Modification Application for Risk Reduction Activities
Otay Landfill

Otay Landfill, Inc.
1700 Maxwell Road
Chula Vista, California 91911
619-421-3773

SCS ENGINEERS

01205144.33 | September 2024 (Revised December 2024, Revised June 2025)

4683 Chabot Drive, Suite 200
Pleasanton, CA 94588

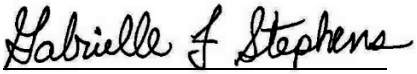
Table of Contents

Section Page

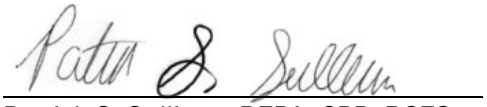
Tables

Appendices

This document is dated June 2025 and was prepared and reviewed by the following:



Gabrielle F. Stephens
Vice President



Patrick S. Sullivan, REPA, CPP, BCES
Senior Vice President
SCS ENGINEERS

1.0 INTRODUCTION

1.1 OVERVIEW

This application, prepared by SCS Engineers (SCS), on behalf of Otay Landfill, Inc. (OLI) details the risk reduction activities that will be implemented at the Otay Landfill (Otay or landfill) to reduce health risk. This document serves as both a modification application to have these risk reduction activities permitted, as well as serving as the risk reduction audit and plan (RRAP) detailed in San Diego Air Pollution Control District (SDAPCD or District) Rule 1210 (e).

> SDAPCD Rule 1210 (e) reads as follows:*(1) Except as provided in Subsections (e)(2), (e)(3) and (e)(4), within six months of receipt of written notice from the Air Pollution Control Officer that a stationary source's most recent approved public health risk assessment indicates potential public health risks equal to or greater than one or more of the following significant risk mitigation levels, the owner or operator shall submit to the Air Pollution Control Officer, for review for completeness, a stationary source toxic air contaminant risk reduction audit and plan:*
>
> *(i) Maximum incremental cancer risks equal to or greater than 100 in one million, or*
>
> *(ii) Cancer burden equal to or greater than 1.0, or*
>
> *(iii) Total acute noncancer health hazard index equal to or greater than 1.0, or*
>
> *(iv) Total chronic noncancer health hazard index equal to or greater than 1.0.*
>
> *The risk reduction audit and plan shall contain airborne toxic risk reduction measures proposed by the owner or operator which will be sufficient to reduce the stationary source emissions to levels that result in potential public health risks below the significant risk mitigation levels specified above. Such emission reductions shall be accomplished within five years of the date the plan is submitted to the Air Pollution Control Officer.*
>
> *(5) The risk reduction audit and plan submitted by the owner or operator shall contain all of the following:*
>
> *(i) The name, location and standard industrial classification (SIC) code of the stationary source.*
>
> *(ii) The identification of the emission units and toxic air contaminants emitted by each emission unit that contribute to potential public health risks above the significant risk mitigation levels specified in Subsection (e)(1). Emission units shall be listed by decreasing contribution to the total potential public health risks estimated for the stationary source. Toxic air contaminants shall be listed for each emission unit by decreasing contribution to the potential public health risk estimated for that unit.*
>
> *The plan need not include identification of emission units which emit toxic air contaminants in amounts which the approved public health risk assessment indicates Regulation XII -14- Rule 1210 do not cause maximum incremental cancer risks greater than 1.0 in a million, nor a total acute noncancer health hazard index of 1.0 or greater, nor a total chronic*

noncancer health hazard index of 1.0 or greater. The plan shall include identification of all emission units for which the owner or operator proposes to reduce toxic air contaminant emissions as part of the risk reduction audit and plan.

1.2 BACKGROUND INFORMATION

1.2.1 Applicant Name and Address

Otay Landfill, Inc.
1700 Maxwell Road
Chula Vista, CA 91911

1.2.2 Facility Address

Otay Landfill
1700 Maxwell Road
Chula Vista, CA 91911

1.2.3 Nature of Business

Municipal Solid Waste Landfill

1.2.4 Persons to Contact Regarding Application

Marco Cervantes
Environmental Manager
Otay Landfill, Inc.
1700 Maxwell Road
Chula Vista, CA 91911
(619) 332-9021
MCervantes2@republicservices.com

Gabrielle Stephens
Vice President
SCS Engineers
4683 Chabot Drive, Suite 200
Pleasanton, CA 94588
(562) 355-6510
gstephens@scsengineers.com

1.2.5 Operation Schedule

11 hours per day
6 days per week
52 weeks per year

1.2.6 Status of Application

This is a modification application for risk reduction activities.

1.2.7 Facility Status

Existing facility

2.0 PROJECT DESCRIPTION

2.1 EXISTING OPERATION

Otay is located in Chula Vista, California. The Site is owned and operated by OLI. The primary function of Otay is for the disposal of municipal solid waste (MSW) (Standard Industrial Code (SIC) #4953). The landfill is equipped with a landfill gas (LFG) collection and control system (GCCS), the original objective of which was to control the migration of combustible gases to off-site soils (California Code of Regulations [CCR] Title 27). However, over time, the GCCS has been expanded and enhanced to comply with federal, state, and local air quality regulations.

The OLI GCCS consists of vertical and horizontal extraction wells used to collect the LFG, a high-density polyethylene (HDPE) piping collection system used to convey the collected LFG, and a blower/flare station (BFS) used to destruct the collected LFG. The BFS consists of a John Zink flare (No. 1) rated at 150 million British Thermal Units per hour (MMBtu/hr) and a Perennial flare (No. 2) rated at 48 MMBtu/hr.

2.2 REASON FOR PERMITTING ACTION

OLI received notice from the SDAPCD that the 2021 health risk assessment (HRA) indicated that public risk was above the significant risk mitigation levels under Rule 1210. This requires OLI to submit a RRAP within six months. This document will define risk reduction measures that can be incorporated into and implemented by the facility's air permit (APCD2009-PTO-971112).

3.0 RISK REDUCTION

Otay contains the following emission units that contribute to public health risks above the significant mitigation levels:

- Landfill (area source)
- Diesel engines (point source)
- Flares (point sources)
- Stockpiles (area sources)
- Unpaved and paved haul roads (line volume sources)

3.1 RISK CONTRIBUTION

As required by the California H&S code, section 44360, the District requested an HRA on November 15, 2022 for the 2021 calendar year. OLI submitted an HRA to the District on May 14, 2023. The District provided comments on the HRA as well as comments provided from the Office of Environmental Health Hazard Assessment (OEHHA) to Otay Landfill on October 12, 2023. OLI submitted a revised HRA to the District on December 11, 2023. The District approved the HRA on March 21, 2024.

According to the 2021 HRA, the specific contaminants that contribute the most to the residential cancer risk are arsenic (63 percent (%)), and to a lesser extent, benzene (13%), vinyl chloride (8%),

and ethylbenzene (6%). By far, the largest contributor to cancer risk are metals, specifically arsenic, being released in combusted landfill gas (LFG) from the John Zink flare (No. 1) (51%). The RRAP is required due to residential cancer risk exceeding ten in one million. Therefore, sources and TACs contributing to the risk will be the focus of this RRAP.

3.2 RISK REDUCTION EVALUATION

The largest contribution to health risk for Otay is a non-volatile metal (arsenic) presumed to being released by the John Zink flare. Please note that the 2021 HRA included residential cancer risk contribution from unpaved roads of approximately 15%. The risk reduction plan associated with reduction of risks from these unpaved haul roads that was submitted in 2021 and subsequently approved as a requirement of the 2017 HRA results, was not included in the 2021 HRA. However, the approved plan has since been implemented by OLI and contributes to the risk reduction of toxics and metals from unpaved haul roads that contributed 15% of the cancer risk. These risk reduction measures should be considered as risk reduction for the 2021 HRA.

We believe the SDAPCD based the arsenic emissions for the LFG flare on sampling results for arsine and trimethylarsine from testing in 2016 through 2018 at multiple landfills in the District. Testing for Otay Landfill was conducted on June 15, 2016. However, the analyses were not performed using a United States Environmental Protection Agency (EPA) or other regulatory agency approved method nor from an accredited laboratory. We do not believe that all arsine and trimethylarsine is converted to arsenic during combustion; therefore, the emissions used for the 2021 HRA may be overstated. This was the case for a landfill facility in the Santa Barbara County Air Pollution Control District (SBCAPCD) where the SBCAPCD assumed arsenic would be emitted in a significant amount but multiple recent stack testing data showed arsenic emissions were non-detect for all three runs. We believe that the arsenic emissions and risk contribution were overestimated in the 2021 emission inventory and HRA. Therefore, the Facility will conduct arsenic testing to verify the actual emissions of arsenic for the LFG-fired flare and update the resulting emission factor for arsenic as appropriate. We will then revise the HRA accordingly using the updated emission factor(s). The Facility will be contracting with Total Air Analysis, Inc. (Total Air) which has performed arsenic testing at other landfills with flares. **Table 1** below provides a schedule for arsenic testing and reporting:

Table 1. Proposed Arsenic Testing Schedule

Action	Date	Status/Comments
Source Test Protocol	January 31, 2025	Submitted to SDAPCD on 1/31/25; Comments received from SDAPCD on 2/20/25; Revised protocol submitted to SDAPCD on 3/4/25
Flare Source Testing	July 25 & 26, 2025	Scheduled dates per Total Air
Source Test Report	September 23, 2025	Within 60 days of testing
Updated Health Risk Assessment	October 23, 2025	Within 30 days of receiving final Source Test Report

3.3 RISK REDUCTION SCHEDULE

The Facility will conduct testing as noted in Section 3.2 above for the risk driver, arsenic. If testing results show that risk associated with arsenic emissions are now below the mitigation levels, no further risk reduction actions will be required, and risk reduction will be fulfilled once the updated HRA is approved by the SDAPCD.

In the event that the testing and resulting emission factors indicate that the arsenic emissions from the LFG flare would still result in Otay Landfill triggering any of the significant risk mitigation thresholds or continue to be above the maximum exposed individual resident cancer risk, OLI will evaluate and implement additional risk reduction actions that could reduce post-combustion emissions such as the installation of post-combustion add-on controls, (i.e. catalysts and/or pre-combustion pretreatment of the LFG). Although these actions are not reliably proven as technologically feasible currently, have not been deployed at any landfills, and we are not certain technologies would be economically viable, OLI will further research and reach out to vendors to evaluate potential treatment options.

Current research has indicated that there are several potential gas treatment options for arsenic such as activated carbon and Puraspec absorbent for arsine, or a catalyst-based system.

Puraspec absorbents, which are manufactured by Johnson Matthey, are designed to remove arsine as well as hydrogen sulfide and carbonyl sulfide from the LFG prior to combustion in the flare, but mainly in the form of light liquid hydrocarbon streams such as LFG condensate. This may also be done through microelectrolysis (ME) treatment which uses zero-valent iron combined with activated carbon to remove or immobilize arsine. By removing the arsine, the arsenic emissions from the flare will be reduced or potentially be eliminated.

Back-end controls will also be further evaluated such as iron-based adsorbents with catalytic oxidation, or catalytic flare tips.

An estimated schedule for add-on controls, if necessary, is provided in **Table 2** below.

Table 2. Proposed Estimated Add-On Controls Schedule

Action	Milestone
Research and Vendor Discussions	Current – Within 3 months (Concurrent with Arsenic Testing)
Selection of Preferred Control Technology	60 days after revised HRA showing risk still over thresholds
Design of Selected Control Technology	60 days after selection of preferred control technology
Submittal of Air Permit Application for Add-On Controls (if necessary)	60 days after design of selected control technology
Procurement and Installation of Controls	Within 12-18 months of design of selected control technology

*Please note timelines are estimated as dependent upon control technology manufacturer timelines; subject to change

3.4 RISK REDUCTION DEMONSTRATION

Actual emissions from the John Zink flare will be revised and updated with testing for the risk driver, arsenic, based on source testing in 2025. The significant risk mitigation levels for the Facility are the following:

- Maximum exposed individual resident cancer risk equal to or greater than 10 in one million (20.2)

Since we believe that the arsenic emissions and subsequent risk are overstated, OLI plans to perform testing and then re-evaluate the health risk. As noted previously, risk reduction activities already implemented for unpaved haul roads that were not applied in the 2021 HRA would also show reduction in health risk for this and future HRAs. The unpaved roads accounted for 15% of the cancer risk for the 2021 HRA. After implementation of the October 2021 risk reduction plan for the 2013 HRA, which was subsequently approved in the permit, consists of watering every four hours and the routine addition of chemical dust suppressants. This resulted in a 90% reduction in fugitive dust emissions, reducing cancer risks by 2.727 in a million, leaving a residual risk of 17.473 in a million. The resulting risk reduction needed would be 7.47 in a million. We believe that testing would reduce the John Zink flare's arsenic emissions contribution to below 10 in a million.

Table 3 below shows the revised forecast for a future risk assessment within the 5-year timeframe for risk reductions requirements per Rule 1210.

Table 3. Proposed HRA Risk Reduction

Risk Type	2021 HRA	Risk Reduction Amount from Unpaved Roads Risk*	Resulting Risk	Risk Reduction Amount from 2025 Flare Source Testing and/or Controls	Resulting 2025 HRA	Units
Cancer Maximum Residential	20.2	2.727	17.473	>7.473	<10	Cancer Risk Per Million

*Risk reduction based on 90% reduction of 15% cancer risk contribution from watering/chemical suppressants on unpaved roadways, as approved for 2013 HRA.

3.5 PROGRESS REPORTS

Rule 1210(e) requires progress reports to be submitted at least annually under this RRAP. The Facility will provide progress reports as required on an annual basis incorporated into the toxic air contaminant emission inventory report. This report will detail actions taken by the Facility to reduce TAC emissions and the estimated public health risk reduction achieved through the submittal of testing and/or add-on controls.

4.0 APPLICATION FORM AND FEE

The General Permit or Registration Application Form can be found in **Appendix A**. The fee estimate provided by the SDAPCD as well as the payment receipt in the amount of $7,528 can be found in **Appendix B**.

5.0 CONCLUSION

OLI has included all required information from Rule 1210(e) regarding the RRAP. The risk reduction activities detailed in this permit modification application serve to update the current permit and show that OLI is taking all necessary steps to reduce health risk at the landfill. OLI understands that permit conditions will be imposed to reflect the commitments on risk reductions, including periodic testing to demonstrate compliance with emission limits.

Appendix A

General Permit Application Form

Internal Use Only
APP ID: APCD -APP/CER-
SITE ID: APCD -SITE-

GENERAL PERMIT OR REGISTRATION APPLICATION FORM

San Diego County Air Pollution Control District

Submittal of this application does not grant permission to construct or to operate equipment except as specified in Rule 24(c).

REASON FOR SUBMITTAL OF APPLICATION:

- ☐ New Installation
- ☐ Amendment to Existing Authority to Construct or Application
- ☒ Change of Permit Conditions
- ☐ Registration of Portable Equipment
- ☐ Existing Unpermitted Equipment or Rule 11 Change
- ☐ Change of Equipment Location
- ☐ Change Permit to Operate Status to Inactive
- ☐ Other (Specify)_____
- ☐ Modification of Existing Permitted Equipment
- ☐ Change of Equipment Ownership *(please provide proof of ownership)*
- ☐ Banking Emissions

List affected APP/PTO Record ID(s): APCD2009-PTO-971112

APPLICANT INFORMATION

Name of Business (DBA) Otay Landfill, Inc.

Does this organization own or operate any other APCD permitted equipment at this or any other adjacent locations? ☒ Yes ☐ No

If yes, list assigned Site Record IDs listed on your Permits APCD1989-SITE-07494

Name of Legal Owner (if different from DBA)_____

Equipment Owner			Authority to Construct Mailing Address		
Name: Otay Landfill Inc.			Name: Same as Equipment Owner		
Mailing Address: 1700 Maxwell Road			Mailing Address:		
City: Chula Vista	State: CA	Zip: 91911	City:	State:	Zip:
Phone: (619) 449-9026			Phone: ( )		
E-Mail Address: nmohr@republicservices.com			E-Mail Address:		

Permit To Operate Mailing Address			Invoice Mailing Address		
Name: Same as Equipment Owner			Name: Same as Equipment Owner		
Mailing Address:			Mailing Address:		
City:	State:	Zip:	City:	State:	Zip:
Phone: ( )			Phone: ( )		
E-Mail Address:			E-Mail Address:		

EQUIPMENT/PROCESS INFORMATION: Type of Equipment: ☒ Stationary ☐ Portable, *if portable please enter below the equipment storage address*. If portable, will operation exceed 12 consecutive months at the same location ☐ Yes ☒ No

Equipment Location Address Otay Landfill - 1700 Maxwell Road City Chula Vista State: CA

Parcel No._____ Zip 91911 Phone (619) 332-9021 E-mail: mcervantes2@republicservices.com

Site Contact Marco Cervantes Phone (619) 332-9021

General Description of Equipment/Process Municipal Solid Waste Landfill

Application Submitted by ☐ Owner ☐ Operator ☐ Contractor ☒ Consultant Affiliation SCS Engineers

EXPEDITED APPLICATION PROCESSING: ☐ I hereby request Expedited Application Processing and understand that:

a) Expedited processing will incur additional fees and permits will not be issued until the additional fees are paid in full (see Rule 40(d)(8)(iv) for details) b) Expedited processing is contingent on the availability of qualified staff c) Once engineering review has begun this request cannot be cancelled d) Expedited processing does not guarantee action by any specific date nor does it guarantee permit approval.

☐ **This application contains trade secret or confidential information** *(see reverse for instructions)*

I hereby certify that all information provided on this application is true and correct.

SIGNATURE Neil Mohr Date 09/17/2024

Print Name Neil Mohr Company Otay Landfill, Inc.

Phone (619) 449-9026 E-mail Address nmohr@republicservices.com

Internal Use Only

Date_____ Staff Initials:_____ Amt Rec'd $_____ Fee Schedule_____

RNP:_____ EMF:_____ NBF:_____ TA:_____

GEN_APP_Form_Rev Date: Aug. 2017

Appendix B

Fee Estimate and Payment Receipt

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

FEE ESTIMATE

Applicant Site ID/EIF ID:	*APCD1989-SITE-07494, EIF ID 7263*		
Applicant DBA:	*Otay Landfill*	Fee Schedule:	RRP
	1700 Maxwell Road	Reason for Submittal:	Other
	Chula Vista, CA 91911	Existing Site?	Yes
APCD Engineer:	*Jim Swaney*	Estimate Date:	9/12/2024
Equipment Description:	*Estimated fees to review Risk Reduction Plan related to APCD2022-HRA-0028 for their 2021 emissions, to add review and revise flare emission factors*		

ACTIVITY	EMPLOYEE CLASSIFICATION	LABOR HOURS	COST	SUBTOTAL	
Initial Evaluation Fee - T&M (Rule 40(d)(3)(i))					
Authority to Construct	Engineering Services	15.0	$4,110.00		ETM
Permit to Operate	Engineering Services		$0.00	$4,110.00	ETM
T&M Application - No Fixed Fee, see above					
Authority to Construct/Permit to Operate		N/A	T+M	$0.00	ETM
Additional Evaluation and Processing Fees (Rule 40(d)(5))					
New Source Review	Engineering Services		$0.00	$0.00	NSR
	Monitoring Services		$0.00	$0.00	AQI
Prev. Significant Deterioration	Engineering Services		$0.00	$0.00	PSD
AB2588 Hot Spots (Rule 40(f)(6))	Engineering Services	12.0	$3,288.00		
(Health Risk Assessment)	Monitoring Services		$0.00		
	HRA Base Estimate	Standard		$3,288.00	ETM
Tile V	Engineering Services		$0.00	$0.00	TIV
NESHAPS/ATCM/NSPS	Engineering Services		$0.00	$0.00	HAP
CEQA	Engineering Services		$0.00	$0.00	CEQ
AB 3205 Notice	Engineering Services		$0.00		
	Public Notice Costs		$0.00	$0.00	AB3
Equipment subject to Rule 11(a)(3)	Engineering Services		$0.00	$0.00	R51
H&SC 42301(e)	Engineering Services		$0.00	$0.00	HSC
Testing or Test Witness	Engineering Services		$0.00		STF
	Source Testing Services		$0.00		ad-hoc
Fixed Test Fee Sched. NA	Fixed Testing Fees		$0.00	$0.00	ad-hoc
Miscellaneous Fees					
Processing Fee (Rule 40(d)(1)(ii))		1.0	$130	$130.00	EFX
Renewal Fee (Rule 40(e)(2)(ii))		N/A	N/A	$0.00	REN
Emissions Fee (Rule 40(e)(2)(iv))			N/A	$0.00	EMF

ESTIMATE TOTAL: $7,528.00

NOTES:

(1) To avoid possible processing delays, this document should be submitted with your application forms.

(2) The fees contained in this estimate are are based on APCD Rule 40. Final fee may be more or less than this estimate (see Rule 40(d)(1)(iii) or Rule 40(f)(6)).

(3) Emissions determined to be greater than 5 tons per year will be charged a emission fee on a ton per year basis. (see Rule 40 (e)(2)(iv)(A))

(4) Fees paid by credit card will be assessed a 2.19% processing fee (see Rule 40(c)(5))

(5) Federal government payments made through DFAS: Please reference the above liste Site ID Record number in your DFAS submittal.

(6) This estimate is valid only for applications or Health Risk Assessments received by the District by June 30, 2024

SAN DIEGO COUNTY AIR P
10124 OLD GROVE ROAD
SAN DIEGO, CA 92131

09/17/2024 14:59:35
MID: XXXXXXXXXXX005 TID: XXXXX301

CREDIT CARD

VISA SALE

Card #	XXXXXXXXXXXX3284
SEQ #:	5
Batch #:	79
INVOICE	5
Approval Code:	02401S
Entry Method:	Manual
Mode:	Online
Tax Amount:	$0.00
Cust Code:	
Card Code:	M

SALE AMOUNT $7692.86

I agree to pay above total amount
according to card issuer agreement.
(Merchant agreement if Credit Voucher)

X_____

MERCHANT COPY