OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
ODEQ PERMIT NO. 3555018

TIER III PERMIT MODIFICATION
LANDFILL EXPANSION

VOLUME 1 OF 4

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APPLICATION TO MODIFY A SOLID WASTE DISPOSAL FACILITY PERMIT

Date: March 15, 2022

County: Oklahoma

Send to:
Solid Waste Permitting Unit
Waste Management Division
Dept. of Environmental Quality
707 N. Robinson (PO Box 1677)
Oklahoma City, OK 73101-1677

Oklahoma City Waste Disposal, Inc. proposes to modify the permit of
(Applicant’s Name)
the Oklahoma Landfill, located at (see attached)
(Facility Name)

(Exact legal description: metes & bounds, platted lot, or land survey. Append extra sheets if necessary)

in Oklahoma County, Oklahoma. We hereby make application for a modification of existing permit number 3555018 as required by the Oklahoma Solid Waste Management Act and the Rules pursuant thereto.

Remarks & brief description of proposed modification:
An expansion of an existing municipal solid waste landfill. The expansion includes a 48.7-acre lateral expansion of the solid waste disposal area, and the permit boundary will increase from 417.79 acres to 475.72 acres.

Applicant or Authorized Agent:

Rachel Hanigan, P.E.
Address: 7600 SW 15th Street
City: Oklahoma City State: OK
Date signed: 3/15/22 Phone: (405) 745-3002

Preparing Engineer:

Jonathan V. Queen, P.E.
Address: 6420 Southwest Blvd., Suite 206
City: Fort Worth State: TX
Date signed: 3/15/22 Phone: (817) 735-9770
VERIFICATION

STATE OF OKLAHOMA )

COUNTY OF Oklahoma ) ss

Rachel Hanigan , of lawful age, being first duly sworn, upon oath state that I have read the foregoing APPLICATION TO MODIFY A SOLID WASTE DISPOSAL FACILITY PERMIT, that I am familiar with the matters set forth therein, and that the same are true to the best of my information and belief.

[Signature]
Applicant

Subscribed and sworn to before me this 15th day of March , 2022 .

by [Signature] (Applicant or legal representative).

[Signature]
Notary Public

My commission expires:

4/28/25

1 This Verification is required for a Tier III modification application.
BOUNDARY SURVEY FOR
OKLAHOMA LANDFILL
OKLAHOMA CITY, OKLAHOMA

LEGAL DESCRIPTION

A point of re-entry is at the Northwest corner of Section 8, T-11-N, R-4-W, Conroe Bar.

Thence North 00'27'17" West along the South line of said SW/4 of Section 9 a distance of 2607.72 feet

Thence North 85'27'25' East a distance of 973.32 feet (974.58')

Thence South 00'22'58" East (S 00'21 '47' E) along the thread of the North Canadian River the following five (5) courses:

Thence North 89'41'09" East along the North line of said NW/4 a distance of 386,83 feet

Thence North 89'42'15" East along the North line of said NE/4 a distance of 2628.95 feet to the Northwest corner of the NE/4 Section 8.

Thence South 00'27'17" West (N 0014'04' W) along the Northwest line of said NE/4 of Section 9 a distance of 945.24 feet (945.30')

Thence South 89'52'42" West along the South line of the Northeast Quarter (NE/4) of said Section 8 a distance of 755.92 feet

Thence South 89'46'08" West along the South line of said SW/4 of Section 9 a distance of 2607.72 feet

Thence North 63'09'32" East a distance of 985.35 feet

Thence North 65'22'45" East a distance of 177.23 feet

Thence South 89'42'15" East along the South line of said SW/4 of Section 9 a distance of 1135.20 feet

Thence South 00'27'17" West along the South line of the Northeast Quarter (NE/4) of said Section 9 a distance of 1112.47 feet (1112.38')

Thence South 77'25'57" East a distance of 755.92 feet

Thence South 71'44'57" East a distance of 422.59 feet;

Thence South 05'36'09" East a distance of 641.85 feet;

Thence South 33'37'49" East a distance of 282.05 feet;

Thence North 63'09'32" East a distance of 985.35 feet;

Thence North 65'22'45" East a distance of 177.23 feet;

Thence North 89'41'09" East along the North line of said NW/4 a distance of 386,83 feet;

Thence North 89'42'15" East along the North line of said NE/4 a distance of 2628.95 feet to the Northwest corner of the NE/4 Section 8.
OKLAHOMA LANDFILL
OKLAHOMA COUNTY,
ODEQ PERMIT NO. 3555018

TIER III PERMIT MODIFICATION
LANDFILL EXPANSION

Prepared for
Oklahoma City Waste Disposal, Inc.
March 2022

Prepared by
Weaver Consultants Group, LLC
CA 3804 PE-05/31/2023
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas  76109
817-735-9770

WCG Project No. 0601-001-11-159-04
Re: Tier III Permit Modification
Landfill Expansion
Oklahoma Landfill, Permit No. 3555018
Oklahoma County, Oklahoma

Dear Mr. Cates:

On behalf of Oklahoma City Waste Disposal, Inc., please find enclosed a Tier III Permit Modification to expand the Oklahoma Landfill. Included are two copies of the application for your review and comment and one CD with a PDF copy of the application for your use. Oklahoma City Waste Disposal, Inc., is fully committed to operating the Oklahoma Landfill consistent with ODEQ rules for the protection of human health and the environment while providing needed additional landfill capacity for the region.

The “Notice of Application Filed” will be published in The Oklahoman within the next few days. In addition, the notice will also be sent to adjacent property owners and mineral rights owners. This information will be forwarded to ODEQ for inclusion into Appendix B-2 of the attached application.

We appreciate your review of this permit modification and look forward to your comments. In the meantime, if you have any questions, please do not hesitate to call me.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
Project Director

Attachments: 1 Copy of Tier III Permit Modification
1 CD with PDF Copy of Tier III Permit Modification

cc: Rachel Hanigan, Oklahoma City Waste Disposal, Inc.
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Weaver Consultants Group, LLC
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1 GENERAL INFORMATION REQUIREMENTS

1.1 Introduction and Project Overview

The purpose of this Tier III permit modification is to expand the existing landfill operation to the southeast of the current permitted area. The existing 216.6-acre disposal area will be expanded by 48.7 acres and the permit boundary will increase from 417.79 acres to 475.72 acres. The maximum permitted final cover elevation will remain consistent at 1,377 ft-msl. The resulting capacity increase is 9.84 million cubic yards.

The Oklahoma Landfill has provided for the municipal solid waste (MSW) disposal needs of Oklahoma City and surrounding communities for over 40 years. This Tier III permit modification will ensure that this critical service will continue for the landfill's service area. The site's existing permittee and operator is Oklahoma City Waste Disposal, Inc. Oklahoma City Waste Disposal, Inc. is a Waste Connections, Inc. company (refer to Section 1.5 for more information).

A comparison between the currently permitted configuration of the site and the proposed configuration is shown on Figure 1-1. The continued development of the site will require the continued relocation of Campbell Creek. Therefore, along with this Tier III Permit Modification, authorization from the United States Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA) will be obtained.

Furthermore, this project site is located within the City of Oklahoma City (City); therefore, authorization from the City was also required. The City controls all development activities within the City limits of the City of Oklahoma City through zoning requirements to ensure that compatible land uses are grouped together. Each of the above authorizations are summarized in Sections 1.1.1 through 1.1.3.

1.1.1 Zoning Authorization

The development or expansion of a landfill in the City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the city limits of Oklahoma City. The City controls development trends and land use changes within the city limits of the City of Oklahoma City through its zoning rules and regulations.
Oklahoma City Waste Disposal, Inc. completed PUD-1759, which included the proposed landfill completion plan, to comply with the City's long-term development plan for the area. This development plan included creating a long term public use for the landfill after closure. The Master Development Plan from PUD-1759 is shown on Figure 1-2.

The City’s long-term development plan includes a series of public nature trails that will be constructed at the Oklahoma Landfill during the active life and upon closure of the site. As such, the final landfill configuration was developed to accommodate allowing these trails to traverse a portion of the site after closure.

The approved PUD-1759 is included in Appendix D (Appendix D-6). PUD-1759 was approved by the City on May 26, 2020. PUD-1752 addresses the final configuration of the landfill and the use of the site after closure. The final configuration of the landfill and associated site development included in PUD-1759 matches the configuration provided in this Tier III Permit Modification. Furthermore, the closure and postclosure plans included in this modification incorporate the planned use (e.g., public accessible nature trails) for the site after closure.

As noted in Appendix D-6, the approved PUD includes a 12-foot-wide nature trail that will be constructed at the site in three phases, as shown on Figure 1-2. Phase I (north portion of the trail system and a front office with an Education Center) will be constructed during the active life of the landfill. The Education Center will include posters and models to help guide visitors through the various existing and future environmental sustainable features at the site.

The Phase II trail system (west portion of the trail system) will be constructed during the active life of the landfill, after the western portion of the site has been filled to grade and final cover constructed. The trails route will lead up to the summit as shown on Figure 1-2. At the summit of Phase II landform, an open air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. An 8-foot-high chain link fence will be constructed between the Phase II public use area and areas of ongoing Phase III operations.

The remainder of the trail system (Phase III) will be constructed during the postclosure period. A planting plan for the relocated Campbell Creek to provide a variety of native plants to thrive along the trail system was included in the PUD. Public parking will be provided as part of the proposed open space park, allowing access to nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site’s past uses, and indigenous plants and animals (refer to Appendix D-6 for additional information).

Prior to submittal of PUD-1759, the proposed configuration was submitted to both the FAA and Will Rogers International Airport (owned by the City of Oklahoma City) for review and approval. The site worked with the FAA and Will Rogers...
International Airport during the PUD review process. As discussed in Section 2.4, several assessments of the landfill expansion were completed by the FAA and Will Rogers International Airport before issuing the required authorizations for this project.

### 1.1.2 USACE and ODEQ Water Quality Division Authorization to Relocate Campbell Creek

The USACE is given the authority under Section 404 of the Clean Water Act to issue permits for all construction activities that affect the nation’s waters and wetlands, including dredging or placement of fill material into or adjacent to Waters of the United States (U.S.). The regulatory program that governs these permits is focused on protecting the nation’s aquatic resources, while allowing reasonable development. Therefore, as part of the expansion process, a determination of Section 404 Jurisdictional Waters of the United States was performed to delineate the waters of the U.S. and wetlands within the permit boundary. The determination indicated that there are jurisdictional waters of the U.S. on the landfill property, including the North Canadian River, Campbell Creek, an unnamed tributary west of Campbell Creek, and a wetlands area in the northern portion of the site. Oklahoma City Waste Disposal, Inc. evaluated several options to avoid and minimize impacts to the jurisdictional waters. The option selected balances the long-term solid waste disposal needs of Oklahoma City while minimizing the impact to existing jurisdictional waters.

The USACE approved a Section 404 Individual Permit for current landfill development in December 2010. The Section 404 Individual Permit Application included a Mitigation Plan to ensure that there would be no overall net loss of waters of the U.S. To offset the unavoidable impacts to Campbell Creek, Oklahoma City Waste Disposal, Inc. committed to the avoidance, enhancement, and creation of wetlands and waters of the U.S. as part of the overall site development plan. A Section 404 Individual Permit Modification request was made in May 2014 to incorporate the changes in the proposed condition. On May 7, 2015, the USACE approved the permit modification of permit SWT-2008-657. The USACE did, however, determine that a new Section 404 Individual Permit would be required for the Phase V area. The Phase V area required mitigation activities for existing wetlands and Waters of the U.S. On December 18, 2017, the USACE approved SWT-2016-386 for the development of the Phase V area.

The proposed southeastern expansion area will require development of a new USACE Section 404 Individual Permit to replace SWT-2008-657, which currently regulates the development and mitigation of Campbell Creek along the southeastern portion of the site. A summary of the mitigation activities is included on Figure 1-3.

As summarized on Figure 1-3 the Mitigation Plan includes; (1) the avoidance of 3,380 linear feet of Waters of the U.S., the enhancement of 2,160 linear foot of waters of the U.S. (and 3) the creation of 3.2 acres of wetland and 11,669 linear feet of new waters of the U.S.
of Waters of the U.S. A new USACE Section 404 Individual Permit Application for the
development of the expansion area was submitted to the USACE in January 2022. Any additional USACE submittals will be placed in the site operating record, along with the USACE Section 404 Individual Permit. The expansion area will not be developed until the Section 404 Individual Permit is approved by the USACE.

Campbell Creek is currently being relocated consistent with the Section 404 Individual Permit SWT-2008-657. This expansion has minimal effects on the permitted mitigation activities for the creek in the southeastern portion of the site. The expansion on the southeastern portion of the site will require the permitted configuration of Campbell Creek to be relocated. Campbell Creek relocation activities and stormwater control structures will be moved approximately 980 feet to the east. Progress of the site development will continue to be reported in the submittal of an annual compliance report to the USACE. This annual report describes the activities of the previous year’s progress and/or completion of all authorized work, and photographs/maps/drawings, and a discussion of how the completed work is consistent with the permit conditions. The most recent Annual Report was submitted in October 2021.

The site is currently being developed and operated in compliance with SWT-2008-657 and SWT-2016-386. Conditions for the new USACE Section 404 Individual Permit for the continued development of the southern portion of the site, including the expansion area, will be met prior to development in this area. A copy of the new Section 404 Individual Permit Application is included in Appendix J. The new Section 404 Individual Permit will be placed in the Site Operating Record.

1.1.3 FEMA CLOMR

FEMA is responsible for implementing the regulatory program that controls development within a floodplain. FEMA manages the National Flood Insurance Program and is also responsible for approving updates of Flood Insurance Rate Maps (FIRM). The FIRM defines flood hazard areas for a community, including the floodplain. By defining flood hazard zones and maintaining community FIRM, FEMA manages flood risks to property and human safety. The process for changing the delineation of a floodplain area involves submitting a Conditional Letter of Map Revision (CLOMR) and a Letter of Map Revision (LOMR) including detailed hydraulic and hydrologic data to FEMA and the community floodplain administrator for review and approval.

Prior to the initial phase of development of the landfill in 2009, Campbell Creek meandered through the permit boundary and along the east side of the existing waste fill area. The effective FIRM for Oklahoma County showed that Campbell Creek included floodplain areas. To allow for the continued development of the landfill, Campbell Creek and the associated floodplain was approved by FEMA to be relocated around the previous expansion areas, with the current site CLOMR.
approved by FEMA in June 2016. The proposed expansion will require that Campbell Creek be relocated further east on the southern portion of the expansion. Figure 1-4 shows the existing and proposed flood hazard areas in the vicinity of the Oklahoma Landfill.

The CLOMR for the proposed condition was prepared to meet all applicable FEMA regulations for the relocation of Campbell Creek. Additionally, the CLOMR was prepared to be consistent with the PUD that was submitted and approved by the City in May 2020. The purpose of the CLOMR is to obtain approval to relocate Campbell Creek on the southern portion of the site, revise the effective floodplains for Campbell Creek and the North Canadian River, and allow the development of the proposed landfill expansion. Once the landfill is developed, a LOMR will be submitted to officially revise the floodplains within the permit boundary.

The CLOMR was prepared consistent with the requirements of 40 CFR 65.6. In general, the CLOMR was required to demonstrate that the proposed relocation of Campbell Creek and revision to the North Canadian River floodplain conformed to the following criteria.

- Tie the floodplain into existing upstream and downstream Base Flood Elevations (the 100-year floodplain elevations).
- Maintain consistent hydraulic and hydrologic methodologies included in the effective floodplain analysis.
- Analyze the floodway to ensure that encroachments into the floodway do not increase floodplain elevations by more than 1 foot.

In addition, a maintenance and operation plan and a slope stability analysis were prepared for the relocated Campbell Creek. The maintenance and operation plan summarizes maintenance and inspection requirements required for the relocated Campbell Creek (refer to Appendix H, Section 1.4 for more information). The slope stability analysis was prepared to verify the stability of the relocated Campbell Creek configuration.

The CLOMR analyzed the pre-project condition of the landfill site, which represented the post-project condition included in the previously approved CLOMR (June 2016), and the post-project condition consistent with the proposed completion plan in this application. These analyses included hydrologic and hydraulic calculations for drainage basins and drainage features in the Campbell Creek watershed to evaluate the impact of the proposed relocation of Campbell Creek and revisions to the North Canadian River floodplain and floodway. The CLOMR concluded that the proposed development of the Oklahoma Landfill, the relocation of Campbell Creek, and revisions to the North Canadian River floodplain and floodway would not increase flood risk on adjacent properties. Additionally, the relocated Campbell Creek can adequately manage runoff produced by the 10-year, 50-year, 100-year, and 500-year storm events. The CLOMR was submitted to the Weaver Consultants Group, LLC
City in February 2022. The CLOMR will be submitted to FEMA upon approval by the City. The CLOMR submittal is included in Appendix I. The CLOMR will be approved by the City and FEMA prior to development of the expansion area.

### 1.1.4 Other Agency Coordination

In addition, numerous agencies have issued approval/coordination letters regarding the landfill expansion. These approvals are summarized in the following table.
<table>
<thead>
<tr>
<th>Agency</th>
<th>Coordination Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Aviation Administration (FAA)</td>
<td>The FAA completed an aeronautic study for the proposed expansion of the site and issued a &quot;Determination of No Hazard to Air Navigation&quot; in April 2019 and October 2019. These studies concluded that the proposed landfill configuration does not exceed obstruction standards and will not be a hazard to air navigation. Furthermore, the site also worked with the FAA and Will Rogers International Airport to develop a bird management and monitoring plan. The approved plan has been implemented and is further discussed in Section 2.4. The determinations expire on an 18-month basis; therefore, a request for an extension of the No Hazard to Air Navigation was approved by FAA in October 2019 and April 2021. The FAA approval for the current permitted landfill configuration, along with any future required updates will be kept in the Site Operating Record and can be accessed at <a href="https://oeaaa.faa.gov">https://oeaaa.faa.gov</a>.</td>
</tr>
<tr>
<td>Biological Survey</td>
<td>According to these agencies, there was 1 occurrence of a relevant species (Bald Eagle) within the vicinity of the project location. As noted in the Threatened and Endangered Species Reviews included in the initial correspondence to these agencies dated March and November 2018, bald eagles are typically associated with aquatic habitats (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines and cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the site would not likely have an adverse effect on this species.</td>
</tr>
<tr>
<td>Department of Wildlife Conservation</td>
<td>GRDA had no comments on this project.</td>
</tr>
<tr>
<td>Grand River Dam Authority (GRDA)</td>
<td>The Bureau of Reclamation and the Natural Areas Registry concluded that there are no public recreation or preservation areas within ½ mile of the proposed expansion. However, the Oklahoma Tourism and Recreation Department and Oklahoma City Parks and Recreation stated that there is a park land within ½ mile of the expansion area. This park land is owned by the City of Oklahoma City and is currently located within ½ mile of the existing landfill. Oklahoma City Waste Disposal, Inc. has worked with the Planning and Zoning Commission as well as the City Council to develop PUD-1542 to comply with the City's long-term development plan for the area. Refer to Section 2.13 for additional information.</td>
</tr>
<tr>
<td>Natural Areas Registry</td>
<td></td>
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<td>Tourism and Recreation Department</td>
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<tr>
<td>Bureau of Reclamation</td>
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<tr>
<td>Oklahoma City Parks and Recreation</td>
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<tr>
<td>Oklahoma City Riverfront Redevelopment Authority</td>
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<tr>
<td>Water Resource Board (OWRB)</td>
<td>The OWRB identified no existing or planned public water supply surface water intakes located within 1 mile or less downstream from the proposed landfill expansion.</td>
</tr>
</tbody>
</table>

*Absorbed the mission and responsibilities of the Oklahoma Scenic River Commission (July 16, 2016)
CAMPBELL CREEK RELOCATION ACTIVITIES
(REFER TO SECTION 1.1.2 AND 1.1.3)

- USACE APPROVED SECTION 404 PERMITS FOR THIS SITE IN MAY 2015 AND DECEMBER 2017
- FEMA ISSUED A CLOMR IN JUNE 2016

N 159500
S ROCKWELL
N 159000

-400
800
SCALE IN FEET

--- - --- EXISTING PERMIT BOUNDARY
-- - -- - -- PROPOSED PERMIT BOUNDARY
- - - - - - PERMITTED LIMIT OF WASTE
------------ PROPOSED LIMIT OF WASTE

--- 202---
EXISTING CONTOUR
---- '1280------
FINAL COVER CONTOUR

--- ·· ·- ·· ·-- DRAINAGE SWALE

DRAINAGE CHUTE

--- - - - - TRAIL SYSTEM

Landfill Expansion Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Existing</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Boundary</td>
<td>417.79 acres</td>
<td>475.72 acres</td>
</tr>
<tr>
<td>Disposal Area</td>
<td>216.6 acres</td>
<td>265.3 acres</td>
</tr>
<tr>
<td>Maximum Permitted Height</td>
<td>1377.0 ft</td>
<td>1377.0 ft</td>
</tr>
<tr>
<td>Capacity</td>
<td>34,011,088 cy</td>
<td>43,851,088 cy</td>
</tr>
<tr>
<td>Site Life</td>
<td>10.0 years</td>
<td>17.0 years</td>
</tr>
</tbody>
</table>

NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FirmateK compiled from aerial photography flown 03-13-2021.
2. The United States Army Corps of Engineers (USACE), Tulsa District approved a Section 404 Individual Permit for the permitted Campbell Creek Relocation on December 8, 2010. This permit was modified to incorporate the changes in the proposed condition for Campbell Creek. USACE approved the permit modification on May 7, 2015. A new Section 404 permit will be obtained for the southeastern expansion area and placed in the site operating record.
3. A CLOMR was approved by OKC to establish a floodplain and floodway boundaries based on the proposed relocation of Campbell Creek. FEMA's approval of the CLOMR will be obtained and placed in the site operating record.
4. The City of Oklahoma City has approved PUD-1759 for the continue development of an existing landfill and the proposed landfill completion plan on May 26, 2020.
Enhancement reversed to flow north to south. The slope of the creek will be reduced to minimize erosion potential and facilitate vegetation colonizing shrubs.

USACE SWT-2008-657 Proposed Mitigation Plan Summary

<table>
<thead>
<tr>
<th>Type of Mitigation</th>
<th>Area Description</th>
<th>Discussion</th>
<th>Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aviation</strong></td>
<td>Campbell Creek and existing woodland area between the North Canadian River and the southern edge of the existing woodland area to be avoided.</td>
<td>Waters of the U.S. (Southern Portion of Campbell Creek) - 740 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Avoidance</strong></td>
<td>Campbell Creek and woodland area on southern portion of the site for avoided.</td>
<td>Waters of the U.S. (Southern Portion of Campbell Creek) - 1,720 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Creation</strong></td>
<td>Campbell Creek &quot;Oxbow&quot; and woodland area on western portion of the site to be avoided.</td>
<td>Waters of the U.S. (Oxbow area) - 815 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Enhancement</strong></td>
<td>Enhancements to an existing creek which was previously relocated under USACE Permit No. OKR2003030 will be made. The enhancements include the planting of additional woodland trees and existing shrubs.</td>
<td>Enhancements to existing Relocated Creek - 800 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Enhancement</strong></td>
<td>Several enhancements to the western portion of Campbell Creek will be made. The slope of this portion of the creek will be reduced to flow north to south. The slope of the creek will be reduced to minimize erosion potential and facilitate vegetation colonizing shrubs.</td>
<td>Enhancements to existing Campbell Creek - 1,360 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Creation</strong></td>
<td>10,550 linear feet of relocated creek is created with this plan. The creek was designed to mimic the characteristics of the existing creek, including slope, vegetation, streambed, and nature of substrate. Additionally, a riparian corridor will be re-established adjacent to the relocated creek.</td>
<td>Relocated Creek - 10,550 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Creation</strong></td>
<td>Substantial Floodplain storage will also be developed as part of this plan. The average elevation of this area is 1,200 ft-msl and the 100-year floodplain elevation will be 1,211 ft-msl (per FEMA approved CLOMR).</td>
<td>Existing floodplain storage - 6.8 acres</td>
<td></td>
</tr>
<tr>
<td><strong>Creation</strong></td>
<td>An additional 1,110 feet of wetlands created in an area adjacent to the relocated creek.</td>
<td>Additional wetlands of the U.S. created - 1,110 feet</td>
<td></td>
</tr>
<tr>
<td><strong>Creation</strong></td>
<td>Wetland area constructed per ODEQ Water Quality's request.</td>
<td>Wetlands Created - 3.2 acres</td>
<td></td>
</tr>
</tbody>
</table>

**Jurisdictional Waters Created**

- Waters of the U.S. - 11,660 linear feet
- Wetlands - 3.2 acres
- Additional Floodplain Storage Created - 420 Ac-ft over 38 acres
NOTES:
1. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. THE 100-YEAR POST PROJECT FLOODPLAIN IS REPRODUCED FROM THE SITE CLOMR.

ON THIS PANEL IS LOCATED NORTH, RANGE 4 WEST

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Tier III Permit Modification
Revisions to FEMA Floodplain

Weaver Consultants Group
CA 3804 PE - 06/01/2023

Figure 1-4
Each of the above approvals are further discussed in Section 2.

1.2 Name and Type of Facility

The current permitted name of the facility is Oklahoma Landfill. The Oklahoma Landfill is a municipal solid waste facility.

1.3 Proposed Operational Description

The Oklahoma Landfill is an existing municipal solid waste landfill facility (ODEQ Permit Number 3555018). The existing landfill currently provides solid waste disposal service for residences and businesses in the City of Oklahoma City, Oklahoma County, and the surrounding areas. With this expansion, the existing landfill permit boundary will expand from approximately 417.79 acres to a proposed 475.72 acres. The waste disposal area will increase from approximately 217.3 acres to 265.3 acres.

1.4 Name, Address of Applicant

Oklahoma City Waste Disposal, Inc.  
(Oklahoma Landfill)  
7600 SW 15th Street  
Oklahoma City, OK 73128  
Telephone (Applicant): (405) 745-3002  
Telephone (Facility): (405) 745-3002

c/o Ms. Rachel Hanigan, P.E., Regional Engineer

1.5 Owner Information and Disclosure

The current permittee and operator for the Oklahoma Landfill is Oklahoma City Waste Disposal, Inc. Oklahoma City Waste Disposal, Inc. is a wholly-owned subsidiary of Waste Connections, Inc. (WCI). WCI is one of the leading solid waste management companies in the nation. For over 40 years, the landfill has been a part of the community and is a vital component of the area’s solid waste management system. WCI’s 2020 annual report is included in Appendix A.

Sheet B-3-2 in Appendix B shows the property ownership within the 475.72-acre permit boundary. The deeds associated with each tract owned by Oklahoma City Waste Disposal, Inc. are included on Sheets B-3-3 through B-3-23. As shown on
Sheet B-3-2, Oklahoma City Waste Disposal, Inc. owns each tract within the expansion area.

Sheet B-3-2 in Appendix B also shows the location and holders of easements located on the site.

### 1.6 Legal Description

The legal description of the proposed permit boundary is included in Appendix B.

### 1.7 Location of Facility

Generally, the site is located south of the North Canadian River, north of SW 29th Street, east of Council Road, and west of McArthur Boulevard within the Oklahoma City Limits.

The existing Oklahoma Landfill and the proposed landfill expansion area are located within Sections Eight (8) and Nine (9) of Township Eleven North (T-11-N), Range Four West (R-4-W) of the Indian Meridian, Oklahoma County, Oklahoma.

### 1.8 Right to Use Documentation

The executed right to use documents are included in Appendix C. The purpose of this appendix is to provide a temporary easement for access that will allow the ODEQ the right to access the property.

### 1.9 Land Use of Adjacent Property and General Area

The landfill expansion area zoning was approved by the City of Oklahoma City on May 26, 2020 through the approval of PUD-1752. Land use of the adjacent properties is dominated mostly by industrial and agricultural activity. Located within a 1-mile radius of the facility includes both developed and undeveloped areas of industrial, commercial, and residential zones. The locations of residential areas and businesses are presented on Figure 3 – Land Use Map. Water well locations in the vicinity of the facility are presented on Figure 11.

In general, the land use is described below for the surrounding areas:

**South** – Located south of the permit boundary is property zoned “I-2” Moderate Industrial, “I-3” Heavy Industrial, “R-1” Residential, PUD-548, and PUD-1042. This area consists of industrial, manufacturing, outdoor storage, and agricultural.
**East** – Located east of the permit boundary is property which is zoned “R-1” Residential and “R-MH-2” Manufactured (Mobile) Home Park District. This area consists of agricultural and a mobile home park.

**West** – Located west of the permit boundary is property zoned “I-3” Heavy Industrial and PUD-1407. This area includes heavy industrial and the Western Heights Schools/Bridgestone Firestone Nature and Education Area.

**North** – Located north of the permit boundary is property zoned “R-1” Residential and “AA” Agricultural and Rural Residential, which is used predominantly as mining and auto salvage.

The use of this area for a municipal solid waste landfill represents a compatible land use for the following reasons.

- Landfill operations have occurred in the area of this facility since the early 1980s.
- The land use of property adjacent to the facility is dominated by mostly industrial activities.
- The City has approved a PUD (PUD-1752) for the site.

1.10 Waste Streams

The facility is classified as a Municipal Solid Waste (MSW) Landfill and follows the guidelines for operations as defined in OAC 252:515. The facility currently receives residential and commercial waste, construction and demolition waste, non-hazardous “other” industrial waste, encapsulated asbestos waste, vegetative waste, semi-solid waste, and sludges. Special waste is handled under the requirements set forth in this permit. This Tier III Permit Modification does not propose to change the types of waste accepted at this facility. No hazardous, radioactive, or Polychlorinated biphenyl (PCB) waste will be knowingly accepted at this facility.

The major sources of waste come from Oklahoma City, Oklahoma County, and the surrounding communities. During the 12-month period beginning on February 18, 2020 and ending on March 11, 2021, Oklahoma Landfill accepted 752,576 tons of waste.

1.11 Life and Design Capacity of Facility

A summary of the capacity increase associated with this landfill expansion is listed below:
• Current Design Capacity = 34,011,088 cubic yards
• Proposed Capacity Increase due to Landfill expansion = 9,840,000 cubic yards
• New Design Capacity = 43,851,088 cubic yards

The expansion of the landfill will increase the remaining airspace as of March 11, 2021 to approximately 19,266,867 cubic yards (cy). The existing permitted area and previous final grading plan has a remaining airspace of 9,426,867 cy (as of March 11, 2021). As noted above, the proposed landfill expansion will increase the existing remaining airspace by 9,840,000 cy.

Based on the remaining airspace and volumes calculated for daily cover and intermediate cover, the remaining volume for waste only is estimated as follows:

Remaining Volume for Waste Only = Total remaining airspace - Volume of daily and intermediate cover (10% of total remaining airspace)

= 19,266,867 cy - 1,926,687 cy

= 17,340,180 cy

Assuming an in-place density of waste/cover soils of 1,530 lb/cy (1,430 lb/cy density of waste only), the above remaining waste volume can be converted to a total remaining volume in tons (as of March 11, 2021).

Total Remaining Volume (Tons) = (80% of 19,266,867 cy)[(1,430 lb/cy*1/2,000 tons/lb)]

= 12,398,229 tons

The estimated initial waste stream received for disposal by the landfill (in 2021) is approximately 2,475 tons per day. The site is open for operation approximately 286 days per year. It is assumed that the incoming waste rate will increase consistent with the growth rate projections for County. The growth rate projections were obtained from the Water Resources Board’s (OWRB’s) “2012 Comprehensive Water Plan.” The incoming waste volume is assumed to increase at the same rate as the population projections of Oklahoma County after each year of operation.

The waste inflow rate is estimated to increase at the rates shown below:

Projected Use Rate (years 2021-2030) = 4.11% or annualized projected use rate of 0.4033%

Projected Use Rate (years 2031-2040) = 2.98% or annualized projected use rate of 0.2939%

Weaver Consultants Group, LLC
Using the above growth rates, the estimated waste inflow rate will gradually increase from 707,850 estimated tons per year in 2021 (2,475 tons per day based on a 286-day operating schedule) to 749,194 estimated tons per year in 2037 (2,620 tons per day based on a 286-day operating schedule). Over the life of the facility, the expected average daily volume of incoming waste is projected to be approximately 2,550 tons per day. These projections are based on current market conditions and may vary as market conditions change.

Supporting calculations are provided in Appendix B, Appendix B-4. In summary, the site life is projected to be approximately 17.0 years, which would result in the site’s closure during the year 2038.

In addition, an economic “life of site” estimate has been developed consistent with OAC 252:515, Subchapter 27 (for the purposes of this regulation, it is our understanding that “life of site” is defined as the remaining life of the capacity over the currently constructed fill areas). This estimate is included in Appendix T. Consistent with OAC 252:515-27-8(c), the Economic Life of the facility as of December 31, 2020, is approximately 1.1 years.

1.12 Record Keeping Procedure

The facility will follow record keeping procedures set forth in accordance with OAC 252:515-19-40. These items are listed in detail in the Operational Plan section (Section 8) of this permit modification.

1.13 Access Roads

The primary access to the site is SW 15th Street, which is located just north of the site. Traffic is restricted by a locked gate at the landfill entrance controlled by Oklahoma Landfill and all roads inside the facility are maintained by the facility.

1.14 Air Quality Permitting Status

Currently, the site is subject to New Source Performance Standards (NSPS) Subpart XXX and National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart AAAA requirements, given that it has had a capacity increase since May 31, 1999, and commenced construction after July 17, 2014 and the estimated NMOC Emissions are 7 50 Mg/yr. The site is currently authorized by Title V Operating Permit No. 2019-099-TVR2 dated March 31, 2020, which is included in Appendix S. The air permit will be revised to include the expansion upon approval. The site will continue to follow all applicable NSPS requirements. In addition, the site will maintain compliance with applicable air quality permit requirements. All applicable
NSPS, NESHAP, and air quality documentation will be placed in the Site Operating Record.

### 1.15 Aesthetic Enhancement

In accordance with OAC 252:515-3-37. The visual harmony of the expansion area will be enhanced by (1) creating buffer zones greater than the required minimum of 100 feet, as shown in the permit figures/drawings and as discussed in Section 8.7 and the PUD (Appendix D-6) and (2) the establishment of interim and permanent vegetation as noted in Appendix K. Noise will be controlled by the established buffer zones as discussed in Section 8.7 and the PUD (Appendix D-6). Dust will be controlled as discussed in Section 8.11. The aesthetic enhancement plan is presented on Figure 14.

### 1.16 Variance Requests

This permit modification includes two variance requests. The variance requests include (1) location of the disposal area as it relates to the 100-year floodplain and (2) location of the site with an area designated as alluvium or terrace deposits.

Consistent with OAC 252:515-3-32 and OAC 252:515-5-32(a)(2)(A), this application requests a variance to OAC 252:515-32(a). A Conditional Letter of Map Revision (CLOMR) Request that includes the final configuration of the proposed Oklahoma Landfill was submitted to the City in February 2022. The CLOMR will be submitted to FEMA upon approval by the City. The CLOMR Request will revise the limits of the 100-year floodplain, as shown on Figure 4 and in Appendix I. As shown, no portion of the waste disposal area will be located within the 100-year floodplain after the perimeter berm has been constructed. In addition, the perimeter berm will provide over 3 feet of freeboard between the 100-year floodplain elevation and the top of the perimeter berm. The perimeter berm has also been designed to withstand potential erosion, as further discussed in Section 2.2.

Consistent with OAC 252:515-3-32, this application requests a variance to OAC 252:515-5-51(a). OAC 252:515-5-51(a) states that no MSWLF shall be located within an area designated as alluvium or terrace deposits and their recharge areas as shown on Oklahoma Geologic Survey (OGS) publication "Map of Aquifers and Recharge Areas in Oklahoma," compiled by Kenneth S. Johnson, Oklahoma Geological Survey (1991). A portion of this map, which has been reproduced as Figure 10, shows that the expansion area is located on an OGS mapped alluvium/terrace deposit and recharge area.

However, as allowed by OAC 252:515-5-51(1)(2), a Quaternary Alluvial Sediment/Terrace Deposit Investigation was performed by Weaver Consultants Group, LLC (WCG) and submitted to ODEQ on August 3, 2018 for the westernmost
37-acre property of the expansion area. In ODEQ's letter dated September 19, 2018, ODEQ concluded that terrace deposits and alluvium do not exist on the property based on the investigation. A copy of WCG's request letter and ODEQ's response letter is included in Appendix D-7 of Appendix D. Based on the proximity of the 37-acre property included in the 2018 investigation, adjacent to the 22-acre property, the 2018 investigation is still relevant and applicable for the adjacent 22-acre property. The 22-acre property was also investigated as part of the subsurface investigation (Appendix E). No terrace deposit/alluvium areas were identified as part of the subsurface investigation.

A 2004 investigation was completed for the currently permitted eastern and southern portions of the site and also determined that this portion of the site is not located in a terrace deposit/alluvium area.

The northern portion of the site (Phase V) was reviewed and discussed related to the terrace deposit/alluvium location restriction in the 2016-2017 Tier III Permit Modification process. A Phase V specific development plan was proposed and approved as part of the Tier III Permit Modification to address this location restriction. Phase V has been developed and will continue to be developed in accordance with this plan.

This Tier III Permit Modification does not include expansion areas adjacent to the Phase V area nor does this Tier III Permit Modification revise the design of Phase V or the approved development plan.
2 LOCATION STANDARDS

2.1 Introduction

The criteria for location restrictions in OAC 252:515-5 restricts Municipal Solid Waste Landfills and landfill expansions from being located in or near unsuitable areas. The restrictions pertain to floodplains, public water supply, airports, wetlands, fault areas, seismic impact zones, unstable areas, endangered or threatened species, scenic rivers, recreation/preservation areas, utility transmission lines and terrace deposits. The following sections address each of these location restrictions. In addition, Appendix D contains the correspondences associated with the Location Restriction Demonstrations.

2.2 100-Year Floodplain

The site is currently being developed consistent with a Conditional Letter of Map Revision (CLOMR) approved by FEMA in June 2016 (Case No. 14-06-4593R). A CLOMR for the expansion of the landfill was submitted to the City in February 2022. The landfill expansion includes the continued relocation of Campbell Creek and removing a portion of the landfill from the North Canadian River floodplain and floodway. The creek relocation and removing the portion of the landfill from the North Canadian River floodplain and floodway was included in the CLOMR submitted to the City. The limits of the 100-year floodplain that will result from the development of the expansion area are also shown on Figure 4.

As shown on Figure 4, no portion of the waste disposal area will be located within the 100-year floodplain. The perimeter berm will provide over 3 feet of freeboard between the 100-year floodplain elevation and the top of the perimeter berm.

The site is and will remain in compliance with OAC 252:515-5-32(a).

2.3 Utility Separation

OAC 252:515-5-52(a) requires a minimum of 25 feet between the active expansion area and any above ground or underground pipeline or transmission line. There are several known above ground and below ground utilities on site. There are utilities along SW 15th Street, along S. Rockwell Avenue, along the perimeter of the site, and that transverse the site. The utilities along SW 15th Street and S. Rockwell Avenue, service Oklahoma Landfill and other surrounding facilities (refer to Appendix B for
additional information). The utilities along SW 15th Street (that extend onto property) will not be affected by the proposed landfill expansion and will be a minimum of 25 feet from the proposed waste disposal area. The utilities along S. Rockwell Avenue extend onto the site property to service the site maintenance facility. The utilities along the perimeter of the site will not be affected by the proposed expansion and will be a minimum of 25 feet from the proposed waste disposal area. The most noticeable utility that transverses the site is an Oklahoma Gas & Electric (OG&E) electrical distribution line that currently runs from the southeast to northwest of the southern portion of the site (refer to Drawing 2 for the existing distribution line location). This electrical distribution line will be relocated to meet the location restriction before the waste disposal area is developed in this area. Documentation of all utility line and easement relocations will be maintained in the Site Operating Record.

### 2.4 Airports

OAC 252:515-5-52(e) states that no MSWLF that has the potential to cause or create bird hazards to aircraft shall be permitted within 10,000 feet of any airport runway used by turbojet aircraft and within 5,000 feet of any airport used by only piston-engine aircraft except as approved by the U.S. Federal Aviation Administration (FAA).

The FAA has no objection to the proposed expansion regarding potential wildlife hazards to aircraft as documented in their May 8, 2018 and November 9, 2019 letters (see Appendix D-1).

In addition, the FAA also reviewed the proposed landfill expansion to determine the potential for the site to be a hazard to air navigation. As documented in their correspondence, dated April 16, 2019 and October 29, 2019, the proposed expansion does not pose as a hazard to air navigation (refer to Appendix D-1 for more information). An extension request of the No Hazard to Air Navigation determination was approved by the FAA on October 28, 2019 and April 28, 2021. The updated determination letters along with any future required updates will be kept in the Site Operating Record and can be accessed at https://oeaaa.faa.gov.

Furthermore, OAC 252:515-5-52(e)(1)(A) requires that if any expansion of waste management or disposal areas of an active land disposal facility are located within a 5-mile radius of any airport runway end used by turbojet or piston-type aircraft, the affected airport and the FAA must be notified and proof of such notification provided to the ODEQ. The Will Rogers World Airport was notified of the Oklahoma Landfill expansion in the previous correspondence between the FAA, the Will Rogers World Airport, the U.S. Department of Agriculture, and Oklahoma City Waste Disposal, Inc. regarding PUD-1752.

The landfill expansion complies with the airport location restrictions listed in OAC 252:515-5-52(e).
2.5 Wetlands

OAC 252:515-5-32(d) requires that no new MSWLFs and landfill expansions be located in wetland areas. As discussed in Section 1.1.2 and shown on Figure 1-3, the southeastern and northern portions of the site have currently approved USACE Section 404 Individual Permits SWT-2008-657 and SWT-2016-386. Therefore, these areas are in compliance with OAC 252:515-5-32(d).

Goshawk Environmental Consulting, Inc. (an environmental services firm with experience in wetland delineation) completed a Section 404 jurisdictional determination report for the expansion area. The Goshawk reports determined that the area does not meet the criteria necessary to be considered jurisdictional waters. However, development will require relocation of previous USACE permitted areas, therefore, a new USACE Section 404 Individual Permit for the development of the expansion area was submitted to the USACE in January 2022. The expansion area will not be developed until the new Section 404 Individual Permit is approved by the USACE. A copy of the new Section 404 Individual Permit Application is included in Appendix J. The new Section 404 Individual Permit will be placed in the Site Operating Record.

2.6 Fault Areas

OAC 252:515-5-52(b) requires that new MSWLFs and landfill expansions shall not be located within 200 feet of a fault that has had displacement in Holocene (most recent 11,000 years) time. Based on the Oklahoma Geological Survey Map of the Oklahoma Landfill area, there are no mapped faults in the area.

The landfill and the surrounding area were examined for the presence of Holocene (last 11,000 years) fault displacements. This included a physical inspection of the site and surrounding area, review of previous fault investigations, available literature and maps, and a current aerial photograph. No unusual Holocene scarps, topographic breaks, vegetation changes, or lineations were interpreted within 200 feet of the site. No apparent Holocene structural influence of stream courses was observed. In addition, no unusual relief or topographic features, such as sag ponds, truncated alluvial spurs, or offset tributary alignments, were observed. The Tectonic Map of Oklahoma (Arbenz, 1956) indicates no mapped faults within Oklahoma County. In summary, there is no evidence of Holocene faulting within 200 feet of the site. Therefore, the proposed expansion complies with the fault area location restriction.
2.7 Seismic Impact Zones

A seismic impact zone is defined as an area with a 10 percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.1 g in 250 years. A 2014 USGS contour map of peak horizontal acceleration, expressed as percent of gravity (%g) values, with a 2% probability of exceedance within 50 years is presented on Figure 8. According to the USGS, the 2% probability of exceedance within 50 years is statistically equivalent to a 10% exceedance within 250 years. The Interactive Hazard Map for the Lower 48 States, dated 2018, from the USGS seismic hazard database indicates that there is a 19.4 percent probability that the maximum horizontal acceleration will exceed 10 percent of the earth's gravitational pull within 250 years.

Therefore, the USGS data indicates the facility is located within a seismic impact zone. However, OAC 252:515-5-52(c)(1) states that no new MSWLF shall be located in a seismic impact zone except as provided in 27A Oklahoma Statute §2-10-501(D)(3), which states that the location restriction does not apply to privately-owned landfills which regularly serve one or more municipalities, and which have been accepting non-hazardous industrial solid waste under approval of the ODEQ. The Oklahoma Landfill serves numerous communities in the Oklahoma City metropolitan area and has been receiving non-hazardous industrial wastes, as permitted by the ODEQ. Therefore, the seismic impact zone restriction does not apply.

Although this location restriction does not apply, seismic impact is considered in the design. Appendices N (Geotechnical Assessment) and M (Leachate Collection System Design) address seismic issues in conjunction with the slope stability analyses for the landfill and demonstrate compliance with OAC 252:515-5-52(c)(2). The leachate collection system will consist of flexible pipes and joints and has been designed to resist the maximum horizontal and vertical displacement caused by a seismic event. The liner materials will be composed of flexible materials and have been designed to withstand a seismic event.

2.8 Endangered and Threatened Species

OAC 252:515-5-31(c) states that owners/operators of new MSWLFs obtain a statement from the Oklahoma Department of Wildlife Conservation (ODWC) and Oklahoma Biological Survey (OBS) concerning endangered or threatened wildlife or plant species within one-mile of the proposed site. Supporting correspondence from the ODWC and OBS are included in Appendix D, Appendix D-2. According to the agency responses, there was 1 occurrence of a relevant species (Bald Eagle) within the vicinity of the project location.
Goshawk Environmental Consulting, Inc. (Goshawk) conducted an on-site field reconnaissance for endangered or threatened wildlife and plant species habitats and completed a habitat assessment report. Goshawk's report also concluded that, due to a lack of suitable habitat on the landfill property, no endangered or threatened species are known to exist near the proposed permit boundary. As part of the survey, Goshawk obtained information from the U.S. Fish and Wildlife Service's (USFWS) Tulsa, Oklahoma office regarding threatened and endangered species. Goshawk's report is included in Appendix D, Appendix D-2. Therefore, the proposed landfill expansion area complies with this location restriction and no mitigation plan is required.

2.9 Scenic Rivers

OAC 252:515-5-31(a) requires that no new MSWLFs shall be located within the drainage basin of any river designated under Oklahoma Scenic Rivers Commission (OSRC) Act (82§21-1452) unless a statement is obtained from the OSRC or the Oklahoma Tourism and Recreation Department stating the proposed site is not expected to adversely affect the river or point of public interest. The mission and responsibility of the OSRC was absorbed by the Grand River Dam Authority (GRDA) on July 16, 2016. The Oklahoma Scenic Rivers Act provides protection for designated Oklahoma scenic rivers including the Illinois River, Lee Creek, Little Lee Creek, Barren Fork Creek, Flint Creek, and the Mountain Fork River. The proposed expansion permit boundary is within the North Canadian River drainage basin, which is not part of any designated scenic river drainage system. The GRDA had no comment as indicated on their response letter included in Appendix D-3 of Appendix D. Therefore, the proposed landfill expansion complies with the scenic rivers location restriction.

2.10 Terrace Deposits

OAC 252:515-5-51(a) states that no MSWLF shall be located within an area designated as alluvium or terrace deposits and their recharge areas as shown on Oklahoma Geologic Survey (OGS) publication “Map of aquifers and Recharge Areas in Oklahoma,” compiled by Kenneth S. Johnson, OGS (1991), unless site-specific hydrological and geological data has been submitted to demonstrate that the proposed location does not lie in a prohibited area. The 1991 map compiles data previously presented on two maps: one on bedrock aquifers and the other on alluvium and terrace deposits compiled by Kenneth S. Johnson, 1983 (Maps showing Principal Groundwater Resources and Recharge Areas in Oklahoma; Oklahoma State Department of Health and Oklahoma Geological Survey, 2 sheets). A portion of this map has been reproduced as Figure 10. As shown on Figure 10, the proposed landfill expansion area is located within an area that is mapped as unconsolidated alluvium or terrace deposits. However, as allowed by OAC 252:515-5-51(1)(2), a
Quaternary Alluvial Sediment/Terrace Deposit Investigation was performed by Weaver Consultants Group, LLC (WCG) and submitted to ODEQ on August 3, 2018 for the westernmost 37-acre property of the expansion area. In ODEQ's letter dated September 19, 2018, ODEQ concluded that terrace deposits and alluvium do not exist on the property based on the investigation. A copy of WCG’s request letter and ODEQ’s response letter is included in Appendix D-7 of Appendix D. Based on the proximity of the 37-acre property included in the 2018 investigation, adjacent to the 22-acre property, the 2018 investigation is still relevant and applicable for the adjacent 22-acre property. The 22-acre property was also investigated as part of the subsurface investigation (Appendix E). No terrace deposit/alluvium areas were identified as part of the subsurface investigation.

A 2004 investigation was completed for the currently permitted eastern and southern portions of the site and also determined that this portion of the site is not located in a terrace deposit/alluvium area.

The northern portion of the site (Phase V) was reviewed and discussed related to the terrace deposit/alluvium location restriction in the 2016-2017 Tier III Permit Modification process. A Phase V specific development plan was proposed and approved as part of the Tier III Permit Modification to address this location restriction. Phase V has been developed and will continue to be developed in accordance with this plan.

This Tier III Permit Modification does not include expansion areas adjacent to the Phase V area nor does this Tier III Permit Modification revise the design of Phase V or the approved development plan.

### 2.11 Public Water Supply and Groundwater Resources

OAC 252:515-5-32(b) states that no MSWLF shall be located within one mile up gradient of a public water supply surface water intake that is in existence or permitted for construction at the time a complete modification is filed or within a one-year travel time of a public water supply well. The following subsections address public water supply surface water intakes, wellhead delineations, and aquifer recharge or discharge areas.

#### 2.11.1 Public Water Supply Surface Water Intakes

The online geographic information system (GIS) ODEQ database indicated that there are no public water supply surface water intakes within one mile of the proposed permit boundary (gis.deq.ok.gov/maps). The nearest public water supply intake is located about 3.4 miles upstream of the proposed permit boundary. In addition, a October 29, 2021 correspondence from the Oklahoma Water Resources Board (OWRB) is included in Appendix D-5 of Appendix D that indicates there are no
permitted public water supply surface water intakes within one mile of the proposed landfill expansion area.

2.11.2 Public Water Supply Wellhead Delineation

The OWRB online water supply database and ODEQ database were queried for locations of area public water supply wells. The locations of the recorded seven public water supply wells are shown on Figure 11. A complete discussion of public water supply wells located within 2 miles of the site is provided in Section 2.12. The nearest public water supply well is located approximately 200 feet southeast of the proposed permit boundary. As such, this public water supply well is not at risk from a potential landfill release, because it is up Garber-Wellington groundwater gradient from the landfill. Refer to Section 2.3 in Appendix E.

2.11.3 Aquifer Recharge or Discharge Area

A Groundwater Resource and Usage Map (Johnson, 1983) illustrating recharge areas is provided as Figure 10 per OAC 252:515-3-72. The proposed expansion area is located in potential recharge areas of the Garber-Wellington Aquifer, as delineated by Johnson (1983). However, as described in studies of this aquifer, there is about 840 feet of Hennessey shale that confines the Garber-Wellington beneath the landfill. Recharge is derived primarily from rainfall infiltration on the outcrop areas located in eastern Oklahoma, Cleveland, and Logan Counties. Natural discharge of groundwater from the Garber-Wellington Aquifer may occur along local streams and rivers within a 3-mile radius of the proposed expansion area.

2.12 Wellhead Protection Area

OAC 252:515-5-32(c) requires the identification of a wellhead protection area if a public water supply well is located within two miles of the proposed landfill expansion. A summary of the public water supply wells is shown on Figure 11. As shown on Figure 11, there are a total of seven recorded public water wells. As shown on Figure 11, the seven public water supply wells located within 2 miles of the site (wells labeled A, B, C, D, E, F and G) have associated wellhead protection areas, as required by OAC 252:515-5-32(c). For this reason, the wellhead protection location restriction does not apply.

2.13 Recreation/Preservation Area

OAC 252:515-5-31(b) states that no new MSWLF shall be located within one-half mile of an area dedicated and managed for public recreation or natural preservation by any federal, state, or local governmental agency. Weaver Consultants Group, LLC (WCG) contacted the Oklahoma Tourism and Recreation Department, Oklahoma Natural Areas Registry, Oklahoma City Parks and Recreation, and Bureau of Weaver Consultants Group, LLC
Reclamation to determine the potential proximity of public recreation and natural preservation areas. The Bureau of Reclamation and the Oklahoma Natural Areas Registry concluded that there are no public recreation or preservation areas within ½ mile of the proposed expansion. However, according to the Oklahoma Tourism and Recreation Department and the Oklahoma City Parks and Recreation, Larry McAtee Park, located directly north of SW 15th Street, is owned by the City of Oklahoma City and is located within ½ mile of the proposed expansion. Larry McAtee Park is part of the park land in the Oklahoma River corridor leased to and managed by the Oklahoma City Riverfront Redevelopment Authority. The Oklahoma City Riverfront Redevelopment Authority and the City of Oklahoma declared in a joint resolution that the proposed expansion is not expected to adversely affect recreation areas within one-half mile of the proposed expansion.

The existing permitted landfill is currently located within one-half mile of Crystal Lake. In addition, Oklahoma City Waste Disposal, Inc. has worked with the Planning and Zoning Commission as well as the City Council to develop PUD-1759 to comply with the City’s long-term development plan for the area. Copies of the agency correspondence are included in Appendix D-4 of Appendix D. Therefore, the proposed expansion complies with the Recreation/Preservation Area location restriction.

### 2.14 Karst Terrain

OAC 252:515-5-51(b) states that no part of a new MSWLF shall be within a locally fractured or cavernous limestone (aquifer) or cherty limestone bedrock or within five miles of any water well owned by a rural water district. The proposed landfill expansion area is not in karst terrain. In addition, the geologic maps (Figures 5, 6, and 7) do not indicate the presence of soluble rock (i.e., limestone, dolomite, and/or halite) within 750 feet of the surface, which is necessary for karst terrain formation. Also, the site topographic map and a site walkover indicated no karst characteristic features were present (i.e., sinkholes, vanishing streams, caves, large springs, and/or blind valleys). The Reconnaissance of Water Resources of the Oklahoma City Quadrangle indicates there is no “karst bedrock aquifer” within five miles of the Oklahoma Landfill. Therefore, the proposed expansion complies with the karst terrain location restriction.

### 2.15 Unstable Areas

OAC 252:515-5-52(d) states that no new MSWLF shall be located over a subsurface mining area or any other unstable areas. Based on a review of the location of the proposed landfill expansion area by a licensed WCG professional engineer, it was determined that the area is not located within an unstable area. The proposed disposal area excavations will be founded in the stable geologic formation and will
not experience adverse differential settlement as discussed in Appendix N - Geotechnical Assessment.

For determination of unstable areas at the site, a review of existing geotechnical and geological data, along with WCG site observations and a slope stability analysis were conducted as part of the location restriction demonstration (refer to Appendix N). No significant differential settling, geomorphologic features indicative of instability or human caused areas of instability were observed by WCG in the proposed landfill expansion area. Unstable areas, which would be susceptible to natural or human-induced events or forces have not been identified at the site. Therefore, the proposed landfill expansion area is stable and the proposed expansion complies with the unstable area location restriction.

2.16 Earthquake Epicenter Areas

OAC 252:515-5-51(c) prohibits any area within the permit boundary of a new disposal facility that accepts non-hazardous industrial waste to be located within 5 miles of the epicenter of a greater than 4.0 on the Richter scale magnitude or a Modified Mercalli scale intensity of a category V or greater earthquake as recorded by the Oklahoma Geological Survey (OGS) records. This location restriction does not apply to the Oklahoma Landfill, which is an existing municipal solid waste landfill.

According to the online Oklahoma Geological Survey Earthquake Catalog of Oklahoma (www.okgeosurvey1.gov), which catalogs earthquakes in the State of Oklahoma since 1882, within the past 10 years, no earthquakes with more than a 4.0 on the Richter Scale or a category V or greater on the modified Mercalli scale have occurred within a 5-mile radius of the site. As stated above, the earthquake epicenter location restriction doesn't apply since the Oklahoma Landfill is an existing landfill. In addition, pseudo-static method was used during stability analysis to account for seismic loads, refer to Appendix N for more information. Therefore, the proposed expansion complies with the earthquake epicenter area location restriction.

2.17 Asbestos Monofills

OAC 252:515-5-51(d) prohibits the location of new asbestos monofills within 500 yards of an occupied residence or 3 miles of a municipally incorporated area. According to 27A Oklahoma Statute 2-10-103(11), a monofill is a landfill which is used to dispose of a single type of specified non-hazardous industrial solid waste, except for other non-hazardous industrial solid wastes which are not readily separable from the specified waste. This location restriction does not apply to the Oklahoma Landfill because it is an existing municipal solid waste facility and not an asbestos monofill (nor is the proposed expansion area). However, as noted in Section 8.4, the Oklahoma Landfill is approved to accept asbestos and materials containing asbestos.
3 SUBSURFACE INVESTIGATION

3.1 Introduction

A Subsurface Characterization Drilling Plan (SDP) (WCG, June 2020) was prepared to perform a subsurface investigation of the site. The SDP was approved by the ODEQ in a letter dated July 14, 2020. A copy of the ODEQ approval letter is provided in Appendix E-9. This Subsurface Investigation Report provides findings outlined in the approved SDP and pertinent information required by OAC 252:515-7-1. The subsurface investigation report is presented in Appendix E. The design of the landfill expansion area is based on the new data gathered from this investigation.

3.2 Monitoring Wells

The existing groundwater monitoring system is comprised of eight monitoring wells (four upgradient wells and four downgradient wells) screened in the uppermost saturated zone. The proposed groundwater system is comprised of eight monitoring wells (four upgradient wells and four downgradient wells) screened in the uppermost saturated zone. MW-11 will be decommissioned and MW-12 will be constructed to OWRB monitoring well specifications. The well location is illustrated on Attachment E-1-26 in Appendix E per OAC 252:515-3-74(b)(2) and OAC 252:515-3-75(b)(2).

3.3 Design and Construction

Design, construction considerations, and details of the proposed groundwater monitoring system are included in Section 4 of Appendix E (Subsurface Investigation and Groundwater Study).

3.4 Plugging

All monitoring wells and piezometers that are removed will be plugged and abandoned according to the Water Resources Board and ODEQ requirements of OAC 785:35-11, 252:515-7-3, and 252:515-7-71(b).
3.5 Monitoring Program

The monitoring program will follow the current Ground Water Sampling and Analysis Plan (GWSAP) and Statistical Methods Plan. Both of these plans were previously approved by the ODEQ. This plan satisfies the regulations put forth in OAC 252:515-9. Copies of these plans are included in Appendix F and include the following:

- Groundwater sample collection, preservation, and analysis methodologies;
- Chain of custody procedures;
- Monitored constituents;
- Establishment of background groundwater quality;
- Detection monitoring program; and
- Statistical analyses procedures.

Detection monitoring of the proposed groundwater monitoring system for the proposed landfill expansion area will be performed in accordance with 252:515-9-71 through 72.
4 EXPLOSIVE GAS CONTROL

4.1 Methane Monitoring Program

In accordance with OAC 252:515-15, a methane-monitoring program will address the type and frequency of monitoring in all structures and permitted areas. Site boundaries will be monitored to identify any migration of methane gas through the subsurface. Structures inside the permitted area will also be monitored to ensure that methane levels do not exceed 25 percent of the lower explosive limit. The Landfill Gas (LFG) Management Plan is included in Appendix G. The proposed gas probes for the proposed landfill expansion area are included in Figure 13.

4.2 Landfill Gas Monitoring Probes

Currently, the site has 26 existing LFG monitoring probes that will remain in place. As a result of the proposed landfill expansion, 7 existing monitoring probes will be abandoned and 13 new probes will be installed. At landfill completion, the monitoring network consist of 39 monitoring probes. At a minimum the new probes will extend from ground surface down to the lowest bottom of waste elevation in accordance with OAC 252:515-15-4. The installation report on the new probes will be submitted to the ODEQ within 90 days following the installation.

4.3 Excessive Gas Procedure

In accordance with OAC 252:515-15-5 in the event that methane gas levels do exceed the limits specified, Oklahoma Landfill personnel will decide if the threat warrants an evacuation to protect human health. ODEQ will be notified immediately. Documentation of methane measurements and any steps taken to protect the safety of individuals will be recorded in the Site Operating Record and reported to the ODEQ within seven days. Upon review of the exceedances, a remediation plan will be prepared and submitted within 30 days. The plan, upon approval by the ODEQ, will be implemented within 60 days. This plan may be modified to meet the facility’s conditions by approval from ODEQ. The ODEQ will be notified that the remediation plan has been implemented and that a copy of the plan has been placed in the Site Operating Record.

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4.4 **Landfill Gas Collection and Control System**

The site has an existing active landfill gas collection and control system (GCCS). This GCCS will be expanded as needed to provide control of LFG.

4.5 **LFG Regulatory Compliance**

The existing facility has a design capacity that exceeds 2.5 million Mg. As such, the site complies with all applicable requirements of 60 CFR Subpart XXX (NSPS XXX) and 40 CFR 63 Subpart AAAA (NESHAP AAAA). The site operates a landfill gas collection and control system in accordance with NSPS XXX and NESHAP AAAA..
5 STORMWATER MANAGEMENT

5.1 Surface Water Protection

In accordance with OAC 252:515-17-3, the facility has been designed to prevent discharge of pollutants into waters of the State or waters of the United States, as follows:

- No discharge of solid waste or pollutants into or adjacent to waters of the State, including wetlands, that is in violation of the requirements of the Water Quality Management Plan will occur. During the active life of the facility all stormwater coming into contact with solid waste will be retained as contaminated water and disposed of as outlined in Appendix M.

- No discharge of pollutants into or adjacent to waters of the United States, including wetlands, that violates any requirement of the Clean Water Act, including, but not limited to, the OPDES requirements as demonstrated in Appendix H-2 will occur. Oklahoma City Waste Disposal, Inc. has received a permit from ODEQ to discharge stormwater runoff consistent with an OPDES Stormwater Industrial General Permit for industrial activity. A copy of the authorization to discharge under the OPDES Stormwater Industrial General Permit OKR05 is included in Appendix H-6. In addition to the above, leachate and contaminated water will be disposed of by one of the approved methods listed in Appendix M, Section 5.

- The proposed site development includes relocation of Campbell Creek, which requires the placement of fill into jurisdictional waters of the United States. The USACE regulates all construction activities within the nation’s waters (including wetlands). Oklahoma City Waste Disposal, Inc. will obtain a Section 404 Individual Permits, including a Section 401 Water Quality Certifications from ODEQ for the construction activities associated with the proposed site’s development. Coordination with the USACE is included in Appendix J.

- No discharge of a nonpoint source pollution of waters of the United States, including wetlands, that violates any requirement of an area-wide or statewide Water Quality Management Plan that has been approved under the Federal Clean Water Act, §208 or §319, as amended will occur. Coordination with the Water Resources Board is included in Appendix D, Appendix D-5.
5.2 Run-on Control System

The Surface Water Management Plan for this proposed landfill expansion design has been prepared in accordance with OAC 252:515-17. The proposed drainage improvements for this expansion include providing final cover erosion control structures (i.e., chutes and swales), and perimeter drainage channels. A drawing depicting the layout of the proposed drainage system is presented on Drawing 5. As shown on Drawing 5, stormwater runoff will be collected in swales located near the upper grade break on the landfill and on the 4 (Horizontal) to 1 (Vertical) sideslopes, and then conveyed to drainage letdown structures (chutes) and down the 25 percent slopes to the perimeter channels, relocated Campbell Creek, or existing drainage features. Stormwater drainage from developed areas will be directed into the perimeter channels, relocated Campbell Creek, or existing drainage features. The site is designed so that the expansion area development will not significantly alter existing permitted drainage patterns and to prevent stormwater run-on to the active portion of the landfill during a 24-hour, 25-year storm event. The design of the stormwater management system is included in Appendix H.

The stormwater management system (including the relocation of Campbell Creek) will be constructed as the site is developed to the east. As the site develops, the permanent erosion control structures (i.e., chutes, swales, etc.) will be constructed. This will provide for the controlled conveyance of all stormwater generated from the developed portions of the site.

Surface waters will be managed throughout the active life of the landfill to minimize the amount of stormwater that will come in contact with waste or enter the leachate collection system. Surface water will be controlled through the use of diversion berms, stormwater diversion ditches, and stormwater detention areas. Stormwater that comes into contact with waste at the working face area will be considered contaminated water and treated as leachate (refer to Section 5.3).

5.3 Run-off Control System

Contaminated water that collects behind the containment berm and does not infiltrate into the landfill will be pumped into tanker trucks and transported to a properly permitted privately-owned treatment facility or a public-owned treatment works (POTW) for treatment. Contaminated water may also be transported to the leachate storage pond or a leachate storage tank for conveyance. At no time will contaminated water be allowed to discharge into waters of the United States. The design calculations and the size of the containment and diversion berms required around the active working face for the 25-year, 24-hour storm event are provided in Appendix M (Appendix M-8).
5.4 Stormwater Pollution Prevention Plan

The Stormwater Pollution Prevention Plan (SWPPP) will be prepared in accordance with the facility's current National Pollutant Discharge Elimination System under the current multi-sector permit (OKR050488). A copy of this permit is included in Appendix H, Appendix H-6.
6 LINER AND FINAL COVER SYSTEMS

6.1 Liner Design and Installation

The waste disposal area will be expanded from 216.6 acres to 265.3 acres. The expansion area will include two additional cells to Phase IV (Cells 9 and 10), and the reconfiguration of Phase IV Cells 4 through 7. The excavation plan, top of liner plan, and top of leachate collection layer plan are presented on Drawings 7 through 9. Drawings 19 through 21 include details of the liner system construction for the expansion area.

The liner system design will be a composite liner system or an alternative liner system designed in accordance with OAC 252:515-11-2(c). The liner details are depicted on Drawings 19 through 21. The liner system design configuration is shown below (from top to bottom).

<table>
<thead>
<tr>
<th>Liner System Design</th>
<th>Alternative Liner System Design 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional 12-inch-thick Leachate Collection Layer or 5 feet of Select Waste</td>
<td>Additional 12-inch-thick Leachate Collection Layer or 5 feet of Select Waste</td>
</tr>
<tr>
<td>12-inch-thick Leachate Collection Layer</td>
<td>12-inch-thick Leachate Collection Layer</td>
</tr>
<tr>
<td>8-oz/sq yd Geotextile</td>
<td>8-oz/sq yd Geotextile</td>
</tr>
<tr>
<td>Geomembrane Liner (60-mil FML)</td>
<td>Geomembrane Liner (60-mil FML)</td>
</tr>
<tr>
<td>24-inch-thick Compacted Clay Liner (CCL) (k ≤ 1x10⁻⁷ cm/sec)</td>
<td>12-inch-thick CCL (k ≤ 1x10⁻⁶ cm/sec) and Geosynthetic Clay Liner (GCL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alternative Liner System Design 2</th>
<th>Alternative Liner System Design 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-inch thick soil protective cover layer</td>
<td>24-inch thick soil protective cover layer</td>
</tr>
<tr>
<td>Drainage Geocomposite</td>
<td>Drainage Geocomposite</td>
</tr>
<tr>
<td>Geomembrane Liner (60-mil FML)</td>
<td>Geomembrane Liner (60-mil FML)</td>
</tr>
<tr>
<td>24-inch-thick Compacted Clay Liner (CCL) (k ≤ 1x10⁻³ cm/sec)</td>
<td>12-inch-thick CCL (k ≤ 1x10⁻⁶ cm/sec) and Geosynthetic Clay Liner (GCL)</td>
</tr>
</tbody>
</table>

The expansion excavation area is designed to have a slope of 1.2 percent (from the cell ridge line to the leachate collection line). The sidewalls will be constructed with a typical slope of 3(H):1(V). The leachate collection trench will be situated down the center of each cell. Sump riser pipes and clean out pipes are provided for each cell. The design demonstration for the alternative liner system design is provided in

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Appendix O. Material specifications, construction, and testing requirements for the alternative liner system design are provided in Appendix L.

6.2 Liner Installation and Testing

A Liner and Leachate Collection/Protective Cover System Installation Quality Assurance/Quality Control (QA/QC) Plan has been prepared and will be followed during the construction of each of the new sectors. The Liner and Leachate Collection/Protective Cover System Installation QA/QC Plan is included in Appendix L. The purpose of the Liner and Leachate Collection/Protective Cover System Installation QA/QC Plan is to ensure that the liner and leachate collection/protective cover systems comply with OAC 252:515-11-4 through 76, and OAC 252:515-13.

6.3 Final Cover Design

The proposed evapotranspiration (ET) final cover system is a monolithic soil cover that employs a thick layer of soil with adequate soil-water storage capacity to retain any infiltrated water until it can be removed through ET. The ET final cover system concept relies on the soil to act like a sponge. A key to the design is that the "soil sponge" or "soil rooting medium" be designed thick enough to hold infiltration of precipitation until the water can be consumed by ET. The ET final cover system will consist of the layers listed in the following table.

<table>
<thead>
<tr>
<th>Evapotranspiration (ET) Final Cover System</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-inch-thick vegetation layer</td>
</tr>
<tr>
<td>24-inch-thick vegetation support layer</td>
</tr>
<tr>
<td>12-inch-thick intermediate layer</td>
</tr>
</tbody>
</table>

The ET final cover system design is included in Appendix K. Drawing 24 contains the ET final cover system details. In addition, Appendix K also includes the Final Cover Quality Assurance/Quality Control Plan (Appendix F of the Alternative Final Cover Design) and the Vegetation Plan (Appendix F of the Alternative Final Cover Design).

A geotechnical report including stability demonstrations for both liner and final cover systems is provided in Appendix N – Geotechnical Assessment.

An additional 12 inches of compacted earthen material (intermediate cover) shall be applied over all disposal areas not protected by final cover meeting the requirements of OAC 252:515-19-53 or managed with run-off control structures meeting the requirements of OAC 252:515-17-2(2).
### 6.4 Phase V Development Plan

The northern portion of the site (Phase V) was reviewed and discussed related to the terrace deposit/alluvium location restriction and subsequent proposed liner system and development plan in the 2016-2017 Tier III Permit Modification process. A Phase V specific development plan was proposed and approved as part of the Tier III Permit Modification to address this area. Phase V has been developed and will continue to be developed in accordance with this plan.

This Tier III Permit Modification does not include expansion areas adjacent to the Phase V area nor does this Tier III Permit Modification revise the design of Phase V or the approved development plan.
7 LEACHATE COLLECTION/PROTECTIVE COVER SYSTEM

7.1 Leachate Collection/Protective Cover System Design

The purpose of the leachate collection/protective cover system is to control the accumulation of leachate on the bottom liner and reduce the potential for migration of leachate into the environment. The leachate collection system is designed to satisfy the requirements set forth in OAC 252:515-13, these include maintaining 1 foot or less of head above the top of the liner and provide at least 5 feet of separation between the top of the geomembrane liner and the highest groundwater elevation (refer to Section 7 of Appendix M for additional information).

The leachate collection/protective cover system consists of a leachate collection/protective cover layer and the underlying leachate collection piping, trenches, and sumps. This system will collect leachate from the sectors, minimize head buildup on the liner system, and manage the leachate through its disposal. The 5-foot separation requirement provides a safety factor for groundwater protection.

The leachate collection/protective cover layer is placed above the liner to allow leachate to discharge freely from the overlaying wastes and flow laterally to the perforated collection pipes. The leachate collection layer consists of a 12-inch soil layer with a permeability of $1 \times 10^{-3}$ cm/sec or greater. The protective cover layer consists of an additional 12-inch-thick leachate collection layer or 5 feet of select waste. An alternative leachate collection/protective cover layer option includes a drainage geocomposite as the leachate collection layer and a 24-inch-thick soil layer with a permeability of $1 \times 10^{-4}$ cm/sec or greater as protective cover.

The leachate collection layer follows the top of the liner slope to promote leachate flow toward the leachate collection trenches and ultimately to the sumps for removal (Drawing 9). This layer provides a high permeability layer to effectively transmit leachate to collection pipes and sumps, thereby reducing leachate head buildup. In each of the cells the top of the liner slopes 1.2 percent from the cell ridge to the middle of each cell, where the leachate collection trenches are located.

Leachate collection pipes lie in the middle of the leachate collection trenches to aid in the transport of leachate to the sumps. The collection pipes are 6-inch-diameter SDR17 HDPE perforated with 1/2-inch holes. The perforated collection pipes are placed with the holes facing downward in the trench. In the leachate collection trench, a geotextile will encapsulate the piping and drainage stones to prevent clogging of the drainage material and prevent puncture of the underlying geotextile and geomembrane. Washed stone surrounds the collection pipes with a minimum...
hydraulic conductivity of 1 cm/s. Each trench slopes towards the sumps located on the end of each cell. This ensures that the leachate in the trenches flows freely to the leachate collection sumps. Drawings 19 and 22 contains details concerning the leachate collection system.

As discussed in Appendix M (Section 6), leachate may be recirculated. In accordance with ODEQ guidelines, recirculation of leachate will only occur over areas of the landfill that have been lined with ODEQ approved composite liner systems.

7.2 Leachate Management

The leachate collection sumps and pumps have been sized to limit maximum head above the liner system to 12 inches and provide a reasonable pump cycle time. Leachate removal from each sump is accomplished with a submersible pump. The leachate collected in the leachate sumps is currently pumped from the sumps to an existing leachate pond located in the northeast portion of the site. The existing leachate pond will continue to be utilized at the facility for leachate storage.

Leachate and contaminated water will be disposed of by one of the following methods.

1. Pumped into the existing leachate storage pond, temporary leachate storage pond, or a leachate storage tank.
2. Pumped into a tanker truck and transported directly to a POTW or other off-site permitted disposal facility.
3. Direct discharge to a POTW or other off-site permitted facility consistent with OAC 252:515-13-55.
4. Recirculated at the working face, as needed, to stabilize waste and facilitate compaction. The recirculation of leachate will be performed following the procedures set for in the Leachate Recirculation System Operating Plan (Section 6).

Refer to Appendix M for additional information.

7.3 Performance Evaluations

Samples will be collected from the existing leachate storage pond to comply with all applicable permit requirements. A grab sample may be obtained and used for laboratory analysis.

In addition, leachate levels will be monitored at the existing leachate storage pond prior to and following pumping cycles to estimate the amount of leachate generated by the landfill. This allows for a qualitative evaluation of the landfill design.
Leachate head levels will be measured at a minimum frequency of once per quarter, but more frequent head measurements may be made to ensure compliance. The removal of leachate will occur as necessary to maintain less than one foot of head on the liner system.

The leachate collection system will be routinely inspected, at least quarterly, to ensure the proper operation of the system. In the event that the leachate collection system is shown to have failed to perform as designed, the facility shall submit a corrective action plan to the ODEQ within 30 days. The facility should begin the implementation of such a plan within 30 days of the ODEQ approval.
8 OPERATIONAL PLAN

8.1 Hours of Operation

The site will typically operate Monday through Friday (7:00 AM to 5:00 PM) and Saturdays (7:00 AM to 12:00 PM); however, the operating hours are not limited to those time periods. The incoming volume of waste will change the operational hours of the facility. At certain times of the year and with changes in incoming volumes due to special circumstances and/or projects, the facility will increase or decrease the daily hours of operation to accommodate the incoming volume. The facility ultimately will be open to serve the community needs. However, an appropriate amount of staff and equipment will always be maintained during operational hours to ensure that applicable regulations are properly followed.

8.2 Public Access Control

The permitted and proposed landfill area are controlled by a perimeter fence, natural barriers and/or a gate which are locked when the landfill personnel are not present. The primary entrance to the facility is from SW 15th Street, which runs east/west adjacent to the north permit boundary. The entrance road is constructed of all weather (gravel) surface and runs from SW 15th Street to the scalehouse. The scalehouse personnel will control the access to the landfill during operational hours. When the site is closed the main entry gate will be closed and locked to prevent unauthorized disposal at the site. Maintenance on the perimeter fences, gates, and locks will be performed as necessary to maintain control of the site.

The City of Oklahoma City maintains the access road to the site (i.e., SW 15th Street). The vehicular traffic utilizing the facility will consist of waste collection vehicles such as compactors, transfer, transport and roll-off vehicles which vary in type size, length, weight, and capacity. SW 15th Street is maintained to support the present and any additional future traffic to the site. Internal roads will be maintained by Oklahoma Landfill and intended to support all traffic in all weather conditions. Temporary roads will be used as waste placement areas are completed. All interior site roads will be graded for proper drainage and drainage culverts will be installed and maintained as needed.

During dry and windy weather water trucks will spray the roads to minimize dust problems. To minimize the tracking of mud from the site to public roads, the entrance road will be maintained. The entrance road will be maintained during
periods of inclement weather to help ensure that mud-tracking does not become a problem.

A secondary entrance to the facility is from Rockwell Avenue near SW 29th Street on the south side of the facility. This entrance will be used by employees and vendors.

8.3 Measuring Procedure

8.3.1 General Information

OAC 252:515-19-33 states that all waste delivered to and disposed of will be measured by either weight or volume. In January of 1996 ODEQ mandated the utilization of weight measurements. Therefore, the landfill personnel will record the amount of solid waste the facility disposes on a daily basis. These records will be maintained for review by the ODEQ at the facility. In compliance with OAC 252:515-19-33(a), scales are located onsite. In addition, the scales will be tested and certified annually in accordance with requirements of the Department of Agriculture, Food, and Forestry.

The Oklahoma Landfill currently has a Tare Weight Plan in place. The Tare Weight Plan incorporates past experience in using tare weights as a means to determine average truck weights over a period of time. Those vehicles that are regular users of the landfill have established historical data that allows for tare weights to become increasingly accurate over time.

Currently, vehicles are identified by unit number or name and stored in the site computer database by means of a customer ID number. As a vehicle enters the scale, the scale attendant enters the ID number in the computer, and the vehicle’s tare weight (i.e., weight of vehicle without waste) is automatically retrieved based on historical data for that vehicle.

Due to variations in each individual truck weight (i.e., fuel quantity, removable or added equipment, number of passengers, etc.), an estimated tare weight for each truck will be used. This will be the average sum of all previously measured weights for that truck/vehicle.

Tare weight records are maintained in a computerized truck file listing that can be printed at any time for review. If the scales are inoperative, tonnage will be estimated on a volume basis where one cubic yard of solid waste will be calculated to weigh one-third ton. Monthly reports will also be filed in the operating record and submitted to the ODEQ no later than the 15th of the month following the reporting month. Solid waste disposal fees will be remitted to the ODEQ in accordance with 27A O.S. §2-10-802(B).
8.3.2 Existing Customers

Given the historical data previously gathered for existing customers, existing trucks will reweigh annually to gather current data that can be used to recalculate the average tare weight. With this method, slight variations can be accounted for and the average (estimated) tare weight will remain accurate over time.

Existing customers will be notified that equipment changes (removed and/or added) must be communicated to the site management so that the vehicle can reweigh as soon as possible. Each time a truck/vehicle has a change in equipment, it will reweigh and the new weight will be added to the average tare weight database.

8.3.3 New Customers

New customer vehicles will be weighed empty on their first trip to the landfill. Thereafter, vehicles will reweigh annually as described above.

8.3.4 Existing Equipment

Collection vehicles owned by WCI have been weighed and tare weights are in the computer database. Each truck and container has been assigned an ID number. When a facility owned truck/container enters the landfill, the scale operator will enter the ID numbers for both pieces of equipment. The computer will add the tare weights of the truck and container, then subtract the sum from the measured gross weight, leaving the net weight of the waste load.

Trucks will reweigh annually to gather current data that can be used to recalculate the average tare weight to be used. With this method, slight variations can be accounted for and the average (estimated) tare weight will become more accurate over time.

The containers will reweigh only if significant repair work has been performed on the container that would either add or reduce the tare weight.

Equipment changes (removed and/or added to the trucks) will be communicated to the site management so that the vehicle can reweigh as soon as possible. Each time a truck/vehicle has a change in equipment, it will reweigh and the new weight added to the average weight database.

8.3.5 New Equipment

New equipment will be weighed and given an ID number on the first visit to the landfill and this information added to the database.
8.4 Asbestos

Oklahoma Landfill is approved to accept asbestos and materials containing asbestos in compliance with all the requirements set forth in OAC 252:515-19-36, all regulations set forth in 252:100 and 380:50. These requirements are stated in the Waste Exclusion Plan included in Appendix P.

8.5 Litter Control

Blowing litter will be controlled in accordance with OAC 252:515-19-35. The site operations will conduct unloading of waste in such a matter to reduce the blowing of waste from outside the active disposal area. The working face will be covered at the end of each day as well as when necessary during the operational day to help minimize the scattering of waste. In addition, litter fencing will be placed downwind of the active area during windy weather periods. The entire landfill site and the approaching roadways within 1/2 mile will be cleaned by landfill personnel at least once a week or whenever the site or surrounding area deems necessary. In addition, signage will be posted advising customers to adequately cover their loads to prevent blowing litter.

8.6 Cover Material Requirements

A daily cover with at least 6 inches of earthen material or an approved Alternative Daily Cover (ADC) will be placed over the exposed solid waste at the end of each operating day or more frequently, if needed. The cover is used to prevent and control disease vectors, fires, odors, blowing litter and scavenging at the facility. The material will be compacted sufficiently to minimize washout and keep any rainfall from exiting the active disposal area.

As part of this Tier III Permit Modification, Oklahoma Landfill proposes to use spray-type ADCs (e.g., ConCover, AIRTROL® Plaster, Second Nature®, Refiber, BioCover, or an approved equivalent), a tarp ADC (e.g., DURASHEILD, Fabrisoil, HDPE flexible membrane liner materials, or an equivalent material), contaminated material ADC, wood chip ADC, or tire chip ADC. In accordance with Section 252:515-19-51(d) of the ODEQ Municipal Solid Waste Regulations, material characteristics, operation methods and inspection procedures are discussed below.

8.6.1 Spray Type ADC

- General Material Description – The spray type ADC materials that will be used at this site are composed of the following materials.
  - Wood fiber, corrugated fiber, and/or recycled paper
Guar gum tackifier and/or other polymers

Water or leachate. If leachate is utilized, the spray type ADC material will only be utilized over a composite lined area, including recirculation barrier lined areas.

The material is mixed in a hydromulch machine and applied to the working face where it forms a crust-like barrier after application. This barrier prevents odors, windblown litter, and also creates a barrier between the solid waste material and vectors.

• Operational Methods – The spray type operational method includes the following:
  - The operator will be familiar with the product to be used prior to use of the ADC.
  - The operator will not operate the machine until qualified personnel have trained him.
  - The operator will mix the spray ADC according to the manufacturer’s recommendation.
  - The operator will spread the material on the working face and verify that the entire area is covered with the minimum specified thickness. If the thickness is not sufficient to control vectors, odors, windblown litter, and waste the operator will spray additional material to satisfy this requirement.
  - The operator will then take the machine to an appropriate place to be washed, cleaned, and stored for use the following day.

• ADC Verification and Inspection Procedures – At the end of each working day, site personnel will visually inspect the working face to verify that the approved ADC has been placed over the exposed wastes. Site personnel will also routinely assess the effectiveness of the ADC in controlling vectors, fires, odors, and windblown waste.

8.6.2 Tarp ADC

• General Material Description – The tarp ADC materials that will be used at this site will typically be composed of synthetic materials. Tarp options will include, but not be limited to, DURASHIELD, Fabrisoil, or an equivalent material.

• Operational Methods – The tarp ADC operational method includes the following:
  - Panels of ADC material will be pulled over the working face.
– The perimeter of the tarps will be anchored appropriately with tires, dirt, sandbags, or similar material.
– The tarps will be removed the following morning by pulling across itself (to reduce drag) and stored in an inactive area.

- ADC Verification and Inspection Procedures – At the end of each working day, site personnel will visually inspect the working face to verify that the approved ADC has been placed over the exposed wastes. Site personnel will also routinely assess the effectiveness of the ADC in controlling vectors, fires, odors, and windblown waste.

8.6.3 Contaminated Material

- General Material Description – The contaminated materials that will be used at this site will meet the sampling standards included in the Waste Exclusion Plan. Each contaminated material generator will provide a laboratory analysis indicating compliance with the site Waste Exclusion Plan for each specific contaminated material. Waste Connections will request ODEQ approval for each contaminated generator and specific contaminated material prior to use as an ADC.
- Operational Method – The contaminated material ADC operational method includes the following:
  – At least 6 inches of contaminated material will be placed over the working face.
  – The working area will be surrounded by a contaminated water containment berm and stormwater diversion berm.
  – The contaminated material will be covered with waste within a 24-hour period.
- ADC Verification and Inspection Procedures – At the end of each working day, site personnel will visually inspect the working face to verify that the approved ADC has been placed over the exposed wastes. Site personnel will also routinely assess the effectiveness of the ADC in controlling vectors, fires, odors, and windblown waste.

8.6.4 Wood Chips ADC

- General Material Description – The wood chips (mixed with 50% soil) that will be used at this site will be the chippings of clean wood material, brush, and/or leaves.
- Operational Methods – The wood chip material ADC operational method includes the following:
  – At least 6 inches of wood chips will be placed over the working face.
- The working area will be surrounded by a contaminated water containment berm and stormwater diversion berm.
- The wood chips will be covered with waste within a 24-hour period.

- ADC Verification and Inspection Procedures - At the end of each working day, site personnel will visually inspect the working face to verify that the approved ADC has been placed over the exposed wastes. Site personnel will also routinely assess the effectiveness of the ADC in controlling vectors, fires, odors, and windblown waste.

8.6.5 Tire Chips ADC

- General Material Description - The tire chips that will be used at this site will be the chippings of waste tires.
- Operational Methods - The tire chip material ADC operational method includes the following:
  - At least six (6) inches of tire chips will be placed over the working face.
  - The working area will be surrounded by a contaminated water containment berm and stormwater diversion berm.
  - The tire chips will be covered with waste within a 24-hour period.
- ADC Verification and Inspection Procedures - At the end of each working day, site personnel will visually inspect the working face to verify that the approved ADC has been placed over the exposed wastes. Site personnel will also routinely assess the effectiveness of the ADC in controlling vectors, fires, odors, and windblown waste.

8.7 Buffer Zones

In accordance with OAC 252:515-19-38, waste-free buffer zones of at least 100 feet offset from the proposed permit boundary for the landfill expansion area included in this permit modification will be maintained. No disposal waste will be placed inside the buffer zone. The distance between the permit boundary and limits of waste in the lateral expansion area is shown on Drawing 6.

8.8 Air Criteria

Currently, the site is subject to New Source Performance Standards (NSPS) Subpart XXX requirements, given that it has had a capacity increase since May 31, 1999, and commenced construction after July 17, 2014. The site is currently authorized by Title V Operating Permit No. 2019-099-TVR2 dated March 31, 2020, which is
included in Appendix S. The site will continue to follow all applicable NSPS requirements. In addition, the site will maintain compliance with applicable air quality permit requirements. All applicable NSPS and air quality documentation will be placed in the Site Operating Record.

8.9 Salvage or Recyclery Operations

No scavenging will be permitted at the disposal site. However, in accordance with OAC 252:515-19-39, diversion of the appropriate waste streams to recycling facilities with verification of an ODEQ-approved recycling and salvage plan is permitted.

8.10 Disease Control

With the proper compaction and cover of waste, most disease vectors will be eliminated. If a situation warrants, the use of alternative actions will be available as required. Professional exterminators will be contacted, if necessary, to eliminate rodents and other pests.

8.11 Dust Control

Dust resulting from vehicular traffic construction activity and landfill operations will be kept to a minimum within the property through the utilization of a water truck, road base material, and/or vegetation establishment. The site water truck is utilized throughout the day to apply water to various haul roads throughout the site. During the life of the landfill, water will be applied to the access roads to control dust on a daily basis, except on days of measurable precipitation or when temperatures are at or below freezing.

In addition, several of the site haul roads are covered with various road base materials, including the main site entrance road. Finally, as portions of the landfill are developed to final grade, final or temporary vegetation is established through means of seeding or sodding.

8.12 Dead Animals, Containers, and Municipal Sewage

Oklahoma Landfill may receive dead animals or slaughterhouse wastes. Dead animals and slaughterhouse wastes will be buried at the working face and covered with a minimum of three feet of other solid waste or a minimum of two feet of soil immediately upon receipt. Additional waste or soil will be added over the dead animals or slaughterhouse wastes if objectionable odors are created by the wastes.
Unless disposed containers follow the criteria below, containers holding liquid wastes will not be disposed of at Oklahoma Landfill in accordance with OAC 252:515-19-72. The containers allowed to be disposed of at the landfill are:

a. containers similar in size and quantity to that normally found in household waste;
b. designed to hold liquids for use other than storage; or
c. derived from household waste.

Municipal sewage sludge treated to Class B requirements as discussed in 40 CFR 503.32(b) is allowed to be disposed of at the Oklahoma Landfill if the sludge passes the Paint Filter Liquids Test (PFLT), EPA Method 9095. If the sludge does not pass the paint filter test, it will be bulked or solidified on-site or removed from the site and disposed of at another permitted site.

8.13 Animal Feeding

In accordance with OAC 252:515-17-2(i), no domestic animals except for guard dogs will be allowed on the site. Furthermore, no animals will be allowed near the active disposal area.

8.14 Discharge

Contaminated water or leachate is currently pumped to the existing leachate storage pond. Contaminated water or leachate will not be discharged from the site without prior approval from the ODEQ.

8.15 Waste Placement

In accordance with OAC 252:515-19-38(a), no waste will be placed or allowed to enter waters that come in contact with waters of the State located outside the permit boundary. This is further addressed in Section 5. No waste will be allowed in the buffer zones as outlined in Section 8.7.

8.16 Accident Prevention and Safety

Safety training will be provided to new employees as well as refresher courses for current employees in safety and accident prevention.
8.17 Recordkeeping and Reporting

In accordance with OAC 252:515-19-40, the operating record of the facility will be maintained on-site or near the facility. The operating record will include all records concerning the planning, construction, operation, closing, and postclosure monitoring of the facility until the postclosure monitoring period is terminated. Among the documents that will be included in the site operating record will be location demonstrations, the daily operation record, monitoring and test results, closure and postclosure plans, cost estimates, and financial assurance documents.

The location demonstration reports include all permits required by local, state and federal agencies concerning all operation at the site. The daily operational record will record operational information including the amount of waste received, any unusual circumstances that may take place during operations, and any other pertinent information regarding the general work carried out at the facility. The monitoring and test results will be maintained in the operating record and submitted to the ODEQ within 60 days of the sampling event. A copy of all groundwater, leachate, stormwater, and gas monitoring data will be kept on-site for review by any local, state, or federal agency. Examples of the recordkeeping and reporting forms are included in Appendix U.

The operating record will be maintained and updated to abide by any new regulations for the life of the operating landfill and the closure and postclosure period. Out of state waste will only be accepted at a rate of less than 200 tons/day, unless a Disposal Plan is submitted to ODEQ, consistent with OAC 252:515-19-34 (c) (d). The Waste Exclusion Plan, included in Appendix P, outlines waste acceptance and the rejection of waste.

8.18 Liquid Waste Restriction

Bulk or non-containerized liquid will not be accepted at the landfill with the exception of: (1) household waste; (2) leachate or gas condensate derived from the landfill which is designed with a composite liner and leachate collection system and is recirculated in accordance with 252:515-13-53; or (3) waste that has been sufficiently bulked or solidified with soil or other previously approved material to pass the paint filter liquid test prior to disposal. The Waste Exclusion Plan, included in Appendix P, outlines acceptance requirements for disposal at Oklahoma Landfill.

The facility currently has an existing liquid waste bulking facility constructed over a permitted waste fill area that is lined in accordance with Subtitle D requirements (Phase II/Cell 1/Fill Sector 2). A copy of the Liquid Waste Bulking Facility Operating Plan submitted to ODEQ in February 2013 is included in Appendix W.
8.19 Exclusion of Hazardous Waste

In accordance with OAC 252:515-29, Oklahoma Landfill has developed a Waste Exclusion Plan designed to prevent the receipt of hazardous waste, radioactive waste, and PCB waste at the landfill. The Waste Exclusion Plan is included in Appendix P. This proactive plan minimizes the potential for hazards or otherwise unacceptable wastes to be transported to the site for disposal. Implementation of this plan provides protection from the potential dangers that a waste could pose to employees, the public, or the environment.

8.20 Wood Chip Recycling

The facility is currently authorized to accept source-separated wood material from area residents, landscape companies, local businesses, and other landfill customers for wood chip recycling. Recycled wood chips will either be used onsite or distributed to third parties for off-site usage. A copy of the existing Wood Chip Recycling Plan which was approved by ODEQ on June 12, 2009 is included in Appendix X.
9 CLOSURE AND POSTCLOSURE PLAN

The closure and postclosure plan is included in Appendix Q. These plans were developed to meet the requirements of OAC 252:515-25. The closure plan will include the necessary actions to certify the facility as closed. While the postclosure plan sets forth the maintenance and monitoring during the postclosure period.
10 CLOSURE AND POSTCLOSURE COST ESTIMATES

The Cost Estimates for closure and postclosure care has been prepared consistent with OAC 252:515-27-31 through 34. Cost estimates are required for solid waste landfill facilities whose debts and liabilities could become the debts and liabilities of a state or the United States (i.e., in the event of forced closure, which occurs when an operational municipal solid waste landfill facility can no longer operate because of an inability to manage the incurred debts and liabilities). As such time, the responsibility for closure would be assumed by the ODEQ. The closure and postclosure cost estimates are provided in Appendix R.
In accordance with OAC 252-515-1-4(b) and 252-515-3-51(e), figures/drawings have been provided in an alternative scale. The alternative scales are clearly identified on each figure/drawing.

Figure 1  General Site Location Map
Figure 2  Topographic Site Location Map
Figure 3  Land Use Map
Figure 4  FIRM
Figure 5  Generalized Geology Map of Oklahoma
Figure 6  Regional Geology Map and Stratigraphic Column
Figure 7  Regional Geologic Cross Section Map
Figure 8  Seismic Impact Zone Map
Figure 9  Surface Geologic Map
Figure 10 Groundwater Resource and Recharge Area Map
Figure 11 Groundwater Resource and Usage Map
Figure 12 Existing and Proposed Monitoring Well Locations
Figure 13 Existing and Proposed Landfill Gas Probe Locations
Figure 14 Aesthetic Enhancement Plan
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP 2 NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. THE 100-YEAR POST PROJECT FLOODPLAIN IS REPRODUCED FROM THE SITE CLOMR.

THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.


THE 100-YEAR POST PROJECT FLOODPLAIN IS REPRODUCED FROM THE SITE CLOMR.
A site-specific Quaternary alluvial sediment/terrace deposit investigation was completed in 2004, 2018, and as part of the subsurface investigation. Additional information on these investigations is included in Section 2.10, Appendix E, and Appendix D-7.

1. Adapted from the geologic map of the Mustang 7.5' quadrangle Oklahoma, Canadian and Cleveland counties, Oklahoma, Stanley, Thomas M., and Surcons, NSS, H., 2000, Oklahoma Geological Survey.

2. Refer to Figure 12 for waste disposal area, buffer zone, and permit boundary.

3. A site-specific Quaternary alluvial, sediment/terrace deposit investigation was completed in 2004, 2018, and as part of the subsurface investigation. Additional information on these investigations is included in Section 2.10, Appendix E, and Appendix D-7.
NOTES:

1. ADAPTED FROM THE GEOLOGIC MAP OF THE MUSTANG 7.5' QUADRANGLE AND THE OKLAHOMA CITY 7.5' QUADRANGLE, STANLEY, THOMAS M., AND SUNDBY, NEIL H., 2000, OKLAHOMA GEOLOGICAL SURVEY.

NOTES:
1. BASED ON USGS 2014 DATA, THE AREA WITHIN THE RED DASHED CONTOUR LINE (1/10 OF GRAVITATIONAL FORCE OR 0.1g) IS DEFINED BY THE USGS AS A SEISMIC IMPACT ZONE.
2. SEISMIC IMPACT ZONE MAP OBTAINED FROM U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 2014-1091, ENTITLED "2014 UPDATE OF THE UNITED STATES NATIONAL SEISMIC HAZARD MAPS, TWO PERCENT PROBABILITY OF EXCEEDANCE OF 50 YEARS MAP OF PEAK GROUND ACCELERATION."
3. ACCORDING TO THE USGS, 2% PROBABILITY OF EXCEEDENCE IN 50 YEARS IS STATISTICALLY EQUIVALENT TO A 10% PROBABILITY OF EXCEEDENCE IN 250 YEARS.
4. REFER TO FIGURE 12 FOR WASTE DISPOSAL AREA, BUFFER ZONE, AND PERMIT BOUNDARY.
1. ADAPTED FROM THE GEOLOGIC MAP OF THE MUSTANG 7.5' QUADRANGLE OKLAHOMA, CANADIAN AND CLEVELAND COUNTIES, OKLAHOMA, STANLEY, THOMAS M., AND SUNDEE, NEL H., 2000, OKLAHOMA GEOLOGICAL SURVEY.

2. REFER TO FIGURE 12 FOR WASTE DISPOSAL AREA, BUFFER ZONE, AND PERMIT BOUNDARY.

3. A SITE SPECIFIC QUaternary Alluvial Sediment/Terrace Deposit Investigation was completed in 2004, 2016, and as part of the subsurface Investigation, additional information on these investigations is included in Section 2.10, Appendix E, and Appendix G-7.

NOTES:

- Sandpit
- Qacm
- Phy
- Qal
- Stromatolite
- Muddy sandstone
- Greenish sandstone
- Poketofyne sandstone
- Riptidal sandstone
- Mudstone
- Shale
- Siltstone
- Muddyclaystone
- Muddy claystone
- Gray claystone
- Siltstone
- Gravel
- Sand
- Mud
- Shale
- Muddy siltstone
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1. This figure shows the site location on the "Map of Aquifers and Recharge Areas in Oklahoma," compiled by Kenneth S. Johnson, Geologic Survey, 1991. The 1991 map brings together data previously presented on two maps: one on bedrock aquifers and the other on alluvium and terrace deposits compiled by K.S. Johnson, 1983 (maps showing principal groundwater resources and recharge areas in Oklahoma; Oklahoma State Department of Health and the Oklahoma Geological Survey, 2 sheets). Typically, recharge to alluvial and terrace deposits is from percolation of surface water following rainfall events.

2. Refer to Appendix E, Section 2.3 for area groundwater quality information.

3. Refer to Figure 11 for private and public supply well locations.

4. Refer to Figure 12 for waste disposal area buffer zone, and permit boundary.

5. A site-specific Quaternary alluvial sediment/terrace deposit investigation was completed in 2004, 2018, and as part of the subsurface investigation. Additional information on these investigations is included in Section 2.10, Appendix E, and Appendix D-7.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FlOWN 03-13-2021.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. A WASTE-FREE BUFFER ZONE OF AT LEAST 100-FOOT OFFSET FROM THE PROPOSED PERMIT BOUNDARY FOR THE LANDFILL EXPANSION AREA INCLUDED IN THIS MODIFICATION WILL BE MAINTAINED.
4. EXISTING 100-FOOT OG&E EASEMENT WILL BE RELOCATED PRIOR TO DEVELOPMENT IN THIS AREA.
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMAXTEK COMPILED FROM AERIAL PHOTOGRAPHY FLown 03-13-2021.

2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

3. A WASTE-FREE BUFFER ZONE OF AT LEAST 100-FEET OFFSET FROM THE PROPOSED PERMIT BOUNDARY FOR THE LANDFILL EXPANSION AREA INCLUDED IN THIS MODIFICATION WILL BE MAINTAINED.

4. EXISTING 100-FOOT OG&E EASEMENT WILL BE RELOCATED PRIOR TO DEVELOPMENT IN THIS AREA.
1. Oklahoma City Waste Disposal, Inc. and the City of Oklahoma City worked together to develop a site development plan that accommodates the City of Oklahoma City's desire to create a long-term public use area for the landfill after closure.

2. Buffer Zones Greater than the Required Minimum of 100 Feet.
3. Establishment of Interim and Permanent Vegetation
4. Visual Screening Will be Controlled Through Established Landscaped Buffer Areas
5. Roads and Surfaces Used by Vehicles Will be Sprayed With Water When Conditions Require Dust to be Minimized
6. Noise Will be Controlled Through the Established Buffer Zones.

Note:

1. Oklahoma City Waste Disposal, Inc. and the City of Oklahoma City worked together to develop a site development plan that accommodates the City of Oklahoma City's desire to create a long-term public use area for the landfill after closure.
In accordance with OAC 252-515-1-4(b) and 252-515-3-51(e), figures/drawings have been provided in an alternative scale. The alternative scales are clearly identified on each figure/drawing.

1. Cover Sheet and Site Vicinity Map
2. Location and Boundary Map
3. Existing Ground Contour Map
4. Existing Permitted Drainage Plan
5. Post-Development Drainage Plan
6. Site Map
7. Excavation Plan
8. Top of Liner Plan
9. Top of Leachate Collection Layer Plan
10. Closure Contour and Stormwater Management Map
11. Cross-Section Location Map Open Phases
12. Cross-Section Location Map Closed Phases
13. Cross-Section A
14. Cross-Section B
15. Cross-Section C
16. Cross-Section D
17. Cross-Section E
18. Cross-Section F
19. Liner System Details
20. Liner System Details
21. Liner System Details
22. Leachate Collection System Details
23. Perimeter Road and Channel Details
24. Final Cover Details
DRAWINGS (Continued)

25 Drainage Details
26 Drainage Details
27 Drainage Details
28 Drainage Details

Full-size Permit Design Drawings are provided in a separate package.
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PREPARED FOR
OKLAHOMA CITY WASTE DISPOSAL, INC.

PREPARED BY
Weaver Consultants Group

6420 SOUTHWEST BLVD, SUITE 206
FORT WORTH, TEXAS 76119
(817) 730-8770
(817) 735-9775 (FAX)
CA 3804 PE - 09/30/2023

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1. Existing contours and elevations provided by Firnatek compiled from aerial photography flown 03-13-2021.
2. Permit boundary was reproduced from legal description prepared by Lemke Land Surveying, Inc.
3. A waste-free buffer zone of at least 100-feet offset from the proposed permit boundary for the landfill expansion area included in this modification will be maintained.
4. Existing 100-foot OG&E easement will be relocated prior to development in this area.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. A WASTE-FREE BUFFER ZONE OF AT LEAST 100-FOOT OFFSET FROM THE PROPOSED PERMIT BOUNDARY FOR THE LANDFILL EXPANSION AREA INCLUDED IN THIS MODIFICATION WILL BE MAINTAINED.
4. REFER TO SECTION 2.5 FOR WETLAND INFORMATION.
5. REFER TO DRAWINGS 4 AND 5 FOR THE LOCATION AND QUANTITIES OF SURFACE DRAINAGE ENTERING AND EXITING THE FACILITY.
6. SURFACE ELEVATIONS FOR WBC/WCG BORINGS FROM LEMKE SURVEYING AND POSTED AT BOREHOLE LOCATION IN FEET MSL.
7. EXISTING SHEPHERD AND MDK BOREHOLE SURFACE ELEVATIONS BASED ON HISTORICAL BORING LOG DATA AND POSTED AT APPROXIMATE BOREHOLE LOCATIONS IN FEET MSL. MDK SURFACE ELEVATIONS POSTED FOR DEEPEST PIEZOMETER IN EACH CLUSTER.
8. PRESENT SURFACE ELEVATIONS FOR EXISTING BOREHOLES MAY VARY FROM POSTED HISTORICAL ELEVATIONS DUE TO CONSTRUCTION ACTIVITIES.
9. CONSISTENT WITH PU0-1759, AN 8-FOOT HIGH CHAIN LINK FENCE AND TREES ON 30-FOOT CENTERS WILL BE INSTALLED ALONG THE EASTERN BOUNDARY FOR SCREENING.
EXISTING PERMITTED DRAINAGE SUMMARY

STORMWATER DRAINAGE FEATURES HAVE BEEN CONSTRUCTED CONSISTENT WITH CITY, STATE, AND FEDERAL PERMITS.

EXISTING PERMITTED DRAINAGE PLAN

REV 1

OKLAHOMA CITY WASTE DISPOSAL, INC.

TIER III PERMIT MODIFICATION

EXISTING PERMITTED DRAINAGE PLAN

OKLAHOMA LANDFILL

OKLAHOMA COUNTY, OKLAHOMA

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FRIMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.

2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

3. REFER TO APPENDIX I FOR ADDITIONAL FLOODPLAIN INFORMATION.

4. REFER TO APPENDIX H FOR ADDITIONAL DRAINAGE INFORMATION.

5. REFER TO APPENDIX J FOR ADDITIONAL WETLAND AREA INFORMATION.

6. CAMPBELL CREEK AND NORTH CANADIAN RIVER 100-YEAR FLOODPLAINS REPRODUCED FROM THE POST-PROJECT CONDITION ANALYSIS INCLUDED IN THE SITE CLOMR.

7. PERMITTED FINAL COVER CONTOURS WERE REPRODUCED FROM THE TIER I PERMIT MODIFICATION PREPARED BY WEAVER CONSULTANTS GROUP, LLC. IN JANUARY 2020.
POST-DEVELOPMENT DRAINAGE SUMMARY

THE PROPOSED LANDFILL EXPANSION DOES NOT ALTER THE EXISTING PERMITTED DRAINAGE PATTERNS. STORMWATER FLOWS REMAIN CONSISTENT WITH PERMITTED DRAINAGE PATTERNS.
PHASE/CELL AREA (AC)

- PHASE IV
  - Cell 3: 11.2 acres
  - Cell 4: 11.2 acres
  - Cell 5: 14.1 acres
  - Cell 6: 13.4 acres
  - Cell 7: 12.1 acres
  - Cell 8: 7.6 acres
  - Cell 9: 14.9 acres
  - Cell 10: 7.3 acres

- PHASE IV
  - Cell 11: 12.4 acres
  - Cell 12: 12.1 acres
  - Cell 13: 7.6 acres
  - Cell 14: 14.9 acres
  - Cell 15: 7.3 acres

- PHASE IV
  - Cell 16: 14.9 acres
  - Cell 17: 7.6 acres

- PHASE IV
  - Cell 18: 10.0 acres

- PHASE IV
  - Cell 19: 9.0 acres

- PHASE IV
  - Cell 20: 8.0 acres

- PHASE IV
  - Cell 21: 7.0 acres

- PHASE IV
  - Cell 22: 6.0 acres

- PHASE IV
  - Cell 23: 5.0 acres

- PHASE IV
  - Cell 24: 4.0 acres

- PHASE IV
  - Cell 25: 3.0 acres

- PHASE IV
  - Cell 26: 2.0 acres

- PHASE IV
  - Cell 27: 1.0 acres

- PHASE IV
  - Cell 28: 0.0 acres

* PHASES/CELLS NOT REFERENCED REMAIN UNCHANGED.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. PROPOSED LIMIT OF WASTE WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
4. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED CROSS SECTION SCHEMATIC THROUGH PRESENT FILL SOUTHWEST TO NORTHWEST DATED 9-17-86 PROVIDED BY OKLAHOMA CITY WASTE DISPOSAL, INC.
5. LOCATION AND DEPTHS OF BOREHOLES CAN BE FOUND IN APPENDIX E.
6. A SECTION 404 INDIVIDUAL PERMIT IS CURRENTLY UNDER REVIEW BY THE USACE. THE EXPANSION AREA WILL NOT BE DEVELOPED UNTIL THE SECTION 404 PERMIT IS APPROVED BY USACE.
NOTES:
1. Existing contours and elevations provided by Firmatek compiled from aerial photography flown 02-13-2001.
2. Permit boundary was reproduced from legal description prepared by Leema Land Surveying, Inc.
3. A waste-free buffer zone of at least 100-feet offset from the proposed permit boundary for the landfill expansion area included in this modification will be maintained.
4. All proposed excavation sideslopes are 3:1 (horizontal):(vertical).
5. Permitted top of liner grades were reproduced from the Tier II permit modification prepared by Weaver Consultants Group, March 2017.
6. The site has an option to replace the top 1-foot of clay liner with GCL.
7. Approximate bottom liner grades were reproduced from the PCE Environmental Services, Inc. bottom liner elevation certification figure dated October 2, 1992.
8. Approximate base grades were reproduced from figure titled "cross section schematic through present fill south west to north west dated 8-17-96" provided by Oklahoma City Waste Disposal, Inc.

LEGEND
- Existing permit boundary
- Proposed permit boundary
- Permitted limit of waste
- Phase/Cell/sector boundary
- State Plane Grid Coordinate
- Existing contour
- Proposed top of liner contour
- Permitted top of liner contour
- Approximate base grades (pre-subtitle D, see note 8)
- Approximate bottom liner grades (pre-subtitle D, see note 7)
- Permitted top of clay as-built contour
- Permitted leachate sump
- Proposed leachate sump
- Proposed leachate collection pipe
- Proposed leachate cleanout riser
- Fence
- Existing drainage channel
- Proposed drainage channel
- Turf reinforcement mat
- Riprap Gabions
- Existing groundwater monitoring well location
- Proposed groundwater monitoring well location
- Existing landfill gas monitoring probe location
- Proposed landfill gas monitoring probe location
- Permitted landfill gas monitoring probe location

OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA

Weaver Consultants Group
WWW.WCGRP.COM DRAWING 8
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. EXISTING PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. PROPOSED LIMIT OF WASTE SIDESLOPES ARE 3(HORIZONTAL) : 1 (VERTICAL).
4. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED "N 59000 CROSS SECTION SCHEMATIC THROUGH PRESENT FILL SOUTHWEST TO NORTHWEST DATED 9-17-86 PROVIDED BY OKLAHOMA CITY WASTE DISPOSAL, INC.
5. APPROXIMATE BOTTOM LINER GRADES WERE REPRODUCED FROM THE POE ENVIRONMENTAL SERVICES, INC. BOTTOM LINER ELEVATION CERTIFICATION FIGURE DATED OCTOBER 2, 1992.
6. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED "EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
7. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED "EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
8. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED "EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.

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NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. REFER TO DRAWINGS 19 THROUGH 21 FOR LINED SYSTEM DETAILS.
3. REFER TO DRAWING 22 FOR LEACHATE COLLECTION SYSTEM DETAILS.
4. REFER TO DRAWING 23 FOR PERIMETER ROAD AND CHANNEL DETAILS.
5. REFER TO DRAWING 24 FOR FINAL COVER DETAILS.
6. POST DEVELOPMENT AND EXCAVATION GRADES ARE SHOWN ON DRAWINGS 11 AND 12.
7. ADDITIONAL BORING AND GROUNDWATER INFORMATION IS PROVIDED IN APPENDIX E.

EXPIRING: 05/31/2023

DATE: 12/2021

CAO: 13-CROSS SECTION A

FIRMATEK

OKLAHOMA CITY WASTE DISPOSAL, INC.

OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA

WEAVER CONSULTANTS GROUP
WWW.WCGRP.COM

DRAWING 13
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. REFER TO DRAWINGS 19 THROUGH 21 FOR LINER SYSTEM DETAILS.
3. REFER TO DRAWING 22 FOR LEACHATE COLLECTION SYSTEM DETAILS.
4. REFER TO DRAWING 23 FOR PERIMETER ROAD AND CHANNEL DETAILS.
5. REFER TO DRAWING 24 FOR FINAL COVER DETAILS.
6. POST DEVELOPMENT AND EXCAVATION GRADES ARE SHOWN ON DRAWINGS 11 AND 12.
7. ADDITIONAL BORING AND GROUNDWATER INFORMATION IS PROVIDED IN APPENDIX E.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK OBTAINED FROM AERIAL PHOTOGRAPHY FLOWN 03-15-2022.
2. REFER TO DRAWINGS 19 THROUGH 21 FOR LINER SYSTEM DETAILS.
3. REFER TO DRAWING 22 FOR LEACHATE COLLECTION SYSTEM DETAILS.
4. REFER TO DRAWING 23 FOR PERIMETER ROAD AND CHANNEL DETAILS.
5. REFER TO DRAWING 24 FOR FINAL COVER DETAILS.
6. POST DEVELOPMENT AND EXCAVATION GRADES ARE SHOWN ON DRAWINGS 11 AND 12.
7. ADDITIONAL BORING AND GROUNDWATER INFORMATION IS PROVIDED IN APPENDIX E.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPiled FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. REFER TO DRAWINGS 19 THROUGH 21 FOR LINER SYSTEM DETAILS.
3. REFER TO DRAWING 22 FOR LEACHATE COLLECTION SYSTEM DETAILS.
4. REFER TO DRAWING 23 FOR PERIMETER ROAD AND CHANNEL DETAILS.
5. REFER TO DRAWING 24 FOR FINAL COVER DETAILS.
6. POST DEVELOPMENT AND EXCAVATION GRADES ARE SHOWN ON DRAWINGS 11 AND 12.
7. ADDITIONAL BORING AND GROUNDWATER INFORMATION IS PROVIDED IN APPENDIX E.
1. Existing contours and elevations provided by FirmaTek compiled from aerial photography flown 03-13-2021.
2. Refer to drawings 19 through 21 for liner system details.
3. Refer to drawing 22 for leachate collection system details.
4. Refer to drawing 23 for perimeter road and channel details.
5. Refer to drawing 24 for final cover details.
6. Post development and excavation grades are shown on drawings 11 and 12.
7. Additional boring and groundwater information is provided in Appendix E.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATE K COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. REFER TO DRAWINGS 19 THROUGH 21 FOR LINER SYSTEM DETAILS.
3. REFER TO DRAWING 22 FOR LEACHATE COLLECTION SYSTEM DETAILS.
4. REFER TO DRAWING 23 FOR PERIMETER ROAD AND CHANNEL DETAILS.
5. REFER TO DRAWING 24 FOR FINAL COVER DETAILS.
6. POST DEVELOPMENT AND EXCAVATION GRADES ARE SHOWN ON DRAWINGS 11 AND 12.
7. ADDITIONAL BORING AND GROUNDWATER INFORMATION IS PROVIDED IN APPENDIX E.
NOTES:
1. Material properties and QA/QC requirements for each of the liner components are specified in Appendix L.
2. The site operator will document that the uncompacted, select solid waste protective cover layer was placed consistent with this permit modification by placing a certification statement in the site operating record for each sector.
3. An alternate option includes replacing the 5-foot select waste layer with an additional 12-inch thick leachate collection layer.
4. An alternate option includes replacing the 12-inch thick leachate collection layer with a drainage geocomposite. This option will require the placement of a drainage geocomposite layer with a permeability of 1 x 10^-7 cm/s or greater.
5. An alternative to the 2 feet of clay is 1 foot of clay at 1 x 10^-6 cm/s overlain by a GCL.
NOTES:
1. MATERIAL PROPERTIES AND QA/QC REQUIREMENTS FOR EACH OF THE LINER COMPONENTS ARE SPECIFIED IN APPENDIX L.
2. AN ALTERNATE OPTION INCLUDES REPLACING THE 12-INCH THICK LEACHATE COLLECTION LAYER WITH A DRAINAGE GEOCOMPOSITE. THIS OPTION WILL REQUIRE THE PLACEMENT OF A 24-INCH-THICK SOIL PROTECTIVE COVER LAYER WITH A PERMEABILITY OF 1x10^-4 CM/S OR GREATER.
3. AN ALTERNATIVE TO THE 2 FEET OF CLAY IS 1 FOOT OF CLAY AT 1x10^-6 CM/S OVERLAIN BY A GCL.
NOTES:
1. MATERIAL PROPERTIES AND QA/QC REQUIREMENTS FOR EACH OF THE LINER COMPONENTS ARE SPECIFIED IN APPENDIX L.
2. AN ALTERNATE OPTION INCLUDES REPLACING THE 12-INCH THICK LEACHATE COLLECTION LAYER WITH A DRAINAGE GEOCOMPOSITE. THIS OPTION WILL REQUIRE THE PLACEMENT OF A 24-INCH-THICK SOIL PROTECTING COVER LAYER WITH A PERMEABILITY OF 1x10^-4 CMS OR GREATER.
3. AN ALTERNATIVE TO THE 2 FEET OF CLAY IS 1 FOOT OF CLAY AT 1x10^-6 CMS OVERLAIN BY A GCL.
LIMITS OF 60-MIL HDPE GEOMEMBRANE (TEXTURED BOTH SIDES)

6" HDPE SDR-17 SOLID LEACHATE CLEANOUT PIPE

2-18" HDPE SDR-17 PERFORATED RISER PIPES

2-18" HDPE SDR-17 PERFORATED END CAP

6" HDPE SDR-17 SOLID RISER PIPE

6" HDPE SDR-17 SOLID ELBOW

6" HDPE SDR-17 PERFORATED COLLECTION PIPE

2-18" HDPE SDR-17 PERFORATED RISER PIPE

2-2" DRAW STEM ON 18" HDPE SOLID RISER PIPE

6" HDPE SDR-17 SOLID RISER PIPE

6" HDPE SDR-17 PERFORATED COLLECTION PIPE

LEACHATE SIDEWALL RISER HEADWALL SECTION

LEACHATE CLEANOUT

COMPACTED CLAY LINER

GEOMEMBRANE (TEXTURED BOTH SIDES)

NOTE 2:

1. MATERIAL PROPERTIES AND QA/QC REQUIREMENTS FOR EACH OF THE LINER COMPONENTS ARE SPECIFIED IN APPENDIX L.

2. AN ALTERNATE OPTION INCLUDES REPLACING THE 12-INCH THICK LEACHATE COLLECTION LAYER WITH A DRAINAGE GEOCOMPOSITE. THIS OPTION WILL REQUIRE THE PLACEMENT OF A 24-INCH-THICK SOIL PROTECTIVE COVER LAYER WITH A PERMEABILITY OF 1x10^-5 CM/S OR GREATER.

3. AN ALTERNATIVE TO THE 2 FEET OF CLAY IS 1 FOOT OF CLAY AT 1x10^-6 CM/S OVERLAIN BY A GCL.
NOTE:
1. ALTERNATIVE LINER, LEACHATE COLLECTION, AND PROTECTIVE COVER OPTIONS ARE SHOWN ON DRAWING 19.
NOTES:
1. SEE APPENDIX H FOR CHUTE DESIGN SUMMARY.
2. 60 MIL HOPE GEOMEMBRANE TEXTURED BOTH SIDES SHALL BE USED FOR GEOMEMBRANE LETDOWN LINING.
3. EXTRUSION WELD UPSTREAM PANEL OVER DOWNSTREAM PANEL USING 1'-0" LONG EXTRUSION WELD WITH A SPACING OF 1'-0" BETWEEN EACH WELD.
4. SOIL PLACED UNDER GEOMEMBRANE LETDOWN AND CONCRETE DISSIPATER SHALL NOT CONTAIN TOPSOIL THAT WILL BE USED FOR VEGETATIVE LAYER.
5. FML LETDOWN OPTION IS SHOWN. REFER TO APPENDIX H FOR ALTERNATIVE LETDOWN OPTIONS.
NOTES:
1. SEE APPENDIX H FOR CHUTE DESIGN SUMMARY.
2. 60 MIL HOPE GEOMEMBRANE TEXTURED BOTH SIDES SHALL BE USED FOR GEOMEMBRANE LETDOWN LINING.
3. EXTRUSION WELD UPSTREAM PANEL OVER DOWNSTREAM PANEL USING 1'-0" LONG EXTRUSION WELD WITH A SPACING OF 1'-0" BETWEEN EACH WELD.
4. SOIL PLACED UNDER GEOMEMBRANE LETDOWN AND CONCRETE DISSIPATER SHALL NOT CONTAIN TOPSOIL THAT WILL BE USED FOR VEGETATIVE LAYER.
5. FML LETDOWN OPTION IS SHOWN. REFER TO APPENDIX H FOR ALTERNATIVE LETDOWN OPTIONS.
NOTES:
1. SEE APPENDIX H FOR CHUTE DESIGN SUMMARY.
2. CHUTE BOTTOM DOWNSTREAM OF WEIR SHALL BE LINED WITH 3,500 PSI REINFORCED CONCRETE AS SHOWN IN WEIR SECTION DETAIL.
3. SOILSECTIONS DOWNSTREAM OF WEIR WILL BE LINED WITH CONCRETE GROUTED RIP RAP OR AN ENGINEER APPROVED EQUIVALENT.
4. GEOMEMBRANE/CONCRETE ANCHORS (D11) WILL BE PLACED WITH 6' SPACING AT THE BOTTOM AND SIDESLOPES.
5. FML LETDOWN OPTION IS SHOWN. REFER TO APPENDIX H FOR ALTERNATIVE LETDOWN OPTIONS.
1. BEDDING MATERIAL WILL CONSIST OF A SW OR SP MATERIAL AS DEFINED BY UNIFIED SOIL CLASSIFICATION SYSTEM (USCS).

2. TURF REINFORCEMENT MATTING WILL BE USED IN PERIMETER CHANNELS AND PORTIONS OF CAMPBELL CREEK FOR VELOCITIES BETWEEN 5fps AND 10fps. SEE APPENDIX H-5 FOR CHANNEL CALCULATIONS.

3. GABIONS MAY BE REPLACED WITH CONCRETE GROUTED RIP RAP.

NOTES:

- Gabion layout may vary pending discharge into channel and/or stormwater pond. Adequate Gabion layout will be constructed for erosion control.

- Rock filled Gabions (D50 = 9-inch). Gabion mesh shall be PVC coated.

- 6" Minimum thickness of bedding material (see note 1).

- Gabions placed end-to-end.

- 8 oz. Geotextile.

- Gabion placed end-to-end.

- Gabion Keyway (Typ).

- Seed with mulch.

- Turf reinforcement (Pyrmat or equivalent installed per manufacturer's recommendation).

- 5" Chute Flowline.

- Gabion or concrete grouted low-water crossing.

- Low-water crossing section.

- Prepared subgrade.

- Low-water crossing section.
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
ODEQ PERMIT NO. 3555018

APPENDIX A

WASTE CONNECTIONS
ANNUAL AND QUARTERLY REPORTS

Prepared for
Oklahoma City Waste Disposal, Inc.

March 2022

Prepared by
Weaver Consultants Group, LLC
CA 3804 PE – 05/31/2023
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0601-001-11-159
WASTE CONNECTIONS
ANNUAL AND QUARTERLY REPORTS

The purpose of this appendix is to provide a location for Waste Connections annual and quarterly reports. Annual reports are available at http://investors.wasteconnections.com/annual-reports. Quarterly reports are available at http://investors.wasteconnections.com/quarterly-results.
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
ODEQ PERMIT NO. 3555018

APPENDIX B

PERMIT, PROOF OF PUBLICATION,
LEGAL DESCRIPTION, AND
VOLUME CALCULATIONS

Prepared for
Oklahoma City Waste Disposal, Inc.

March 2022

Prepared by

Weaver Consultants Group, LLC
CA 3804 PE - 05/31/2023
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0601-001-11-159
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EXISTING PERMIT

Note: This appendix includes the following.

- March 3, 2020 Permit to reduce the permitted waste disposal area by approximately 0.5 acres.
- September 14, 2017 Permit to expand the permitted waste disposal from 178.2 acres to 217.3 acres of waste disposal area.
- March 16, 2017 Permit to vertically expand the landfill from 1,358 ft-msl to 1,370.8 ft-msl.
- January 31, 2014 Permit to expand the permitted waste disposal from 143.9 acres to 178.2 acres of waste disposal area.
- December 14, 2009 Permit to expand the permitted waste disposal area 22.9 acres for a total of 143.9 acres of waste disposal area.
- October 19, 2001 Permit to revise the final contours to remove benches on the sideslope to create a uniform slope.
- September 29, 1987 Permit to upgrade, construct, operate, and maintain a Type I landfill facility.
- July 13, 1981 Permit for the purpose of acceptance of solid type wastes at the site/facility.
March 3, 2020

Mr. Steven Clark
Oklahoma City Waste Disposal, Inc.
PO Box 457
Wheatland, OK 73097

Re: Tier I Permit Modification – Landfill Configuration Modification
Oklahoma Landfill (Permit No. 355018)
Oklahoma County

Dear Mr. Bedick:

The Oklahoma Department of Environmental Quality (DEQ) is in receipt of the Tier I Permit Modification Application for the Landfill Configuration Modification. The Application, dated January 30, 2020, was submitted by Weaver Consultants Group, LLC on behalf of Oklahoma City Waste Disposal, Inc.

The Application proposes to modify the configuration of Phase V from that approved in the September 18, 2017 Tier III Permit Modification. The configuration modification would result in a reduced waste footprint as a result of moving the Phase V eastern berm approximately 60 feet to the west in order to accommodate the mitigation channel as part of Oklahoma Landfill’s USACE Section 404 Individual Permit requirements. The configuration modification also allows for more efficient traffic flow around the northeastern corner of Phase V. Replacement pages to the Tier III Permit Modification are included in the Application.

The Application is approved. Attached is the Tier I Permit Modification with conditions. Should you have any questions, please contact Jeff Biddick at (405) 702-5141.

Sincerely,

Hillary Young, P.E.
Chief Engineer
Land Protection Division

Enclosed: Solid Waste Permit Modification

cc: Jonathan Queen, P.E., Weaver Consultants Group, LLC
Rachel Hanigan, P.E., Waste Connections, Inc.
SOLID WASTE PERMIT MODIFICATION

The Oklahoma Department of Environmental Quality (DEQ) hereby approves the following modification:

Permit Number: 3555018
Facility: Oklahoma Landfill
Facility Type: Municipal Solid Waste Landfill
County: Oklahoma County

Modification: This permit modification reduces the waste footprint of Phase V by moving the eastern berm approximately 60 feet to the west in order to accommodate a mitigation channel. The reduction is approximately 0.5 acres in waste disposal footprint and 93,000 cubic yards in disposal capacity, bringing the total landfill design capacity to 34,011,088 cubic yards. All other design specifications and conditions of the September 18, 2017 Tier III Permit Modification remain unchanged.

Incorporated by Reference:
The Tier I Permit Modification for Landfill Configuration Modification, dated January 30, 2020, submitted by Weaver Consultants Group, LLC.

Conditions:

1. All conditions from the September 18, 2017 Tier III Permit Modification remain in effect.
2. The Phase V eastern berm cross section dimensions and properties shall be consistent with the Tier III Permit Modification, including the use of flexamat or equivalent hard armor material.
3. The Phase V top of liner grades shall be consistent with the Tier III Permit Modification.
4. Final external side slopes shall be no steeper than 4 horizontal to 1 vertical (4:1).

The permittee is authorized to operate in conformity with the application described above. Commencing operations under this modification constitutes acceptance of, and consent to, the conditions contained herein.

Date: 3-3-2020

Hillary Young, P.E.
Chief Engineer
Land Protection Division
September 14, 2017

Mr. Steven Clark
Oklahoma City Waste Disposal, Inc.
7600 SW 15th
Oklahoma City, Oklahoma 73128

Re: Tier III Solid Waste Permit Modification
Oklahoma Landfill (Permit No. 3555018)
Oklahoma County

Dear Mr. Clark:

The Oklahoma Department of Environmental Quality (DEQ) received an application for a Tier III Solid Waste Permit Modification for expansion of Oklahoma Landfill under letter dated June 3, 2016, from Weaver Consultants Group, LLC. The application was submitted on behalf of Oklahoma City Waste Disposal, Inc.

The application was determined to be administratively and technically complete by DEQ, and a Draft Solid Waste Permit Modification was issued on June 12, 2017. Public Notice of the Draft Solid Waste Permit Modification occurred in The Oklahoman on June 23, 2017. No comments or requests for a public meeting were received by DEQ within 30 days of publication.

A Proposed Solid Waste Permit Modification was issued on August 8, 2017. Public Notice of the Proposed Solid Waste Permit Modification occurred in The Oklahoman on August 16, 2017. No requests for an administrative hearing were received by DEQ within 20 days of publication. Accordingly, the final permit modification has been issued and a copy enclosed with this letter.

If you have any questions, please contact Rachel Hanigan at (405) 702-5196.

Sincerely,

Hillary Young, P.E.
Chief Engineer
Land Protection Division

Enclosure: Proposed Solid Waste Permit Modification

cc: Jonathan V. Queen, P.E., Weaver Consultants Group, LLC, (w/enclosure)
SOLID WASTE PERMIT MODIFICATION

The Oklahoma Department of Environmental Quality (DEQ) hereby approves the following modification:

- **Permit Number:** 3555018
- **Permittee:** Oklahoma City Waste Disposal, Inc.
- **Facility:** Oklahoma Landfill
- **Facility Type:** Municipal Solid Waste Landfill
- **County:** Oklahoma County

**Modification:**
Modify the existing permit to allow an expansion of the permit boundary and waste disposal area. The permit boundary will expand from 379.82 acres to 417.79 acres. The waste disposal area will increase from 178.2 acres to 217.3 acres. The design capacity will increase by 8.85 million cubic yards, with a new total design capacity of 34,104,088 cubic yards.

**Variances:**
Applicants may, in a permit application, request a variance in accordance with 27A O.S. § 2-10-304. Two variances were requested in the application.

1. The application includes a variance request to the location restriction of a waste disposal area within the currently defined 100-year flood plain (OAC 252:515-5-32(a)). The variance is conditioned upon the subsequent redefinition of the flood plain, removing the waste disposal area from the 100-year flood plain. The variance is authorized in accordance with OAC 252:515-5-32(a)(2)(A).

2. The application includes a variance request to the location restriction of an expansion of a permit boundary into an area designated as alluvium or terrace deposits (OAC 252:515-5-51(a)(1)). Per OAC 252:515-3-32(b), the applicant must demonstrate that operations under the variance will equal or exceed the protection accorded by the rule for which the variance is being requested, and will not result in a hazard to the health, environment or safety of people or their property. Technical information regarding the demonstration is included in Section 1.16, Section 2.10, and Appendices N and Y.
Incorporated by Reference:

1. The Tier III application, dated and stamped by Jonathan V. Queen, P.E., on June 3, 2016, inclusive of the following appendices:
   A. Waste Connections, Inc. Annual and Quarterly Reports
   B. Permit, Proof of Publication, Legal Description, and Volume Calculations
   C. Temporary Easement for Access
   D. Location Restriction Correspondence
   E. Subsurface Investigation and Groundwater Study
   F. Groundwater Sampling and Analysis Plan (GWSAP)
   G. Landfill Gas Management Plan
   H. Surface Water Management Plan
   I. Floodplain Information
   J. USACE Information
   K. Alternative Final Cover System Design
   L. Quality Assurance/Quality Control Plan for Liner and Leachate Collection System Installation and Testing
   M. Leachate Collection System Design
   N. Geotechnical Assessment
   O. Alternative Liner and Leachate Collection System Design
   P. Waste Exclusion Plan
   Q. Closure and Post Closure Plan
   R. Closure and Post Closure Cost Estimates
   S. Title V Operating Permit
   T. Economic Life Estimate
   U. Recordkeeping and Reporting Example Forms
   V. Copy of Surety Bond
   W. Liquid Waste Bulking Facility Operating Plan
   X. Wood Chip Recycling Plan

2. A copy of the recorded Temporary Easement for Access submitted under letter dated June 21, 2016, from Jonathan V. Queen, P.E.

3. Copies of return receipts of notifications sent by certified mail to adjacent property owners and owners of mineral interests submitted under letter dated August 17, 2016, from Jonathan V. Queen, P.E.


B-1-5
SOLID WASTE PERMIT MODIFICATION
Oklahoma City Waste Disposal, Inc.
Oklahoma Landfill ( Permit No. 3555018)
September 14, 2017
Page 3 of 4

5. Additional Correspondence from The City of Oklahoma City Parks and Recreation Department submitted under letter dated February 7, 2017, from Jonathan V. Queen, P.E.

6. NOD Responses and Replacement Pages to the Tier III application dated and stamped by Jonathan V. Queen, P.E. on March 31, 2017, inclusive of modification to appendices H, J, L, and N.

7. NOD Responses and Replacement Pages to the Tier III application dated and stamped by Jonathan V. Queen, P.E. on May 26, 2017, inclusive of modification to appendices L, M, and N.

Conditions:

1. The conceptual layouts of Phase IV Cell 7 and Phase IV Cell 8 are approved. However, approval is contingent upon the completion of an additional groundwater study prior to the construction of each cell as required by Appendix M, Section 7.4 of the application. Detailed cell construction plans, to include verification of compliance with OAC 252:515-11-3 (Separation from groundwater), must be provided to DEQ for review and approval prior to construction of each liner phase development in Phase IV Cell 7 and Phase IV Cell 8.

2. The conceptual layout of Phase V is approved in accordance with the following:
   a. Development of Phase V shall not occur until a Section 404 Individual Permit is approved by the U.S. Army Corps of Engineers, and a copy of the approval letter is submitted to DEQ;
   b. Development of Phase V shall occur in accordance with Section 6.4, Figures 6-1 through 6-6, Figure 2.3, and Appendices L and M of the application;
   c. General fill material in Phase V shall be placed in uniform lifts that do not exceed 9 inches in loose thickness and shall be compacted to at least 95 percent of the maximum dry density as determined by the Standard Proctor at a moisture content equal to or greater than the optimum moisture content in accordance with Appendix L, Section 2.2.2.2 of the application;
   d. Construction of the Phase V perimeter berm shall include flexamat (or an equivalent hard armor material) as detailed on Figures 2.2-1 through 2.2-3 of the application; and
   e. The liner system in Phase V shall include two feet (minimum) of compacted clay liner and a geosynthetic clay liner, in accordance with Appendix Y of the application.
3. This permit modification is based on data, design criteria, plans, and specifications presented in the documents incorporated by reference. Any inaccuracies found in the application or supporting documentation may provide cause for potential enforcement action against Oklahoma City Waste Disposal, Inc. and the amendment, modification or revocation of this permit modification.

4. Oklahoma City Waste Disposal, Inc. shall comply with the Oklahoma Solid Waste Management Act, the Environmental Quality Code, and Rules promulgated thereunder, including provisions of the Oklahoma Administrative Code, and all conditions of the Solid Waste Permit. Any permit noncompliance constitutes a violation of the Solid Waste Permit and is grounds for enforcement action, including: permit modification, administrative civil penalties, suspension or revocation, and denial of a pending permit modification application.

The permittee is authorized to operate in conformity with the documents incorporated by reference. Commencing operations under this modification constitutes acceptance of, and consent to, the conditions contained herein.

Hillary Young, P.E.
Chief Engineer
Land Protection Division

Date: 9-14-17

Kelly Dixon
Division Director
Land Protection Division

Date: 9-14-17

Scott A. Thompson
Executive Director
Oklahoma Department of Environmental Quality

Date: 9.18.17
March 16, 2017

Mr. Steven Clark  
Oklahoma City Waste Disposal, Inc.  
7600 SW 15th  
Oklahoma City, Oklahoma 73128  

Re: Tier I Permit Modification Request  
Landfill Completion Plan Revision  
Oklahoma Landfill (Permit No. 3555018)  
Oklahoma County  

Dear Mr. Clark:  

The Oklahoma Department of Environmental Quality (DEQ) received a Tier I permit modification request for Oklahoma Landfill under letter dated February 24, 2017, submitted by Weaver Consultants Group, LLC on behalf of Oklahoma City Waste Disposal, Inc. The Tier I permit modification proposes to vertically expand the landfill and revise the completion plan.

In accordance with the Tier III Solid Waste Permit Modification approved in January 2014, the maximum final elevation of the landfill is 1358 ft-msl. The Tier I permit modification proposes to vertically expand the landfill by extending the 25% (4H:1V) sideslopes of the northern portion of the existing permitted disposal area. The proposed maximum final elevation is 1370.8 ft-msl. The vertical expansion will add 973,000 cubic yards (CY) of disposal capacity to the existing disposal capacity of 25,254,088 CY. The result is a 3.9% increase in capacity and a revised total disposal capacity of 26,227,088 cubic yards.

The Tier I Solid Waste Permit Modification is approved; a copy is enclosed with this letter. Please contact DEQ’s Air Quality Division regarding any required modifications to the existing Title V Operating Permit, as a result of the revised total disposal capacity. If you have any questions, please contact Rachel Hanigan at (405) 702-5196.

Sincerely,

Hillary Young, P.E.  
Chief Engineer  
Land Protection Division  

Enclosure: Solid Waste Permit Modification  
cc (w/ enclosure): Jonathan V. Queen, P.E., Weaver Consultants Group, LLC  
707 NORTH ROBINSON, P.O. BOX 1677, OKLAHOMA CITY, OKLAHOMA 73101-1677  

printed on recycled paper with soy ink
SOLID WASTE PERMIT MODIFICATION

The Oklahoma Department of Environmental Quality (DEQ) hereby approves the following modification:

Permit Number: 3555018
Permittee: Oklahoma City Waste Disposal, Inc.
Facility: Oklahoma Landfill
Facility Type: Municipal Solid Waste Landfill
County: Oklahoma County

Modification:
Modify the existing permit to revise the landfill completion plan and allow vertical expansion over the existing permitted disposal area by extending the 25% (4H:1V) sideslopes. The disposal capacity will increase by 973,000 cubic yards, resulting in a revised total disposal capacity of 26,227,088 cubic yards.

Incorporated by Reference:

1. The Tier I application, dated and stamped by Jonathan V. Queen, P.E., on February 24, 2017, inclusive of the following appendices:
   A. Permit Modification Drawings;
   B. Drainage Design Report;
   C. Slope Stability Analysis;
   D. Leachate Collection System Evaluation;
   E. Design Capacity Report;
   F. FAA Coordination; and
   G. Oklahoma City Planned Unit Development (PUD) Zoning Information.

Conditions:

1. Final exterior sideslopes shall not exceed 25% (4H:1V). The maximum final elevation of the landfill shall not exceed 1370.8 ft-msl.

2. Closure and Post-Closure Cost Estimates and Financial Assurance shall be revised to include the additional disposal capacity.

The permittee is authorized to operate in conformity with the application incorporated by reference. Commencing operations under this modification constitutes acceptance of, and consent to, the conditions contained herein.

Date: 3-16-17

Hillary Young, P.E.
Chief Engineer
Land Protection Division
January 31, 2014

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Mr. Jeff Bedick
Oklahoma City Waste Disposal, Inc.
7600 SW 15th
Oklahoma City, Oklahoma 73128

Subject: Oklahoma Landfill (Permit No. 3555018)
Proposed Solid Waste Permit Modification
Tier III Lateral Expansion of Permit Boundary
Oklahoma County, Oklahoma

Dear Mr. Bedick:

The Oklahoma Department of Environmental Quality (DEQ) received a Tier III Permit Modification on March 22, 2013, from Oklahoma City Waste Disposal, Inc. (Oklahoma Landfill). The modification was submitted by Weaver Boos Consultants, LLC-Southwest on behalf of the applicant. A Legal Notice of Filing, providing the opportunity to request a process meeting, was published in The Oklahoman on April 5, 2013. No requests for a process meeting were received within 30 days of the publication date; therefore, no process meeting was held.

After reviewing the March 2013 application, DEQ prepared a Notice of Deficiency (NOD) dated August 13, 2013. A response to the NOD and a revised permit modification were received by DEQ on September 12, 2013. DEQ reviewed the revised modification and deemed the application administratively and technically complete. A "Draft Permit" was issued on November 15, 2013. A Legal Notice of Draft, providing the opportunity to request a public meeting and submit comments on the application and/or "Draft Permit", was published in The Oklahoman on November 26, 2013. No requests for a public meeting or comments on the application or "Draft Permit" were received within 30 days of the publication date. Therefore, no public meeting was held.

Pursuant to OAC 252:4, a "Proposed Permit" was issued. A Legal Notice of Proposed Permit, providing the opportunity to request an administrative hearing, was published in The Oklahoman on January 8, 2014. No requests for an administrative hearing were received within 20 days of the publication date; therefore, no administrative hearing was held.
At this time, DEQ has approved the Tier III permit modification. With this permit modification, the existing landfill permit boundary will increase from approximately 259.6 acres to 379.82 acres, and the waste disposal area will increase from approximately 143.96 acres to 178.2 acres. The site capacity, including solid waste and cover soils, will increase by 3,690,000 cubic yards. The projected average daily volume is approximately 1,468 tons per day, and the life of site is approximately 8.7 years. As part of this permit modification, the existing groundwater and landfill gas monitoring systems will be expanded. In addition, surface water drainage improvements will occur, including final cover erosion control structures, perimeter drainage channels, and detention ponds. No variance requests were included with this permit modification.

A copy of the Solid Waste Permit Modification is enclosed with this letter. Should you have any questions or require additional information, please contact Rachel Hanigan at (405) 702-5196.

Sincerely,

Hillary Young, P.E.
Engineering Manager
Solid Waste Permitting

cc: Jeffery P. Young, P.E., Weaver Boos Consultants

Enclosed: Solid Waste Permit Modification
SOLID WASTE PERMIT MODIFICATION

The Department of Environmental Quality hereby approves the following modification:

Permit Number: 3555018
Facility: Oklahoma Landfill
Facility Type: Municipal Solid Waste Landfill
County: Oklahoma County

Modification:
Lateral expansion of the permitted boundary from the existing 259.6 acres to 379.82 acres. The waste disposal area will be expanded from 143.96 acres to 178.2 acres. The expansion increases disposal capacity by 3,690,000 cubic yards. No variances are requested in the permit modification.

MODIFICATION CONDITIONS:

1. Detailed Construction Drawings: This modification approves the conceptual layout of Phase IV cells 1 through 6. Approval is contingent upon the completion of an additional groundwater study prior to the construction of each cell as required by Appendix M, Section 7.4 (compliance with OAC 252:515-11-3(a) - Separation from groundwater) of the permit modification application. Detailed cell construction plans, to include verification of compliance with OAC 252:515-11-3, must be provided to DEQ for review and approval prior to construction of each liner phase beginning with development of cell 1.

2. The application dated March 22, 2013, and resubmittal dated September 12, 2013, signed by Jeffery P. Young, P.E., is considered approved and incorporated as part of this modification.

3. The permittee is authorized to operate in conformity with the application described above. Commencing operations under this permit modification constitutes acceptance of, and consent to, the conditions contained herein.
Oklahoma City Waste Disposal, Inc.
Final Permit
January 31, 2014

Saba Tahmassebi, Ph. D., P. E.,
Agency Chief Engineer
Department of Environmental Quality

Date: 1/31/2014

Kelly Dixon
Acting Division Director
Land Protection Division

Date: 11/31/14

Scott A. Thompson
Executive Director
Department of Environmental Quality

Date: 2-3-14
December 14, 2009

Mr. Jeff Bedick
Oklahoma City Waste Disposal, Inc.
7600 SW 15th
Oklahoma City, Oklahoma 73123

Subject: Landfill Completion and Excavation Plan
Oklahoma Landfill
Oklahoma County, Permit No. 3555018

Dear Mr. Bedick:

The Department received an application dated September 28, 2009 for the above referenced permit modification at the Oklahoma Landfill. The Department reviewed the application and found it to be technically complete.

Pursuant to Oklahoma Administrative Code (OAC) 252:4-7-58(2) the submittal was processed as a Tier I Application. The Department approves the permit modification, which is effective on the date that it was signed.

Please contact Wesley Squyres at (405) 702-5197, if there are any questions concerning the permit modification.

Sincerely,

Saba Tahmassebi, Ph. D., P. E.
Chief Engineer
Land Protection Division

cc: Mark Adams, Waste Connections
    Jeff Young, Weaver Boys Consultants
SOLID WASTE PERMIT MODIFICATION

The Department of Environmental Quality hereby approves the following modification:

Permit Number: 3555018
Facility: Oklahoma Landfill
Facility Type: Municipal Solid Waste Landfill
County: Oklahoma County

Modification: Lateral expansion of the waste boundary within the currently permitted boundary of the landfill. 22.9 acres will be added to the permitted disposal area for a total of 143.9 acres. The new disposal area is designed to include 24 inch recompacted clay liner, HDPE 60 mil liner and leachate collection system.

MODIFICATION CONDITIONS:

1. The original application dated September 28, 2009 and revised application dated November 10, 2009 signed by Jeffrey P. Young, P.E., is considered approved and is incorporated as part of this modification.

2. The permittee is authorized to operate in conformity with the application described above. Commencing operations under this permit modification constitutes acceptance of, and consent to, the conditions contained herein.

Saba Tahmassebi, Ph.D., P.E.
Chief Engineer
Land Protection Division

Date: 12/14/09
October 19, 2001

Mr. Mark Adams
Waste Connections, Inc.
4625 South Rockwell
Oklahoma City, Oklahoma 73179

Subject: Modification to Revise the Final Contours
Oklahoma City Landfill
Permit No. 3355018

Dear Mr. Adams:

On September 13, 2001 the Department of Environmental Quality (Department) received an application for a permit modification to revise the final contours of the landfill. The application was reviewed and found to be technically complete.

Pursuant to Oklahoma Administrative Code (OAC) 252:4-7-38(2) the submittal was processed as a Tier 1 Application. The Department approves the permit modification, which is effective on the date that it was signed.

Please contact Wesley Squyres at (405) 702-6196, if there are any questions concerning the permit modification.

Sincerely,

[Signature]

Saba Tahmassebi, Ph. D., P. E.
Chief Engineer
Land Protection Division

cc: File 3355018
SOLID WASTE PERMIT MODIFICATION

The Department of Environmental Quality hereby approves the following modification:

Permit Number: 3553018
Owner: Waste Connections, Inc.
Facility Name: Oklahoma City Landfill
Facility Type: Municipal Solid Waste Landfill
County: Oklahoma County

MODIFICATION CONDITIONS:

1. The original application dated September 6, 2001 is considered approved and incorporated as part of this modification.

2. The landfill must make all appropriate changes to the OPDES Storm Water Industrial General Permit.

3. The permittee is authorized to operate in conformity with the application described above. Commencing operations under this permit modification constitutes acceptance of, and consent to, the conditions contained herein.

Saba Tahmassabi, Ph. D., P.E.
Chief Engineer
Land Protection Division

Date: 10/19/01
This site shall be subject to the following provisions (see Attachment B for provisions):
Let Two (2) and the South (NS/4) and the Northeast Quarter (NE/4) of Section Eight (8), Township Eleven (11), North Range Hour (4) West of the Indian Meridian, Oklahoma County, Oklahoma, as shown by the Government Survey thereof, LESS AND EXCEPT the following described tract of land conveyed to the CITY OF OKLAHOMA CITY for park purposes by deed recorded April 9, 1962 in Book 4864, page 46: A part of the Northeast Quarter (NE/4) of Section Eight (8), Township Eleven (11), North Range Hour (4) West of the Indian Meridian, Oklahoma County, Oklahoma, more particularly described as follows: BEGINNING at the Northeast Corner of the Northeast Quarter (NE/4) of said Section Eight (8); THENCE South along the East Line of said Northeast Quarter (NE/4) a distance of 495.00 feet to the true point of beginning; THENCE South 90°00'00" East a distance of 50.00 feet; THENCE South 64°30'30" West a distance of 1800.85 feet; THENCE North 84°29'03" East a distance of 468.17 feet, more or less; to a point 60.00 feet East of the West Line of said Northeast Quarter (NE/4); THENCE South and parallel with the West Line of said Northeast Quarter (NE/4) a distance of 55.00 feet; THENCE South 45°56'21" West a distance of 325.53 feet THENCE South 85°03'11" East a distance of 208.78 feet; THENCE South 85°31'54" East a distance of 334.50 feet; THENCE South 76°36'27" East a distance of 215.87 feet; THENCE South 85°53'01" East a distance of 663.92 feet; THENCE South 85°11'12" East a distance of 225.44 feet; THENCE South 84°48'51" East a distance of 821.07 feet; THENCE South 24°39'21" East a distance of 335.65 feet; THENCE South 24°22'42" East a distance of 265.84 feet; THENCE South 30°57'50" East a distance of 174.93 feet; THENCE South 75°37'07" East a distance of 201.31 feet; THENCE South 45°32'32" East a distance of 130.86 feet; THENCE North 64°29'12" East a distance of 221.48 feet; THENCE North 30°01'08" East a distance of 125.91 feet; THENCE North 6°35'14" East a distance of 255.66 feet; THENCE North 51°10'34" East a distance of 425.29 feet; THENCE North 00°00'00" East a distance of 390.00 feet; THENCE North 00°00'00" East a distance of 390.24 feet; THENCE South 90°00'00" East a distance of 79.00 feet; THENCE North 0°00'00" East a distance of 367.00 feet, to the true point of beginning; LESS AND EXCEPT a part of the Northeast Quarter (NE/4) of Section Eight (8), Township Eleven (11), North Range Hour (4) West of the Indian Meridian, Oklahoma County, Oklahoma, more particularly described as follows: BEGINNING at a point 80 feet South and 50 feet West of the Northeast Corner of the Northeast Quarter (NE/4) of said Section Eight (8); THENCE South 00°00'00" East a distance of 485.00 feet; THENCE South 35°56'21" West a distance of 342.81 feet; THENCE North 84°25'50" West a distance of 1805.85 feet; THENCE North 24°39'21" West a distance of 215.46 feet; THENCE North 71°46'27" West a distance of 224.21 feet; THENCE North 0°00'00" East a distance of 220.00 feet; THENCE South 90°00'00" East a distance of 239.00 feet to the point of beginning.

All of that part of Government Lots Five (5), Six (6) and Seven (7), and the Southwest Quarter (SW/4) of the Northeast Quarter (NE/4) of Section Nine (9), Township Eleven (11), North Range Four (4) West of the Indian Meridian, lying South of the new levee of the North Canadian River, LESS and EXCEPT a tract of land more particularly described as follows: BEGINNING at the Southeast corner of said Northwest Quarter (NW/4); THENCE North 44° feet; THENCE East 900.43 feet; THENCE South 447 feet; THENCE West 900.43 feet to the point of beginning.
OKLAHOMA LANDFILL COMPANY
PERMIT NUMBER 3555018
TYPE I-B METROPOLITAN SANITARY LANDFILL
ATTACHMENT B
PERMIT PROVISIONS

1. All operational practices and procedures used at this facility shall conform to the
   best possible public health practices.

2. Operation of the facility shall be conducted in accordance with the plans and
   specifications submitted, amended, and approved as parts of the permit application,
   and with the Regulations Governing Solid Waste and Sludge Management (OSDH
   Bulletin 0324) for a Type I-B site, as amended by the Oklahoma State Board of
   Health on April 2, 1987.

3. This permit is effective for the lifetime of the facility, estimated in the application
   plans to be 20 years. This permit will therefore expire upon completion of the
   landfill to the designed boundaries and final grades represented in the plans and
   specifications approved September 29, 1987. If the facility's life ends before or
   extends after September 29, 2007, due to changes in operation or other factors not
   addressed in the approved application or modifications thereto, the permittee shall
   immediately notify the Department in writing. Alterations to facility life resulting
   from Department approved permit modifications shall modify the expiration date in
   accordance with the terms of the permit modifications.

4. If the population served by or the waste volume received at this site increased by
   ten percent (10%) or more above the figures stated in the approved application
   report, the permit holder must modify the expected life of site and amount of land
   to be covered by the performance bond.

5. Wastes designated as hazardous by either the Oklahoma State Department of Health
   or the U.S. Environmental Protection Agency shall not be accepted or disposed of at
   this facility. Wastes excluded from designation as "hazardous" or "controlled"
   industrial waste solely on the basis of quantity shall not be accepted or disposed of
   at this facility.

6. Reports on liner testing and installation shall be submitted to the Oklahoma State
   Department of Health within fifteen (15) days of completion of each liner segment.

7. The electric transmission line in the Phase I area must be removed prior to
   operations in the Phase I-B area.

8. Operations on the north side of Phase II adjacent to the Canadian River must be
   delayed until the river is rerouted to the north.
Know All Men by These Presents, That the Oklahoma State Department of Health has issued Permit Number 3555018 to Felix James Jorski, Jr., 25-B North Council Road, Oklahoma City, OK 73127 for the purpose of acceptance of solid type wastes at the site/facility located at S.W. 15th Street and Rockwell (see Attachment A, Legal Description), Oklahoma County, Oklahoma, said Permit being issued pursuant to 63 O.S. Supp. 1981, Section 2251 et seq., and to rules and regulations promulgated in accordance therewith.

In witness whereof, we have hereunto set our hands this Thirtieth day of July, 1981.

Richard Thomas
Chief
Industrial/Solid Waste Service

John Carew
Deputy Commissioner for
Environmental Health Services

Joan K. Leavitt, M.D.
Commissioner of Health

The foregoing instrument was acknowledged before me this Thirtieth day of July, 1981, by Joan K. Leavitt, M.D., Commissioner of Health, Mark S. Colesian, and H. A. Caves.

Shirley Anthony
Notary Public

My Commission expires 10-5-82.
ATTACHMENT A

LEGAL DESCRIPTION

All of the NE/4 of Section 8, T-11-N, R-4-W of the I.M., and

All that part of Government Lots 5, 6 and 7 and the SW/4 of the NW/4 of Section 9, T-11-N, R-4-W of the I.M., lying south of the new channel of the North Canadian River, together with riparian rights and all accreted lands, containing 109.24 acres more or less, in accordance with E.D. Hill Survey No. 7354, dated June 5, 1936; less and except 9.24 acres, said 9.24 acres more particularly described as follows: Beginning at the Southwest corner of said NW/4, thence North 447 feet, thence East 900.43 feet, thence South 447 feet, thence West 900.43 feet to the point of beginning.
APPENDIX B-2

PROOF OF PUBLICATION
[Insert proof of publication – will be submitted to ODEQ after notice is completed]
APPENDIX B-3

PERMIT BOUNDARY LEGAL DESCRIPTION,
DEEDS, EASEMENTS
PERMIT BOUNDARY LEGAL DESCRIPTION AND DEEDS

This appendix includes the following information.

- Permit Boundary Legal Description. The legal description for the 475.72-acre permit boundary is included on Sheet B-3-2.

- The deeds associated with each tract owned by Oklahoma City Waste Disposal, Inc. are included on Sheets B-3-3 through B-3-23.

- Easement Summary. Sheet B-3-2 shows the location and holders of easements located on the site. The various City of Oklahoma City and OG&E easements along the perimeter of the proposed permit boundary area will not be affected by the proposed landfill expansion. The other easements that transverse the site or provide utility service are already abandoned or will be relocated and/or abandoned before the waste disposal area is developed in these areas. Additional information regarding the existing OG&E electrical distribution line that currently transverses the southern area from southeast to northwest is included in Section 2.3.
STATE OF OKLAHOMA
OKLAHOMA COUNTY

DOCUMENTARY STAMPS $750.00

GENERAL WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS:

That BFI WASTE SYSTEMS OF NORTH AMERICA, INC., a Delaware corporation, Successor by Merger to BROWNING-FERRIS, INC., a Delaware corporation, Grantor, party of the first part, in consideration of the sum of TEN AND NO/100 dollars, and other valuable consideration, in hand paid, the receipt of which is hereby acknowledged, does hereby grant, bargain, sell and convey unto OKLAHOMA CITY WASTE DISPOSAL, INC., an Oklahoma corporation, all of the following described real property and premises situated in Oklahoma County, State of Oklahoma, to wit:

SEE THE ATTACHED EXHIBIT "A"

INCLUDING all oil, gas, and other minerals not heretofore reserved or conveyed of record.

GRANTOR does hereby warrant the title to the same to be free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages and other liens and encumbrances of whatsoever nature.

TO HAVE AND TO HOLD said described premises unto the said party of the second part, its successors and assigns forever.

Signed and delivered this 29th day of March, 2000.

BFI WASTE SYSTEMS OF NORTH AMERICA, INC., a Delaware corporation,
Successor by Merger to BROWNING-FERRIS, INC., a Delaware corporation

By: ________________________________
Title:______________________________

CERTIFIED COPY
FEB 27 2013

CAROLYNN CAUDILL
County Clerk, Oklahoma County
Deputy
STATE OF ARIZONA
COUNTY OF MARICOPA

This instrument was acknowledged before me on this 29th day of September, 2000 by RICK WEIGAND as
Authorized Officer of BFI WASTE SYSTEMS OF NORTH AMERICA, INC.,
a Delaware corporation, Successor by Merger to BROWNING-FERRIS, INC., a
Delaware corporation.

Given under my hand and seal the day and year last above written.

Notary Public

My Commission expires: ________________________

JANET L. WESBOS
Notary Public - Arizona
MARICOPA COUNTY
by Commission Expiration
JANUARY 14, 2003

TUCSON, AZ 85714-4993 M/N/179-267
02/26/03

B-3-4
EXHIBIT "A"

A tract of land lying in the Northeast Quarter (NE/4) of Section Eight (8) and the Northwest Quarter (NW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, and being more particularly described as follows: All of Lot Two (2) and the South Half (S/2) of the Northeast Quarter (NE/4) and the Northwest Quarter (NW/4) of the Northeast Quarter (NE/4) of Section Eight (8), as shown by the Government Survey thereof. LESS AND EXCEPT the following described tract of land [being a portion of that land conveyed to the CITY OF OKLAHOMA CITY for park purposes by Deed recorded in Book 4864 Page 46] being a part of the Northeast Quarter of said Section 8 and being more particularly described as follows: Beginning at the Northeast Corner of the Northeast Quarter (NE/4) of said Section Eight (8); Thence South along the East line of said Northeast Quarter (NE/4) a distance of 498.00 Feet to the true point of beginning; Thence South 90°00'00" West a distance of 50.00 Feet; Thence South 58°56'21" West a distance of 342.81 Feet; Thence North 84°38'50" West a distance of 1800.81 Feet; Thence North 84°29'03" West a distance of 463.17 Feet more or less to a point 60.00 Feet East of the West line of said Northeast Quarter (NE/4); Thence South and parallel with the West line of said Northeast Quarter (NE/4) a distance of 85.00 Feet; Thence South 43°56'21" East a distance of 302.52 Feet; Thence South 85°03'15" East a distance of 203.78 Feet; Thence South 86°33'54" East a distance of 334.50 Feet; Thence South 79°36'27" East a distance of 214.97 Feet; Thence South 86°58'41" East a distance of 601.92 Feet; Thence North 90°00'00" East a distance of 403.12 Feet; Thence South 90°00'00" East a distance of 70.00 Feet; Thence North 0°00'00" East a distance of 367.00 Feet to the POINT OF BEGINNING. AND LESS AND EXCEPT a part of the Northeast Quarter (NE/4) of Section Eight (8), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, more particularly described as follows: Beginning at a point 50 Feet South and 50 Feet West of the Northeast Corner of the Northeast Quarter (NE/4) of said Section Eight (8); Thence South 0°00'00" West a distance of 458.00 Feet; Thence South 59°51'16" West a distance of 342.81 Feet; Thence North 84°38'50" West a distance of 1800.81 Feet; Thence North 27°30'43" West a distance of 214.97 Feet; Thence North 0°00'00" West a distance of 203.78 Feet; Thence South 90°00'00" East a distance of 403.12 Feet to the point of beginning.

All of that part of Government Lots Five (5), Six (6) and Seven (7) and the Southwest Quarter (SW/4) of the Northwest Quarter (NW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, lying South of the new channel of the North Canadian River, together with riparian and all accreted land.
WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS:

That Christopher M. Salyer and Margaret Slippery Salyer, husband and wife (herein "Grantor"), in consideration of the sum of Ten and No/100 dollars and other valuable consideration in hand paid, the receipt of which is hereby acknowledged, do hereby grant, bargain, sell and convey unto Oklahoma City Waste Disposal, Inc., an Oklahoma corporation (herein "Grantee"), whose mailing address is 4625 S. Rockwell, Oklahoma City, OK 73179, the real property and premises situate in Oklahoma County, State of Oklahoma, described on Exhibit "A" attached hereto, together with the improvements thereon and the appurtenances thereunto belonging plus all surface and subsurface rights (herein the "Land") EXCEPTING from this conveyance and RESERVING unto the Grantor title to all interest in the oil and gas not heretofore conveyed or reserved of record, including all of the oil and gas in, under or produced from said property and all rights pertaining thereto.

Grantor warrants the title to the Land to be free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature, SUBJECT TO easements and restrictive covenants of record and any interest in the oil, gas and other minerals within and underlying the Land, previously reserved or conveyed.

TO HAVE AND TO HOLD the Land unto the Grantee, its successors and assigns, forever.

Signed and delivered this 10th day of February, 2003.

[Signature]
Christopher M. Salyer

[Signature]
Margaret Slippery Salyer

CERTIFIED COPY

FEB 27 2013

CAROLYN CAUDILL
County Clerk, Oklahoma County
Deputy
ACKNOWLEDGEMENT

STATE OF OKLAHOMA
COUNTY OF OKLAHOMA

This instrument was acknowledged before me on this 10th day of February, 2003, by Christopher M. Salyer and Margaret Sipperly Salyer, husband and wife.

[Signature]

Linda, Rachel  Notary Public
Exhibit "A"

The west half of the southwest quarter and the west half of the west half of the east half of the southwest quarter, Section 9, Township 11 North, Range 4 West of the Indian Meridian, Oklahoma County, Oklahoma.

Less and except the following described tract of land:

Beginning at the southwest corner of said southwest quarter;

Thence North 00°13'32" West along the west line of said southwest quarter a distance of 347.50 feet;

Thence North 89°46'24" East and parallel with the south line of said southwest quarter a distance of 1629.73 feet to a point on the east line of the west half of the west half of said southwest quarter;

Thence South 00°10'41" East along said east line a distance of 347.50 feet to a point on the south line of said southwest quarter;

Thence South 89°48'24" West along the south line of said southwest quarter a distance of 1629.41 feet to the point of beginning.
RECEIVED
RETURN TO 114447-0000
Betty J. Cummins
Escrow Department
First American Title & Trust
133 N. W. 8th
Oklahoma City, Okla. 73102

KNOW ALL MEN BY THESE PRESENTS: that
CHERYL FINCHER, a married person, (referred to herein as the "Grantor"), for and in
consideration of the sum of Ten and NO/100 Dollars ($10.00), and other good and valuable
consideration, the receipt and sufficiency of which are hereby acknowledged, does hereby grant,
grant, sell and convey unto OKLAHOMA CITY WASTE DISPOSAL, INC., an Oklahoma
corporation, (referred to herein as "Grantee"), whose address is 4625 S. Rockwell, Oklahoma,
City, Oklahoma County, Oklahoma, a certain tract of real property situated in the City of
Oklahoma City, Oklahoma County, Oklahoma, more particularly described on Exhibit "A",
attached hereto and made a part hereof, together with all the improvements thereon and
appurtenances thereto belonging, LESS AND EXCEPT any interests in and to oil, gas and
other mineral rights in, on or under the said real property, which term "mineral rights" does not
include soil, or rocks under the property and SUBJECT TO those matters as set forth in the
"Permitted Exceptions" on Exhibit "B" hereto (provided to Grantee in the Title Commitment),
attached hereto and made a part hereof by this reference, and that the Grantor does hereby
warrant title to the same against all acts, conveyances, liens and encumbrances affecting such real
property made or suffered to be made or done by, through or under the Grantor, but not
otherwise.

TO HAVE AND TO HOLD said described premises unto the Grantee, Grantee's
successors and assigns forever. The said real property is conveyed to Grantee "AS IS".

EXECUTED this 16TH day of September, 2008.

CHERYL FINCHER, a married person

[Signature]

JAMES A. FINCHER, husband of Cheryl Fincher

[Signature]

STATE OF OKLAHOMA

COUNTY OF OKLAHOMA

Before me, the undersigned, a Notary Public in and for said County and State on this
16TH day of September, 2008, personally appeared Cheryl Fincher, to me known to be the
identical person who executed the within and foregoing instrument and acknowledged to
me that she executed the same as her free and voluntary act and deed for the uses and purposes
therein set forth.

Given under my hand and seal the day and year last above written.

My Commission Expires 4-21-09

[Seal]

Notary Public

[Signature]

CAROLYNN CAUDILL

County Clerk, Oklahoma County

By: Deed. Dept.
STATE OF OKLAHOMA  
COUNTY OF OKLAHOMA

Before me, the undersigned, a Notary Public in and for said County and State on this 16TH day of September, 2008, personally appeared JAMES A. FINCHER, to me known to be the identical person who executed the within and foregoing instrument and acknowledged to me that she executed the same as her free and voluntary act and deed for the uses and purposes therein set forth.

Given under my hand and seal the day and year last above written.

[Signature]
Notary Public

My Commission Expires 12/31/2010

B-3-10
EXHIBIT 'A'

A part of the Northeast Quarter (NE/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, more particularly described as follows:

Beginning at a point in the South line of the Northeast Quarter (NE/4) of Section Nine (9), which point is 1486.00 feet West of the Southeast Corner of said quarter section;

Thence North 89°40'43" West, a distance of 1136.40 feet to the center of said section;

Thence North 0°00'41" West, along the West line of said quarter section, a distance of 966.79 feet;

Thence North 85°54'20" East, a distance of 974.58 feet;

Thence North 66°56'10" East, a distance of 173.30 feet to a point which is 1486.00 feet West of the East line of said quarter section;

Thence South and parallel with the East line of said quarter section, a distance of 1132.65 feet to the Point of Beginning.
SPECIAL WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS:

Metheny Concrete Products, Inc., an Oklahoma corporation and successor by merger to Materco, Inc., "Grantee," in consideration of the sum of Ten and No/100 Dollars ($10.00) and other good and valuable consideration in hand paid, the receipt and sufficiency of which are hereby acknowledged, does hereby grant, bargain, sell and convey unto Oklahoma City Waste Disposal, Inc., an Oklahoma corporation, "Grantee," certain real estate and premises situated in Oklahoma County, State of Oklahoma, as more particularly described at Exhibit "A" attached as a part hereof, together with any and all improvements located thereon, any and all rights and appurtenances thereto belonging, any and all of Grantor's right, title and interest in and to any land lying in the bed of any street, road, avenue or easement opened, vacated or proposed, in front of or adjoining the above-described property, any and all water and riparian rights and rights relating to sewage treatment capacity incident thereto, and any and all oil, gas, and other mineral interests in and under the above-described real property, and any and all rights incident thereto, not previously reserved or conveyed of record, and SUBJECT TO and LESS AND EXCEPT those matters set forth at Exhibit "B" attached as a part hereof, and warrants the title to the same against any and all acts, restrictions, conveyances, liens and encumbrances affecting such real property and premises made or suffered to be made or done by, through or under Grantor, but not otherwise.

TO HAVE AND TO HOLD said described property unto Grantee and Grantee's successors and assigns, forever.

IN WITNESS WHEREOF, Grantor has executed this Special Warranty Deed on this 21st day of December, 2011.

METHENY CONCRETE PRODUCTS, INC., an Oklahoma corporation

By: Richard K. Metheny, President

("Grantee")

CERTIFIED COPY

FEB 27 2013

CAROLYNN CAUDILL
County Clerk, Oklahoma County

B-3-12
ACKNOWLEDGMENT

STATE OF OKLAHOMA )
COUNTY OF OKLAHOMA )  ss.

This instrument was acknowledged before me on this __ day of December 2011, by Richard K. Metheny, President of Metheny Concrete Products, Inc., an Oklahoma corporation.

______________________________
NOTARY PUBLIC

AFTER RECORDATION MAIL TO:

Betty J. Cummins, Vice-President
First American Title & Trust Company
501 North Walker, Suite 170
Oklahoma City, Oklahoma 73102

MAIL TAX STATEMENT TO:

Waste Connections, Inc.
c/o James M. Little Vice President,
Engineering and Disposal
2293 Iron Point Circle, Suite 200
Folsom, California 95630-8767
EXHIBIT A

Legal Description of Property

A part of the Southeast Quarter (SE/4) of Section Eight (8), Township Eleven (11) North, Range Four (4) West, of the Indian Meridian, Oklahoma County, Oklahoma, being more particularly described as follows:

BEGINNING at the Northeast corner of the Southeast Quarter (SE/4) of said Section Eight (8); thence South 0°06′55″ East along the East line of said Section Eight (8), a distance of 1089.00 feet; thence North 89°57′15″ West and parallel with the South line of said Section Eight (8), a distance of 400.00 feet; thence North 0°04′26″ West a distance of 1089.00 feet, more or less, to a point of intersection in the North line of said Southeast Quarter (SE/4); thence South 89°59′00″ East along the North line of said Southeast Quarter (SE/4), a distance of 400.00 feet, more or less, to the point or place of beginning.
EXHIBIT B

Permitted Title Exceptions

1. Ad valorem taxes for 2012 and subsequent years, amount of which is not ascertainable, due or payable.

2. Statutory right-of-way along all section lines.


5. Matters shown on ALTA/ACSM Land Title Survey last dated November 30, 2011, prepared and certified by Kelly James Henderson, P. L. S. No. 1395, of Lemke Land Surveying, Inc.
KNOW ALL MEN BY THESE PRESENTS:

That Christopher M. Salyer, a single person (herein "Grantor"), in consideration of the sum of Ten and No/100 dollars and other valuable consideration in hand paid, the receipt and sufficiency of which are hereby acknowledged, do/does hereby grant, bargain, sell and convey unto Oklahoma City Waste Disposal, Inc., an Oklahoma corporation (herein "Grantee"), whose mailing address is Waste Connections, Inc., 3 Waterway Square Place, Suite 110, The Woodlands, TX 77380 Attn: Robert Cloninger, the real property and premises situate in Oklahoma County, State of Oklahoma, described on Exhibit "A" attached hereto, together with the improvements thereon and the appurtenances thereunto belonging (herein the "Land") EXCEPTING from this conveyance and RESERVING unto the Grantor title to all minerals not heretofore conveyed or reserved of record, including, without limitation, all of the oil, gas, hydrocarbon substances and other minerals in, under or produced from said property and all rights pertaining thereto.

SURFACE RIGHTS ONLY

Grantor warrants the title to the Land to be free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature, SUBJECT TO easements and restrictive covenants of record and any interest in the oil, gas and other minerals within and underlying the Land, previously reserved or conveyed.

TO HAVE AND TO HOLD the Land unto the Grantee, its successors and assigns, forever.

Signed and delivered this 27th day of February, 2014.

[Signature]

Christopher M. Salyer

CERTIFIED COPY

[Signature]

APR 04 2014

CAROLYNN CAUDILL

Secretary Clerk, Oklahoma County

Deputy
ACKNOWLEDGEMENT

STATE OF Oklahoma  }    SS.
COUNTY OF Oklahoma  }    SS.

This instrument was acknowledged before me on this 27th day of February, 2014, by Christopher M. Salyer, a single person.

Mary C. Gardner, Notary Public

Commission number: 00008945
Commission expires: May 26, 2016
Exhibit A

A part of the southwest quarter of Section 9, Township 11 North, Range 4 West of the Indian Meridian, Oklahoma County, Oklahoma, being more particularly described as follows:

Beginning at the southwest corner of said southwest quarter;

Thence North 00°13'52" West (of record as North 00°13'32" West) along the west line of said southwest quarter a distance of 347.50 feet;

Thence North 89°46'24" East and parallel with the south line of said southwest quarter a distance of 1629.73 feet to a point on the east line of the west half of the west half of the east half of said southwest quarter;

Thence South 00°10'41" East along said east line, a distance of 347.50 feet to a point on the south line of said southwest quarter;

Thence South 89°46'24" West along the south line of said southwest quarter a distance of 1629.41 feet to the point of beginning.
KNOW ALL MEN BY THESE PRESENTS:

That CP Realty, LLC, an Oklahoma limited liability company party of the first part, in consideration of the sum of Ten and No/100 dollars and other valuable consideration to it in hand paid, the receipt of which is hereby acknowledged does hereby grant, bargain, sell and convey unto Oklahoma City Waste Disposal, Inc., an Oklahoma corporation party of the second part, the following described real property and premises situate in Oklahoma County, State of Oklahoma, to-wit:

See Exhibit "A" attached hereto and made a part hereof for legal description

MAIL TAX STATEMENT TO:
Oklahoma City Waste Disposal, Inc.
2 Waterway Square Place, Suite 110
The Woodlands, TX 77380

together with the improvements thereon and the appurtenances thereunto belonging and warrant the title to the same.

TO HAVE AND TO HOLD said described premises unto the said party of the second part, CP Realty, LLC, an Oklahoma limited liability company heirs and assigns forever, free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature, subject to easements, rights of ways and restrictive covenants of record, and LESS AND EXCEPT any oil, gas and other minerals and all rights incident thereto, previously reserved or conveyed of record.

Signed and delivered this 11 day of January 2019.

Craig Cannon, Manager

ACKNOWLEDGMENT

STATE OF TEXAS COUNTY OF MILLS, SS.

This Instrument was acknowledged before me on January 11, 2019, by

MELISSA REYES Notary Public State of Texas ID # 1042191-0
My Comm. Expires 08-14-2019

B-3-19
"Exhibit A"

A PART OF THE SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING 122.62 FEET WEST OF THE SOUTHEAST CORNER OF SAID QUARTER;

THENCE NORTH AND PARALLEL WITH SAID EAST LINE OF SAID QUARTER A DISTANCE OF 2,639.47 FEET;

THENCE WEST AND PARALLEL WITH SAID NORTH LINE OF SAID QUARTER A DISTANCE OF 246.84 FEET;

THENCE SOUTHERLY A DISTANCE OF 2,639.92 FEET TO A POINT 367.87 FEET WEST OF THE SOUTHEAST CORNER OF SAID QUARTER;

THENCE EAST A DISTANCE OF 245.25 FEET TO THE POINT OR PLACE OF BEGINNING,

EXCEPT THE SOUTH 33 FEET WHICH IS RESERVED FOR ROAD PURPOSES.

AND

THE EAST 7 1/2 ACRES OF THE EAST 30 ACRES OF THE SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.
GENERAL WARRANTY DEED

THIS DEED made this 22 day of August, 2018, between ANNE C. MYCEK, ("Grantor"), a single person, with an address of 377 High Point Cove, State College, Pennsylvania, and OKLAHOMA CITY WASTE DISPOSAL, INC., an Oklahoma Corporation, with address of 3 Waterway Square Place, Suite 110, The Woodlands, Texas, County, ("Grantee").

The Grantor, in consideration of the sum of TEN and NO/100THS DOLLARS ($10.00) and other good and valuable consideration duly paid, the receipt of which is hereby acknowledged, does grant, bargain, sell, and convey to the Grantee, the Grantee's heirs, successors, and assigns, all the following described real estate, situated in Oklahoma County, State of Oklahoma to-wit:

See Exhibit "A" for Legal Description

together with all the improvements and appurtenances on the premises, and warrant the title to the same.

TO HAVE AND HOLD the described premises to the Grantee, the Grantee's heirs, successors, and assigns forever, free and discharged of all former grants, charges, taxes, judgments, mortgages, and other liens and encumbrances of whatsoever nature or kind; EXCEPT: Basements and building restrictions of record and special assessments not yet due.

Executed on the day and year written above.

[signature]
ANNE C. MYCEK, Grantor

After Recording Return to:
Oklahoma City Waste Disposal, Inc.
Atten: Legal Department
3 Waterway Square Place, Suite 110
The Woodlands, Texas 77380

Prepared by:
The Coleman Law Office
3904 E. Reno Avenue
Oklahoma City, OK 73117
STATE OF OKLAHOMA  )
COUNTY OF OKLAHOMA ) ss.

BEFORE ME, the undersigned, a Notary Public, in and for said County and State, on this 20th day of August, 2018, personally appeared ANNE C. MYCEK, a single woman, to me known to be the identical person who executed the within and foregoing instrument, and acknowledged to me that she executed the same as her free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I hereunto set my official signature and affixed my notarial seal the day and year last above written.

My Commission Number: __________________________

My Commission Expires: __________________________

Notary Public
EXHIBIT “A”

THE EAST HALF (E/2) OF THE WEST HALF (W/2) OF THE EAST HALF (E/2)
OF THE SOUTHWEST QUARTER (SW/4), AND THE WEST HALF (W/2) OF
THE WEST HALF (W/2) OF THE EAST HALF (E/2) OF THE EAST HALF (E/2)
OF THE SOUTHWEST QUARTER (SW/4), AND THE WEST 7.5 ACRES OF
THE EAST 30 ACRES OF THE SOUTHWEST QUARTER (SW/4) OF SECTION
NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF
THE INDIAN MERIDIAN (I.M.), OKLAHOMA COUNTY, OKLAHOMA, AND
BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS
FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SW/4; THENCE
SOUTH 89°46'22" WEST ALONG THE SOUTH LINE OF SAID SW/4 A
DISTANCE OF 365.01 FEET TO THE POINT OF BEGINNING; THENCE
CONTINUING SOUTH 89°46'22" WEST ALONG SAID SOUTH LINE A
DISTANCE OF 612.55 FEET; THENCE NORTH 00°10'43" WEST A
DISTANCE OF 2640.95 FEET TO A POINT ON THE NORTH LINE OF SAID
SW/4; THENCE NORTH 89°56'37" EAST ALONG SAID NORTH LINE A
DISTANCE OF 614.08 FEET; THENCE SOUTH 00°08'43" EAST A DISTANCE
OF 2639.11 FEET TO THE POINT OF BEGINNING. SAID TRACT CONTAINS
37.17 ACRES, MORE OR LESS.
## CONTENTS

1 SITE LIFE  
1.1 Solid Waste Generation  
1.2 Landfill Capacity  
1.3 Site Life Calculations

SITE LIFE CALCULATIONS  
SHEET B-4-4  
Depth of Waste Between Bottom of Final Cover and Bottom of Waste

AVERAGE DENSITY DETERMINATION
1 SITE LIFE

1.1 Solid Waste Generation

Oklahoma City Waste Disposal, Inc. estimates that the waste stream will be approximately 707,850 estimated tons per year in 2021 (2,475 tons per day based on a typical 286-day operating year) for the Oklahoma Landfill. The waste inflow rate is assumed to increase consistent with the projected growth rate of the Oklahoma City area. The expected maximum annual waste acceptance rate is 749,194 tons per year in 2037 (2,620 tons per day based on a 286-day operating schedule). The above projections are based on current market conditions and may vary as market conditions change. Over the life of the facility, the expected average daily volume of incoming waste is projected to be approximately 2,550 tons/day.

1.2 Landfill Capacity

The total volume available for solid waste and daily cover after March 11, 2021 (date of topographic information) is estimated to be 19,266,867 cubic yards using the average end area method (the additional capacity due to the expansion is 9,840,000 cubic yards). This airspace estimate includes the remaining available volume in the existing permitted area, as well as the volume resulting from the landfill expansion.

1.3 Site Life Calculations

The site life calculations are presented on pages B-4-2 through B-4-4. In summary, the site life is projected to be approximately 17.0 years, which would result in the site's closure during the year 2038.
Required:  Determine approximate site life (years) for the site. The site will typically operate 286 days per year.

Solution:  Determine available landfill tonnage and initial annual waste inflow rate:

Remaining airspace (includes permitted site and expansion) = 19,266,867 cy (as of March 11, 2021)

Percent daily cover = 10%

In-place density of waste/cover soils = 1,530 lb/cy

Estimate the total remaining airspace (tons).

- Estimate density of waste only

\[(\gamma_{soil}) (10\% \text{ of } 19,266,867 \text{ cy}) + (\gamma_{waste})(90\% \text{ of } 19,266,867 \text{ cy}) = (\gamma_{soil/waste})(19,266,867 \text{ cy})\]

\[(2,430 \text{ lb/cy})(1,926,877, \text{ cy}) + (\gamma_{waste})(17,340,180 \text{ cy}) = (1,530 \text{ lb/cy})(19,266,867 \text{ cy})\]

\[\gamma_{waste} = 1,430 \text{ lb/cy}\]

Remaining airspace = (90% of 17,340,180 cy)*(1,430 lb/cy*1/2,000 tons/lb)

Remaining airspace = 12,398,229 tons

\[
\begin{array}{|c|}
\hline
\text{Total remaining capacity (includes existing permitted site and expansion)} = 12,398,229 \text{ tons} \\
\hline
\end{array}
\]

Initial waste stream estimate = 2,475 tons/day

Days of operation per year = 286 days

Initial waste inflow rate = 707,850 tons/year

Assumed annual growth rates (based on water use projections):

\[
\begin{array}{ccc}
\text{Growth rate (years 2021-2030)} & = & 4.11\% \\
\text{Growth rate (years 2031-2040)} & = & 2.98\% \\
\text{or annualized growth rate of:} & = & 0.4033\% \\
\text{or annualized growth rate of:} & = & 0.2939\% \\
\end{array}
\]

The growth projections were obtained from the Oklahoma Water Resources Board (OWRB projections used in the 2012 Oklahoma Comprehensive Water Plan). The initial waste stream volume was provided by Oklahoma City Waste Disposal, Inc.

The following table calculates the waste stream growth (assuming the growth rates described above) and the projected cumulative airspace consumed.
<table>
<thead>
<tr>
<th>Year</th>
<th>Waste Inflow (tons/year)</th>
<th>Tonnage Consumed (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>April</td>
<td>2021</td>
<td>707,850</td>
</tr>
<tr>
<td>2022</td>
<td>710,705</td>
<td>575,112</td>
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<tr>
<td>2023</td>
<td>713,571</td>
<td>577,542</td>
</tr>
<tr>
<td>2024</td>
<td>716,449</td>
<td>579,891</td>
</tr>
<tr>
<td>2025</td>
<td>719,338</td>
<td>581,290</td>
</tr>
<tr>
<td>2026</td>
<td>722,239</td>
<td>582,643</td>
</tr>
<tr>
<td>2027</td>
<td>725,152</td>
<td>583,987</td>
</tr>
<tr>
<td>2028</td>
<td>728,077</td>
<td>585,317</td>
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<tr>
<td>2029</td>
<td>731,013</td>
<td>586,618</td>
</tr>
<tr>
<td>2030</td>
<td>733,961</td>
<td>587,924</td>
</tr>
<tr>
<td>2031</td>
<td>736,118</td>
<td>589,228</td>
</tr>
<tr>
<td>2032</td>
<td>738,282</td>
<td>590,525</td>
</tr>
<tr>
<td>2033</td>
<td>740,451</td>
<td>591,822</td>
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<tr>
<td>2034</td>
<td>742,627</td>
<td>593,118</td>
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<tr>
<td>2035</td>
<td>744,810</td>
<td>594,414</td>
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<tr>
<td>2036</td>
<td>746,999</td>
<td>595,710</td>
</tr>
<tr>
<td>2037</td>
<td>749,194</td>
<td>596,997</td>
</tr>
<tr>
<td>2038</td>
<td>127,144</td>
<td>12,398,229</td>
</tr>
</tbody>
</table>

Available tonnage is consumed during year 2038
Site life is projected to be approximately 17.0 years

Summary of waste tonnage information:

<table>
<thead>
<tr>
<th></th>
<th>Initial inflow = 2,475 tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum inflow = Tonnage accepted during final year of operation (749,194 tons)(^1)</td>
<td></td>
</tr>
<tr>
<td>286 days of operation per year</td>
<td></td>
</tr>
<tr>
<td>(^1) 749,194 tons represents the calculated total tonnage accepted for the full year of 2037.</td>
<td></td>
</tr>
</tbody>
</table>

Projected maximum waste inflow rate:

| Maximum inflow = 2,620 tons/day |

Average inflow = Maximum waste accepted Site Life

Projected average waste inflow rate:

| 12,398,229 tons |
| 17.0 years * |
| 286 days/year |
| Average inflow = 2,550 tons/day |
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-13-2021.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
3. AN A MINIMUM BUFFER ZONE OF AT LEAST 100- FEET OFFSET FROM THE PROPOSED PERMIT BOUNDARY FOR THE LANDFILL EXPANSION AREA INCLUDED IN THIS MODIFICATION WILL BE MAINTAINED.
4. ALL PROPOSED EXCAVATION SIDESLOPES ARE (3:VERTICAL) (HORIZONTAL).
5. PERMITTED TOP OF LEACHATE COLLECTION LAYER GRADES WERE REPRODUCED FROM THE TIER III PERMIT MODIFICATION PREPARED BY WEAVER CONSULTANTS GROUP MARCH 2017.
6. THE SITE HAS AN OPTION TO REPLACE THE TOP 1-FOOT OF CLAY LINER WITH GCL.
8. APPROXIMATE BASE GRADES WERE REPRODUCED FROM FIGURE TITLED CROSS SECTION SCHEMATIC THROUGH PRESENT FILL SOUTHWEST TO NORTHWEST DATED 9-17-86 PROVIDED BY OKLAHOMA CITY WASTE DISPOSAL, INC.
9. TOP OF CLAY CONTOURS WERE RAISED 1-FOOT IN VOLUME CALCULATIONS TO DETERMINE BOTTOM OF WASTE.
Determine average density for the landfill between the proposed/permitted bottom of waste contours and the bottom of the final cover system.

Method:
1. Determine average thickness of waste throughout the landfill profile.
2. Determine the average density of the fill between the proposed/permitted bottom of waste contours and the bottom of the final cover system.

References:

List of Symbols

\[ D_{av} = \text{Average Density, lb/yd}^3 \]

Procedure:

1. Determine average thickness of waste throughout the landfill profile.

Using the Drawing B-4-4, the average thickness of waste over the entire site is shown below:

Volume of Waste = 43,851,088 cy
Area of Waste = 11,556,468 ft²
Average Thickness of Waste = 102 ft

2. Determine the average density of the fill between the proposed/permitted bottom of waste contours and the bottom of the final cover system.

   a) Waste/daily cover generally is placed into a landfill with a density from 1,100 lb/yd³ to 1,300 lb/yd³.
   b) Using the Unit Weight Profile for MSW graph shown on the following page, density estimates were obtained at the top and bottom of the average 102-foot lift.
   c) The density reading at the top and bottom the lift were averaged to determine an average density for the lift.

Weaver Consultants Group, LLC
Rev. A, 9/14/2021
UNIT WEIGHT PROFILE FOR WASTE/DAILY COVER WITHIN A MSW LANDFILL.\(^1\)

\[ D_{\text{avg}} = \frac{D_{\text{top}} + D_{\text{bottom}}}{2} \]

\[ D_{\text{top}} = 1,133 \text{ lb/yd}^3 \]

\[ D_{\text{bottom}} = 1,926 \text{ lb/yd}^3 \]

\[ D_{\text{avg}} = 1,530 \text{ lb/yd}^3 \]

\(^1\) Graph derived from Reference 1
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
ODEQ PERMIT NO. 3555018

APPENDIX C
TEMPORARY EASEMENT FOR ACCESS

Prepared for
Oklahoma City Waste Disposal, Inc.
March 2022

Prepared by

Weaver Consultants Group, LLC
CA 3804 PE – 05/31/2023
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0601-001-11-159
CONTENTS

TEMPORARY ACCESS EASEMENT C-1
TEMPORARY ACCESS EASEMENT

The purpose of this appendix is to provide a Temporary Easement for Access for the Oklahoma Landfill in accordance with OAC 252:515, Subchapter 3. Consistent with OAC 252:515-3-34(c), a Temporary Easement for Access is provided on pages C-2 and C-3. The attached Temporary Easement for Access to the landfill tract has been recorded with the County Clerk’s office in Oklahoma County.
TEMPORARY EASEMENT FOR ACCESS

Pursuant to the Oklahoma Environmental Quality Code (27A O.S. §2-1-101 et seq., including the Solid Waste Management Act, the rules promulgated thereunder, and in accordance with the conditions and requirements of Permit No. 3555018, issued by the Oklahoma State Department of Health, the predecessor in interest to the Oklahoma Department of Environmental Quality (DEQ) on July 13, 1981, Oklahoma City Waste Disposal, Inc., its successors and assigns, hereinafter referred to as Grantor, does hereby grant unto the DEQ, including its contractors, employees, and its successors and assigns, the right of access for purposes of performing closure, post-closure monitoring, or corrective action in the event of default by the owner or operator. The Easement is granted over and across the following described land, situated in Oklahoma County, State of Oklahoma:

Tract 1 (the landfill permitted boundary area): The Oklahoma Landfill permit boundary (Permit No. 3555018) as described in the attached legal description.

This Temporary Easement for Access is given subject to the following conditions:

1. The Grantor hereby grants unto the DEQ an easement and right-of-way over and across Tract 1 (the area within the landfill permit boundary), above set out, for access to said Tract 1 for the purposes of conducting closure and post-closure activities and/or corrective action as prescribed by the laws of the State of Oklahoma and Rules of the DEQ;

2. This Easement is temporary and shall become null and void upon certification by the DEQ that post-closure and/or corrective action has been properly completed.

This Easement shall be binding upon the heirs, successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the Grantor has hereunto set his this 30th day of September, 2021.

WHEN RECORDED MAIL TO:
NAME: Jonathan V. Queen
ADDRESS: 6420 Southwest Blvd., Ste. 206
CITY: Fort Worth
STATE: Texas 76109

STATE OF OKLAHOMA )
) SS:
COUNTY OF OKLAHOMA )

Before me, the undersigned, a Notary Public within and for said County and State, on this 30th day of September, 2021, personally appeared Rachel Hanigan, to me known to be the identical person who executed the within and foregoing instrument, and acknowledged to me that he executed the same as his free and voluntary act and deed, for the uses and purposes therein set forth.

Witness my hand and the official seal the date above written.

My Commission Expires:

Notary Public
LIST OF APPENDICES

APPENDIX D-1
Airports

APPENDIX D-2
Endangered and Threatened Species

APPENDIX D-3
Scenic Rivers

APPENDIX D-4
Recreation/Preservation Areas

APPENDIX D-5
Surface Water Intake

APPENDIX D-6
Excerpts from PUD-1542

APPENDIX D-7
Quaternary Alluvial Sediment/Terrace Deposit Investigation
APPENDIX D-1

AIRPORTS
This appendix provides documentation for the required coordination with the Federal Aviation Administration (FAA) and airports within 5 miles. This appendix includes:

- April 28 2021. The FAA concluded on October 29, 2019 that Aeronautical Study No. 2019-ASW-10002-OE does not exceed obstruction standards and will not be a hazard to air navigation. This determination was extended on April 20, 2021. Prior to expiration on October 28, 2022, a Form 7460-2 will be completed to keep this determination active during the development of the site. Future correspondence with FAA to keep the determination active will be kept in the site operating record and can be accessed at https://oeaaa.faa.gov.

- November 9, 2019 FAA Airports Division letter identifying an objection from the standpoint of birds.

- October 28, 2019. The FAA concluded on April 16, 2019 that 2018-ASW-4954-OE does not exceed obstruction standards and will not be a hazard to air navigation. This determination was extended on October 28, 2019. Prior to expiration on April 28, 2021, a Form 7460-2 was completed to keep this determination active and can be accessed at https://oeaaa.faa.gov.

- July 17, 2019 Weaver Consultants Group, LLC request for FAA potential for wildlife hazards determination.

- July 17, 2019 Weaver Consultants Group, LLC request for FAA obstruction evaluation review.

- May 8, 2018 FAA Airports Division letter identifying an objection from the standpoint of birds.

- April 23, 2018 Weaver Consultants Group, LLC request for FAA potential for wildlife hazards determination.

- April 2, 2018 Weaver Consultants Group, LLC request for FAA obstruction evaluation review.

2013-ASW-7045-OE, 2013-ASW-7046-OE, 2013-ASW-7047-OE, 2013-ASW-7048-OE, and 2013-ASW-7049-OE are still active and compliant with FAA standards. Based on these Aeronautical Studies, the FAA concluded that the permitted landfill configuration does not exceed obstruction standards and will not be a hazard to air navigation.
A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure: Landfill Oklahoma Landfill
Location: Oklahoma City, OK
Latitude: 35-26-07.00N NAD 83
Longitude: 97-37-39.00W
Heights:
1263 feet site elevation (SE)
160 feet above ground level (AGL)
1423 feet above mean sea level (AMSL)

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 10/28/2022 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (817) 222-4848, or Brian.Oliver@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-ASW-10002-OE.

Signature Control No: 411665118-479151404
Brian Oliver
Specialist
Additional information for ASN 2019-ASW-10002-OE

All conditions and safety requirements cited in the original FAA determination remain valid and unchanged
November 4, 2019

Jonathan V. Queen, P.E.
Senior Project Manager
Weaver Consultants Group
6420 Southwest Boulevard Suite 206
Fort Worth, TX 76109

Subject: Oklahoma Landfill
Oklahoma City Waste Disposal
Solid Waste Permit No. 3555018
7600 SW 15th Street
Oklahoma City, OK 73128
2018-ASW-4954-OE
FAA File No. 2012-001-OK

Dear Mr. Queen:

This is in response to your voice-mail of October 29, 2019 advising us of your receipt of FAA Letter subject title, "Determination of No Hazard to Air Navigation" dated October 29, 2019 and the application for expansion of the existing Oklahoma Landfill located at 7600 SW 15th Street, Oklahoma City, Oklahoma.

Using the coordinates of 35°26'07" N and 97°37'44" W we determined the Will Rogers World Airport, specifically, the Runway 13 threshold is located approximately 11,822 feet or 2.24 statute miles from the southeast corner of the landfill property line. We have no objection to the expansion plans described in your letter. Our position of no objection is based on the following:

1. The information in your April 23, 2018 (Project No. 0601-001-11-133-01) and July 17, 2019 (Project No. 0601-001-11-142) letters and vertical limits of 1423 AMSL evaluated via 2018-ASW-4954-OE and 2019-ASW-10002-OE;
2. Our guidance for hazardous wildlife attractants on or near airports FAA Advisory Circular 150/5200-33B;
4. The continuation of the USDA contract to implement the Bird Control Plan at the landfill site;
5. The continued coordination and communication with Will Rogers World Airport management via quarterly held meetings and no negative impact on aircraft operations.
This site has been assigned our file No. 2012-001-OK. Please refer to this number in any future correspondence regarding this site. Thank you for coordinating with us. If there are any questions, you can contact me at 817-222-5671 or gary.loftus@faa.gov.

Sincerely,

Gary Joseph Loftus

Gary J. Loftus, A.A.E.
Airports Compliance Program Manager
Airport Certification Safety Inspector
FAA Southwest Region
Southwest Region Airports Division

cc: Oklahoma Aeronautics Commission (via email)
110 N. Robinson Avenue, Suite 200
Oklahoma City, OK 73102

Mr. Mark Kranenburg, A.A.E. (via email)
Director of Airports
Will Rogers World Airport
7100 Terminal Drive, Box 937
Oklahoma City, OK 73159-0937
A Determination was issued by the Federal Aviation Administration (FAA) concerning:

<table>
<thead>
<tr>
<th>Structure</th>
<th>Landfill Oklahoma Landfill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Oklahoma City, OK</td>
</tr>
<tr>
<td>Latitude</td>
<td>35-26-07.00N NAD 83</td>
</tr>
<tr>
<td>Longitude</td>
<td>97-37-44.00W</td>
</tr>
<tr>
<td>Heights</td>
<td>1258 feet site elevation (SE)</td>
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<tr>
<td></td>
<td>165 feet above ground level (AGL)</td>
</tr>
<tr>
<td></td>
<td>1423 feet above mean sea level (AMSL)</td>
</tr>
</tbody>
</table>

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure. Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 04/28/2021 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6337, or nick.goodly@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASW-4954-OE.

**Extension**

Signature Control No: 361318211-421113786
Nick Goodly
Technician

Attachment(s)
Case Description
Case Description for ASN 2018-ASW-4954-OE

Due diligence obstruction evaluation for adjacent property to determine applicability to Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)(A)
Dear Mr. Loftus:

The purpose of this letter is to request a potential for wildlife hazards determination for a property adjacent (southeast) to the Oklahoma Landfill consistent with Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)(A). This regulation requires an applicant for an expansion of a municipal solid waste facility coordinate with the Federal Aviation Administration (FAA) and the affected airports within a 5-mile radius of the site. To facilitate this request, the following subsections have been developed to provide supplemental information relating to the site operations and recent FAA evaluations.

**Site Operations**

Oklahoma City Waste Disposal, Inc. has a long history of working with the City of Oklahoma City (OKC) and Will Rogers World Airport regarding bird control at this facility, including developing a Bird Control Plan that was updated in January 2009. The Bird Control Plan was most recently provided to the FAA in 2014 and has been successfully implemented. At the request of the Will Rogers World Airport, the Bird Control plan was updated in May 2019 and reviewed by the USDA. A copy of the Bird Control Plan is attached as reference (Attachment 1.) Previous Potential Wildlife Hazard Determinations have been completed for this site in 2014 and 2018 (FAA File No. 2012-001 OK).

The site has contracted with the USDA to implement the Bird Control Plan at the site. This program has proven very effective in preventing flocks of birds from using the landfill as a staging or roosting area. The program implements a wide variety of proven, legal and acceptable hazing, exclusion, and capture techniques, both lethal and nonlethal, to eradicate birds at the site. A record of the number and species of birds taken is maintained in site records in accordance with the annual depredation permit issued by the U.S. Fish and Wildlife Service.
Mr. Gary Loftus

July 17, 2019

The site will continue to effectively implement the approved Bird Control Plan as well as the USDA Wildlife Damage Management (WDM) program on a daily basis to further minimize the risk of bird strikes on aircraft using Will Rogers World Airport. The WDA program, or a similar program, will continue to be implemented at the landfill throughout the operational life of the site. Furthermore, the Site Operating Plan includes requirements to maintain the working face of the landfill, where trash is exposed, to as small of an area as practical.

**Recent FAA Coordination**

A Site Plan has been attached that shows previously determined obstruction evaluation points (2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, 2013-ASW-7049-0E and 2018-ASW-4954-0E.) These obstruction evaluations have determined the structure (landfill) does not exceed obstruction standards and would not be a hazard to air navigation. An obstruction-evaluation for Point K - Southeast Corner, has recently been uploaded to the FAA online obstruction evaluation portal so that a determination can be performed.

**Summary**

Given site operations including (1) the Bird Control Plan (2) maintaining a small practical working face, (3) recent FAA coordination as it pertains to obstruction and evaluation, and (4) Oklahoma City Waste Disposal, Inc. continues working relationship with the Will Rogers World Airport, (including quarterly meetings) it is our anticipation that this adjacent property to the Oklahoma Landfill would not affect the site potential as a wildlife hazard.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

**Weaver Consultants Group, LLC**

[Signature]

Jonathan V. Queen, P.E.
Project Director

Attachments:  Attachment 1 – Bird Control Plan May 2019
              Attachment 2 – Site Plan

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
BIRD CONTROL PLAN

FOR

OKLAHOMA LANDFILL
7600 SW 15TH STREET
OKLAHOMA CITY, OKLAHOMA 73128

Solid Waste Permit Number 3555018

Prepared for
Oklahoma City Waste Disposal, Inc.

May 2019

Prepared by
Weaver Consultants Group, LLC
6420 Southwest Blvd., Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0601-001-10-44
INTRODUCTION

Oklahoma Landfill is a permitted solid waste disposal facility (Permit Number 3555018). The landfill is located within the Oklahoma City limits and is at 7600 SW 15th Street, Oklahoma City, Oklahoma 73128. Oklahoma Landfill is situated about 12,300-feet northwest of the Will Rogers World Airport.

A significant portion of the solid waste streams accepted by the landfill have the potential to attract certain bird species to the site. An accumulation of a large number of birds at the landfill may present a hazard to aircraft using the Airport.

Oklahoma Landfill is committed to minimizing the risk of bird strikes on aircraft using Will Rogers Airport and this Bird Control Plan outlines the procedures and measures that are designed to prevent flocks of birds from using the Landfill as a food source and staging or roosting area.

In March 2007, the City of Oklahoma City approved a revised zoning plan for the landfill – Planned Unit Development (PUD)-1060. During the development of PUD-1060, substantial coordination with the Federal Aviation Administration (FAA) and representatives of Will Rogers World Airport occurred. This coordination resulted in the development of a site specific Bird Control Plan. The Bird Control Plan was developed with the assistance of the FAA, the U.S. Department of Agriculture (USDA), and the Oklahoma Department of Environmental Quality (ODEQ).

In December 2008, representatives of Oklahoma City Waste Disposal, Inc. met with Will Rogers World Airport representatives to discuss a reconfiguration of the landfill. It was agreed that the representatives of Oklahoma City Landfill would work with Will Rogers World Airport’s personnel to update the previously approved Bird Control Plan to further minimize potential bird hazards. An updated Bird Control Plan was approved in January 2009 and has been successfully implemented.

Based on recent coordination with Will Rogers World Airport representatives and given the age of the current Bird Control Plan, Oklahoma City Landfill has updated the Plan based on current operations.

The site has contracted with the USDA to implement the Bird Control Plan at the site. This program has proven very effective in preventing flocks of birds from using the landfill as a staging or roosting area. The program implements a wide variety of proven, legal and acceptable hazing, exclusion, and capture techniques, both lethal
and nonlethal, to eradicate birds at the site. Additionally, the Oklahoma Landfill currently meets with Will Rogers World Airport personnel on a quarterly basis to review the effectiveness of the existing Bird Control Plan.

The Landfill Site Manager is responsible for implementing the Bird Control Plan. The operational, monitoring, reporting, and recordkeeping elements of the Plan are outlined below.
OPERATIONAL MEASURES

The operational measures presented below are based upon specific USDA bird control recommendations for the Oklahoma Landfill as well as successful measures that have already been implemented by site operations.

1. **Bird Food Source Control**
   - Site Operations will keep the working face to as small an area as possible.
   - Operators at the work face will place mobile litter fences downwind of the work face to minimize the amount of blowing litter.
   - Site Operations will police the landfill area on a daily basis for blown litter. The litter will be collected as soon as practicably possible.
   - Daily Cover will be applied during the day if necessary to control the amount of exposed waste and all waste on the work face will be covered with daily cover at the end of each working day.

2. **Bird Feeding and Foraging Deterrent Measures**
   - Utilize bird hazing pyrotechnics (including screamers and poppers).
   - Utilize bird (chasing) drones.
   - Obtain Bird Depredation Permit (to be renewed annually as necessary) and utilize the taking of selected bird species in combination with hazing to control bird numbers. All employees trained to take birds will have access to a bird identification field guide to ensure that only those species identified for taking in the Depredation Permit are targeted. Only Site Management will be trained and authorized to take birds at the Landfill.

3. **Bird Staging/Loafing/Roosting Deterrent Measures**
   - Any new ponds on the landfill will be designed for detention rather than retention and as such will allow for the continual draining or emptying of water from the pond.
   - The site intends to convert detention ponds to wetlands environments upon final closure of the Landfill. The Landfill agrees to incorporate permanent features in these wetlands areas, including tree canopies, to ensure that these areas do not attract congregations of bird species that
might pose a threat to aircraft. The Landfill will consult with Will Rogers Airport Management and the local USDA office in the design, construction, and maintenance of these wetlands areas. Wetlands habitat will be inspected during the minimum 30 year postclosure period required by the Oklahoma Department on Environmental Quality. Should this environment result in attracting birds that may pose a threat to air navigation, the Oklahoma Landfill will re-grade the area and create an upland habitat environment.

- The site has not observed any congregation of birds at existing water sources located adjacent to the landfill. The Site Manager will seek guidance from the USDA on suitable mitigation measures if this pond becomes an attractant to the birds in the future.

- If gulls persist in the staging or loafing in areas of the landfill, site operations will install suspended parallel wire or monofilament strands over the area.
The bird population will be monitored on a daily basis by the landfill personnel to develop a history of bird activity at the site. The Monitoring procedure is outlined below:

1. Landfill personnel will conduct daily bird counts within one hour of starting daily operations and mid to late afternoon.

2. If birds are present, the Monitor will record any bird counts on the form attached to this Plan.

3. The Site Manager will immediately take all reasonable operational measures to reduce bird numbers.

4. If Site Operations are unable to satisfactorily disperse birds following the implementation of bird deterrent operational measures for two consecutive days, the Site Manager will notify the Airport. Further notification shall be provided to the Airport when the necessary bird control measures have been successfully implemented and birds have been removed.

On a quarterly basis, the Landfill will coordinate a meeting with representatives of Will Rogers Airport to discuss bird species, pattern, and count observations, and this group will also evaluate the performance of implemented bird deterrent measures for the period. The group will then discuss any additional measures that need to be implemented, as appropriate.

On an annual basis, the Landfill will coordinate a site visit with the USDA to ensure that site features are not attracting birds that may pose a threat to air navigation.
RECORDKEEPING

1. A record of the number and species of birds taken will be maintained on a form in accordance with the annual depredation permit.

2. The Bird Monitoring Form will be submitted to Will Rogers Airport representatives on a quarterly basis and will be maintained in the Operating Record located at the landfill.
# BIRD MONITORING FORM

**OKLAHOMA LANDFILL, OKLAHOMA COUNTY**

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**NOTE:** WILL ROGERS WORLD AIRPORT MUST BE NOTIFIED IF SITE IS UNABLE TO DISPERSE BIRDS WITHIN 2-DAYS OF IMPLEMENTING DETERRENT MEASURES.

---

**Weaver Consultants Group, LLC**

5/2019
ATTACHMENT 2

SITE PLAN
1. Existing contours and elevations provided by Sidwell Company compiled from aerial photography flown 03/15/2016. Existing contours and elevations outside the permit boundary provided by Sidwell Company compiled from aerial photography flown 03/15-16, 03/26-2012 and 03/10-2008.

2. Permit boundary was reproduced from legal description prepared by Lemke Land Surveying, Inc.
Mr. Andrew B. Hollie
FAA Specialist for Arkansas, Georgia, Louisiana, New Mexico, North Carolina, Oklahoma and South Carolina
Obstruction Evaluation Group, AJV-15
10101 Hillwood Pkwy
Fort Worth, Texas 76177

Re: Obstruction Evaluation Determination
Oklahoma Landfill
Oklahoma City, Oklahoma

Dear Mr. Hollie:

The purpose of this letter is to request an obstruction evaluation determination for a property adjacent (southeast) to the Oklahoma Landfill consistent with the Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)(A). This regulation requires an applicant for an expansion of a municipal solid waste facility coordinate with the Federal Aviation Administration (FAA) and the affected airports within a 5-mile radius of the site. To facilitate this request, the following subsections have been developed to provide supplemental information relating to the site operations and recent FAA evaluations.

**Site Operations**

Oklahoma City Waste Disposal, Inc. has a long history of working with the City of Oklahoma City (OKC) and Will Rogers World Airport regarding bird control at this facility, including developing a Bird Control Form that was updated in January 2009. The Bird Control Plan was provided to the FAA in 2014 (FAA File No. 2012-001-OK) and was successfully approved. At the request of the Will Rogers World Airport, the Bird Control Plan was updated in May 2019 and reviewed by the USDA.

The site has contracted with the USDA to implement the Bird Control Plan at the site. This program has proven very effective in preventing flocks of birds from using the landfill as a staging or roosting area. The program implements a wide variety of proven, legal and acceptable hazing, exclusion, and capture techniques, both lethal and nonlethal, to eradicate birds at the site. A record of the number and species of birds taken is maintained in site records in accordance with the annual depredation permit issued by the U.S. Fish and Wildlife Service.
The site will continue to effectively implement the approved Bird Control Plan as well as the USDA Wildlife Damage Management (WDM) program on a daily basis to further minimize the risk of bird strikes on aircraft using Will Rogers World Airport. The WDA program, or a similar program, will continue to be implemented at the landfill throughout the operational life of the site. Furthermore, the Site Operating Plan includes requirements to maintain the working face of the landfill, where trash is exposed, to as small of an area as practical.

Summary

Recent obstruction evaluations have been performed and approved by the FAA for this site including 2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, 2013-ASW-7049-0E and 2018-ASW-4954-0E. To assist in this obstruction evaluation determination relating to FAA air navigation obstruction standards, Figure 1 (Site Plan) has been provided in Attachment 1. This plan shows previously determined obstruction evaluation Points A through I (2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, 2013-ASW-7049-0E and 2018-ASW-4954-0E.). Note that the peak elevation of the landfill occurs at Point A, 2013-ASW-7041-0E. However, points B through J are also set at the maximum landfill elevation to provide a conservative landfill configuration for the previous aeronautical studies. Therefore, for evaluation purpose, Point K has been identified on Figure 1 as the southeast corner of the adjacent property. This location is the closest point of the property to Will Rogers World Airport and has been set at a maximum elevation consistent with recent obstruction evaluations. Point K has been uploaded to the FAA online obstruction evaluation portal so that a determination can be performed.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Consultants Group, LLC

[Signature]

Jonathan V. Queen, P.E.
Project Director

Attachments: Site Plan

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
NOTES:
1. EXISTING SURFACES AND ELEVATIONS PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 04-03-2016. EXISTING SURFACES AND ELEVATIONS OUTSIDE THE PERMIT BOUNDARY PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-15-15, 03-26-2012 AND 03-10-2008.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEISURE LAND SURVEYING, INC.
May 8, 2018

Jonathan V. Queen, P.E.
Senior project Manager
Weaver Consultants Group
6420 Southwest Boulevard Suite 206
Fort Worth, TX 76109

Subject: Oklahoma Landfill
Oklahoma City Waste Disposal
Solid Waste Permit No. 3555018
7600 SW 15th Street
Oklahoma City, OK 73128
2018-ASW-4954-OE
FAA File No. 2012-001-OK

Dear Mr. Queen:

This is in response to your letter of April 23, 2018 and Project No. 0601-001-11-133-01, advising us of an application for expansion of the existing Oklahoma Landfill located at 7600 SW 15th Street, Oklahoma City, Oklahoma. Thank you for keeping us informed.

Using the coordinates of 35° 26'07" N and 97° 37'44" W we determined the Will Rogers World Airport, specifically, the Runway 13 threshold is located approximately 11,822 feet or 2.24 statute miles from the southeast corner of the landfill property line. We have no objection to the expansion plans described in your letter. Our position of no objection is based on the following:

1. The information in your April 23, 2018 letter and vertical limits evaluated via 2018-ASW-4954-OE;
2. Our guidance for hazardous wildlife attractants on or near airports FAA Advisory Circular 150/5200-33B;
3. The continued implementation of the Bird Control Plan of 2009 as required in FAA letter dated July 16, 2014;
4. The continuation of the USDA contract to implement the Bird Control Plan at the landfill site;
5. The continued coordination and communication with Will Rogers World Airport management via quarterly held meetings and no negative impact on aircraft operations.
This site has been assigned our file No. 2012-001-OK. Please refer to this number in any future correspondence regarding this site. Thank you for coordinating with us. If there are any questions, you can contact me at 817-222-5671 or gary.loftus@faa.gov.

Sincerely,

ORIGINAL SIGNED BY:

[Signature]

Gary J. Loftus, A.A.E.
Airports Compliance Program Manager
Airport Certification Safety Inspector
FAA Southwest Region
Southwest Region Airports Division

cc: Oklahoma Aeronautics Commission
110 N. Robinson Avenue, Suite 200
Oklahoma City, OK 73102

Mr. Mark Kranenburg, A.A.E.
Director of Airports
Will Rogers World Airport
7100 Terminal Drive, Box 937
Oklahoma City, OK 73159-0937
Mr. Gary Loftus  
Airports Compliance Program Manager  
Federal Aviation Administration  
Southwest Region, Airports Division-Safety and Standards Branch  
10101 Hillwood Pkwy  
Fort Worth, Texas 76177

Re: Potential for Wildlife Hazards Determination  
Oklahoma Landfill  
Oklahoma City, Oklahoma

Dear Mr. Loftus:

The purpose of this letter is to request a potential for wildlife hazards determination for a property adjacent (southeast) to the Oklahoma Landfill. The owner of Oklahoma Landfill, Oklahoma City Waste Disposal, Inc. is completing a due diligence effort regarding this property. This due diligence effort includes the adjacent property applicability to Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)(A). This regulation requires an applicant for an expansion of a municipal solid waste facility coordinate with the Federal Aviation Administration (FAA) and the affected airports within a 5-mile radius of the site. To facilitate this request, the following subsections have been developed to provide supplemental information relating to the site operations and recent FAA evaluations.

Site Operations

Oklahoma City Waste Disposal, Inc. has a long history of working with the City of Oklahoma City (OKC) and Will Rogers World Airport regarding bird control at this facility, including developing a Bird Control Plan that was updated in January 2009. The Bird Control Plan was most recently provided to the FAA in 2014 and has been successfully implemented. A copy of the Bird Control Plan and July 2014 Potential Wildlife Hazard Determination (FAA File No. 2012-001-OK) is attached for reference.

The site has contracted with the USDA to implement the Bird Control Plan at the site. This program has proven very effective in preventing flocks of birds from using the landfill as a staging or roosting area. The program implements a wide variety of proven, legal and acceptable hazing, exclusion, and capture techniques, both lethal and nonlethal, to eradicate birds at the site. A record of the number and species of birds taken is maintained in site records in accordance with the annual depredation permit issued by the U.S. Fish and Wildlife Service.
The site will continue to effectively implement the approved Bird Control Plan as well as the USDA Wildlife Damage Management (WDM) program on a daily basis to further minimize the risk of bird strikes on aircraft using Will Rogers World Airport. The WDA program, or a similar program, will continue to be implemented at the landfill throughout the operational life of the site. Furthermore, the Site Operating Plan includes requirements to maintain the working face of the landfill, where trash is exposed, to as small of an area as practical.

Recent FAA Coordination

A recent obstruction evaluation has been performed and approved by the FAA for this site, 2018-ASW-4954-0E. A Site Plan has been attached that shows previously determined obstruction evaluation points (2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, and 2013-ASW-7049-0E) as well as 2018-ASW-4954-0E. These recent obstruction evaluations have determined the structure (landfill) does not exceed obstruction standards and would not be a hazard to air navigation. Aeronautical Study No. 2018-ASW-4954-0E has been attached for reference.

Summary

Given site operations including (1) the Bird Control Plan (2) maintaining a small practical working face, (3) recent FAA coordination as it pertains to obstruction and evaluation, and (4) Oklahoma City Waste Disposal, Inc. continues working relationship with the Will Rogers World Airport, (including quarterly meetings) it is our anticipation that this adjacent property to the Oklahoma Landfill would not affect the site potential as a wildlife hazard.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
Senior Project Manager

Attachments: Attachment 1 – Bird Control Plan January 2009
Attachment 3 – Site Plan
Attachment 4 – Aeronautical Study No. 2018-ASW-4954-0E

cc: Matt Crockett, P.E., Oklahoma City Waste Disposal, Inc.
ATTACHMENT 1

BIRD CONTROL PLAN JANUARY 2009
BIRD CONTROL PLAN

For

OKLAHOMA LANDFILL
7600 SW 15th Street
Oklahoma City, Oklahoma 73128

Solid Waste Permit Number 3555018

January 2009
INTRODUCTION

Oklahoma Landfill is a permitted solid waste disposal facility (Permit Number 3555018). The landfill is located within the Oklahoma City limits and is at 7600 SW 15th Street, Oklahoma City, Oklahoma 73128. Oklahoma Landfill is situated about 13,040-feet Northwest of the Will Rogers World Airport.

A significant portion of the solid waste streams accepted by the landfill have the potential to attract certain bird species to the site. An accumulation of a large number of birds at the landfill may present a hazard to aircraft using the Airport.

Oklahoma Landfill is committed to minimizing the risk of bird strikes on aircraft using Will Rogers Airport and this Plan outlines the procedures and measures that are designed to prevent flocks of birds from using the Landfill as a food source and staging or roosting area.

This Plan has been developed with the assistance of Oklahoma City's Department of Airports, and the U.S. Department of Agriculture (USDA).

The Landfill Site Manager is responsible for implementing the Bird Control Plan. The operational, monitoring, reporting, and recordkeeping elements of the Plan are outlined below.

OPERATIONAL MEASURES

The operational measures presented below are based upon specific USDA bird control recommendations for the Oklahoma Landfill as well as successful measures that have already been implemented by site operations:

1. Bird Food Source Control
   - Site Operations will keep the working face to as small an area as possible.
   - Operators at the work face will place mobile litter fences downwind of the work face to minimize the amount of blowing litter.
   - Site Operations will police the landfill area on a daily basis for blown litter. The litter will be collected as soon as practicable possible.
   - Daily Cover will be applied during the day if necessary to control the amount of exposed waste and all waste on the work face will be covered with daily cover at the end of each working day.
2. **Bird Feeding and Foraging Deterrent Measures**

- Utilize Bird Hazing pyrotechnics (including screamers and poppers).
- Obtain Bird Depredation Permit (to be renewed annually as necessary) and utilize the taking of selected bird species in combination with hazing to control bird numbers. All employees trained to take birds will have access to a bird identification field guide to ensure that only those species identified for taking in the Depredation Permit are targeted. Only Site Management will be trained and authorized to take birds at the Landfill.

3. **Bird Staging/Loafing/Roosting Deterrent Measures**

- Any new ponds on the landfill will be designed for detention rather than retention and as such will allow for the continual draining or emptying of water from the pond.
- The site intends to convert two detention ponds to a wetlands environment upon final closure of the Landfill. The wetlands will cover approximately 8 acres. The Landfill agrees to incorporate permanent features in these wetlands areas, including tree canopies, to ensure that these areas do not attract congregations of bird species that might pose a threat to aircraft. The Landfill will consult with Will Rogers Airport Management and the local USDA office in the design, construction, and maintenance of these wetlands areas. Wetlands habitat will be inspected during the minimum 30 year postclosure period required by the Oklahoma Department on Environmental Quality. Should this environment result in attracting birds that may pose a threat to air navigation, the Oklahoma Landfill will re-grade the area and create an upland habitat environment.
- The site has not observed any congregation of birds at existing water sources located adjacent to the landfill. The Site Manager will seek guidance from the USDA on suitable mitigation measures if this pond becomes an attractant to the birds in the future.
- If gulls persist in the staging or loafing in areas of the landfill, site operations will install suspended parallel wire or monofilament strands over the area.

**MONITORING and REPORTING**

The bird population will be monitored on a daily basis by the landfill personnel to develop a history of bird activity at the site. The Monitoring procedure is outlined below:

1. Landfill personnel will conduct daily bird counts within one hour of starting daily operations and mid to late afternoon.
2. If birds are present, the Monitor will record any bird counts on the form attached to this Plan.
3. The Site Manager will immediately take all reasonable operational measures to reduce bird numbers.
4. If Site Operations are unable to satisfactorily disperse birds following the implementation of bird deterrent operational measures for two consecutive days, the
Site Manager will notify the Airport. Further notification shall be provided to the Airport when the necessary bird control measures have been successfully implemented and birds have been removed.

On a quarterly basis, the Landfill will coordinate a meeting with representatives of Will Rogers Airport to discuss bird species, pattern, and count observations, and this group will also evaluate the performance of implemented bird deterrent measures for the period. The group will then discuss any additional measures that need to be implemented, as appropriate.

RECORDKEEPING

1. A record of the number and species of birds taken will be maintained on a form in accordance with the annual depredation permit.
2. The Bird Monitoring Form will be submitted to Will Rogers Airport representatives on a quarterly basis and will be maintained in the Operating Record located at the landfill.
July 16, 2014

Mr. Jason A. Edwards, P.E.
Senior Project Manager
Weaver Boos Consultants, LLC. Southwest
6420 Southwest Blvd, Suite 206
Fort Worth, TX 76109

Subject: Oklahoma Landfill Expansion
Oklahoma City, Oklahoma
FAA File No. 2012-001-OK

Dear Mr. Edwards:

This letter is in response to your June 4, 2014 notice advising us of your request for a determination of the Oklahoma landfill expansion project regarding the potential for wildlife hazards to aircraft. This letter also serves to confirm our August 8, 2013 statement of no objection to the proposed expansion of the Oklahoma City Landfill.

Using you coordinates of 35 26’ 12” N and 97 38’ 00” W, we determined that the Will Rogers World Airport, Runway 13 threshold is located approximately 12848.674 feet or 02.4370 miles from the southernmost point of the landfill expansion area. Our position of no objection is based on the following:

1. The information provided in your June 4, 2014 letter;
2. Our guidance for hazardous wildlife attractions on or near airports FAA Advisory Circular 150/5200-33B;
3. The development and implementation of a site specific Bird Control Plan for the landfill site;
4. Quarterly meetings with airport management to assess the effectiveness of the Bird Control Plan;
5. Contracting the USDA to implement the Bird Control Plan at the landfill;
6. Will Rogers World Airport management team has no objection based on the continued operation of the bird control plan, the quarterly held meetings and there is no negative impact on aircraft operations;
7. The national wildlife strike data base indicates that there has been approximately 30 bird strikes associated with Runway 13 since 1996
This site has been assigned our file No. 2012-001-OK. Please refer to this number in any future correspondence regarding this site. Thank you for coordinating this project with us. If there are any questions, you can contact me at 817-222-5621 or bill.mitchell@faa.gov.

Sincerely,

William Mitchell
Lead Airport Certification Safety Inspector
Airports Division Southwest Region
(817) 222-5621
Bill.mitchell@faa.gov

cc: Oklahoma Department of Environmental Quality
   Waste Management Division
   P.O. Box 1677
   Oklahoma City, OK 73101-1677

   Mr. Mark Kranenburg
   Director of Airports
   Will Rogers World Airport
   7100 Terminal Drive, Box 937
   Oklahoma City, OK 73159-0937

   Oklahoma Aeronautics Commission
   120 North Robinson Ave, Suite 1244W
   Oklahoma City, OK 73102
ATTACHMENT 3

SITE PLAN
NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 04-03-2016. EXISTING CONTOURS AND ELEVATIONS OUTSIDE THE PERMIT BOUNDARY PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-10-2008, 03-26-2012 AND 03-15-2015.

2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

3. 100'-FLOODPLAIN REPRODUCED FROM THE POST-PROJECT CONDITION ANALYSIS INCLUDED IN THE SITE CLOMR.
ATTACHMENT 4

AERONAUTICAL STUDY NO. 2018-ASW-4954-0E
The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

<table>
<thead>
<tr>
<th>Structure:</th>
<th>Landfill Oklahoma Landfill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Oklahoma City, OK</td>
</tr>
<tr>
<td>Latitude:</td>
<td>35-26-07.00N NAD 83</td>
</tr>
<tr>
<td>Longitude:</td>
<td>97-37-44.00W</td>
</tr>
<tr>
<td>Heights:</td>
<td>1258 feet site elevation (SE)</td>
</tr>
<tr>
<td></td>
<td>165 feet above ground level (AGL)</td>
</tr>
<tr>
<td></td>
<td>1423 feet above mean sea level (AMSL)</td>
</tr>
</tbody>
</table>

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

- It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:
  - At least 10 days prior to start of construction (7460-2, Part 1)
  - Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 1.

This determination expires on 10/16/2019 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.
NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (817) 222-5928, or chris.smith@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2018-ASW-4954-OE.

Signature Control No: 361318211-362732514
Chris Smith
Technician

Attachment(s)
Case Description
Map(s)

Page 2 of 5
Case Description for ASN 2018-ASW-4954-OE

Due diligence obstruction evaluation for adjacent property to determine applicability to Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)(A)
Mr. Andrew B. Hollie
FAA Specialist for Arkansas, Georgia, Louisiana,
New Mexico, North Carolina, Oklahoma and South Carolina
Obstruction Evaluation Group, AJV-15
10101 Hillwood Pkwy
Fort Worth, Texas 76177

Re: Obstruction Evaluation Determination
Oklahoma Landfill
Oklahoma City, Oklahoma

Dear Mr. Hollie:

The purpose of this letter is to request an obstruction evaluation determination for a property adjacent (southeast) to the Oklahoma Landfill. The owner of Oklahoma Landfill, Oklahoma City Waste Disposal, Inc. is completing a due diligence effort regarding this property. This due diligence effort includes the adjacent property applicability to Oklahoma Administrative Code (OAC) 252:515-5-52(e)(1)[A). This regulation requires an applicant for an expansion of a municipal solid waste facility coordinate with the Federal Aviation Administration (FAA) and the affected airports within a 5-mile radius of the site. To facilitate this request, the following subsections have been developed to provide supplemental information relating to the site operations and recent FAA evaluations.

Site Operations

Oklahoma City Waste Disposal, Inc. has a long history of working with the City of Oklahoma City (OKC) and Will Rogers World Airport regarding bird control at this facility, including developing a Bird Control Form that was updated in January 2009. The Bird Control Plan was provided to the FAA in 2014 (FAA File No. 2012-001-OK) and has been successfully implemented.

The site has contracted with the USDA to implement the Bird Control Plan at the site. This program has proven very effective in preventing flocks of birds from using the landfill as a staging or roosting area. The program implements a wide variety of proven, legal and acceptable hazing, exclusion, and capture techniques, both lethal and
nonlethal, to eradicate birds at the site. A record of the number and species of birds taken is maintained in site records in accordance with the annual depredation permit issued by the U.S. Fish and Wildlife Service.

The site will continue to effectively implement the approved Bird Control Plan as well as the USDA Wildlife Damage Management (WDM) program on a daily basis to further minimize the risk of bird strikes on aircraft using Will Rogers World Airport. The WDA program, or a similar program, will continue to be implemented at the landfill throughout the operational life of the site. Furthermore, the Site Operating Plan includes requirements to maintain the working face of the landfill, where trash is exposed, to as small of an area as practical.

Summary

Recent obstruction evaluations have been performed and approved by the FAA for this site including 2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, and 2013-ASW-7049-0E. To assist in this obstruction evaluation determination relating to FAA air navigation obstruction standards, Figure 1 (Site Plan) has been provided in Attachment 1. This plan shows previously determined obstruction evaluation Points A through I (2013-ASW-7041-0E, 2013-ASW-7042-0E, 2013-ASW-7043-0E, 2013-ASW-7044-0E, 2013-ASW-7045-0E, 2013-ASW-7046-0E, 2013-ASW-7047-0E, 2013-ASW-7048-0E, and 2013-ASW-7049-0E). Note that the peak elevation of the landfill occurs at Point A, 2013-ASW-7041-0E. However, points B through I are also set at the maximum landfill elevation to provide a conservative landfill configuration for the previous aeronautical studies. Therefore, for evaluation purpose, Point J has been identified on Figure 1 as the southeast corner of the adjacent property. This location is the closest point of the property to Will Rogers World Airport and has been set at a maximum elevation consistent with recent obstruction evaluations. Point J has been uploaded to the FAA online obstruction evaluation portal so that a determination can be performed.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
Senior Project Manager

Attachments: Site Plan

cc: Matt Crockett, P.E., Oklahoma City Waste Disposal, Inc.
APPENDIX D-2

ENDANGERED AND THREATENED SPECIES
CONTENTS

This appendix provides documentation for the required coordination with the Oklahoma Department of Wildlife Conservation and the Oklahoma Biological Survey. This appendix includes:


- September 8, 2021 Oklahoma Biological Survey confirmation e-mail. The email from the Oklahoma Natural Heritage Inventory, which is a program of the Oklahoma Biological Survey, states they have searched their database of endangered and threatened species and found one occurrence of relevant species within the vicinity of the project (Bald eagle). As noted in the Threatened and Endangered Species Reviews included in the initial correspondence to the Oklahoma Biological Survey dated March and November 2018, bald eagles are typically associated with aquatic habits (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the site would not likely have an adverse effect on this species.

- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma Department of Wildlife conservation review.

- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma Biological Survey review.
September 15, 2021

Jonathan V. Queen, P.E.
Weaver Consultants Group, LLC
6420 Southwest Boulevard
Suite 206
Fort Worth, TX 76109

RE: Endangered or Threatened Wildlife Species Statement
Oklahoma Landfill Expansion
Oklahoma City, OK
Project No. 0601-001-11-159-03

Dear Mr. Queen:

This letter is written in response to your request for threatened and endangered species information in reference to a solid waste facility permit application in Oklahoma City, Oklahoma. Based upon the site description provided, there are no species listed as species of STATE concern which may be at or within one mile of the proposed permit boundary or expansion area.

Please understand that due to time and a personnel constraint, the Oklahoma Department of Wildlife Conservation has not performed an actual field survey of this specific project area; therefore, we can provide only limited site-specific information. The information sent to this office regarding the proposed project has been reviewed and compared against our current records for endangered and threatened species, and our response is based on this review. I will make note that there is a difference between STATE and FEDERALLY listed species. The Oklahoma Department of Wildlife Conservation only oversees STATE listed species, whereas the U.S. Fish and Wildlife Service reserves authority FEDERALLY listed species. For this reason, if you are concerned about species of federal interest, we urge you to consult with the Tulsa Ecological Service Office of the U.S. Fish and Wildlife Service (918-581-7458), as they may have additional information of which we are unaware.

We appreciate the opportunity to review this project and submit comments. If you have any questions, or if I can be of any assistance, please contact me at either (405)255-5153 or ashley.nealis@odwc.ok.gov.

Sincerely,

Ashley Nealis
North Central Region Fisheries Supervisor
Oklahoma Department of Wildlife Conservation
Dear Mr. Queen,

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 8 and 9-T11 N-R4W, Oklahoma County

We found 1 occurrence(s) of relevant species within the vicinity of the project location as described.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Federal Status</th>
</tr>
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<tbody>
<tr>
<td>Haliaeetus leucocephalus</td>
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<td>Protected</td>
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<td>County</td>
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</tr>
<tr>
<td>Oklahoma</td>
<td>Sec. 5-T11 N-R4W</td>
<td>Count</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species: http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry: https://okregistry.wordpress.com/

Todd Fagin  
Oklahoma Natural Heritage Inventory  
(405) 325-4700  
tfagin@ou.edu
Mr. J.D. Strong, Director  
Oklahoma Department of Wildlife Conservation  
1801 North Lincoln  
Oklahoma City, Oklahoma 73105

Re: Endangered or Threatened Wildlife Species Statement  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma

Dear Mr. Strong:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to obtain endangered or threatened wildlife species information and demonstrate compatibility with Oklahoma Department of Environmental Quality (ODEQ) landfill location restriction regulation Oklahoma Administrative Code (OAC) §252:515-5-31(c). This regulation requires that a permit applicant for an expansion of a municipal solid waste landfill facility obtain a current information statement from the Oklahoma Department of Wildlife Conservation (ODWC).

The DEQ landfill location restriction regulation set forth in §252:515-5-31(c), requires that a permit applicant for an expansion of a municipal solid waste facility obtain a statement from the ODWC regarding current information about endangered or threatened wildlife or plant species listed in state and federal laws that exist within one mile of the landfill permit boundary or expansion area. Weaver Consultants Group, LLC is preparing a landfill expansion modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing Oklahoma Landfill located in the City of Oklahoma City, Oklahoma.

The proposed expansion area was assessed by Goshawk Environmental Consulting, Inc. (Goshawk), an environmental services firm with experience in threatened and endangered species habitat assessment. Goshawk conducted an on-site field reconnaissance for endangered or threatened wildlife and plant species habitats. Goshawk’s report concluded that the site does not provide habitat for and would not likely be occupied by any federal or state listed threatened and endangered species.

To assist you in your statement regarding threatened or endangered wildlife within one mile of the referenced project, please find attached a project summary, site location drawings, and the Goshawk report.

To verify compliance with §252:515-5-31(c), we will need to include a statement from the ODWC within the permit application.
Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,
Weaver Consultants Group, LLC

[Signature]

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps
Threatened and Endangered Species Review

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction
The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information
The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information
The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail’s route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

**Federal Emergency Management Administration (FEMA)**

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical data to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

**Oklahoma Department of Environmental Quality (ODEQ)**

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submission to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. REPRODUCED FROM GENERAL HIGHWAY MAP, OKLAHOMA COUNTY, OKLAHOMA (OK DOT PLANNING DIVISION, APRIL, 1999), GENERAL HIGHWAY MAP, CLEVELAND COUNTY, OKLAHOMA (OK DOT PLANNING DIVISION, AUGUST 1993), AND GENERAL HIGHWAY MAP, CANADIAN COUNTY, OKLAHOMA (OK DOT PLANNING DIVISION, APRIL, 1999).

SITE LOCATION MAP
OKLAHOMA CITY WASTE DISPOSAL, INC.
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
WWW.WCGRP.COM
FIGURE 1
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
PERMITTED LANDFILL COMPLETION PLAN

PROPOSED LANDFILL COMPLETION PLAN

NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FirmTek FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.

EXISTING PERMIT BOUNDARY
PROPOSED PERMIT BOUNDARY
PERMITTED LIMIT OF WASTE
PROPOSED LIMIT OF WASTE
STATE PLANE GRID COORDINATE
EXISTING CONTOUR
FINAL COVER CONTOUR
DRAINAGE SWALE
DRAINAGE CHUTE

LEGEND
26 March 2018

Mr. Jonathan Queen
Weaver Consultants Group
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

Re: Threatened and Endangered Species Review
Oklahoma Landfill – Mycek Site
Oklahoma County, Oklahoma

Dear Mr. Queen:

This letter provides the results of a Threatened and Endangered (T/E) Species Habitat Assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Oklahoma Landfill, Mycek Expansion Site in Oklahoma City, Oklahoma County, Oklahoma. The assessment included a literature review and field investigation.

Site Description
The proposed Mycek Expansion site is situated in southwest Oklahoma City, Oklahoma, within Section 9 of Township 11N, Range 4W, 1.2 miles south of Interstate 40 and 3.3 miles west of Highway 62. The proposed site is approximately 2,627 feet long (north/south) and 630 feet wide (east/west), totaling approximately 40 acres. Southwest 29th Street forms the site’s southern boundary. Primary land use on the site is row crop agriculture. Agriculture and industrial development are the primary land uses in the general vicinity of the proposed site. The site is within the North Canadian River watershed which is located approximately 2000 feet to the north.

Literature Review
Literature and agency file searches were conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the Mycek Expansion site. The review included the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) threatened and endangered species list, along with the Oklahoma Natural Heritage Inventory (ONHI) database county listing.

An internet search of IPAC was conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the proposed site. The species listed for Oklahoma County (list attached) include the Arkansas River shiner (Notropis girardi), least tern (Sterna antillarum), piping plover (Charadrius melodus), red knot (Calidris canutus), and whooping crane (Grus americana). No critical habitat is indicated for any of the potential species for the site.

The ONHI website identifies the federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species with potential to occur in Oklahoma County. Those species are the Texas horned lizard (Phrynosoma cornutum), bald eagle (Haliaeetus leucocephalus), least tern (Sterna antillarum), barn owl (Tyto alba), black-capped vireo (Vireo atricapillus), and woodchuck.
(Marmota monax). The ONHI database includes documented occurrences of federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species. A request to the ONHI returned “no occurrences of relevant species” within the Mycek Expansion site or the immediate vicinity (letter dated 9 March 2018 attached).

Field Investigation
Goshawk conducted a field investigation on 6 March 2018. The site was traversed on-foot to assess the potential for threatened or endangered species habitat. The site can generally be described as relatively flat land that had been terraced for row crop production; however, a residence and associated outbuildings occurs along the southern boundary. The majority of the site had been recently tilled and planted. Unidentified seedlings were evident in rows across the site. Boundary fence lines along with historic cross fence line exhibit narrow bands of woodland vegetation. Additionally, a small area in the northwest corner contains native woodlands. A slight depression that was mostly devoid of vegetation, save for a few young trees is located within the native woodland area.

Vegetation within the woodlands consisted of American elm (Ulmus americana), pecan (Carya illinoinsis), Eastern red cedar (Juniperus virginiana), soapberry (Sapindus sp.), greenbrier (Smilax rotundifolia), cottonwood (Aigeiros sp.), black willow (Salix nigra), sugar hackberry ( Celtis laevigata), and Johnson grass (Sorghum halepense). Understory within the woodlands is moderate with little ground cover except along the edges.

None of the listed threatened or endangered species were observed on the site during the field investigation. Additionally, none of the on-site vegetation types exhibit the necessary characteristics to be occupied by any of the listed species.

Habitat Suitability Findings
The following is a brief description of each of the above-listed species' preferred habitat and an evaluation of the habitat suitability of the site based on these preferences.

Arkansas River Shiner
The Arkansas River shiner historically occurred in wide, sandy-bottomed streams of the Arkansas River drainage. Its current range is believed to be restricted to portions of the Canadian, North Canadian, South Canadian, Cimarron, and Beaver rivers. The shiner feeds primarily on aquatic invertebrates and typically breeds between May and July during higher flows. Although the North Canadian River is in close proximity to the proposed site, the site will be designed and managed according to current state regulations, which will prevent any contamination of surface water in the North Canadian River. No impacts to the Arkansas River shiner are anticipated.

Least Tern
The least tern primarily feeds on fish within shallow water areas of rivers, streams, and lakes. This species nests on bare or sparsely vegetated beaches, sandbars, and islands composed of sand, shell, and/or gravel, usually within major rivers and reservoirs. Although the North Canadian River may provide nesting and feeding habitat, the tern would not utilize the proposed site.
development would not impact potential habitat along the North Canadian River; therefore, no impacts to the least tern are anticipated.

**Piping Plover**
The piping plover is a migratory species that winters along the Gulf Coast and nests around the Great Lakes and along the upper Atlantic Coast. It primarily inhabits sandy beaches and lakeshores and migrates along the major river systems. The piping plover mainly migrates through Oklahoma; however, they may occasionally nest along major rivers within the state. Use of the North Canadian River by the piping plover may be possible; however, the lack of suitable habitat on-site, coupled with the amount of industrial activity within the general vicinity, would likely preclude the plover from utilizing the Mycek Expansion site.

**Red Knot**
The red knot is a migratory shore bird that breeds in the Arctic regions of Canada and winters along the coast of the US and South America. Although the red knot relies mostly on shoreline habitats, stopover areas along the migration route can provide important feeding grounds for refueling. There are no known migration staging areas near the proposed site. The lack of wetland habitats on the proposed site would make migration stopover by the red knot highly unlikely.

**Whooping Crane**
The whooping crane is migratory and passes through Oklahoma on its migration route between the Texas coast and southern Canada. It may occasionally stop at points along the way that provide temporary feeding or resting habitat, such as large wetlands, playa lakes, or agricultural fields. Although the site does contain agricultural fields, industrial activity in the area would likely preclude the whooping crane from utilizing the site.

**Texas Horned Lizard**
The Texas horned lizard utilizes open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees. The Texas horned lizard burrows into soil, enters rodent burrows, or hides under rocks when inactive. Since the proposed site is primarily used for agriculture and is frequently being tilled or plowed, the Texas horned lizard is not likely to occur.

**Bald Eagle**
The bald eagle was de-listed from the federal T/E species list; however, bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Bald eagles are typically associated with aquatic habitats (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the Mycek Expansion site would not likely have an adverse effect on this species.
Barn Owl
Barn owls typically require large areas of pasture, grasslands, or wet meadows for feeding on small mammals. They utilize hollows or cavities in trees for nesting, but as their name suggests, often utilize man-made structures (like barns) for nesting. Although the majority of the site is row crops, the amount of urbanization and industrial activities near the site likely preclude its use by the barn owl. However, barn owls could be present at the site.

Black-Capped Vireo
The black-capped vireo requires low-growing (typically less than 8 feet in height), dense shrub habitat. Although the vegetative species composition can vary, some deciduous broad-leaved species are necessary. The site does not contain any low-growing dense shrub habitat typically utilized by the black capped vireo. The black-capped vireo would not occupy the proposed site.

Woodchuck
The woodchuck typically utilizes edge habitats, areas where woodlands meet open fields. Woodchuck build burrows that they use for protection, hibernation, and rearing young. They primarily feed on herbaceous vegetation but can consume tree bark occasionally. Despite the presence of the woodland vegetation along the boundaries and edge habitat, this vegetative type is not extensive enough to adequately support the woodchuck. It is unlikely that the woodchuck would occupy the proposed site.

SUMMARY
Based on this assessment, it is Goshawk’s opinion that the Mycek Expansion site does not provide habitat for, and would not likely be occupied by, any federally listed threatened and endangered species. While it is possible that the migratory bird species would utilize the site during migration, use would be transitory in nature and of short duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

Sincerely,

Natasia Mitchell
Environmental Specialist
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Oklahoma County, Oklahoma

Local office

Oklahoma Ecological Services Field Office

(918) 581-7458
(918) 581-7467
9014 East 21st Street
Tulsa, OK 74129-1428
http://www.fws.gov/southwest/es/Oklahoma/
Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

...and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:
Birds

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Tern Sterna antillarum</td>
<td>Endangered</td>
</tr>
<tr>
<td>Piping Plover Charadrius melodus</td>
<td>Threatened</td>
</tr>
<tr>
<td>Red Knot Calidris canutus rufa</td>
<td>Threatened</td>
</tr>
<tr>
<td>Whooping Crane Grus americana</td>
<td>Endangered</td>
</tr>
</tbody>
</table>

Fishes

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas River Shiner Notropis girardi</td>
<td>Threatened</td>
</tr>
</tbody>
</table>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².
Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the E-bird data mapping tool (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the E-bird Explore Data Tool (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.
<table>
<thead>
<tr>
<th>NAME</th>
<th>BREEDING SEASON</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Golden-plover Pluvialis dominica</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td>Bald Eagle Haliaeetus leucocephalus</td>
<td>Breeds Sep 1 to Jul 31</td>
</tr>
<tr>
<td>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</td>
<td></td>
</tr>
<tr>
<td><a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></td>
<td></td>
</tr>
<tr>
<td>Buff-breasted Sandpiper Calidris subruficollis</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td><a href="https://ecos.fws.gov/ecp/species/9498">https://ecos.fws.gov/ecp/species/9498</a></td>
<td></td>
</tr>
<tr>
<td>Chestnut-collared Longspur Calcarius ornatus</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td>Harris's Sparrow Zonotrichia querula</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td>Hudsonian Godwit Limosa haemastica</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td>Lesser Yellowlegs Tringa flavipes</td>
<td>Breeds elsewhere</td>
</tr>
<tr>
<td>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</td>
<td></td>
</tr>
<tr>
<td><a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a></td>
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</tbody>
</table>
Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that
may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.
Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

**Facilities**

**National Wildlife Refuge lands**

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

**Fish hatcheries**

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

**Wetlands in the National Wetlands Inventory**

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:
The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the NWI map for a full list.

FRESHWATER EMERGENT WETLAND
- PEM1Ch
- PEM1Hh
- PEM1A
- PEM1Cx
- PEM1Ah
- PEM1Fh
- PEM1Ax
- PEM1C
- PEM1Fx
- PEMFh
- PEM1/UBFh
- PEM1F

FRESHWATER FORESTED/SHRUB WETLAND
- PFO1A
- PFO1C
- PFO1Ah
- PFO/SS1A
- PFO/EM1A
- PSS/EM1A
- PSS1C
- PSS1Ch
- PFO1Ch
- PSS2/EM1A
- PSS1A
- PSS1Ah
- PSS1Cx
- PFO1Ax
- PFO/SS1C
- PSS/EM1C

FRESHWATER POND
- PUBHh
- PUBHx
- PUBFh
- PUBFx
- PUBH
- PUBF

LAKE
- L1UBHh
- L2UBFh
A full description for each wetland code can be found at the National Wetlands Inventory website: https://ecos.fws.gov/imap/wetlands/decoder

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.
Dear Ms. Mitchell,  

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:  

Sec. 9-T11N-R4W, Oklahoma County  

We found no occurrences of relevant species within the vicinity of the project location as described. However, absence from our database does not preclude such species from occurring in the area.  

If you have any questions about this response, please send me an email, or call us at the number given below.  

Although not specific to your project, you may find the following links helpful.  

ONHI guide to ranking codes for endangered and threatened species:  
http://vmpincel.ou.edu/heritage/ranking_guide.html  

Information regarding the Oklahoma Natural Areas Registry:  
http://www.oknaturalheritage.ou.edu/registry_faq.htm

Todd Fagin  
Oklahoma Natural Heritage Inventory  
(405) 325-4700  
tfagin@ou.edu
5 November 2018

Mr. Jonathan Queen
Weaver Consultants Group
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

Re: Threatened and Endangered Species Review
Oklahoma Landfill – CP Realty Site
Oklahoma County, Oklahoma

Dear Mr. Queen:

This letter provides the results of a Threatened and Endangered (T/E) Species Habitat Assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Oklahoma Landfill, CP Realty Expansion Site in Oklahoma City, Oklahoma County, Oklahoma. The assessment included a literature review and field investigation.

Site Description
The proposed CP Realty Expansion site is situated in southwest Oklahoma City, Oklahoma, within Section 9 of Township 11N, Range 4W, 1.2 miles south of Interstate 40 and 3.3 miles west of Highway 62. The proposed site is approximately 2,627 feet long (north/south) and 360 feet wide (east/west), totaling approximately 22.22 acres. Southwest 29th Street forms the site's southern boundary. Primary land use on the site is industrial truck/storage yard. Agriculture and industrial development are the primary land uses in the general vicinity of the proposed site. The site is within the North Canadian River watershed which is located approximately 2000 feet to the north.

Literature Review
Literature and agency file searches were conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the CP Realty Expansion site. The review included the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) threatened and endangered species list, along with the Oklahoma Natural Heritage Inventory (ONHI) database county listing.

An internet search of IPAC was conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the proposed site. The species listed for Oklahoma County (list attached) include the least tern (Sterna antillarum), piping plover (Charadrius melodus), red knot (Calidris canutus), and whooping crane (Grus americana). No critical habitat is indicated for any of the potential species for the site.

The ONHI website identifies the federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species with potential to occur in Oklahoma County. Those species are the Texas horned lizard (Phrynosoma cornutum), bald eagle (Haliaeetus leucocephalus), least tern (Sterna antillarum), barn owl (Tyto alba), black-capped vireo (Vireo atricapillus), and woodchuck.
The ONHI database includes documented occurrences of federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species. A request to the ONHI returned “no occurrences of relevant species” within the CP Realty Expansion site or the immediate vicinity (letter dated 9 March 2018 attached).

Field Investigation
Goshawk conducted a field investigation on 29 October 2018. The site was traversed on-foot to assess the potential for threatened or endangered species habitat. The site can generally be described as relatively flat land that has been cleared and utilized as a truck storage yard; however, a few associated office buildings and a large garage/warehouse occurs along the western boundary. The majority of the site has been cleared of vegetation, and topped with a variety of gravel, sand, and caliche. Boundary fence lines along exhibit narrow bands of woodland and shrubland vegetation. Additionally, the northeastern quadrant of the site is being reclaimed by various successional grasses. A slight depression possessing relatively dense grass vegetation was centrally located near the eastern site boundary. A few Mature trees were located largely off-site and down-gradient of the on-site depressional area.

Limited vegetation within the site consisted of Johnsongrass (Sorghum halepense), Sunflower (Helianthus maximilian), Eastern red cedar (Juniperus virginiana), sugar hackberry (Celtis laevigata) and American elm (Ulmus americana).

None of the listed threatened or endangered species were observed on the site during the field investigation. Additionally, none of the on-site vegetation types exhibit the necessary characteristics to be occupied by any of the listed species.

Habitat Suitability Findings
The following is a brief description of each of the above-listed species’ preferred habitat and an evaluation of the habitat suitability of the site based on these preferences.

Least Tern
The least tern primarily feeds on fish within shallow water areas of rivers, streams, and lakes. This species nests on bare or sparsely vegetated beaches, sandbars, and islands composed of sand, shell, and/or gravel, usually within major rivers and reservoirs. Although the North Canadian River may provide nesting and feeding habitat, the tern would not utilize the proposed site. Site development would not impact potential habitat along the North Canadian River; therefore, no impacts to the least tern are anticipated.

Piping Plover
The piping plover is a migratory species that winters along the Gulf Coast and nests around the Great Lakes and along the upper Atlantic Coast. It primarily inhabits sandy beaches and lakeshores and migrates along the major river systems. The piping plover mainly migrates through Oklahoma; however, they may occasionally nest along major rivers within the state. Use of the North Canadian River by the piping plover may be possible; however, the lack of suitable habitat on-site, coupled
with the amount of industrial activity within the general vicinity, would likely preclude the plover from utilizing the CP Realty Expansion site.

Red Knot
The red knot is a migratory shore bird that breeds in the Artic regions of Canada and winters along the coast of the US and South America. Although the red knot relies mostly on shoreline habitats, stopover areas along the migration route can provide important feeding grounds for refueling. There are no known migration staging areas near the proposed site. The lack of wetland habitats on the proposed site would make migration stopover by the red knot highly unlikely.

Whooping Crane
The whooping crane is migratory and passes through Oklahoma on its migration route between the Texas coast and southern Canada. It may occasionally stop at points along the way that provide temporary feeding or resting habitat, such as large wetlands, playa lakes, or agricultural fields. Although the site does contain agricultural fields, industrial activity in the area would likely preclude the whooping crane from utilizing the site.

Texas Horned Lizard
The Texas horned lizard utilizes open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees. The Texas horned lizard burrows into soil, enters rodent burrows, or hides under rocks when inactive. Since the proposed site is primarily used as a truck yard and industrial area, the Texas horned lizard is not likely to occur.

Bald Eagle
The bald eagle was de-listed from the federal T/E species list; however, bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Bald eagles are typically associated with aquatic habitats (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the CP Realty Expansion site would not likely have an adverse effect on this species.

Barn Owl
Barn owls typically require large areas of pasture, grasslands, or wet meadows for feeding on small mammals. They utilize hollows or cavities in trees for nesting, but as their name suggests, often utilize man-made structures (like barns) for nesting. Since the proposed site is primarily used as a truck yard and industrial area, the site likely precludes its use by the barn owl.

Black-Capped Vireo
The black-capped vireo requires low-growing (typically less than 8 feet in height), dense shrub habitat. Although the vegetative species composition can vary, some deciduous broad-leaved species are necessary. The site does not contain any low-growing dense shrub habitat typically utilized by the black capped vireo. The black-capped vireo would not occupy the proposed site.
Woodchuck
The woodchuck typically utilizes edge habitats, areas where woodlands meet open fields. Woodchuck build burrows that they use for protection, hibernation, and rearing young. They primarily feed on herbaceous vegetation but can consume tree bark occasionally. Despite the presence of the woodland vegetation along the boundaries and edge habitat, this vegetative type is not extensive enough to adequately support the woodchuck. It is unlikely that the woodchuck would occupy the proposed site.

SUMMARY
Based on this assessment, it is Goshawk’s opinion that the CP Realty Expansion site does not provide habitat for, and would not likely be occupied by, any federally listed threatened and endangered species. While it is possible that the migratory bird species would utilize the site during migration, use would be transitory in nature and of short duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

Sincerely,

Bear Aspra
Project Manager/Ecologist
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Oklahoma County, Oklahoma

Local office

Oklahoma Ecological Services Field Office

(918) 581-7458
(918) 581-7467

9014 East 21st Street
Tulsa, OK 74129-1428

http://www.fws.gov/southwest/es/Oklahoma/
Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

**Birds**

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
</table>

https://ecos.fws.gov/ipac/location/F2EU5J3A52DUDI7P2HV4IFNZWU/resources
Least Tern  *Sterna antillarum*
This species only needs to be considered if any of the following conditions apply:
- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meteorological)

No critical habitat has been designated for this species.
[https://ecos.fws.gov/ecp/species/8505](https://ecos.fws.gov/ecp/species/8505)

Piping Plover  *Charadrius melodus*
There is final critical habitat for this species. Your location is outside the critical habitat.
[https://ecos.fws.gov/ecp/species/6039](https://ecos.fws.gov/ecp/species/6039)

Red Knot  *Calidris canutus rufa*
No critical habitat has been designated for this species.
[https://ecos.fws.gov/ecp/species/1864](https://ecos.fws.gov/ecp/species/1864)

Whooping Crane  *Grus americana*
There is final critical habitat for this species. Your location is outside the critical habitat.
[https://ecos.fws.gov/ecp/species/758](https://ecos.fws.gov/ecp/species/758)

Critical habitats
Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

**THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.**

Migratory birds
Certain birds are protected under the Migratory Bird Treaty Act\(^1\) and the Bald and Golden Eagle Protection Act\(^2\).

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

2. The *Bald and Golden Eagle Protection Act* of 1940.

Additional information can be found using the following links:
Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.
What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
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Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the NanoTag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.
Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

- FRESHWATER EMERGENT WETLAND
  - PEM1Ch

- FRESHWATER POND
  - PUSCh

- RIVERINE
  - R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website.

Data limitations

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Data exclusions

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Information regarding the Oklahoma Natural Areas Registry:
http://www.oknaturalheritage.ou.edu/registry_faq.htm

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu
Dear Mr. Fagin:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to obtain endangered or threatened wildlife species information and demonstrate compatibility with Oklahoma Department of Environmental Quality (ODEQ) landfill location restriction regulation Oklahoma Administrative Code (OAC) §252:515-5-31(c). This regulation requires that a permit applicant for an expansion of a municipal solid waste landfill facility obtain a current information statement from the Oklahoma Biological Survey (OBS).

The ODEQ landfill location restriction regulation set forth in §252:515-5-31(c), requires that a permit applicant for an expansion of a municipal solid waste facility obtain a statement from the OBS regarding current information about endangered or threatened wildlife or plant species listed in state and federal laws that exist within one mile of the landfill permit boundary or expansion area. Weaver Consultants Group, LLC is preparing a landfill expansion modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing Oklahoma Landfill located in the City of Oklahoma City, Oklahoma.

The proposed expansion area was assessed by Goshawk Environmental Consulting, Inc. (Goshawk), an environmental services firm with experience in threatened and endangered species habitat assessment. Goshawk conducted an on-site field reconnaissance for endangered or threatened wildlife and plant species habitats. Goshawk’s report concluded that the site does not provide habitat for and would not likely be occupied by any federal or state listed threatened and endangered species.

To assist you in your statement regarding threatened or endangered wildlife within one mile of the referenced project, please find attached a project summary, site location drawings, and the Goshawk report.

To verify compliance with §252:515-5-31(c), we will need to include a statement from the OBS within the permit application.
Todd Fagin

September 7, 2021

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps
Threatened and Endangered Species Review

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail's route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

Oklahoma Department of Environmental Quality (ODEQ)

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
LEGEND

- - - - EXISTING PERMIT BOUNDARY
- - - - PROPOSED PERMIT BOUNDARY
- - - - PERMITTED LIMIT OF WASTE
- - - - - PROPOSED LIMIT OF WASTE

NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTE:
1. The existing contours and elevations provided by Firmatek from aerial photography flown on 03-13-2021.
26 March 2018

Mr. Jonathan Queen
Weaver Consultants Group
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

Re: Threatened and Endangered Species Review
Oklahoma Landfill – Mycek Site
Oklahoma County, Oklahoma

Dear Mr. Queen:

This letter provides the results of a Threatened and Endangered (T/E) Species Habitat Assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Oklahoma Landfill, Mycek Expansion Site in Oklahoma City, Oklahoma County, Oklahoma. The assessment included a literature review and field investigation.

Site Description
The proposed Mycek Expansion site is situated in southwest Oklahoma City, Oklahoma, within Section 9 of Township 11N, Range 4W, 1.2 miles south of Interstate 40 and 3.3 miles west of Highway 62. The proposed site is approximately 2,627 feet long (north/south) and 630 feet wide (east/west), totaling approximately 40 acres. Southwest 29th Street forms the site’s southern boundary. Primary land use on the site is row crop agriculture. Agriculture and industrial development are the primary land uses in the general vicinity of the proposed site. The site is within the North Canadian River watershed which is located approximately 2000 feet to the north.

Literature Review
Literature and agency file searches were conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the Mycek Expansion site. The review included the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) threatened and endangered species list, along with the Oklahoma Natural Heritage Inventory (ONHI) database county listing.

An internet search of IPAC was conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the proposed site. The species listed for Oklahoma County (list attached) include the Arkansas River shiner (Notropis girardi), least tern (Sterna antillarum), piping plover (Charadrius melodus), red knot (Calidris canutus), and whooping crane (Grus americana). No critical habitat is indicated for any of the potential species for the site.

The ONHI website identifies the federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species with potential to occur in Oklahoma County. Those species are the Texas horned lizard (Phrynosoma cornutum), bald eagle (Haliaeetus leucocephalus), least tern (Sterna antillarum), barn owl (Tyto alba), black-capped vireo (Vireo atricapillus), and woodchuck.
(Marmota monax). The ONHI database includes documented occurrences of federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species. A request to the ONHI returned “no occurrences of relevant species” within the Mycek Expansion site or the immediate vicinity (letter dated 9 March 2018 attached).

Field Investigation
Goshawk conducted a field investigation on 6 March 2018. The site was traversed on-foot to assess the potential for threatened or endangered species habitat. The site can generally be described as relatively flat land that had been terraced for row crop production; however, a residence and associated outbuildings occurs along the southern boundary. The majority of the site had been recently tilled and planted. Unidentified seedlings were evident in rows across the site. Boundary fence lines along with historic cross fence line exhibit narrow bands of woodland vegetation. Additionally, a small area in the northwest corner contains native woodlands. A slight depression that was mostly devoid of vegetation, save for a few young trees is located within the native woodland area.

Vegetation within the woodlands consisted of American elm (Ulmus americana), pecan (Carya illinoinsensis), Eastern red cedar (Juniperus virginiana), soapberry (Sapindus sp.), greenbrier (Smilax rotundifolia), cottonwood (Aigeiros sp.), black willow (Salix nigra), sugar hackberry (Celtis laevigata), and Johnson grass (Sorghum halepense). Understory within the woodlands is moderate with little ground cover except along the edges.

None of the listed threatened or endangered species were observed on the site during the field investigation. Additionally, none of the on-site vegetation types exhibit the necessary characteristics to be occupied by any of the listed species.

Habitat Suitability Findings
The following is a brief description of each of the above-listed species’ preferred habitat and an evaluation of the habitat suitability of the site based on these preferences.

Arkansas River Shiner
The Arkansas River shiner historically occurred in wide, sandy-bottomed streams of the Arkansas River drainage. Its current range is believed to be restricted to portions of the Canadian, North Canadian, South Canadian, Cimarron, and Beaver rivers. The shiner feeds primarily on aquatic invertebrates and typically breeds between May and July during higher flows. Although the North Canadian River is in close proximity to the proposed site, the site will be designed and managed according to current state regulations, which will prevent any contamination of surface water in the North Canadian River. No impacts to the Arkansas River shiner are anticipated.

Least Tern
The least tern primarily feeds on fish within shallow water areas of rivers, streams, and lakes. This species nests on bare or sparsely vegetated beaches, sandbars, and islands composed of sand, shell, and/or gravel, usually within major rivers and reservoirs. Although the North Canadian River may provide nesting and feeding habitat, the tern would not utilize the proposed site.
development would not impact potential habitat along the North Canadian River; therefore, no impacts to the least tern are anticipated.

**Piping Plover**
The piping plover is a migratory species that winters along the Gulf Coast and nests around the Great Lakes and along the upper Atlantic Coast. It primarily inhabits sandy beaches and lakeshores and migrates along the major river systems. The piping plover mainly migrates through Oklahoma; however, they may occasionally nest along major rivers within the state. Use of the North Canadian River by the piping plover may be possible; however, the lack of suitable habitat on-site, coupled with the amount of industrial activity within the general vicinity, would likely preclude the plover from utilizing the Mycek Expansion site.

**Red Knot**
The red knot is a migratory shore bird that breeds in the Artic regions of Canada and winters along the coast of the US and South America. Although the red knot relies mostly on shoreline habitats, stopover areas along the migration route can provide important feeding grounds for refueling. There are no known migration staging areas near the proposed site. The lack of wetland habitats on the proposed site would make migration stopover by the red knot highly unlikely.

**Whooping Crane**
The whooping crane is migratory and passes through Oklahoma on its migration route between the Texas coast and southern Canada. It may occasionally stop at points along the way that provide temporary feeding or resting habitat, such as large wetlands, playa lakes, or agricultural fields. Although the site does contain agricultural fields, industrial activity in the area would likely preclude the whooping crane from utilizing the site.

**Texas Horned Lizard**
The Texas horned lizard utilizes open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees. The Texas horned lizard burrows into soil, enters rodent burrows, or hides under rocks when inactive. Since the proposed site is primarily used for agriculture and is frequently being tilled or plowed, the Texas horned lizard is not likely to occur.

**Bald Eagle**
The bald eagle was de-listed from the federal T/E species list; however, bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Bald eagles are typically associated with aquatic habitats (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the Mycek Expansion site would not likely have an adverse effect on this species.
Barn Owl
Barn owls typically require large areas of pasture, grasslands, or wet meadows for feeding on small mammals. They utilize hollows or cavities in trees for nesting, but as their name suggests, often utilize man-made structures (like barns) for nesting. Although the majority of the site is row crops, the amount of urbanization and industrial activities near the site likely preclude its use by the barn owl. However, barn owls could be present at the site.

Black-Capped Vireo
The black-capped vireo requires low-growing (typically less than 8 feet in height), dense shrub habitat. Although the vegetative species composition can vary, some deciduous broad-leaved species are necessary. The site does not contain any low-growing dense shrub habitat typically utilized by the black capped vireo. The black-capped vireo would not occupy the proposed site.

Woodchuck
The woodchuck typically utilizes edge habitats, areas where woodlands meet open fields. Woodchuck build burrows that they use for protection, hibernation, and rearing young. They primarily feed on herbaceous vegetation but can consume tree bark occasionally. Despite the presence of the woodland vegetation along the boundaries and edge habitat, this vegetative type is not extensive enough to adequately support the woodchuck. It is unlikely that the woodchuck would occupy the proposed site.

SUMMARY
Based on this assessment, it is Goshawk’s opinion that the Mycek Expansion site does not provide habitat for, and would not likely be occupied by, any federally listed threatened and endangered species. While it is possible that the migratory bird species would utilize the site during migration, use would be transitory in nature and of short duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

Sincerely,

Natasia Mitchell
Environmental Specialist
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Oklahoma County, Oklahoma

![Map of Oklahoma County, Oklahoma]

Local office

Oklahoma Ecological Services Field Office

- (918) 581-7458
- (918) 581-7467

9014 East 21st Street
Tulsa, OK 74129-1428

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present ifl the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:
1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

1 and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries). Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:
### Birds

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Least Tern Sterna antillarum</td>
<td>Endangered</td>
</tr>
<tr>
<td>Piping Plover Charadrius melodus</td>
<td>Threatened</td>
</tr>
<tr>
<td>Red Knot Calidris canutus rufa</td>
<td>Threatened</td>
</tr>
<tr>
<td>Whooping Crane Grus americana</td>
<td>Endangered</td>
</tr>
</tbody>
</table>

This species only needs to be considered if any of the following conditions apply:
- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meteorological)

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/8505

### Fishes

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas River Shiner Notropis girardi</td>
<td>Threatened</td>
</tr>
</tbody>
</table>

There is no critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/4364

### Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

### Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act\(^1\) and the Bald and Golden Eagle Protection Act\(^2\).
Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The **Migratory Birds Treaty Act** of 1918.
2. The **Bald and Golden Eagle Protection Act** of 1940.

Additional information can be found using the following links:

- Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS **Birds of Conservation Concern** (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the **E-bird data mapping tool** (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the **E-bird Explore Data Tool** (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the **PROBABILITY OF PRESENCE SUMMARY** at the top of your list to see when these birds are most likely to be present and breeding in your project area.
American Golden-plover *Pluvialis dominica*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bald Eagle *Haliaeetus leucocephalus*
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
[https://ecos.fws.gov/ecp/species/1626](https://ecos.fws.gov/ecp/species/1626)

Buff-breasted Sandpiper *Calidris subruficollis*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
[https://ecos.fws.gov/ecp/species/9488](https://ecos.fws.gov/ecp/species/9488)

Chestnut-collared Longspur *Calcarius ornatus*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Harris’s Sparrow *Zonotrichia querula*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Hudsonian Godwit *Limosa haemastica*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Lesser Yellowlegs *Tringa flavipes*
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
[https://ecos.fws.gov/ecp/species/9679](https://ecos.fws.gov/ecp/species/9679)

**Breeding Season (If A Breeding Season is Indicated For A Bird On Your List, The Bird May Breed In Your Project Areas Sometime Within The Timeframe Specified, Which Is A Very Liberal Estimate Of The Dates Inside Which The Bird Breeds Across Its Entire Range. "Breeds Elsewhere" Indicates That The Bird Does Not Likely Breed In Your Project Area.)**

- American Golden-plover: Breeds elsewhere
- Bald Eagle: Breeds Sep 1 to Jul 31
- Buff-breasted Sandpiper: Breeds elsewhere
- Chestnut-collared Longspur: Breeds elsewhere
- Harris’s Sparrow: Breeds elsewhere
- Hudsonian Godwit: Breeds elsewhere
- Lesser Yellowlegs: Breeds elsewhere
Long-billed Curlew  
*Numenius americanus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/5511

Breedes Apr 1 to Jul 31

Marbled Godwit  
*Limosa fedoa*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/9481

Breeds elsewhere

McCown's Longspur  
*Calcarius mccownii*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/9292

Breeds elsewhere

Red-headed Woodpecker  
*Melanerpes erythrocephalus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds May 10 to Sep 10

Semipalmated Sandpiper  
*Calidris pusilla*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds elsewhere

Smith's Longspur  
*Calcarius pictus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA.

Breeds elsewhere

Whimbrel  
*Numenius phaeopus*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/9483

Breeds elsewhere

Willet  
*Tringa semipalmata*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Breeds Apr 20 to Aug 5

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

*Nationwide Conservation Measures* describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS *Birds of Conservation Concern (BCC)* and other species that
may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review.
Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the BGEPA should such impacts occur.

Facilities

National Wildlife Refuge lands
Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory
Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:
The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the NWI map for a full list.

FRESHWATER EMERGENT WETLAND
PEM1Ch
PEM1Hh
PEM1A
PEM1Cx
PEM1Ah
PEM1Fh
PEM1Ax
PEM1C
PEM1Fx
PEMFh
PEM1/UBFh
PEM1F

FRESHWATER FORESTED/SHRUB WETLAND
PFO1A
PFO1C
PFO1Ah
PFO/SS1A
PFO/EM1A
PSS/EM1A
PSS1C
PSS1Ch
PFO1Ch
PSS2/EM1A
PSS1A
PSS1Ah
PSS1Cx
PFO1Ax
PFO/SS1C
PSS/EM1C

FRESHWATER POND
PUBHh
PUBHx
PUBFh
PUBFx
PUBH
PUBF

LAKE
L1UBHh
L2UBFh
A full description for each wetland code can be found at the National Wetlands Inventory website:
https://ecos.fws.gov/ipac/wetlands/decoder

Data limitations

The Service’s objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberfid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.
OBS Ref. 2018-145-BUS-GOS

Dear Ms. Mitchell, Mar. 9, 2018

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 9-T11N-R4W, Oklahoma County

We found no occurrences of relevant species within the vicinity of the project location as described. However, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI guide to ranking codes for endangered and threatened species: http://vmpincel.ou.edu/heritage/ranking_guide.html

Information regarding the Oklahoma Natural Areas Registry: http://www.oknaturalheritage.ou.edu/registry_faq.htm

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu
5 November 2018

Mr. Jonathan Queen
Weaver Consultants Group
6420 Southwest Blvd., Suite 206
Fort Worth, TX 76109

Re: Threatened and Endangered Species Review
Oklahoma Landfill – CP Realty Site
Oklahoma County, Oklahoma

Dear Mr. Queen:

This letter provides the results of a Threatened and Endangered (T/E) Species Habitat Assessment conducted by Goshawk Environmental Consulting, Inc. (Goshawk) on the Oklahoma Landfill, CP Realty Expansion Site in Oklahoma City, Oklahoma County, Oklahoma. The assessment included a literature review and field investigation.

Site Description
The proposed CP Realty Expansion site is situated in southwest Oklahoma City, Oklahoma, within Section 9 of Township 11N, Range 4W, 1.2 miles south of Interstate 40 and 3.3 miles west of Highway 62. The proposed site is approximately 2,627 feet long (north/south) and 360 feet wide (east/west), totaling approximately 22.22 acres. Southwest 29th Street forms the site’s southern boundary. Primary land use on the site is industrial truck/storage yard. Agriculture and industrial development are the primary land uses in the general vicinity of the proposed site. The site is within the North Canadian River watershed which is located approximately 2000 feet to the north.

Literature Review
Literature and agency file searches were conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the CP Realty Expansion site. The review included the US Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) threatened and endangered species list, along with the Oklahoma Natural Heritage Inventory (ONHI) database county listing.

An internet search of IPAC was conducted to identify the potential occurrence of any federally listed T/E species or potential habitat on the proposed site. The species listed for Oklahoma County (list attached) include the least tern (Sterna antillarum), piping plover (Charadrius melodus), red knot (Calidris canutus), and whooping crane (Grus americana). No critical habitat is indicated for any of the potential species for the site.

The ONHI website identifies the federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species with potential to occur in Oklahoma County. Those species are the Texas horned lizard (Phrynosoma cornutum), bald eagle (Haliaeetus leucocephalus), least tern (Sterna antillarum), barn owl (Tyto alba), black-capped vireo (Vireo atricapillus), and woodchuck...
(Marmota monax). The ONHI database includes documented occurrences of federal and state endangered, threatened, and candidate species, as well as non-regulatory rare species. A request to the ONHI returned “no occurrences of relevant species” within the CP Realty Expansion site or the immediate vicinity (letter dated 9 March 2018 attached).

Field Investigation
Goshawk conducted a field investigation on 29 October 2018. The site was traversed on-foot to assess the potential for threatened or endangered species habitat. The site can generally be described as relatively flat land that has been cleared and utilized as a truck storage yard; however, a few associated office buildings and a large garage/warehouse occurs along the western boundary. The majority of the site has been cleared of vegetation, and topped with a variety of gravel, sand, and caliche. Boundary fence lines along exhibit narrow bands of woodland and shrubland vegetation. Additionally, the northeastern quadrant of the site is being reclaimed by various successional grasses. A slight depression possessing relatively dense grass vegetation was centrally located near the eastern site boundary. A few Mature trees were located largely off-site and down-gradient of the on-site depressional area.

Limited vegetation within the site consisted of Johnsongrass (Sorghum halepense), Sunflower (Helianthus maximilian), Eastern red cedar (Juniperus virginiana), sugar hackberry (Celtis laevigata) and American elm (Ulmus americana).

None of the listed threatened or endangered species were observed on the site during the field investigation. Additionally, none of the on-site vegetation types exhibit the necessary characteristics to be occupied by any of the listed species.

Habitat Suitability Findings
The following is a brief description of each of the above-listed species’ preferred habitat and an evaluation of the habitat suitability of the site based on these preferences.

Least Tern
The least tern primarily feeds on fish within shallow water areas of rivers, streams, and lakes. This species nests on bare or sparsely vegetated beaches, sandbars, and islands composed of sand, shell, and/or gravel, usually within major rivers and reservoirs. Although the North Canadian River may provide nesting and feeding habitat, the tern would not utilize the proposed site. Site development would not impact potential habitat along the North Canadian River; therefore, no impacts to the least tern are anticipated.

Piping Plover
The piping plover is a migratory species that winters along the Gulf Coast and nests around the Great Lakes and along the upper Atlantic Coast. It primarily inhabits sandy beaches and lakeshores and migrates along the major river systems. The piping plover mainly migrates through Oklahoma; however, they may occasionally nest along major rivers within the state. Use of the North Canadian River by the piping plover may be possible; however, the lack of suitable habitat on-site, coupled
with the amount of industrial activity within the general vicinity, would likely preclude the plover from utilizing the CP Realty Expansion site.

Red Knot
The red knot is a migratory shore bird that breeds in the Artic regions of Canada and winters along the coast of the US and South America. Although the red knot relies mostly on shoreline habitats, stopover areas along the migration route can provide important feeding grounds for refueling. There are no known migration staging areas near the proposed site. The lack of wetland habitats on the proposed site would make migration stopover by the red knot highly unlikely.

Whooping Crane
The whooping crane is migratory and passes through Oklahoma on its migration route between the Texas coast and southern Canada. It may occasionally stop at points along the way that provide temporary feeding or resting habitat, such as large wetlands, playa lakes, or agricultural fields. Although the site does contain agricultural fields, industrial activity in the area would likely preclude the whooping crane from utilizing the site.

Texas Horned Lizard
The Texas horned lizard utilizes open, arid, and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush, or scrubby trees. The Texas horned lizard burrows into soil, enters rodent burrows, or hides under rocks when inactive. Since the proposed site is primarily used as a truck yard and industrial area, the Texas horned lizard is not likely to occur.

Bald Eagle
The bald eagle was de-listed from the federal T/E species list; however, bald eagles are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Bald eagles are typically associated with aquatic habitats (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They select large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of suitable roosts and the adjacent industrial activities. Therefore, development of the CP Realty Expansion site would not likely have an adverse effect on this species.

Barn Owl
Barn owls typically require large areas of pasture, grasslands, or wet meadows for feeding on small mammals. They utilize hollows or cavities in trees for nesting, but as their name suggests, often utilize man-made structures (like barns) for nesting. Since the proposed site is primarily used as a truck yard and industrial area, the site likely precludes its use by the barn owl.

Black-Capped Vireo
The black-capped vireo requires low-growing (typically less than 8 feet in height), dense shrub habitat. Although the vegetative species composition can vary, some deciduous broad-leaved species are necessary. The site does not contain any low-growing dense shrub habitat typically utilized by the black capped vireo. The black-capped vireo would not occupy the proposed site.
Woodchuck
The woodchuck typically utilizes edge habitats, areas where woodlands meet open fields. Woodchuck build burrows that they use for protection, hibernation, and rearing young. They primarily feed on herbaceous vegetation but can consume tree bark occasionally. Despite the presence of the woodland vegetation along the boundaries and edge habitat, this vegetative type is not extensive enough to adequately support the woodchuck. It is unlikely that the woodchuck would occupy the proposed site.

SUMMARY
Based on this assessment, it is Goshawk's opinion that the CP Realty Expansion site does not provide habitat for, and would not likely be occupied by, any federally listed threatened and endangered species. While it is possible that the migratory bird species would utilize the site during migration, use would be transitory in nature and of short duration. Lack of suitable habitat makes the occurrence of the migratory species highly unlikely.

Sincerely,

Bear Aspra
Project Manager/Ecologist
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as trust resources) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Oklahoma County, Oklahoma

Local office

Oklahoma Ecological Services Field Office

(918) 581-7458
(918) 581-7467
9014 East 21st Street
Tulsa, OK 74129-1428

http://www.fws.gov/southwest/es/Oklahoma/
Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATUS</th>
</tr>
</thead>
</table>

https://ecos.fws.gov/ipac/location/F2EU5J3A5ZDUDI7PZH4IFNIZWU/resources
Least Tern  *Sterna antillarum*  
This species only needs to be considered if any of the following conditions apply:
- Wind Turbines and Wind Farms
- Towers (i.e. radio, television, cellular, microwave, meteorological)

No critical habitat has been designated for this species.
[https://ecos.fws.gov/ecp/species/8505](https://ecos.fws.gov/ecp/species/8505)

Piping Plover  *Charadrius melodus*  
There is final critical habitat for this species. Your location is outside the critical habitat.
[https://ecos.fws.gov/ecp/species/6039](https://ecos.fws.gov/ecp/species/6039)

Red Knot  *Calidris canutus rufa*  
No critical habitat has been designated for this species.
[https://ecos.fws.gov/ecp/species/1864](https://ecos.fws.gov/ecp/species/1864)

Whooping Crane  *Grus americana*  
There is final critical habitat for this species. Your location is outside the critical habitat.
[https://ecos.fws.gov/ecp/species/758](https://ecos.fws.gov/ecp/species/758)

**Critical habitats**

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

**THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.**

**Migratory birds**

Certain birds are protected under the Migratory Bird Treaty Act\(^1\) and the Bald and Golden Eagle Protection Act\(^2\).

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

2. The *Bald and Golden Eagle Protection Act* of 1940.

Additional information can be found using the following links:
Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.
What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

https://ecos.fws.gov/ipac/location/F2EU5J3A5ZDUDI7PZHV4IFNZWU/resources
Facilities
Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND
   PEM1Ch
FRESHWATER POND
   PUSCh
RIVERINE
   R4SBC

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

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Data exclusions
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Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.
We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 9-T11N-R4W, Oklahoma County

We found no occurrences of relevant species within the vicinity of the project location as described. However, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI guide to ranking codes for endangered and threatened species:
http://vmpincel.ou.edu/heritage/ranking_guide.html

Information regarding the Oklahoma Natural Areas Registry:
http://www.oknaturalheritage.ou.edu/registry_faq.htm

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu
APPENDIX D-3

SCENIC RIVERS
This appendix provides documentation for the required coordination with the Oklahoma Scenic Rivers Commission. This appendix includes:

- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma Scenic Rivers Commission review.
Mr. Edward H. Fite III, River Operations & Water Quality Leader
Grand River Dam Authority (GRDA) – Water Quality
15971 Hwy. 10
Tahlequah, Oklahoma 74464

Re: Scenic River Statement
Oklahoma Landfill Expansion
Oklahoma City, Oklahoma

Dear Mr. Fite:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm that the proposed expansion of the Oklahoma Landfill is not located within the drainage basin of a scenic river, as designated by the Oklahoma Scenic Rivers Act. The Oklahoma Department of Environmental Quality (ODEQ) landfill location restriction regulation set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(a), requires that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within a drainage basin of a designated scenic river.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill facility located in the City of Oklahoma City, Oklahoma. Please find attached a project summary and site location maps to assist in your review.

To verify compliance with §252:515-5-31(a), we are requesting that the GRDA confirm that the landfill is not located within a drainage basin of a scenic river, as designated by the Commission or other agency. A review of the GRDA web site indicates that no designated scenic rivers are located in the area of the Oklahoma Landfill. The proposed landfill expansion is located within the North Canadian River drainage basin. It is our understanding that the site is not located within a drainage basin of a designated scenic river.
Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
jqe11@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
Mr. Edward H. Fite III, River Operations & Water Quality Leader  
Grand River Dam Authority (GRDA) – Water Quality  
15971 Hwy. 10  
Tahlequah, Oklahoma 74464  

Re: Scenic River Statement  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma  

Dear Mr. Fite:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm that the proposed expansion of the Oklahoma Landfill is not located within the drainage basin of a scenic river, as designated by the Oklahoma Scenic Rivers Act. The Oklahoma Department of Environmental Quality (ODEQ) landfill location restriction regulation set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(a), requires that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within a drainage basin of a designated scenic river.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill facility located in the City of Oklahoma City, Oklahoma. Please find attached a project summary and site location maps to assist in your review.

To verify compliance with §252:515-5-31(a), we are requesting that the GRDA confirm that the landfill is not located within a drainage basin of a scenic river, as designated by the Commission or other agency. A review of the GRDA web site indicates that no designated scenic rivers are located in the area of the Oklahoma Landfill. The proposed landfill expansion is located within the North Canadian River drainage basin. It is our understanding that the site is not located within a drainage basin of a designated scenic river.
Mr. Edward H. Fite III  

September 7, 2021

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

**Weaver Consultants Group, LLC**

[Signature]

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail's route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

Oklahoma Department of Environmental Quality (ODEQ)

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.
APPENDIX D-4

RECREATION/PRESERVATION AREAS
CONTENTS

This appendix provides documentation for the required coordination with the Oklahoma Tourism and Recreation Department, Bureau of Reclamation, Oklahoma City Parks and Recreation Department, and Oklahoma Natural Areas Registry. This appendix includes:

- November 9, 2021 Oklahoma City Parks and Recreation Department and Oklahoma City Riverfront Redevelopment Authority Joint Resolution. This resolution is joint configuration by Oklahoma City Parks and Recreation and the Oklahoma City Riverfront Redevelopment Authority that the expansion will not adversely affect recreation or natural preservation acres within one mile of the site.


- October 18, 2021 Oklahoma Tourism and Recreation Department confirmation e-mail.

- October 19, 2021 Weaver Consultants Group, LLC email response addressing Oklahoma Tourism and Recreation Departments comments regarding Oklahoma City Parks and Recreation Facilities.

- September 15, 2021 Weaver Consultants Group, LLC request for Oklahoma City Parks and Recreation Department Review
  - Weaver Consultants Group, LLC was contacted by Mr. Brendan Boydston and asked to make some minor revisions to our September 7, 2021 letter to the Oklahoma City Parks and Recreation Department.

- September 8, 2021 Oklahoma Natural Areas Registry confirmation letter. As noted in the Threatened and Endangered Species Review included in the initial correspondence to the Oklahoma Department of Wildlife Conservation dated March and November 2018, bald eagles are typically associated with aquatic habits (coastal areas, large rivers, lakes, and reservoirs) with forested shorelines or cliffs. They selected large canopy roost trees that are open and easily accessible, constructing large nests that are returned to and utilized each year. Despite the close proximity of the North Canadian River to the proposed site, the bald eagle would not likely occupy this area, due to lack of sustainable roosts and the adjacent industrial activities. Therefor, development of the site would not likely have an adverse effect on this species.
- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma Tourism and Recreation Department review.
- September 7, 2021 Weaver Consultants Group, LLC request for Bureau of Reclamation review.
- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma City Parks and Recreation Department review.
- September 7, 2021 Weaver Consultants Group, LLC request for Oklahoma Natural Areas Registry review.
JOINT RESOLUTION

JOINT RESOLUTION OF THE OKLAHOMA CITY RIVERFRONT REDEVELOPMENT AUTHORITY AND THE CITY OF OKLAHOMA CITY DECLARING THAT OKLAHOMA CITY WASTE DISPOSAL, INC.'S PROPOSED EXPANSION OF THE OKLAHOMA LANDFILL, LOCATED AT 7600 SOUTHWEST 15TH STREET, IS NOT EXPECTED TO ADVERSELY AFFECT RECREATION OR NATURAL PRESERVATION AREAS WITHIN ONE-HALF MILE OF THE PROPOSED EXPANSION.

WHEREAS, the Oklahoma City Riverfront Redevelopment Authority (OCRRA) is a public trust of which The City of Oklahoma City (City) is sole beneficiary and whose primary responsibility is to plan, develop, and promote the City’s interests in and along the North Canadian/Oklahoma River Corridor; and

WHEREAS, pursuant to a Lease Agreement dated July 5, 2005, as amended on February 5, 2008; April 8, 2014; December 30, 2014; May 17, 2016; and August 4, 2020; the City has leased to OCRRA certain property in and along the North Canadian/Oklahoma River Corridor in furtherance of developing the property for the use and enjoyment of the public; and

WHEREAS, Oklahoma City Waste Disposal, Inc. (Waste Disposal) owns and operates the Oklahoma Landfill, located at 7600 Southwest 15th Street, in Sections Eight (8) and Nine (9) of Township Eleven (11) North, Range Four (4) West of the Indian Meridian in Oklahoma County, Oklahoma, within the corporate limits of the City; and

WHEREAS, the Oklahoma Landfill and its proposed expansion area are contiguous to City-owned property within the OCRRA leasehold estate; and

WHEREAS, the proposed expansion area is within one-half mile (1/2 mi.) of Larry McAtee Park, located at 6625 Southwest 15th Street; and within one-half mile (1/2 mi.) of part of the West River Trail that runs roughly from Council Road to MacArthur Boulevard; and

WHEREAS, the Oklahoma Landfill has been operating at this site for more than thirty (30) years; and

WHEREAS, the proposed expansion is needed to provide long-term disposal capacity for authorized solid waste generated in the Oklahoma City area; and

WHEREAS, the proposed expansion would add some sixty (60) acres on the southeast edge of the landfill; and

WHEREAS, about forty-nine (49) of those acres would be used for landfill space, and the other eleven (11) acres would serve as a buffer for adjacent property; and
WHEREAS, the expansion would be consistent with the requirements of Planned Unit Development 1759 (PUD-1759), which was approved by the City Council on May 26, 2020 (Item No. IX.A.8.); and

WHEREAS, PUD-1759 includes a long-term plan to convert the site to parkland when it reaches the end of its useful life as a landfill; and

WHEREAS, staff do not believe that the proposed expansion, which is in a direction away from the park assets, will negatively impact either Larry McAtee Park or the West River Trail; and

WHEREAS, on October 20, 2021, the Oklahoma City Park Commission was expected to make a recommendation on this matter; and

WHEREAS, Section 252 of the Oklahoma Administrative Code requires a statement from OCRRA and the City (as the appropriate management agencies of Larry McAtee Park and the West River Trail) that the proposed expansion is not expected to negatively impact the park and/or trail property in question; and

WHEREAS, OCRRA and the City desire to declare that Waste Disposal's proposed expansion of the Oklahoma Landfill is not expected to adversely affect recreation or natural preservation areas of the City and/or OCRRA leasehold estate within one-half mile of the proposed expansion.

NOW, THEREFORE, BE IT JOINTLY RESOLVED by the Oklahoma City Riverfront Redevelopment Authority and The City of Oklahoma City to declare that Oklahoma City Waste Disposal, Inc.'s proposed expansion of the Oklahoma Landfill, located at 7600 Southwest 15th Street, is not expected to adversely affect recreation or natural preservation areas of the City and/or OCRRA leasehold estate within one-half mile of the proposed expansion.

ADOPTED by the Oklahoma City Riverfront Redevelopment Authority this 26th day of October, 2021.

Amy K. Simpson
Secretary

J. Phillip Mann
Chairman

ADOPTED by the City Council of The City of Oklahoma City this 9th day of November, 2021.

Amy K. Simpson
City Clerk

David Holt
Mayor
REVIEWED for form and legality.

[Signature]

Assistant Municipal Counselor
Exhibit A

Report from Weaver Consultants Group on Proposed Expansion of the Oklahoma Landfill

(Attached)

This exhibit is referencing the September 15, 2021 letter included in Appendix D-4
Hi Jonathan,

Reclamation does not administer any area dedicated to public recreation or preservation within one-half mile of the landfill expansion area described in the attached September 7, 2021, letter. Please let me know if you have any questions.

Ashley Dixson  
Natural Resource Specialist  
Oklahoma City Field Office  
Bureau of Reclamation  
5924 NW 2nd St., Suite 200  
Oklahoma City, OK 73127  
phone: 405-470-4828  
email: adixson@usbr.gov

Sure thing. I have attached the letter sent on September 7, 2021.

Thanks,

Jonathan

Jonathan Lumang P.E.  
Project Engineer  
Weaver Consultants Group  
6420 Southwest Blvd. | Suite 206  
Fort Worth, TX 76109  
O: 817-735-9770 | F: 817-735-9775  
jlumang@wcgrp.com | www.wcgrp.com
Hi Jonathan,

Can you please send me the original request so I have some context for our records? I'm not sure whether we still have your hard copy incoming.

Thanks,

Ashley Dixson
Natural Resource Specialist
Oklahoma City Field Office
Bureau of Reclamation
5924 NW 2nd St., Suite 200
Oklahoma City, OK 73127
phone: 405-470-4828
email: adixson@usbr.gov

Apologies – the previous email should read:

It is our understanding that the Bureau of Reclamation does not have a public recreation or natural preservation area that is dedicated or management by the Bureau within one-half mile of the proposed facility expansion.
Ms. Dixson,

Thank you for discussing the Oklahoma Landfill project today via phone. I have developed this email to summarize our conversation.

It is our understanding that the Bureau of Reclamation does not have a public recreation or natural preservation area that is dedicated or management by the Bureau within 1 mile of the proposed facility expansion.

Please feel free to contact me with any questions.

Thanks,

Jonathan
Queen, Jonathan

From: Queen, Jonathan
Sent: Tuesday, October 19, 2021 8:40 AM
To: Eve Atkinson
Cc: Susan Henry; Lumang, Jonathan; Rachel Hanigan
Subject: RE: Oklahoma City Landfill expansion between Council Road and McArthur Boulevard and sw15th and SW 29th

Eve,

I appreciate the response indicating that the expansion is not within one-half mile of a public recreation area. You referenced an attached aerial in your response below, however, I do not see this attachment. Could you please provide?

We are aware of the proximity of Crystal Lake Park, now known as Larry McAtee Park. Oklahoma City Waste Disposal, Inc. worked together with the City of Oklahoma City to develop a Site Development Plan. This plan focused on both the final configuration of the site and the end use for the site once the landfill is closed. The result of this plan was the development of Planned Unit Development 1759 (PUD-1759) for the site. PUD-1759 complies with Oklahoma City’s long-term development plan for this area and includes creating a long-term public use for the landfill area. The public uses include nature trails, a council ring, and an education center. This public use will allow for nearly two miles of trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretative signage will educate visitors about area history, the site’s past uses, and indigenous plants and animals. PUD-1759 was approved by the City Council on May 27, 2020.

WCG also provided a similar public recreation and preservation area letter to Oklahoma City Parks and Recreation Department. The Parks and Recreation Department provided a Staff Report to the Park Commission indicating they do not believe the proposed expansion will negatively impact Larry McAtee Park. A representative of Oklahoma City Waste Disposal, Inc. will be in attendance at the Wednesday, October 20, 2021 Parks Commission meeting to provide additional information and answer any questions.

We appreciate your response.
Please feel free to contact me with any other questions.

From: Eve Atkinson <Eve.Atkinson@travelok.com>
Sent: Monday, October 18, 2021 6:13 PM
To: Queen, Jonathan <jqueen@wcgrp.com>
Cc: Susan Henry <Susan.Henry@travelok.com>
Subject: Oklahoma City Landfill expansion between Council Road and McArthur Boulevard and sw15th and SW 29th

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Mr. Queen,
The proposed expansion is at one half mile from Crystal Lake Park. This lake is managed by the City of Oklahoma City. There is an attached aerial with recreation features labeled. Namely the green dots are a bicycle trail linking downtown OKC with Lake Overholser, a trail appreciated by many cyclists. Crystal Lake is a park operated by the City of Oklahoma City. As the city develops recreation facilities for the residents of this area, the landfill may become a nuisance and not fit in the area. However, at this time the expansion is not within one-half mile of a public recreation area.

Sincerely,

Eve Atkinson | Planning Coordinator II | Tourism & Recreation | State Parks p. 405-522-9516 |
| TravelOK.com
Mr. Queen,

The proposed expansion is at one half mile from Crystal Lake Park. This lake is managed by the City of Oklahoma City. There is an attached aerial with recreation features labeled. Namely the green dots are a bicycle trail linking downtown OKC with Lake Overholser, a trail appreciated by many cyclists. Crystal Lake is a park operated by the City of Oklahoma City. As the city develops recreation facilities for the residents of this area, the landfill may become a nuisance and not fit in the area. However, at this time the expansion is not within one-half mile of a public recreation area.

Sincerely,

Eve Atkinson | Planning Coordinator II | Tourism & Recreation | State Parks p. 405-522-9516 |
| TravelOK.com
Brandon Boydstun  
Planning Development Manager  
Oklahoma City Parks and Recreation Department  
420 W Main  
Oklahoma City, Oklahoma 73102

Re: Public Recreation or Preservation Areas  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma

Dear Mr. Boydstun:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm if the proposed expansion of the Oklahoma Landfill is located within ½ mile of a public recreation or preservation area designated by a federal, state, or local agency. The Oklahoma Department of Environmental Quality landfill location restriction regulations set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(b) require that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within ½ mile of an area designated for public recreation or preservation.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit application, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill facility located in the City of Oklahoma City, Oklahoma. The landfill has been operating at this location for over 30 years. Please find attached project summary and site location maps (Attachment 1) to assist in your review.

The Oklahoma City Waste Disposal, Inc. determined the two public recreation areas include Larry McAtee Park and the West River Trail, which are currently located within ½ mile of the existing landfill. Oklahoma City Waste Disposal, Inc. worked together with the City of Oklahoma City to develop a Site Development Plan. This plan focused on both the final configuration of the site and the end use for the site once the landfill is closed. The result of this plan was the development of Planned Unit Development 1759 (PUD-1759) for the site. PUD-1759 complies with Oklahoma City's long-term development plan for this area and includes creating a long-term public use for the landfill area. The public uses include nature trails, a council ring, and an education center. This public use will allow for nearly two miles of trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretative signage will educate visitors about area history, the site's past uses, and indigenous plants and animals. PUD-1759 was approved by the City Council on May 27, 2020. Based on the long-term
development plan (PUD-1759), developed with and approved by the City of Oklahoma City, it is our understanding that this project will not adversely affect the existing public recreation areas. The PUD approval letter (Attachment 2), the Oklahoma Landfill PUD Update Summary (Attachment 3) included as Appendix A of the PUD application, and the PUD End Use Plan (Attachment 4) included as Exhibit H of the PUD application are included for reference.

To verify compliance with Oklahoma Administrative Code (OAC) 252:515-5-31(b)(2), we are requesting that the Oklahoma City Parks and Recreation Department confirm that the proposed project will not adversely affect the existing recreation areas within \( \frac{1}{2} \) miles based on the development of the Site Development Plan included in the approved PUD-1759.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

**Weaver Consultants Group, LLC**

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment:  Attachment 1 – Project Summary and Drawings
Attachment 2 – PUD Approval Letter
Attachment 3 – Oklahoma Landfill PUD update summary
Attachment 4 – PUD End Use Plan

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
ATTACHMENT 1

PROJECT SUMMARY AND DRAWINGS
Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

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The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail's route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

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   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

Oklahoma Department of Environmental Quality (ODEQ)

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:

1. REPRODUCED FROM GENERAL HIGHWAY MAP, OKLAHOMA COUNTY, OKLAHOMA (DOT PLANNING DIVISION, APRIL, 1995), GENERAL HIGHWAY MAP, CLEVELAND COUNTY, OKLAHOMA (DOT PLANNING DIVISION, AUGUST 1995), AND GENERAL HIGHWAY MAP, CANADIAN COUNTY, OKLAHOMA (DOT PLANNING DIVISION, APRIL, 1995).
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP 11 NORTH, RANGE 4 WEST.
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LEGEND

--- - - --- EXISTING PERMIT BOUNDARY
-- - - - -- PROPOSED PERMIT BOUNDARY
- - - - - - PERMITTED LIMIT OF WASTE
------------ PROPOSED LIMIT OF WASTE

STATE PLANE GRID COORDINATE

---~28°-----

EXISTING CONTOUR
FINAL COVER CONTOUR
DRAINAGE SWALE
DRAINAGE CHUTE

NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK FROM AERIAL PHOTOGRAPHY FLOW ON 03-13-2021.
ATTACHMENT 2

PUD APPROVAL LETTER
An Ordinance Amending Chapter 59, Section 5150 of The Oklahoma City Municipal Code, 2010, to Include Additional Territory Within the PUD Planned Unit Development District and Declaring an Emergency.

Emergency Ordinance

Be It Ordained by the Council of the City of Oklahoma City:

Section 1. That Chapter 59, Section 5150 of The Oklahoma City Municipal Code, 2010, be amended to change the boundaries of the PUD Planned Unit Development District, as shown upon the District Map to include therein the following described property:

(Book 7808, Page 1984) A tract of land lying in the Northeast Quarter (NE/4) of Section Eight (8) and the Northwest Quarter (NW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, and being more particularly described as follows: All of Lot Two (2) and the South Half (S/2) of the Northeast Quarter (NE/4) and the Northwest Quarter (NW/4) of the Northeast Quarter (NE/4) of Section Eight (8), as shown by the Government Survey thereof. And, all of that part of Government Lots Five (5), Six (6) and Seven (7) and the Southwest Quarter (SW/4) of the Northwest Quarter (NW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma, lying south of the New Channel of the North Canadian River, together with riparian and all accreted land. (Book 8734, Page 1173) The West Half (W/2) of the Southwest Quarter (SW/4) and the West Half (W/2) of the West Half (W/2) of the East Half (E/2) of the Southwest Quarter (SW/4), Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. (Book 10909, Page 1005) A part of the Northeast Quarter (NE/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. (Book RE11805, Page 648) A part of the Southeast Quarter (SE/4) of Section Eight (8), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. (Book 12476, Page 1444) A part of the Southwest Quarter of Section 9, Township 11 North, Range 4 West of the Indian Meridian, Oklahoma County, Oklahoma.

Surveyor's Description: Beginning at the Northwest Corner of the Northwest Quarter of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma; thence North 89° 41' 09" East, along the North Line of said Northwest Quarter to the thread of the New Channel of the North Canadian River, a distance of 386.83 Feet; thence South 33° 31' 49" East, along said thread of the river a distance of 282.05 Feet; thence continuing along said thread, South 05° 36' 09" East a distance of 641.85 Feet; thence continuing along said thread, South 71° 14' 57" East a
DISTANCE OF 422.59 FEET; THENCE CONTINUING ALONG SAID THREAD, NORTH 61°24'08" EAST A DISTANCE OF 985.32 FEET; THENCE CONTINUING ALONG SAID THREAD, SOUTH 75°43'53" EAST A DISTANCE OF 775.56 FEET; THENCE SOUTH 00°21'47" EAST, ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION (9), A DISTANCE OF 945.30 FEET; THENCE NORTH 85°27'25" EAST A DISTANCE OF 974.58 FEET; THENCE NORTH 66°29'25" EAST A DISTANCE OF 177.23 FEET; THENCE SOUTH 00°10'45" EAST A DISTANCE OF 2641.12 FEET TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SECTION NINE (9); THENCE SOUTH 89°42'15" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2245.25 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SECTION EIGHT (8); THENCE NORTH 00°14'04" WEST, ALONG THE EAST-WEST QUARTER SECTION LINE OF SAID QUARTER SECTION EIGHT (8), A DISTANCE OF 365.01 feet to the Point of Beginning; THENCE continuing along said thread, South 89°46'22" West a distance of 612.55 feet; THENCE North 00°10'43" West a distance of 2640.95 feet to a point on the North line of said Southwest Quarter; THENCE North 89°56'37" East, along the North line, a distance of 614.08 feet; THENCE South 00°08'43" East a distance of 2639.11 feet to the Point of Beginning. SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Note: Last Field Site Visit Date: February 26, 2013

Legal Description for Mycek Property


METES AND BOUNDS DESCRIPTION: BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4); Thence South 89°46'22" West, along the South line of said Southwest Quarter (SW/4), a distance of 365.01 feet to the Point of Beginning; Thence continuing along said thread, South 89°46'22" West a distance of 612.55 feet; Thence North 00°10'43" West a distance of 2640.95 feet to a point on the North line of said Southwest Quarter; Thence North 89°56'37" East, along the North line, a distance of 614.08 feet; Thence South 00°08'43" East a distance of 2639.11 feet to the Point of Beginning. SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Legal Description for CP Realty Property

(TRACT A) (BOOK 11162, PAGE 1678) A part of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. metes and bounds description: Beginning at the Southeast corner of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma; Thence West a distance of 122.62 feet Thence North 00°08'38" West and parallel with said East line of Southwest Quarter (SW/4) a distance of 2639.47 (2638.38 - calculated) feet; Thence West (South 89°56'37" West -
calculated) and parallel with the said North line of Southwest Quarter (SW/4) a distance of 246.84 (243.41 - calculated) feet; Thence Southerly (South 00°08'43" East - calculated) a distance of 2639.92 (2639.11 - calculated) feet to a point 367.87 (365.01 - calculated) feet West of the Southeast corner of Southwest Quarter (SW/4); Thence East (North 89°46'22" East - calculated) a distance of 245.25 (243.34 - calculated) feet to the Point or Place of Beginning, except the South 33 feet which is reserved for ROAD purposes.

AND (TRACT B) (BOOK 12640, PAGE 1913) The east 7 and ½ acres of the east 30 acres of Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma.

METES AND BOUNDS DESCRIPTION:
Beginning at the Southeast corner of Southwest Quarter (SW/4): Thence South 89°46'22" West along the South line of said Southwest Quarter a distance of 121.67 feet; Thence North 00°08'38" West a distance of 2638.38 feet to a point on the North line of Southwest Quarter (SW/4); Thence North 89°56'17" East along the said North line a distance of 121.67 feet to a point on the East line Southwest Quarter (SW/4); Thence South 00°08'38" East along said East line a distance of 2638.02 feet to the Point of Beginning.

SECTION 2. (EMERGENCY) WHEREAS, it being immediately necessary for the preservation of the peace, health, safety, and public good of Oklahoma City and the inhabitants thereof that the provisions of the ordinance be put into full force and effect, an emergency is hereby declared to exist by reason whereof this ordinance shall take effect, and be in full force from and after its passage as provided by law.

INTRODUCED AND READ in open meeting of the Council of The City of Oklahoma City, Oklahoma, on this 28th day of April, 2020.

PASSED by the Council of The City of Oklahoma City, Oklahoma, on the 26th day of May, 2020.

SIGNED by the Mayor of The City of Oklahoma City, Oklahoma, on this 26th day of May, 2020.

ATTEST:

[Signature]
CITY CLERK

[Signature]
MAYOR

REVIEWED for form and legality.

[Signature]
ASSISTANT MUNICIPAL COUNSELOR
ATTACHMENT 3

OKLAHOMA LANDFILL PUD UPDATE SUMMARY
SUMMARY

Oklahoma Landfill PUD Update

The purpose of updating existing PUD-1542 for the Oklahoma Landfill is to make several subtle, yet important, improvements to the existing Master Development Plan. PUD-1542 was approved by the City of Oklahoma City (City) on October 22, 2014. As discussed below, the updated PUD will include modifying the site configuration to increase the capacity of the site without significantly changing the visual appearance of the site and expanding the planned trail system.

PUD Highlights

Site Configuration. The proposed site configuration changes have virtually no impact on how the site will look from surrounding areas. Photo simulations that show how the site will look from several area vantage points are attached. The expansion of the waste disposal area in the area shown on Figures 1 and 2 will extend the life of the landfill approximately 12 years and recapture some of the disposal capacity lost during the disaster recovery relief efforts that occurred in 2013 and 2016. The Oklahoma Landfill was a community resource during the disaster recovery effort that occurred in the aftermath of the May 2013 and April 2016 Oklahoma City area tornadoes. The attached Table 1 provides a detailed comparison of both PUDs and Figure 4 shows the attached revised Master Design Plan.

Trail System. The trail system concept included in PUD-1542 will remain as a key part of the Master Development Plan for the Oklahoma Landfill. Phase I of the trail system, new scalehouse, and Education Center will be constructed by the end of 2019 in accordance with PUD-1542. The Education Center will include posters and models to help guide visitors through the various existing and future environmental and sustainable features of the site. When complete, the trail system will offer panoramic views of surrounding areas.

Community Investments. Waste Connections' interest and investment does not end at our property line. Waste Connections is an active participant in the community through multiple various efforts – sponsorships, donations, and participation in community programs such as City Care; OKC Parks and Recreation (Crystal Lake) and the Western Heights Public Schools Outdoor Class Program; and other projects, events, and educational outreach in the community. The expansion of the site will allow for a continuation of community resources, as well as a strengthened relationship between Waste Connections and the City of Oklahoma City and surrounding communities.
### Table 1
**PUD Comparison – Oklahoma Landfill**

<table>
<thead>
<tr>
<th>Item</th>
<th>PUD-1542</th>
<th>PUD Update</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining Solid Waste Disposal Capacity as of March 9, 2018</td>
<td>11.5 million cubic yards</td>
<td>21.0 million cubic yards</td>
<td>9.5 million cubic yards of additional capacity. This capacity can be gained without significantly changing the visual appearance of the site.</td>
</tr>
<tr>
<td>Site Life</td>
<td>15 years</td>
<td>27 years</td>
<td>The additional capacity will extend the life of the site about 12 years.</td>
</tr>
<tr>
<td>Maximum Permitted Height (and Elevation)</td>
<td>154.0 feet (1,377 ft-msl)</td>
<td>154.0 feet (1,377 ft-msl)</td>
<td>The height does not increase with this proposed configuration.</td>
</tr>
<tr>
<td>PUD Area</td>
<td>417.79 acres</td>
<td>477.1 acres</td>
<td>Refer to Figure 1.</td>
</tr>
<tr>
<td>Waste Disposal Footprint</td>
<td>217.3 acres</td>
<td>266.3 acres</td>
<td>Refer to Figure 1.</td>
</tr>
<tr>
<td>Buffer Zone Area</td>
<td>200.49 acres</td>
<td>210.8 acres</td>
<td>The buffer zone area is over 200 acres.</td>
</tr>
<tr>
<td>Trail System Length</td>
<td>10,435 linear feet</td>
<td>14,055 linear feet</td>
<td>The trail system will be improved by adding more than 3,620 linear feet of trail system (refer to Figure 3).</td>
</tr>
</tbody>
</table>

**Production of Renewable Energy**
The life of the renewable energy produced by the site will increase by about 30 percent with the proposed amendment to the PUD. Landfill gas is a naturally occurring byproduct of the waste decomposition process. Methane – the main component of landfill gas – is a source of renewable energy and potent greenhouse gas. Oklahoma City Landfill is helping to reduce greenhouse gases and the local community’s dependence on petroleum fuels by turning landfill gas into energy. Oklahoma City Landfill has expanded the landfill gas collection system at the landfill. The landfill gas is treated and then processed for injection into a natural gas pipeline at the Renewable Natural Gas (RNG) facility. RNG projects capture and recover methane produced at the landfill thereby significantly reducing the greenhouse gas emissions.
EXISTING SITE CONDITIONS

PERMITTED COMPLETION PLAN

PROPOSED COMPLETION PLAN
EXISTING SITE CONDITIONS

PERMITTED COMPLETION PLAN

PROPOSED COMPLETION PLAN
EXISTING SITE CONDITIONS

PERMITTED COMPLETION PLAN

PROPOSED COMPLETION PLAN
ATTACHMENT 4

SUMMARY PUD END USE PLAN
EXHIBIT H

END USE PLAN
EXHIBIT H-1

CAMPBELL CREEK SECTION A
EXHIBIT H-2

CAMPBELL CREEK SECTION B
PLANTING PLAN AREA "A"

AS SHOWN

BERMUDA SEED  BERMING (1 CONTOURS)  BERMUDA SOD  PERIMETER FENCE

PLANTING PLAN AREA "B"

AS SHOWN

OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.

SW 29th Buffer Planting Plan

EXHIBIT H-5

guernsey
EXHIBIT H-6

SW 29TH BUFFER PLANTING SCHEDULE
SW 29th Street Buffer Planting Schedule
EXHIBIT H-6

<table>
<thead>
<tr>
<th>TREES</th>
<th>CODE</th>
<th>BOTANICAL NAME / COMMON NAME</th>
<th>CONT</th>
<th>CAL/SIZE</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Cercis canadensis 'Oklahoma' / Oklahoma Redbud</td>
<td>B&amp;B/C</td>
<td>1.5&quot;-2.0&quot;</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>BCM</td>
<td>Lagerstroemia x 'Biloxi' / Crape Myrtle</td>
<td>30 gal</td>
<td></td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>LP</td>
<td>Pinus taeda / Loblolly Pine</td>
<td>B&amp;B/C</td>
<td>7-8' HT.</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>Pistacia chinensis / Chinese Pistache</td>
<td>B&amp;B/C</td>
<td>2&quot;Cal</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>SO</td>
<td>Quercus shumardii / Shumard Red Oak</td>
<td>B&amp;B/C</td>
<td>4&quot;Cal</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LE</td>
<td>Ulmus parvifolia 'Allee' / Allee Lacebark Elm</td>
<td>B&amp;B/C</td>
<td>2.5&quot;Cal</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
Dear Mr. Queen, Sep. 8, 2021

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Sec. 8 and 9-T11N-R4W, Oklahoma County

We found 1 occurrence(s) of relevant species within the vicinity of the project location as described.

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Federal Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Haliaeetus leucocephalus</em></td>
<td>Bald Eagle</td>
<td>Protected</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>Sec. 5-T11N-R4W</td>
<td>Count</td>
</tr>
</tbody>
</table>

Additionally, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI, guide to ranking codes for endangered and threatened species: http://www.oknaturalheritage.ou.edu/content/biodiversity-info/ranking-guide/

Information regarding the Oklahoma Natural Areas Registry: https://okregistry.wordpress.com/

Todd Fagin
Oklahoma Natural Heritage Inventory
(405) 325-4700
tfagin@ou.edu
Mr. Jerry Winchester, Executive Director  
Oklahoma Tourism and Recreation Department  
123 Robert S Kerr Ave  
Oklahoma City, OK 73102-6406  

Re: Public Recreation or Preservation Area Statement  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma  

Dear Mr. Winchester:  

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm that the proposed expansion of the Oklahoma Landfill is not located within one-half mile of a public recreation or preservation area designated by a federal, state, or local agency. The Oklahoma Department of Environmental Quality landfill location restriction regulations set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(b), requires that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within one-half mile of an area designated for public recreation or preservation.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill located in the City of Oklahoma City, Oklahoma. A landfill has been operating at this location for over 30 years. Please find attached a project summary and site location maps to facilitate your review.

To verify compliance with §252:515-5-31(b), we are requesting that the Oklahoma Tourism and Recreation Department confirm that the landfill is not located within one-half mile of an area dedicated and managed by a federal, state, or local government agency for public recreation or preservation.
Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an educational center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site’s past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail’s route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City’s desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   • Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   • Removing existing tires and debris that were previously placed in the creek;
   • Widening the creek in areas to provide a string of ponds that will improve water quality.

Weaver Consultants Group, LLC
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

**Federal Emergency Management Administration (FEMA)**

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

**Oklahoma Department of Environmental Quality (ODEQ)**

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
PERMITTED LANDFILL COMPLETION PLAN

NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.
Mr. Jeff Tompkins  
Supervisor of Resource Management Division  
Bureau of Reclamation  
5924 NW 2nd Street, Suite 200  
Oklahoma City, Oklahoma 73127  

Re: Public Recreation or Preservation Area Statement  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma  

Dear Mr. Tompkins:  

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm that the proposed expansion of the Oklahoma Landfill is not located within one-half mile of a public recreation or preservation area designated by a federal, state, or local agency. The Oklahoma Department of Environmental Quality (ODEQ) landfill location restriction regulations set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(b), require that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within one-half mile of an area designated for public recreation or preservation.

Weaver Consultants Group, LLC, is preparing a permit modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill located in the City of Oklahoma City, Oklahoma. A landfill has been operating at this location for over 30 years. Please find attached a project summary and site locations maps to facilitate your review.

To verify compliance with §252:515-5-31(b), we are requesting that the Bureau of Reclamation confirm that the landfill is not located within one-half mile of an area dedicated for public recreation or preservation.
Mr. Jeff Tompkins  

September 7, 2021

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

[Signature]

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachments: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
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The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

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For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail's route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.

---

Weaver Consultants Group, LLC
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical data to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

Oklahoma Department of Environmental Quality (ODEQ)

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. REPRODUCED FROM GENERAL HIGHWAY MAP, OKLAHOMA COUNTY, OKLAHOMA (OKDOT PLANNING DIVISION, APRIL 1999), GENERAL HIGHWAY MAP, CLEVELAND COUNTY, OKLAHOMA (OKDOT PLANNING DIVISION, AUGUST 1991), AND GENERAL HIGHWAY MAP, CANADIAN COUNTY, OKLAHOMA (OKDOT PLANNING DIVISION, APRIL 1999).
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEEME LAND SURVEYING, INC.
NOTES:

1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.

2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
PERMITTED LANDFILL COMPLETION PLAN

NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEX FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.
Brandon Boydstun  
Planning Development Manager  
Oklahoma City Parks and Recreation Department  
420 W Main  
Oklahoma City, Oklahoma 73102  

Re: Public Recreation or Preservation Areas  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma  

Dear Mr. Boydstun:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm if the proposed expansion of the Oklahoma Landfill is located within ½ mile of a public recreation or preservation area designated by a federal, state, or local agency. The Oklahoma Department of Environmental Quality landfill location restriction regulations set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(b) require that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within ½ mile of an area designated for public recreation or preservation.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit application, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill facility located in the City of Oklahoma City, Oklahoma. The landfill has been operating at this location for over 30 years. Please find attached project summary and site location maps (Attachment 1) to assist in your review.

The Oklahoma City Waste Disposal, Inc. determined the two public recreation areas include Crystal Lake and the West River Trail, which are currently located within ½ mile of the existing landfill. Oklahoma City Waste Disposal, Inc. worked together with the City of Oklahoma City to develop a Site Development Plan. This plan focused on both the final configuration of the site and the end use for the site once the landfill is closed. The result of this plan was the development of Planned Unit Development 1759 (PUD-1759) for the site. PUD-1759 complies with Oklahoma City's long-term development plan for this area and includes creating a long-term public use for the landfill area. The public uses include nature trails, a council ring, and an education center. This public use will allow for nearly two miles of trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretative signage will educate visitors about area history, the site's past uses, and indigenous plants and animals. PUD-1759 was approved by the City Council on May 27, 2020. Based on the long-term
development plan (PUD-1759), developed with and approved by the City of Oklahoma City, it is our understanding that this project will not adversely affect the existing public recreation areas. The PUD approval letter (Attachment 2), the Oklahoma Landfill PUD Update Summary (Attachment 3) included as Appendix A of the PUD application, and the PUD End Use Plan (Attachment 4) included as Exhibit H of the PUD application are included for reference.

To verify compliance with Oklahoma Administrative Code (OAC) 252:515-5-31(b)(2), we are requesting that the Oklahoma City Parks and Recreation Department confirm that the proposed project will not adversely affect the existing recreation areas within ½ miles based on the development of the Site Development Plan included in the approved PUD-1759.

Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

**Weaver Consultants Group, LLC**

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment:  Attachment 1 – Project Summary and Drawings
Attachment 2 – PUD Approval Letter
Attachment 3 – Oklahoma Landfill PUD update summary
Attachment 4 – PUD End Use Plan

cc:  Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
ATTACHMENT 1

PROJECT SUMMARY AND DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site’s past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail’s route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City’s desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
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   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.

Weaver Consultants Group, LLC
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

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The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP 2 NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.
ATTACHMENT 2

PUD APPROVAL LETTER
ORDINANCE NO. 26,457

AN ORDINANCE AMENDING CHAPTER 59, SECTION 5150 OF THE OKLAHOMA CITY MUNICIPAL CODE, 2010, TO INCLUDE ADDITIONAL TERRITORY WITHIN THE PUD PLANNED UNIT DEVELOPMENT DISTRICT AND DECLARING AN EMERGENCY. FK

EMERGENCY ORDINANCE

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF OKLAHOMA CITY:

SECTION 1. That Chapter 59, Section 5150 of The Oklahoma City Municipal Code, 2010, be amended to change the boundaries of the PUD Planned Unit Development District, as shown upon the District Map to include therein the following described property:

(Book 7808, page 1984) A tract of land lying in the northeast quarter (NE/4) of section eight (8) and the northwest quarter (NW/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma, and being more particularly described as follows: all of lot two (2) and the south half (S/2) of the northeast quarter (NE/4) and the northwest quarter (NW/4) of the northeast quarter (NE/4) of section eight (8), as shown by the government survey thereof. And, all of that part of government lots five (5), six (6) and seven (7) and the southwest quarter (SW/4) of the northwest quarter (NW/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma, lying south of the new channel of the north Canadian River, together with riparian and all accreted land. (Book 8734, page 1173) The west half (W/2) of the southwest quarter (SW/4) and the west half (W/2) of the east half (E/2) of the southwest quarter (SW/4), section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma. (Book 10909, page 1005) A part of the northeast quarter (NE/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma. (Book RE11805, page 648) A part of the southeast quarter (SE/4) of section eight (8), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma. (Book 12476, page 1444) A part of the southwest quarter of section nine, township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma.

Surveyor's description: beginning at the northwest corner of the northwest quarter of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma; thence north 89° 41' 09" east, along the north line of said northwest quarter to the thread of the new channel of the north Canadian River, a distance of 386.83 feet; thence south 33°31'49" east, along said thread of the river a distance of 282.05 feet; thence continuing along said thread, south 05°36'09" east a distance of 641.85 feet; thence continuing along said thread, south 71°14'57" east a
DISTANCE OF 422.59 FEET; THENCE CONTINUING ALONG SAID THREAD, NORTH 61°24'08" EAST A DISTANCE OF 985.32 FEET; THENCE CONTINUING ALONG SAID THREAD, SOUTH 75°43'53" EAST A DISTANCE OF 775.56 FEET; THENCE SOUTH 00°21'47" EAST, ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION (9), A DISTANCE OF 945.30 FEET; THENCE NORTH 85°27'25" EAST A DISTANCE OF 974.58 FEET; THENCE NORTH 66°29'25" EAST A DISTANCE OF 177.23 FEET; THENCE SOUTH 00°25'17" EAST A DISTANCE OF 1,112.38 FEET TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SECTION NINE (9); THENCE SOUTH 89°54'44" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2,114.43 FEET; THENCE SOUTH 00°10'45" WEST A DISTANCE OF 2641.12 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION NINE (9); THENCE SOUTH 89°46'24" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 1629.41 FEET TO THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SECTION EIGHT (8) TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST; THENCE NORTH 00°14'04" WEST, ALONG THE EAST LINE OF SECTION EIGHT, A DISTANCE OF 1556.78 FEET; THENCE NORTH 89°45'49" WEST, A DISTANCE OF 400.00 FEET; THENCE NORTH 00°10'43" WEST, TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SAID SECTION EIGHT, A DISTANCE OF 1088.44 FEET; THENCE SOUTH 89°56'37" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2245.25 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SECTION EIGHT (8); THENCE NORTH 00°10'12" WEST, ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION EIGHT (8), A DISTANCE OF 2,642.88 FEET TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE SOUTH 89°42'15" EAST, ALONG THE NORTH LINE OF SAID SECTION EIGHT (8), A DISTANCE OF 2,628.95 FEET TO THE POINT OF BEGINNING.

BASIS OF BEARING: GRID BEARINGS BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83, NORTH ZONE.

Note: Last Field Site Visit Date: February 26, 2013

Legal Description for Mycek Property


METES AND BOUNDS DESCRIPTION: BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4); Thence South 89°46'22" West, along the South line of said Southwest Quarter (SW/4), a distance of 365.01 feet to the Point of Beginning; Thence continuing along said thread, South 89°46'22" West a distance of 612.55 feet; Thence North 00°10'43" West a distance of 2640.95 feet to a point on the North line of said Southwest Quarter; Thence North 89°56'37" East, along the North line, a distance of 614.08 feet; Thence South 00°08'43" East a distance of 2639.11 feet to the Point of Beginning. SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Legal Description for CP Realty Property

(TRACT A) (BOOK 11162, PAGE 1678) A part of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. metes and bounds description: Beginning at the Southeast corner of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma; Thence West a distance of 122.62 feet Thence North 00°08'38" West and parallel with said East line of Southwest Quarter (SW/4) a distance of 2639.47 (2638.38 - calculated) feet; Thence West (South 89°56'37" West -
calculated) and parallel with the said North line of Southwest Quarter (SW/4) a distance of 246.84 (243.41 - calculated) feet; Thence Southerly (South 00°08'43" East - calculated) a distance of 2639.92 (2639.11 - calculated) feet to a point 367.87 (365.01 - calculated) feet West of the Southeast corner of Southwest Quarter (SW/4); Thence East (North 89°46'22" East - calculated) a distance of 245.25 (243.34 - calculated) feet to the Point or Place of Beginning, except the South 33 feet which is reserved for ROAD purposes.

AND (TRACT B) (BOOK 12640, PAGE 1913) The east 7 and ½ acres of the east 30 acres of Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma.

METES AND BOUNDS DESCRIPTION:
Beginning at the Southeast corner of Southwest Quarter (SW/4): Thence South 89°46'22" West along the South line of said Southwest Quarter a distance of 121.67 feet; Thence North 00°08'38" West a distance of 2638.38 feet to a point on the North line of Southwest Quarter (SW/4); Thence North 89°56'37" East along the said North line a distance of 121.67 feet to a point on the East line Southwest Quarter (SW/4); Thence South 00°08'38" East along said East line a distance of 2638.02 feet to the Point of Beginning.

SECTION 2. (EMERGENCY) WHEREAS, it being immediately necessary for the preservation of the peace, health, safety, and public good of Oklahoma City and the inhabitants thereof that the provisions of the ordinance be put into full force and effect, an emergency is hereby declared to exist by reason whereof this ordinance shall take effect, and be in full force from and after its passage as provided by law.

INTRODUCED AND READ in open meeting of the Council of The City of Oklahoma City, Oklahoma, on this ______ day of ______ , 2020.

PASSED by the Council of The City of Oklahoma City, Oklahoma, on the ______ day of ______, 2020.

SIGNED by the Mayor of The City of Oklahoma City, Oklahoma, on this ______ day of ______, 2020.

ATTEST:

CITY CLERK

ASSISTANT MUNICIPAL COUNSELOR

REVIEWED for form and legality.
ATTACHMENT 3

OKLAHOMA LANDFILL PUD UPDATE SUMMARY
SUMMARY
Oklahoma Landfill PUD Update

The purpose of updating existing PUD-1542 for the Oklahoma Landfill is to make several subtle, yet important, improvements to the existing Master Development Plan. PUD-1542 was approved by the City of Oklahoma City (City) on October 22, 2014. As discussed below, the updated PUD will include modifying the site configuration to increase the capacity of the site without significantly changing the visual appearance of the site and expanding the planned trail system.

PUD Highlights

Site Configuration. The proposed site configuration changes have virtually no impact on how the site will look from surrounding areas. Photo simulations that show how the site will look from several area vantage points are attached. The expansion of the waste disposal area in the area shown on Figures 1 and 2 will extend the life of the landfill approximately 12 years and recapture some of the disposal capacity lost during the disaster recovery efforts that occurred in 2013 and 2016. The Oklahoma Landfill was a community resource during the disaster recovery effort that occurred in the aftermath of the May 2013 and April 2016 Oklahoma City area tornadoes. The attached Table 1 provides a detailed comparison of both PUDs and Figure 4 shows the attached revised Master Design Plan.

Trail System. The trail system concept included in PUD-1542 will remain as a key part of the Master Development Plan for the Oklahoma Landfill. Phase I of the trail system, new scalehouse, and Education Center will be constructed by the end of 2019 in accordance with PUD-1542. The Education Center will include posters and models to help guide visitors through the various existing and future environmental and sustainable features of the site. When complete, the trail system will offer panoramic views of surrounding areas.

Community Investments. Waste Connections' interest and investment does not end at our property line. Waste Connections is an active participant in the community through multiple various efforts - sponsorships, donations, and participation in community programs such as City Care; OKC Parks and Recreation (Crystal Lake) and the Western Heights Public Schools Outdoor Class Program; and other projects, events, and educational outreach in the community. The expansion of the site will allow for a continuation of community resources, as well as a strengthened relationship between Waste Connections and the City of Oklahoma City and surrounding communities.
### Table 1
**PUD Comparison – Oklahoma Landfill**

<table>
<thead>
<tr>
<th>Item</th>
<th>PUD-1542</th>
<th>PUD Update</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining Solid Waste Disposal Capacity as of March 9, 2018</td>
<td>11.5 million cubic yards</td>
<td>21.0 million cubic yards</td>
<td>9.5 million cubic yards of additional capacity. This capacity can be gained without significantly changing the visual appearance of the site.</td>
</tr>
<tr>
<td>Site Life</td>
<td>15 years</td>
<td>27 years</td>
<td>The additional capacity will extend the life of the site about 12 years.</td>
</tr>
<tr>
<td>Maximum Permitted Height (and Elevation)</td>
<td>154.0 feet (1,377 ft-sm)</td>
<td>154.0 feet (1,377 ft-sm)</td>
<td>The height does not increase with this proposed configuration.</td>
</tr>
<tr>
<td>PUD Area</td>
<td>417.79 acres</td>
<td>477.1 acres</td>
<td>Refer to Figure 1.</td>
</tr>
<tr>
<td>Waste Disposal Footprint</td>
<td>217.3 acres</td>
<td>266.3 acres</td>
<td>Refer to Figure 1.</td>
</tr>
<tr>
<td>Buffer Zone Area</td>
<td>200.49 acres</td>
<td>210.8 acres</td>
<td>The buffer zone area is over 200 acres.</td>
</tr>
<tr>
<td>Trail System Length</td>
<td>10,435 linear feet</td>
<td>14,055 linear feet</td>
<td>The trail system will be improved by adding more than 3,620 linear feet of trail system (refer to Figure 3).</td>
</tr>
</tbody>
</table>

**Production of Renewable Energy**

The life of the renewable energy produced by the site will increase by about 30 percent with the proposed amendment to the PUD. Landfill gas is a naturally occurring byproduct of the waste decomposition process. Methane – the main component of landfill gas – is a source of renewable energy and potent greenhouse gas. Oklahoma City Landfill is helping to reduce greenhouse gases and the local community’s dependence on petroleum fuels by turning landfill gas into energy. Oklahoma City Landfill has expanded the landfill gas collection system at the landfill. The landfill gas is treated and then processed for injection into a natural gas pipeline at the Renewable Natural Gas (RNG) facility. RNG projects capture and recover methane produced at the landfill thereby significantly reducing the greenhouse gas emissions.
EXISTING SITE CONDITIONS

PERMITTED COMPLETION PLAN

PROPOSED COMPLETION PLAN
ATTACHMENT 4

SUMMARY PUD END USE PLAN
EXHIBIT H

END USE PLAN
EXHIBIT H-1

CAMPBELL CREEK SECTION A
OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.

PROPOSED SECTIONS

EXHIBIT H-1

guemsey
EXHIBIT H-2

CAMPBELL CREEK SECTION B
EXISTING RIPARIAN WOODLAND

PROPOSED ORNAMENTAL HABITAT PLANTING

TRAIL
EXISTING VEGETATION/WETLAND TO REMAIN

PERIMETER ROAD/TRAIL

DRAINAGE SWALE COMPOSITE LINER SYSTEM

SOLID WASTE DISPOSAL AREA

NORTH SECTION

EXHIBIT H-2

OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.

PROPOSED SECTIONS
EXHIBIT H-4

CAMPBELL CREEK SECTION D
PROPOSED ORNAMENTAL HABITAT PLANTING

PROPOSED RIPARIAN WOODLAND

EXISTING VEGETATION TO REMAIN

100-YEAR FLOODPLAIN ELEVATION

RELOCATION CAMPBELL CREEK

TYPICAL INTERMITTENT STREAM FLOW

SOUTHEAST SECTION

100'-150' BUFFER

PERIMETER FENCE

EXISTING GRADE

PERIMETER ROAD/TRAIL

COMPOSITE LINER SYSTEM

SOLID WASTE DISPOSAL AREA

OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.

PROPOSED SECTIONS

EXHIBIT H-4

GUENSEY
EXHIBIT H-5

SW 29TH BUFFER PLANTING PLAN
EXHIBIT H-6

SW 29TH BUFFER PLANTING SCHEDULE
## SW 29th Street Buffer Planting Schedule

**EXHIBIT H-6**

### PLANT SCHEDULE AREAS A & B

<table>
<thead>
<tr>
<th>TREES</th>
<th>CODE</th>
<th>BOTANICAL NAME / COMMON NAME</th>
<th>CONT</th>
<th>CAL/ SIZE</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>Cercis canadensis &quot;Oklahoma&quot; / Oklahoma Redbud</td>
<td>B&amp;B/C</td>
<td>1.5&quot;-2.0&quot;</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>BCM</td>
<td>Lagerstroemia x &quot;Biloxi&quot; / Crape Myrtle</td>
<td>30 gal</td>
<td>32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LP</td>
<td>Pinus taeda / Loblolly Pine</td>
<td>B&amp;B/C</td>
<td>7-8' HT</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>Pistacia chinensis / Chinese Pistache</td>
<td>B&amp;B/C</td>
<td>2&quot; Cal</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>SO</td>
<td>Quercus shumardii / Shumard Red Oak</td>
<td>B&amp;B/C</td>
<td>4&quot; Cal</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>LE</td>
<td>Ulmus parvifolia 'Allee' / Allee Lacebark Elm</td>
<td>B&amp;B/C</td>
<td>2.5&quot; Cal</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>
Dear Mr. Fagin:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc., is to confirm that the proposed expansion of the Oklahoma Landfill is not located within one-half mile of a public recreation or preservation area designated by a federal, state, or local agency. The Oklahoma Department of Environmental Quality landfill location restriction regulations, set forth in Oklahoma Administrative Code (OAC) §252:515-5-31(b), requires that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion lies within one-half mile of an area designated for public recreation or preservation.

Weaver Consultants Group, LLC, is preparing a landfill expansion permit modification, under contract with Oklahoma City Waste Disposal, Inc., to expand their existing landfill located in the City of Oklahoma City, Oklahoma. A landfill has operated at this location for over 30 years. Please find attached a project summary and site location maps to facilitate your review.

To verify compliance with §252:515-5-31(b), we are requesting that the Oklahoma Natural Areas Registry confirm that the landfill is not located within one-half mile of an area dedicated and managed by a federal, state, or local government agency for public recreation or preservation.
Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction
The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information
The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information
The following drawings are attached to this summary.

- Site Location Map (Figure 1). This figure shows the site location on a standard Oklahoma Department of Transportation Oklahoma County highway map.
- General Topographic Map (Figure 2). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on a USGS map.
- Aerial Photograph (Figure 3). This figure shows the existing landfill and waste disposal area, as well as the proposed expansion area, on an aerial photograph.
- Completion Plan Comparison (Figure 4). This figure shows the permitted landfill completion plan and the proposed landfill completion plan.
The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail's route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City's desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

**Federal Emergency Management Administration (FEMA)**

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

**Oklahoma Department of Environmental Quality (ODEQ)**

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
MUSTANG, OK
2018

OKLAHOMA CITY, OK
2018

NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).
2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP 11 NORTH, RANGE 4 WEST.
3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
The existing contours and elevations provided by Firmatek from aerial photography flown on 03-13-2021.

NOTE:
1. The permitted landfill completion plan.

PROPOSED LANDFILL COMPLETION PLAN

PROPOSED LANDFILL COMPLETION PLAN

PERMITTED LANDFILL COMPLETION PLAN

LEGEND

- - - - EXISTING PERMIT BOUNDARY
--- PROPOSED PERMIT BOUNDARY
- - PERMITTED LIMIT OF WASTE
--- PROPOSED LIMIT OF WASTE
- - - - N. 1802220
- - - - E. 1351440
- - - - STATE PLANE GRID COORDINATE
- - - - EXISTING CONTOUR
- - - - FINAL COVER CONTOUR
- - - - DRAINAGE SWALE
- - - - DRAINAGE CHUTE

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APPENDIX D-5

SURFACE WATER INTAKE
This appendix provides surface water intake documentation for the required coordination with the Oklahoma Water Resources Board. This appendix includes:

- October 29, 2021 Weaver Consultants Group, LLC e-mail response addressing Oklahoma Water Resources Board comments regarding Oklahoma City facilities.
- October 29, 2021 Oklahoma Water Resources Board confirmation e-mail letter.
- October 20, 2021 Weaver Consultants Group, LLC e-mail response addressing Oklahoma Water Resources Board comments regarding floodplains.
- October 19, 2021 Oklahoma Water Resource Board comment email regarding floodplains.
- September 7, 2021 Weaver Consultants Group, LLC request for surface water intake review by the Oklahoma Water Resources Board.
Queen, Jonathan

From: Queen, Jonathan
Sent: Friday, October 29, 2021 7:29 PM
To: Bonnie Moats
Cc: Miranda Thomas; Bill Cauthron; Lumang, Jonathan; Rachel Hanigan
Subject: RE: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

Bonnie,

I appreciate the acknowledgment of no intakes within one mile of the proposed project. This allows us to verify compliance with OAC 252:515-3-32(b).

In regards to your notation regarding recreational facilities, OAC 252:515-3-31(b) requires us to obtain information regarding public recreation and preservation areas with ½ mile of our project.

To date we have provide correspondence with the following agencies:

• Oklahoma City, City Council - Approved a Planned Unit Development (PUD-1759) for this project on 05-26-20.
• Oklahoma City Parks Commissions – Approved our request for a letter of no adverse effects to local parks on 10-20-2021.
• Oklahoma City Riverfront Authority – Approved our project on 10-26-2021.
• Oklahoma Tourism & Recreation – Acknowledged the project is not located within ½ of a public recreation facility on 10-18-2021.
• Bureau of Reclamation – Acknowledge the project is not location within ½ of a public recreation facility on 10-28-2021.

We appreciate your time.
Please feel free to contact me with any questions.
Thanks

From: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>
Sent: Friday, October 29, 2021 1:17 PM
To: Queen, Jonathan <jqueen@wcgrp.com>
Cc: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>; Bill Cauthron <Bill.Cauthron@owrb.ok.gov>; Lumang, Jonathan <jlumang@wcgrp.com>
Subject: RE: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Dear Mr. Queen,

I know you are looking for intakes downstream of the land fill. For this landfill I am not seeing any permitted intakes within a mile downstream. There is however a recreation fish and wildlife permitted, which its area of use is within in a mile, by the City of Oklahoma City. I don’t know if there are any rules on recreation areas, but I thought it was probably good to know for a landfill.
From: Queen, Jonathan <jqueen@wcgrp.com>
Sent: Tuesday, October 19, 2021 11:55 AM
To: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>
Cc: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>; Bill Cauthron <Bill.Cauthron@owrb.ok.gov>; Lumang, Jonathan <jlumang@wcgrp.com>
Subject: [EXTERNAL] Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

Bonnie,

Per our conversation this morning, please find attached a request regarding existing or planned public water supply surface water intakes for the Oklahoma Landfill.

Please feel free to contact me with any questions.
Thanks

Jonathan Queen, P.E.
Principal

Weaver Consultants Group
6420 Southwest Blvd. | Suite 206
Fort Worth, TX 76109
jqueen@wcgrp.com | www.wcgrp.com

IMPORTANT NOTICE: The information contained in this email message (including any attachments) may be confidential, privileged or both, and is intended exclusively for the addressee(s) intended by the sender. If it appears you have received this email message in error, please notify the sender immediately and then delete; any other use of this email message is prohibited. Thank you.
From: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>  
Sent: Friday, October 29, 2021 1:17 PM  
To: Queen, Jonathan  
Cc: Miranda Thomas; Bill Cauthron; Lumang, Jonathan  
Subject: RE: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake  

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Dear Mr. Queen,

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Sincerely,

Bonnie Moats | Permitting Specialist  
Water Rights Administration Division  
OKLAHOMA WATER RESOURCES BOARD  
w:405.530.8844•c:405.421.3059 • owrb.ok.gov • Facebook • Twitter

From: Queen, Jonathan <jqueen@wcgrp.com>  
Sent: Tuesday, October 19, 2021 11:55 AM  
To: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>  
Cc: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>; Bill Cauthron <Bill.Cauthron@owrb.ok.gov>; Lumang, Jonathan <jlumang@wcgrp.com>  
Subject: [EXTERNAL] Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

Bonnie,

Per our conversation this morning, please find attached a request regarding existing or planned public water supply surface water intakes for the Oklahoma Landfill.

Please feel free to contact me with any questions.
Thanks

Jonathan Queen, P.E.  
Principal
The OKLAHOMA WATER RESOURCES BOARD hereby issues regular stream water permit number 1998-043 in the name of the City of Oklahoma City, whose address is 200 North Walker Avenue, Oklahoma City, OK 73102. The regular permit authorizes the taking and use of 1,450 acre-feet of water per calendar year for recreation, fish and wildlife purposes through low water dam impoundments on the North Canadian River. The area of use is comprised of approximately 410 acres along the North Canadian River generally south of the downtown area of Oklahoma City in the following locations: the N2 of Sec. 2, Sec. 3, the SW of Sec. 4, Sec. 5, the N2 of Sec. 6, and the N2 of Sec. 9, T11N, R3WIM; also in Sec. 1, the S2 of Sec. 2, the S2 of Sec. 3, the NE of Sec. 10, the N2 of Sec. 11, and the NW of Sec. 12, T11N, R4WIM; all in Oklahoma County. The water is to be impounded by three dams located as follows: in the SE NE of Sec. 2 and in the SE SW SW of Sec. 4, both in T11N, R3WIM, and in the SE SE NE of Sec. 1, T11N, R4WIM.

The permit holder is authorized to proceed with the construction of the project in compliance with the application and permit, and subject to the following terms, conditions and limitations.

1. The use of water authorized under this permit shall not interfere with domestic or existing appropriative uses;

2. Construction on the proposed project must be started by the 9th day of March, 2001, and the permit holder has until the 9th day of March, 2006, to complete the project;

3. Upon completion of the project, permit holder must file with the Oklahoma Water Resources Board a Notice of Completion of Project;

4. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days. Wilful failure to complete and return the report with the file maintenance fee may be considered by the Board as nonuse of water under this permit;

5. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven continuous year period to retain the authorized amount.

Acceptance of this permit shall be an acknowledgment and agreement that permit holder will comply with all the terms, conditions and limitations embodied in this permit and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board.

Dated approved: March 9, 1999

Duane A. Smith, Executive Director

OKLAHOMA WATER RESOURCES BOARD
Pending Permits in SS 2-5-3 and 2-5-2

2-5-3
1969-0285 City of Woodward NE of 21 24N-22WIM.............8,490 af for Public Water Supply

2-5-2
1982-0119 City of Oklahoma City SW SE NW of 30 12N-04WIM.....28,000 af for Public Water Supply

1987-0045 El Reno Golf and Country Club SW NE SW of 7 12N-07WIM.....120 af for Irrigation
Queen, Jonathan

From: Queen, Jonathan
Sent: Wednesday, October 20, 2021 2:07 PM
To: Miranda Thomas
Cc: Bonnie Moats; bill.cauthron@owrb.ok.gov; Lumang, Jonathan; Rachel Hanigan
Subject: RE: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

Miranda,

Thank you for the comment regarding this project and floodplain considerations. Oklahoma Administrative Code (OAC) 252:515-5-32(a) states that no waste management or disposal areas of a solid waste disposal facility shall be located within the 100-year floodplain. However OAC 252:515-5-32(a)(2)(A) allows ODEQ to grant a variance from the 100-year floodplain restriction provided the variance is conditioned upon the subsequent redefinition of the floodplain to not include the land area proposed for the variance.

The site is currently being development in accordance with a Conditional Letter of Map Revision (CLOMR) approved by Oklahoma City and FEMA in June 2016. The site CLOMR will be revised consistent with the proposed completion plan. The revised CLOMR will be submitted to Oklahoma City for approval and upon approval from Oklahoma City submitted to FEMA for approval. The expansion area will not be developed until the revised CLOMR is approved by Oklahoma City and FEMA. Upon development of the site, a Letter of Map Revision (LOMR) will be submitted to officially revise the floodplain.

Please feel free to contact me with any questions.
Thanks

From: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>
Sent: Tuesday, October 19, 2021 2:02 PM
To: Queen, Jonathan <jqueen@wcgrp.com>
Subject: Re: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

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Here is the comments for the Oklahoma City project. Thanks,

Miranda Thomas, CFM | Floodplain Management Specialist

Engineering & Planning Division

OKLAHOMA WATER RESOURCES BOARD

3800 North Classen Blvd., Oklahoma City, OK 73118

405.530.8800 | owrb.ok.gov • Facebook • Twitter
Bonnie,

Per our conversation this morning, please find attached a request regarding existing or planned public water supply surface water intakes for the Oklahoma Landfill.

Please feel free to contact me with any questions.

Thanks

Jonathan Queen, P.E.
Principal

Weaver Consultants Group
6420 Southwest Blvd. | Suite 206
Fort Worth, TX 76109
jqueen@wcgrp.com | www.wcgrp.com
Queen, Jonathan

From: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>
Sent: Tuesday, October 19, 2021 2:02 PM
To: Queen, Jonathan
Subject: Re: Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake
Attachments: 10-19-21 Oklahoma Co.docx

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Here is the comments for the Oklahoma City project. Thanks,

Miranda Thomas, CFM | Floodplain Management Specialist
Engineering & Planning Division
OKLAHOMA WATER RESOURCES BOARD
3800 North Classen Blvd., Oklahoma City, OK 73118
405.530.8800 | owrb.ok.gov • Facebook • Twitter

From: Queen, Jonathan <jqueen@wcgrp.com>
Sent: Tuesday, October 19, 2021 11:54 AM
To: Bonnie Moats <Bonnie.Moats@owrb.ok.gov>
Cc: Miranda Thomas <Miranda.Thomas@owrb.ok.gov>; Bill Cauthron <Bill.Cauthron@owrb.ok.gov>; Lumang, Jonathan <jlumang@wcgrp.com>
Subject: [EXTERNAL] Oklahoma Landfill Expansion - Public Water Supply Surface Water Intake

Bonnie,

Per our conversation this morning, please find attached a request regarding existing or planned public water supply surface water intakes for the Oklahoma Landfill.

Please feel free to contact me with any questions.
Thanks

Jonathan Queen, P.E.
Principal

Weaver Consultants Group
6420 Southwest Blvd. | Suite 206
Fort Worth, TX 76109
jqueen@wcgrp.com | www.wcgrp.com
WE RECOMMEND THAT YOU CONTACT THE LOCAL FLOODPLAIN ADMINISTRATOR FOR POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. THE OWRB WEB SITE, www.owrb.ok.gov, contains a directory of floodplain administrators and is located under forms/floodplain management/floodplain administrators, listed alphabetically by name of community. If this development would fall on state owned or operated property, a floodplain development permit is required from OWRB. The Chapter 55 Rules and permit application for this requirement can be found on the OWRB web site listed above. If this project is proposed in a non-participating community, try to ensure that this project is completed so that it is reasonably safe from flooding and so that it does not flood adjacent property if possible. Permitting Section said, "No information for water rights needed."

Reviewer: Miranda Thomas, CFM  
DATE 10/19/2021

Project Name: The proposed project is expansion to the existing landfill located in Oklahoma City, Oklahoma.

FIRM Name: Weaver Consultants Group, Jonathan Queen, P.E.

* Otoe-Missouria Tribe and Red Rock participate in the NFIP and have a floodplain development permitting system. See paragraph above.
Mr. Bill Cauthron  
Water Quality Programs Division  
Oklahoma Water Resources Board  
3800 North Classen Boulevard  
Oklahoma City, Oklahoma 73118  

Re: Public Water Supply Surface Water Intake Statement  
Oklahoma Landfill Expansion  
Oklahoma City, Oklahoma  

Dear Mr. Cauthron:

The purpose of this letter, submitted on behalf of Waste Connections of Oklahoma, Inc., is to confirm existing Oklahoma Department of Environmental Quality (ODEQ) information that the proposed landfill expansion of the Oklahoma Landfill is not one mile or less upstream from an existing or planned public water supply surface water intake. The ODEQ landfill location restriction regulation regarding public water supply intakes set forth in Oklahoma Administrative Code (OAC) §252:515-5-32(b), requires that a permit applicant for an expansion of a municipal solid waste facility determine if a proposed landfill expansion is one mile or less upstream from an existing or planned public water supply surface water intake.

Weaver Consultants Group, LLC, is preparing a permit modification, under contract with Waste Connections of Oklahoma, Inc., to expand the existing landfill located in Oklahoma City, Oklahoma. Our review of the ODEQ website indicates the nearest public water supply intake is approximately 3.4 miles west of the site at Lake Overholser. Please find attached a project summary and site location maps to facilitate in your review.

To verify compliance with §252:515-5-32(b), we are requesting that the Oklahoma Water Resources Board confirm that the landfill is not located within one mile or less upstream from an existing or planned public water supply surface water intake.
Your assistance with this matter is sincerely appreciated. Please call if you have any questions or need additional information.

Sincerely,

Weaver Consultants Group, LLC

Jonathan V. Queen, P.E.
jqueen@wcgrp.com
Project Director

Attachment: Project Summary and Site Location Maps

cc: Rachel Hanigan, P.E., Oklahoma City Waste Disposal, Inc.
PROJECT SUMMARY
AND
DRAWINGS
Project Summary
Oklahoma City Waste Disposal, Inc.
Proposed Oklahoma Landfill Expansion
Oklahoma County, Oklahoma

Introduction

The Oklahoma Landfill is an existing municipal solid waste (MSW) landfill in the City of Oklahoma City (Oklahoma City or City) that is in the process of expanding to provide long-term disposal capacity for authorized solid waste that is generated in Oklahoma City and the surrounding areas. The objective of this summary is to provide an overview of the various agency coordination/permitting included in the landfill expansion process, including the City of Oklahoma City, the United States Army Corp of Engineers (USACE), the Federal Emergency Management Administration (FEMA) and the Oklahoma Department of Environmental Quality (ODEQ). The following subsections detail information regarding the owner and operator of the site, and various agency coordination/permitting.

Owner/Operator Information

The Oklahoma Landfill is owned and operated by Oklahoma City Waste Disposal, Inc. (a Waste Connections, Inc. company). Waste Connections is one of the leading providers of solid waste services in the nation. Waste Connections provides non-hazardous waste collection, transfer, recycling, and disposal services to residential, municipal, and commercial customers across the county.

Site Information

The following drawings are attached to this summary.

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The City of Oklahoma City

The development or expansion of a landfill in the City of Oklahoma City requires the approval of a Planned Unit Development (PUD) by the Planning and Zoning Commission, as well as the City Council. The entire 475.72-acre site lies within the City limits of Oklahoma City. Therefore, the City controls development trends and land use changes in the area of the landfill through its zoning rules and regulations.

For this project, Oklahoma City Waste Disposal, Inc. and the City worked together to revise the existing Site Development Plan. Public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an education center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of the surrounding area. Interpretive signage will educate visitors about area history, the site’s past uses, and indigenous plants and animals.

In addition, a 12-foot-wide nature trail will be constructed at the site upon closure of the site. The trail’s route will lead up the west slope to the summit of the site. At the summit, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The trail will also connect to the Bridgestone Firestone Nature and Education Area located to the west of the site. WCG worked in conjunction with both the owner and C.H. Guernsey and Company to develop a conceptual layout that would meet the long term needs of the facility as well as accommodate the City’s desire to create a long term public use for the landfill after closure. The PUD for this project, which made several subtle, yet important, improvements to the existing Site Development Plan, was approved in May 2020.

United States Army Corps of Engineering (USACE)

The development of this site also required the relocation of Campbell Creek, a Section 404 Jurisdictional Water. In order to relocate Campbell Creek, a Section 404 Individual Permit will be required from the USACE. The Individual Permit, including a site Mitigation Plan, will be developed to ensure that there will be no overall net loss of waters of the U.S. with this project. The overall Site Development Plan will be developed to provide significant improvement to this industrial area through the following two means.

1. Enhancement of existing portions of Campbell Creek, including:
   - Reducing the slope of the creek to minimize erosion potential and facilitate vegetation establishment;
   - Removing existing tires and debris that were previously placed in the creek;
   - Widening the creek in areas to provide a string of ponds that will improve water quality.
2. The creation of relocated creek and additional waters of the U.S. designed to mimic the characteristics of the existing Campbell Creek, including the establishment of a riparian corridor adjacent to the relocated creek and additional waters of the U.S.

The initial USACE Individual Permit for this site was approved in December 2010 and initial creek relocation activities began in 2011. Oklahoma City Waste Disposal, Inc. is currently working with the USACE to incorporate minor changes to the current USACE Individual Permit based on proposed expansion activities.

Federal Emergency Management Administration (FEMA)

With the relocation of Campbell Creek and proposed development in the floodplain and floodway areas of the North Canadian River, a Conditional Letter of Map Revision (CLOMR) will be required to establish floodplain and floodway boundaries as well as to provide FEMA with the required technical date to issue the CLOMR. The proposed relocation of Campbell Creek and site development will create additional floodplain storage on the site property and will have minimal impacts to the North Canadian River floodplain and floodway elevations. The current site CLOMR was approved by Oklahoma City in June 2016. A CLOMR incorporating the proposed revisions will be reviewed and approved by FEMA prior to development.

Oklahoma Department of Environmental Quality (ODEQ)

The expansion of a landfill will require a modification to the ODEQ Solid Waste Permit. The modification will be developed to show that the design and operation of the landfill expansion will be in compliance with Oklahoma Administrative Code (OAC) 252:515 Management of Solid Waste. A Tier III permit modification is currently being developed for submittal to ODEQ. The permitting of the landfill expansion will be the culmination of previously discussed Oklahoma City, USACE, FEMA, and ODEQ coordination/permitting.
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA

Figures 1

OKLAHOMA CITY WASTE DISPOSAL, INC.

DATE, 12/2021
FILE: 0601-01-11
CAD: FIG 1 - Sm: LOC MAP.DWG
DRAWN BY: RM
DESIGN BY: JBP
REVIEWS: JVQ

REVIEWS

OKLAHOMA CITY WASTE DISPOSAL, INC.

PREPARED FOR OKLAHOMA CITY WASTE DISPOSAL, INC.
FOR INFORMATIONAL PURPOSES ONLY
ISSUED FOR CONSTRUCTION

www.wcgrp.com

FIGURE 1

NOTES:

1. REPRODUCED FROM GENERAL HIGHWAY MAP, OKLAHOMA COUNTY, OKLAHOMA (ODOT PLANNING DIVISION, APRIL 1999), GENERAL HIGHWAY MAP, CLEVELAND COUNTY, OKLAHOMA (ODOT PLANNING DIVISION, AUGUST 1991), AND GENERAL HIGHWAY MAP, CANADIAN COUNTY, OKLAHOMA (ODOT PLANNING DIVISION, APRIL 1998).
NOTES:
1. ADAPTED FROM USGS 7.5 MINUTE QUADRANGLE TOPOGRAPHIC MAP (MUSTANG, OK 2018 AND OKLAHOMA CITY, OK 2018).

2. THE MAP AREA SHOWN IS WITHIN SECTIONS 8 AND 9 OF TOWNSHIP II NORTH, RANGE 4 WEST.

3. THE PERMIT BOUNDARY WAS REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
WWW.WCGRP.COM FIGURE 2
NOTES:
1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 09-24-2020.
2. THE EXISTING AND PROPOSED PERMIT BOUNDARIES WERE REPRODUCED FROM A LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
PERMITTED LANDFILL COMPLETION PLAN

NOTE:
1. THE EXISTING CONTOURS AND ELEVATIONS PROVIDED BY FIRMATEK FROM AERIAL PHOTOGRAPHY FLOWN ON 03-13-2021.
APPENDIX D-6

EXCERPTS FROM PUD-1759
This appendix includes excerpts from the City of Oklahoma approved (May 27, 2020) Planned Unit Development (PUD-1759) for the proposed modifications to the site.

The Bureau of Reclamation and the Natural Areas Registry concluded that there are no public recreation or preservation areas within ½ mile of the proposed expansion. However, the Oklahoma Tourism and Recreation Department and Oklahoma City Parks and Recreation stated that there is a park land within ½ mile of the expansion area. This park land is owned by the City of Oklahoma City and is currently located within ½ mile of the existing landfill. Oklahoma City Waste Disposal, Inc. has worked with the Planning and Zoning Commission as well as the City Council to develop PUD 1759 to comply with the City’s long-term development plan for the area. Refer to Section 2.13 for additional information.
AN ORDINANCE AMENDING CHAPTER 59, SECTION 5150 OF THE OKLAHOMA CITY MUNICIPAL CODE, 2010, TO INCLUDE ADDITIONAL TERRITORY WITHIN THE PUD PLANNED UNIT DEVELOPMENT DISTRICT AND DECLARING AN EMERGENCY. FK

EMERGENCY ORDINANCE

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF OKLAHOMA CITY:

SECTION 1. That Chapter 59, Section 5150 of The Oklahoma City Municipal Code, 2010, be amended to change the boundaries of the PUD Planned Unit Development District, as shown upon the District Map to include therein the following described property:


SURVEYOR'S DESCRIPTION: BEGINNING AT THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA; THENCE NORTH 89° 41' 09" EAST, ALONG THE NORTH LINE OF SAID NORTHWEST QUARTER TO THE THREAD OF THE NEW CHANNEL OF THE NORTH CANADIAN RIVER, A DISTANCE OF 386.83 FEET; THENCE SOUTH 33°31'49" EAST, ALONG SAID THREAD OF THE RIVER A DISTANCE OF 282.05 FEET; THENCE CONTINUING ALONG SAID THREAD, SOUTH 05°36'09" EAST A DISTANCE OF 641.85 FEET; THENCE CONTINUING ALONG SAID THREAD, SOUTH 71°14'57" EAST A
DISTANCE OF 422.59 FEET; THENCE CONTINUING ALONG SAID THREAD, NORTH 61°24'08" EAST A DISTANCE OF 985.32 FEET; THENCE CONTINUING ALONG SAID THREAD, SOUTH 75°43'53" EAST A DISTANCE OF 775.56 FEET; THENCE SOUTH 00°21'47" EAST, ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION (9), A DISTANCE OF 945.30 FEET; THENCE NORTH 85°27'25" EAST A DISTANCE OF 974.58 FEET; THENCE NORTH 00°10'45" EAST A DISTANCE OF 1,112.38 FEET TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SECTION NINE (9); THENCE SOUTH 89°54'44" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2,628.85 FEET; THENCE SOUTH 89°46'22" WEST ALONG SAID QUARTER SECTION LINE, A DISTANCE OF 1629.41 FEET TO THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION NINE (9); THENCE SOUTH 00°10'43" WEST, ALONG THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION NINE, A DISTANCE OF 177.23 FEET; THENCE NORTH 89°46'22" WEST, ALONG THE SOUTH LINE, A DISTANCE OF 1556.78 FEET; THENCE NORTH 00°10'43" WEST, TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION NINE, A DISTANCE OF 2,628.85 FEET; THENCE SOUTH 89°46'22" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 1629.41 FEET TO THE POINT OF BEGINNING.

BASIS OF BEARING: GRID BEARINGS BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83, NORTH ZONE.

Note: Last Field Site Visit Date: February 26, 2013

Legal Description for Mycek Property


METES AND BOUNDS DESCRIPTION: BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4); Thence South 89°46'22" West, along the South line of said Southwest Quarter (SW/4), a distance of 365.01 feet to the Point of Beginning; Thence continuing along said thread, South 89°46'22" West a distance of 612.25 feet; Thence North 00°10'43" West a distance of 122.62 feet; Thence South 89°56'37" East, along the North line, a distance of 614.08 feet; Thence South 00°08'43" East a distance of 2639.11 feet to the Point of Beginning. SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Legal Description for CP Realty Property

(Book 11162, Page 1678) A part of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma. metes and bounds description: Beginning at the southeast corner of the Southwest Quarter (SW/4), a distance of 2639.47 (2638.38 - calculated) feet; Thence West (South 89°56'37" West -
calculated) and parallel with the said North line of Southwest Quarter (SW/4) a distance of 246.84 (243.41 - calculated) feet; Thence Southerly (South 00°08'43'' East - calculated) a distance of 2639.92 (2639.11 - calculated) feet to a point 367.87 (365.01 - calculated) feet West of the Southeast corner of Southwest Quarter (SW/4); Thence East (North 89°46'22'' East - calculated) a distance of 245.25 (243.34 - calculated) feet to the Point or Place of Beginning, except the South 33 feet which is reserved for ROAD purposes.

AND (TRACT B) (BOOK 12640, PAGE 1913) The east 7 and ½ acres of the east 30 acres of Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma.

METES AND BOUNDS DESCRIPTION:
Beginning at the Southeast corner of Southwest Quarter (SW/4): Thence South 89°46'22'' West along the South line of said Southwest Quarter a distance of 121.67 feet; Thence North 00°08'38'' West a distance of 2638.38 feet to a point on the North line of Southwest Quarter (SW/4); Thence North 89°56'37'' East along the said North line a distance of 121.67 feet to a point on the East line Southwest Quarter (SW/4); Thence South 00°08'38'' East along said East line a distance of 2638.02 feet to the Point of Beginning.

SECTION 2. (EMERGENCY) WHEREAS, it being immediately necessary for the preservation of the peace, health, safety, and public good of Oklahoma City and the inhabitants thereof that the provisions of the ordinance be put into full force and effect, an emergency is hereby declared to exist by reason whereof this ordinance shall take effect, and be in full force from and after its passage as provided by law.

INTRODUCED AND READ in open meeting of the Council of The City of Oklahoma City, Oklahoma, on this 28th day of April, 2020.
PASSED by the Council of The City of Oklahoma City, Oklahoma, on the 26th day of May, 2020.
SIGNED by the Mayor of The City of Oklahoma City, Oklahoma, on this 26th day of May, 2020.

ATTEST:

CITY CLERK

MAYOR

REVIEWED for form and legality.

ASSISTANT MUNICIPAL COUNSELOR
APPROVED
5-26-2020
THE CITY OF OKLAHOMA CITY
PLANNED UNIT DEVELOPMENT

PUD –1759
DESIGN STATEMENT FOR
OKLAHOMA LANDFILL

Prepared for
Oklahoma City Waste Disposal, Inc.
February 12, 2020

Prepared by
Weaver Consultants Group, LLC
6420 Southwest Blvd, Suite 206
Fort Worth, Texas 76109
817-735-9770 (Office) 817-735-9775 (Fax)
jqueen@wcgrp.com

WCG Project No. 0601-001-11-142-01
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1 DESIGN STATEMENT INTRODUCTION

1.1 Purpose

The purpose of this Planned Unit Development (PUD) is to make several subtle, yet important, improvements to the existing PUD-1542 Master Development Plan. The updates include modifying the site configuration to increase the capacity of the site without significantly changing the visual appearance of the site and expanding the planned trail system. This updated Master Development Plan will allow the existing Oklahoma Landfill to continue to provide a safe and environmentally protective solid waste disposal facility for the City of Oklahoma City (City) and surrounding communities. For over the past 35 years the Oklahoma Landfill has been an integral part of the City's solid waste management system. The updated Master Development Plan included in this PUD for the Oklahoma Landfill will ensure that long-term solid waste disposal capacity is available for the City to support future economic growth and development.

The development and operation of the existing landfill is governed by Oklahoma Department of Environmental Quality (ODEQ) Permit No. 3555018 and PUD-1542.

The concept of the proposed PUD is discussed in Section 6 and depicted on Exhibit E though H. This expansion will allow the landfill to continue to provide solid waste disposal services to the area.

1.2 Location

The site is located on the west side of Oklahoma City. Specifically, the site is located within Sections Eight (8) and Nine (9), Township Eleven North (T-11-N), Range Four West (R-4-W) of the Indian Meridian, Oklahoma County, Oklahoma. The address for the facility is:

Oklahoma Landfill
7600 SW 15th St.
Oklahoma City, Oklahoma 73128
2 LEGAL DESCRIPTION

The legal description of the property comprising the PUD is described below, as well as in Exhibit B, and is made a part of this Design Statement.

Legal Description for PUD-1542

(BOOK 7808, PAGE 1984)
A TRACT OF LAND LYING IN THE NORTHEAST QUARTER (NE/4) OF SECTION EIGHT (8) AND THE NORTHWEST QUARTER (NW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: ALL OF LOT TWO (2) AND THE SOUTH HALF (S/2) OF THE NORTHEAST QUARTER (NE/4) AND THE NORTHWEST QUARTER (NW/4) OF THE NORTHEAST QUARTER (NE/4) OF SECTION EIGHT (8), AS SHOWN BY THE GOVERNMENT SURVEY THEREOF.

AND,

ALL OF THAT PART OF GOVERNMENT LOTS FIVE (5), SIX (6) AND SEVEN (7) AND THE SOUTHWEST QUARTER (SW/4) OF THE NORTHWEST QUARTER (NW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA, LYING SOUTH OF THE NEW CHANNEL OF THE NORTH CANADIAN RIVER, TOGETHER WITH RIPARIAN AND ALL ACCRETED LAND.

(BOOK 8734, PAGE 1173)
THE WEST HALF (W/2) OF THE SOUTHWEST QUARTER (SW/4) AND THE WEST HALF (W/2) OF THE WEST HALF (W/2) OF THE EAST HALF (E/2) OF THE SOUTHWEST QUARTER (SW/4), SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

(BOOK 10909, PAGE 1005)
A PART OF THE NORTHEAST QUARTER (NE/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

(BOOK RE11805, PAGE 648)
A PART OF THE SOUTHEAST QUARTER (SE/4) OF SECTION EIGHT (8), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST, OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

(Book 12476, Page 1444)
A PART OF THE SOUTHWEST QUARTER OF SECTION 9, TOWNSHIP 11 NORTH, RANGE 4 WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

SURVEYOR'S DESCRIPTION:

BEGINNING AT THE NORTHWEST CORNER OF THE NORTHWEST QUARTER OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA;

THENCE NORTH 89° 41' 09" EAST, ALONG THE NORTH LINE OF SAID NORTHWEST QUARTER TO THE THREAD OF THE NEW CHANNEL OF THE NORTH CANADIAN RIVER, A DISTANCE OF 386.83 FEET;

THENCE SOUTH 33°31'49" EAST, ALONG SAID THREAD OF THE RIVER A DISTANCE OF 282.05 FEET;

THENCE CONTINUING ALONG SAID THREAD, SOUTH 05°36'09" EAST A DISTANCE OF 641.85 FEET;

THENCE CONTINUING ALONG SAID THREAD, SOUTH 71°14'57" EAST A DISTANCE OF 422.59 FEET;

THENCE CONTINUING ALONG SAID THREAD, NORTH 61°24'08" EAST A DISTANCE OF 985.32 FEET;

THENCE CONTINUING ALONG SAID THREAD, SOUTH 75°43'53" EAST A DISTANCE OF 775.56 FEET;

THENCE SOUTH 00°21'47" EAST, ALONG THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION (9), A DISTANCE OF 945.30 FEET;

THENCE NORTH 85°27'25" EAST A DISTANCE OF 974.58 FEET;

THENCE NORTH 66°29'25" EAST A DISTANCE OF 177.23 FEET;

THENCE SOUTH 00°25'17" EAST A DISTANCE OF 1,112.38 FEET TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SECTION NINE (9);

THENCE SOUTH 89°54'44" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2,114.43 FEET;
THENCE SOUTH 00°10'45" EAST A DISTANCE OF 2641.12 FEET TO A POINT ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 9;

THENCE SOUTH 89°46'24" WEST ALONG SAID SOUTH LINE, A DISTANCE OF 1629.41 FEET TO THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER OF SECTION EIGHT (8) TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST;

THENCE NORTH 00°14'04" WEST, ALONG THE EAST LINE OF SECTION EIGHT, A DISTANCE OF 1556.78 FEET;

THENCE NORTH 89°45'49" WEST, A DISTANCE OF 400.00 FEET;

THENCE NORTH 00°14'04" WEST, TO A POINT ON THE EAST-WEST QUARTER SECTION LINE OF SAID SECTION EIGHT, A DISTANCE OF 1088.44 FEET;

THENCE SOUTH 89°41'02" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2245.25 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SECTION EIGHT (8);

THENCE NORTH 00°10'12" WEST, ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION EIGHT (8), A DISTANCE OF 2,642.88 FEET TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER;

THENCE NORTH 89°42'15" EAST, ALONG THE NORTH LINE OF SAID SECTION EIGHT (8), A DISTANCE OF 2,628.95 FEET TO THE POINT OF BEGINNING.

BASIS OF BEARING: GRID BEARINGS BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83, NORTH ZONE.

Note:
Last Field Site Visit Date: February 26, 2013

Legal Description for Mycek Property

(BOOK 12301, PAGE 1428)

THE EAST HALF (E/2) OF THE WEST HALF (W/2) OF THE EAST HALF (E/2) OF THE SOUTHWEST QUARTER (SW/4), AND THE WEST HALF (W/2) OF THE WEST HALF (W/2) OF THE EAST HALF (E/2) OF THE EAST HALF (E/2) OF THE SOUTHWEST QUARTER (SW/4),

AND,
THE WEST 7.5 ACRES OF THE EAST 30 ACRES OF THE SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

METES AND BOUNDS DESCRIPTION:

BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4);

THENCE SOUTH 89°46'22" WEST, ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER (SW/4), A DISTANCE OF 365.01 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING ALONG SAID THREAD, SOUTH 89°46'22" WEST A DISTANCE OF 612.55 FEET;

THENCE NORTH 00°10'43" WEST A DISTANCE OF 2640.95 FEET TO A POINT ON THE NORTH LINE OF SAID SOUTHWEST QUARTER;

THENCE NORTH 89°56'37" EAST, ALONG THE NORTH LINE, A DISTANCE OF 614.08 FEET;

THENCE SOUTH 00°08'43" EAST A DISTANCE OF 2639.11 FEET TO THE POINT OF BEGINNING.

SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Legal Description for CP Realty Property

(TRACT A)
(BOOK 11162, PAGE 1678)

A PART OF THE SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

METES AND BOUNDS DESCRIPTION:

BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA;

THENCE WEST A DISTANCE OF 122.62 FEET

THENCE NORTH 00°08'38" WEST AND PARALLEL WITH SAID EAST LINE OF SOUTHWEST QUARTER (SW/4) A DISTANCE OF 2639.11 (2638.38 - CALCULATED) FEET;
THENCE WEST (SOUTH 89°56'37" WEST - CALCULATED) AND PARALLEL WITH THE SAID NORTH LINE OF SOUTHWEST QUARTER (SW/4) A DISTANCE OF 246.84 (243.41 - CALCULATED) FEET;

THENCE SOUTHERLY (SOUTH 00°08'43" EAST - CALCULATED) A DISTANCE OF 2639.92 (2639.11 - CALCULATED) FEET TO A POINT 367.87 (365.01 - CALCULATED) FEET WEST OF THE SOUTHEAST CORNER OF SOUTHWEST QUARTER (SW/4);

THENCE EAST (NORTH 89°46'22" EAST - CALCULATED) A DISTANCE OF 245.25 (243.34 - CALCULATED) FEET TO THE POINT OR PLACE OF BEGINNING, EXCEPT THE SOUTH 33 FEET WHICH IS RESERVED FOR ROAD PURPOSES.

AND

(TRACT B)
(BOOK 12640, PAGE 1913)

THE EAST 7 AND ½ ACRES OF THE EAST 30 ACRES OF SOUTHWEST QUARTER (SW/4) OF SECTION NINE (9), TOWNSHIP ELEVEN (11) NORTH, RANGE FOUR (4) WEST OF THE INDIAN MERIDIAN, OKLAHOMA COUNTY, OKLAHOMA.

METES AND BOUNDS DESCRIPTION:

BEGINNING AT THE SOUTHEAST CORNER OF SOUTHWEST QUARTER (SW/4):

THENCE SOUTH 89°46'22" WEST ALONG THE SOUTH LINE OF SAID SOUTHWEST QUARTER A DISTANCE OF 121.67 FEET;

THENCE NORTH 00°08'38" WEST A DISTANCE OF 2638.38 FEET TO A POINT ON THE NORTH LINE OF SOUTHWEST QUARTER (SW/4);

THENCE NORTH 89°56'37" EAST ALONG THE SAID NORTH LINE A DISTANCE OF 121.67 FEET TO A POINT ON THE EAST LINE SOUTHWEST QUARTER (SW/4);

THENCE SOUTH 00°08'38" EAST ALONG SAID EAST LINE A DISTANCE OF 2638.02 FEET TO THE POINT OF BEGINNING.
The owner/developer of the PUD is as follows:

Oklahoma City Waste Disposal, Inc.
Attention: Rachel Hanigan
7600 SW 15th St.
Oklahoma City, Oklahoma 73128
405-742-3002

Oklahoma City Waste Disposal, Inc. is a wholly-owned subsidiary of Waste Connections, Inc. (WCI). WCI is one of the leading solid waste management companies in the nation. For over 35 years, the landfill has been a part of the community and is one of the main recipients of waste from the residents and businesses in the City of Oklahoma City (City) and surrounding areas. The landfill also serves as a key community resource during disaster relief efforts, as demonstrated during recent severe storm events such as the tornadoes and flooding that occurred in the City and surrounding areas in 2013 and 2016.
4 SITE AND SURROUNDING AREAS

4.1 Zoning of Proposed PUD Area

As shown on Exhibit A, the subject property is currently zoned PUD-1542, I-2, and R-1. A topographic map and aerial photo that shows the existing conditions of the PUD area and surrounding areas is shown on Exhibit C and Exhibit D.

4.2 Zoning of Surrounding Area

Land use and zoning of the surrounding area is shown on Exhibit A (Master Development Plan) and Exhibit D (Aerial Photograph) and summarized below.

**North** – Located north of the site is property zoned “R-1” Residential and “AA” Agricultural and Rural Residential which is used predominantly as mining and auto salvage.

**South** – Located south of the site is property zoned “I-2” Moderate Industrial, “I-3” Heavy Industrial, “R-1” Residential, PUD-548, and PUD-1042. This area consists of industrial, manufacturing, outdoor storage, and agricultural.

**East** – Located east of the site is property which is zoned “R-1” Residential, and “R-MH-2” Manufactured (Mobile) Home Park District. This area consists of agricultural and a mobile home park.

**West** – Located west of the site is property zoned “I-3” Heavy Industrial and PUD-1407. This area includes heavy industrial and the Western Heights Schools/Bridgestone Firestone Nature and Education Area.
5 PHYSICAL CHARACTERISTICS

The existing configuration of the 477.1-acre PUD area is shown on Exhibit C (Topographic Map) and Exhibit D (Aerial Photograph). The soil on the site can generally be classified as clay and silty loam.

There is a scrub-wooded area along Campbell Creek on the west side of the southern portion of the site. Undeveloped areas of the PUD are covered with field vegetation. Pursuant to plans approved by Oklahoma Department of Environmental Quality (ODEQ), as the solid waste disposal reaches final grade, the slopes are re-vegetated.

The North Canadian River lies along the north edge of the site. Campbell Creek runs northeasterly from the southwest corner of the site. The existing topography of the site is influenced by two prominent features, the North Canadian River and Campbell Creek. The existing site is divided by Campbell Creek. The portion of the site west of Campbell Creek slopes toward the north and east to either Campbell Creek or the North Canadian River. The eastern portion of the existing site slopes from a high point in the southeast corner in a northwest direction toward Campbell Creek.

With regard to the elevation of the subject property, the existing landfill in the west half of the site continues to be developed in accord with the existing permitted grading plans. There is ongoing soil borrow activity in the southern portion of the site. Creek relocation and floodplain development activities continue on the east portion of the site. Due to the ongoing landfill activity, the depositing of solid wastes and cover material, the elevation of any given portion of the landfill will be in constant change until the site reaches its permitted capacity.

Several landfill operation support facilities including the scale house, wheel wash, maintenance shop, landfill gas-to-energy facility, landfill gas flare, citizens convenience center, and storage building are located in the PUD area.

This property is in the Campbell Creek and North Canadian River Drainage Basins. The 100-year floodplain is shown on Exhibit C. The proposed site development will ensure that the solid waste disposal area is protected from the 100-year floodplain.

With regard to natural resource areas on this property, there are no native rock outcroppings, steep slopes, environmentally sensitive lands, wildlife habitats, significant mature trees, or tree canopies. Campbell Creek transects the site: as part of the development of the landfill, Campbell Creek will be relocated to the east edge of the property.
6 CONCEPT

6.1 Project Overview and Final Landfill Configuration

The concept for the PUD is to make several subtle, yet important, improvements to the existing PUD-1542 Master Development Plan. The updates include modifying the site configuration to increase the capacity of the site without significantly changing the visual appearance of the site and expanding the planned trail system. This updated Master Development Plan will allow the existing Oklahoma Landfill to continue to provide a safe and environmentally protective solid waste disposal facility for the City of Oklahoma City (City) and surrounding communities. For over the past 35 years the Oklahoma Landfill has been an integral part of the City's solid waste management system. The updated Master Development Plan included in this PUD for the Oklahoma Landfill will ensure that long-term solid waste disposal capacity is available for the City to support future economic growth and development.

The trail system is discussed in more detail in Section 6.2. The proposed completion plan is shown on Exhibit E. The proposed completion plan will have little impact on how the site will look from surrounding areas. The expansion of the waste disposal area will recapture some of the disposal capacity lost during the disaster relief effort that occurred in the aftermath of the May 2013 and April 2016 Oklahoma City area tornadoes. A side by side comparison of the permitted landfill completion plan and the proposed landfill completion plan is shown on Exhibit F and summarized below.

- The eastern portion of the site will be utilized for Campbell Creek relocation activities and will be developed as floodplain storage. Initial Campbell Creek relocation activities and floodplain development has been completed in accordance with Oklahoma City, USACE, FEMA, and ODEQ permit documents. These initial activities can be seen on Exhibits C and D.

- The proposed waste disposal area will be increased by 49 acres in the southeastern portion of the site. This increase in waste disposal area will require that the permitted Campbell Creek relocation activities and stormwater control structures be moved approximately 1,000 feet to the east.

The entrance to the site will remain at the current location. Traffic patterns will not change with this PUD.
Facilities located near the site entrance include the following.

- **Scale House.** A new scalehouse and education center will be constructed by the end of 2019 in accordance with PUD-1542. The Education Center will be open to the public and include posters and models to help guide visitors through the various existing and future environmental and sustainable features at the site. Sanitary and water facilities will be available at the scale house by means of septic tank and city water connection, respectively.

- **Wheel Wash.** The existing wheel wash near the entrance of the facility minimizes the potential for mud tracking onto area roads.

- **Maintenance Shop.** The existing maintenance shop is located in the southern portion of the site. The maintenance shop is utilized for maintenance, repair, mechanical work, and/or storage of site equipment.

- **Landfill Gas-to-Energy Facility.** The existing landfill gas-to-energy facility is located in the northern portion of the site near the site entrance. The landfill gas-to-energy facility collects gas produced within the landfill, processes (i.e., filter, compress, dehydrate) the gas, and conveys the gas offsite to end users.

- **Landfill Gas Flare.** The existing landfill gas flare is located in the northern portion of the site. Any landfill gas not collected/processed by the landfill gas-to-energy facility will be directed to the landfill gas flare for combustion.

- **Citizens Convenience Center.** The existing citizens convenience center near the entrance of the facility allows small vehicle customers (e.g., vehicles driven by members of the public or small contractors) a location where they can unload the solid waste material they transport to the site into roll-offs which will then be hauled safely to the working face by landfill employees.

- **Storage Building.** The existing storage building near the entrance of the facility houses documents/records required to be kept onsite by state regulations, as well as providing for other facility storage needs.

### 6.2 Public Access and Trail System

The trail system concept included in PUD-1542 will remain as a key part of the Master Development Plan for the Oklahoma Landfill. The first phase of the trail system will be constructed by the end of 2019 in accordance with PUD-1542. When complete, the trail system will offer panoramic views of surrounding areas. The proposed End Use Plan is shown on Exhibit H.

Similar to PUD-1542, public access to the site is a key component of the plans for the site. Public parking will be provided as part of the proposed open space park, allowing access to an Education Center, nearly two miles of gravel trails, opportunities for passive recreation, wildlife observation, and panoramic views of...
the surrounding area. Interpretive signage will educate visitors about area history, the site's past uses, and indigenous plants and animals.

The trail system will be constructed and maintained by Oklahoma City Waste Disposal, Inc. for a 30-year period after the site closes. A side by side comparison of the permitted trail system and the proposed trail system is shown on Exhibit G. As shown on Exhibits A and G, the trail system will be constructed in three phases. At the completion of construction of each phase of the trail system, Oklahoma City Waste Disposal, Inc. will grant to the City, a public trust or a non-profit organization, an access easement and/or other document. Said easement and/or other document will indicate, describe and/or show the areas open to the public.

The easement and/or other document will be prepared by Oklahoma City Waste Disposal, Inc. and submitted to the City, public trust or non-profit organization for approval. At the end of the landfill's 30-year postclosure period, the Oklahoma City Waste Disposal, Inc. will allow the trail system to continue to be used by the public. However, the maintenance and operation of the trail system within this PUD after the 30-year postclosure period has been completed will not be the responsibility of the Oklahoma City Waste Disposal, Inc.

Similar to PUD-1542, site improvement plans reflect the addition of several stormwater detention ponds. This includes a string of ponds that will be constructed around the perimeter of the site adjacent to the relocated Campbell Creek as part of Phase III and as shown on Exhibit A. Detention Ponds will transition to wetlands when landfill operations are complete. Final grade and condition at side slopes will accommodate emergent vegetation along the edges of the ponds. The detention ponds that will be transitioned to wetlands will be inspected during the minimum 30-year postclosure period required by ODEQ. Should this environment result in attracting birds that may pose a threat to air navigation, the Oklahoma Landfill will re-grade the area and create an upland habitat environment.

6.3 Landfill Design and Operation Information

This section describes the landfill design and operation and is consistent with PUD-1542.

6.3.1 Solid Waste Containment System

A liner, leachate management, and final cover system that meet all regulatory requirements will be used for the solid waste containment system. The design objective of the containment system (liner, leachate management, and final cover system) is to isolate the solid waste and remove leachate (defined as liquid that has contacted solid waste) that collects on the liner system. The construction procedures of the liner, leachate collection, and final cover systems follow strict
ODEQ approved quality control and quality assurance procedures, which are verified by an independent testing firm. Each of the containment system components must be thoroughly reviewed and approved by the ODEQ before solid waste is placed in the future constructed portion of the landfill.

### 6.3.2 Environmental Monitoring Systems

To verify that the highest levels of environmental protection are maintained, the following landfill monitoring systems are provided:

- **Groundwater Monitoring System.** The purpose of the groundwater monitoring system is to verify the integrity of the containment system and verify that groundwater is not adversely impacted by the landfill. This is accomplished by obtaining water samples from the monitor wells, located on the perimeter of the landfill, which are screened in the uppermost saturated zone to monitor groundwater quality. The water samples are tested at an off-site laboratory.

- **Landfill Gas Monitoring System.** The purpose of the landfill gas monitoring system is to verify the integrity of the containment system and verify that methane gas, produced from the decomposing waste material, has not migrated beyond the permit boundary. This is accomplished by obtaining subsurface air samples from the landfill gas probes, located on the perimeter of the landfill, which are screened across potential migration pathways. The samples are tested on-site with a portable landfill gas analyzer.

- These monitoring systems are sampled and tested periodically. The results are filed with the ODEQ.

### 6.3.3 Stormwater Controls and Site Vegetation Requirements

Stormwater controls that meet all regulatory requirements will be used to prevent discharge of pollutants into waters of the State or waters of the United States.

A Surface Water Management Plan will be developed and approved by ODEQ. The Surface Water Management Plan will include the design of a stormwater management system. The stormwater management system will include swales, letdowns, a perimeter drainage system, and detention ponds that will convey stormwater to existing drainage features. The stormwater management system will be designed so that the landfill expansion will not significantly alter existing drainage patterns.

The site Vegetation Plan that sets forth the procedures to establish interim and permanent vegetation, pursuant to regulatory requirements will be updated and utilized to establish vegetation on the landfill and borrow areas. Establishment of vegetation will assist with dust control, and erosion control. Additional landscaping requirements for the PUD are discussed in Section 9.2.
6.3.4 Air Quality and Odor Control Plan (Dust Control Plan)

Oklahoma Landfill is subject to New Source Performance Standard (NSPS) Subpart WWW and NSPS XXX for landfills and is currently operating under a Title V permit. Under the NSPS, the site is required to install a landfill gas collection and control system (GCCS).

In addition to using the GCCS to control potential landfill gas (LFG) odors, potential odors for landfill operations will be controlled through means of earthen material daily cover or approved Alternative Daily Cover (ADC). Earthen material or ADC will be placed over exposed solid waste at the end of each operating day or more frequently, if needed.

Dust resulting from vehicular traffic, construction activity, and landfill operations will be kept to a minimum within the property through the utilization of a water truck, road base material, and/or vegetation establishment. The site water truck is utilized throughout the day to apply water to various haul roads throughout the site. During the life of the landfill, water will be applied to the access roads to control dust on a daily basis, except on days of measurable precipitation or when temperatures are at or below freezing.

In addition, several of the site haul roads are covered with various road base materials, including the main site entrance road. Finally, as portions of the landfill are developed to final grade, final or temporary vegetation is established through means of seeding or sodding.

6.3.5 Site Operations

A detailed site operating plan will be included in the ODEQ landfill expansion permit application. The plan will detail the required equipment, personnel, and safety procedures required to operate the site in accordance with ODEQ regulations. The site will continue to provide solid waste disposal service six days a week and the active landfill area will be covered at the end of each workday to prevent potential nuisance conditions such as odors and vectors. The Oklahoma Landfill will continue to be inspected by the ODEQ on a regular basis to ensure the site is in compliance with state regulations.
7 SERVICE AVAILABILITY

7.1 Streets

The site is located south of the major transportation corridor of Interstate Highway 40 (IH-40). The site is accessed from South Council Rd. and SW 15th St. SW 29th St. is located south of the site. An all-weather road from SW 15th St. to the entrance of the Oklahoma Landfill will be provided and maintained for access to the site.

7.2 Sanitary Sewer

Sanitary sewer utilities are available to serve the site. A 48-inch sewer main runs along SW 15th St. east of S. Council Rd. An 18-inch main runs along SW 29th St. west of S. Rockwell Ave.

7.3 Water

Water utilities are presently available to serve the site. An existing 16-inch water line runs along S. Council Rd. between SW 15th St. and SW 29th St. An existing 12-inch water line runs north from SW 29th St. along S. Rockwell Ave. to the half-section line. The scalehouse currently has existing water service from a meter on S. Rockwell Ave.

7.4 Fire Protection

Fire protection is presently available from the Oklahoma City Fire Department Station No. 20 located at 7929 SW 29th St. approximately 1 mile southwest of the site.

7.5 Gas Service, Electrical Service, and Telephone Service

Proper coordination with the various utility companies will be made in conjunction with this development.
7.6 Public Transportation

There is no Metro Transit service along SW 15th St. at the PUD area.

7.7 Drainage

To allow for the continued development of the landfill, Campbell Creek and the associated floodplain will be permitted to be relocated around the future landfill area. In order to relocate the floodplain, a Conditional Letter of Map Revision (CLOMR) will be prepared for the site. The CLOMR will be prepared to be consistent with this PUD. The purpose of the CLOMR will be to obtain approval to relocate Campbell Creek, revise the effective floodplain, and allow the development of the landfill. The CLOMR will be submitted to the City for review and comment. The CLOMR will be subject to FEMA and OKC Floodplain approval. Once the landfill is developed, a Letter of Map Revision (LOMR) will be issued to officially revise the floodplain within the permit boundary.
8 SPECIAL DEVELOPMENT REGULATIONS

The following Special Development Regulations and/or limitations are placed upon the development of the PUD. Planning and zoning regulations will be those, which are in effect at the time of development of this PUD. Certain zoning districts are referred to as a part of the Special Development Regulations of this PUD. For purpose of interpretation of these Special Development Regulations, the operative and controlling language and regulations of such zoning districts will be the language and regulations applicable to the referenced zoning districts as contained in the City of Oklahoma City’s Planning and Zoning Code as such exists at the time this PUD is approved. In the event of conflict between provisions of this PUD and any of the provisions of the Oklahoma City Municipal Code, the provisions of this PUD will apply and be controlling; provided however that in the event of a conflict between the Special Use and Development Regulations specifically negotiated as a part of this PUD and the provisions of the Code in effect at the time a permit is applied for with respect to any lot, block tract and/or parcel of land subject to this PUD, such Special Use and Development Regulations of this PUD will prevail and be controlling.

Notwithstanding Section 59-14250.1 of the Oklahoma City Municipal Code, 2010, as amended, pertaining to administrative approval of minor amendments, the following special conditions listed in Sections 8.1 through 10.0 will not be changed or amended in any way except by action of the City Council, after review and recommendation by the Planning Commission.

8.1 Use and Development Regulations

The use and development regulations of the I-3 Heavy Industrial District as of the date of approval of the PUD will govern this PUD, except as herein modified, including accessory uses subject to their appropriate conditions and review procedures for public hearings where applicable, unless otherwise noted herein.

The following represents variations to the City of Oklahoma City Subdivision Regulations proposed in this PUD: None.

The following represents variations to the I-3 Heavy Industrial base zoning district and/or other sections of the Oklahoma City zoning ordinance.

- All setbacks are shown on Exhibit A and/or the Proposed Landfill Completion Plan (Exhibit E).
• Hard surface paving is not required for internal drives, required parking and/or outdoor storage.
• Recyclable material will be stored in roll offs and in a manner to control vectors, prevent odors, prevent windblown material/litter, prevent fires and ensure safety.
• All maintenance, repair, and mechanical work will be performed in enclosed buildings when feasible. Maintenance, repair, and mechanical work will periodically be required on equipment unable to reach enclosed buildings or on permanent operations equipment.

8.2 Special Provisions

The following additional uses are permitted within this PUD:

• Sanitary landfill (8350.12) and auxiliary uses including leachate, gas collection, and stormwater management. Leachate, gas collection and stormwater management facilities may be relocated in the future to facilitate site operations.
• Uses accessory to the sanitary landfill use, including recycling and reuse of materials, equipment maintenance/repair/washing/fueling, office/scale house facilities, wheel wash, citizens convenience center, fuel storage, etc. (including relocation of existing facilities).
• Recycling Collection and Processing Facility (8350.11) and auxiliary uses including the collection, storage, processing, and transfer of recycling and reuse materials.
• Mining and processing: Minerals and raw materials (8450.1) to be utilized to facilitate site operations including but not limited to liner construction, final cover construction, drainage structure construction, etc.
• Heavy Public Protection and Utility (8250.9) and auxiliary uses including landfill gas flare and/or gas-to-energy facilities.
• Automotive and Equipment: Heavy Repairs, Heavy Equipment (8300.15) and auxiliary uses including maintenance, repair, fueling, washing of site operation equipment.
• Above Ground Flammable Liquid Storage: General (8350.1) and auxiliary uses including storage in portable or permanent above ground tanks at volumes above 10,000 gallons for maintenance and operation of site equipment.
• Community Recreation: General (8250.2) and auxiliary uses including trails, overlooks, ponds, and related public relation facilities.
Sanitary landfill use is allowed within this PUD; application for a special use permit is not required when an additional part of the PUD property is developed as a solid waste disposal area. The solid waste disposal areas will be designed and constructed consistent with the Master Development Plan shown in Exhibit A. However, each solid waste disposal area will meet the following conditions:

- All setbacks are shown on Exhibit A.
- A fence or natural barrier will be provided at the perimeter of the PUD property.
- Site will remain open during business hours, but access will be denied after hours with a locked gate.
- Minimum setbacks between any solid waste disposal area and any highway, drainage canal, lake, stream, navigable waterway, regulatory floodway or property line will be as shown on Exhibit A, Master Development Plan and/or the Proposed Landfill Completion Plan (Exhibit E).
- All buildings and structures accessory to the operation will comply with all applicable city codes with the exception that hard surface paving is not required.
- The entrance of the facility will have an all-weather access road.
- No residentially-developed street will be used for access.
- After the solid waste disposal areas have reached their proposed grades, the solid waste disposal site will be closed in accordance with regulatory closure and postclosure requirements consistent with the Master Development Plan shown on Exhibit A.

Recycling collection and processing is allowed within this PUD; application for a special use permit is not required if the collection and processing of reusable materials is done with the intent for reuse, remanufacture, or reconstruction. Recycling collection and processing will meet the following conditions

- The materials will not be displayed for sale.
- Recyclable materials will not include refuse or hazardous materials.
- Recyclable materials will not be stored in a quantity exceeding that which could be reasonably expected to be used or recycled.

Mining and processing: Minerals and raw materials use is allowed within this PUD; application for a special use permit is not required as long as the area that is developed for a soil borrow area is developed consistent with the grades of a future excavation for a solid waste disposal area or an area that is used for a stormwater management structure. The solid waste disposal area and related stormwater management facilities will be designed and constructed consistent with the Master Development Plan.
Development Plan shown on Exhibit A. However, each soil borrow area will meet the following conditions:

- After the soil borrow area is completed it will be converted to its final intended use as either a solid waste disposal area or stormwater management structure, consistent with the Master Development Plan in Exhibit A. Soil borrow areas will be closed in accordance with regulatory closure and postclosure requirements.

- No excavation, stockpiling of material or accessory or incidental use of the mining operation will be permitted within 50 feet of any property line, street right-of-way line or drainage or utility easement, except as shown on the Master Development Plan and/or the Proposed Landfill Completion Plan (Exhibit E).

The soil borrow areas support the operation of the landfill by providing soil that is used to cover solid waste on a daily basis and for the landfill's liner and final cover systems.

Heavy public protection and utility use is allowed within this PUD; application for a special use permit is not required for a landfill gas flare facilities. The landfill gas flare facility will meet the following conditions:

- There will be a 50-foot setback from any Residential District for any off-street parking or loading spaces.
- No heavy public protection and utility use will be permitted within 500 feet of an occupied dwelling.

Automotive and equipment repair/maintenance is allowed within this PUD; application for a special permit is not required if the repair/maintenance is for site operation equipment purposes.

Aboveground flammable liquid storage is allowed within this PUD; application for a special use permit is not required if the liquid stored is for site operation purposes. Aboveground flammable liquid storage tanks will meet the following conditions:

- The setback for any aboveground storage tank will be not less than one-hundred (100) feet from any property boundary.
- The aboveground tanks will be used for maintenance and operation of site equipment only.
- The aboveground tanks will meet all local, state, and federal requirements and standards.

Community recreation is allowed within the PUD; application for a special permit is not required if the public recreation facilities are established as noted in this PUD.
9 SPECIAL CONDITIONS

The special conditions included in the following section will be made part of this PUD.

9.1 Façade Regulations

Building facades will be in accord with regulations of the “I-3” Heavy Industrial District.

9.2 Landscaping Regulations

The following landscaping provisions will apply to this PUD.

Along the southwest boundary, natural vegetation will be preserved to the extent practical.

Vegetation will be planted on the landfill’s final cover system, in accordance with the Site Vegetation Plan. Supplemental vegetation will also be installed in accordance with the End Use Plan (Exhibit H).

Vegetation will be locally available, native material to be planted in a naturalized manner. Planting will be in accordance with naturalized planting methods, which generally install smaller size plant material to achieve a greater success for establishment.

As part of PUD-1060 (PUD-1060 preceded PUD-1385, which preceded PUD-1542 at the site), Oklahoma City Waste Disposal, Inc. prepared a detailed research design for investigation of best practices for site vegetation. This was submitted to the City of Oklahoma City and ODEQ in April 2007. Test plots were installed and observed over a twelve-month cycle beginning in June 2007. A proposed planting plan was presented to the OKC Planning Department in September 2008. The information obtained by conducting the test plots influenced the approach and species utilized for the plantings. Additional information on preparation and implementation of the Vegetation Plan is discussed in Section 9.20.

Oklahoma City Waste Disposal, Inc. has provided a surety to the City totaling $1,149,516.90, a portion of which is designated as a guarantee that the vegetation
cover and landscaping is properly installed (refer to Section 9.20 for more information).

9.3 Lighting Regulations

To minimize light spillover on residential uses, outdoor lights related to commercial uses will be directed away from any adjacent residential properties. To accomplish this, lights will utilize shields, shades or other appropriate methods of directing light beams.

9.4 Screening Regulations

A sight-proof fence is not required along any property line.

The perimeter of the Phase II trail system waste disposal area will have an 8-foot-high chain link fence as shown on Exhibit A.

Along the east boundary adjacent to the existing mobile home park use (approximately 1024-foot boundary), additional screening will be provided within 18 months from the approval of this PUD, as follows:

- An 8-foot-high chain link fence will be installed on the eastern property boundary.
- Trees on 30-foot centers will be planted 20 feet west of said property boundary.

Along the southern boundary adjacent to SW 29th St., a berm and buffer plantings will be installed and maintained as shown in Exhibits H-5 and H-6. The initial portion of the berm and buffer plantings was completed in accordance with PUD-1542. An eastern extension of the berm and vegetation will be completed within 18 months from the approval of this PUD.

Prior to expanding into the southern area (refer to Exhibit A), a 25-foot-tall fence will be installed along the southern portion of the proposed landfill footprint to reduce the potential for windblown waste along SW 29th St. The fence will consist of wooden or metal support poles and nylon netting or similar materials. The location of the fence is shown on Exhibit A and will be approximately 2,800 feet long. This fence will be maintained throughout the duration of waste filling activities in the southern portion of the site.
9.5 Platting Regulations

A specific plan and final plat pursuant to Chapter 59, Section 14150C of the Oklahoma City Municipal Code, 2010, as amended shall not be required for development pursuant to this PUD.

9.6 Drainage Regulations

Private drainage ways shall be allowed within the subject PUD.

Drainage improvements, if required, will be in accordance to the applicable sections of the Oklahoma City Code of Ordinances. Private drainage ways will be permitted and constructed in accordance with Chapter 16 of the Oklahoma City Municipal Code which includes certain allowances in construction standards for PUDs. Such private drainage ways must be designed to handle adequate flows and cannot be built without specific approval of the City Engineer and the ODEQ. The maintenance will be the responsibility of the property owner(s).

As a solid waste disposal area develops, additional detention/sedimentation ponds may be added around the perimeter. Such ponds will meet applicable city, state and federal regulations. Development of this parcel will comply with Chapter 16 of the Oklahoma City Municipal Code, 2010, as amended.

Development within the 100-year floodplain is subject to approval from FEMA and the Oklahoma City Floodplain Administrator.

9.7 Dumpster Regulations

Dumpsters will be located within an area screened by a fence or masonry wall of sufficient height that screens the dumpster from public streets and residences and will be placed no closer than 50 feet from all property lines adjacent to residential use.

9.8 Access Regulations

Commercial haulers will take access from SW 15th St. along an existing drive located in the northwest corner of the site.

In addition to the access from SW 15th St., landfill employees and vendors may utilize S. Rockwell Ave. as a single point of access at the location shown on Exhibit A. There will be no access taken from SW 29th St. or from S. Rockwell by commercial haulers. The single point of access permitted along SW 29th St. shall be from S. Rockwell Ave., which may be used by landfill employees and vendors only.
In addition, vehicles/equipment used to borrow/transport soil from the PUD area to the adjacent landfill area for operational purposes (i.e., daily/intermediate cover, final cover, and liner materials) will not access any public street but rather will be limited to internal site haul roads. Internal access drives and storage areas are not required to have hard surface paving and may consist of gravel, asphalt millings and/or other alternative surfacing materials.

9.9 Parking Regulations

The design and number of all parking facilities within this PUD will be in accordance with Chapter 59 Article X of the Oklahoma City Municipal Code 2010, as amended, provided that required parking aisles and spaces are permitted to have gravel surfacing or other surface as described in Section 9.8.

9.10 Signage Regulations

Freestanding signs that are used to convey information associated with the operation of the landfill are limited to one in number at the entrance of the facility on SW 15th St., with a maximum 8-foot height, 100 square foot size.

Signs related to the trail use will be allowed as accessory signs. Before development of each phase of the trail system, a plan showing the proposed location, size and material for signs related to the trail system use will be submitted for review by the Planning Director. No trail sign will exceed 36 inches by 48 inches in size.

9.11 Sidewalk Regulations

There are no proposed sidewalks located on the PUD.

9.12 Height Regulations

Maximum height of the sanitary landfill area at completion will not exceed an elevation of 1377.0 ft-msl feet as shown on the landfill completion plan attached as Exhibit E.

9.13 Setback Regulations

Minimum setback for waste disposal areas from the perimeter of the PUD area development is shown on the Master Development Plan in Exhibit A. A minimum distance of 540 feet will be maintained between the landfill waste footprint and SW
29th St.; no landfill waste disposal will occur in this area. This will not prevent one access point from SW 29th St. and Rockwell Ave. for employees and vendors.

Additionally, a landscaped buffer area shall be provided and maintained for the entire south four hundred forty feet (440') of the PUD property, measured from the north side of S.W. 29th St. Other than the permitted single point of access for employees and vendors along S.W. 29th St. at Rockwell Ave., there shall be no buildings and no landfill activities or operations in this 440' landscaped buffer area. Other than the single point of access, the 440' area shall be used for landscaping, power lines, a relocated channel and related drainage structures (including detention ponds). Groundwater monitoring wells and landfill gas monitoring probes required by the Oklahoma Department of Environmental Quality may also be included in this buffer area.

9.14 Permit Requirements

Applications for building permits in this PUD must include a plan that depicts the location of the proposed building permit and the size and address of all existing buildings, parking and landscaping plus the parking and landscaping associated with the proposed building permit.

9.15 Public Improvements

Public improvements will be made by the property owner throughout this PUD as required by the City of Oklahoma City Municipal Code. All Local, State, and Federal ordinances that apply to the site will be adhered to fully.

9.16 Common Areas

There are no common areas within this PUD.

9.17 General Design and Development Guidelines

Specific information and plans for General Design and Development Guidelines as contained in Chapter 59 Section 14200.4 for density, amenities, relationship to abutting uses, site design, safety, and/or circulations systems are depicted on Exhibit A, and Exhibit C through Exhibit J.
9.18 Specific Plan and Preliminary Plat

A specific plan and final plat pursuant to Chapter 59, Section 14150C of the Oklahoma City Municipal Code, 2010, as amended shall not be required for development pursuant to this PUD.

9.19 The Completed Landfill, Post Closure

For the purposes of this section, the landfill is divided into three tracts: Phase I, Phase II, and Phase III as shown on the Master Development Plan; Exhibit A and the Trail System Comparison, Exhibit G. Phase I of the trail system, new scalehouse, and Education Center will be constructed by the end of 2019 in accordance with PUD-1542. The Education Center will include posters and models to help guide visitors through the various existing and future environmental and sustainable features of the site.

When the landfill unit located within Phase II is filled to capacity it will be closed and revegetated pursuant to state law.

Preparation and implementation of the Vegetation Plan consists of the following steps:

- Plan Development: As part of PUD-1060 (PUD-1060 preceded PUD-1385, which preceded PUD-1542 at the site), Oklahoma City Waste Disposal, Inc. prepared a detailed research design for investigation of best practices for site vegetation. This was submitted to the City of Oklahoma City and ODEQ in April 2007. Test plots were installed and observed over a twelve-month cycle beginning in June 2007. A proposed planting plan was presented to the OKC Planning Department in September 2008. The information obtained by conducting the test plots influenced the approach and species utilized for the plantings.

- Vegetation Plots: A proof of concept vegetation plot will be established on roughly 20 acres of the south facing slope (see Exhibit G). The plot area will be developed using the experience previously obtained from past projects at the site, including the information listed in the above bullet. This area will be used as a "proof of concept" area to show that the vegetation will be successful when used over a large area.

- Implementation and Warranty: Implementation of the Planting Plan and associated site maintenance practices will occur upon approval of the final plan. Implementation will occur in a phased manner upon approval and will address inactive areas of the site and buffer zones immediately. Funds for the Warranty are incorporated in the Closure Cost Estimate. A portion of the funds, equivalent to the cost of a contractor warranty, is being utilized to
install a larger quantity of plants at the outset of the project, resulting in a higher overall number of plants surviving beyond the warranty period.

A 12-foot-wide nature trail will be constructed on Phase II within two years after the construction of the landfill's Phase II final cover system is completed. The trail's route will lead up the western slope of Phase II to the summit.

At the summit of the Phase II landform, an open-air Council Ring area will be constructed by placing large boulders in a 30-foot-diameter circle. The flat area within the boulder ring will have the same surface as the trails, compacted crushed stone.

An 8-foot-high chain link fence will be constructed between the Phase II public use area and areas of ongoing Phase III operations. These areas include the site access road and the boundary between Phase II and Phase III just east of the Council Ring. The fence will provide a physical barrier between the two phases but will be placed as to not obstruct the views from the Council Ring. The ongoing landfill functions will likely be visible from this vantage point, and the owner will provide interpretive signage to educate visitors about the operations. Note the internal fencing is not subject to financial assurance, since ceasing landfill operations on the site would eliminate the need for internal physical barriers.

The Phase II trail will connect to the Bridgestone Firestone Nature and Education Area located to the west of this planned unit development. The trail surface will consist of compacted crushed stone installed over geotechnical fabric. See Exhibit J, Trail Cross-Section, for the proposed trail materials.

Several storm water detention and sedimentation ponds will be constructed during the development of the site. The ponds will be designed in accordance with applicable city, state, and federal requirements and will increase the filtering of storm water runoff as well as increase the aesthetics of the area. This includes designing the pond consistent with applicable United States Army Corps of Engineers permit requirements.

Stormwater ponds will be constructed before the Phase III landfill unit reaches its permitted capacity. The ponds are shown on Exhibit A. Detention Ponds will transition to wetlands when landfill operations are complete. Final grade and condition at side slopes will accommodate emergent vegetation along the edges of the ponds. The detention ponds that will be transitioned to wetlands will be inspected during the minimum 30-year postclosure period required by the ODEQ. Should this environment result in attracting birds that may pose a threat to air navigation, the Oklahoma Landfill will re-grade the area and create an upland habitat environment.

When the landfill unit located within Phase III is filled to capacity, it will be closed pursuant to state law. The remainder of the trail system (Phase III) will be constructed within two years after construction of the landfill's Phase III final cover
system is completed. The trail system, shown on Exhibit A, Exhibit G, and Exhibit H, to be installed after the landfill operations are completed at the site includes the installation of the trailhead parking north of the Phase II area.

At the completion of construction of the Phase III trail system, Oklahoma City Waste Disposal, Inc. will grant to the City, public trust, or non-profit organization, an access easement and/or other document. Said easement and/or other document will indicate, describe and/or show the areas open to the public. The easement and/or other document will be prepared by the Oklahoma City Waste Disposal, Inc. and submitted to the City, public trust or non-profit organization for approval.

After landfill operations are completed in the Phase III area, the site entrance will remain in place for use by the public to access the trailhead parking and Education Center.

In compliance with state law, Oklahoma City Waste Disposal, Inc. will maintain the closed Phase II and Phase III tracts for the 30-year post closure period. At the conclusion of the post closure period, Oklahoma City Waste Disposal, Inc. will allow the trail system to continue to be used by the public.

At the end of the 30-year post closure period, Oklahoma City Waste Disposal, Inc. will cease to maintain and operate the trail system. At the end of the 30-year post closure period, the City, public trust or non-profit organization will have the option to take responsibility for the trail system. If the City, public trust or non-profit organization does not take responsibility for the Phases I, II and III trail system, the easements and/or other documents relating to the trail system will have no further force and effect and as appropriate will be revoked, released, and/or deemed expired.

In addition to the statutory closure and post closure financial obligations deposited with ODEQ, Oklahoma City Waste Disposal, Inc. will post additional supplementary financial assurance with the City, a public trust or a non-profit organization to cover the costs of constructing the trail system-related improvements proposed as part of this PUD and maintaining said trail system related-improvements during the post closure period.

The closure and post closure cost estimates are attached as Exhibit I. Oklahoma City Waste Disposal, Inc. has established a trust fund with the City to assure construction of the Phases I, II, and III PUD improvements and maintenance thereof during the 30-year post closure period. Through March 2019, Oklahoma City Waste Disposal, Inc. has contributed $1,149,516.90 to meet the requirements of PUD-1542. As shown in Exhibit I, the cost estimate for the Phases I, II and III trail system increased to $1,279,351 from the previous amount of $1,090,178 listed in PUD-1542. This increase is due to the additional funds that will be available for additional trail length. Within 12 months of City Council approval, Oklahoma City Waste Disposal, Inc. will make the increase of $189,173 to the trust fund for a total of $1,279,351.
As said improvements are completed and maintenance is performed, Oklahoma City Waste Disposal, Inc. will withdraw funds from the trust fund as follows: (1) upon completion of Phase I improvements, (2) upon completion of Phase II improvements, (3) upon completion of Phase III, and (4) the remaining balance upon conclusion of the 30-year maintenance period. The amount withdrawn related to a specific Phase will not exceed the estimate shown on Exhibit I, plus interest.

Attached as Exhibit H is the End Use Plan showing the proposed post-closure improvements.
10 DEVELOPMENT SEQUENCE

Development phasing will be allowed as part of this PUD.
The following exhibits are hereby attached and incorporated into this PUD. These exhibits are:

EXHIBIT A    Master Development Plan
EXHIBIT B    Legal Description
EXHIBIT C    Topographic Map
EXHIBIT D    Aerial Photograph
EXHIBIT E    Proposed Landfill Completion Plan
EXHIBIT F    Site Configuration Comparison
EXHIBIT G    Trail System Comparison
EXHIBIT H    End Use Plan
EXHIBIT H-1  Campbell Creek Section A
EXHIBIT H-2  Campbell Creek Section B
EXHIBIT H-3  Campbell Creek Section C
EXHIBIT H-4  Campbell Creek Section D
EXHIBIT H-5  SW 29th Buffer Planting Plan
EXHIBIT H-6  SW 29th St. Buffer Planting Schedule
EXHIBIT I    Cost Estimates for Trail System
EXHIBIT J    Trail Cross Section, November 2006
NOTES:
1. ADJACENT ZONING WAS REPRODUCED FROM CITY OF OKLAHOMA CITY PLANNING DEPARTMENT WEBSITE.
2. EXISTING AND PROPOSED PERMIT BOUNDARY REPRODUCED FROM LEGAL DESCRIPTION.
3. LOCATION AND SIZE OF STORMWATER DETENTION PONDS IS APPROXIMATE. DETAILS OF THE DESIGN WILL BE INCLUDED IN THE DEED TIED TO PERMIT MODIFICATION.
4. THE EXISTING ENTRANCE FACILITIES MAY BE EXPANDED IN THE FUTURE. DETAILS WILL BE INCLUDED IN THE DEED TIED TO PERMIT MODIFICATION.
5. THE LANDFILL BUFFER AREA IS DEFINED AS THE AREA BETWEEN THE WASTE DISPOSAL AREA AND THE PERMIT BOUNDARY (100 FEET MINIMUM FROM 28TH STREET). NO WASTE DISPOSAL WILL OCCUR IN THIS AREA.
7. REFER TO DRAWING H FOR ADDITIONAL INFORMATION ON THE POST-CLOSURE IMPROVEMENTS.
8. ACCESS FROM SW 29TH STREET VIA ROCKWELL AVENUE WILL BE LIMITED TO LANDFILL EMPLOYEES AND VENDORS. NO COMMERCIAL VEHICLES WILL ACCESS THE SITE FROM THIS ENTRANCE.
9. Prior to filling in the area south of this line a 25-foot high fence will be constructed along the southern portion of the proposed footprint. Refer to section 6.4 for more information.
10. BUFFER AREA (440 FEET) MEASURED FROM THE NORTH SIDE OF THE PROPOSED 100' OG&E EASEMENT TO THE NORTH SIDE OF 28TH STREET. THE BUFFER FROM THE 30-Foot SW 29TH STREET STATUTORY RIGHT-OF-WAY IS 425 FEET.

COPYRIGHT © 2019 WEAVER CONSULTANTS GROUP. ALL RIGHTS RESERVED.
Legal Description

(Book 7808, page 1984) A tract of land lying in the northeast quarter (NE/4) of section eight (8) and the northwest quarter (NW/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma, and being more particularly described as follows: all of lot two (2) and the south half (S/2) of the northeast quarter (NE/4) and the northwest quarter (NW/4) of the northeast quarter (NE/4) of section eight (8), as shown by the government survey thereof. And, all of that part of government lots five (5), six (6) and seven (7) and the southwest quarter (SW/4) of the northwest quarter (NW/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma, lying south of the new channel of the North Canadian River, together with riparian and all accreted land. (Book 8734, page 1173) the west half (W/2) of the southwest quarter (SW/4) and the west half (W/2) of the east half (E/2) of the southwest quarter (SW/4), section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma. (Book 10909, page 1005) a part of the northeast quarter (NE/4) of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma. (Book RE11805, page 648) a part of the southeast quarter (SE/4) of section eight (8), township eleven (11) north, range four (4) west, of the Indian Meridian, Oklahoma County, Oklahoma. (Book 12476, page 1444) a part of the southwest quarter of section nine, township eleven north, range four west of the Indian Meridian, Oklahoma County, Oklahoma.

Surveyor's description: beginning at the northwest corner of the northwest quarter of section nine (9), township eleven (11) north, range four (4) west of the Indian Meridian, Oklahoma County, Oklahoma; thence north 89° 41' 09" east, along the north line of said northwest quarter to the thread of the new channel of the North Canadian River, a distance of 386.83 feet; thence south 33°31'49" east, along said thread of the river a distance of 282.05 feet; thence continuing along said thread, south 05°36'09" east a distance of 641.83 feet; thence continuing along said thread, south 71°14'57" east a distance of 422.59 feet; thence continuing along said thread, north 61°24'08" east a distance of 985.32 feet; thence continuing along said thread, south 75°43'53" east a distance of 775.56 feet; thence south 00°21'47" east, along the east line of the northwest quarter of section nine (9), a distance of 945.30 feet; thence north 85°27'25" east a distance of 974.58 feet; thence north 66°29'25" east a distance of 177.23 feet; thence south 00°25'17" east a distance of 1,112.38 feet to a point on the east-west quarter section line of section nine (9); thence south 89°54'44" west, along said quarter section line a distance of 2,114.43 feet; thence south 00°10'45" east a distance of 2641.12 feet to a point on the south line of the southwest quarter of section nine; thence south 89°46'24" west along said south line, a distance of 1629.41 feet to the southwest corner of the southeast quarter of section eight (8) township eleven (11) north, range four (4) west; thence north 00°14'04" west, along the east line of section eight, a distance of 1556.78 feet; thence north 89°45'49" west, a distance of 400.00 feet; thence north 00°14'04" west, to a point on the east-west quarter section line of said section eight, a distance of 1088.44 feet;
THENCE SOUTH 89°41'02" WEST, ALONG SAID QUARTER SECTION LINE A DISTANCE OF 2245.25 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF SECTION EIGHT (8); THENCE NORTH 00°10'12" WEST, ALONG THE WEST LINE OF THE NORTHEAST QUARTER OF SAID SECTION EIGHT (8), A DISTANCE OF 2,642.88 FEET TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE NORTH 89°42'15" EAST, ALONG THE NORTH LINE OF SAID SECTION EIGHT (8), A DISTANCE OF 2,628.95 FEET TO THE POINT OF BEGINNING.

BASIS OF BEARING: GRID BEARINGS BASED ON THE OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD83, NORTH ZONE.

Note: Last Field Site Visit Date: February 26, 2013

Legal Description for Mycek Property


METES AND BOUNDS DESCRIPTION: BEGINNING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER (SW/4); Thence South 89°46'22" West, along the South line of said Southwest Quarter (SW/4), a distance of 365.01 feet to the Point of Beginning; Thence continuing along said thread, South 89°46'22" West a distance of 612.55 feet; Thence North 00°10'43" West a distance of 2640.95 feet to a point on the North line of said Southwest Quarter; Thence North 89°56'37" East, along the North line, a distance of 614.08 feet; Thence South 00°08'43" East a distance of 2639.11 feet to the Point of Beginning. SAID TRACT CONTAINS 37.17 ACRES, MORE OR LESS.

Legal Description for CP Realty Property

(Tract A) (Book 11162, Page 1678) A part of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma.

metes and bounds description: Beginning at the Southeast corner of the Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma; Thence West a distance of 122.62 feet Thence North 00°08'38" West and parallel with said East line of Southwest Quarter (SW/4) a distance of 2638.38 (2638.02 - calculated) feet; Thence West (South 89°56'37" West - calculated) and parallel with the said North line of Southwest Quarter (SW/4) a distance of 246.84 (243.41 - calculated) feet; Thence Southerly (South 00°08'43" East - calculated) a distance of 2639.92 (2639.11 - calculated) feet to a point 367.87 (365.01 - calculated) feet West of the Southeast corner of Southwest Quarter (SW/4); Thence East (North 89°46'22" East - calculated) a distance of 245.25 (243.34 - calculated) feet to the Point or Place of Beginning, except the South 33 feet which is reserved for ROAD purposes.

AND (Tract B) (Book 12640, Page 1913) The east 7 and ½ acres of the east 30 acres of Southwest Quarter (SW/4) of Section Nine (9), Township Eleven (11) North, Range Four (4) West of the Indian Meridian, Oklahoma County, Oklahoma.

METES AND BOUNDS DESCRIPTION:
Beginning at the Southeast corner of Southwest Quarter (SW/4): Thence South 89°46'22" West along the South line of said Southwest Quarter a distance of 121.67 feet; Thence North 00°08'38" West a distance of 2638.38 feet to a point on the North line of Southwest Quarter (SW/4); Thence North 89°56'37" East along the said North line a distance of 121.67 feet to a point on the East line Southwest Quarter (SW/4); Thence South 00°08'38" East along said East line a distance of 2638.02 feet to the Point of Beginning.
NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-09-2018. EXISTING CONTOURS AND ELEVATIONS OUTSIDE THE PROPERTY BOUNDARY PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-23-2014, AND 03-10-2008.

2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

3. THIS AREA REPRESENTS ADDITIONAL PROPERTY ACQUIRED BY OKLAHOMA CITY WASTE DISPOSAL, INC., THAT WAS NOT PREVIOUSLY INCLUDED IN THE SITE DEVELOPMENT PLAN.

4. CAMPBELL CREEK AND NORTH CANADIAN RIVER 100-YEAR FLOODPLAINS REPRODUCED FROM THE POST-PROJECT CONDITION ANALYSIS INCLUDED IN THE SITE CLOMR. ADDITIONAL FLOODPLAIN PERMITTING WILL BE REQUIRED/COMPLETED FOR THE DEVELOPMENT OF THIS EXPANSION AREA.

TOPOGRAPHIC MAP
EXHIBIT C
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA

Weaver Consultants Group

DRAWN BY: SRF DATE: 01/2020 FILE: DB01-001-11
REVIEWED BY: JVQ CAD: EXHIBIT C.DWG DRAWING C
NOTES:
1. AERIAL PHOTOGRAPH PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPH FLown 03-09-2018.
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-09-2018. EXISTING CONTOURS AND ELEVATIONS OUTSIDE THE PROPERTY BOUNDARY PROVIDED BY SIDWELL COMPANY COMPILED FROM AERIAL PHOTOGRAPHY FLOWN 03-23-2014, AND 03-10-2008.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
PERMITTED LANDFILL COMPLETION PLAN

PROPOSED LANDFILL COMPLETION PLAN

49-ACRE EXPANSION AREA IS MADE POSSIBLE BY THE ADDITIONAL PROPERTY ACQUISITION IN THIS AREA.
EXHIBIT H

END USE PLAN
EXHIBIT H-1

CAMPBELL CREEK SECTION A
EXISTING BERM AND SCREENING
PROPOSED RIPARIAN WOODLAND
PROPOSED RIPARIAN WOODLAND
PROPOSED ORNAMENTAL HABITAT PLANTING
PROPOSED ORNAMENTAL HABITAT PLANTING
SOLID WASTE DISPOSAL AREA

OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.
PROPOSED SECTIONS
EXHIBIT H-2

CAMPBELL CREEK SECTION B
EXHIBIT H-3

CAMPBELL CREEK SECTION C
OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.
PROPOSED SECTIONS
EXHIBIT H-4

CAMPBELL CREEK SECTION D
PROPOSED ORNAMENTAL HABITAT PLANTING

EXISTING VEGETATION TO REMAIN

50' BUFFER

1.5:1 SLOPE

PERIMETER FENCE

EXHIBIT 4

SOUTHEAST SECTION

OKLAHOMA CITY LANDFILL EXPANSION, WASTE CONNECTIONS, INC.

PROPOSED SECTIONS
EXHIBIT H-5

SW 29TH BUFFER PLANTING PLAN
EXHIBIT H-6

SW 29TH BUFFER PLANTING SCHEDULE
## SW 29th Street Buffer Planting Schedule
### EXHIBIT H-6

### PLANT SCHEDULE AREAS A & B

<table>
<thead>
<tr>
<th>TREES</th>
<th>CODE</th>
<th>BOTANICAL NAME / COMMON NAME</th>
<th>CONT</th>
<th>CAL/SIZE</th>
<th>QTY</th>
</tr>
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<tbody>
<tr>
<td>CO</td>
<td></td>
<td>Cercis canadensis 'Oklahoma' / Oklahoma Redbud</td>
<td>B&amp;B/C</td>
<td>1.5&quot;-2.0&quot;</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STRONG CENTRAL LEADER, UNIFORM BRANCHING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCM</td>
<td></td>
<td>Lagerstroemia x 'Biloxi' / Crape Myrtle</td>
<td>30 gal</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 TRUNK MIN., MIN 1&quot; CAL EACH TRUNK</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>LP</td>
<td></td>
<td>Pinus taeda / Loblolly Pine</td>
<td>B&amp;B/C</td>
<td>7-8' HT.</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STRONG CENTRAL LEADER, UNIFORM BRANCHING</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td></td>
<td>Pistacia chinensis / Chinese Pistache</td>
<td>B&amp;B/C</td>
<td>2&quot;Cal</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STRONG CENTRAL LEADER, UNIFORM BRANCHING</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SO</td>
<td></td>
<td>Quercus shumardii / Shumard Red Oak</td>
<td>B&amp;B/C</td>
<td>4&quot;Cal</td>
<td>20</td>
</tr>
<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>LE</td>
<td></td>
<td>Ulmus parvifolia 'Allee' / Allee Lacebark Elm</td>
<td>B&amp;B/C</td>
<td>2.5&quot;Cal</td>
<td>16</td>
</tr>
<tr>
<td></td>
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<td>STRONG CENTRAL LEADER, UNIFORM BRANCHING</td>
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</tr>
</tbody>
</table>
EXHIBIT I

COST ESTIMATES FOR TRAIL SYSTEM
### TABLE 1
Oklahoma Landfill
Closure Cost Estimate for Phases I, II, & III Trail System

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUAN</th>
<th>UNIT</th>
<th>Unit Cost</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish easement</td>
<td>1</td>
<td>Is</td>
<td>$23,589</td>
<td>$23,589</td>
</tr>
<tr>
<td>12' gravel trail w/ geotextile</td>
<td>2,835</td>
<td>lf</td>
<td>$14</td>
<td>$40,126</td>
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<tr>
<td>Trees, 3” cal.</td>
<td>20</td>
<td>ea</td>
<td>$472</td>
<td>$9,436</td>
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<tr>
<td>Trees, 1 1/2” cal.</td>
<td>20</td>
<td>ea</td>
<td>$324</td>
<td>$6,487</td>
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<tr>
<td>Trees, 5 gal.</td>
<td>595</td>
<td>ea</td>
<td>$88</td>
<td>$52,634</td>
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<td>Shrub, 1 gal.</td>
<td>380</td>
<td>ea</td>
<td>$29</td>
<td>$11,205</td>
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<td>Shrub/Trees 18-24” Bareroot</td>
<td>945</td>
<td>ea</td>
<td>$6</td>
<td>$5,673</td>
</tr>
<tr>
<td>Prep and Planting</td>
<td>1,960</td>
<td>ea</td>
<td>$6</td>
<td>$11,559</td>
</tr>
<tr>
<td>Warranty Allowance</td>
<td>1</td>
<td>Is</td>
<td>$30,961</td>
<td>$30,961</td>
</tr>
<tr>
<td>Trash receptacles</td>
<td>2</td>
<td>ea</td>
<td>$389</td>
<td>$778</td>
</tr>
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</table>

5% contingency | | | $9,617 |

**SUBTOTAL PHASE I** | | | $201,966 |

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUAN</th>
<th>UNIT</th>
<th>Unit Cost</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
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<td>$23,589.49</td>
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<tr>
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<td>5,400</td>
<td>lf</td>
<td>$21</td>
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<tr>
<td>12’ gravel trail w/ geotextile</td>
<td>3,170</td>
<td>lf</td>
<td>$14</td>
<td>$44,867.22</td>
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<tr>
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<td>ea</td>
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<td>$59,268.60</td>
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<td>Shrub, 1 gal.</td>
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<td>ea</td>
<td>$29</td>
<td>$12,531.92</td>
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<td>Shrub/Trees 18-24” Bareroot</td>
<td>1,060</td>
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<td>$6,251.22</td>
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<td>Is</td>
<td>$15,451</td>
<td>$15,451.12</td>
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<td>2” th soil (180x180)</td>
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<td>cy</td>
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<td>Trash receptacles</td>
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<td>ea</td>
<td>$389</td>
<td>$778.45</td>
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<td>Parking - 40 cars</td>
<td>40</td>
<td>ea</td>
<td>$839</td>
<td>$33,544.26</td>
</tr>
<tr>
<td>Site clearing / prep</td>
<td>1</td>
<td>Is</td>
<td>$23,589</td>
<td>$23,589.49</td>
</tr>
<tr>
<td>Trail bridge 12’x100’</td>
<td>1</td>
<td>Is</td>
<td>$117,947</td>
<td>$117,947.47</td>
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<tr>
<td>Interpretive signage</td>
<td>1</td>
<td>Is</td>
<td>$41,282</td>
<td>$41,281.61</td>
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</tbody>
</table>

5% contingency | | | $27,605 |

**SUBTOTAL PHASE II** | | | $579,705 |

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUAN</th>
<th>UNIT</th>
<th>Unit Cost</th>
<th>TOTAL</th>
</tr>
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<tbody>
<tr>
<td>Establish easement</td>
<td>1</td>
<td>Is</td>
<td>$23,589</td>
<td>$23,589.49</td>
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<tr>
<td>12’ gravel trail w/ geotextile</td>
<td>8,050</td>
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<td>293</td>
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<td>Shrub, 1 gal.</td>
<td>612</td>
<td>ea</td>
<td>$29</td>
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<tr>
<td>Trees/Shrub 18-24”</td>
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<td>ea</td>
<td>$6</td>
<td>$6,801.41</td>
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<tr>
<td>Prep and Planting</td>
<td>2,059</td>
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<td>Bench (8’)</td>
<td>12</td>
<td>ea</td>
<td>$855</td>
<td>$10,261.43</td>
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<td>Picnic table (8’)</td>
<td>6</td>
<td>ea</td>
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<td>$6,369.16</td>
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<td>2</td>
<td>ea</td>
<td>$389</td>
<td>$778.45</td>
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<tr>
<td>Parking - resurface ex. Lot</td>
<td>1</td>
<td>Is</td>
<td>$11,795</td>
<td>$11,794.75</td>
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5% contingency | | | $286,612 |

**SUBTOTAL PHASE III** | | | $300,943 |

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<tr>
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<th>QUAN</th>
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<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trail Maintenance</td>
<td>30</td>
<td>annual</td>
<td>$9,436</td>
<td>$283,073.93</td>
</tr>
</tbody>
</table>

10% postclosure cont. | | | $28,307 |

**TOTAL** | | | $1,393,996 |

Financial Assurance total will not include fencing and equals: $1,279,351

Estimate assumes the following costs are included elsewhere:
Erosion control measures, revegetation and maintenance of all disturbed areas, all fencing and gates except the boundary between Ph.II and Ph.III, all landfill related maintenance issues.

January 3, 2020

Weaver Consultants Group, LLC
EXHIBIT J

TRAIL CROSS SECTION, NOVEMBER 2006
EXHIBIT J: PEDESTRIAN TRAIL CROSS

NOT TO SCALE
EXHIBIT I

COST ESTIMATES FOR TRAIL SYSTEM
## TABLE 1
Oklahoma Landfill Closure Cost Estimate for Phases I, II, & III Trail System

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUAN</th>
<th>UNIT</th>
<th>Unit Cost</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish easement</td>
<td>1</td>
<td>Is</td>
<td>$23,589</td>
<td>$23,589</td>
</tr>
<tr>
<td>12’ gravel trail w/ geotextile</td>
<td>2,835</td>
<td>If</td>
<td>$14</td>
<td>$40,126</td>
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<tr>
<td>Trees, 3” cal.</td>
<td>20</td>
<td>ea</td>
<td>$472</td>
<td>$9,436</td>
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<tr>
<td>Trees, 1 1/2” cal.</td>
<td>20</td>
<td>ea</td>
<td>$324</td>
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<tr>
<td>Trees, 5 gal.</td>
<td>595</td>
<td>ea</td>
<td>$88</td>
<td>$52,634</td>
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<td>Shrub, 1 gal.</td>
<td>380</td>
<td>ea</td>
<td>$9</td>
<td>$3,420</td>
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<td>Shrub/Trees 18-24” Bareroot</td>
<td>945</td>
<td>ea</td>
<td>$6</td>
<td>$5,673</td>
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<tr>
<td>Prep and Planting</td>
<td>1,960</td>
<td>ea</td>
<td>$6</td>
<td>$11,559</td>
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<tr>
<td>Warranty Allowance</td>
<td>1</td>
<td>ls</td>
<td>$30,961</td>
<td>$30,961</td>
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<tr>
<td>Trash receptacles</td>
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<td>ea</td>
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<td>$778</td>
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<tr>
<td><strong>5% contingency</strong></td>
<td></td>
<td></td>
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<td>$9,617</td>
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<td><strong>SUBTOTAL PHASE I</strong></td>
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<td><strong>$201,966</strong></td>
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<table>
<thead>
<tr>
<th>Phase II</th>
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<tbody>
<tr>
<td>Establish easement</td>
</tr>
<tr>
<td>6’ chain link fence</td>
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<tr>
<td>12’ gravel trail w/ geotextile</td>
</tr>
<tr>
<td>Trees, 3” cal.</td>
</tr>
<tr>
<td>Trees, 1 1/2” cal.</td>
</tr>
<tr>
<td>Trees, 5 gal.</td>
</tr>
<tr>
<td>Shrub, 1 gal.</td>
</tr>
<tr>
<td>Shrub/Trees 18-24” Bareroot</td>
</tr>
<tr>
<td>Prep and Planting</td>
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<tr>
<td>Warranty Allowance</td>
</tr>
<tr>
<td>Council Ring</td>
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<tr>
<td>2’ th soil (180x180)</td>
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<td>Trash receptacles</td>
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<td>Parking - 40 cars</td>
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<tr>
<td>Site clearing / prep</td>
</tr>
<tr>
<td>Trail bridge 12’x100’</td>
</tr>
<tr>
<td>Interpretive signage</td>
</tr>
<tr>
<td><strong>5% contingency</strong></td>
</tr>
<tr>
<td><strong>SUBTOTAL PHASE II</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase III</th>
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<td>Establish easement</td>
</tr>
<tr>
<td>12’ gravel trail w/ geotextile</td>
</tr>
<tr>
<td>Trees, 5 gal.</td>
</tr>
<tr>
<td>Shrub, 1 gal.</td>
</tr>
<tr>
<td>Trees/Shrub 18-24”</td>
</tr>
<tr>
<td>Prep and Planting</td>
</tr>
<tr>
<td>Bench (8”)</td>
</tr>
<tr>
<td>Picnic table (8”)</td>
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<tr>
<td>Trash receptacles</td>
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<tr>
<td>Parking - resurface ex. Lot</td>
</tr>
<tr>
<td><strong>5% contingency</strong></td>
</tr>
<tr>
<td><strong>SUBTOTAL PHASE III</strong></td>
</tr>
</tbody>
</table>

| Trail Maintenance | 30 | annual | $9,436 | $283,073.93 |
| **10% post closure cont.** | | | | $28,307 |
| **TOTAL** | | | | **$1,393,996** |

Financial Assurance total will not include fencing and equals: **$1,279,351**

Estimate assumes the following costs are included elsewhere:
- Erosion control measures, revegetation and maintenance of all disturbed areas,
- all fencing and gates except the boundary between Ph.II and Ph.III, all landfill related maintenance issues

January 3, 2020

Weaver Consultants Group, LLC
EXHIBIT J

TRAIL CROSS SECTION, NOVEMBER 2006
EXHIBIT J: PEDESTRIAN TRAIL CROSS

NOT TO SCALE

BACKFILL WITH TOPSOIL, SLOPE AWAY FROM TRAIL SURFACE

PROVIDE 1/4" DEPTH SLATE SCREENING TO TOP DRESS, 8" THICK COMPACTED

1 1/2" CRUSHER RUN LIMESTONE, ODOT #303A

WEED-CONTROL BARRIER FABRIC COMPACTED SUBGRADE
APPENDIX D-7

QUATERNARY ALLUVIAL SEDIMENT/TERRACE DEPOSIT INVESTIGATION
This Tier III Permit Modification incorporates two additional properties acquired by Oklahoma City Waste Disposal, Inc. Both are adjacent to the southern landfill property with the westernmost consisting of approximately 37 acres (aka Mycek property) and the easternmost consisting of approximately 22 acres (aka CP Realty property).

This appendix provides documentation of coordination with ODEQ regarding the presence of alluvial/terrace deposits on the 37-acre property. This appendix includes:

- September 14, 2018 ODEQ letter agreeing that terrace deposits and alluvium do not exist on the property based on the site investigation.
- August 3, 2018 Weaver Consultants Group, LLC Terrace Deposit/Alluvium Investigation report.
- June 18, 2018 ODEQ letter indicating the revised Work Plan is accepted.
- April 30, 2018 Weaver Consultants Group, LLC response to ODEQ's April 13, 2013 request.
- April 13, 2018 ODEQ letter requesting additional investigation areas be incorporated into the proposed Work Plan.
- February 28, 2018 Weaver Consultants Group, LLC Quaternary terrace deposit and alluvial sediment investigation Work Plan for the 37-acre (Mycek) property.

Based on the proximity of the 37-acre property included in the 2018 investigation, adjacent to the 22-acre property, the 2018 investigation is still relevant and applicable for the adjacent 22-acre property. The 22-acre property was also investigated as part of the subsurface investigation (Appendix E). No terrace deposit/alluvium areas were identified as part of the subsurface investigation.

A 2004 investigation, included as Appendix A in the Weaver Consultants Group, LLC February 28, 2018 correspondence, was completed for the currently permitted eastern and southern portions of the site and also determined that this portion of the site is not located in a terrace deposit/alluvium area.

The northern portion of the site (Phase V) was reviewed and discussed related to the terrace deposit/alluvium location restriction in the 2016-2017 Tier III Permit.
Modification process. A Phase V specific development plan was proposed and approved as part of the Tier III Permit Modification to address this location restriction. Phase V has been developed and will continue to be developed in accordance with this plan.

This Tier III Permit Modification does not include expansion areas adjacent to the Phase V area nor does this Tier III Permit Modification revise the design of Phase V or the approved work plan. Therefore, the proposed landfill expansion complies with this location restriction.
September 14, 2018

Mr. Steven Clark  
Oklahoma City Waste Disposal, Inc.  
PO Box 457  
Wheatland, OK 73097

Re: Terrace Deposit / Alluvium Investigation  
Oklahoma City Landfill (Permit No. 3555018)  
Oklahoma County

Dear Mr. Clark:

The Oklahoma Department of Environmental Quality (DEQ) is in receipt of the Terrace Deposit/Alluvium Investigation report dated August 3, 2018, submitted by Weaver Consultants Group for the Oklahoma Landfill. The report documents the June 29, 2018 site investigation of the Mycek property to determine if alluvium or terrace deposits exist.

In accordance with Oklahoma Administrative Code (OAC) 252:515-5-51(a)(2), site-specific hydrological and geological data and other information may be submitted to demonstrate clearly and convincingly that the proposed location does not lie in an area designated as alluvium or terrace deposits and their recharge areas. DEQ agrees that site investigation of the 11 test pits indicates terrace deposits and alluvium do not exist in the Mycek property. However, please note that DEQ will still need to review and approve a subsurface investigation conducted in the area prior to its inclusion into the permit boundary.

Should you have any questions regarding this letter, please contact Jeff Biddick at (405) 702-5141.

Sincerely,

Hillary Young, P.E.  
Chief Engineer  
Land Protection Division

HY/jb

cc: Jonathan V. Queen, P.E., Weaver Consultants Group
Dear Mr. Biddick:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc. (OCWD), is to document the findings of the terrace deposit/alluvium investigation completed on property (Myczek) adjacent to the Oklahoma Landfill and to request Oklahoma Department of Environmental Quality (ODEQ) confirmation that the adjacent Mycek Property complies with Oklahoma Administrative Code (OAC) §252:515-5-51(a) regarding a potential terrace deposit/alluvial sediment location restriction.

On June 29, 2018, 11 shallow test pits were excavated to investigate the potential presence of Quaternary-age terrace deposits and alluvium. Only Permian-age Hennessey formation red bed sediments were observed beneath the shallow, clayey surface soil horizon in the excavated test pits. The massive siltstones observed were devoid of sedimentary structures and sorting that are common in terrace deposits and alluvium. Therefore, it is WCG’s opinion that this investigation has provided site-specific geologic information which has clearly and convincingly demonstrated that the adjacent Mycek property is not located in a terrace deposit/alluvium area. A test pit location map and photographs from the June 29, 2018 field investigation are included in Attachment 1 for reference.
We appreciate Mr. Cates’ and your presence onsite during the investigation. If you have any questions or require further information, please call. We look forward to the ODEQ’s response.

Sincerely,

Weaver Consultants Group, LLC

Bob Ferbend, P.G.
Senior Hydrogeologist

Jonathan V. Queen, P.E.
Senior Project Manager

cc: Matt Crockett, P.E., Oklahoma City Waste Disposal, Inc.
Steven Clark, Oklahoma City Waste Disposal, Inc.

Attachments: Attachment 1 – Test Pit Location Map and Photographs from the June 29, 2018 Field Investigation
ATTACHMENT 1

TEST PIT LOCATION MAP AND PHOTOGRAPHS FROM THE JUNE 29, 2018 FIELD INVESTIGATION
NOTES:
1. AERIAL PHOTOGRAPH PROVIDED BY SOWELL COMPANY FLOWN 04/03/2016.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
Photograph 1: Clayey soil above weathered siltstone in test pit TP-4.

Photograph 2: Clayey soil above weathered siltstone in test pit TP-2.
Photograph 3: Weathered siltstone in test pit TP-6.

Photograph 4: Clayey soil above weathered siltstone in test pit TP-9.
Photograph 5: Some excavated soil from the June 29, 2018 field investigation with ODEQ representatives, Jeff Biddick and Dave Cates.
June 18, 2018

Mr. Steven Clark
Oklahoma City Waste Disposal, Inc.
7600 SW 15th
Oklahoma City, Oklahoma 73128

Re: Terrace Deposit / Alluvium Investigation Work Plan
   Oklahoma Landfill (Permit No. 3555018)
   Oklahoma County

Dear Mr. Clark:

The Oklahoma Department of Environmental Quality (DEQ) received the updated Terrace Deposit / Alluvium Investigation Work Plan under cover letter dated April 30, 2018 from Weaver Consultants Group on behalf of Oklahoma City Waste Disposal, Inc (OKCWD). The submittal revised Drawing 4 to include three additional trenches in the northwest corner of the investigation area in accordance with the request in DEQ's April 13, 2018 letter. On June 11, 2018, DEQ received notice by electronic mail that OKCWD is proceeding with the site investigation and will notify DEQ when a firm date is established.

The revised Work Plan is accepted. Should you have any questions or comments, please contact Jeff Biddick at (405) 702-5141.

Sincerely,

Hillary Young, P.E.
Chief Engineer
Land Protection Division

HY/jb

cc: Jonathan V. Queen, P.E., Weaver Consultants Group, LLC
Jeff Biddick  
Oklahoma Department of Environmental Quality  
707 North Robinson  
Oklahoma City, Oklahoma 73107-1677

Re: Terrace Deposit /Alluvium Investigation Work Plan – Response to ODEQ Comments  
Oklahoma Landfill  
Oklahoma County, Oklahoma

Dear Mr. Biddick:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc. (OCWD), is to respond to comments provided in the Oklahoma Department of Environmental Quality (ODEQ) comment letter dated April 13, 2018. OCWD will comply with ODEQ's request to add three more test trenches along the north and northwest boundaries of the investigation area. Drawing 4 (attached) has been revised to indicate the approximate locations of the eleven proposed trenches.

OCWD will notify ODEQ at least two weeks prior to conducting investigation/excavation activities.

If you have any questions or require further information, please call.

Sincerely,

Weaver Consultants Group

Bob Ferbend, P.G.  
Senior Hydrogeologist

Jonathan V. Queen, P.E.  
Senior Project Manager

Attachments: Drawing – Proposed Trench Locations

cc: Matt Crockett, Oklahoma City Waste Disposal, Inc.  
Steven Clark, Oklahoma City Waste Disposal, Inc.
NOTES:
1. AERIAL PHOTOGRAPH PROVIDED BY SIDWELL COMPANY FLOWN 04/03/2016.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

PROPOSED TRENCH LOCATIONS
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA
WWW.WCGRP.COM DRAWING 4
Dear Mr. Biddick:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc. (OCWD), is to document the findings of the terrace deposit/alluvium investigation completed on property (Mycek) adjacent to the Oklahoma Landfill and to request Oklahoma Department of Environmental Quality (ODEQ) confirmation that the adjacent Mycek Property complies with Oklahoma Administrative Code (OAC) §252:515-5-51(a) regarding a potential terrace deposit/alluvial sediment location restriction.

On June 29, 2018, 11 shallow test pits were excavated to investigate the potential presence of Quaternary-age terrace deposits and alluvium. Only Permian-age Hennessey formation red bed sediments were observed beneath the shallow, clayey surface soil horizon in the excavated test pits. The massive siltstones observed were devoid of sedimentary structures and sorting that are common in terrace deposits and alluvium. Therefore, it is WCG's opinion that this investigation has provided site-specific geologic information which has clearly and convincingly demonstrated that the adjacent Mycek property is not located in a terrace deposit/alluvium area. A test pit location map and photographs from the June 29, 2018 field investigation are included in Attachment 1 for reference.
We appreciate Mr. Cates' and your presence onsite during the investigation. If you have any questions or require further information, please call. We look forward to the ODEQ's response.

Sincerely,

Weaver Consultants Group, LLC

Bob Ferbend, P.G.
Senior Hydrogeologist

Jonathan V. Queen, P.E.
Senior Project Manager

cc: Matt Crockett, P.E., Oklahoma City Waste Disposal, Inc.
Steven Clark, Oklahoma City Waste Disposal, Inc.

Attachments: Attachment 1 – Test Pit Location Map and Photographs from the June 29, 2018 Field Investigation
ATTACHMENT 1

TEST PIT LOCATION MAP AND PHOTOGRAPHS FROM THE JUNE 29, 2018 FIELD INVESTIGATION
NOTES:
1. AERIAL PHOTOGRAPHY PROVIDED BY SIDWELL COMPANY FLOWN 04/03/2016.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEAKE LAND SURVEYING, INC.
April 13, 2018

Mr. Steven Clark
Oklahoma City Waste Disposal, Inc.
7600 SW 15th
Oklahoma City, Oklahoma 73128

Re: Terrace Deposit / Alluvium Investigation Work Plan and Notice of Intent to Excavate Trenches
Oklahoma Landfill ( Permit No. 3555018)
Oklahoma County

Dear Mr. Clark:

The Oklahoma Department of Environmental Quality (DEQ) received the Terrace Deposit / Alluvium Investigation Work Plan and Notice of Intent to Excavate Trenches under cover letter dated February 28, 2018 from Weaver Consultants Group on behalf of Oklahoma City Waste Disposal, Inc (OKCWD). The purpose of the investigation is to determine if alluvium or terrace deposits exist in a future expansion area per OAC 252:515-5-51(a). Appendix A of the submittal contains documentation for a similar site investigation conducted in 2004 at the Oklahoma Landfill.

Trench excavation activities were originally planned for March 12, 2018. However, DEQ was notified on March 8, 2018 by email that the planned investigation and excavation would be delayed until further notice.

The methodology provided in the work plan is accepted. However, DEQ requests that OKCWD include three more test trenches along the north and northwest boundaries of the investigation area. Please provide DEQ with a notification and/or revised work plan at least two weeks prior to conducting investigation/excavation activities at the Oklahoma Landfill. Should you have any questions or comments, please contact Jeff Biddick at (405) 702-5141.

Sincerely,

Hillary Young, P.E.
Chief Engineer
Land Protection Division

cc: Jonathan V. Queen, P.E., Weaver Consultants Group, LLC
Dear Mr. Cates:

The purpose of this letter, submitted on behalf of Oklahoma City Waste Disposal, Inc. (OCWD) is to present a Work Plan for a Quaternary terrace deposit and alluvial sediment investigation for the potential acquisition of the Mycek property adjacent to the southeast corner of the referenced facility. Drawing 1 is an aerial photograph showing the entire landfill facility and the adjacent Mycek property. This work plan describes due diligence investigation activities designed to determine if Quaternary terrace deposits or alluvial sediments are present beneath the Mycek property.

Drawings 2 and 3 present Oklahoma Geological Survey (OGS) surface geology maps of the site area. They indicate portions of the Mycek property could have underlying terrace deposits or alluvial sediments. However, deep excavations at the north and west boundaries of the Mycek property indicate this property is not underlain by terrace deposits or alluvial sediments, but is underlain by Permian age Hennessey Formation mudstones. These are easy to identify in the field due to their 'red bed' color.

To verify that terrace deposits or alluvial sediments are not present beneath the Mycek property, we proposed to excavate 8 test trenches on the property at the locations shown on Drawing 4. The Mycek property is approximately 40 acres in size. Expansion drilling plans require 11 boreholes per 40 acres of expansion area. We propose to complete 8 test trenches on the Mycek property because of the excellent bedrock exposures on the north and west sides of the Mycek property due to the adjacent landfill excavations.

Weaver Consultants Group, LLC (WCG) is anticipating initiating and completing trench excavation activities on Monday, March 12, 2018. The trenches will be excavated to the top of the geologic unit underlying the black, loamy surface topsoil. The presence of massive, red bed mudstones of the Hennessey Formation immediately beneath the
topsoil will indicate an absence of Quaternary terrace and alluvial sediments at the test pit location. Each test pit location will be described and photographed by a qualified groundwater scientist.

WCG is requesting that an Oklahoma Department of Environmental Quality (ODEQ) representative view each test trench on the afternoon of Monday, March 12, 2018 or the morning of Tuesday, March 13, 2018 to potentially confirm the absence of terrace deposits or alluvial sediments on the Mycek property. After ODEQ has viewed the test trenches, they will be backfilled. The results of this investigation will be incorporated into a report that will be submitted to ODEQ at a later date if the Mycek property is acquired by OCWD.

In October 2003, this same type of test trench demonstration was completed on a property acquisition adjacent to west side of the Mycek property. Mr. Jim Cammack, a former ODEQ staff member, viewed 16 test trenches, and sent the facility a ‘no terrace or alluvial sediment’ concurrence letter. This earlier investigation was completed because OGS geologic maps indicated terrace and alluvial sediments may be beneath the property to the west of the Mycek property.

A copy of the 2004 test trench investigation report and concurrence letters are presented in Appendix A of this report for reference.

If you have any questions or require further information, please call.

Sincerely,

Weaver Consultants Group

Bob Ferbend, P.G.
Senior Hydrogeologist

Jonathan V. Queen, P.E.
Senior Project Manager

Attachments: Drawing 1 – Site Plan
Drawing 2 – Regional Surface Geology Map
Drawing 3 – Local Surface Geologic Map
Drawing 4 – Proposed Trench Locations
Appendix A – 2004 Terrace/Alluvial Sediment Investigation

cc: Matt Crockett, Oklahoma City Waste Disposal, Inc.
Mark Adams, Oklahoma City Waste Disposal, Inc.
Steven Clark, Oklahoma City Waste Disposal, Inc.
NOTES:
1. AERIAL PHOTOGRAPH PROVIDED BY SIDWELL COMPANY FLOWN 04/03/2016.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.

LEGEND
- - - - - PERMIT BOUNDARY
- - - - - PERMITTED LIMIT OF WASTE
- - - - - CONSTRUCTED LIMIT OF WASTE
- - - - - APPROXIMATE MYCIEK PROPERTY BOUNDARY

OKLAHOMA CITY WASTE DISPOSAL, INC. SITE PLAN
AERIAL PHOTO
OKLAHOMA LANDFILL
OKLAHOMA COUNTY, OKLAHOMA

DRAWING 1
NOTE:
2. Original Bingham and Moore (1991) publication assigned sediments below the Permian Wellington formation to the Pennsylvanian Oscar group. Subsequent USGS Central Oklahoma Aquifer Publications (e.g., USGS Water Supply Paper 2357A dated 1996) assign those sediments to the Pennsylvanian-age Chase, Council Grove, and Admire groups (undivided). This more recent USGS stratigraphic assignment is used by WBC in this subsurface investigation and groundwater study report.
LEGEND

- APPROXIMATE MYCEK PROPERTY BOUNDARY
- PERMIT BOUNDARY
- ALLUVIUM OF NORTH CANADIAN RIVER (Holocene)
- ALLUVIUM (LATE HOLOCENE)
- ALLUVIUM (MIDDLE HOLOCENE)
- HENNESSEY FORMATION (PERMIAN)
- GEOLOGIC CONTACT
- PETROLEUM WELL (INCLUDING OIL GAS, DRY SERVICE (WATER SUPPLY OR INJECTION), JUNKED AND ABANDONED, & UNKNOWN)
- EXOTIC PEBBLES AND COBBLES (QUARTZ)
- MUNICIPAL WATER SUPPLY WELL
- SHALLOW BOREHOLE
- OUTCROP, OBSERVATION POINT

NOTES:
1. MODIFIED FROM GEOLOGIC MAP OF THE MUSTANG AND OKLAHOMA CITY QUADRANGLES, STANLEY, T.M., SUNESON, N.H., AND SIEMERS, W.A., 2000, OKLAHOMA GEOLOGIC SURVEY.
NOTES:
1. AERIAL PHOTOGRAPH PROVIDED BY SIDWELL COMPANY FLOWN 04/03/2016.
2. PERMIT BOUNDARY WAS REPRODUCED FROM LEGAL DESCRIPTION PREPARED BY LEMKE LAND SURVEYING, INC.
February 6, 2004  
Project: 0601-353-11-00-06

Jim Cammack, Senior Specialist  
Land Protection Division  
Oklahoma Department of Environmental Quality  
707 North Robinson  
Oklahoma City, Oklahoma 73107-1677

Re: Quaternary Alluvial Sediment/Terrace Deposit Investigation  
Oklahoma Landfill Expansion Property, Oklahoma County, Oklahoma  
Permit Number 3555018

Dear Mr. Cammack:

The purpose of this letter is to request DEQ confirmation that a proposed Oklahoma Landfill lateral expansion complies with Oklahoma Administrative Code (OAC) §252:515-5-51(a) regarding a potential terrace deposit/alluvial sediment location restriction. On October 22, 2003, you and I inspected 16 shallow test pits and two facility borrow areas for the potential presence of Quaternary-age terrace deposits and alluvium. Weaver Boos Consultants, LLC–Southwest (WBC), has included the following items to facilitate DEQ’s review of this issue and to allow the DEQ to make a final determination regarding the applicability of the terrace deposit/alluvial location restoration.

- Attachment 1 – Quaternary Alluvial Sediment/Terrace Deposit Investigation Work Plan that was submitted to the DEQ on September 4, 2003
- Attachment 2 – September 24, 2003, Plan Approval Letter
- Attachment 3 – October 7, 2003, WBC Notice of Intent to complete the investigation
- Attachment 4 – The October 22, 2003, Field Investigation Test Pit Location Map and Test Pit Logs developed from terrace deposit/alluvial sediment

Based on the investigation results presented in Attachment 4, only Permian-age Hennessey formation red bed sediments were observed beneath the shallow surface soil horizon in the test pits and borrow pit areas. The massive mudstones observed were devoid of sedimentary structures and sorting that are common in terrace deposits and alluvium. Therefore, it is WBC’s opinion that this investigation has provided site-specific geologic information, which has clearly and convincingly demonstrated that, the proposed expansion area is not located in a prohibited terrace deposit/alluvium area.
If you have any questions or require further information, please call.

Sincerely,

Weaver Boos Consultants, LLC–Southwest

Bob Ferbend, P.G.
Senior Hydrogeologist

cc: Mark Adams, Oklahoma City Waste Disposal, Inc.
    Jeffrey P. Young, P.E., Weaver Boos Consultants, LLC–Southwest

Attachments:  Attachment 1 – Quaternary Alluvial Sediment/Terrace Deposit Investigation Work Plan that was submitted to the DEQ on September 4, 2003
               Attachment 2 – September 24, 2003, Plan Approval Letter
               Attachment 3 – October 7, 2003, WBC Notice of Intent to complete the investigation
               Attachment 4 – The October 22, 2003, Field Investigation Test Pit Location Map and Test Pit Logs developed from terrace deposit/alluvial sediment
ATTACHMENT 1

QUATERNARY ALLUVIAL SEDIMENT/TERRACE DEPOSIT
INVESTIGATION WORK PLAN
September 4, 2003
Project: 0601-353-11-00-00

David Smit, PhD
Environmental Specialist
Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, Oklahoma 73107-1677

Re: Terrace/Alluvium Deposit Investigation Work Plan
Potential Oklahoma Landfill Expansion Area
Oklahoma County, Oklahoma

Dear Dr. Smit:

The purpose of this letter, submitted on behalf of Waste Connections, Inc. is to present a Work Plan for a Quaternary terrace deposit and alluvial sediment investigation at a potential landfill expansion area adjacent to the referenced facility. The Work Plan has been developed in response to our meeting on August 21, 2003, at the Oklahoma City DEQ office regarding a potential terrace deposit/alluvium-based location restriction. As noted in the meeting, the latest Oklahoma Geological Survey surface geology map of the site (see Drawing 1) possibly indicates a portion of the waste disposal footprint is located within a Quaternary alluvium outcrop. However, the Oklahoma Geological Survey map’s formation labeling is not clear in the area of the potential expansion. During our meeting, Weaver Boos Consultant’s (WBC’s) initial geological reconnaissance findings indicated the only recent alluvium or terrace deposit sediments at the expansion property were insignificant point bars within the incised portion of Camel Creek. Per your request, we are submitting this Work Plan to provide additional subsurface geological information to definitively demonstrate that Quaternary terrace deposit and alluvial sediments are not located within the planned waste disposal area. The Work Plan includes the following tasks.

- During our meeting, the DEQ stated the number of data points (test pits) must approximate the number of boreholes recommended for an expansion drilling plan. The permit boundary area is expected to encompass approximately 71 acres. According to DEQ borehole density recommendations for drilling plans, 18 boreholes would be required based on the permit boundary size. As indicated on Drawing 2, a new 4-acre borrow pit is present at the northwest corner of the potential expansion area. The borrow pit excavation spans 2 site grid squares and provides excellent exposure of the surface topsoil and underlying Hennessey Formation mudstone. Due to the quality and extent of
the exposure, 2 of the 18 recommended boreholes (test pits) have been removed from the Work Plan. Therefore, a total of 16 test pits will be excavated.

- WBC will provide DEQ with written notice of intent to excavate test pits at least 7 days prior to the start date. Drawing 4 presents the test pit locations, which will be excavated to the top of the geologic unit underlying the black, loamy topsoil. The presence of massive, red bed mudstones of the Hennessey Formation immediately beneath the topsoil will indicate an absence of Quaternary terrace and alluvial sediments at a test pit location. The test pits locations will be staked by a surveyor prior to the initiation of final activities.

- Each test pit location will be described and photographed by a qualified groundwater scientist.

- As discussed in our August 21st meeting, the results of the investigation will be incorporated into the location restriction report that will be submitted to DEQ for approval prior to a complete Tier III Modification submittal.

If you have any questions or require further information, please call.

Sincerely,

Weaver Boos Consultants, LLC–Southwest

Bob Ferbend, P.G.
Senior Hydrogeologist

Jeffrey P. Young, P.E.
Senior Engineer

Attachments: Drawing 1 – OGS Area Geologic Map
Drawing 2 – Test Pit Location Map

cc: Mark Adams, Waste Connections, Inc.
ATTACHMENT 2

ODEQ WORK PLAN APPROVAL LETTER
September 24, 2003

Mr. Mark Adams, Regional Engineering Manager
Waste Connections Inc.
7009 S. Potomac Suite 125
Englewood, CO 80112

Re: Terrace/Alluvium Deposit Investigation Work Plan
Oklahoma City Landfill
Permit # 3555018
Oklahoma County

Dear Mr. Adams:

The Department of Environmental Quality (Department) has reviewed the Terrace/Alluvium Deposit Investigation Work Plan submitted by your consultant (Weaver, Boos Consultants) on September 5, 2003. The purpose of the work plan is implementation of a detailed investigation of a potential landfill expansion area. Oklahoma prohibits operation of a landfill facility on areas that are alluvial and/or terrace deposits. The objective is to establish if the area meets the location restrictions in Oklahoma.

The Department has reviewed the plan and it is acceptable for the initiation of the investigation. Please notify the Department two weeks before initiating work on the investigation. During the investigation the Department requests that it be consulted as information is acquired. As with any geologic investigation, information found during the work may result in revisions of the study plan to achieve acceptable results.

Please feel free to contact David Smit at (405) 702-5185 if there are any questions concerning this letter.

Sincerely,

[Signature]

Greg Laker, Ph.D., P. E.
Chief Engineer.
Land Protection Division

cc: Jeffery Young, Weaver and Boos Consultants

File: Groundwater Monitoring - Permit No. 3555018
ATTACHMENT 3

NOTICE OF INTENT TO COMPLETE TEST PITS LETTER
October 7, 2003
Project No. 0601-353-11-00-00
Via Fax: (405) 702-5101

Dr. David Smit
Environmental Specialist
Oklahoma Department of Environmental Quality
707 North Robinson
Oklahoma City, Oklahoma 73107-1677

Re: Notice of Intent to Excavate Test Pits
Quaternary Alluvial Sediment/Terrace Deposit Investigation
Oklahoma Landfill Greenfield Property, Oklahoma County, Oklahoma
Permit Number 3555018

Dear Dr. Smit:

The purpose of this letter, submitted on behalf of the Oklahoma City Waste Disposal, Inc.’s (OCWD’s) Oklahoma Landfill, is to provide written notification of our intent to excavate 16 test pits at a greenfield property adjacent to the referenced facility. We plan to begin the excavations at 0700 hours on Wednesday, October 22, 2003.

If you have any questions or require further information, please call.

Sincerely,
Weaver Boos Consultants, LLC–Southwest

Bob Ferbend, P.G.
Senior Hydrogeologist

cc:  Mark Adams, Waste Connections, Inc.
Ronnie Black, Waste Connections, Inc.
Jeffrey P. Young, P.E., Weaver Boos Consultants, LLC–Southwest
ATTACHMENT 4

TEST PIT LOCATION MAP
TEST PIT LOGS
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY AMI ENGINEERING, INC. COMPILED FROM AERIAL PHOTOGRAPHY FLOW 02-09-2002.
2. THE EXISTING LANDFILL PERMIT BOUNDARY WAS APPROXIMATED FROM 1981 DRAWING PREPARED BY BENHAM - BLAIR & AFFILIATES, INC.
## LOG OF TEST PIT TP-1

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No:** 0601-353-11-00-06

<table>
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<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>Description</th>
<th>USCS</th>
<th>渗透计测试 (tests)</th>
<th>填充百分比 (％)</th>
<th>干密度 (g/cm³)</th>
<th>液限 (％)</th>
<th>塑限 (％)</th>
<th>渗透系数 (cm/s)</th>
<th>岩壁详情</th>
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<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occassional slickensides.</td>
<td>CH 4</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.5</td>
<td></td>
<td></td>
<td>Total Depth = 8.5'</td>
<td></td>
<td></td>
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Test Pit TP-1 image shown below:
## LOG OF TEST PIT TP-10

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**Project No:** 0001-353-11-00-06

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<th>Description</th>
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<th>Percent Passing No. 200</th>
<th>Plastic Limit</th>
<th>Permeability (cm/s)</th>
<th>Well Detail</th>
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<td></td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td>CH 2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
<td>CH 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Depth = 8.5'.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Pit Dimensions: 13.0 feet long x 8.5 feet deep x 1.0 feet wide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Water Level at Time of Excavation: None
- Water Level After 24 Hours: None

Excavation Date: 10/22/2003  
Northing: 161103  
Easting: 2077902  
Surface Elevation: 1231.0 ft. m.s.l.

---

Test Pit TP-10 image shown below:
**LOG OF TEST PIT TP-11**

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No.:** 0601-353-11-00-06  
**Geologist:** RSF  
**Test Pit Excavator:** Backhoe

<table>
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<th>Samples</th>
<th>Graphic Log</th>
<th>Description</th>
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<td>2</td>
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<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
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<tr>
<td>4</td>
<td></td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, sandy and clayey, dry to slightly moist, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
</tr>
<tr>
<td></td>
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<td></td>
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</tbody>
</table>

Water Level at Time of Excavation: None  
Water Level After 24 Hours: None

Test Pit Dimensions: 10.0 feet long x 5.0 feet deep x 1.0 feet wide

Excavation Date: 10/22/2003  
Northing: 159142  
Surface Elevation: 1242.0 ft. m.s.l.  
Easting: 2078391

Penetration Blows/Ft | Percent Passing No. 200 | Percent Moisture Content | Dry Density (pcf) | Plastic Limit | Plastic Index | Permeability (cm/s) | Well Detail |
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<tr>
<td>CH 4</td>
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</table>

Total Depth = 5.0'.
### LOG OF TEST PIT TP-12

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No:** 0601-353-11-00-06

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<th>Graphic Log</th>
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<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Excavation Date:** 10/22/2003  
**Northing:** 159543  
**Surface Elevation:** 1250.2 ft. m.s.l.  
**Easting:** 2078390

**Test Pit Dimensions:** 11.0 feet long x 7.5 feet deep x 1.0 feet wide

| Water Level at Time of Excavation: | None |
| Water Level After 24 Hours:       | None |

**Description**

- **Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.**
  - USCS: CH 2.5

- **Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occassional slickensides.**
  - USCS: CH 4
  - Total Depth = 7.5'

**Laboratory Tests**

- **Hand Penetrometer Test (in)**
- **Penetration Blows/Ft**
- **Percent Moisture Content**
- **Dry Density (gcf)**
- **Liquid Limit**
- **Plastic Limit**
- **Permeability (cm/s)**
- **Well Detail**

**Test Pit TP-12 image shown below:**
LOG OF TEST PIT TP-13

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<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
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<tr>
<td>2.0</td>
<td>1242.7</td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides. - becomes shaley at 6.0’.</td>
<td>CH 4</td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td>Total Depth = 8.0’.</td>
<td></td>
</tr>
<tr>
<td>6.0</td>
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<tr>
<td>8.0</td>
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Test Pit TP-13 image shown below:
### LOG OF TEST PIT TP-14

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No.:** 0601-353-11-00-06  
**Excavation Date:** 10/22/2003  
**Northing:** 160343  
**Easting:** 2078390  
**Surface Elevation:** 1242.4 ft. m.s.l.

**Test Pit Excavator:** Backhoe

**Test Pit Dimensions:** 11.0 feet long x 7.5 feet deep x 1.0 feet wide

- **WLT** = Water Level at Time of Excavation: None
- **WLA** = Water Level After 24 Hours: None

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
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<tbody>
<tr>
<td>0</td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides. - becomes very blocky at 5.0'.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Total Depth = 7.5'.</td>
<td></td>
</tr>
</tbody>
</table>

**Hand Penetrometer Test (ft):**
- **WLT** = Water Level at Time of Excavation: None
- **WLA** = Water Level After 24 Hours: None

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<th>Depth (ft)</th>
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<th>Graphic Log</th>
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<tr>
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<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides. - becomes very blocky at 5.0'.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Total Depth = 7.5'.</td>
<td></td>
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</table>

**Test Pit TP-14 image shown below:**

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**LOG OF TEST PIT TP-15**

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No.:** 0601-353-11-00-06  
**Excavation Date:** 10/22/2003  
**Northing:** 160744  
**Surface Elevation:** 1241.0 ft. m.s.l.  
**Easting:** 2078390  
**Test Pit Dimensions:** 11.0 feet long x 6.5 feet deep x 1.0 feet wide

<table>
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<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>Field Tests</th>
<th>Laboratory Tests</th>
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<tr>
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<td>6.0</td>
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</tr>
<tr>
<td>6.5</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Description**  
Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.  
Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.

**Hand Penetration Test (ft)**  
- **Depth 2.5:** CH 2.5  
- **Depth 4.0:** CH 4  
- **Depth 6.5:** CH 6.5

**Total Depth:** 6.5 ft.

Test Pit TP-15 image shown below:
**LOG OF TEST PIT TP-16**

Project Title: Oklahoma Landfill Terrace Deposit Investigation

Project No: 0601-353-11-00-06

Geologist: [Name]

Test Pit Excavator: Backhoe

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<th>Field Tests</th>
<th>Laboratory Tests</th>
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<tr>
<td>Northing: 161100</td>
<td>Percent Passing No. 200</td>
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<tr>
<td>Surface Elevation: 1241.4 ft. m.s.l</td>
<td>Dry Density (pcf)</td>
</tr>
<tr>
<td>Easting: 2078391</td>
<td>Plastic Limit</td>
</tr>
<tr>
<td>Test Pit Dimensions: 12.0 feet long x 8.0 feet deep x 1.0 feet wide</td>
<td>Plasticity Index</td>
</tr>
<tr>
<td>∆ = Water Level at Time of Excavation: None</td>
<td>Permeability (cm/s)</td>
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<tr>
<td>Ψ = Water Level After 24 Hours: None</td>
<td>Well Detail</td>
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<td></td>
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<tr>
<td>4</td>
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<td>CH 4</td>
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<td>8</td>
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<td>Total Depth = 8.0'</td>
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Test Pit TP-16 image shown below:
**LOG OF TEST PIT TP-2**

**Geologist:**

**RSF**

**Test Pit Excavator:**

**Trackhoe**

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation

**Project No:** 0601-353-11-00-06

**Excavation Date:** 10/22/2003

**Northing:** 159545

**Surface Elevation:** 1237.9 ft. m.s.l.

**Easting:** 2077421

**Test Pit Dimensions:** 12.0 feet long x 7.0 feet deep x 2.5 feet wide

\[ \n= \text{Water Level at Time of Excavation: None} \]

\[ \n= \text{Water Level After 24 Hours: None} \]

**Test Pit TP-2 image shown below:**

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<th>Description</th>
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<td></td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td>CH 2.5</td>
</tr>
<tr>
<td>-6</td>
<td></td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
<td>CH 4</td>
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<tr>
<td>1230.9</td>
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<td>Total Depth = 7.0'.</td>
<td></td>
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</tbody>
</table>

**Laboratory Tests**

<table>
<thead>
<tr>
<th>Hand Penetrometer Test (ts)</th>
<th>Penetrometer Blows/Pt</th>
<th>Percent Passing No. 200</th>
<th>Percent Moisture Content</th>
<th>Dry Density (pcf)</th>
<th>Liquid Limit</th>
<th>Plastic Limit</th>
<th>Plasticity Index</th>
<th>Permeability (cm/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# LOG OF TEST PIT TP-3

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No:** 0601-353-11-00-06

| Geologist: | RSF  
| Test Pit Excavator: | Trackhoe  
| Field Tests | Laboratory Tests |

---

### Excavation Details
- **Excavation Date:** 10/22/2003  
- **Northing:** 159945  
- **Surface Elevation:** 1246.6 ft. m.s.l.  
- **Easting:** 2077421

### Test Pit Dimensions
- **Test Pit Dimensions:** 12.0 feet long x 8.0 feet deep x 2.5 feet wide

### Water Levels
- **\( \gamma \): Water Level at Time of Excavation:** None  
- **\( \gamma \): Water Level After 24 Hours:** None

### Descriptions

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Description</th>
<th>USCS</th>
<th>Penetration Blow/ft</th>
<th>Percent Passing No. 200</th>
<th>Percent Moisture Content</th>
<th>Dry Density Limit</th>
<th>Plastic Limit</th>
<th>Permeability (cm/s)</th>
<th>Wall Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Silty Clay (topsoil), dark gray brown, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td>CH</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
<td>CH</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Depth = 8.0'.**

---

Test Pit TP-3 image shown below:
LOG OF TEST PIT TP-4

Project Title: Oklahoma Landfill Terrace Deposit Investigation
Project No: 0601-353-11-00-06

Excavation Date: 10/22/2003  Northing: 160344
Surface Elevation: 1241.9 ft m.s.l. Easting: 2077422

Test Pit Dimensions: 12.0 feet long x 5.0 feet deep x 2.5 feet wide

\[\begin{align*}
\text{Water Level at Time of Excavation: None} \\
\text{Water Level After 24 Hours: None}
\end{align*}\]

Description

- Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified. USCS CH 2.5
- Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides. USCS CH 4

Total Depth = 5.0'.

Test Pit TP-4 image shown below:
## LOG OF TEST PIT TP-5

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No:** 0601-353-11-00-06

Excavation Date: 10/22/2003  
North: 159144  
Surface Elevation: 1242.3 ft. m.s.l.  
Easting: 2077882

**Test Pit Dimensions:** 13.0 feet long x 6.0 feet deep x 2.5 feet wide

- Water Level at Time of Excavation: None
- Water Level After 24 Hours: None

### Description

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>USCS</th>
<th>Penetration Blows/Ft</th>
<th>Percent Passing No. 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>CH</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>CH</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td>CH</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.

Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.

Total Depth = 6.0'.

Test Pit TP-5 image shown below:
# LOG OF TEST PIT TP-6

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No.:** 0601-353-11-00-06

Excavation Date: 10/22/2003  
Northing: 159545  
Surface Elevation: 1242.0 ft. m.s.l.  
Easting: 2077882

Test Pit Dimensions: 11.0 feet long x 5.0 feet deep x 2.5 feet wide

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>USCS</td>
<td></td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
</tr>
<tr>
<td>2.5</td>
<td>USCS</td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
</tr>
</tbody>
</table>

Water Level at Time of Excavation: None  
Water Level After 24 Hours: None

Total Depth = 5.0'.

Test Pit TP-6 image shown below:
**LOG OF TEST PIT TP-7**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Pit Dimensions: 13.0 feet long x 7.75 feet deep x 2.5 feet wide</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Excavation Date:** 10/22/2003  
**Northing:** 159944  
**Surface Elevation:** 1244.6 ft. m.s.l.  
**Easting:** 2077882

| Water Level at Time of Excavation: None |
| Water Level After 24 Hours: None |

**Description**

- Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.  
  USCS: CH  
  Penetration Blow/Ft: 2.5

- Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.  
  USCS: CH  
  Penetration Blow/Ft: 4

**Total Depth = 7.75'.**

Test Pit TP-7 image shown below:
**LOG OF TEST PIT TP-8**

<table>
<thead>
<tr>
<th>Project Title:</th>
<th>Oklahoma Landfill Terrace Deposit Investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project No:</td>
<td>0601-353-11-00-06</td>
</tr>
</tbody>
</table>

Excavation Date: 10/22/2003  Northing: 160345  Surface Elevation: 1239.8 ft. m.s.l.  Easting: 2077882

Test Pit Dimensions: 11.0 feet long x 7.3 feet deep x 1.0 feet wide

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>Description</th>
<th>USCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td>CH 2.5</td>
</tr>
</tbody>
</table>

1237.8

| 4         |         |             | Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides. | CH 4 |

1232.5

Total Depth = 7.3'.

<table>
<thead>
<tr>
<th>Field Tests</th>
<th>Laboratory Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Penetrometer Test (lbf)</td>
<td>Penetration Blows/Ft.</td>
</tr>
<tr>
<td>Percent Passing No. 200</td>
<td>Percent Moisture Content</td>
</tr>
<tr>
<td>Dry Density (pcf)</td>
<td>Liquid Limit</td>
</tr>
<tr>
<td>Plastic Limit</td>
<td>Permeability (cm/s)</td>
</tr>
<tr>
<td>Well Detail</td>
<td></td>
</tr>
</tbody>
</table>

Test Pit TP-8 image shown below:
### LOG OF TEST PIT TP-9

**Project Title:** Oklahoma Landfill Terrace Deposit Investigation  
**Project No.:** 0601-353-11-00-06

<table>
<thead>
<tr>
<th>Field Tests</th>
<th>Laboratory Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geologist:</strong></td>
<td>RSF</td>
</tr>
<tr>
<td><strong>Test Pit Excavator:</strong></td>
<td>Backhoe</td>
</tr>
</tbody>
</table>

**Excavation Date:** 10/22/2003  
**Northing:** 160745  
**Surface Elevation:** 1231.8 ft. m.s.l.  
**Easting:** 2077882

**Test Pit Dimensions:** 12.0 feet long x 8.0 feet deep x 1.0 feet wide

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Samples</th>
<th>Graphic Log</th>
<th>Description</th>
<th>USCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>Clay (topsoil), dark gray brown, silty, dry, soft, slightly plastic when moistened, abundant organic material, unstratified.</td>
<td>CH 2.5</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>Mudstone (Hennessey Formation), brownish red, silty and clayey, dry, stiff to hard, blocky fractures, massive bedding, slightly sandy, slightly calcareous, occasional slickensides.</td>
<td>CH 4</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Water Level at Time of Excavation:** None  
**Water Level After 24 Hours:** None

**Total Depth =** 8.0'.