Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory

Air Emissions Calculation Methods

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Notice

This document presents the methods used to calculate the air emissions impacts reported in the *Final Environmental Impact Statement for Remediation of Area IV and the Northern Buffer Zone of the Santa Susana Field Laboratory* (*Final SSFL Area IV EIS*). The peak day fugitive dust emissions for Ventura County presented in this document (Table 1A-42a) were inadvertently not updated in the *Final Area IV EIS*, Chapter 4, Section 4.6, Table 4–36. The correct peak day fugitive dust emissions for Building Removal and Soil Remediation activities are 49.3 and 62.1 pounds per day of PM_{10}, respectively. This update increases the total peak day PM_{10} emissions from proposed activities within Ventura County by about 19 percent compared to the values presented in Table 4–36. This increase in emissions does not change the conclusion of the air quality impact analyses in the *Final Area IV EIS*, namely, peak daily emissions of PM10 would not contribute to an exceedance of an ambient air quality standard.

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AIR EMISSIONS CALCULATION METHODS – FINAL ENVIRONMENTAL IMPACT STATEMENT FOR REMEDIATION OF AREA IV AND NORTHERN BUFFER ZONE OF THE SANTA SUSANA FIELD LABORATORY

1.0 Introduction

The following describes the methods used to estimate air emissions from cleanup activities proposed by the U.S. Department of Energy (DOE) within the Santa Susana Field Laboratory (SSFL) for purposes of documentation in the *Final Environmental Impact Statement for Remediation of Area IV and Northern Buffer Zone of the Santa Susana Field Laboratory* (*SSFL Area IV FEIS*). SSFL is located in Ventura County, California, on 2,850 acres in the hills between Chatsworth and Simi Valley. A detailed description of SSFL and its physical setting, the history of activities at SSFL, and the current configuration and planned cleanup for SSFL is available at http://www.etec.energy.gov/.

The analysis calculated emissions for each action alternative and four combinations of action alternatives. This document also presents methods for the estimation of (1) emissions for SSFL cumulative projects and (2) fuel consumption due to the implementation of each proposed action alternative and combined action alternative. The emissions and fuel estimates are presented in tabular form in Attachment 1 of this document for each project alternative and combined action alternative.

2.0 Emission Calculation Methods

Proposed cleanup activities would produce emissions from three main sources:

1. Off-road construction equipment.
2. On-road haul trucks and worker commuter vehicles.
3. Fugitive dust generated from equipment and trucks operating on unpaved and paved surfaces, the handling of soils and demolished materials, and wind erosion of vacated disturbed lands and soil stockpiles.

The following summarizes the methodologies used to estimate air emissions of criteria pollutants and greenhouse gases (GHGs) from proposed activities. The emissions considered in the analysis include the following:

- Volatile organic compounds (VOCs).
- Carbon monoxide (CO).
- Nitrogen oxides (NO_x).
- Sulfur dioxide (SO_2).
- Particulate matter less than 10 microns in diameter (PM_{10}).
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).
- Carbon dioxide (CO_2) as GHGs, since CO_2 amounts to roughly 99 percent of the carbon dioxide-equivalent (CO_2e) emissions generated from all evaluated sources (fossil fuel-fired internal combustion engines).

Due to the extensive area affected by emissions from the proposed activities, the analysis estimated emissions that would occur within three main domains: (1) Ventura County and the area directly

adjacent to SSFL; (2) the South Coast Air Basin, which includes most of Los Angeles County, in addition to Orange County and the most western portions of Riverside and San Bernardino Counties; and (3) regions beyond Ventura County and the South Coast Air Basin. See **Figure 1** for the locations of SSFL, Ventura County, and the South Coast Air Basin. The third domain spans several air basins and it encompasses the routes taken by trucks hauling waste between the South Coast Air Basin and offsite disposal facilities. This approach was taken to enable the evaluation of emissions based on the regulatory constraints that pertain to these areas.

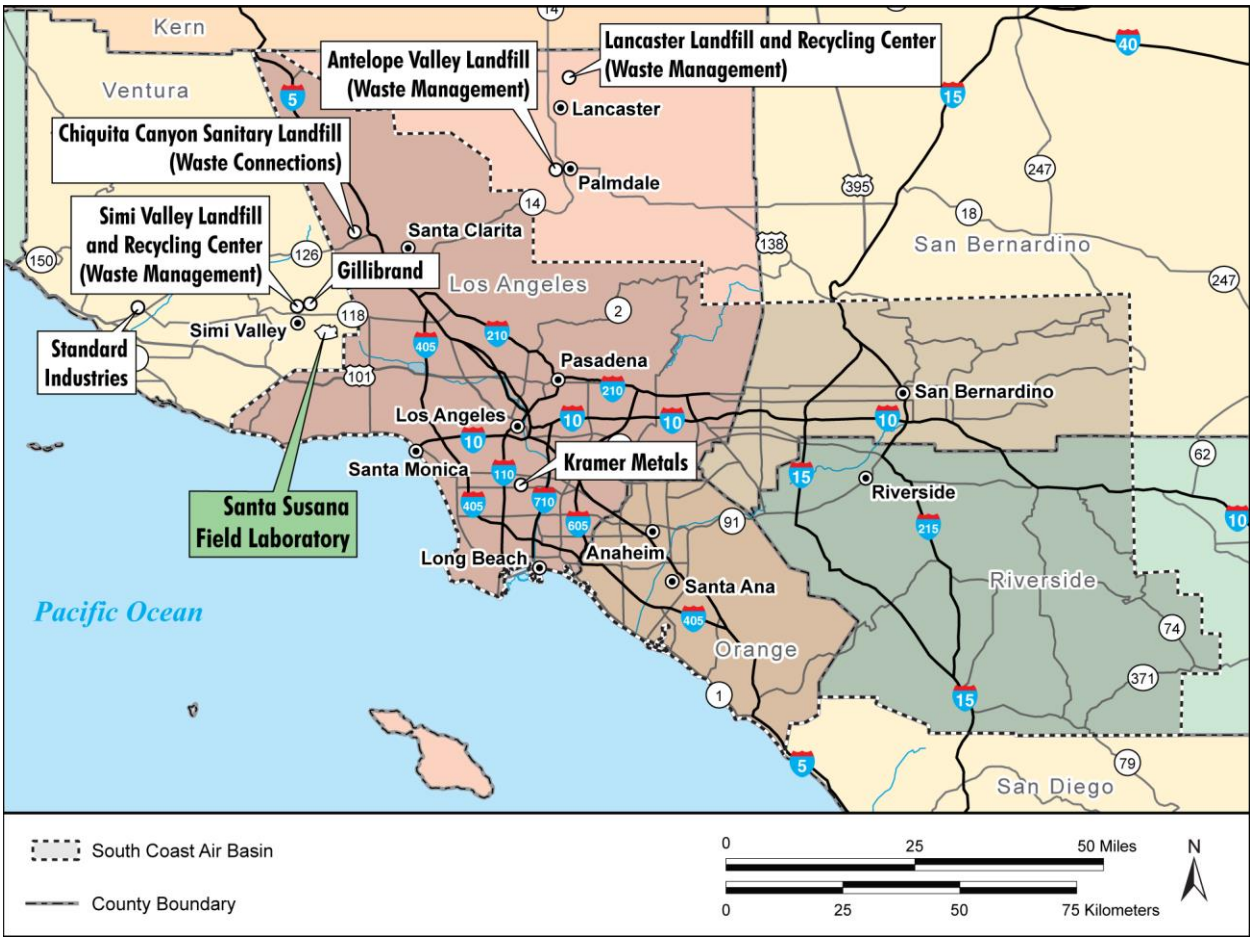

Figure 1. Air Quality Analysis Domains for the *SSFL Area IV FEIS*

2.1 Calculations for Off-Road Equipment

Data needed to estimate emissions from the usage of off-road construction equipment for proposed demolition, soil removal, and groundwater remediation activities include the following:

1. Horsepower (hp) rating.
2. Average daily engine load factor as a fraction of full power.
3. Hours per day, days per year, and total years of operation.
4. Equipment emission factors, in units of grams per hp-hour (gm/hp-hr).

Items 1 through 3 are activity data that were defined by taking into consideration the types of proposed activities, the amounts of materials handled, production rates of applicable equipment (Caterpillar Inc.

2015), and scheduling and durations of activities proposed for each project alternative. Attachment 1.A, Tables 1.A-2 through 1.A-4, present examples of off-road equipment activity data developed for activities under the Building Removal, Soil Remediation, and Groundwater Remediation Alternatives addressed in the *SSFL Area IV FEIS*. Regarding the Soil Remediation Alternatives, equipment activity data are shown for the Cleanup to AOC [Administrative Order on Consent] LUT [Look-Up Table] Values Alternative; the same equipment is used for the Cleanup to Revised LUT and Conservation of Natural Resources Alternatives. Regarding the Groundwater Remediation Alternatives, equipment activity data are shown for the Groundwater Treatment Alternative; equipment use and associated emissions under the Groundwater Monitored Natural Attenuation Alternative are negligible.

Off-road equipment emission factors were obtained from the *2011 Off-road Emissions Inventory* model (California Air Resources Board [ARB] 2012) for average California fleets for future project years, as presented in the California Emission Estimator Model (CalEEMod) document (BREEZE Software 2017). These emission factors are organized into ranges of equipment hp categories. All off-road equipment usages and emissions would occur at SSFL and therefore within Ventura County.

The analyses used off-road emission factors to estimate emissions for the following project years: (1) 2019, as it coincides with the start of proposed remediation activities (building removal); and (2) 2021, as it is the year of peak annual activities proposed at SSFL (due to simultaneous soil removal and ground water remediation). The analysis estimated emissions for proposed activities that extend beyond 2021 with the use of year 2021 fleet emission factors. This is a conservative approach, as due to the infusion of newer and lower-emitting models into the average equipment fleet over time, emission factors would continue to decrease beyond 2021. The analysis estimated total hp-hrs for each piece of equipment and then multiplied these estimates by the applicable emission factors in units of gm/hp-hr to obtain total grams (converted to pounds [lb] and tons) of emissions.

2.2 Calculations for On-Road Vehicles

Data needed to estimate emissions for on-road vehicles include the following:

1. Vehicle category, as defined by the ARB EMFAC2014 on-road mobile source emissions model (ARB 2014).
2. Trips per day, days per year, and total years of operation of each vehicle type.
3. Miles per round trip of travel.
4. Each round trip defined by vehicle speeds of 5 miles per hour (mph) increments to match the form of the emission factors output by EMFAC2014.
5. Vehicle emission factors, in units of grams per mile (gm/mi) for running emissions and gm/hr for heavy duty truck idling conditions.

The analysis evaluated all project haul trucks as heavy-heavy duty diesel trucks with a gross vehicle weight (GVW) greater than 33,000 pounds and an EMFAC2014 vehicle category equal to a T7 diesel construction truck. Worker commuter vehicles were chosen as a fleet of 75/25 percent auto/light duty trucks.

Vehicle trips were obtained from the project description. Haul truck trip lengths were based on distances between the SSFL and locations of proposed disposal sites and sources of backfill. Several offsite facilities were evaluated for the recycle or disposal of materials or waste from SSFL. To present a range of impacts that could occur from transporting materials and waste by truck to these facilities, emissions were determined for transport to both the nearest (nearby) and furthest (distant) facility identified for each type of material or waste. As an example, it was assumed that hazardous waste

would be trucked to either the Buttonwillow Landfill in California (nearby round trip of 240 miles) or US Ecology in Idaho (distant round trip of 2,040 miles). For backfill, the analysis assumed that trucks would deliver backfill from sources at an average of 50 miles away from SSFL (a distance that would encompass potential sources of local soil).

Vehicle emission factors were obtained from the ARB EMFAC2014 model and developed for average California fleets for future project years 2019 and 2021. The analysis developed composite emission factors to simulate vehicle speeds expected for each project vehicle route. These include the following: (1) within Ventura County, vehicles would travel 10/40/50 percent of the time at 10/25/55 mph; and (2) outside of Ventura County, vehicles would travel 5/5/90 percent of the time at 10/25/55 mph. Emissions for onsite vehicle travel were based on factors for a speed of 15 mph. The analysis estimated total vehicle miles travelled (VMT) for each type of vehicle and trip and then multiplied these by applicable emission factors in units of gm/mi to obtain total grams (converted to lb and tons) of emissions. The analysis also included 5 minutes of idling on-site SSFL per truck round trip.

As mentioned above, due to the extensive area affected by emissions from the proposed haul trucks, the analysis estimated emissions that would occur within three main domains: (1) Ventura County and the area directly adjacent to SSFL, (2) the South Coast Air Basin, and (3) regions beyond Ventura County and the South Coast Air Basin.

2.3 Calculations for Fugitive Dust Sources

Data needed to estimate emissions of fugitive dust (PM_{10} and $PM_{2.5}$) include the following:

- For handling demolished materials, tons of material excavated and loaded into trucks. Chapter 2 of the *SSFL Area IV FEIS* presents the amounts of materials handled for each proposed activity.
- For paved road dust generated by vehicle travel, haul truck weights and distances travelled on paved roads within SSFL. The distances travelled by haul trucks on paved roads within SSFL are based on mileages between the SSFL gate and locations of proposed activities. The average weight of haul trucks was assumed to be 35 tons.
- For dust generated by the operation of equipment and trucks on exposed soils, the acreages and durations of these activities. The areas of soils disturbed by equipment are based on the average daily footprint of soils affected by each activity. The duration of each disturbance were obtained from the durations of off-road equipment usages estimated for each activity.
- For soils loaded into haul trucks, cubic yards of material loaded and average wind speeds. Chapter 2 of the *SSFL Area IV FEIS* presents the amounts of soils handled for each proposed activity. Wind speeds (6 mph) were based on data collected at the Boeing SSFL Area IV meteorological station (Environmental Monitoring Company, Inc. 2012 and 2013).
- For dust generated by wind erosion of vacated disturbed lands and soil stockpiles, the acreages and durations of exposure. Areas and durations of vacated disturbed lands were assumed to be 10 percent of the total areas disturbed by each activity and for the entire duration of each activity. Soil stockpiles areas ranged from 0.33 acre for building demolition to 0.5 acre for soil removal.

Attachment 1.A, Tables 1.A-34 through 1.A-36, present examples of fugitive dust activity data developed for activities under the Building Removal, Cleanup to AOC LUT Values, and Groundwater Treatment Alternatives.

Emission factors (PM_{10} and $PM_{2.5}$) for each type of fugitive dust source were obtained from the following sources:

- For the handling of demolished materials, CalEEMod Appendix A, Section 4.4 (units of lb emitted per ton of material).
- For paved road dust generated by onsite vehicle travel, Section 13.2.1 of the *AP-42* document (EPA 2011) (units in lb emitted per VMT). Factors were reduced by 50 percent from uncontrolled levels assuming use of a PM_{10}-efficient street sweeper twice per day.
- For dust generated by the operation of equipment and trucks on exposed soils, Table 3-2 from the WRAP Fugitive Dust Handbook for active large earth-moving operations (units in lb per acre-day) (Countess Environmental 2006). These factors were reduced by 74 percent from uncontrolled levels to simulate water application every 2.1 hours and use of best management practices for fugitive dust control (WRAP Fugitive Dust Handbook Table 3-7).
- For soils loaded into haul trucks, the methods identified in *AP-42* Section 13.2.4 (EPA 2006a) (units in lb emitted per ton of loaded soil).
- For dust generated from wind erosion of vacated disturbed lands and soil stockpiles, the methods identified in *AP-42* Section 13.2.5 (EPA 2006b) (units in gm emitted per square meter). Factors were reduced by 50 percent from uncontrolled levels to simulate use of soil stabilization measures.

The analysis estimated total activity data for each source type and then multiplied these by the applicable emission factors to obtain total mass emissions. All fugitive dust emissions would occur at SSFL and therefore within Ventura County.

2.4 Definition of Peak Annual and Daily Emission Rates

A primary focus of the air quality analysis in the *SSFL Area IV FEIS* is to identify peak annual and daily emissions that would occur from the proposed alternatives within each analysis domain. Due to the proposed scheduling of each alternative, year 2021 would generate the highest amount of activity due to overlapping Building Demolition and Soil Remediation as part of each combined action alternative. Correspondingly, annual emissions for each combined action alternative would peak in 2021 due to maximum annual activity levels and because the average emission rates for the proposed off-road and on-road vehicle fleets would decrease each subsequent year due to the replacement of older and higher-emitting vehicles in these fleets with new vehicles that have more-stringent emission standards.

Each of the four action alternative combinations would generate an annual average of about 16 daily truck trips, although there could be a larger number of truck trips during some days, provided the total number of heavy duty truck trips was consistent with the Transportation Agreement with Boeing and NASA (Boeing 2015). For a peak day of activity, the analysis assumed that during some days DOE could generate twice as many truck trips, or up to 32 truck trips per day, and the estimation of peak daily emissions for each analysis domain is based on this level of production. Since numerous combinations of proposed activities could generate 32 truck trips per day, the analysis focused on a reasonable worst-case scenario of activities with the highest emission rates per unit of material throughput, which included 8 truck trips per day each for (1) Demolition – Radioactive Metal and Building Debris, (2) Demolition - Soil Backfilling, (3) Soil Excavation - Soil Categories 1 and 2, and (4) Soil Remediation - Soil Backfilling.

2.5 Calculations for Green Cleanup Vehicle Fleets

DOE proposes to minimize project environmental impacts with the use of green cleanup methodologies. To reduce project air quality impacts, these methodologies would take the form of low-emitting equipment and vehicle fleets. Peak annual and daily unmitigated emissions from project vehicle fleets are based on California average off-road and on-road vehicle fleets for years 2019 and 2021. Therefore, the assumptions used to develop green fleets for the project include the following:

1. For off-road equipment, EPA Nonroad Tier 4 emission standards.
2. For on-road haul trucks, a fleet with individual vehicles no more than 5 years old.

These initiatives form the basis of Mitigation Measure (MM) AQ-1, as addressed in the *SSFL Area IV FEIS*.

Implementation of MM AQ-1 would reduce emissions from the California average calendar year 2021 off-road equipment fleets by 51 percent, as averaged over emission factors for VOC, CO, NOx, and PM_{10} (the pollutants defined for Tier 4 standards). To estimate the emission reduction potential for the mitigated truck fleet, the analysis used the following approach:

1. Based on a project year of 2021, the truck fleet would include model years ranging from 2017 through 2022.
2. The portion of the total fleet population made up of each truck model year was determined by the following:

   The EMFAC2014 model was run to obtain predictions of year 2021 statewide VMT by model years 2017 through 2022 for the T7 diesel construction truck class. The fraction of the VMT for each model year to the total VMT for all model years was assumed to equal the fractional population of that model year to the total fleet population. These fractional values are 0.22, 0.21, 0.20, 0.21, 0.14, and 0.02 for each respective model year starting in 2017 and ending in 2022.

3. The EMFAC2014 model was run to estimate T7 diesel construction truck emission factors for years 2017 through 2022.
4. The fractional population value for each model year was applied to its associated emission factors and then these products for all model years were summed to develop one set of composite emission factors for the entire mitigated fleet.

Use of the mitigated truck fleet would reduce emissions from the average California T7 truck fleet of year 2021 by 66 and 71 percent for the Ventura County and outside Ventura County domains, as averaged over emission factors for VOC, CO, NOx, and PM_{10} (these pollutants chosen to be consistent with the analysis for off-road vehicles). Therefore, implementing the proposed green cleanup fleets would produce substantial emission reductions compared to the use of California average fleets.

3.0 Emissions Estimates for SSFL Cumulative Projects

The air quality analysis evaluated potential cumulative impacts within the Ventura County domain, with a focus in the area directly adjacent to SSFL. The cumulative projects that would have the greatest potential to combine their emissions with emissions from the DOE Area IV remediation activities would include the cleanup actions proposed by the National Aeronautics and Space Administration (NASA) and The Boeing Company (Boeing) at SSFL. Emissions used in the project cumulative analyses were estimated for these actions by the following methods.

3.1 NASA Cleanup Actions

NASA proposed remediation activities for properties owned by NASA in Areas I and II at SSFL, as documented in the *Final Environmental Impact Statement for Proposed Demolition and Environmental Cleanup Activities at Santa Susana Field Laboratory* (*NASA FEIS*) (NASA 2014a). NASA announced its decision to proceed with demolition activities described in the proposed action in the *NASA FEIS*, but deferred its decision on specific techniques to accomplish soil and groundwater cleanup until it completes additional soil, groundwater, archeology, and cleanup technology feasibility studies (NASA 2014b). To develop air emissions from these future actions for use in the cumulative analysis, it was assumed that NASA (1) would demolish buildings, generating about 99,100 tons of material and 3,970 associated truck trips in year 1 (NASA 2014a) and (2) would excavate up to 870,000 cubic yards (cy) of soil (NASA 2015) in years 2 and 3, as evaluated in the *SSFL Area IV FEIS*. This soil volume is an increase in the high soil removal scenario of 500,000 cy projected in the *NASA SEIS*. Total air emissions associated with this scenario were estimated by multiplying total emissions estimated for the high soil removal scenario identified in the *NASA FEIS* by a factor of 8.7/5. Annual emissions generated by these activities were assumed to be half of their total emissions. This is a conservative approach, as it is expected that completion of the high soil removal scenario by NASA would take more than two years and therefore would produce lower annual emissions then those estimated by this analysis.

3.2 Boeing Cleanup Actions

Boeing proposes remediation activities for parcels owned by Boeing at SSFL in Administrative Areas I and III, the Southern Undeveloped Land (Southern Buffer Zone), and in adjacent northern offsite areas (NBZ). Estimates of air emissions for these proposed activities currently are not available. To develop air emissions from these future actions for use in the cumulative analysis, it was assumed that Boeing would excavate 150,000 cy of soil over a two-year period. Total air emissions associated with this scenario were estimated by multiplying total emissions estimated in the *SSFL Area IV FEIS* for removal of 881,000 cy of soil by a factor of 1.50/8.81. Annual emissions generated by these activities were assumed to be half of their total emissions.

3.3 Total Cumulative Emissions

The analysis evaluated both annual and daily cumulative emissions assuming they would occur at the same time for the DOE, NASA, and Boeing cleanup activities at SSFL. These emissions would occur entirely on SSFL, except small amounts of vehicular emissions would occur along the access road between SSFL and Los Angeles County. The analysis considered the ranges of emissions that would occur from the DOE and NASA activities. High and low emissions for DOE activities equate to the range of emissions generated by the four combined action alternatives. High and low emissions for NASA activities equate to the range of emissions generated by the high and low soil removal scenarios (870,000 and 320,000 cy [this low soil removal scenario bounds NASA's revised lower end estimate of 626,000 cy – See *SSFL Area IV FEIS* Chapter 5, Table 5-1]). Daily emissions used in the analysis were based on 250 workdays per year.

4.0 Fuel Calculation Methods for the Combined Project Alternatives

This document presents methods that estimate the amounts of fuels consumed due to the implementation of each proposed action alternative and combined action alternative in support of the *SSFL Area IV FEIS*. The analysis estimated fuel usages for off-road construction equipment, on-road haul trucks, and worker commuter vehicles based on the following methods:

1. Off-road construction equipment – All equipment were evaluated as being diesel-powered. Total hp-hr were estimated for each action alternative and combined action alternative and then multiplied by a diesel fuel usage factor of 0.05 gal/hp-hr to determine total gallons of diesel fuel usage (U.S. Army Corps of Engineers 2011).
2. On-road haul trucks and worker commuter vehicles - All haul trucks/commuter vehicles were evaluated as being diesel-/gasoline-powered. The EMFAC2014 model was run to obtain predictions of year 2021 statewide VMT and fuel consumed per speed category for the T7 diesel construction truck and auto/light duty truck vehicle classes. These data were used to develop fuel usage factors for each vehicle speed category in term of miles per gallon of fuel. These factors were then applied to the total VMT per speed category generated by each vehicle class for each action alternative and combined action alternative to obtain total gallons of fuel usage for these actions.

The results of this analysis are summarized in Chapter 7 of the *SSFL Area IV FEIS*.

5.0 Organization of Attachment 1 Emissions Tables

Attachment 1 presents the project emissions estimates in tabular form. The emissions tables are organized into the following four sections of Attachment 1 that correspond to activities associated with the four combinations of action alternatives:

1. Attachment 1.A - Building Removal, Soil Remediation Cleanup to AOC LUT Values, and Groundwater Remediation Treatment Alternatives.
2. Attachment 1.B - Building Removal, Cleanup to Revised LUT Values, and Groundwater Treatment Alternatives.
3. Attachment 1.C - Building Removal; Conservation of Natural Resources, Residential Scenario; and Groundwater Treatment Alternatives.
4. Attachment 1.C-OS - Building Removal; Conservation of Natural Resources; Open Space Scenario; and Groundwater Treatment Alternatives.

Each of these sections begins with a table of contents and then presents tables in the following sequence: (1) annual schedule that identifies the annual occurrence of activities proposed under the three main alternatives (building demolition, soil remediation, and groundwater remediation), (2) emissions data for off-road equipment, (3) emissions data for on-road vehicles, (4) emissions data for fugitive dust sources, and (5) combined source emissions summaries. Each set of emissions data for off-road, on-road, and fugitive dust sources also presents information in the following order: (1) source activity data for each alternative, (2) emission factors, and (3) mass emissions for each alternative.

The mass emissions tables for each source type include (1) total emissions, (2) peak annual emissions, and (3) peak day emissions. Since proposed building demolition and groundwater remediation activities are the same for all four combinations of action alternatives, only section 1.A presents individual data for these activities. However, emissions for these activities are included in tables that present total emissions for combined action alternatives in sections 1.B through 1.C-OS.

Attachment 1 also presents (1) emissions estimates for green cleanup vehicle fleets proposed by MM AQ-1, (2) emissions estimates for SSFL cumulative projects, and (3) fuel calculations for the combined project alternatives in the following sections:

1. Attachment 1.D - Green Vehicle Fleets Emission Factors for On-Road Haul Trucks and Off-road Equipment - Mitigation Measure AQ-1.

2. Attachment 1.E – Emission Calculations for SSFL Cumulative Projects.

3. Attachment 1.F - Fuel Calculations due to Implementation of the *SSFL Area IV FEIS* Project Alternatives.

6.0 References

Boeing (The Boeing Company), 2015, *Transportation Agreement for the Santa Susana Field Laboratory Ventura County, California Between the Boeing Company (Boeing) and the U.S. Government As Represented by the National Aeronautics and Space Administration (NASA) and the Department of Energy (DOE).*

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Attachment 1

Air Emissions Calculation Tables

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Attachment 1.A

Building Removal, Soil Remediation Cleanup to AOC LUT Values, and Groundwater Remediation Treatment Alternatives

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Attachment 1.A
Emission Calculations for Implementation of the Building Removal, Soil Remediation Cleanup to AOC LUT Values (AOC), and Groundwater Remediation Treatment Combined Alternatives - SSFL Area IV EIS

Table 1.A-38. Total Fugitive Dust Emissions for Building Removal - SSFL Area IV FEIS .

Table 1.A-39. Total Fugitive Dust Emissions for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS

Table 1.A-40. Total Fugitive Dust Emissions for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS

Table 1.A-41. Peak Annual Fugitive Dust Emissions for Building Removal - SSFL Area IV FEIS .

Table 1.A-42. Peak Annual Fugitive Dust Emissions for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS

Table 1.A-42a. Year 2021 Peak Day Fugitive Dust Emissions Estimates - Building Removal and Cleanup to AOC LUT Values - SSFL Area IV FEIS.

Table 1.A-43. Emission Estimates for Windblown Dust from Inactive Disturbed Areas - Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

Table 1.A-44. Total Emissions for Off-Road Equipment Usage - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.A-45. Total Emissions for On-road Vehicle Usage within Ventura County - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.A-46. Total Fugitive Dust Emissions - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.A-47. Total Emissions within Ventura County by Activity - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.A-48. Peak Annual Emissions within Ventura County by Activity for the Combined Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.A-49. Total Emissions within Ventura County by Source Type for the Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.A-50. Peak Annual Emissions within Ventura County by Source Type for the Combined Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.A-51. Peak Daily Emissions within Ventura County by Source Type for the Combined Building Removal, Any Soil Remediation Alternative, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.A-52. Total Emissions by Source Type for Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.A-53. Peak Annual Emissions - Combined Building Demolition, Cleanup to AOC LUT Values, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

Table 1.A-54. Peak Annual Emissions - Soil Remediation Cleanup to AOC LUT Values Alternative - SSFL Area IV FEIS.

Table 1.A-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to AOC LUT Values, and Groundwater Treatment Combined Alternatives - SSFL Area IV FEIS

Alternative-Activity/Task	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*	*2027*	*2028*	*2029*
Building Demolition											
Demolition - Concrete - RAD	40%	40%	20%								
Demolition - Asphalt - RAD	40%	40%	20%								
Demolition - Metal and Building Debris - RAD	40%	40%	20%								
Demolition - Concrete - HW	40%	40%	20%								
Demolition - Asphalt - HW											
Demolition - Metal and Building Debris - HW	40%	40%	20%								
Demolition - Concrete - Clean	40%	40%	20%								
Demolition - Asphalt - Clean	40%	40%	20%								
Demolition - Metal and Building Debris - Clean	40%	40%	20%								
Soil Backfilling		67%	33%								
Soil Remediation											
Excavation - Soil Categories 1 and 2 = 769,000 cy			0.7%	1.0%	1.0%	1.0%	4.6%	4.6%	4.6%	4.6%	4.6%
Excavation - Soil Category 3 = 2,000 cy			100%								
Excavation - Soil Category 4 = 110,000 cy			25%	25%	25%	25%					
Soil Backfilling			4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Groundwater Remediation											
Bedrock Removal = 1,700 cy				100%							
HW Soil Removal =				20%	20%	20%	20%	20%			
Soil Backfilling				100%							
Truck/Worker Vehicle Trips											
Total Tons - Annual Demo	9,303	9,303	4,651								
Total Tons - Annual Soil Category 4			41,262	41,262	41,262	41,214					
Total Tons - Annual Soil Categories 1-3			11,303	11,309	11,309	11,357	52,571	52,571	52,571	52,571	52,571
Total Annual Demo Truck Trips	600	600	300								
Total Annual Soil Truck Trips - Soil Categories 1 and 2			361	492	492	494	2,286	2,286	2,286	2,286	2,286
Total Annual Soil Truck Trips - Soil Category 3			130								
Total Annual Soil Truck Trips - Soil Category 4			1,794	1,794	1,794	1,792					
Total Annual GW Treatment Alt - Bedrock Truck Trips				338							
Total Annual GW Treatment Alt - HW Soils Truck Trips				24	24	24	24	24			
Total Annual Soil Backfill Truck Trips - Demo		585	293								
Total Annual Soil Backfill Truck Trips - Soil Rem			1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714
Total Annual Soil Backfill Truck Trips - GW Treatment Alt				196							
Total Annual Equipment Deliver/Remove Truck Trips - Demo	19	19									
Total Annual Equipment Deliver/Remove Truck Trips - Soils		26									
Total Annual Equipment Deliver/Remove Truck Trips - GWT Alt		19									
Total Annual DOE Truck Trips	619	1,249	4,593	4,558	4,024	4,024	4,024	4,024	4,000	4,000	4,000
Worker Round Trips - Annual (1)	15,000	15,200	13,870	6,470	6,370	6,250	6,250	6,250	6,250	6,250	6,250

Notes: (1) Assumes 250 work days per year. Building Demolition and Soil Remediation would generate 60/25 round trips per day and GWT would generate substantially less.

Table 1.A-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to AOC LUT Values, and Groundwater Treatment Combined Alternatives - SSFL Area IV FEIS

Annual Percentage of Total Activity																
2030	*2031*	*2032*	*2033*	*2034*	*2035*	*2036*	*2037*	*2038*	*2039*	*2040*	*2041*	*2042*	*2043*	*2044*	*2045*	*2046*
4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%	0.6%
4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	0.5%
52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	52,571	7,214
2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	314
1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	1,714	235
																26
4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	575
6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250	6,250

Table 1.A-2. Total Off-Road Equipment Activity Data for Building Removal - SSFL Area IV FEIS (Page 1 of 2).

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Removal Alt - Concrete - RAD								
Excavator - 350	286	D	0.38	1	4	435	67.4	29,311
Excavator - Concrete Breaker	250	D	0.42	1	8	840	67.4	56,637
Concrete/Industrial Saw	84	D	0.42	1	5	176	67.4	11,894
Forklift	94	D	0.40	1	2	75	67.4	5,070
Loader - 902G	48	D	0.36	1	4	69	67.4	4,660
Street Sweeper	115	D	0.46	1	2	106	67.4	7,134
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	67.4	17,935
Demolition - Asphalt - RAD								
Dozer - D8	310	D	0.43	1	4	533	15.7	8,358
Excavator - 350	286	D	0.38	1	8	869	15.7	13,628
Forklift	94	D	0.40	1	2	75	15.7	1,179
Loader - 902G	48	D	0.36	1	4	69	15.7	1,083
Street Sweeper	115	D	0.46	1	2	106	15.7	1,658
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	15.7	4,170
Demolition - Metal and Building Debris - RAD								
Crane	180	D	0.42	1	6	449	76.5	34,343
Dozer - D8	310	D	0.43	1	6	800	76.5	61,224
Excavator - 350	286	D	0.38	1	8	869	76.5	66,555
Forklift	94	D	0.40	1	2	75	76.5	5,757
Industrial Saw	84	D	0.42	1	8	279	76.5	21,369
Loader - 902G	48	D	0.36	1	4	69	76.5	5,291
Street Sweeper	115	D	0.46	1	2	106	76.5	8,099
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	76.5	20,362

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

Table 1.A-2. Total Off-Road Equipment Activity Data for Building Removal - SSFL Area IV FEIS (Page 2 of 2).

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Demolition - Metal and Building Debris - HW								
Crane	180	D	0.42	1	6	449	1.8	795
Dozer - D8	310	D	0.43	1	6	800	1.8	1,418
Excavator - 350	286	D	0.38	1	8	869	1.8	1,542
Forklift	94	D	0.40	1	2	75	1.8	133
Industrial Saw	84	D	0.42	1	8	279	1.8	495
Loader - 902G	48	D	0.36	1	4	69	1.8	123
Street Sweeper	115	D	0.46	1	2	106	1.8	188
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	1.8	472
Demolition - Concrete - Clean								
Excavator - 350	286	D	0.38	1	4	435	3.6	1,573
Excavator - Concrete Breaker	250	D	0.42	1	8	840	3.6	3,039
Concrete/Industrial Saw	84	D	0.42	1	5	176	3.6	638
Loader - 938G	158	D	0.36	1	8	455	3.6	1,646
Street Sweeper	115	D	0.46	1	2	106	3.6	383
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	3.6	962
Demolition - Asphalt - Clean								
Dozer - D8	310	D	0.43	1	4	533	3.1	1,632
Excavator - 350	286	D	0.38	1	8	869	3.1	2,660
Loader - 938G	158	D	0.36	1	8	455	3.1	1,392
Street Sweeper	115	D	0.46	1	2	106	3.1	324
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	3.1	814
Demolition - Metal and Building Debris - Clean								
Crane	180	D	0.42	1	6	449	66.5	29,817
Dozer - D8	310	D	0.43	1	6	800	66.5	53,156
Excavator - 350	286	D	0.38	1	8	869	66.5	57,785
Industrial Saw	84	D	0.42	1	8	279	66.5	18,553
Loader - 938G	158	D	0.36	1	8	455	66.5	30,243
Street Sweeper	115	D	0.46	1	2	106	66.5	7,032
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	66.5	17,679
Soil Backfilling								
Dozer - D8	310	D	0.43	1	8	1,066	55.0	58,604
Grader - 160H	200	D	0.41	1	6	492	55.0	27,038
Loader - 938G	158	D	0.36	1	8	455	55.0	25,007
Street Sweeper	115	D	0.46	1	2	106	55.0	5,814
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	55.0	14,618
Generators								
Central Trailer Complex	100	D	0.74	2	24	3,552	912.5	3,241,200
Air Monitoring	7	D	0.74	4	24	497	912.5	453,768
Temporary Lighting	7	D	0.74	4	10	207	65.0	13,468
Miscellaneous Use	5	D	0.74	2	10	74	625.0	46,250

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

Table 1.A-3. Total Off-Road Equipment Activity Data for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day (2)*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 769,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	3,139	1,255,196
Excavator - 350	286	D	0.38	1	5.0	543	3,139	1,705,611
Loader - 938G	158	D	0.36	1	3.0	171	3,139	535,601
Street Sweeper	115	D	0.46	1	2.0	106	3,139	332,082
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	3,139	834,914
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	8.2	2,176
Excavator - 350	286	D	0.38	1	4.0	435	8.2	3,549
Forklift	94	D	0.40	1	2.7	100	8.2	817
Loader - 902G	48	D	0.36	2	5.0	173	8.2	1,411
Street Sweeper	115	D	0.46	1	2.0	106	8.2	864
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	8.2	2,171
Excavation - Soil Category 4 = 110,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	449.0	119,698
Excavator - 350	286	D	0.38	1	4.0	435	449.0	195,180
Forklift	94	D	0.40	1	2.7	100	449.0	44,957
Loader - 902G	48	D	0.36	2	5.0	173	449.0	77,584
Street Sweeper	115	D	0.46	1	2.0	106	449.0	47,502
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	449.0	119,429
Soil Backfilling = 660,750 cy								
Dozer - D8	310	D	0.43	1	4	533	2,697	1,438,008
Grader - 160H	200	D	0.41	1	3	246	2,697	663,447
Loader - 938G	158	D	0.36	1	4	228	2,697	613,608
Street Sweeper	115	D	0.46	1	2	106	2,697	285,336
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	2,697	717,386
Generators								
Air Monitoring	7	D	0.74	4	24	497	9,198	4,573,981

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

(2) Assumes 16 truck loads per day for each activity.

Table 1.A-4. Total Off-Road Equipment Activity Data for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavate Soil/Ramp Construction								
Dozer - D8	310	D	0.43	1	8	1,066	3.0	3,199
Dump truck - Cat D25D - 18 CY	260	D	0.38	1	8	790	3.0	2,371
Loader - 938G	158	D	0.36	1	8	455	3.0	1,365
Street Sweeper	115	D	0.46	1	2	106	3.0	317
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	3.0	798
Bedrock Removal								
Excavator - 350 with Bedrock Breaker	286	D	0.38	1	8	869	32.9	28,571
Forklift	94	D	0.40	1	2	75	32.9	2,471
Loader - 902G	48	D	0.36	1	6	104	32.9	3,407
Street Sweeper	115	D	0.46	1	1	53	32.9	1,738
Water Truck - 5000 Gallons	175	D	0.38	1	2	133	32.9	4,371
HW Soil Removal								
Forklift	94	D	0.40	1	1.5	56	15.0	846
Loader - 902G	48	D	0.36	1	2.0	35	15.0	518
Soil Backfilling								
Dozer - D8	310	D	0.43	1	8	1,066	2.0	2,133
Dump truck - Cat D25D - 18 CY	260	D	0.38	2	8	1,581	2.0	3,162
Loader - 938G	158	D	0.36	1	8	455	2.0	910
Street Sweeper	115	D	0.46	1	2	106	2.0	212
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	2.0	532

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

Table 1.A-5. Emission Factors for Off-Road Equipment - SSFL Area IV FEIS Project Alternatives.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour) (1)*						
		VOC	*CO*	*NOx*	*SO2*	*PM10*	*PM2.5*	*CO2*
Year 2019								
Concrete/Industrial Saws - 51 to 120 Hp	D	0.44	3.55	3.44	0.01	0.22	0.22	568
Cranes - 176 to 250 Hp	D	0.43	1.94	5.08	0.00	0.22	0.20	483
Crawler Tractors - 251 to 500 Hp	D	0.32	2.22	3.93	0.00	0.15	0.14	486
Excavators - 176 to 250 Hp	D	0.20	1.15	2.59	0.00	0.08	0.07	490
Excavators - 251 to 500 Hp	D	0.17	1.14	2.05	0.00	0.07	0.06	489
Generator - 6 to 15 Hp	D	0.66	3.56	4.62	0.01	0.22	0.22	568
Generator - 51 to 120 Hp	D	0.41	3.40	3.45	0.01	0.21	0.21	568
Rough Terrain Forklifts - 51 to 120 Hp	D	0.20	3.26	2.62	0.00	0.12	0.11	483
Graders - 176 to 250 Hp	D	0.36	1.36	4.87	0.00	0.16	0.14	486
Off-HighwayTrucks - 121 to 175 Hp	D	0.32	3.33	2.82	0.00	0.15	0.14	480
Off-HighwayTrucks - 251 to 500 Hp	D	0.26	1.48	2.67	0.00	0.10	0.09	485
Rubber Tired Loaders - 26 to 50 Hp	D	1.60	6.98	5.43	0.01	0.52	0.48	536
Rubber Tired Loaders - 121 to 175 Hp	D	0.41	3.38	3.86	0.00	0.21	0.20	482
Sweepers/Scrubbers - 51 to 120 Hp	D	0.55	3.85	4.77	0.00	0.39	0.36	485
Year 2021								
Concrete/Industrial Saws - 51 to 120 Hp	D	0.37	3.52	2.91	0.01	0.17	0.17	568
Cranes - 176 to 250 Hp	D	0.35	1.68	4.10	0.01	0.17	0.15	473
Crawler Tractors - 251 to 500 Hp	D	0.28	2.02	3.28	0.01	0.13	0.12	474
Excavators - 176 to 250 Hp	D	0.16	1.10	1.71	0.01	0.05	0.05	472
Excavators - 251 to 500 Hp	D	0.14	1.09	1.33	0.01	0.05	0.04	470
Generator - 6 to 15 Hp	D	0.63	3.53	4.44	0.01	0.20	0.20	568
Generator - 51 to 120 Hp	D	0.33	3.36	2.89	0.01	0.15	0.15	568
Rough Terrain Forklifts - 51 to 120 Hp	D	0.18	3.25	2.29	0.01	0.09	0.08	473
Graders - 176 to 250 Hp	D	0.34	1.31	4.38	0.01	0.14	0.13	475
Off-HighwayTrucks - 121 to 175 Hp	D	0.28	3.32	2.25	0.01	0.11	0.10	470
Off-HighwayTrucks - 251 to 500 Hp	D	0.23	1.34	1.95	0.01	0.07	0.07	475
Rubber Tired Loaders - 26 to 50 Hp	D	1.33	6.45	4.97	0.01	0.41	0.38	525
Rubber Tired Loaders - 121 to 175 Hp	G	0.35	3.35	3.12	0.01	0.17	0.16	471
Sweepers/Scrubbers - 51 to 120 Hp	G	0.44	3.76	3.96	0.01	0.29	0.27	474

Notes: (1) Data from the California Emission Estimator Model (CalEEMod) User's Guide, Version 2016.3.2, Appendix D Table 3.4 and equate to state average factors for project years 2019 and 2021 from the ARB OFFROAD2011 Model (BREEZE Software 2017).

Table 1.A-6. Total Emissions for Off-Road Equipment - Building Removal - SSFL Area IV FEIS (page 1 of 2).

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Concrete - RAD							
Excavator - 350	0.01	0.04	0.07	0.00	0.00	0.00	15.80
Excavator - Concrete Breaker	0.01	0.07	0.16	0.00	0.00	0.00	30.61
Concrete/Industrial Saw	0.01	0.05	0.05	0.00	0.00	0.00	7.45
Forklift	0.00	0.02	0.01	0.00	0.00	0.00	2.70
Loader - 902G	0.01	0.04	0.03	0.00	0.00	0.00	2.75
Street Sweeper	0.00	0.03	0.04	0.00	0.00	0.00	3.81
Water Truck - 5000 Gallons	0.01	0.07	0.06	0.00	0.00	0.00	9.50
Subtotal	0.04	0.31	0.41	0.00	0.02	0.02	72.62
Demolition - Asphalt - RAD							
Dozer - D8	0.00	0.02	0.04	0.00	0.00	0.00	4.48
Excavator - 350	0.00	0.02	0.03	0.00	0.00	0.00	7.35
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.63
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.64
Street Sweeper	0.00	0.01	0.01	0.00	0.00	0.00	0.89
Water Truck - 5000 Gallons	0.00	0.02	0.01	0.00	0.00	0.00	2.21
Subtotal	0.01	0.07	0.10	0.00	0.00	0.00	16.19
Demolition - Metal and Building Debris - RAD							
Crane	0.02	0.07	0.19	0.00	0.01	0.01	18.30
Dozer - D8	0.02	0.15	0.27	0.00	0.01	0.01	32.79
Excavator - 350	0.01	0.08	0.15	0.00	0.00	0.00	35.88
Forklift	0.00	0.02	0.02	0.00	0.00	0.00	3.07
Industrial Saw	0.01	0.08	0.08	0.00	0.01	0.01	13.39
Loader - 902G	0.01	0.04	0.03	0.00	0.00	0.00	3.13
Street Sweeper	0.00	0.03	0.04	0.00	0.00	0.00	4.33
Water Truck - 5000 Gallons	0.01	0.07	0.06	0.00	0.00	0.00	10.78
Subtotal	0.08	0.56	0.84	0.00	0.04	0.04	121.66

Table 1.A-6. Total Emissions for Off-Road Equipment - Building Removal Alt - SSFL Area IV FEIS (page 2 of 2).

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Metal and Building Debris - HW							
Crane	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	0.76
Excavator - 350	0.00	0.00	0.00	0.00	0.00	0.00	0.83
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Industrial Saw	0.00	0.00	0.00	0.00	0.00	0.00	0.31
Loader - 902G	0.00	0.00	0.00	0.00	0.00	0.00	0.07
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Subtotal	0.00	0.01	0.02	0.00	0.00	0.00	2.82
Demolition - Concrete - Clean							
Excavator - 350	0.00	0.00	0.00	0.00	0.00	0.00	0.85
Excavator - Concrete Breaker	0.00	0.00	0.01	0.00	0.00	0.00	1.64
Concrete/Industrial Saw	0.00	0.00	0.00	0.00	0.00	0.00	0.40
Loader - 938G	0.00	0.01	0.01	0.00	0.00	0.00	0.87
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.51
Subtotal	0.00	0.02	0.03	0.00	0.00	0.00	4.48
Demolition - Asphalt - Clean							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	0.87
Excavator - 350	0.00	0.00	0.01	0.00	0.00	0.00	1.43
Loader - 938G	0.00	0.01	0.01	0.00	0.00	0.00	0.74
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Subtotal	0.00	0.02	0.02	0.00	0.00	0.00	3.65
Demolition - Metal and Building Debris - Clean							
Crane	0.01	0.06	0.17	0.00	0.01	0.01	15.89
Dozer - D8	0.02	0.13	0.23	0.00	0.01	0.01	28.47
Excavator - 350	0.01	0.07	0.13	0.00	0.00	0.00	31.15
Industrial Saw	0.01	0.07	0.07	0.00	0.00	0.00	11.62
Loader - 938G	0.01	0.11	0.13	0.00	0.01	0.01	16.06
Street Sweeper	0.00	0.03	0.04	0.00	0.00	0.00	3.76
Water Truck - 5000 Gallons	0.01	0.06	0.06	0.00	0.00	0.00	9.36
Subtotal	0.08	0.55	0.82	0.00	0.04	0.04	116.31
Soil Backfilling							
Dozer - D8	0.02	0.14	0.25	0.00	0.01	0.01	31.39
Grader - 160H	0.01	0.04	0.15	0.00	0.00	0.00	14.49
Loader - 938G	0.01	0.09	0.11	0.00	0.01	0.01	13.28
Street Sweeper	0.00	0.02	0.03	0.00	0.00	0.00	3.11
Water Truck - 5000 Gallons	0.01	0.05	0.05	0.00	0.00	0.00	7.74
Subtotal	0.05	0.36	0.58	0.00	0.03	0.02	70.01
Generators							
Central Trailer Complex	1.46	12.15	12.33	0.02	0.75	0.75	2,030.39
Air Monitoring	0.33	1.78	2.31	0.00	0.11	0.11	284.26
Temporary Lighting	0.01	0.05	0.07	0.00	0.00	0.00	8.44
Miscellaneous Use	0.03	0.18	0.24	0.00	0.01	0.01	28.97
Subtotal	1.84	14.16	14.94	0.03	0.87	0.87	2,352.06
Total Emissions - Building Demolition	2.11	16.05	17.76	0.03	1.00	0.99	2,759.80

Table 1.A-7. Total Emissions of Off-Road Equipment for the Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 769,000 cy							
Dozer - D8	0.39	2.80	4.53	0.01	0.18	0.16	656.49
Excavator - 350	0.27	2.05	2.50	0.01	0.08	0.08	882.92
Loader - 938G	0.20	1.98	1.84	0.00	0.10	0.09	278.12
Street Sweeper	0.16	1.38	1.45	0.00	0.11	0.10	173.55
Water Truck - 5000 Gallons	0.26	3.06	2.07	0.00	0.10	0.10	432.82
Subtotal	1.28	11.26	12.40	0.03	0.57	0.53	2,423.90
Excavation - Soil Category 3 = 2,000 cy							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	1.14
Excavator - 350	0.00	0.00	0.01	0.00	0.00	0.00	1.84
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.82
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	1.13
Subtotal	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4 = 110,000 cy							
Dozer - D8	0.04	0.27	0.43	0.00	0.02	0.02	62.60
Excavator - 350	0.03	0.23	0.29	0.00	0.01	0.01	101.04
Forklift	0.01	0.16	0.11	0.00	0.00	0.00	23.45
Loader - 902G	0.11	0.55	0.43	0.00	0.03	0.03	44.86
Street Sweeper	0.02	0.20	0.21	0.00	0.02	0.01	24.83
Water Truck - 5000 Gallons	0.04	0.44	0.30	0.00	0.01	0.01	61.91
Subtotal	0.25	1.85	1.76	0.00	0.10	0.09	318.68
Soil Backfilling = 660,750 cy							
Dozer - D8	0.45	3.21	5.19	0.01	0.20	0.19	752.11
Grader - 160H	0.24	0.96	3.20	0.00	0.10	0.09	347.04
Loader - 938G	0.23	2.27	2.11	0.00	0.12	0.11	318.63
Street Sweeper	0.14	1.18	1.25	0.00	0.09	0.08	149.12
Water Truck - 5000 Gallons	0.22	2.63	1.78	0.00	0.09	0.08	371.89
Subtotal	1.29	10.24	13.53	0.02	0.60	0.55	1,938.78
Generators							
Air Monitoring	3.18	17.80	22.39	0.04	1.01	1.01	2,865.29
Subtotal	3.18	17.80	22.39	0.04	1.01	1.01	2,865.29
Total Emissions - Soil Remediation	6.00	41.18	50.10	0.09	2.28	2.18	7,552.45

Table 1.A-8. Total Emissions of Off-Road Equipment for the Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavate Soil/Ramp Construction							
Dozer - D8	0.00	0.01	0.01	0.00	0.00	0.00	1.67
Dump truck - Cat D25D - 18 CY	0.00	0.00	0.01	0.00	0.00	0.00	1.24
Loader - 938G	0.00	0.01	0.00	0.00	0.00	0.00	0.71
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Subtotal	0.00	0.02	0.02	0.00	0.00	0.00	4.20
Bedrock Removal							
Excavator - 350 with Bedrock Breaker	0.00	0.03	0.04	0.00	0.00	0.00	14.79
Forklift	0.00	0.01	0.01	0.00	0.00	0.00	1.29
Loader - 938G	0.00	0.01	0.01	0.00	0.00	0.00	1.77
Street Sweeper	0.00	0.01	0.01	0.00	0.00	0.00	0.91
Water Truck - 5000 Gallons	0.00	0.02	0.01	0.00	0.00	0.00	2.27
Subtotal	0.01	0.08	0.08	0.00	0.00	0.00	21.02
HW Soil Removal							
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.44
Loader - 902G	0.00	0.00	0.00	0.00	0.00	0.00	0.30
Subtotal	0.00	0.01	0.00	0.00	0.00	0.00	0.74
Soil Backfilling							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	1.12
Dump truck - Cat D25D - 18 CY	0.00	0.00	0.01	0.00	0.00	0.00	1.65
Loader - 938G	0.00	0.00	0.00	0.00	0.00	0.00	0.47
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Subtotal	0.00	0.02	0.02	0.00	0.00	0.00	3.63
Total Emissions - Groundwater Remediation	0.01	0.12	0.13	0.00	0.01	0.01	29.59

Note: All emissions would occur in year 2022.

Table 1.A-9. Peak Annual Emissions for Off-Road Equipment - Building Removal - SSFL Area IV FEIS.

	Tons per Year						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Concrete - RAD	0.03	0.20	0.27	0.00	0.01	0.01	48.39
Demolition - Asphalt - RAD	0.01	0.05	0.07	0.00	0.00	0.00	10.78
Demolition - Metal and Building Debris - RAD	0.06	0.37	0.56	0.00	0.03	0.02	81.06
Demolition - Metal and Building Debris - HW	0.00	0.01	0.01	0.00	0.00	0.00	1.88
Demolition - Concrete - Clean	0.00	0.01	0.02	0.00	0.00	0.00	2.98
Demolition - Asphalt - Clean	0.00	0.01	0.02	0.00	0.00	0.00	2.43
Demolition - Metal and Building Debris - Clean	0.05	0.36	0.55	0.00	0.03	0.02	77.50
Soil Backfilling	0.03	0.24	0.39	0.00	0.02	0.02	46.64
Generators	1.22	9.44	9.95	0.02	0.58	0.58	1,567.15
Peak Annual Emissions - Building Demolition	1.41	10.70	11.84	0.02	0.67	0.66	1,838.82

Note: Peak annual emissions would occur in year 2020.

Table 1.A-10. Peak Annual and Daily Emissions from Off-Road Equipment for the Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

	Peak Annual Emissions - Tons						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2	0.01	0.08	0.09	0.00	0.00	0.00	17
Excavation - Soil Category 3	0.00	0.03	0.03	0.00	0.00	0.00	6
Excavation - Soil Category 4	0.06	0.46	0.44	0.00	0.02	0.02	80
Soil Backfilling	0.05	0.41	0.54	0.00	0.02	0.02	77
Generators - Air Monitoring	0.13	0.71	0.89	0.00	0.04	0.04	114
Peak Annual Emissions - Soil Remediation	0.25	1.69	1.99	0.00	0.09	0.09	294
	Peak Day Emissions - Pounds						
Excavation - Soil Categories 1 and 2 (1)	0.4	3.6	4.0	0.0	0.2	0.2	773
Soil Backfilling (1)	0.5	3.8	5.0	0.0	0.2	0.2	720
Generators - Air Monitoring	0.7	3.9	4.9	0.0	0.2	0.2	623
Total Peak Day Emissions - Building Demolition	1.6	11.3	13.8	0.0	0.6	0.6	2,116

Note: Peak annual/daily emissions would occur in year 2021.

(1) Equal to activity associated with 8 truck trips.

Table 1.A-10a. Year 2021 Annual and Peak Day Emissions for Off-Road Equipment - Building Removal - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Metal and Building Debris - RAD							
Crane	0.00	0.01	0.03	0.00	0.00	0.00	3.58
Dozer - D8	0.00	0.03	0.04	0.00	0.00	0.00	6.40
Excavator - 350	0.00	0.02	0.02	0.00	0.00	0.00	6.89
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Industrial Saw	0.00	0.02	0.01	0.00	0.00	0.00	2.68
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.61
Street Sweeper	0.00	0.01	0.01	0.00	0.00	0.00	0.85
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	2.11
Subtotal - Year 2021	0.01	0.11	0.13	0.00	0.01	0.01	23.72
Peak Day Emissions - Pounds (1)	2.8	21.3	27.1	0.1	1.2	1.1	4,779
Soil Backfilling							
Dozer - D8	0.00	0.03	0.04	0.00	0.00	0.00	6.13
Grader - 160H	0.00	0.01	0.03	0.00	0.00	0.00	2.83
Loader - 938G	0.00	0.02	0.02	0.00	0.00	0.00	2.60
Street Sweeper	0.00	0.00	0.01	0.00	0.00	0.00	0.61
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	1.52
Subtotal - Year 2021	0.01	0.07	0.10	0.00	0.00	0.00	13.68
Peak Day Emissions - Pounds (1)	0.8	6.2	8.9	0.0	0.4	0.4	1,246
Generators							
Central Trailer Complex	0.24	2.40	2.07	0.00	0.11	0.11	406.08
Air Monitoring	0.06	0.35	0.44	0.00	0.02	0.02	56.85
Temporary Lighting	0.00	0.01	0.01	0.00	0.00	0.00	1.69
Miscellaneous Use	0.01	0.04	0.05	0.00	0.00	0.00	5.79
Subtotal - Year 2021	0.31	2.80	2.57	0.01	0.13	0.13	470.41
Average Day Emissions - Pounds	3.4	30.7	28.1	0.1	1.4	1.4	5,155
Total Year 2021 Emissions - Tons	0.33	2.97	2.80	0.01	0.14	0.14	507.81
Total Peak Day Emissions - Pounds	7.0	58.2	64.1	0.1	3.0	2.9	11,181

Note: (1) Equal to activity associated with 8 truck trips.

Table 1.A-11. Total On-Road Vehicle Activity Data for Building Removal - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Demolished Material Type-Destination/Vehicle Type (1)	*Trips (2)*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
RAD - NNSS									
Concrete Haul Truck	482	5.5	0.75	199.3	500	2,652	362	96,084	241,029
Asphalt Haul Truck	149	5.5	0.75	199.3	500	818	112	29,654	74,387
Metal and Building Debris Haul Truck	397	5.5	0.75	199.3	500	2,184	298	79,143	198,532
Total Miles - RAD Materials to NNSS (3)	85.7					5,654	771	204,880	513,949
RAD - WCS Texas									
Concrete Haul Truck	482	5.5	0.75	374	1,945	2,652	362	180,308	937,817
Asphalt Haul Truck	149	5.5	0.75	374	1,945	818	112	55,647	289,433
Metal and Building Debris Haul Truck	397	5.5	0.75	374	1,945	2,184	298	148,517	772,467
Total Miles - RAD Materials to WCS Texas (3)	85.7					5,654	771	384,472	1,999,717
HW - Buttonwillow									
Building Debris and ACM Haul Truck	12	5.5	0.75	127.6	112	66	9	1,531	1,340
Total Miles - HW Materials to Buttonwillow (3)	1.0					66	9	1,531	1,340
HW - US Ecology Idaho									
Building Debris and ACM Haul Truck	12	5.5	0.75	199.3	1,840	66	9	2,392	22,079
Total Miles - HW Materials to US Ecology Idaho (3)	1.0					66	9	2,392	22,079
Clean - Near Disposal Facility									
Concrete Haul Truck - Chiquita Canyon	23	5.5	0.75	63.3		128	17	1,473	
Asphalt Haul Truck - Chiquita Canyon	20	5.5	0.75	63.3		108	15	1,247	
Metal and Building Debris Haul Truck - Gillibrand	417	5.5	20.75	17.8		2,293	8,652	7,422	
Total Miles - Clean Materials to Near DS (3)	38.3					2,530	8,685	10,143	
Clean - Far Disposal Facility									
Concrete Haul Truck - McKittrick	23	5.5	0.75	127.6	140	128	17	2,973	3,253
Ashpalt Haul Truck - McKittrick	20	5.5	0.75	127.6	140	108	15	2,516	2,754
Metal and Building Debris Haul Truck - Kramer Metals	417	5.5	0.75	87.3		2,293	313	36,382	
Total Miles - Clean Materials to Far DS (3)	38.3					2,530	345	41,871	6,007
Soil Backfilling									
Soil Haul Trucks - Import (4)	878	5.5	40	60		4,829	35,120	52,680	
Total Miles - Backfill Soil (3)	73.2					4,829	35,120	52,680	
Construction - Worker commuting									
Passenger Car/Pickup	37,500	5.5	15	25		206,250	562,500	937,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for RAD, HW, and clean material types to present a reasonable bounding analysis.

(2) Assumes that ACM included in the HW volume.

(3) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(4) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.A-12. Total On-Road Vehicle Activity Data for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 769,000 cy									
Soil Haul Trucks - 23 tons/load to Chiquita Canyon	50,152	5.5	0.75	63.3		275,837	37,614	3,172,125	
Total Miles - Clean Soils to Chiquita Canyon (2)	4,179.3					275,837	37,614	3,172,125	
Soil Haul Trucks - 23 tons/load to Westmorland	50,152	5.5	0.75	374	85	275,837	37,614	18,756,913	4,275,473
Total Miles - Clean Soils to Westmorland (2)	4,179.3					275,837	37,614	18,756,913	4,275,473
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 23 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	717	98	16,643	14,563
Total Miles - HW Soils to Buttonwillow (2)	10.9					717	98	16,643	14,563
Soil Haul Trucks - 23 tons/load to US Ecology Idaho	130	5.5	0.75	199.3	1,840	717	98	25,996	239,993
Total Miles - HW Soils to US Ecology Idaho (2)	10.9					717	98	25,996	239,993
Excavation - Soil Category 4 = 110,000 cy									
Soil Haul Trucks - 23 tons/load to NNSS	7,174	5.5	0.75	199.3	500	39,457	5,380	1,429,761	3,586,598
Total Miles - RAD Soils to NNSS (2)	597.8					39,457	5,380	1,429,761	3,586,598
Soil Haul Trucks - 23 tons/load to WCS Texas	7,174	5.5	0.75	374	1,945	39,457	5,380	2,683,043	13,955,054
Total Miles - RAD Soils to WCS Texas (2)	597.8					39,457	5,380	2,683,043	13,955,054
Soil Backfilling									
Soil Haul Trucks - Import (3)	43,092	5.5	40	60		237,007	1,723,686	2,585,529	
Total Miles - Backfill Soil (2)	3,591.0					237,007	1,723,686	2,585,529	
Construction - Worker commuting									
Passenger Car/Pickup	######	5.5	15	25		893,750	2,437,500	4,062,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for soil categories 1 and 2, 3, and 4 to present a reasonable bounding analysis.

(2) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(3) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.A-13. Total On-Road Vehicle Activity Data for Groundwater Remediation Treatment Alternative - SSFL Area IV EIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Bedrock Removal = 1,700 cy									
Rock Haul Trucks - 20 tons/load to NNSS	338	5.5	0.75	199.3	500	1,859	254	67,363	168,983
Total Miles - RAD Soils to NNSS (2)	28.2					1,859	254	67,363	168,983
Soil Haul Trucks - 20 tons/load to WCS Texas	338	5.5	0.75	374	1,945	1,859	254	126,412	657,495
Total Miles - RAD Soils to WCS Texas (2)	28.2					1,859	254	126,412	657,495
HW Soils Removal									
Soil Haul Trucks - 20 tons/load to Buttonwillow	240	5.5	0.75	127.6	112	1,320	180	30,624	26,796
Total Miles - HW Soils to Buttonwillow (2)	20.0					1,320	180	30,624	26,796
Soil Haul Trucks - 20 tons/load to US Ecology Idaho	240	5.5	0.75	199.3	1,840	1,320	180	47,832	441,588
Total Miles - HW Soils to US Ecology Idaho (2)	20.0					1,320	180	47,832	441,588
Soil Backfilling									
Soil Haul Trucks - Import (3)	196	5.5	40	60		1,078	7,840	11,760	
Construction - Worker commuting									
Passenger Car/Pickup	660	5.5	15	25		3,630	9,900	16,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for bedrock and HW soil to present a reasonable bounding analysis.

(2) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(3) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.A-14. Emission Factors for On-road Vehicles - SSFL Area IV FEIS Project Alternatives.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Mile)*							*References*
		VOC	*CO*	*NOx*	*SO2*	*PM10*	*PM2.5*	*CO2*	
Year 2019									
Light Duty Auto - 25 mph	G	0.02	0.88	0.08	0.00	0.00	0.00	345	(1)
Light Duty Auto - 55 mph	G	0.01	0.57	0.06	0.00	0.00	0.00	245	(1)
Light Duty Truck (LDT2) - 25 mph	G	0.03	1.10	0.11	0.00	0.00	0.00	463	(1)
Light Duty Truck (LDT2) - 55 mph	G	0.01	0.71	0.09	0.00	0.00	0.00	329	(1)
Composite On-site - Auto and Truck	G	0.02	0.93	0.09	0.00	0.00	0.00	374	(2)
Composite Off-site - Auto and Truck	G	0.01	0.68	0.07	0.00	0.00	0.00	293	(3)
Haul Truck - Idle	D	1.71	6.84	47.89	0.06	0.11	0.11	6,735	(1)
Haul Truck - 10 mph	D	1.22	3.68	18.64	0.03	0.20	0.13	2,905	(1)
Haul Truck - 15 mph (On-site mode)	D	0.77	2.57	13.16	0.02	0.17	0.11	2,434	(1)
Haul Truck - 25 mph	D	0.37	1.38	7.86	0.02	0.15	0.09	1,929	(1)
Haul Truck - 55 mph	D	0.08	0.34	5.03	0.01	0.14	0.08	1,498	(1)
Composite - Trip within Ventura County	D	0.31	1.09	7.52	0.02	0.15	0.09	1,811	(4)
Composite - Trip Outside Ventura County	D	0.15	0.56	5.85	0.02	0.15	0.08	1,589	(5)
Year 2021									
Light Duty Auto - 25 mph	G	0.02	0.89	0.08	0.00	0.00	0.00	328	(1)
Light Duty Auto - 55 mph	G	0.01	0.57	0.06	0.00	0.00	0.00	233	(1)
Light Duty Truck (LDT2) - 25 mph	G	0.03	1.31	0.15	0.00	0.00	0.00	447	(1)
Light Duty Truck (LDT2) - 55 mph	G	0.02	0.85	0.12	0.00	0.00	0.00	318	(1)
Composite On-site - Auto and Truck	G	0.02	0.99	0.09	0.00	0.00	0.00	358	(2)
Composite Off-site - Auto and Truck	G	0.02	0.73	0.08	0.00	0.00	0.00	280	(3)
Haul Truck - Idle	D	0.98	3.92	34.79	0.06	0.01	0.01	6,436	(1)
Haul Truck - 10 mph	D	0.90	3.40	16.91	0.03	0.15	0.08	2,812	(1)
Haul Truck - 15 mph (On-site mode)	D	0.60	2.38	11.65	0.02	0.14	0.08	2,359	(1)
Haul Truck - 25 mph	D	0.31	1.26	6.30	0.02	0.13	0.07	1,883	(1)
Haul Truck - 55 mph	D	0.06	0.25	3.50	0.01	0.12	0.06	1,468	(1)
Composite - Trip within Ventura County	D	0.24	0.97	5.96	0.02	0.13	0.07	1,768	(4)
Composite - Trip Outside Ventura County	D	0.11	0.46	4.31	0.01	0.13	0.06	1,556	(5)

Notes: (1) Estimated with the EMFAC2014 model for calendar years 2019 and 2021 and annual average conditions (ARB 2014). Data for light duty autos and trucks based on activities within Ventura County. Data for haul trucks based on Statewide activities. Truck idle data in units of grams/hour.
PM10/PM2.5 running emission factors include contributions from tire and brake wear (0.10/0.04 gm per mile).

(2) Equal to a fleet of 75/25% car/light truck and 100% 25 mph factors.

(3) Equal to a fleet of 75/25% car/light truck and 25/75% 25/55 mph factors.

(4) Equal to 10/40/50% of 10/25/55 mph factors.

(5) Equal to 5/5/90% of 10/25/55 mph factors.

Table 1.A-15. Total Emissions for Onroad Vehicles - Building Removal - SSFL Area IV FEIS (page 1 of 2).

	Tons						
Demolished Material Type-Destination/Vehicle Type-Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
RAD - NNSS							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Demolition Material Haul Truck - On-site Miles	0.00	0.02	0.08	0.00	0.00	0.00	15.17
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.01	0.00	0.00	0.00	1.54
Subtotal - Ventura County (1)	0.01	0.02	0.09	0.00	0.00	0.00	17.34
Subtotal - SCAB (2)	0.03	0.13	1.32	0.00	0.03	0.02	358.97
Subtotal - Remainder (3)	0.09	0.32	3.31	0.01	0.08	0.05	900.48
RAD - WCS Texas							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.64
Demolition Material Haul Truck - On-site Miles	0.00	0.02	0.08	0.00	0.00	0.00	15.17
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.01	0.00	0.00	0.00	1.54
Subtotal - Ventura County (1)	0.01	0.02	0.09	0.00	0.00	0.00	17.34
Subtotal - SCAB (2)	0.07	0.24	2.48	0.01	0.06	0.04	673.62
Subtotal - Remainder (3)	0.34	1.24	12.90	0.03	0.32	0.18	3,503.65
HW - Buttonwillow							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Demolition Material Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Subtotal - Ventura County (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Subtotal - SCAB (2)	0.00	0.00	0.01	0.00	0.00	0.00	2.68
Subtotal - Remainder (3)	0.00	0.00	0.01	0.00	0.00	0.00	2.35
HW - US Ecology Idaho							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Demolition Material Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Subtotal - Ventura County (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Subtotal - SCAB (2)	0.00	0.00	0.02	0.00	0.00	0.00	4.19
Subtotal - Remainder (3)	0.00	0.01	0.14	0.00	0.00	0.00	38.68
Clean - Near Disposal Facility							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Demolition Material Haul Truck - On-site Miles	0.00	0.01	0.04	0.00	0.00	0.00	6.79
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.07	0.00	0.00	0.00	17.34
Subtotal - Ventura County (1)	0.01	0.02	0.11	0.00	0.00	0.00	24.41
Subtotal - SCAB (2)	0.00	0.01	0.07	0.00	0.00	0.00	17.77
Subtotal - Remainder (3)							
Clean - Far Disposal Facility							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Demolition Material Haul Truck - On-site Miles	0.00	0.01	0.04	0.00	0.00	0.00	6.79
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.69
Subtotal - Ventura County (1)	0.00	0.01	0.04	0.00	0.00	0.00	7.76
Subtotal - SCAB (2)	0.01	0.03	0.27	0.00	0.01	0.00	73.36
Subtotal - Remainder (3)	0.00	0.00	0.04	0.00	0.00	0.00	10.52

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.A-15. Total Emissions for Onroad Vehicles - Building Removal - SSFL Area IV FEIS (page 2 of 2).

	Tons						
Demolished Material Type-Destination/Vehicle Type-Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Backfilling							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.54
Demolition Material Haul Truck - On-site Miles	0.00	0.01	0.07	0.00	0.00	0.00	12.96
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.01	0.04	0.29	0.00	0.01	0.00	70.11
Subtotal - Ventura County (1)	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Subtotal - SCAB (2)	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.00	0.21	0.02	0.00	0.00	0.00	85.08
Worker Vehicle - Off-site Miles within Ventura County	0.01	0.42	0.05	0.00	0.00	0.00	181.64
Subtotal - Ventura County (1)	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal - SCAB (2)	0.01	0.71	0.08	0.00	0.00	0.00	302.74

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.A-16. Total Emissions for Onroad Vehicles - Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV EIS (page 1 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Categories 1 and 2 = 769,000 cy - Chiquita Canyon							
Soil Haul Truck - On-site Idling	0.00	0.02	0.16	0.00	0.00	0.00	29.65
Soil Haul Truck - On-site Miles	0.18	0.72	3.54	0.01	0.04	0.02	717.36
Soil Haul Truck - Off-site Miles within Ventura County	0.01	0.04	0.25	0.00	0.01	0.00	73.31
Subtotal - Ventura County (1)	0.20	0.78	3.95	0.01	0.05	0.03	820.32
Subtotal - SCAB (2)	0.39	1.61	15.08	0.05	0.44	0.22	5,439.24
Subtotal - Remainder (3)							
Soil Categories 1 and 2 = 769,000 cy - Westmorland							
Soil Haul Truck - On-site Idling	0.00	0.02	0.16	0.00	0.00	0.00	29.65
Soil Haul Truck - On-site Miles	0.18	0.72	3.54	0.01	0.04	0.02	717.36
Soil Haul Truck - Off-site Miles within Ventura County	0.01	0.04	0.25	0.00	0.01	0.00	73.31
Subtotal - Ventura County (1)	0.20	0.78	3.95	0.01	0.05	0.03	820.32
Subtotal - SCAB (2)	2.32	9.53	89.16	0.31	2.59	1.33	32,162.47
Subtotal - Remainder (3)	0.53	2.17	20.32	0.07	0.59	0.30	7,331.15
Soil Category 3 = 2,000 cy - Buttonwillow							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.87
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.08	0.00	0.00	0.00	28.54
Subtotal - Remainder (3)	0.00	0.01	0.07	0.00	0.00	0.00	24.97
Soil Category 3 = 2,000 cy - US Ecology Idaho							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.87
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.12	0.00	0.00	0.00	44.57
Subtotal - Remainder (3)	0.03	0.12	1.14	0.00	0.03	0.02	411.52

Table 1.A-16. Total Emissions for Onroad Vehicles - Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS (page 2 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Category 4 = 110,000 cy - NNSS							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	4.24
Soil Haul Truck - On-site Miles	0.03	0.10	0.51	0.00	0.01	0.00	102.61
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.04	0.00	0.00	0.00	10.49
Subtotal - Ventura County (1)	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Subtotal - SCAB (2)	0.18	0.73	6.80	0.02	0.20	0.10	2,451.61
Subtotal - Remainder (3)	0.44	1.82	17.05	0.06	0.50	0.25	6,149.94
Soil Category 4 = 110,000 cy - WCS Texas							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	4.24
Soil Haul Truck - On-site Miles	0.03	0.10	0.51	0.00	0.01	0.00	102.61
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.04	0.00	0.00	0.00	10.49
Subtotal - Ventura County (1)	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Subtotal - SCAB (2)	0.33	1.36	12.75	0.04	0.37	0.19	4,600.61
Subtotal - Remainder (3)	1.73	7.09	66.33	0.23	1.93	0.99	23,928.73
Soil Backfilling							
Soil Haul Truck - On-site Idling	0.00	0.02	0.14	0.00	0.00	0.00	25.48
Soil Haul Truck - On-site Miles	0.16	0.62	3.04	0.01	0.04	0.02	616.38
Soil Haul Truck - Off-site Miles within Ventura County	0.46	1.85	11.33	0.03	0.24	0.13	3,359.30
Subtotal - Ventura County (1)	0.62	2.48	14.51	0.04	0.28	0.15	4,001.16
Subtotal - SCAB (2)	0.32	1.31	12.29	0.04	0.36	0.18	4,433.41
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.02	0.98	0.09	0.00	0.00	0.00	352.75
Worker Vehicle - Off-site Miles within Ventura County	0.04	1.96	0.22	0.01	0.00	0.00	753.15
Subtotal - Ventura County (1)	0.07	2.94	0.31	0.01	0.01	0.01	1,105.91
Subtotal - SCAB (2)	0.07	3.26	0.36	0.01	0.01	0.01	1,255.25

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.A-17. Total Emissions for Onroad Vehicles - Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS.

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Bedrock RAD - NNSS							
Bedrock Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Bedrock Haul Truck - On-site Miles	0.00	0.00	0.02	0.00	0.00	0.00	4.83
Bedrock Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Subtotal - Ventura County (1)	0.00	0.01	0.03	0.00	0.00	0.00	5.53
Subtotal - SCAB (2)	0.01	0.03	0.32	0.00	0.01	0.00	115.51
Subtotal - Remainder (3)	0.02	0.09	0.80	0.00	0.02	0.01	289.76
Bedrock RAD - WCS Texas							
Bedrock Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Bedrock Haul Truck - On-site Miles	0.00	0.00	0.02	0.00	0.00	0.00	4.83
Bedrock Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.49
Subtotal - Ventura County (1)	0.00	0.01	0.03	0.00	0.00	0.00	5.53
Subtotal - SCAB (2)	0.02	0.06	0.60	0.00	0.02	0.01	216.76
Subtotal - Remainder (3)	0.08	0.33	3.13	0.01	0.09	0.05	1,127.41
HW Soil - Buttonwillow							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Soil Haul Truck - On-site Miles	0.00	0.00	0.02	0.00	0.00	0.00	3.43
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.35
Subtotal - Ventura County (1)	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Subtotal - SCAB (2)	0.00	0.02	0.15	0.00	0.00	0.00	52.51
Subtotal - Remainder (3)	0.00	0.01	0.13	0.00	0.00	0.00	45.95
HW Soil - US Ecology Idaho							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.14
Soil Haul Truck - On-site Miles	0.00	0.00	0.02	0.00	0.00	0.00	3.43
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.35
Subtotal - Ventura County (1)	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Subtotal - SCAB (2)	0.01	0.02	0.23	0.00	0.01	0.00	82.02
Subtotal - Remainder (3)	0.05	0.22	2.10	0.01	0.06	0.03	757.19
Soil Backfilling							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.12
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	2.80
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.05	0.00	0.00	0.00	15.28
Subtotal - Ventura County (1)	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Subtotal - SCAB (2)	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	1.43
Worker Vehicle - Off-site Miles within Ventura County	0.00	0.01	0.00	0.00	0.00	0.00	3.06
Subtotal - Ventura County (1)	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal - SCAB (2)	0.00	0.01	0.00	0.00	0.00	0.00	5.10

Notes: All emissions would occur in year 2022.

(1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.A-18. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.13	0.46	4.73	0.01	0.12	0.07	1,276.79
HW - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	5.23
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.18	0.00	0.00	0.00	42.18
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.19	1.92	5.77	0.02	0.14	0.08	2,069.57
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Chiquita Canyon	0.59	2.39	19.03	0.06	0.49	0.25	6,259.56
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.02	0.16	0.00	0.00	0.00	55.64
Soil Category 4 = 110,000 cy - NNSS	0.65	2.66	24.41	0.08	0.70	0.36	8,718.89
Soil Backfilling	0.94	3.80	26.80	0.08	0.64	0.33	8,434.56
Construction - Worker commuting	0.14	6.20	0.68	0.02	0.01	0.01	2,361.16
Subtotal	2.32	15.07	71.07	0.25	1.84	0.96	25,829.82
Groundwater Remediation							
Bedrock RAD - NNSS	0.03	0.13	1.15	0.00	0.03	0.02	410.79
HW Soil - Buttonwillow	0.01	0.03	0.29	0.00	0.01	0.00	102.38
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.04	0.20	1.57	0.01	0.04	0.02	561.13
Total Emissions to Nearby Disposal Sites	2.55	17.19	78.41	0.27	2.02	1.06	28,460.52

Table 1.A-19. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.41	1.49	15.47	0.04	0.38	0.22	4,194.62
HW - US Ecology Idaho	0.00	0.02	0.16	0.00	0.00	0.00	43.08
Clean - McKittrick/Kramer Metals	0.01	0.04	0.35	0.00	0.01	0.00	91.65
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.48	2.98	16.83	0.05	0.41	0.24	5,074.71
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Westmorland	3.05	12.49	113.43	0.38	3.23	1.66	40,313.95
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.14	1.27	0.00	0.04	0.02	458.22
Soil Category 4 = 110,000 cy - WCS Texas	2.09	8.57	79.65	0.27	2.31	1.18	28,646.68
Soil Backfilling	0.94	3.80	26.80	0.08	0.64	0.33	8,434.56
Construction - Worker commuting	0.14	6.20	0.68	0.02	0.01	0.01	2,361.16
Subtotal	6.25	31.19	221.83	0.77	6.23	3.21	80,214.58
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.10	0.40	3.75	0.01	0.11	0.06	1,349.69
HW Soil - US Ecology Idaho	0.06	0.25	2.33	0.01	0.07	0.03	839.21
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.16	0.69	6.20	0.02	0.18	0.09	2,236.85
Total Emissions to Distant Disposal Sites	6.89	34.87	244.86	0.84	6.82	3.54	87,526.15

Table 1.A-20. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.11	0.00	0.00	0.00	24.41
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.73	0.64	0.00	0.01	0.01	392.28
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Chiquita Canyon	0.20	0.78	3.95	0.01	0.05	0.03	820.32
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 110,000 cy - NNSS	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Soil Backfilling	0.62	2.48	14.51	0.04	0.28	0.15	4,001.16
Construction - Worker commuting	0.07	2.94	0.31	0.01	0.01	0.01	1,105.91
Subtotal	0.91	6.32	19.35	0.06	0.34	0.18	6,046.86
Groundwater Remediation							
Bedrock RAD - NNSS	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.96	7.08	20.10	0.06	0.35	0.19	6,471.29

Table 1.A-21. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - McKittrick/Kramer Metals	0.00	0.01	0.04	0.00	0.00	0.00	7.76
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.72	0.57	0.00	0.01	0.01	375.63
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Westmorland	0.20	0.78	3.95	0.01	0.05	0.03	820.32
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 110,000 cy - WCS Texas	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Soil Backfilling	0.62	2.48	14.51	0.04	0.28	0.15	4,001.16
Construction - Worker commuting	0.07	2.94	0.31	0.01	0.01	0.01	1,105.91
Subtotal	0.91	6.32	19.35	0.06	0.34	0.18	6,046.86
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - US Ecology Idaho	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Distant Disposal Sites	0.96	7.07	20.03	0.06	0.35	0.19	6,454.64

Table 1.A-22. Total Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.03	0.13	1.32	0.00	0.03	0.02	358.97
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.68
Clean - Chiquita Canyon/Gillibrand	0.00	0.01	0.07	0.00	0.00	0.00	17.77
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.06	0.87	1.81	0.01	0.04	0.03	774.46
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Chiquita Canyon	0.39	1.61	15.08	0.05	0.44	0.22	5,439.24
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28.54
Soil Category 4 = 110,000 cy - NNSS	0.18	0.73	6.80	0.02	0.20	0.10	2,451.61
Soil Backfilling	0.32	1.31	12.29	0.04	0.36	0.18	4,433.41
Construction - Worker commuting	0.07	3.26	0.36	0.01	0.01	0.01	1,255.25
Subtotal	0.96	6.92	34.61	0.13	1.00	0.52	13,608.05
Groundwater Remediation							
Bedrock RAD - NNSS	0.01	0.03	0.32	0.00	0.01	0.00	115.51
HW Soil - Buttonwillow	0.00	0.02	0.15	0.00	0.00	0.00	52.51
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.01	0.07	0.52	0.00	0.02	0.01	193.28
Total SCAB	1.04	7.87	36.94	0.14	1.06	0.55	14,575.79

Notes: (1) Based on disposal sites that would require the least amount of transport distance per soil category through the SCAB.

Table 1.A-23. Peak Annual Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.01	0.03	0.26	0.00	0.01	0.00	72	65
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	1	0
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.01	0.00	0.00	0.00	4	3
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.27	0.42	0.00	0.01	0.01	208	189
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon	0.00	0.01	0.11	0.00	0.00	0.00	39	36
Soil Category 3 - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	29	26
Soil Category 4 - NNSS	0.04	0.18	1.70	0.01	0.05	0.03	613	557
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.06	0.38	2.39	0.01	0.07	0.04	905	823
Total SCAB	0.08	0.65	2.81	0.01	0.08	0.04	1,113	1,012

Notes: (1) Based on disposal sites that require the least amount of transport distance per soil category through the SCAB. Peak annual emissions would occur in year 2021.

Table 1.A-24. Peak Daily Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)						
Activity (2)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
Soil Remediation	1.6	6.5	60.6	0.2	1.8	0.9	21,871
Groundwater Remediation							
Total SCAB	1.6	6.5	60.6	0.2	1.8	0.9	21,871

Notes: (1) Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT within the SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur during Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to NNSS.

Table 1.A-25. Total Emissions for Onroad Vehicles within the SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.07	0.24	2.48	0.01	0.06	0.04	673.62
HW - US Ecology Idaho	0.00	0.00	0.02	0.00	0.00	0.00	4.19
Clean - McKittrick/Kramer Metals	0.01	0.03	0.27	0.00	0.01	0.00	73.36
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.10	1.01	3.18	0.01	0.08	0.05	1,146.21
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Westmorland	2.32	9.53	89.16	0.31	2.59	1.33	32,162.47
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44.57
Soil Category 4 = 110,000 cy - WCS Texas	0.33	1.36	12.75	0.04	0.37	0.19	4,600.61
Soil Backfilling	0.32	1.31	12.29	0.04	0.36	0.18	4,433.41
Construction - Worker commuting	0.07	3.26	0.36	0.01	0.01	0.01	1,255.25
Subtotal	3.05	15.49	114.69	0.41	3.33	1.71	42,496.32
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	216.76
HW Soil - US Ecology Idaho	0.01	0.02	0.23	0.00	0.01	0.00	82.02
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.02	0.11	0.89	0.00	0.03	0.01	324.04
Total SCAB	3.17	16.60	118.76	0.42	3.44	1.77	43,966.58

Notes: (1) Based on disposal sites that would require the highest amount of transport distance per soil category through the SCAB.

Table 1.A-26. Peak Annual Emissions for Onroad Vehicles within the SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.01	0.05	0.50	0.00	0.01	0.01	135	122
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Clean - McKittrick/Kramer Metals	0.00	0.01	0.05	0.00	0.00	0.00	15	13
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.30	0.69	0.00	0.02	0.01	282	256
Soil Remediation								
Soil Categories 1 and 2 - Westmorland	0.02	0.07	0.64	0.00	0.02	0.01	232	210
Soil Category 3 - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	45	41
Soil Category 4 - WCS Texas	0.08	0.34	3.19	0.01	0.09	0.05	1,150	1,046
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Total SCAB	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,758

Notes: (1) Based on disposal sites that require the highest amount of transport distance per soil category through the SCAB. Peak annual emissions would occur in year 2021.

Table 1.A-27. Peak Daily Emissions for Onroad Vehicles within the SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)						
Activity (2)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
Soil Remediation	3.0	12.2	113.8	0.4	3.3	1.7	41,043.1
Groundwater Remediation							
Total SCAB	3.0	12.2	113.8	0.4	3.3	1.7	41,043.1

Notes: (1) Based on disposal sites that require the highest amount of transport distance per soil category through the SCAB. Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to either the Westmorland or WCS Texas sites, which would result in the largest VMT within the SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily trips to the WCS Texas site.

Table 1.A-28. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.09	0.32	3.31	0.01	0.08	0.05	900.48
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.35
Clean - Chiquita Canyon/Gillibrand							
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.09	0.32	3.32	0.01	0.08	0.05	902.82
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Chiquita Canyon							
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	24.97
Soil Category 4 = 110,000 cy - NNSS	0.44	1.82	17.05	0.06	0.50	0.25	6,149.94
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.45	1.83	17.12	0.06	0.50	0.26	6,174.91
Groundwater Remediation							
Bedrock RAD - NNSS	0.02	0.09	0.80	0.00	0.02	0.01	289.76
HW Soil - Buttonwillow	0.00	0.01	0.13	0.00	0.00	0.00	45.95
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.02	0.10	0.93	0.00	0.03	0.01	335.70
Total Outside Ventura County/SCAB	0.56	2.25	21.37	0.07	0.61	0.32	7,413.44

Notes: (1) Based on disposal sites that would require the least amount of transport distance per soil category outside Ventura County/SCAB.

Table 1.A-29. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.02	0.06	0.66	0.00	0.02	0.01	180	164
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clean - Chiquita Canyon/Gillibrand								
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.02	0.06	0.66	0.00	0.02	0.01	181	164
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon								
Soil Category 3 - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	25	23
Soil Category 4 - NNSS	0.11	0.46	4.26	0.01	0.12	0.06	1,538	1,398
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.11	0.46	4.33	0.01	0.13	0.06	1,563	1,421
Total Outside Ventura County/SCAB	0.13	0.53	5.00	0.02	0.14	0.07	1,743	1,585

Notes: (1) Based on disposal sites that would require least amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in year 2021.

Table 1.A-30. Peak Day Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)						
Activity (2)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
Soil Remediation	4.0	16.3	152.1	0.5	4.4	2.3	54,864.9
Groundwater Remediation							
Total Outside Ventura County/SCAB	4.0	16.3	152.1	0.5	4.4	2.3	54,864.9

Notes: (1) Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT outside Ventura County/SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the NNSS.

Table 1.A-31. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.34	1.24	12.90	0.03	0.32	0.18	3,503.65
HW - USE Idaho	0.00	0.01	0.14	0.00	0.00	0.00	38.68
Clean - McKittrick/Kramer Metals	0.00	0.00	0.04	0.00	0.00	0.00	10.52
Soil Backfilling							
Construction - Worker commuting							
Building Demolition	0.34	1.26	13.08	0.03	0.33	0.19	3,552.86
Soil Remediation							
Soil Categories 1 and 2 = 769,000 cy - Westmorland	0.53	2.17	20.32	0.07	0.59	0.30	7,331.15
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	411.52
Soil Category 4 = 110,000 cy - WCS Texas	1.73	7.09	66.33	0.23	1.93	0.99	23,928.73
Soil Backfilling							
Construction - Worker commuting							
Subtotal	2.29	9.39	87.80	0.30	2.55	1.31	31,671.40
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.08	0.33	3.13	0.01	0.09	0.05	1,127.41
HW Soil - US Ecology Idaho	0.05	0.22	2.10	0.01	0.06	0.03	757.19
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.14	0.56	5.22	0.02	0.15	0.08	1,884.60
Total Outside Ventura County/SCAB	2.77	11.20	106.10	0.35	3.03	1.57	37,108.86

Notes: (1) Based on disposal sites that would require the greatest amount of transport distance outside Ventura County/SCAB.

Table 1.A-32. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.07	0.25	2.58	0.01	0.06	0.04	701	637
HW - US Ecology Idaho	0.00	0.00	0.03	0.00	0.00	0.00	8	7
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.07	0.25	2.62	0.01	0.07	0.04	711	646
Soil Remediation								
Soil Categories - Westmorland	0.00	0.02	0.15	0.00	0.00	0.00	53	48
Soil Category 3 - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	412	374
Soil Category 4 - WCS Texas	0.43	1.77	16.59	0.06	0.48	0.25	5,984	5,440
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.47	1.91	17.88	0.06	0.52	0.27	6,448	5,862
Total Outside Ventura County/SCAB	0.53	2.16	20.49	0.07	0.59	0.30	7,159	6,508

Notes: (1) Based on disposal sites that require the greatest amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in year 2021.

Table 1.A-33. Peak Day Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)						
Activity (2)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
Soil Remediation	15.4	63.3	591.8	2.0	17.2	8.8	213,473
Groundwater Remediation							
Total Outside Ventura County/SCAB	15.4	63.3	591.8	2.0	17.2	8.8	213,473

Notes: (1) Based on disposal sites that require the greatest amount of transport distance per soil category outside VC/SCAB. Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the WCS Texas site, which would result in the largest VMT outside Ventura County/SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the WCS Texas site.

Table 1.A-33a. Year 2021 Annual and Peak Day Emissions for On-Road Vehicles within Ventura County - Building Removal - SSFL Area IV FEIS.

	Tons						
Destination Scenario/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Nearby Disposal Sites							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Demolition Material Haul Truck - On-site Miles	0.00	0.01	0.03	0.00	0.00	0.00	6.80
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.06	0.00	0.00	0.00	17.38
Worker Vehicle - On-site Miles	0.00	0.05	0.00	0.00	0.00	0.00	16.28
Worker Vehicle - Off-site Miles within Ventura County	0.00	0.09	0.01	0.00	0.00	0.00	34.76
Total Tons	0.01	0.15	0.11	0.00	0.00	0.00	75.50
Peak Day Emissions - Pounds (1)	0.5	10.2	7.3	0.1	0.1	0.1	5,076
Distant Disposal Sites							
Demolition Material Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.28
Demolition Material Haul Truck - On-site Miles	0.00	0.01	0.03	0.00	0.00	0.00	6.80
Demolition Material Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.05	0.00	0.00	0.00	14.13
Worker Vehicle - On-site Miles	0.00	0.05	0.00	0.00	0.00	0.00	16.28
Worker Vehicle - Off-site Miles within Ventura County	0.00	0.09	0.01	0.00	0.00	0.00	34.76
Total Tons	0.01	0.15	0.10	0.00	0.00	0.00	72.25
Peak Day Emissions - Pounds (1)	0.5	10.1	6.5	0.0	0.1	0.1	4,857

Note: (1) Equal to activity associated with 8 truck trips per day each for (1) Demolition - Metal and Building Debris - RAD and (2) Demolition - Soil Backfilling.

Table 1.A-34. Fugitive Dust Activity Data for Building Removal - SSFL Area IV FEIS

Construction Activity-Material Type/Equipment Type	*Throughput (Tons)*	*On-site Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Demolition - Concrete - RAD						
Actively Disturbed Ground				0.5	67.4	34
Paved Road Dust - Debris Haul Truck		5.5	482			2,652
Truck Loading - Demolition Debris	6,743					
Demolition - Asphalt - RAD						
Actively Disturbed Ground				0.5	15.7	8
Paved Road Dust - Debris Haul Truck		5.5	149			818
Truck Loading - Demolition Debris	1,568					
Demolition - Metal and Building Debris - RAD						
Building Demolition	7,655					
Actively Disturbed Ground				0.5	76.5	38
Paved Road Dust - Debris Haul Truck		5.5	397			2,184
Truck Loading - Demolition Debris	7,655					
Demolition - Metal and Building Debris - HW						
Building Demolition	177					
Actively Disturbed Ground				0.5	1.8	1
Paved Road Dust - Debris Haul Truck		5.5	12			66
Truck Loading - Demolition Debris	177					
Demolition - Concrete - Clean						
Actively Disturbed Ground				0.5	3.6	2
Paved Road Dust - Debris Haul Truck		5.5	23			128
Truck Loading - Demolition Debris	362					
Demolition - Asphalt - Clean						
Actively Disturbed Ground				0.5	3.1	2
Paved Road Dust - Debris Haul Truck		5.5	20			108
Truck Loading - Demolition Debris	306					
Demolition - Metal and Building Debris - Clean						
Building Demolition	6,646					
Actively Disturbed Ground				0.5	66.5	33
Paved Road Dust - Debris Haul Truck		5.5	417			2,293
Truck Loading - Demolition Debris	6,646					
Inactive Disturbed Area						
Total Acreage				5.0	730.0	3,650
Soil Backfilling						
Actively Disturbed Ground				0.40	55.0	22
Paved Road Dust - Soil Haul Truck		5.5	878			4,829
Stockpile Wind Erosion				0.33	730.0	241
Truck Unloading - Soil	20,194					

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.A-35. Fugitive Dust Activity Data for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS

Construction Activity-Soil Type/Equipment Type	*Throughput (Tons)*	*On-site Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Excavation - Soil Categories 1 and 2 = 769,000 cy						
Actively Disturbed Ground				3.4	3,139	10,672
Vacated Disturbed Ground				5.1	3,139	16,008
Truck Loading - Soil	1,153,500					
Paved Road Dust - Soil Haul Truck		5.5	50,152			275,837
Excavation - Soil Category 3 = 2,000 cy						
Actively Disturbed Ground				1.0	8.2	8
Vacated Disturbed Ground				1.5	8.2	12
Truck Loading - Soil	3,000					
Paved Road Dust - Soil Haul Truck		5.5	130			717
Excavation - Soil Category 4 = 110,000 cy						
Actively Disturbed Ground				1.0	449.0	449
Vacated Disturbed Ground				1.5	449.0	673
Truck Loading - Soil	165,000					
Paved Road Dust - Soil Haul Truck		5.5	7,174			39,457
Inactive Disturbed Area						
Total Acreage per Year				3.9	9,198	35,872
Soil Backfilling						
Actively Disturbed Ground				1.0	2,697	2,697
Stockpile Wind Erosion				0.5	9,198	4,599
Truck Unloading - Soil	991,119					
Paved Road Dust - Soil Haul Truck		5.5	43,092			237,007

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.A-36. Fugitive Dust Activity Data for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS

Construction Activity-Soil Type/Equipment Type	*Throughput (Tons)*	*Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Excavate Soil/Ramp Construction						
Actively Disturbed Ground				0.20	3.0	0.6
Truck Loading - Soil	2,550					
Stockpile Wind Erosion (2)				0.20	60.0	12.0
Bedrock Removal						
Actively Disturbed Ground				0.10	26.0	2.6
Paved Road Dust - Bedrock Haul Truck		5.5	338			1,859
HW Soil Removal						
Actively Disturbed Ground				0.15	15.0	2.3
Inactive Disturbed Area						
Total Acreage per Year				1.0	365.0	365
Soil Backfilling						
Actively Disturbed Ground				0.25	2.0	0.5
Truck Unloading - Soil	4,500					
Paved Road Dust - Soil Haul Truck		5.5	196			1,078

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.A-37. Fugitive Dust Emission Factors for the SSFL Area IV FEIS Project Alternatives.

Project Year/Source Type	*Emission Factors*						*References*
					PM10	*PM2.5*	
Actively Disturbed Ground					9.93	0.99	(1)
Building Demolition					0.001	0.0002	(2)
Paved Road Dust - On-site					0.33	0.08	(3)
Truck Loading - Demolition Debris					0.020	0.003	(4)
Truck Loading - Soil					0.0001	0.00002	(4)
Vacated Disturbed Ground and Soil Stockpile Wind Erosion					2.57	0.77	(5)

Notes: (1) From Table 3-2 for active large-scale earth moving operations (Countess Environmental 2006). Emissions reduced by 74% from uncontrolled levels to simulate water application every 2.1 hours and use of best management practices for fugitive dust control (Table 3-7 Countess Environmental 2006). Converted to units of lbs/acre-day of disturbance assuming 22 work days/month.

(2) California Emissions Estimator Model (CalEEMod) Appendix A, Section 4.4 (BREEZE Software 2017). Units in lbs/ton of demolished building.

(3) From Section 13.2.1 of AP-42 (USEPA 2011). Units in Lb/VMT. Emissions reduced by 50% from uncontrolled levels due to the use of a PM10-efficient street sweeping vacuum unit 2 times per day.

(4) Estimated with the methods identified in AP-42 Section 13.2.4 (USEPA 2006a). Units in lbs/ton of soil loaded.

(5) Developed from methods in AP-42 Section 13.2.5 (USEPA 2006b). See Table Pile Efs for details. Emissions reduced by 50% to simulate use of soil stabilization measures. Units in grams/meter2 of pile area.

Table 1.A-38. Total Fugitive Dust Emissions for Building Removal - SSFL Area IV FEIS .

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Concrete - RAD							
Actively Disturbed Ground					0.17	0.02	
Paved Road Dust - Debris Haul Truck					0.43	0.11	
Truck Loading - Demolition Debris					0.07	0.01	
Subtotal					0.67	0.13	
Demolition - Asphalt - RAD							
Actively Disturbed Ground					0.04	0.00	
Paved Road Dust - Debris Haul Truck					0.13	0.03	
Truck Loading - Demolition Debris					0.02	0.00	
Subtotal					0.19	0.04	
Demolition - Metal and Building Debris - RAD							
Building Demolition					0.00	0.00	
Actively Disturbed Ground					0.19	0.02	
Paved Road Dust - Debris Haul Truck					0.36	0.09	
Truck Loading - Demolition Debris					0.08	0.01	
Subtotal					0.63	0.12	
Demolition - Metal and Building Debris - HW							
Building Demolition					0.00	0.00	
Actively Disturbed Ground					0.00	0.00	
Paved Road Dust - Debris Haul Truck					0.01	0.00	
Truck Loading - Demolition Debris					0.00	0.00	
Subtotal					0.02	0.00	
Demolition - Concrete - Clean							
Actively Disturbed Ground					0.01	0.00	
Paved Road Dust - Debris Haul Truck					0.02	0.01	
Truck Loading - Demolition Debris					0.00	0.00	
Subtotal					0.03	0.01	
Demolition - Asphalt - Clean							
Actively Disturbed Ground					0.01	0.00	
Paved Road Dust - Debris Haul Truck					0.02	0.00	
Truck Loading - Demolition Debris					0.00	0.00	
Subtotal					0.03	0.01	
Demolition - Metal and Building Debris - Clean							
Building Demolition					0.00	0.00	
Actively Disturbed Ground					0.16	0.02	
Paved Road Dust - Debris Haul Truck					0.37	0.09	
Truck Loading - Demolition Debris					0.07	0.01	
Subtotal					0.61	0.12	
Inactive Disturbed Area							
Total Area					0.11	0.02	
Soil Backfilling							
Actively Disturbed Ground					0.11	0.01	
Paved Road Dust - Soil Haul Truck					0.79	0.19	
Stockpile Wind Erosion (2)					2.76	0.83	
Truck Unloading - Soil (3)					0.00	0.00	
Subtotal					3.66	1.03	

Table 1.A-39. Total Fugitive Dust Emissions for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 769,000 cy							
Actively Disturbed Ground					52.97	5.30	
Truck Loading - Soil					0.07	0.01	
Paved Road Dust - Soil Haul Truck					45.07	11.06	
Subtotal					98.11	16.37	
Excavation - Soil Category 3 = 2,000 cy							
Actively Disturbed Ground					0.04	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.12	0.03	
Subtotal					0.16	0.03	
Excavation - Soil Category 4 = 110,000 cy							
Actively Disturbed Ground					2.23	0.22	
Truck Loading - Soil					0.01	0.00	
Paved Road Dust - Soil Haul Truck					6.45	1.58	
Subtotal					8.69	1.81	
Inactive Disturbed Area							
Total Area					1.12	0.17	
Soil Backfilling							
Actively Disturbed Ground					13.39	1.34	
Stockpile Wind Erosion					52.76	15.83	
Truck Unloading - Soil					0.06	0.01	
Paved Road Dust - Soil Haul Truck					38.73	9.51	
Subtotal					104.93	26.68	

Table 1.A-40. Total Fugitive Dust Emissions for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavate Soil/Ramp Construction							
Actively Disturbed Ground					0.00	0.00	
Truck Loading - Soil					0.00	0.00	
Stockpile Wind Erosion (2)					0.14	0.04	
Subtotal					0.14	0.04	
Bedrock Removal							
Actively Disturbed Ground					0.01	0.00	
Paved Road Dust - Bedrock Haul Truck					0.30	0.07	
Subtotal					0.32	0.08	
HW Soil Removal							
Actively Disturbed Ground					0.01	0.00	
Inactive Disturbed Area							
Total Acreage per Year					0.02	0.00	
Soil Backfilling							
Actively Disturbed Ground					0.00	0.00	
Truck Unloading - Soil (3)					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.18	0.04	
Subtotal					0.18	0.04	
Total					0.67	0.17	

Note: All fugitive dust emissions would occur in year 2022.

Table 1.A-41. Peak Annual Fugitive Dust Emissions for Building Removal - SSFL Area IV FEIS .

	Tons						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Concrete - RAD					0.27	0.05	
Demolition - Asphalt - RAD					0.08	0.02	
Demolition - Metal and Building Debris - RAD					0.25	0.05	
Demolition - Metal and Building Debris - HW					0.01	0.00	
Demolition - Concrete - Clean					0.01	0.00	
Demolition - Asphalt - Clean					0.01	0.00	
Demolition - Metal and Building Debris - Clean					0.24	0.05	
Inactive Disturbed Area					0.05	0.01	
Soil Backfilling					2.44	0.69	
Total					3.36	0.87	

Note: Peak annual fugitive dust emissions would occur in year 2020.

Table 1.A-42. Peak Annual Fugitive Dust Emissions for Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2					4.47	0.75	
Excavation - Soil Category 3							
Excavation - Soil Category 4							
Inactive Disturbed Area					0.04	0.01	
Soil Backfilling					4.17	1.06	
Subtotal					8.69	1.81	

Note: Peak annual fugitive dust emissions would occur in years 2025-2045.

Table 1.A-42a. Year 2021 Peak Day Fugitive Dust Emissions Estimates - Building Removal and Cleanup to AOC LUT Values - SSFL Area IV FEIS.

	Pounds per Day						
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Demolition - Metal and Building Debris - RAD							
Building Demolition					0.2	0.0	
Actively Disturbed Ground					7.7	0.8	
Paved Road Dust - Debris Haul Truck					14.4	3.5	
Truck Loading - Demolition Debris					3.1	0.5	
Peak Day Emissions - Pounds (1)					25.3	4.8	
Demolition - Soil Backfilling							
Actively Disturbed Ground					2.0	0.2	
Paved Road Dust - Soil Haul Truck					14.4	3.5	
Stockpile Wind Erosion					7.6	2.3	
Truck Unloading - Soil					0.0	0.0	
Peak Day Emissions - Pounds (1)					24.0	6.0	
Total Building Demolition Peak Day Emissions - Pounds					49.3	10.8	
Soil Excavation - Soil Categories 1 and 2 = 769,000 cy							
Actively Disturbed Ground					16.9	1.7	
Truck Loading - Soil					0.0	0.0	
Paved Road Dust - Soil Haul Truck					14.4	3.5	
Peak Day Emissions - Pounds (1)					31.3	5.2	
Soil Excavation - Soil Backfilling							
Actively Disturbed Ground					5.0	0.5	
Stockpile Wind Erosion					11.5	3.4	
Truck Unloading - Soil					0.0	0.0	
Paved Road Dust - Soil Haul Truck					14.4	3.5	
Peak Day Emissions - Pounds (1)					30.8	7.5	
Total Soil Excavation Peak Day Emissions - Pounds					62.1	12.7	

Note: (1) Emissions from each activity due to 8 truck trips, except Stockpile Wind Erosin based on an average daily rate.

Table 1.A-43. Emission Estimates for Windblown Dust from Inactive Disturbed Areas - Soil Remediation Cleanup to AOC LUT Values - SSFL Area IV FEIS.

Year	Activity (1)	Annual Disturbed Area (m^2) (1)	U_{10} (m/s) (2)	Threshold Friction Velocity u_t (m/s) (3)	Friction Velocity u* (m/s) (4)	PM Uncontrolled (Gm/m^2) (5)	Controlled Pounds/Event (6)		
							PM	PM10	PM2.5
2019	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2020	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2021	Demo Buildings	8,097	24.1	1.02	1.278	10.28	92	46	7
Total - Demolition								229	34
2021	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2022	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2023	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2024	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2025	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2026	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2027	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2028	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2029	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2030	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2031	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2032	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2033	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2034	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2035	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2036	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2037	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2038	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2039	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2040	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2041	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2042	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2043	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2044	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2045	All Soils	15,783	24.1	1.02	1.278	10.28	179	89	13
2046	All Soils	2,164	24.1	1.02	1.278	10.28	25	12	2
Total - Soil Remediation								2,249	337

Notes: (1) Assumes area is inactive for one year after prior year of active disturbance.

(2) Wind speeds at 10 meter level (U_{10}). Equates to equation #5 presented in AP-42 Section 13.2.5 (EPA 2006b).

(3) Threshold friction velocity value for scoria from AP-42 Section Table 13.2.5-2.

(4) Equates to equation #4 presented in AP-42 Section 13.2.5.

(5) Equates to equation #3 presented in AP-42 Section 13.2.5.

(6) Equal to Disturbed Area times P, then reduced by 50% to simulate use of soil stabilization measures.

Table 1.A-44. Total Emissions for Off-Road Equipment Usage - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.02	0.02	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.00	0.00	16	15
Demolition - Metal and Building Debris - RAD	0.08	0.56	0.84	0.00	0.04	0.04	122	111
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.00	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.00	0.00	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Demolition - Metal and Building Debris - Clean	0.08	0.55	0.82	0.00	0.04	0.04	116	106
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.05	0.36	0.58	0.00	0.03	0.02	70	64
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,138
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 769,000 cy	1.28	11.26	12.40	0.03	0.57	0.53	2,424	2,204
Excavation - Soil Category 3 = 2,000 cy	0.00	0.03	0.03	0.00	0.00	0.00	6	5
Excavation - Soil Category 4 = 110,000 cy	0.25	1.85	1.76	0.00	0.10	0.09	319	290
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	1.29	10.24	13.53	0.02	0.60	0.55	1,939	1,763
Soil Remediation - Generators	3.18	17.80	22.39	0.04	1.01	1.01	2,865	2,605
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.00	0.00	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.08	0.00	0.00	0.00	21	19
GW Remediation - HW Soil Removal	0.00	0.01	0.00	0.00	0.00	0.00	1	1
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Total Emissions - Off-Road Equipment	8.12	57.36	67.99	0.12	3.29	3.18	10,342	9,402

Notes: All of these emissions would occur in Ventura County.

Table 1.A-45. Total Emissions for On-road Vehicle Usage within Ventura County - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - All RAD Materials	0.01	0.02	0.09	0.00	0.00	0.00	17	16
Demolition - All HW Materials	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Demolition - All Clean Materials	0.01	0.02	0.11	0.00	0.00	0.00	24	22
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	84	76
Demolition - Generators								
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 769,000 cy	0.20	0.78	3.95	0.01	0.05	0.03	820	744
Excavation - Soil Category 3 = 2,000 cy	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Excavation - Soil Category 4 = 110,000 cy	0.03	0.11	0.56	0.00	0.01	0.00	117	106
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.62	2.48	14.51	0.04	0.28	0.15	4,001	3,630
Soil Remediation - Generators								
Soil Remediation - Worker Commutes	0.07	2.94	0.31	0.01	0.01	0.01	1,106	1,003
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal	0.00	0.01	0.03	0.00	0.00	0.00	6	5
GW Remediation - HW Soil Removal	0.00	0.00	0.02	0.00	0.00	0.00	4	4
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18	17
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4
Total Emissions - On-Road Vehicles (1)	0.96	7.08	20.10	0.06	0.35	0.19	6,471	5,871

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.A-46. Total Fugitive Dust Emissions - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD					0.67	0.13		
Demolition - Asphalt - RAD					0.19	0.04		
Demolition - Metal and Building Debris - RAD					0.63	0.12		
Demolition - Metal and Building Debris - HW					0.02	0.00		
Demolition - Concrete - Clean					0.03	0.01		
Demolition - Asphalt - Clean					0.03	0.01		
Demolition - Metal and Building Debris - Clean					0.61	0.12		
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling					3.66	1.03		
Demolition - Generators								
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 769,000 cy					98.11	16.37		
Excavation - Soil Category 3 = 2,000 cy					0.16	0.03		
Excavation - Soil Category 4 = 110,000 cy					8.69	1.81		
Soil Remediation - Inactive Disturbed Area					1.12	0.17		
Soil Remediation - Soil Backfilling					104.93	26.68		
Soil Remediation - Generators								
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction					0.14	0.04		
GW Remediation - Bedrock Removal					0.32	0.08		
GW Remediation - HW Soil Removal					0.01	0.00		
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling					0.18	0.04		
GW Remediation - Worker Commutes								
Total Emissions - Fugitive Dust					219.63	46.70		

Notes: All of these emissions would occur in Ventura County.

Table 1.A-47. Total Emissions within Ventura County by Activity - Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.69	0.15	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.19	0.04	16	15
Demolition - Metal and Building Debris - RAD	0.09	0.58	0.94	0.00	0.67	0.16	139	126
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.02	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.03	0.01	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.03	0.01	4	25
Demolition - Metal and Building Debris - Clean	0.08	0.56	0.93	0.00	0.65	0.16	141	128
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling	0.07	0.41	0.95	0.00	3.70	1.06	154	139
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,380
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 769,000 cy	1.48	12.04	16.35	0.03	98.73	16.92	3,244	2,948
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 110,000 cy	0.28	1.96	2.33	0.00	8.79	1.90	436	396
Soil Remediation - Inactive Disturbed Area					1.12	0.17		
Soil Remediation - Soil Backfilling	1.91	12.73	28.04	0.06	105.81	27.38	5,940	5,392
Soil Remediation - Generators	3.18	17.80	22.39	0.04	1.01	1.01	2,865	2,605
Soil Remediation - Worker Commutes	0.07	2.94	0.31	0.01	0.01	0.01	1,106	1,003
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.14	0.04	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.10	0.00	0.32	0.08	27	24
GW Remediation - HW Soil Removal	0.00	0.01	0.02	0.00	0.01	0.00	5	4
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling	0.00	0.03	0.09	0.00	0.18	0.04	22	20
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4.07
Total Emissions - On-Road Vehicles (1)	9.08	64.43	88.09	0.18	223.28	50.08	16,813	15,537

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.A-48. Peak Annual Emissions within Ventura County by Activity for the Combined Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.01	0.06	0.08	0.00	0.14	0.03	15	13
Demolition - Asphalt - RAD	0.00	0.01	0.02	0.00	0.04	0.01	3	3
Demolition - Metal and Building Debris - RAD	0.02	0.12	0.19	0.00	0.13	0.03	28	25
Demolition - Metal and Building Debris - HW	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Demolition - Concrete - Clean	0.00	0.00	0.01	0.00	0.01	0.00	1	1
Demolition - Asphalt - Clean	0.00	0.00	0.00	0.00	0.01	0.00	1	1
Demolition - Metal and Building Debris - Clean	0.02	0.11	0.19	0.00	0.13	0.03	28	26
Demolition - Inactive Disturbed Area					0.04	0.01		
Demolition - Soil Backfilling	0.02	0.14	0.32	0.00	1.23	0.35	51	47
Demolition - Generators	0.61	4.73	4.99	0.01	0.29	0.29	785	712
Demolition - Worker Commutes	0.00	0.21	0.02	0.00	0.00	0.00	89	81
Excavation - Soil Categories 1 and 2 = 769,000 cy	0.01	0.09	0.12	0.00	4.50	0.77	23	21
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 110,000 cy	0.07	0.49	0.58	0.00	2.20	0.47	109	99
Soil Remediation - Inactive Disturbed Area					0.04	0.01		
Soil Remediation - Soil Backfilling	0.08	0.51	1.12	0.00	4.21	1.09	236	215
Soil Remediation - Generators	0.13	0.71	0.89	0.00	0.04	0.04	114	104
Soil Remediation - Worker Commutes	0.00	0.11	0.01	0.00	0.00	0.00	43	39
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal								
GW Remediation - HW Soil Removal								
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling								
GW Remediation - Worker Commutes								
Combined Alternatives Peak Annual Emissions (1)	0.98	7.33	8.57	0.02	8.79	1.91	1,534	1,393

Notes: (1) Based on disposal sites that require the greatest transport distance through Ventura County. Peak annual emissions of all pollutants except particulates would occur from Building Demolition and Soil Remediation in year 2021. Peak annual PM10/PM2.5 emissions (mainly as fugitive dust) would occur from Soil Remediation in years 2025-2045 (color shading identifies contributing activities to these emissions).

Table 1.A-49. Total Emissions within Ventura County by Source Type for the Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,509
On-road Vehicles – Nearby Disposal Sites	0.04	0.73	0.64	0.00	0.01	0.01	392	357
On-road Vehicles – Distant Disposal Sites	0.04	0.72	0.57	0.00	0.01	0.01	376	341
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.15	16.78	18.40	0.03	6.97	2.48	3,152	2,866
Subtotal – Distant Disposal Sites	2.15	16.77	18.33	0.03	6.97	2.48	3,135	2,850
Soil Remediation								
Off-road Equipment	6.00	41.18	50.10	0.09	2.28	2.18	7,552	6,866
On-road Vehicles – Nearby Disposal Sites	0.91	6.32	19.35	0.06	0.34	0.18	6,047	5,497
On-road Vehicles – Distant Disposal Sites	0.91	6.32	19.35	0.06	0.34	0.18	6,047	5,497
Fugitive Dust					213.01	45.06		
Subtotal – Nearby Disposal Sites	6.91	47.50	69.45	0.15	215.63	47.42	13,599	12,363
Subtotal – Distant Disposal Sites	6.91	47.50	69.45	0.15	215.63	47.42	13,599	12,363
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
On-road Vehicles – Distant Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
Fugitive Dust					0.67	0.17		
Subtotal – Nearby Disposal Sites	0.02	0.15	0.24	0.00	0.68	0.17	62	56
Subtotal – Distant Disposal Sites	0.02	0.15	0.24	0.00	0.68	0.17	62	56
Total Emissions – Nearby Disposal Sites	9.08	64.43	88.09	0.18	223.28	50.08	16,813	15,285
Total Emissions – Distant Disposal Sites	9.08	64.42	88.02	0.18	223.28	50.07	16,796	15,270

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.A-50. Peak Annual Emissions within Ventura County by Source Type for the Combined Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	0.70	5.36	5.93	0.01	0.34	0.33	921	837
On-road Vehicles – Nearby Disposal Sites	0.01	0.24	0.21	0.00	0.00	0.00	131	119
On-road Vehicles – Distant Disposal Sites	0.01	0.24	0.19	0.00	0.00	0.00	125	114
Fugitive Dust					1.99	0.49		
Subtotal – Nearby Disposal Sites	0.72	5.60	6.14	0.01	2.33	0.83	1,052	956
Subtotal – Distant Disposal Sites	0.72	5.60	6.12	0.01	2.33	0.83	1,046	951
Soil Remediation								
Off-road Equipment	0.25	1.69	1.99	0.00	0.09	0.09	294	267
On-road Vehicles – Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
On-road Vehicles – Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
Fugitive Dust					8.69	1.81		
Subtotal – Nearby Disposal Sites	0.29	1.94	2.76	0.01	8.80	1.91	534	486
Subtotal – Distant Disposal Sites	0.29	1.94	2.76	0.01	8.80	1.91	534	486
Groundwater Remediation								
Off-road Equipment								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Fugitive Dust								
Subtotal – Nearby Disposal Sites								
Subtotal – Distant Disposal Sites								
Peak Annual Emissions – Nearby Disposal Sites	1.01	7.54	8.90	0.02	8.80	1.91	1,586	1,442
Peak Annual Emissions – Distant Disposal Sites	1.01	7.54	8.87	0.02	8.80	1.91	1,581	1,437

Notes: Peak annual emissions of all pollutants except particulates would occur from Building Demolition and Soil Remediation in year 2021. Peak annual PM10/PM2.5 emissions (mainly as fugitive dust) would occur from Soil Remediation in years 2025-2045 (color shading identifies activities that contribute to these peak annual emissions).

Table 1.A-51. Peak Daily Emissions within Ventura County by Source Type for the Combined Building Removal, Any Soil Remediation Alternative, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Building Demolition								
Off-road Equipment	7.0	58.2	64.1	0.1	3.0	2.9	11,181	
On-road Vehicles – Nearby Disposal Sites	0.5	10.2	7.3	0.1	0.1	0.1	5,076	
On-road Vehicles – Distant Disposal Sites	0.5	10.1	6.5	0.0	0.1	0.1	4,857	
Fugitive Dust					49.3	10.8		
Subtotal – Nearby Disposal Sites	7.5	68.4	71.4	0.2	52.5	13.8	16,257	
Subtotal – Distant Disposal Sites	7.5	68.3	70.7	0.2	52.4	13.8	16,038	
Soil Remediation								
Off-road Equipment	1.6	11.3	13.8	0.0	0.6	0.6	2,116	
On-road Vehicles – Nearby Disposal Sites	0.3	2.0	6.2	0.0	0.1	0.1	1,924	
On-road Vehicles – Distant Disposal Sites	0.3	2.0	6.2	0.0	0.1	0.1	1,924	
Fugitive Dust					62.1	12.7		
Subtotal – Nearby Disposal Sites	1.9	13.3	20.0	0.0	62.9	13.3	4,041	
Subtotal – Distant Disposal Sites	1.9	13.3	20.0	0.0	62.9	13.3	4,041	
Groundwater Remediation								
Off-road Equipment								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Fugitive Dust								
Subtotal – Nearby Disposal Sites								
Subtotal – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	9.4	81.7	91.4	0.2	115.3	27.1	20,297	
Peak Daily Emissions – Distant Disposal Sites	9.4	81.6	90.7	0.2	115.3	27.1	20,079	

Notes: Based on a production rate that would generate 32 truck trips of material per day. Numerous combinations of activities could generate 32 truck trips per day. To provide a reasonable worst-case scenario, the analysis chose activities with the highest emission rates per unit of material throughput, including 8 truck trips per day each for (1) Demolition - Metal and Building Debris - RAD, (2) Demolition - Soil Backfilling, (3) Excavation - Soil Categories 1 and 2, and (4) Soil Remediation - Soil Backfilling. See Tables 1.A-10a, -33a, and -42a for derivations of these emissions.

Table 1.A-52. Total Emissions by Source Type for Building Removal, AOC, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,504
On-road Vehicles – Nearby Disposal Sites	0.19	1.92	5.77	0.02	0.14	0.08	2,070	1,878
On-road Vehicles – Distant Disposal Sites	0.48	2.98	16.83	0.05	0.41	0.24	5,075	4,604
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.30	17.97	23.54	0.05	7.10	2.55	4,829	4,381
Subtotal – Distant Disposal Sites	2.59	19.03	34.59	0.08	7.37	2.71	7,835	7,107
Soil Remediation								
Off-road Equipment	6.00	41.18	50.10	0.09	2.28	2.18	7,552	6,852
On-road Vehicles – Nearby Disposal Sites	2.32	15.07	71.07	0.25	1.84	0.96	25,830	23,433
On-road Vehicles – Distant Disposal Sites	6.25	31.19	221.83	0.77	6.23	3.21	80,215	72,771
Fugitive Dust					213.01	45.06		
Subtotal – Nearby Disposal Sites	8.32	56.25	121.18	0.34	217.13	48.20	33,382	30,284
Subtotal – Distant Disposal Sites	12.25	72.38	271.94	0.86	221.52	50.45	87,767	79,622
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.04	0.20	1.57	0.01	0.04	0.02	561	509
On-road Vehicles – Distant Disposal Sites	0.16	0.69	6.20	0.02	0.18	0.09	2,237	2,029
Fugitive Dust					0.67	0.17		
Subtotal – Nearby Disposal Sites	0.06	0.32	1.69	0.01	0.72	0.19	591	536
Subtotal – Distant Disposal Sites	0.18	0.82	6.33	0.02	0.86	0.26	2,266	2,056
Total Emissions – Nearby Disposal Sites	10.68	74.55	146.41	0.39	224.95	50.94	38,802	35,201
Total Emissions – Distant Disposal Sites	15.01	92.22	312.86	0.96	229.75	53.42	97,868	88,786

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.A-53. Peak Annual Emissions - Combined Building Demolition, Cleanup to AOC LUT Values, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.96	7.05	7.92	0.01	0.43	0.42	1,215	267
On-Road Vehicles - Nearby Disposal Sites	0.05	0.49	0.98	0.00	0.02	0.01	371	219
On-Road Vehicles - Distant Disposal Sites	0.05	0.49	0.96	0.00	0.02	0.01	366	219
Fugitive Dust					8.69	1.81		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.08	0.65	2.81	0.01	0.08	0.04	1,113	1,012
On-Road Vehicles - Distant Disposal Sites	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,758
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.13	0.53	5.00	0.02	0.14	0.07	1,743	1,585
On-Road Vehicles - Distant Disposal Sites	0.53	2.16	20.49	0.07	0.59	0.30	7,159	6,508
Peak Annual Emissions – Nearby Disposal Sites	1.22	8.72	16.70	0.04	9.36	2.36	4,443	4,039
Peak Annual Emissions – Distant Disposal Sites	1.68	10.60	34.52	0.10	9.87	2.63	10,673	9,702

Note: Peak annual emissions would occur in year 2021, except peak annual PM10/PM2.5 emissions (mainly fugitive dust) would occur in years 2025-2045.

Table 1.A-54. Peak Annual Emissions - Soil Remediation Cleanup to AOC LUT Values Alternative - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.25	1.69	1.99	0.00	0.09	0.09	294	267
On-Road Vehicles - Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
On-Road Vehicles - Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
Fugitive Dust					8.69	1.81		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.06	0.38	2.39	0.01	0.07	0.04	905	823
On-Road Vehicles - Distant Disposal Sites	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.11	0.46	4.33	0.01	0.13	0.06	1,563	1,421
On-Road Vehicles - Distant Disposal Sites	0.47	1.91	17.88	0.06	0.52	0.27	6,448	5,862
Total Emissions to Nearby Disposal Sites	0.47	2.78	9.48	0.03	8.99	2.01	3,003	2,730
Total Emissions to Distant Disposal Sites	0.87	4.45	25.09	0.08	9.45	2.24	8,634	7,849

Note: Peak annual emissions would occur in year 2021, except peak annual PM10/PM2.5 emissions (mainly fugitive dust) would occur in years 2025-2045.

Attachment 1.B

Building Removal, Cleanup to Revised LUT Values, and Groundwater Treatment Alternatives

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Attachment 1.B

Emission Calculations for Implementation of the Building Removal, Soil Remediation Cleanup to Revised LUT Values, and Groundwater Remediation Treatment Combined Alternatives - SSFL Area IV FEIS

Table 1.B-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to Revised LUT Values, and Groundwater Treatment Alternatives - SSFL Area IV FEIS

Table 1.B-2. Total Off-Road Equipment Activity Data for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

Table 1.B-3. Total Emissions of Off-Road Equipment for the Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

Table 1.B-4. Peak Annual Emissions of Off-Road Equipment for the Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

Table 1.B-5. Total On-Road Vehicle Activity Data for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

Table 1.B-6. Total Emissions for Onroad Vehicles - Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS (page 1 of 2).

Table 1.B-7. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-8. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-9. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-10. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-11. Peak Annual Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-12. Peak Annual Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-13. Total Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.B-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to Revised LUT Values, and Groundwater Treatment Alternatives - SSFL Area IV FEIS

	Annual Percentage of Total Activity							
Construction Activity/Task	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*
Building Demolition								
Demolition - Concrete - RAD	40%	40%	20%					
Demolition - Asphalt - RAD	40%	40%	20%					
Demolition - Metal and Building Debris - RAD	40%	40%	20%					
Demolition - Concrete - HW	40%	40%	20%					
Demolition - Asphalt - HW								
Demolition - Metal and Building Debris - HW	40%	40%	20%					
Demolition - Concrete - Clean	40%	40%	20%					
Demolition - Asphalt - Clean	40%	40%	20%					
Demolition - Metal and Building Debris - Clean	40%	40%	20%					
Soil Backfilling		67%	33%					
Soil Remediation								
Excavation - Soil Categories 1 and 2 = 78,000 cy			7%	10%	10%	10%	45%	19%
Excavation - Soil Category 3 = 2,000 cy			100%	0%	0%			
Excavation - Soil Category 4 = 110,000 cy			25%	25%	25%	25%		
Soil Backfilling			18%	18%	18%	18%	18%	8%
Groundwater Remediation								
Bedrock Removal = 1,700 cy				100%				
HW Soil Removal				20%	20%	20%	20%	20%
Soil Backfilling				100%				
Truck/Worker Vehicle Trips								
Total Tons - Annual Demo	9,303	9,303	4,651					
Total Tons - Annual Soil Category 4			41,262	41,262	41,262	41,214		
Total Tons - Annual Soil Categories 1-3			11,303	11,309	11,309	11,357	52,571	22,149
Total Annual Demo Truck Trips	600	600	300					
Total Annual Soil Truck Trips - Soil Categories 1 and 2			361	492	492	494	2,286	963
Total Annual Soil Truck Trips - Soil Category 3			130					
Total Annual Soil Truck Trips - Soil Category 4			1,794	1,794	1,794	1,792		
Total Annual GW Treatment Alt - Bedrock Truck Trips				338				
Total Annual GW Treatment Alt - HW Soils Truck Trips				24	24	24	24	24
Total Annual Soil Backfill Truck Trips - Demo		585	293					
Total Annual Soil Backfill Truck Trips - Soil Rem			1,714	1,714	1,714	1,714	1,714	722
Total Annual Soil Backfill Truck Trips - GW Treatment Alt				196				
Total Annual Equipment Deliver/Remove Truck Trips - Demo	19	19						
Total Annual Equipment Deliver/Remove Truck Trips - Soils		26						
Total Annual Equipment Deliver/Remove Truck Trips - GWT Alt		19						
Total Annual DOE Truck Trips	619	1,249	4,593	4,558	4,024	4,024	4,024	1,709
Worker Round Trips - Annual (1)	15,000	15,200	13,870	6,470	6,370	6,250	6,250	6,250

Notes: (1) Assumes 250 work days per year. Building Demolition and Soil Remediation would generate 60/25 round trips per day and GWT would generate substantially less.

Table 1.B-2. Total Off-Road Equipment Activity Data for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day (2)*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 78,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	318.4	127,315
Excavator - 350	286	D	0.38	1	5.0	543	318.4	173,001
Loader - 938G	158	D	0.36	1	3.0	171	318.4	54,326
Street Sweeper	115	D	0.46	1	2.0	106	318.4	33,683
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	318.4	84,686
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	8.2	2,176
Excavator - 350	286	D	0.38	1	4.0	435	8.2	3,549
Forklift	94	D	0.40	1	2.7	100	8.2	816
Loader - 902G	48	D	0.36	2	5.0	173	8.2	1,411
Street Sweeper	115	D	0.46	1	2.0	106	8.2	864
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	8.2	2,171
Excavation - Soil Category 4 = 110,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	449.0	119,698
Excavator - 350	286	D	0.38	1	4.0	435	449.0	195,180
Forklift	94	D	0.40	1	2.7	100	449.0	44,956
Loader - 902G	48	D	0.36	2	5.0	173	449.0	77,584
Street Sweeper	115	D	0.46	1	2.0	106	449.0	47,502
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	449.0	119,429
Soil Backfilling = 142,500 cy								
Dozer - D8	310	D	0.43	1	4	533	581.6	310,127
Grader - 160H	200	D	0.41	1	3	246	581.6	143,082
Loader - 938G	158	D	0.36	1	4	228	581.6	132,333
Street Sweeper	115	D	0.46	1	2	106	581.6	61,537
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	581.6	154,714
Generators								
Air Monitoring	7	D	0.74	4	24	497	2,000	994,659

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

(2) Assumes 16 truck loads per day for each activity.

Table 1.B-3. Total Emissions of Off-Road Equipment for the Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 78,000 cy							
Dozer - D8	0.04	0.28	0.46	0.00	0.02	0.02	66.59
Excavator - 350	0.03	0.21	0.25	0.00	0.01	0.01	89.55
Loader - 938G	0.02	0.20	0.19	0.00	0.01	0.01	28.21
Street Sweeper	0.02	0.14	0.15	0.00	0.01	0.01	17.60
Water Truck - 5000 Gallons	0.03	0.31	0.21	0.00	0.01	0.01	43.90
Subtotal	0.13	1.14	1.26	0.00	0.06	0.05	245.86
Excavation - Soil Category 3 = 2,000 cy							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	1.14
Excavator - 350	0.00	0.00	0.01	0.00	0.00	0.00	1.84
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.82
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	1.13
Subtotal	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4 = 110,000 cy							
Dozer - D8	0.04	0.27	0.43	0.00	0.02	0.02	62.60
Excavator - 350	0.03	0.23	0.29	0.00	0.01	0.01	101.04
Forklift	0.01	0.16	0.11	0.00	0.00	0.00	23.44
Loader - 902G	0.11	0.55	0.43	0.00	0.03	0.03	44.86
Street Sweeper	0.02	0.20	0.21	0.00	0.02	0.01	24.83
Water Truck - 5000 Gallons	0.04	0.44	0.30	0.00	0.01	0.01	61.91
Subtotal	0.25	1.85	1.76	0.00	0.10	0.09	318.68
Soil Backfilling = 142,500 cy							
Dozer - D8	0.10	0.69	1.12	0.00	0.04	0.04	162.20
Grader - 160H	0.05	0.21	0.69	0.00	0.02	0.02	74.84
Loader - 938G	0.05	0.49	0.45	0.00	0.02	0.02	68.72
Street Sweeper	0.03	0.25	0.27	0.00	0.02	0.02	32.16
Water Truck - 5000 Gallons	0.05	0.57	0.38	0.00	0.02	0.02	80.20
Subtotal	0.28	2.21	2.92	0.00	0.13	0.12	418.13
Generators							
Air Monitoring	0.69	3.87	4.87	0.01	0.22	0.22	623.09
Subtotal	0.69	3.87	4.87	0.01	0.22	0.22	623.09
Total Emissions - Soil Remediation	1.35	9.10	10.84	0.02	0.51	0.48	1,611.55

Table 1.B-4. Peak Annual Emissions of Off-Road Equipment for the Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEI

	Tons per Year						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2	0.01	0.08	0.09	0.00	0.00	0.00	17.45
Excavation - Soil Category 3	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4	0.06	0.46	0.44	0.00	0.02	0.02	79.69
Soil Backfilling	0.05	0.41	0.54	0.00	0.02	0.02	77.13
Generators - Air Monitoring	0.13	0.71	0.89	0.00	0.04	0.04	113.70
Peak Annual Emissions - Soil Remediation	0.25	1.69	1.99	0.00	0.09	0.09	293.77

Note: Peak annual emissions would occur in year 2021.

Table 1.B-5. Total On-Road Vehicle Activity Data for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 78,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	5,087	5.5	0.75	63.3		27,978	3,815	321,749	
Total Miles - Clean Soils to Chiquita Canyon (2)	423.9					27,978	3,815	321,749	
Soil Haul Trucks - 23 tons/load to Westmorland	5,087	5.5	0.75	374	85	27,978	3,815	1,902,517	433,662
Total Miles - Clean Soils to Westmorland (2)	423.9					27,978	3,815	1,902,517	433,662
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 23 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	717	98	16,643	14,563
Total Miles - HW Soils to Buttonwillow (2)	10.9					717	98	16,643	14,563
Soil Haul Trucks - 23 tons/load to US Ecology Idaho	130	5.5	0.75	199.3	1,840	717	98	25,996	239,993
Total Miles - HW Soils to US Ecology Idaho (2)	10.9					717	98	25,996	239,993
Excavation - Soil Category 4 = 110,000 cy									
Soil Haul Trucks - 23 tons/load to NNSS	7,174	5.5	0.75	199.3	500	39,457	5,380	1,429,761	3,586,598
Total Miles - RAD Soils to NNSS (2)	597.8					39,457	5,380	1,429,761	3,586,598
Soil Haul Trucks - 23 tons/load to WCS Texas	7,174	5.5	0.75	374	1,945	39,457	5,380	2,683,043	13,955,054
Total Miles - RAD Soils to WCS Texas (2)	597.8					39,457	5,380	2,683,043	13,955,054
Soil Backfilling									
Soil Haul Trucks - Import (3)	9,293	5.5	40	60		51,114	371,737	557,606	
Total Miles - Backfill Soil (2)	774.5					51,114	371,737	557,606	
Construction - Worker commuting									
Passenger Car/Pickup	37,500	5.5	15	25		206,250	562,500	937,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for soil categories 1 and 2, 3, and 4 to present a reasonable bounding analysis.

(2) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(3) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.B-6. Total Emissions for Onroad Vehicles - Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS (page 1 of 2)

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Categories 1 and 2 = 78,000 cy - Chiquita Canyon							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	3.01
Soil Haul Truck - On-site Miles	0.02	0.07	0.36	0.00	0.00	0.00	72.76
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.03	0.00	0.00	0.00	7.44
Subtotal - Ventura County (1)	0.02	0.08	0.40	0.00	0.00	0.00	83.21
Subtotal - SCAB (2)	0.04	0.16	1.53	0.01	0.04	0.02	551.70
Subtotal - Remainder (3)							
Soil Categories 1 and 2 = 78,000 cy - Westmorland							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	3.01
Soil Haul Truck - On-site Miles	0.02	0.07	0.36	0.00	0.00	0.00	72.76
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.03	0.00	0.00	0.00	7.44
Subtotal - Ventura County (1)	0.02	0.08	0.40	0.00	0.00	0.00	83.21
Subtotal - SCAB (2)	0.24	0.97	9.04	0.03	0.26	0.13	3,262.25
Subtotal - Remainder (3)	0.05	0.22	2.06	0.01	0.06	0.03	743.60
Soil Category 3 = 2,000 cy - Buttonwillow							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.87
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.08	0.00	0.00	0.00	28.54
Subtotal - Remainder (3)	0.00	0.01	0.07	0.00	0.00	0.00	24.97
Soil Category 3 = 2,000 cy - US Ecology Idaho							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.87
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.12	0.00	0.00	0.00	44.57
Subtotal - Remainder (3)	0.03	0.12	1.14	0.00	0.03	0.02	411.52

Table 1.B-6. Total Emissions for Onroad Vehicles - Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS (page 2 of 2)

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Category 4 = 110,000 cy - NNSS							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	4.24
Soil Haul Truck - On-site Miles	0.03	0.10	0.51	0.00	0.01	0.00	102.61
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.04	0.00	0.00	0.00	10.49
Subtotal - Ventura County (1)	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Subtotal - SCAB (2)	0.18	0.73	6.80	0.02	0.20	0.10	2,451.61
Subtotal - Remainder (3)	0.44	1.82	17.05	0.06	0.50	0.25	6,149.94
Soil Category 4 = 110,000 cy - WCS Texas							
Soil Haul Truck - On-site Idling	0.00	0.00	0.02	0.00	0.00	0.00	4.24
Soil Haul Truck - On-site Miles	0.03	0.10	0.51	0.00	0.01	0.00	102.61
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.01	0.04	0.00	0.00	0.00	10.49
Subtotal - Ventura County (1)	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Subtotal - SCAB (2)	0.33	1.36	12.75	0.04	0.37	0.19	4,600.61
Subtotal - Remainder (3)	1.73	7.09	66.33	0.23	1.93	0.99	23,928.73
Soil Backfilling							
Soil Haul Truck - On-site Idling	0.00	0.00	0.03	0.00	0.00	0.00	5.49
Soil Haul Truck - On-site Miles	0.03	0.13	0.66	0.00	0.01	0.00	132.93
Soil Haul Truck - Off-site Miles within Ventura County	0.10	0.40	2.44	0.01	0.05	0.03	724.48
Subtotal - Ventura County (1)	0.13	0.54	3.13	0.01	0.06	0.03	862.91
Subtotal - SCAB (2)	0.07	0.28	2.65	0.01	0.08	0.04	956.13
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.01	0.23	0.02	0.00	0.00	0.00	81.40
Worker Vehicle - Off-site Miles within Ventura County	0.01	0.45	0.05	0.00	0.00	0.00	173.80
Subtotal - Ventura County (1)	0.02	0.68	0.07	0.00	0.00	0.00	255.21
Subtotal - SCAB (2)	0.02	0.75	0.08	0.00	0.00	0.00	289.67

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.B-7. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.13	0.46	4.73	0.01	0.12	0.07	1,276.79
HW - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	5.23
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.18	0.00	0.00	0.00	42.18
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.19	1.92	5.77	0.02	0.14	0.08	2,069.57
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Chiquita Canyon	0.06	0.24	1.93	0.01	0.05	0.03	634.91
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.02	0.16	0.00	0.00	0.00	55.64
Soil Category 4 = 110,000 cy - NNSS	0.65	2.66	24.41	0.08	0.70	0.36	8,718.89
Soil Backfilling	0.20	0.82	5.78	0.02	0.14	0.07	1,819.03
Construction - Worker commuting	0.03	1.43	0.16	0.01	0.00	0.00	544.88
Subtotal	0.95	5.17	32.43	0.11	0.89	0.46	11,773.36
Groundwater Remediation							
Bedrock RAD - NNSS	0.03	0.13	1.15	0.00	0.03	0.02	410.79
HW Soil - Buttonwillow	0.01	0.03	0.29	0.00	0.01	0.00	102.38
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.04	0.20	1.57	0.01	0.04	0.02	561.13
Total Emissions to Nearby Disposal Sites	1.18	7.29	39.77	0.14	1.08	0.57	14,404.05

Table 1.B-8. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - EnergySolutions Utah	0.41	1.49	15.47	0.04	0.38	0.22	4,194.62
HW - USE Idaho	0.00	0.02	0.16	0.00	0.00	0.00	43.08
Clean - McKittrick/Kramer Metals	0.01	0.04	0.35	0.00	0.01	0.00	91.65
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.48	2.98	16.83	0.05	0.41	0.24	5,074.71
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Westmorland	0.31	1.27	11.51	0.04	0.33	0.17	4,089.05
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.14	1.27	0.00	0.04	0.02	458.22
Soil Category 4 = 110,000 cy - WCS Texas	2.09	8.57	79.65	0.27	2.31	1.18	28,646.68
Soil Backfilling	0.20	0.82	5.78	0.02	0.14	0.07	1,819.03
Construction - Worker commuting	0.03	1.43	0.16	0.01	0.00	0.00	544.88
Subtotal	2.66	12.22	98.37	0.34	2.81	1.45	35,557.87
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.10	0.40	3.75	0.01	0.11	0.06	1,349.69
HW Soil - US Ecology Idaho	0.06	0.25	2.33	0.01	0.07	0.03	839.21
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.16	0.69	6.20	0.02	0.18	0.09	2,236.85
Total Emissions to Nearby Disposal Sites	3.30	15.90	121.40	0.41	3.41	1.78	42,869.44

Table 1.B-9. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.11	0.00	0.00	0.00	24.41
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.73	0.64	0.00	0.01	0.01	392.28
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Chiquita Canyon	0.02	0.08	0.40	0.00	0.00	0.00	83.21
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 110,000 cy - NNSS	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Soil Backfilling	0.13	0.54	3.13	0.01	0.06	0.03	862.91
Construction - Worker commuting	0.02	0.68	0.07	0.00	0.00	0.00	255.21
Subtotal	0.20	1.41	4.18	0.01	0.07	0.04	1,320.80
Groundwater Remediation							
Bedrock RAD - NNSS	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.24	2.17	4.93	0.02	0.09	0.05	1,745.22

Table 1.B-10. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - McKittrick/Kramer Metals	0.00	0.01	0.04	0.00	0.00	0.00	7.76
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.72	0.57	0.00	0.01	0.01	375.63
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Westmorland	0.02	0.08	0.40	0.00	0.00	0.00	83.21
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 110,000 cy - WCS Texas	0.03	0.11	0.56	0.00	0.01	0.00	117.34
Soil Backfilling	0.13	0.54	3.13	0.01	0.06	0.03	862.91
Construction - Worker commuting	0.02	0.68	0.07	0.00	0.00	0.00	255.21
Subtotal	0.20	1.41	4.18	0.01	0.07	0.04	1,320.80
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - US Ecology Idaho	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.24	2.16	4.86	0.02	0.09	0.05	1,728.57

Table 1.B-11. Peak Annual Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.02	0.00	0.00	0.00	4.88
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.18	0.00	0.00	0.00	125.30
Soil Remediation							
Soil Categories 1 and 2 - Chiquita Canyon	0.00	0.01	0.03	0.00	0.00	0.00	5.90
Soil Category 3 - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - NNSS	0.01	0.03	0.14	0.00	0.00	0.00	29.34
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.09
Total Emissions to Nearby Disposal Sites	0.05	0.49	0.95	0.00	0.02	0.01	364.39

Note: Peak annual emissions would occur in year 2021.

Table 1.B-12. Peak Annual Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - USE Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	1.55
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.17	0.00	0.00	0.00	121.97
Soil Remediation							
Soil Categories - Westmorland	0.00	0.01	0.03	0.00	0.00	0.00	5.90
Soil Category 3 - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - WCS Texas	0.01	0.03	0.14	0.00	0.00	0.00	29.34
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.09
Total Emissions to Distant Disposal Sites	0.05	0.48	0.94	0.00	0.02	0.01	361.06

Note: Peak annual emissions would occur in year 2021.

Table 1.B-13. Total Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.03	0.13	1.32	0.00	0.03	0.02	358.97
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.68
Clean - Chiquita Canyon/Gillibrand	0.00	0.01	0.07	0.00	0.00	0.00	17.77
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.06	0.87	1.81	0.01	0.04	0.03	774.46
Soil Remediation							
Soil Categories 1 and 2 - Chiquita Canyon	0.04	0.16	1.53	0.01	0.04	0.02	551.70
Soil Category 3 - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28.54
Soil Category 4 - NNSS	0.18	0.73	6.80	0.02	0.20	0.10	2,451.61
Soil Backfilling	0.07	0.28	2.65	0.01	0.08	0.04	956.13
Construction - Worker commuting	0.02	0.75	0.08	0.00	0.00	0.00	289.67
Subtotal	0.30	1.94	11.14	0.04	0.32	0.17	4,277.65
Groundwater Remediation							
Bedrock RAD - NNSS	0.01	0.03	0.32	0.00	0.01	0.00	115.51
HW Soil - Buttonwillow	0.00	0.02	0.15	0.00	0.00	0.00	52.51
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.01	0.07	0.52	0.00	0.02	0.01	193.28
Total SCAB	0.38	2.88	13.48	0.05	0.38	0.20	5,245.40

Notes: (1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.B-14. Total Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - USE Idaho	0.07	0.24	2.48	0.01	0.06	0.04	673.62
HW - USE Idaho	0.00	0.00	0.02	0.00	0.00	0.00	4.19
Clean - McKittrick/Kramer Metals	0.01	0.03	0.27	0.00	0.01	0.00	73.36
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.10	1.01	3.18	0.01	0.08	0.05	1,146.21
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Westmorland	0.24	0.97	9.04	0.03	0.26	0.13	3,262.25
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44.57
Soil Category 4 = 110,000 cy - WCS Texas	0.33	1.36	12.75	0.04	0.37	0.19	4,600.61
Soil Backfilling	0.07	0.28	2.65	0.01	0.08	0.04	956.13
Construction - Worker commuting	0.02	0.75	0.08	0.00	0.00	0.00	289.67
Subtotal	0.66	3.38	24.65	0.09	0.72	0.37	9,153.23
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	216.76
HW Soil - US Ecology Idaho	0.01	0.02	0.23	0.00	0.01	0.00	82.02
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.02	0.11	0.89	0.00	0.03	0.01	324.04
Total SCAB	0.77	4.49	28.72	0.10	0.82	0.43	10,623.49

Notes: (1) Based on disposal sites that would require the highest amount of transport distance through the SCAB.

Table 1.B-15. Peak Annual Emissions for Onroad Vehicles within the SCAB to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.01	0.03	0.26	0.00	0.01	0.00	72	65
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	1	0
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.01	0.00	0.00	0.00	4	3
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.27	0.42	0.00	0.01	0.01	208	189
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon	0.00	0.01	0.11	0.00	0.00	0.00	39	36
Soil Category 3 - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	29	26
Soil Category 4 - NNSS	0.04	0.18	1.70	0.01	0.05	0.03	613	557
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.06	0.38	2.39	0.01	0.07	0.04	905	823
Total SCAB	0.08	0.65	2.81	0.01	0.08	0.04	1,113.13	1,011.94

Note: Peak annual emissions would occur in year 2021.

(1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.B-16. Peak Annual Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.01	0.05	0.50	0.00	0.01	0.01	135	122
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Clean - McKittrick/Kramer Metals	0.00	0.01	0.05	0.00	0.00	0.00	15	13
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.30	0.69	0.00	0.02	0.01	282	256
Soil Remediation								
Soil Categories 1 and 2 - Westmorland	0.02	0.07	0.64	0.00	0.02	0.01	232	210
Soil Category 3 - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	45	41
Soil Category 4 - WCS Texas	0.08	0.34	3.19	0.01	0.09	0.05	1,150	1,046
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Total SCAB	0.14	0.90	5.15	0.02	0.15	0.08	1,933.28	1,757.53

Notes: (1) Based on disposal sites that would require the highest amount of transport distance per soil category through the SCAB. Peak annual emissions would occur in year 2021.

Table 1.B-17. Summary of Peak Daily Emissions within SCAB for On-Road Vehicles for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites (2)	1.6	6.5	60.6	0.2	1.8	0.9	21,871.3	
On-road Vehicles – Distant Disposal Sites (3)	3.0	12.2	113.8	0.4	3.3	1.7	41,043.1	
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	1.6	6.5	60.6	0.2	1.8	0.9	21,871	
Peak Daily Emissions – Distant Disposal Sites	3.0	12.2	113.8	0.4	3.3	1.7	41,043	

Notes: (1) Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT within the SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur during Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the NNSS.

(3) Based on 32 truck trips per day to either the Westmorland or WCS Texas sites, which would result in the largest VMT within the SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily trips to the WCS Texas site.

Table 1.B-18. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.09	0.32	3.31	0.01	0.08	0.05	900.48
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.35
Clean - Chiquita Canyon/Gillibrand							
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.09	0.32	3.32	0.01	0.08	0.05	902.82
Soil Remediation							
Soil Categories 1 and 2 - Chiquita Canyon							
Soil Category 3 - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	24.97
Soil Category 4 - NNSS	0.44	1.82	17.05	0.06	0.50	0.25	6,149.94
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.45	1.83	17.12	0.06	0.50	0.26	6,174.91
Groundwater Remediation							
Bedrock RAD - NNSS	0.02	0.09	0.80	0.00	0.02	0.01	289.76
HW Soil - Buttonwillow	0.00	0.01	0.13	0.00	0.00	0.00	45.95
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.02	0.10	0.93	0.00	0.03	0.01	335.70
Total Outside Ventura County/SCAB	0.56	2.25	21.37	0.07	0.61	0.32	7,413.44

Notes: (1) Based on disposal sites that would require the least amount of transport distance outside Ventura County/SCAB.

Table 1.B-19. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.34	1.24	12.90	0.03	0.32	0.18	3,503.65
HW - USE Idaho	0.00	0.01	0.14	0.00	0.00	0.00	38.68
Clean - McKittrick/Kramer Metals	0.00	0.00	0.04	0.00	0.00	0.00	10.52
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.34	1.26	13.08	0.03	0.33	0.19	3,552.86
Soil Remediation							
Soil Categories 1 and 2 = 78,000 cy - Westmorland	0.05	0.22	2.06	0.01	0.06	0.03	743.60
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	411.52
Soil Category 4 = 110,000 cy - WCS Texas	1.73	7.09	66.33	0.23	1.93	0.99	23,928.73
Soil Backfilling							
Construction - Worker commuting							
Subtotal	1.81	7.44	69.54	0.24	2.02	1.04	25,083.84
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.08	0.33	3.13	0.01	0.09	0.05	1,127.41
HW Soil - US Ecology Idaho	0.05	0.22	2.10	0.01	0.06	0.03	757.19
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.14	0.56	5.22	0.02	0.15	0.08	1,884.60
Total Outside Ventura County/SCAB	2.29	9.25	87.84	0.29	2.50	1.30	30,521.30

Notes: (1) Based on disposal sites that would require the greatest amount of transport distance outside Ventura County/SCAB.

Table 1.B-20. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.02	0.06	0.66	0.00	0.02	0.01	180	164
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clean - Chiquita Canyon/Gillibrand								
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.02	0.06	0.66	0.00	0.02	0.01	181	164
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon								
Soil Category 3 - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	25	23
Soil Category 4 - NNSS	0.11	0.46	4.26	0.01	0.12	0.06	1,538	1,398
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.11	0.46	4.33	0.01	0.13	0.06	1,563	1,421
Total Outside Ventura County/SCAB	0.13	0.53	5.00	0.02	0.14	0.07	1,743.47	1,584.97

Notes: (1) Based on disposal sites that would require least amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.B-21. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.07	0.25	2.58	0.01	0.06	0.04	701	637
HW - US Ecology Idaho	0.00	0.00	0.03	0.00	0.00	0.00	8	7
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.07	0.25	2.62	0.01	0.07	0.04	711	646
Soil Remediation								
Soil Categories - Westmorland	0.00	0.02	0.15	0.00	0.00	0.00	53	48
Soil Category 3 - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	412	374
Soil Category 4 - WCS Texas	0.43	1.77	16.59	0.06	0.48	0.25	5,984	5,440
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.47	1.91	17.88	0.06	0.52	0.27	6,448	5,862
Total Outside Ventura County/SCAB	0.53	2.16	20.49	0.07	0.59	0.30	7,158.78	6,507.98

Notes: (1) Based on disposal sites that require the greatest amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.B-22. Summary of Peak Daily Emissions Outside Ventura County/SCAB for On-Road Vehicles for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites (2)	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
On-road Vehicles – Distant Disposal Sites (3)	15.4	63.3	591.8	2.0	17.2	8.8	213,473	
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
Peak Daily Emissions – Distant Disposal Sites	15.4	63.3	591.8	2.0	17.2	8.8	213,473	

Notes: (1) Peak annual emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT outside VC/SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the NNSS.

(3) Based on 32 truck trips per day to the WCS Texas site, which would result in the largest VMT outside VC/SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the WCS Texas site.

Table 1.B-23. Fugitive Dust Activity Data for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS

Construction Activity-Soil Type/Equipment Type	*Throughput (Tons)*	*On-site Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Excavation - Soil Categories 1 and 2 = 78,000 cy						
Actively Disturbed Ground				2.8	318.4	891
Vacated Disturbed Ground				4.2	318.4	1,337
Truck Loading - Soil	117,000					
Paved Road Dust - Soil Haul Truck		5.5	5,087			27,978
Excavation - Soil Category 3 = 2,000 cy						
Actively Disturbed Ground				1.0	8.2	8
Vacated Disturbed Ground				1.5	8.2	12
Truck Loading - Soil	3,000					
Paved Road Dust - Soil Haul Truck		5.5	130			717
Excavation - Soil Category 4 = 110,000 cy						
Actively Disturbed Ground				1.0	449.0	449
Vacated Disturbed Ground				1.5	449.0	673
Truck Loading - Soil	165,000					
Paved Road Dust - Soil Haul Truck		5.5	7,174			39,457
Inactive Disturbed Area						
Total Acreage per Year				6.9	2,000	13,801
Soil Backfilling						
Actively Disturbed Ground				1.0	581.6	582
Stockpile Wind Erosion				0.5	2,000	1,000
Truck Unloading - Soil	213,749					
Paved Road Dust - Soil Haul Truck		5.5	9,293			51,114

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.B-24. Total Fugitive Dust Emissions for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 78,000 cy							
Actively Disturbed Ground					4.42	0.44	
Truck Loading - Soil					0.01	0.00	
Paved Road Dust - Soil Haul Truck					4.57	1.12	
Subtotal					9.00	1.57	
Excavation - Soil Category 3 = 2,000 cy							
Actively Disturbed Ground					0.04	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.12	0.03	
Subtotal					0.16	0.03	
Excavation - Soil Category 4 = 110,000 cy							
Actively Disturbed Ground					2.23	0.22	
Truck Loading - Soil					0.01	0.00	
Paved Road Dust - Soil Haul Truck					6.45	1.58	
Subtotal					8.69	1.81	
Inactive Disturbed Area							
Total Area					0.44	0.07	
Soil Backfilling							
Actively Disturbed Ground					2.89	0.29	
Stockpile Wind Erosion					11.47	3.44	
Truck Unloading - Soil					0.01	0.00	
Paved Road Dust - Soil Haul Truck					8.35	2.05	
Subtotal					22.72	5.78	

Table 1.B-25. Peak Annual Fugitive Dust Emissions for Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS.

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2					4.05	0.70	
Excavation - Soil Category 3							
Excavation - Soil Category 4							
Inactive Disturbed Area					0.08	0.01	
Soil Backfilling					4.19	1.07	
Subtotal					8.32	1.78	

Note: Peak annual fugitive dust emissions would occur in year 2025.

Table 1.B-26. Emission Estimates for Windblown Dust from Inactive Disturbed Areas - Soil Remediation Revised LUT Values Alternative - SSFL Area IV FEIS

Year	Activity (1)	Annual Disturbed Area (m^2) (1)	U_{10} (m/s) (2)	Threshold Friction Velocity u_t (m/s) (3)	Friction Velocity u* (m/s) (4)	P Uncontrolled (Gm/m^2) (5)	Controlled Pounds/Event (6)		
							PM	PM10	PM2.5
2019	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2020	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2021	Demo Buildings	8,097	24.1	1.02	1.278	10.28	92	46	7
Total - Demolition								229	34
2021	All Soils	28,377	24.1	1.02	1.278	10.28	322	161	24
2022	All Soils	28,377	24.1	1.02	1.278	10.28	322	161	24
2023	All Soils	28,377	24.1	1.02	1.278	10.28	322	161	24
2024	All Soils	28,377	24.1	1.02	1.278	10.28	322	161	24
2025	All Soils	28,377	24.1	1.02	1.278	10.28	322	161	24
2026	All Soils	11,951	24.1	1.02	1.278	10.28	135	68	10
Total - Soil Remediation								872	131

Notes: (1) Assumes area is inactive for one year after prior year of active disturbance.

(2) Wind speeds at 10 meter level (U_{10}). Equates to equation #5 presented in AP-42 Section 13.2.5 (EPA 2006b).

(3) Threshold friction velocity value for scoria from AP-42 Section Table 13.2.5-2.

(4) Equates to equation #4 presented in AP-42 Section 13.2.5.

(5) Equates to equation #3 presented in AP-42 Section 13.2.5.

(6) Equal to Disturbed Area times P, then reduced by 50% to simulate use of soil stabilization measures.

Table 1.B-27. Total Emissions for Off-Road Equipment Usage - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.02	0.02	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.00	0.00	16	15
Demolition - Metal and Building Debris - RAD	0.08	0.56	0.84	0.00	0.04	0.04	122	111
Demolition - Concrete - HW								
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.00	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.00	0.00	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Demolition - Metal and Building Debris - Clean	0.08	0.55	0.82	0.00	0.04	0.04	116	106
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.05	0.36	0.58	0.00	0.03	0.02	70	64
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,138
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 78,000 cy	0.13	1.14	1.26	0.00	0.06	0.05	246	224
Excavation - Soil Category 3 = 2,000 cy	0.00	0.03	0.03	0.00	0.00	0.00	6	5
Excavation - Soil Category 4 = 110,000 cy	0.25	1.85	1.76	0.00	0.10	0.09	319	290
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.28	2.21	2.92	0.00	0.13	0.12	418	380
Soil Remediation - Generators	0.69	3.87	4.87	0.01	0.22	0.22	623	566
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.00	0.00	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.08	0.00	0.00	0.00	21	19
GW Remediation - HW Soil Removal	0.00	0.01	0.00	0.00	0.00	0.00	1	1
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Total Emissions - Off-Road Equipment	3.48	25.28	28.73	0.05	1.52	1.48	4,401	4,001

Notes: All of these emissions would occur in Ventura County.

Table 1.B-28. Total Emissions for On-road Vehicle Usage within Ventura County - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS

Construction Component/Activity	*Tons*							*CO2 (mt)*
	VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Demolition - All RAD Materials	0.01	0.02	0.09	0.00	0.00	0.00	17	16
Demolition - All HW Materials	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Demolition - All Clean Materials	0.01	0.02	0.11	0.00	0.00	0.00	24	22
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	84	76
Demolition - Generators								
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 78,000 cy	0.02	0.08	0.40	0.00	0.00	0.00	83	75
Excavation - Soil Category 3 = 2,000 cy	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Excavation - Soil Category 4 = 110,000 cy	0.03	0.11	0.56	0.00	0.01	0.00	117	106
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.13	0.54	3.13	0.01	0.06	0.03	863	783
Soil Remediation - Generators								
Soil Remediation - Worker Commutes	0.02	0.68	0.07	0.00	0.00	0.00	255	232
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal	0.00	0.01	0.03	0.00	0.00	0.00	6	5
GW Remediation - HW Soil Removal	0.00	0.00	0.02	0.00	0.00	0.00	4	4
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18	17
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4
Total Emissions - On-Road Vehicles (1)	0.24	2.17	4.93	0.02	0.09	0.05	1,745	1,583

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.B-29. Total Fugitive Dust Emissions - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD					0.67	0.13		
Demolition - Asphalt - RAD					0.19	0.04		
Demolition - Metal and Building Debris - RAD					0.63	0.12		
Demolition - Metal and Building Debris - HW					0.02	0.00		
Demolition - Concrete - Clean					0.03	0.01		
Demolition - Asphalt - Clean					0.03	0.01		
Demolition - Metal and Building Debris - Clean					0.61	0.12		
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling					3.66	1.03		
Demolition - Generators								
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 78,000 cy					9.00	1.57		
Excavation - Soil Category 3 = 2,000 cy					0.16	0.03		
Excavation - Soil Category 4 = 110,000 cy					8.69	1.81		
Soil Remediation - Inactive Disturbed Area					0.44	0.07		
Soil Remediation - Soil Backfilling					22.72	5.78		
Soil Remediation - Generators								
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction					0.14	0.04		
GW Remediation - Bedrock Removal					0.13	0.03		
GW Remediation - HW Soil Removal					0.01	0.00		
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling					0.08	0.02		
GW Remediation - Worker Commutes								
Total Emissions - Fugitive Dust					47.34	10.82		

Notes: All of these emissions would occur in Ventura County.

Table 1.B-30. Total Emissions within Ventura County by Activity - Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.69	0.15	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.19	0.04	16	15
Demolition - Metal and Building Debris - RAD	0.09	0.58	0.94	0.00	0.67	0.16	139	126
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.02	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.03	0.01	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.03	0.01	4	25
Demolition - Metal and Building Debris - Clean	0.08	0.56	0.93	0.00	0.65	0.16	141	128
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling	0.07	0.41	0.95	0.00	3.70	1.06	154	139
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,380
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 78,000 cy	0.15	1.22	1.66	0.00	9.07	1.62	329	299
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 110,000 cy	0.28	1.96	2.33	0.00	8.79	1.90	436	396
Soil Remediation - Inactive Disturbed Area					0.44	0.07		
Soil Remediation - Soil Backfilling	0.41	2.74	6.05	0.01	22.91	5.93	1,281	1,163
Soil Remediation - Generators	0.69	3.87	4.87	0.01	0.22	0.22	623	566
Soil Remediation - Worker Commutes	0.02	0.68	0.07	0.00	0.00	0.00	255	232
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.14	0.04	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.10	0.00	0.13	0.03	27	24
GW Remediation - HW Soil Removal	0.00	0.01	0.02	0.00	0.01	0.00	5	4
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling	0.00	0.03	0.09	0.00	0.08	0.02	22	20
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4.07
Total Emissions - On-Road Vehicles (1)	3.72	27.44	33.65	0.07	48.94	12.36	6,146	5,848

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.B-31. Peak Annual Emissions within Ventura County by Activity for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.01	0.06	0.08	0.00	0.14	0.03	15	13
Demolition - Asphalt - RAD	0.00	0.01	0.02	0.00	0.04	0.01	3	3
Demolition - Metal and Building Debris - RAD	0.02	0.12	0.19	0.00	0.13	0.03	28	25
Demolition - Metal and Building Debris - HW	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Demolition - Concrete - Clean	0.00	0.00	0.01	0.00	0.01	0.00	1	1
Demolition - Asphalt - Clean	0.00	0.00	0.00	0.00	0.01	0.00	1	1
Demolition - Metal and Building Debris - Clean	0.02	0.11	0.19	0.00	0.13	0.03	28	26
Demolition - Inactive Disturbed Area					0.04	0.01		
Demolition - Soil Backfilling	0.02	0.14	0.32	0.00	1.23	0.35	51	47
Demolition - Generators	0.61	4.73	4.99	0.01	0.29	0.29	785	712
Demolition - Worker Commutes	0.00	0.21	0.02	0.00	0.00	0.00	89	81
Excavation - Soil Categories 1 and 2 = 78,000 cy	0.01	0.09	0.12	0.00	4.07	0.73	23	21
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 110,000 cy	0.07	0.49	0.58	0.00	2.20	0.47	109	99
Soil Remediation - Inactive Disturbed Area					0.08	0.01		
Soil Remediation - Soil Backfilling	0.08	0.51	1.12	0.00	4.23	1.09	236	215
Soil Remediation - Generators	0.13	0.71	0.89	0.00	0.04	0.04	114	103
Soil Remediation - Worker Commutes	0.00	0.11	0.01	0.00	0.00	0.00	43	39
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal								
GW Remediation - HW Soil Removal								
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling								
GW Remediation - Worker Commutes								
Combined Alternatives Peak Annual Emissions (1)	0.98	7.33	8.57	0.02	8.42	1.88	1,534	1,393

Notes: (1) Based on disposal sites that require the greatest transport distance through Ventura County. Peak annual emissions of all pollutants except particulates would occur from Building Demolition and Soil Remediation in year 2021. Peak annual PM10/PM2.5 emissions (mainly as fugitive dust) would occur from Soil Remediation in year 2025 (color shading identifies contributing activities to these emissions).

Table 1.B-32. Total Emissions within Ventura County by Source Type for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,509
On-road Vehicles – Nearby Disposal Sites	0.04	0.73	0.64	0.00	0.01	0.01	392	357
On-road Vehicles – Distant Disposal Sites	0.04	0.72	0.57	0.00	0.01	0.01	376	341
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.15	16.78	18.40	0.03	6.97	2.48	3,152	2,866
Subtotal – Distant Disposal Sites	2.15	16.77	18.33	0.03	6.97	2.48	3,135	2,850
Soil Remediation								
Off-road Equipment	1.35	9.10	10.84	0.02	0.51	0.48	1,612	1,465
On-road Vehicles – Nearby Disposal Sites	0.20	1.41	4.18	0.01	0.07	0.04	1,321	1,201
On-road Vehicles – Distant Disposal Sites	0.20	1.41	4.18	0.01	0.07	0.04	1,321	1,201
Fugitive Dust					41.01	9.25		
Subtotal – Nearby Disposal Sites	1.55	10.51	15.01	0.03	41.59	9.78	2,932	2,666
Subtotal – Distant Disposal Sites	1.55	10.51	15.01	0.03	41.59	9.78	2,932	2,666
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
On-road Vehicles – Distant Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
Fugitive Dust					0.38	0.09		
Subtotal – Nearby Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Subtotal – Distant Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Total Emissions – Nearby Disposal Sites	3.72	27.44	33.65	0.07	48.94	12.36	6,146	5,587
Total Emissions – Distant Disposal Sites	3.72	27.43	33.58	0.07	48.94	12.35	6,130	5,572

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.B-33. Peak Annual Emissions within Ventura County by Source Type for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	0.70	5.36	5.93	0.01	0.34	0.33	921	837
On-road Vehicles – Nearby Disposal Sites	0.01	0.24	0.21	0.00	0.00	0.00	131	119
On-road Vehicles – Distant Disposal Sites	0.01	0.24	0.19	0.00	0.00	0.00	125	114
Fugitive Dust					1.99	0.49		
Subtotal – Nearby Disposal Sites	0.72	5.60	6.14	0.01	2.33	0.83	1,052	956
Subtotal – Distant Disposal Sites	0.72	5.60	6.12	0.01	2.33	0.83	1,046	951
Soil Remediation								
Off-road Equipment	0.25	1.69	1.99	0.00	0.09	0.09	294	267
On-road Vehicles – Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
On-road Vehicles – Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
Fugitive Dust					8.32	1.78		
Subtotal – Nearby Disposal Sites	0.29	1.94	2.76	0.01	8.43	1.88	534	486
Subtotal – Distant Disposal Sites	0.29	1.94	2.76	0.01	8.43	1.88	534	486
Groundwater Remediation								
Off-road Equipment								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Fugitive Dust								
Subtotal – Nearby Disposal Sites								
Subtotal – Distant Disposal Sites								
Peak Annual Emissions – Nearby Disposal Sites	1.01	7.54	8.90	0.02	8.43	1.88	1,586	1,442
Peak Annual Emissions – Distant Disposal Sites	1.01	7.54	8.87	0.02	8.43	1.88	1,581	1,437

Notes: (1) Peak annual emissions of all pollutants except particulates would occur from Building Demolition and Soil Remediation in year 2021. Peak annual PM10/PM2.5 emissions (mainly as fugitive dust) would occur from Soil Remediation in year 2025 (color shading identifies activities that contribute to these peak annual emissions).

Table 1.B-34. Total Emissions by Source Type for the Building Removal, Revised LUT Values, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,504
On-road Vehicles – Nearby Disposal Sites	0.19	1.92	5.77	0.02	0.14	0.08	2,070	1,878
On-road Vehicles – Distant Disposal Sites	0.48	2.98	16.83	0.05	0.41	0.24	5,075	4,604
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.30	17.97	23.54	0.05	7.10	2.55	4,829	4,381
Subtotal – Distant Disposal Sites	2.59	19.03	34.59	0.08	7.37	2.71	7,835	7,107
Soil Remediation								
Off-road Equipment	1.35	9.10	10.84	0.02	0.51	0.48	1,612	1,462
On-road Vehicles – Nearby Disposal Sites	0.95	5.17	32.43	0.11	0.89	0.46	11,773	10,681
On-road Vehicles – Distant Disposal Sites	2.66	12.22	98.37	0.34	2.81	1.45	35,558	32,258
Fugitive Dust					41.01	9.25		
Subtotal – Nearby Disposal Sites	2.30	14.28	43.27	0.13	42.41	10.20	13,385	12,143
Subtotal – Distant Disposal Sites	4.02	21.33	109.20	0.36	44.32	11.18	37,169	33,720
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.04	0.20	1.57	0.01	0.04	0.02	561	509
On-road Vehicles – Distant Disposal Sites	0.16	0.69	6.20	0.02	0.18	0.09	2,237	2,029
Fugitive Dust					0.38	0.09		
Subtotal – Nearby Disposal Sites	0.06	0.32	1.69	0.01	0.43	0.12	591	536
Subtotal – Distant Disposal Sites	0.18	0.82	6.33	0.02	0.57	0.19	2,266	2,056
Total Emissions – Nearby Disposal Sites	4.66	32.57	68.50	0.19	49.93	12.87	18,805	17,060
Total Emissions – Distant Disposal Sites	6.78	41.17	150.13	0.46	52.26	14.08	47,270	42,884

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.B-35. Peak Annual Emissions - Combined Building Demolition, Cleanup to Revised LUT Values, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.96	7.05	7.92	0.01	0.43	0.42	1,215	267
On-Road Vehicles - Nearby Disposal Sites	0.05	0.49	0.98	0.00	0.02	0.01	371	219
On-Road Vehicles - Distant Disposal Sites	0.05	0.49	0.96	0.00	0.02	0.01	366	219
Fugitive Dust					8.32	1.78		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.08	0.65	2.81	0.01	0.08	0.04	1,113	1,012
On-Road Vehicles - Distant Disposal Sites	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,758
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.13	0.53	5.00	0.02	0.14	0.07	1,743	1,585
On-Road Vehicles - Distant Disposal Sites	0.53	2.16	20.49	0.07	0.59	0.30	7,159	6,508
Peak Annual Emissions – Nearby Disposal Sites	1.22	8.72	16.70	0.04	8.99	2.33	4,443	4,039
Peak Annual Emissions – Distant Disposal Sites	1.68	10.60	34.52	0.10	9.50	2.59	10,673	9,702

Note: Peak annual emissions would occur in year 2021, except peak annual PM10/PM2.5 emissions (mainly fugitive dust) would occur in year 2025.

Table 1.B-36. Peak Annual Emissions - Soil Remediation Cleanup to Revised LUT Values Alternative - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.25	1.69	1.99	0.00	0.09	0.09	294	267
On-Road Vehicles - Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
On-Road Vehicles - Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	241	219
Fugitive Dust					8.32	1.78		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.06	0.38	2.39	0.01	0.07	0.04	905	823
On-Road Vehicles - Distant Disposal Sites	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.11	0.46	4.33	0.01	0.13	0.06	1,563	1,421
On-Road Vehicles - Distant Disposal Sites	0.47	1.91	17.88	0.06	0.52	0.27	6,448	5,862
Peak Annual Emissions – Nearby Disposal Sites	0.47	2.78	9.48	0.03	8.62	1.98	3,003	2,730
Peak Annual Emissions – Distant Disposal Sites	0.87	4.45	25.09	0.08	9.07	2.21	8,634	7,849

Note: Peak annual emissions would occur in year 2021, except peak annual PM10/PM2.5 emissions (mainly fugitive dust) would occur in year 2025.

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Attachment 1.C

Building Removal, Conservation of Natural Resources Residential Scenario, and Groundwater Treatment Alternatives

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Attachment 1.C
Emission Calculations for Implementation of the Building Removal, Soil Remediation Cleanup Conservation of Natural Resources (COR) Residential Scenario, and Groundwater Remediation Treatment Combined Alternatives - SSFL Area IV FEIS

Table 1.C-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to Conservation of Natural Resources (COR) Residential Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS

Table 1.C-2. Total Off-Road Equipment Activity Data for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-3. Total Emissions of Off-Road Equipment for the Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-4. Peak Annual Emissions of Off-Road Equipment for the Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-5. Total On-Road Vehicle Activity Data for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-6. Total Emissions for Onroad Vehicles - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS (page 1 of 2).

Table 1.C-7. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-8. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-9. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-10. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-11. Peak Annual Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-12. Peak Annual Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-13. Total Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-14. Total Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-15. Peak Annual Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-32. Summary of Total Emissions within Ventura County by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.C-33. Summary of Peak Annual Emissions within Ventura County by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-34. Total Emissions by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-35. Peak Annual Emissions - Combined Building Demolition, COR Residential Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

Table 1.C-36. Peak Annual Emissions - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to Conservation of Natural Resources (COR) Residential Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS

	Annual Percentage of Total Activity							
Construction Activity/Task	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*
Building Demolition								
Demolition - Concrete - RAD	40%	40%	20%					
Demolition - Asphalt - RAD	40%	40%	20%					
Demolition - Metal and Building Debris - RAD	40%	40%	20%					
Demolition - Concrete - HW	40%	40%	20%					
Demolition - Asphalt - HW								
Demolition - Metal and Building Debris - HW	40%	40%	20%					
Demolition - Concrete - Clean	40%	40%	20%					
Demolition - Asphalt - Clean	40%	40%	20%					
Demolition - Metal and Building Debris - Clean	40%	40%	20%					
Soil Backfilling		67%	33%					
Soil Remediation								
Excavation - Soil Categories 1 and 2 = 49,000 cy			65%	35%				
Excavation - Soil Category 3 = 2,000 cy			100%					
Excavation - Soil Category 4 = 1,000 cy			100%					
Soil Backfilling			67%	33%				
Groundwater Remediation								
Bedrock Removal = 1,700 cy				100%				
HW Soil Removal				20%	20%	20%	20%	20%
Soil Backfilling				100%				
Truck/Worker Vehicle Trips								
Total Tons - Annual Demo	9,303	9,303	4,651					
Total Tons - Annual Soil Category 4			1,495					
Total Tons - Annual Soil Categories 1-3			51,060	25,429				
Total Annual Demo Truck Trips	600	600	300					
Total Annual Soil Truck Trips - Soil Categories 1 and 2			2,090	1,106				
Total Annual Soil Truck Trips - Soil Category 3			130					
Total Annual Soil Truck Trips - Soil Category 4			65					
Total Annual GW Treatment Alt - Bedrock Truck Trips				338				
Total Annual GW Treatment Alt - HW Soils Truck Trips				24	24	24	24	24
Total Annual Soil Backfill Truck Trips - Demo		585	293					
Total Annual Soil Backfill Truck Trips - Soil Rem			1,714	829				
Total Annual Soil Backfill Truck Trips - GW Treatment Alt				196				
Total Annual Equipment Deliver/Remove Truck Trips - Demo	19	19						
Total Annual Equipment Deliver/Remove Truck Trips - Soils		26		20				
Total Annual Equipment Deliver/Remove Truck Trips - GWT Alt		19						
Total Annual DOE Truck Trips	619	1,249	4,592	2,513	24	24	24	24
Worker Round Trips - Annual (1)	15,000	15,200	13,870	6,470				

Notes: (1) Assumes 250 work days per year. Building Demolition and Soil Remediation would generate 60/25 round trips per day and GWT would generate substantially less.

Table 1.C-2. Total Off-Road Equipment Activity Data for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day (2)*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 49,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	200.0	79,980
Excavator - 350	286	D	0.38	1	5.0	543	200.0	108,680
Loader - 938G	158	D	0.36	1	3.0	171	200.0	34,128
Street Sweeper	115	D	0.46	1	2.0	106	200.0	21,160
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	200.0	53,200
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	8.2	2,176
Excavator - 350	286	D	0.38	1	4.0	435	8.2	3,549
Forklift	94	D	0.40	1	2.7	100	8.2	816
Loader - 902G	48	D	0.36	2	5.0	173	8.2	1,411
Street Sweeper	115	D	0.46	1	2.0	106	8.2	864
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	8.2	2,171
Excavation - Soil Category 4 = 1,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	4.1	1,088
Excavator - 350	286	D	0.38	1	4.0	435	4.1	1,774
Forklift	94	D	0.40	1	2.7	100	4.1	409
Loader - 902G	48	D	0.36	2	5.0	173	4.1	705
Street Sweeper	115	D	0.46	1	2.0	106	4.1	432
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	4.1	1,086
Soil Backfilling = 39,000 cy								
Dozer - D8	310	D	0.43	1	4	533	159.2	84,877
Grader - 160H	200	D	0.41	1	3	246	159.2	39,159
Loader - 938G	158	D	0.36	1	4	228	159.2	36,217
Street Sweeper	115	D	0.46	1	2	106	159.2	16,842
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	159.2	42,343
Generators								
Air Monitoring	7	D	0.74	4	24	497	573.1	284,966

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

(2) Assumes 16 truck loads per day for each activity.

Table 1.C-3. Total Emissions of Off-Road Equipment for the Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 49,000 cy							
Dozer - D8	0.02	0.18	0.29	0.00	0.01	0.01	41.83
Excavator - 350	0.02	0.13	0.16	0.00	0.01	0.00	56.26
Loader - 938G	0.01	0.13	0.12	0.00	0.01	0.01	17.72
Street Sweeper	0.01	0.09	0.09	0.00	0.01	0.01	11.06
Water Truck - 5000 Gallons	0.02	0.19	0.13	0.00	0.01	0.01	27.58
Subtotal	0.08	0.72	0.79	0.00	0.04	0.03	154.45
Excavation - Soil Category 3 = 2,000 cy							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	1.14
Excavator - 350	0.00	0.00	0.01	0.00	0.00	0.00	1.84
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.82
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	1.13
Subtotal	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4 = 1,000 cy							
Dozer - D8	0.00	0.00	0.00	0.00	0.00	0.00	0.57
Excavator - 350	0.00	0.00	0.00	0.00	0.00	0.00	0.92
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Loader - 902G	0.00	0.01	0.00	0.00	0.00	0.00	0.41
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.23
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.56
Subtotal	0.00	0.02	0.02	0.00	0.00	0.00	2.90
Soil Backfilling = 39,000 cy							
Dozer - D8	0.03	0.19	0.31	0.00	0.01	0.01	44.39
Grader - 160H	0.01	0.06	0.19	0.00	0.01	0.01	20.48
Loader - 938G	0.01	0.13	0.12	0.00	0.01	0.01	18.81
Street Sweeper	0.01	0.07	0.07	0.00	0.01	0.00	8.80
Water Truck - 5000 Gallons	0.01	0.16	0.10	0.00	0.01	0.00	21.95
Subtotal	0.08	0.60	0.80	0.00	0.04	0.03	114.43
Generators							
Air Monitoring	0.20	1.11	1.39	0.00	0.06	0.06	178.51
Subtotal	0.20	1.11	1.39	0.00	0.06	0.06	178.51
Total Emissions - Soil Remediation	0.36	2.48	3.03	0.01	0.14	0.13	456.09

Table 1.C-4. Peak Annual Emissions of Off-Road Equipment for the Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

	Tons per Year						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2	0.05	0.47	0.52	0.00	0.02	0.02	101
Excavation - Soil Category 3	0.00	0.03	0.03	0.00	0.00	0.00	6
Excavation - Soil Category 4	0.00	0.02	0.02	0.00	0.00	0.00	3
Soil Backfilling	0.05	0.41	0.54	0.00	0.02	0.02	77
Generators - Air Monitoring	0.13	0.71	0.89	0.00	0.04	0.04	114
Peak Annual Emissions - Soil Remediation	0.24	1.63	1.99	0.00	0.09	0.09	301

Note: Peak annual emissions would occur in year 2021.

Table 1.C-5. Total On-Road Vehicle Activity Data for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 49,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	3,196	5.5	0.75	63.3		17,576	2,397	202,121	
Total Miles - Clean Soils to Chiquita Canyon (2)	266.3					17,576	2,397	202,121	
Soil Haul Trucks - 23 tons/load to Westmorland	3,196	5.5	0.75	374	85	17,576	2,397	1,195,151	272,424
Total Miles - Clean Soils to Westmorland (2)	266.3					17,576	2,397	1,195,151	272,424
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 23 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	715	98	16,588	14,515
Total Miles - HW Soils to Buttonwillow (2)	10.8					715	98	16,588	14,515
Soil Haul Trucks - 23 tons/load to US Ecology Idaho	130	5.5	0.75	199.3	1,840	715	98	25,909	239,194
Total Miles - HW Soils to US Ecology Idaho (2)	10.8					715	98	25,909	239,194
Excavation - Soil Category 4 = 1,000 cy									
Soil Haul Trucks - 20 tons/load to NNSS	65	5.5	0.75	199.3	500	358	49	12,955	32,497
Total Miles - RAD Soils to NNSS (2)	5.4					358	49	12,955	32,497
Soil Haul Trucks - 23 tons/load to WCS Texas	65	5.5	0.75	374	1,945	358	49	24,310	126,441
Total Miles - RAD Soils to WCS Texas (2)	5.4					358	49	24,310	126,441
Soil Backfilling									
Soil Haul Trucks - Import (3)	2,543	5.5	40	60		13,989	101,739	152,609	
Total Miles - Backfill Soil (2)	212.0					13,989	101,739	152,609	
Construction - Worker commuting									
Passenger Car/Pickup	12,500	5.5	15	25		68,750	187,500	312,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for soil categories 1 and 2, 3, and 4 to present a reasonable bounding analysis.

(2) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(3) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.C-6. Total Emissions for Onroad Vehicles - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS (page 1 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Categories 1 and 2 = 49,000 cy - Chiquita Canyon							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.89
Soil Haul Truck - On-site Miles	0.01	0.05	0.23	0.00	0.00	0.00	45.71
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.02	0.00	0.00	0.00	4.67
Subtotal - Ventura County (1)	0.01	0.05	0.25	0.00	0.00	0.00	52.27
Subtotal - SCAB (2)	0.03	0.10	0.96	0.00	0.03	0.01	346.58
Subtotal - Remainder (3)							
Soil Categories 1 and 2 = 49,000 cy - Westmorland							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.89
Soil Haul Truck - On-site Miles	0.01	0.05	0.23	0.00	0.00	0.00	45.71
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.02	0.00	0.00	0.00	4.67
Subtotal - Ventura County (1)	0.01	0.05	0.25	0.00	0.00	0.00	52.27
Subtotal - SCAB (2)	0.15	0.61	5.68	0.02	0.17	0.08	2,049.32
Subtotal - Remainder (3)	0.03	0.14	1.29	0.00	0.04	0.02	467.13
Soil Category 3 = 2,000 cy - Buttonwillow							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.86
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.08	0.00	0.00	0.00	28.44
Subtotal - Remainder (3)	0.00	0.01	0.07	0.00	0.00	0.00	24.89
Soil Category 3 = 2,000 cy - US Ecology Idaho							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.86
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.12	0.00	0.00	0.00	44.43
Subtotal - Remainder (3)	0.03	0.12	1.14	0.00	0.03	0.02	410.15

Table 1.C-6. Total Emissions for Onroad Vehicles - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS (page 2 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Category 4 = 1,000 cy - NNSS							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Soil Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Subtotal - SCAB (2)	0.00	0.01	0.06	0.00	0.00	0.00	22.21
Subtotal - Remainder (3)	0.00	0.02	0.15	0.00	0.00	0.00	55.72
Soil Category 4 = 1,000 cy - WCS Texas							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Soil Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.93
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.10
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Subtotal - SCAB (2)	0.00	0.01	0.12	0.00	0.00	0.00	41.68
Subtotal - Remainder (3)	0.02	0.06	0.60	0.00	0.02	0.01	216.81
Soil Backfilling							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.50
Soil Haul Truck - On-site Miles	0.01	0.04	0.18	0.00	0.00	0.00	36.38
Soil Haul Truck - Off-site Miles within Ventura County	0.03	0.11	0.67	0.00	0.01	0.01	198.28
Subtotal - Ventura County (1)	0.04	0.15	0.86	0.00	0.02	0.01	236.17
Subtotal - SCAB (2)	0.02	0.08	0.73	0.00	0.02	0.01	261.68
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.00	0.08	0.01	0.00	0.00	0.00	27.13
Worker Vehicle - Off-site Miles within Ventura County	0.00	0.15	0.02	0.00	0.00	0.00	57.93
Subtotal - Ventura County (1)	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal - SCAB (2)	0.01	0.25	0.03	0.00	0.00	0.00	96.56

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.C-7. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.13	0.46	4.73	0.01	0.12	0.07	1,276.79
HW - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	5.23
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.18	0.00	0.00	0.00	42.18
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.19	1.92	5.77	0.02	0.14	0.08	2,069.57
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Chiquita Canyon	0.04	0.15	1.21	0.00	0.03	0.02	398.85
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.02	0.16	0.00	0.00	0.00	55.46
Soil Category 4 = 1,000 cy - NNSS	0.01	0.02	0.22	0.00	0.01	0.00	79.00
Soil Backfilling	0.06	0.22	1.58	0.00	0.04	0.02	497.84
Construction - Worker commuting	0.01	0.48	0.05	0.00	0.00	0.00	181.63
Subtotal	0.11	0.90	3.23	0.01	0.08	0.04	1,212.77
Groundwater Remediation							
Bedrock RAD - NNSS	0.03	0.13	1.15	0.00	0.03	0.02	410.79
HW Soil - Buttonwillow	0.01	0.03	0.29	0.00	0.01	0.00	102.38
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.04	0.20	1.57	0.01	0.04	0.02	561.13
Total Emissions to Nearby Disposal Sites	0.34	3.02	10.56	0.04	0.26	0.15	3,843.47

Table 1.C-8. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - EnergySolutions Utah	0.41	1.49	15.47	0.04	0.38	0.22	4,194.62
HW - USE Idaho	0.00	0.02	0.16	0.00	0.00	0.00	43.08
Clean - McKittrick/Kramer Metals	0.01	0.04	0.35	0.00	0.01	0.00	91.65
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.48	2.98	16.83	0.05	0.41	0.24	5,074.71
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Westmorland	0.19	0.80	7.23	0.02	0.21	0.11	2,568.72
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.14	1.27	0.00	0.04	0.02	456.70
Soil Category 4 = 1,000 cy - WCS Texas	0.02	0.08	0.72	0.00	0.02	0.01	259.56
Soil Backfilling	0.06	0.22	1.58	0.00	0.04	0.02	497.84
Construction - Worker commuting	0.01	0.48	0.05	0.00	0.00	0.00	181.63
Subtotal	0.31	1.71	10.85	0.04	0.30	0.16	3,964.44
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.10	0.40	3.75	0.01	0.11	0.06	1,349.69
HW Soil - US Ecology Idaho	0.06	0.25	2.33	0.01	0.07	0.03	839.21
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.16	0.69	6.20	0.02	0.18	0.09	2,236.85
Total Emissions to Nearby Disposal Sites	0.95	5.39	33.88	0.11	0.90	0.49	11,276.01

Table 1.C-9. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.11	0.00	0.00	0.00	24.41
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.73	0.64	0.00	0.01	0.01	392.28
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Chiquita Canyon	0.01	0.05	0.25	0.00	0.00	0.00	52.27
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 1,000 cy - NNSS	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Soil Backfilling	0.04	0.15	0.86	0.00	0.02	0.01	236.17
Construction - Worker commuting	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal	0.06	0.43	1.15	0.00	0.02	0.01	376.69
Groundwater Remediation							
Bedrock RAD - NNSS	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.10	1.19	1.90	0.01	0.03	0.02	801.12

Table 1.C-10. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - McKittrick/Kramer Metals	0.00	0.01	0.04	0.00	0.00	0.00	7.76
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.72	0.57	0.00	0.01	0.01	375.63
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Westmorland	0.01	0.05	0.25	0.00	0.00	0.00	52.27
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 1,000 cy - WCS Texas	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Soil Backfilling	0.04	0.15	0.86	0.00	0.02	0.01	236.17
Construction - Worker commuting	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal	0.06	0.43	1.15	0.00	0.02	0.01	376.69
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - US Ecology Idaho	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.10	1.18	1.83	0.01	0.03	0.02	784.47

Table 1.C-11. Peak Annual Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.02	0.00	0.00	0.00	4.88
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.18	0.00	0.00	0.00	125.30
Soil Remediation							
Soil Categories 1 and 2 - Chiquita Canyon	0.01	0.03	0.16	0.00	0.00	0.00	34.19
Soil Category 3 - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - NNSS	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.08
Total Emissions to Nearby Disposal Sites	0.05	0.49	0.95	0.00	0.02	0.01	364.38

Note: Peak annual emissions would occur in year 2021.

Table 1.C-12. Peak Annual Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - USE Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	1.55
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.17	0.00	0.00	0.00	121.97
Soil Remediation							
Soil Categories - Westmorland	0.01	0.03	0.16	0.00	0.00	0.00	34.19
Soil Category 3 - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - WCS Texas	0.00	0.00	0.01	0.00	0.00	0.00	1.06
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.08
Total Emissions to Distant Disposal Sites	0.05	0.48	0.94	0.00	0.02	0.01	361.05

Note: Peak annual emissions would occur in year 2021.

Table 1.C-13. Total Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.03	0.13	1.32	0.00	0.03	0.02	358.97
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.68
Clean - Chiquita Canyon/Gillibrand	0.00	0.01	0.07	0.00	0.00	0.00	17.77
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.06	0.87	1.81	0.01	0.04	0.03	774.46
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Chiquita Canyon	0.03	0.10	0.96	0.00	0.03	0.01	346.58
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28.44
Soil Category 4 = 1,000 cy - NNSS	0.00	0.01	0.06	0.00	0.00	0.00	22.21
Soil Backfilling	0.02	0.08	0.73	0.00	0.02	0.01	261.68
Construction - Worker commuting	0.01	0.25	0.03	0.00	0.00	0.00	96.56
Subtotal	0.05	0.45	1.85	0.01	0.05	0.03	755.47
Groundwater Remediation							
Bedrock RAD - NNSS	0.01	0.03	0.32	0.00	0.01	0.00	115.51
HW Soil - Buttonwillow	0.00	0.02	0.15	0.00	0.00	0.00	52.51
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.01	0.07	0.52	0.00	0.02	0.01	193.28
Total SCAB	0.13	1.39	4.19	0.02	0.11	0.06	1,723.21

Notes: (1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.C-14. Total Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - USE Idaho	0.07	0.24	2.48	0.01	0.06	0.04	673.62
HW - USE Idaho	0.00	0.00	0.02	0.00	0.00	0.00	4.19
Clean - McKittrick/Kramer Metals	0.01	0.03	0.27	0.00	0.01	0.00	73.36
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.10	1.01	3.18	0.01	0.08	0.05	1,146.21
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Westmorland	0.15	0.61	5.68	0.02	0.17	0.08	2,049.32
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44.43
Soil Category 4 = 1,000 cy - WCS Texas	0.00	0.01	0.12	0.00	0.00	0.00	41.68
Soil Backfilling	0.02	0.08	0.73	0.00	0.02	0.01	261.68
Construction - Worker commuting	0.01	0.25	0.03	0.00	0.00	0.00	96.56
Subtotal	0.18	0.96	6.67	0.02	0.19	0.10	2,493.67
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	216.76
HW Soil - US Ecology Idaho	0.01	0.02	0.23	0.00	0.01	0.00	82.02
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.02	0.11	0.89	0.00	0.03	0.01	324.04
Total SCAB	0.30	2.07	10.74	0.04	0.30	0.16	3,963.93

Notes: (1) Based on disposal sites that would require the highest amount of transport distance through the SCAB.

Table 1.C-15. Peak Annual Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.01	0.03	0.26	0.00	0.01	0.00	72	65
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	1	0
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.01	0.00	0.00	0.00	4	3
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.27	0.42	0.00	0.01	0.01	208	189
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon	0.02	0.07	0.63	0.00	0.02	0.01	227	206
Soil Category 3 - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28	26
Soil Category 4 - NNSS	0.00	0.01	0.06	0.00	0.00	0.00	22	20
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.04	0.26	1.27	0.00	0.04	0.02	502	456
Total SCAB	0.05	0.53	1.69	0.01	0.05	0.03	709.69	645.17

Note: Peak annual emissions would occur in year 2021.

(1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.C-16. Peak Annual Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.01	0.05	0.50	0.00	0.01	0.01	135	122
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Clean - McKittrick/Kramer Metals	0.00	0.01	0.05	0.00	0.00	0.00	15	13
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.30	0.69	0.00	0.02	0.01	282	256
Soil Remediation								
Soil Categories 1 and 2 - Westmorland	0.10	0.40	3.72	0.01	0.11	0.06	1,340	1,218
Soil Category 3 - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44	40
Soil Category 4 - WCS Texas	0.00	0.01	0.12	0.00	0.00	0.00	42	38
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Total SCAB	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,757

Notes: Peak annual emissions would occur in year 2021.

(1) Based on disposal sites that would require the highest amount of transport distance through the SCAB.

Table 1.C-17. Summary of Peak Daily Emissions within SCAB for On-Road Vehicles for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Building Demolition								
On-road Vehicles – Nearby Disposal Sites (2)								
On-road Vehicles – Distant Disposal Sites (3)								
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites (2)	1.6	6.5	60.6	0.2	1.8	0.9	21,871	
On-road Vehicles – Distant Disposal Sites (3)	3.0	12.2	113.8	0.4	3.3	1.7	41,043	
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	1.6	6.5	60.6	0.2	1.8	0.9	21,871	
Peak Daily Emissions – Distant Disposal Sites	3.0	12.2	113.8	0.4	3.3	1.7	41,043	

Notes: (1) Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT within the SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur during Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the NNSS.

(3) Based on 32 truck trips per day to either the Westmorland or WCS Texas sites, which would result in the largest VMT within the SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily trips to the WCS Texas site.

Table 1.C-18. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.09	0.32	3.31	0.01	0.08	0.05	900.48
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.35
Clean - Chiquita Canyon/Gillibrand							
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.09	0.32	3.32	0.01	0.08	0.05	902.82
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Chiquita Canyon							
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	24.89
Soil Category 4 = 1,000 cy - NNSS	0.00	0.02	0.15	0.00	0.00	0.00	55.72
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.01	0.02	0.22	0.00	0.01	0.00	80.61
Groundwater Remediation							
Bedrock RAD - NNSS	0.02	0.09	0.80	0.00	0.02	0.01	289.76
HW Soil - Buttonwillow	0.00	0.01	0.13	0.00	0.00	0.00	45.95
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.02	0.10	0.93	0.00	0.03	0.01	335.70
Total Outside Ventura County/SCAB	0.12	0.44	4.48	0.01	0.12	0.06	1,319.14

Notes: (1) Based on disposal sites that would require the least amount of transport distance outside Ventura County/SCAB.

Table 1.C-19. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.34	1.24	12.90	0.03	0.32	0.18	3,503.65
HW - USE Idaho	0.00	0.01	0.14	0.00	0.00	0.00	38.68
Clean - McKittrick/Kramer Metals	0.00	0.00	0.04	0.00	0.00	0.00	10.52
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.34	1.26	13.08	0.03	0.33	0.19	3,552.86
Soil Remediation							
Soil Categories 1 and 2 = 49,000 cy - Westmorland	0.03	0.14	1.29	0.00	0.04	0.02	467.13
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	410.15
Soil Category 4 = 1,000 cy - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	216.81
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.08	0.32	3.03	0.01	0.09	0.05	1,094.08
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.08	0.33	3.13	0.01	0.09	0.05	1,127.41
HW Soil - US Ecology Idaho	0.05	0.22	2.10	0.01	0.06	0.03	757.19
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.14	0.56	5.22	0.02	0.15	0.08	1,884.60
Total Outside Ventura County/SCAB	0.56	2.14	21.34	0.06	0.57	0.31	6,531.54

Notes: (1) Based on disposal sites that would require the greatest amount of transport distance outside Ventura County/SCAB.

Table 1.C-20. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.02	0.06	0.66	0.00	0.02	0.01	180	164
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clean - Chiquita Canyon/Gillibrand								
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.02	0.06	0.66	0.00	0.02	0.01	181	164
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon								
Soil Category 3 - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	25	23
Soil Category 4 - NNSS	0.00	0.02	0.15	0.00	0.00	0.00	56	51
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.01	0.02	0.22	0.00	0.01	0.00	81	73
Total Outside Ventura County/SCAB	0.02	0.09	0.89	0.00	0.02	0.01	261.17	237.43

Notes: (1) Based on disposal sites that would require least amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.C-21. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.07	0.25	2.58	0.01	0.06	0.04	701	637
HW - US Ecology Idaho	0.00	0.00	0.03	0.00	0.00	0.00	8	7
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.07	0.25	2.62	0.01	0.07	0.04	711	646
Soil Remediation								
Soil Categories - Westmorland	0.02	0.09	0.85	0.00	0.02	0.01	306	278
Soil Category 3 - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	410	373
Soil Category 4 - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	217	197
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.07	0.28	2.58	0.01	0.08	0.04	932	848
Total Outside Ventura County/SCAB	0.14	0.53	5.20	0.02	0.14	0.08	1,643.04	1,493.67

Notes: (1) Based on disposal sites that require the greatest amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.C-22. Summary of Peak Daily Emissions Outside Ventura County/SCAB for On-Road Vehicles for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Building Demolition								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites (2)	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
On-road Vehicles – Distant Disposal Sites (3)	15.4	63.3	591.8	2.0	17.2	8.8	213,473	
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
Peak Daily Emissions – Distant Disposal Sites	15.4	63.3	591.8	2.0	17.2	8.8	213,473	

Notes: (1) Peak annual emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT outside VC/SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the NNSS.

(3) Based on 32 truck trips per day to the WCS Texas site, which would result in the largest VMT outside VC/SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Soil Remediation. However, Building Demolition also could generate the same number of daily truck trips to the WCS Texas site.

Table 1.C-23. Fugitive Dust Activity Data for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS

Construction Activity-Soil Type/Equipment Type	*Throughput (Tons)*	*On-site Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Excavation - Soil Categories 1 and 2 = 49,000 cy						
Actively Disturbed Ground				3.0	200.0	600
Vacated Disturbed Ground				4.5	200.0	900
Truck Loading - Soil	73,500					
Paved Road Dust - Soil Haul Truck		5.5	3,196			17,576
Excavation - Soil Category 3 = 2,000 cy						
Actively Disturbed Ground				1.0	8.2	8
Vacated Disturbed Ground				1.5	8.2	12
Truck Loading - Soil	3,000					
Paved Road Dust - Soil Haul Truck		5.5	130			715
Excavation - Soil Category 4 = 1,000 cy						
Actively Disturbed Ground				1.0	4.1	4
Vacated Disturbed Ground				1.5	4.1	6
Truck Loading - Soil	1,500					
Paved Road Dust - Soil Haul Truck		5.5	65			358
Inactive Disturbed Area						
Total Acreage per Year				6.3	573.1	3,610
Soil Backfilling						
Actively Disturbed Ground				1.0	159.2	159
Stockpile Wind Erosion				0.5	573.1	287
Truck Unloading - Soil	58,500					
Paved Road Dust - Soil Haul Truck		5.5	2,543			13,989

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.C-24. Total Fugitive Dust Emissions for Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 49,000 cy							
Actively Disturbed Ground					2.98	0.30	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					2.87	0.70	
Subtotal					5.85	1.00	
Excavation - Soil Category 3 = 2,000 cy							
Actively Disturbed Ground					0.04	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.12	0.03	
Subtotal					0.16	0.03	
Excavation - Soil Category 4 = 1,000 cy							
Actively Disturbed Ground					0.02	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.06	0.01	
Subtotal					0.08	0.02	
Inactive Disturbed Area							
Total Area					0.11	0.02	
Soil Backfilling							
Actively Disturbed Ground					0.79	0.08	
Stockpile Wind Erosion (2)					3.29	0.99	
Truck Unloading - Soil					0.003	0.001	
Paved Road Dust - Soil Haul Truck					2.29	0.56	
Subtotal					6.37	1.63	

Table 1.C-25. Peak Annual Fugitive Dust Emissions for Soil Remediation COR Residential Scenario Alt. - SSFL Area IV FEIS.

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2					3.83	0.66	
Excavation - Soil Category 3					0.16	0.03	
Excavation - Soil Category 4					0.08	0.02	
Inactive Disturbed Area					0.08	0.01	
Soil Backfilling					4.29	1.10	
Subtotal					8.43	1.81	

Note: Peak annual fugitive dust emissions would occur in year 2021.

Table 1.C-26. Emission Estimates for Windblown Dust from Inactive Disturbed Areas - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS

Year	Activity (1)	Annual Disturbed Area (m^2) (1)	U_{10} (m/s) (2)	Threshold Friction Velocity u_t (m/s) (3)	Friction Velocity u* (m/s) (4)	P Uncontrolled (Gm/m^2) (5)	Controlled Pounds/Event (6)		
							PM	PM10	PM2.5
2019	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2020	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2021	Demo Buildings	8,097	24.1	1.02	1.278	10.28	92	46	7
Total - Demolition								229	34
2021	All Soils	27,285	24.1	1.02	1.278	10.28	309	155	23
2022	All Soils	13,198	24.1	1.02	1.278	10.28	150	75	11
Total - Soil Remediation								229	34

Notes: (1) Assumes area is inactive for one year after prior year of active disturbance.

(2) Wind speeds at 10 meter level (U_{10}). Equates to equation #5 presented in AP-42 Section 13.2.5 (EPA 2006b).

(3) Threshold friction velocity value for scoria from AP-42 Section Table 13.2.5-2.

(4) Equates to equation #4 presented in AP-42 Section 13.2.5.

(5) Equates to equation #3 presented in AP-42 Section 13.2.5.

(6) Equal to Disturbed Area times P, then reduced by 50% to simulate use of soil stabilization measures.

Table 1.C-27. Summary of Total Emissions for Off-Road Equipment Usage Soil - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.02	0.02	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.00	0.00	16	15
Demolition - Metal and Building Debris - RAD	0.08	0.56	0.84	0.00	0.04	0.04	122	111
Demolition - Concrete - HW								
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.00	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.00	0.00	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Demolition - Metal and Building Debris - Clean	0.08	0.55	0.82	0.00	0.04	0.04	116	106
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.05	0.36	0.58	0.00	0.03	0.02	70	64
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,138
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 49,000 cy	0.08	0.72	0.79	0.00	0.04	0.03	154	140
Excavation - Soil Category 3 = 2,000 cy	0.00	0.03	0.03	0.00	0.00	0.00	6	5
Excavation - Soil Category 4 = 1,000 cy	0.00	0.02	0.02	0.00	0.00	0.00	3	3
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.08	0.60	0.80	0.00	0.04	0.03	114	104
Soil Remediation - Generators	0.20	1.11	1.39	0.00	0.06	0.06	179	162
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.00	0.00	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.08	0.00	0.00	0.00	21	19
GW Remediation - HW Soil Removal	0.00	0.01	0.00	0.00	0.00	0.00	1	1
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Total Emissions - Off-Road Equipment	2.49	18.65	20.92	0.04	1.15	1.13	3,245	2,950

Notes: All of these emissions would occur in Ventura County.

Table 1.C-28. Summary of Total Emissions for On-road Vehicle Usage within Ventura County - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - All RAD Materials	0.01	0.02	0.09	0.00	0.00	0.00	17	16
Demolition - All HW Materials	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Demolition - All Clean Materials	0.01	0.02	0.11	0.00	0.00	0.00	24	22
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	84	76
Demolition - Generators								
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 49,000 cy	0.01	0.05	0.25	0.00	0.00	0.00	52	47
Excavation - Soil Category 3 = 2,000 cy	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Excavation - Soil Category 4 = 1,000 cy	0.00	0.00	0.01	0.00	0.00	0.00	1	1
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.04	0.15	0.86	0.00	0.02	0.01	236	214
Soil Remediation - Generators								
Soil Remediation - Worker Commutes	0.01	0.23	0.02	0.00	0.00	0.00	85	77
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal	0.00	0.01	0.03	0.00	0.00	0.00	6	5
GW Remediation - HW Soil Removal	0.00	0.00	0.02	0.00	0.00	0.00	4	4
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18	17
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4
Total Emissions - On-Road Vehicles (1)	0.10	1.19	1.90	0.01	0.03	0.02	801	727

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.C-29. Summary of Total Fugitive Dust Emissions - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD					0.67	0.13		
Demolition - Asphalt - RAD					0.19	0.04		
Demolition - Metal and Building Debris - RAD					0.63	0.12		
Demolition - Metal and Building Debris - HW					0.02	0.00		
Demolition - Concrete - Clean					0.03	0.01		
Demolition - Asphalt - Clean					0.03	0.01		
Demolition - Metal and Building Debris - Clean					0.61	0.12		
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling					3.66	1.03		
Demolition - Generators								
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 49,000 cy					5.85	1.00		
Excavation - Soil Category 3 = 2,000 cy					0.16	0.03		
Excavation - Soil Category 4 = 1,000 cy					0.08	0.02		
Soil Remediation - Inactive Disturbed Area					0.11	0.02		
Soil Remediation - Soil Backfilling					6.37	1.63		
Soil Remediation - Generators								
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction					0.14	0.04		
GW Remediation - Bedrock Removal					0.13	0.03		
GW Remediation - HW Soil Removal					0.01	0.00		
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling					0.08	0.02		
GW Remediation - Worker Commutes								
Total Emissions - Fugitive Dust					18.91	4.27		

Notes: All of these emissions would occur in Ventura County.

Table 1.C-30. Summary of Total Emissions within Ventura County by Activity - Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.69	0.15	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.19	0.04	16	15
Demolition - Metal and Building Debris - RAD	0.09	0.58	0.94	0.00	0.67	0.16	139	126
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.02	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.03	0.01	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.03	0.01	4	25
Demolition - Metal and Building Debris - Clean	0.08	0.56	0.93	0.00	0.65	0.16	141	128
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling	0.07	0.41	0.95	0.00	3.70	1.06	154	139
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,380
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 49,000 cy	0.09	0.77	1.04	0.00	5.89	1.04	207	188
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 1,000 cy	0.00	0.02	0.02	0.00	0.08	0.02	4	4
Soil Remediation - Inactive Disturbed Area					0.11	0.02		
Soil Remediation - Soil Backfilling	0.11	0.75	1.66	0.00	6.42	1.67	351	318
Soil Remediation - Generators	0.20	1.11	1.39	0.00	0.06	0.06	179	162
Soil Remediation - Worker Commutes	0.01	0.23	0.02	0.00	0.00	0.00	85	77
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.14	0.04	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.10	0.00	0.13	0.03	27	24
GW Remediation - HW Soil Removal	0.00	0.01	0.02	0.00	0.01	0.00	5	4
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling	0.00	0.03	0.09	0.00	0.08	0.02	22	20
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4.07
Total Emissions - On-Road Vehicles (1)	2.59	19.84	22.82	0.04	20.09	5.42	4,047	3,941

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.C-31. Summary of Peak Annual Emissions within Ventura County by Activity for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.01	0.06	0.08	0.000	0.14	0.03	15	13
Demolition - Asphalt - RAD	0.00	0.01	0.02	0.000	0.04	0.01	3	3
Demolition - Metal and Building Debris - RAD	0.02	0.12	0.19	0.000	0.13	0.03	28	25
Demolition - Metal and Building Debris - HW	0.00	0.00	0.00	0.000	0.00	0.00	1	1
Demolition - Concrete - Clean	0.00	0.00	0.01	0.000	0.01	0.00	1	1
Demolition - Asphalt - Clean	0.00	0.00	0.00	0.000	0.01	0.00	1	1
Demolition - Metal and Building Debris - Clean	0.02	0.11	0.19	0.000	0.13	0.03	28	26
Demolition - Inactive Disturbed Area					0.04	0.01		
Demolition - Soil Backfilling	0.02	0.14	0.32	0.001	1.23	0.35	51	47
Demolition - Generators	0.61	4.73	4.99	0.009	0.29	0.29	785	712
Demolition - Worker Commutes	0.00	0.21	0.02	0.001	0.00	0.00	89	81
Excavation - Soil Categories 1 and 2 = 49,000 cy	0.06	0.50	0.68	0.001	3.85	0.68	135	123
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.000	0.16	0.03	8	7
Excavation - Soil Category 4 = 1,000 cy	0.00	0.02	0.02	0.000	0.08	0.02	4	4
Soil Remediation - Inactive Disturbed Area					0.08	0.01		
Soil Remediation - Soil Backfilling	0.08	0.51	1.12	0.002	4.33	1.12	236	214
Soil Remediation - Generators	0.13	0.71	0.89	0.002	0.04	0.04	114	103
Soil Remediation - Worker Commutes	0.00	0.11	0.01	0.000	0.00	0.00	43	39
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal								
GW Remediation - HW Soil Removal								
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling								
GW Remediation - Worker Commutes								
Combined Alternatives Peak Annual Emissions (1)	0.96	7.27	8.57	0.02	10.56	2.66	1,541	1,398

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County. Peak annual emissions of all pollutants would occur from Building Demolition and Soil Remediation in year 2021.

Table 1.C-32. Summary of Total Emissions within Ventura County by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,509
On-road Vehicles – Nearby Disposal Sites	0.04	0.73	0.64	0.00	0.01	0.01	392	357
On-road Vehicles – Distant Disposal Sites	0.04	0.72	0.57	0.00	0.01	0.01	376	341
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.15	16.78	18.40	0.03	6.97	2.48	3,152	2,866
Subtotal – Distant Disposal Sites	2.15	16.77	18.33	0.03	6.97	2.48	3,135	2,850
Soil Remediation								
Off-road Equipment	0.36	2.48	3.03	0.01	0.14	0.13	456	415
On-road Vehicles – Nearby Disposal Sites	0.06	0.43	1.15	0.00	0.02	0.01	377	342
On-road Vehicles – Distant Disposal Sites	0.06	0.43	1.15	0.00	0.02	0.01	377	342
Fugitive Dust					12.57	2.70		
Subtotal – Nearby Disposal Sites	0.42	2.91	4.18	0.01	12.73	2.84	833	757
Subtotal – Distant Disposal Sites	0.42	2.91	4.18	0.01	12.73	2.84	833	757
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
On-road Vehicles – Distant Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
Fugitive Dust					0.38	0.09		
Subtotal – Nearby Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Subtotal – Distant Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Total Emissions – Nearby Disposal Sites	2.59	19.84	22.82	0.04	20.09	5.42	4,047	3,679
Total Emissions – Distant Disposal Sites	2.59	19.83	22.75	0.04	20.09	5.42	4,030	3,664

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.C-33. Summary of Peak Annual Emissions within Ventura County by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	0.70	5.36	5.93	0.01	0.34	0.33	921	837
On-road Vehicles – Nearby Disposal Sites	0.01	0.24	0.21	0.00	0.00	0.00	131	119
On-road Vehicles – Distant Disposal Sites	0.01	0.24	0.19	0.00	0.00	0.00	125	114
Fugitive Dust					1.99	0.49		
Subtotal – Nearby Disposal Sites	0.72	5.60	6.14	0.011	2.33	0.83	1,052	956
Subtotal – Distant Disposal Sites	0.72	5.60	6.12	0.011	2.33	0.83	1,046	951
Soil Remediation								
Off-road Equipment	0.24	1.63	1.99	0.004	0.09	0.09	301	273
On-road Vehicles – Nearby Disposal Sites	0.04	0.25	0.77	0.002	0.01	0.01	239	217
On-road Vehicles – Distant Disposal Sites	0.04	0.25	0.77	0.002	0.01	0.01	239	217
Fugitive Dust					8.43	1.81		
Subtotal – Nearby Disposal Sites	0.27	1.88	2.76	0.01	8.54	1.91	540	491
Subtotal – Distant Disposal Sites	0.27	1.88	2.76	0.01	8.54	1.91	540	491
Groundwater Remediation								
Off-road Equipment								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Fugitive Dust								
Subtotal – Nearby Disposal Sites								
Subtotal – Distant Disposal Sites								
Peak Annual Emissions – Nearby Disposal Sites	0.99	7.48	8.90	0.02	10.86	2.73	1,592	1,447
Peak Annual Emissions – Distant Disposal Sites	0.99	7.48	8.88	0.02	10.86	2.73	1,586	1,442

Notes: Peak annual emissions of all pollutants would occur from Building Demolition and Soil Remediation activities in year 2021.

Table 1.C-34. Total Emissions by Source Type for the Building Removal, COR Residential Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,504
On-road Vehicles – Nearby Disposal Sites	0.19	1.92	5.77	0.02	0.14	0.08	2,070	1,878
On-road Vehicles – Distant Disposal Sites	0.48	2.98	16.83	0.05	0.41	0.24	5,075	4,604
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.30	17.97	23.54	0.05	7.10	2.55	4,829	4,381
Subtotal – Distant Disposal Sites	2.59	19.03	34.59	0.08	7.37	2.71	7,835	7,107
Soil Remediation								
Off-road Equipment	0.36	2.48	3.03	0.01	0.14	0.13	456	414
On-road Vehicles – Nearby Disposal Sites	0.11	0.90	3.23	0.01	0.08	0.04	1,213	1,100
On-road Vehicles – Distant Disposal Sites	0.31	1.71	10.85	0.04	0.30	0.16	3,964	3,597
Fugitive Dust					12.57	2.70		
Subtotal – Nearby Disposal Sites	0.48	3.38	6.26	0.02	12.79	2.87	1,669	1,514
Subtotal – Distant Disposal Sites	0.67	4.19	13.88	0.04	13.01	2.98	4,421	4,010
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.04	0.20	1.57	0.01	0.04	0.02	561	509
On-road Vehicles – Distant Disposal Sites	0.16	0.69	6.20	0.02	0.18	0.09	2,237	2,029
Fugitive Dust					0.67	0.17		
Subtotal – Nearby Disposal Sites	0.06	0.32	1.69	0.01	0.72	0.19	591	536
Subtotal – Distant Disposal Sites	0.18	0.82	6.33	0.02	0.86	0.26	2,266	2,056
Total Emissions – Nearby Disposal Sites	2.83	21.67	31.49	0.07	20.61	5.62	7,089	6,431
Total Emissions – Distant Disposal Sites	3.44	24.04	54.81	0.14	21.24	5.96	14,521	13,174

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.C-35. Peak Annual Emissions - Combined Building Demolition, COR Residential Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.94	6.99	7.92	0.01	0.43	0.42	1,222	273
On-Road Vehicles - Nearby Disposal Sites	0.05	0.49	0.98	0.00	0.02	0.01	370	217
On-Road Vehicles - Distant Disposal Sites	0.05	0.49	0.96	0.00	0.02	0.01	364	217
Fugitive Dust					10.42	2.31		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.05	0.53	1.69	0.01	0.05	0.03	710	645
On-Road Vehicles - Distant Disposal Sites	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,757
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.02	0.09	0.89	0.00	0.02	0.01	261	237
On-Road Vehicles - Distant Disposal Sites	0.14	0.53	5.20	0.02	0.14	0.08	1,643	1,494
Peak Annual Emissions – Nearby Disposal Sites	1.07	8.10	11.48	0.03	10.93	2.77	2,562	2,329
Peak Annual Emissions – Distant Disposal Sites	1.27	8.91	19.23	0.05	11.15	2.89	5,162	4,693

Note: Peak annual emissions would occur in year 2021.

Table 1.C-36. Peak Annual Emissions - Soil Remediation COR Residential Scenario Alternative - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.24	1.63	1.99	0.00	0.09	0.09	301	273
On-Road Vehicles - Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	239	217
On-Road Vehicles - Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	239	217
Fugitive Dust					8.43	1.81		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.04	0.26	1.27	0.00	0.04	0.02	502	456
On-Road Vehicles - Distant Disposal Sites	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.01	0.02	0.22	0.00	0.01	0.00	81	73
On-Road Vehicles - Distant Disposal Sites	0.07	0.28	2.58	0.01	0.08	0.04	932	848
Peak Annual Emissions – Nearby Disposal Sites	0.31	2.16	4.26	0.01	8.58	1.93	1,122	1,020
Peak Annual Emissions – Distant Disposal Sites	0.46	2.76	9.80	0.03	8.74	2.01	3,123	2,839

Note: Peak annual emissions would occur in year 2021.

Attachment 1.C-OS

Building Removal, Conservation of Natural Resources Open Space Scenario, and Groundwater Treatment Alternatives

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Attachment 1.C-OS
Emission Calculations for Implementation of the Building Removal, Soil Remediation Cleanup to Conservation of Natural Resources (COR) Open Space Scenario, and Groundwater Remediation Treatment Combined Alternatives - SSFL Area IV FEIS

Table 1.C-OS-32. Summary of Total Emissions within Ventura County by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

Table 1.C-OS-33. Summary of Peak Annual Emissions within Ventura County by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-OS-34. Total Emissions by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

Table 1.C-OS-35. Peak Annual Emissions - Combined Building Demolition, COR Open Space Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

Table 1.C-OS-36. Peak Annual Emissions - Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

Table 1.C-OS-1. Annual Schedule for the Building Removal, Soil Remediation Cleanup to Conservation of Natural Resources (COR) Open Space Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS

	Annual Percentage of Total Activity							
Construction Activity/Task	*2019*	*2020*	*2021*	*2022*	*2023*	*2024*	*2025*	*2026*
Building Demolition								
Demolition - Concrete - RAD	40%	40%	20%					
Demolition - Asphalt - RAD	40%	40%	20%					
Demolition - Metal and Building Debris - RAD	40%	40%	20%					
Demolition - Concrete - HW	40%	40%	20%					
Demolition - Asphalt - HW								
Demolition - Metal and Building Debris - HW	40%	40%	20%					
Demolition - Concrete - Clean	40%	40%	20%					
Demolition - Asphalt - Clean	40%	40%	20%					
Demolition - Metal and Building Debris - Clean	40%	40%	20%					
Soil Backfilling		67%	33%					
Soil Remediation								
Excavation - Soil Categories 1 and 2 = 78,000 cy			91%	9%				
Excavation - Soil Category 3 = 2,000 cy			100%					
Excavation - Soil Category 4 = 110,000 cy			100%					
Soil Backfilling			92%	8%				
Groundwater Remediation								
Bedrock Removal = 1,700 cy				100%				
HW Soil Removal				20%	20%	20%	20%	20%
Soil Backfilling				100%				
Truck/Worker Vehicle Trips								
Total Tons - Annual Demo	9,303	9,303	4,651					
Total Tons - Annual Soil Category 4			299					
Total Tons - Annual Soil Categories 1-3			52,261	4,729				
Total Annual Demo Truck Trips	600	600	300					
Total Annual Soil Truck Trips - Soil Categories 1 and 2			2,142	206				
Total Annual Soil Truck Trips - Soil Category 3			130					
Total Annual Soil Truck Trips - Soil Category 4			13					
Total Annual GW Treatment Alt - Bedrock Truck Trips				338				
Total Annual GW Treatment Alt - HW Soils Truck Trips				24	24	24	24	24
Total Annual Soil Backfill Truck Trips - Demo		585	293					
Total Annual Soil Backfill Truck Trips - Soil Rem			1,714	154				
Total Annual Soil Backfill Truck Trips - GW Treatment Alt				196				
Total Annual Equipment Deliver/Remove Truck Trips - Demo	19	19						
Total Annual Equipment Deliver/Remove Truck Trips - Soils		26		20				
Total Annual Equipment Deliver/Remove Truck Trips - GWT Alt		19						
Total Annual DOE Truck Trips	619	1,249	4,593	938	24	24	24	24
Worker Round Trips - Annual (1)	15,000	15,200	13,870	6,470				

Notes: (1) Assumes 250 work days per year. Building Demolition and Soil Remediation would generate 60/25 round trips per day and GWT would generate substantially less.

Table 1.C-OS-2. Total Off-Road Equipment Activity Data for Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor (1)*	*Number Active*	*Hours/ Day (2)*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 36,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	146.9	58,761
Excavator - 350	286	D	0.38	1	5.0	543	146.9	79,847
Loader - 938G	158	D	0.36	1	3.0	171	146.9	25,074
Street Sweeper	115	D	0.46	1	2.0	106	146.9	15,546
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	146.9	39,086
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2.0	267	8.2	2,176
Excavator - 350	286	D	0.38	1	4.0	435	8.2	3,549
Forklift	94	D	0.40	1	2.7	100	8.2	816
Loader - 902G	48	D	0.36	2	5.0	173	8.2	1,411
Street Sweeper	115	D	0.46	1	2.0	106	8.2	864
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	8.2	2,171
Excavation - Soil Category 4 = 200 cy								
Dozer - D8	310	D	0.43	1	2.0	267	0.8	218
Excavator - 350	286	D	0.38	1	4.0	435	0.8	355
Forklift	94	D	0.40	1	2.7	100	0.8	82
Loader - 902G	48	D	0.36	2	5.0	173	0.8	141
Street Sweeper	115	D	0.46	1	2.0	106	0.8	86
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	0.8	217
Soil Backfilling = 28,650 cy								
Dozer - D8	310	D	0.43	1	4	533	116.9	62,352
Grader - 160H	200	D	0.41	1	3	246	116.9	28,767
Loader - 938G	158	D	0.36	1	4	228	116.9	26,606
Street Sweeper	115	D	0.46	1	2	106	116.9	12,372
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	116.9	31,106
Generators								
Air Monitoring	7	D	0.74	4	24	497	438.0	217,809

Notes: (1) Data from the 2011 Off-road Emissions Inventory Model (California Air Resources Board [ARB] 2012).

(2) Assumes 16 truck loads per day for each activity.

Table 1.C-OS-3. Total Emissions of Off-Road Equipment for the Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

	Tons						
Construction Activity/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 36,000 cy							
Dozer - D8	0.02	0.13	0.21	0.00	0.01	0.01	30.73
Excavator - 350	0.01	0.10	0.12	0.00	0.00	0.00	41.33
Loader - 938G	0.01	0.09	0.09	0.00	0.00	0.00	13.02
Street Sweeper	0.01	0.06	0.07	0.00	0.00	0.00	8.12
Water Truck - 5000 Gallons	0.01	0.14	0.10	0.00	0.00	0.00	20.26
Subtotal	0.06	0.53	0.58	0.00	0.03	0.02	113.47
Excavation - Soil Category 3 = 2,000 cy							
Dozer - D8	0.00	0.00	0.01	0.00	0.00	0.00	1.14
Excavator - 350	0.00	0.00	0.01	0.00	0.00	0.00	1.84
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.43
Loader - 902G	0.00	0.01	0.01	0.00	0.00	0.00	0.82
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.45
Water Truck - 5000 Gallons	0.00	0.01	0.01	0.00	0.00	0.00	1.13
Subtotal	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4 = 200 cy							
Dozer - D8	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Excavator - 350	0.00	0.00	0.00	0.00	0.00	0.00	0.18
Forklift	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Loader - 902G	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Street Sweeper	0.00	0.00	0.00	0.00	0.00	0.00	0.05
Water Truck - 5000 Gallons	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Subtotal	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Soil Backfilling = 28,650 cy							
Dozer - D8	0.02	0.14	0.23	0.00	0.01	0.01	32.61
Grader - 160H	0.01	0.04	0.14	0.00	0.00	0.00	15.05
Loader - 938G	0.01	0.10	0.09	0.00	0.01	0.00	13.82
Street Sweeper	0.01	0.05	0.05	0.00	0.00	0.00	6.47
Water Truck - 5000 Gallons	0.01	0.11	0.08	0.00	0.00	0.00	16.13
Subtotal	0.06	0.44	0.59	0.00	0.03	0.02	84.07
Generators							
Air Monitoring	0.15	0.85	1.07	0.00	0.05	0.05	136.44
Subtotal	0.15	0.85	1.07	0.00	0.05	0.05	136.44
Total Emissions - Soil Remediation	0.27	1.86	2.27	0.00	0.10	0.10	340.35

Table 1.C-OS-4. Peak Annual Emissions of Off-Road Equipment for the Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

	Tons per Year						
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2	0.05	0.48	0.53	0.00	0.02	0.02	103.54
Excavation - Soil Category 3	0.00	0.03	0.03	0.00	0.00	0.00	5.79
Excavation - Soil Category 4	0.00	0.00	0.00	0.00	0.00	0.00	0.58
Soil Backfilling	0.05	0.41	0.54	0.00	0.02	0.02	77.13
Generators - Air Monitoring	0.13	0.71	0.89	0.00	0.04	0.04	113.70
Peak Annual Emissions - Soil Remediation	0.24	1.63	1.99	0.00	0.09	0.09	300.74

Note: Peak annual emissions would occur in year 2021.

Table 1.C-OS-5. Total On-Road Vehicle Activity Data for Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 36,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	2,348	5.5	0.75	63.3		12,913	1,761	148,500	
Total Miles - Clean Soils to Chiquita Canyon (2)	195.7					12,913	1,761	148,500	
Soil Haul Trucks - 23 tons/load to Westmorland	2,348	5.5	0.75	374	85	12,913	1,761	878,087	200,152
Total Miles - Clean Soils to Westmorland (2)	195.7					12,913	1,761	878,087	200,152
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 23 tons/load to Buttonwillow	130.0	5.5	0.75	127.6	112	715	98	16,588	14,515
Total Miles - HW Soils to Buttonwillow (2)	10.8					715	98	16,588	14,515
Soil Haul Trucks - 23 tons/load to US Ecology Idaho	130	5.5	0.75	199.3	1,840	715	98	25,909	239,194
Total Miles - HW Soils to US Ecology Idaho (2)	10.8					715	98	25,909	239,194
Excavation - Soil Category 4 = 200 cy									
Soil Haul Trucks - 23 tons/load to NNSS	13	5.5	0.75	199.3	500	72	10	2,591	6,499
Total Miles - RAD Soils to NNSS (2)	1.1					72	10	2,591	6,499
Soil Haul Trucks - 23 tons/load to WCS Texas	13	5.5	0.75	374	1,945	72	10	4,862	25,288
Total Miles - RAD Soils to WCS Texas (2)	1.1					72	10	4,862	25,288
Soil Backfilling									
Soil Haul Trucks - Import (3)	1,868	5.5	40	60		10,277	74,739	112,109	
Total Miles - Backfill Soil (2)	155.7					10,277	74,739	112,109	
Construction - Worker commuting									
Passenger Car/Pickup	12,500	5.5	15	25		68,750	187,500	312,500	

Notes: (1) Includes typical nearby and distant disposal site destinations for soil categories 1 and 2, 3, and 4 to present a reasonable bounding analysis.

(2) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(3) Assumes that backfill soil would originate from either Ventura County or the SCAB.

Table 1.C-OS-6. Total Emissions for Onroad Vehicles - Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS (page 1 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Categories 1 and 2 = 36,000 cy - Chiquita Canyon							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.39
Soil Haul Truck - On-site Miles	0.01	0.03	0.17	0.00	0.00	0.00	33.58
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.01	0.00	0.00	0.00	3.43
Subtotal - Ventura County (1)	0.01	0.04	0.18	0.00	0.00	0.00	38.40
Subtotal - SCAB (2)	0.02	0.08	0.71	0.00	0.02	0.01	254.63
Subtotal - Remainder (3)							
Soil Categories 1 and 2 = 36,000 cy - Westmorland							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.39
Soil Haul Truck - On-site Miles	0.01	0.03	0.17	0.00	0.00	0.00	33.58
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.01	0.00	0.00	0.00	3.43
Subtotal - Ventura County (1)	0.01	0.04	0.18	0.00	0.00	0.00	38.40
Subtotal - SCAB (2)	0.11	0.45	4.17	0.01	0.12	0.06	1,505.66
Subtotal - Remainder (3)	0.02	0.10	0.95	0.00	0.03	0.01	343.20
Soil Category 3 = 2,000 cy - Buttonwillow							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.86
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.08	0.00	0.00	0.00	28.44
Subtotal - Remainder (3)	0.00	0.01	0.07	0.00	0.00	0.00	24.89
Soil Category 3 = 2,000 cy - US Ecology Idaho							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Soil Haul Truck - On-site Miles	0.00	0.00	0.01	0.00	0.00	0.00	1.86
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Subtotal - Ventura County (1)	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Subtotal - SCAB (2)	0.00	0.01	0.12	0.00	0.00	0.00	44.43
Subtotal - Remainder (3)	0.03	0.12	1.14	0.00	0.03	0.02	410.15

Table 1.C-OS-6. Total Emissions for Onroad Vehicles - Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS (page 2 of 2).

	Tons						
Soil Type-Destination/Vehicle Operational Mode	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Soil Category 4 = 200 cy - NNSS							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Soil Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Subtotal - Ventura County (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Subtotal - SCAB (2)	0.00	0.00	0.01	0.00	0.00	0.00	4.44
Subtotal - Remainder (3)	0.00	0.00	0.03	0.00	0.00	0.00	11.14
Soil Category 4 = 200 cy - WCS Texas							
Soil Haul Truck - On-site Idling	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Soil Haul Truck - On-site Miles	0.00	0.00	0.00	0.00	0.00	0.00	0.19
Soil Haul Truck - Off-site Miles within Ventura County	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Subtotal - Ventura County (1)	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Subtotal - SCAB (2)	0.00	0.00	0.02	0.00	0.00	0.00	8.34
Subtotal - Remainder (3)	0.00	0.01	0.12	0.00	0.00	0.00	43.36
Soil Backfilling							
Soil Haul Truck - On-site Idling	0.00	0.00	0.01	0.00	0.00	0.00	1.10
Soil Haul Truck - On-site Miles	0.01	0.03	0.13	0.00	0.00	0.00	26.73
Soil Haul Truck - Off-site Miles within Ventura County	0.02	0.08	0.49	0.00	0.01	0.01	145.66
Subtotal - Ventura County (1)	0.03	0.11	0.63	0.00	0.01	0.01	173.49
Subtotal - SCAB (2)	0.01	0.06	0.53	0.00	0.02	0.01	192.23
Construction - Worker commuting							
Worker Vehicle - On-site Miles	0.00	0.08	0.01	0.00	0.00	0.00	27.13
Worker Vehicle - Off-site Miles within Ventura County	0.00	0.15	0.02	0.00	0.00	0.00	57.93
Subtotal - Ventura County (1)	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal - SCAB (2)	0.01	0.25	0.03	0.00	0.00	0.00	96.56

Notes: (1) Includes all on-site activities plus off-site mileage between the SSFL gate and border of Los Angeles County.

(2) Includes all off-site mileage within the SCAB.

(3) Includes all off-site mileage outside of Ventura County/SCAB.

Table 1.C-OS-7. Total Emissions for Onroad Vehicles to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.13	0.46	4.73	0.01	0.12	0.07	1,276.79
HW - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	5.23
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.18	0.00	0.00	0.00	42.18
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.19	1.92	5.77	0.02	0.14	0.08	2,069.57
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Chiquita Canyon	0.03	0.11	0.89	0.00	0.02	0.01	293.04
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.02	0.16	0.00	0.00	0.00	55.46
Soil Category 4 = 200 cy - NNSS	0.00	0.00	0.04	0.00	0.00	0.00	15.80
Soil Backfilling	0.04	0.16	1.16	0.00	0.03	0.01	365.72
Construction - Worker commuting	0.01	0.48	0.05	0.00	0.00	0.00	181.63
Subtotal	0.08	0.78	2.31	0.01	0.06	0.03	911.64
Groundwater Remediation							
Bedrock RAD - NNSS	0.03	0.13	1.15	0.00	0.03	0.02	410.79
HW Soil - Buttonwillow	0.01	0.03	0.29	0.00	0.01	0.00	102.38
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.04	0.20	1.57	0.01	0.04	0.02	561.13
Total Emissions to Nearby Disposal Sites	0.32	2.90	9.65	0.03	0.24	0.13	3,542.34

Table 1.C-OS-8. Total Emissions for Onroad Vehicles to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - EnergySolutions Utah	0.41	1.49	15.47	0.04	0.38	0.22	4,194.62
HW - USE Idaho	0.00	0.02	0.16	0.00	0.00	0.00	43.08
Clean - McKittrick/Kramer Metals	0.01	0.04	0.35	0.00	0.01	0.00	91.65
Soil Backfilling	0.03	0.09	0.70	0.00	0.02	0.01	175.91
Construction - Worker commuting	0.03	1.34	0.14	0.01	0.00	0.00	569.46
Subtotal	0.48	2.98	16.83	0.05	0.41	0.24	5,074.71
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Westmorland	0.14	0.58	5.31	0.02	0.15	0.08	1,887.26
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.14	1.27	0.00	0.04	0.02	456.70
Soil Category 4 = 200 cy - WCS Texas	0.00	0.02	0.14	0.00	0.00	0.00	51.91
Soil Backfilling	0.04	0.16	1.16	0.00	0.03	0.01	365.72
Construction - Worker commuting	0.01	0.48	0.05	0.00	0.00	0.00	181.63
Subtotal	0.23	1.38	7.94	0.03	0.22	0.11	2,943.22
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.10	0.40	3.75	0.01	0.11	0.06	1,349.69
HW Soil - US Ecology Idaho	0.06	0.25	2.33	0.01	0.07	0.03	839.21
Soil Backfilling	0.00	0.02	0.12	0.00	0.00	0.00	38.36
Construction - Worker commuting	0.00	0.03	0.00	0.00	0.00	0.00	9.59
Subtotal	0.16	0.69	6.20	0.02	0.18	0.09	2,236.85
Total Emissions to Nearby Disposal Sites	0.87	5.05	30.97	0.10	0.81	0.45	10,254.79

Table 1.C-OS-9. Total Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - Chiquita Canyon/Gillibrand	0.01	0.02	0.11	0.00	0.00	0.00	24.41
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.73	0.64	0.00	0.01	0.01	392.28
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Chiquita Canyon	0.01	0.04	0.18	0.00	0.00	0.00	38.40
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 200 cy - NNSS	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Soil Backfilling	0.03	0.11	0.63	0.00	0.01	0.01	173.49
Construction - Worker commuting	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal	0.04	0.37	0.85	0.00	0.01	0.01	299.30
Groundwater Remediation							
Bedrock RAD - NNSS	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - Buttonwillow	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.09	1.13	1.60	0.01	0.03	0.02	723.73

Table 1.C-OS-10. Total Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.01	0.02	0.09	0.00	0.00	0.00	17.34
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.20
Clean - McKittrick/Kramer Metals	0.00	0.01	0.04	0.00	0.00	0.00	7.76
Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	83.61
Construction - Worker commuting	0.01	0.64	0.07	0.00	0.00	0.00	266.72
Subtotal	0.04	0.72	0.57	0.00	0.01	0.01	375.63
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Westmorland	0.01	0.04	0.18	0.00	0.00	0.00	38.40
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 = 200 cy - WCS Texas	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Soil Backfilling	0.03	0.11	0.63	0.00	0.01	0.01	173.49
Construction - Worker commuting	0.01	0.23	0.02	0.00	0.00	0.00	85.07
Subtotal	0.04	0.37	0.85	0.00	0.01	0.01	299.30
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.00	0.01	0.03	0.00	0.00	0.00	5.53
HW Soil - US Ecology Idaho	0.00	0.00	0.02	0.00	0.00	0.00	3.93
Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18.20
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	4.49
Subtotal	0.01	0.03	0.11	0.00	0.00	0.00	32.14
Total Emissions to Nearby Disposal Sites	0.08	1.12	1.53	0.01	0.03	0.02	707.08

Table 1.C-OS-11. Peak Annual Emissions for Onroad Vehicles within Ventura County to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.02	0.00	0.00	0.00	4.88
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.18	0.00	0.00	0.00	125.30
Soil Remediation							
Soil Categories 1 and 2 - Chiquita Canyon	0.01	0.03	0.17	0.00	0.00	0.00	35.04
Soil Category 3 - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - NNSS	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.09
Total Emissions to Nearby Disposal Sites	0.05	0.49	0.95	0.00	0.02	0.01	364.39

Note: Peak annual emissions would occur in year 2021.

Table 1.C-OS-12. Peak Annual Emissions for Onroad Vehicles within Ventura County to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons/Year						
Activity/Material Type-Destination	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.00	0.00	0.02	0.00	0.00	0.00	3.47
HW - USE Idaho	0.00	0.00	0.00	0.00	0.00	0.00	0.04
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	1.55
Soil Backfilling	0.01	0.02	0.12	0.00	0.00	0.00	27.90
Construction - Worker commuting	0.00	0.21	0.02	0.00	0.00	0.00	89.01
Subtotal	0.01	0.24	0.17	0.00	0.00	0.00	121.97
Soil Remediation							
Soil Categories - Westmorland	0.01	0.03	0.17	0.00	0.00	0.00	35.04
Soil Category 3 - US Ecology Idaho	0.00	0.00	0.01	0.00	0.00	0.00	2.13
Soil Category 4 - WCS Texas	0.00	0.00	0.00	0.00	0.00	0.00	0.21
Soil Backfilling	0.02	0.10	0.58	0.00	0.01	0.01	159.17
Construction - Worker commuting	0.00	0.11	0.01	0.00	0.00	0.00	42.53
Subtotal	0.04	0.25	0.77	0.00	0.01	0.01	239.09
Total Emissions to Distant Disposal Sites	0.05	0.48	0.94	0.00	0.02	0.01	361.06

Note: Peak annual emissions would occur in year 2021.

Table 1.C-OS-13. Total Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.03	0.13	1.32	0.00	0.03	0.02	358.97
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.68
Clean - Chiquita Canyon/Gillibrand	0.00	0.01	0.07	0.00	0.00	0.00	17.77
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.06	0.87	1.81	0.01	0.04	0.03	774.46
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Chiquita Canyon	0.02	0.08	0.71	0.00	0.02	0.01	254.63
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28.44
Soil Category 4 = 200 cy - NNSS	0.00	0.00	0.01	0.00	0.00	0.00	4.44
Soil Backfilling	0.01	0.06	0.53	0.00	0.02	0.01	192.23
Construction - Worker commuting	0.01	0.25	0.03	0.00	0.00	0.00	96.56
Subtotal	0.04	0.39	1.36	0.01	0.04	0.02	576.31
Groundwater Remediation							
Bedrock RAD - NNSS	0.01	0.03	0.32	0.00	0.01	0.00	115.51
HW Soil - Buttonwillow	0.00	0.02	0.15	0.00	0.00	0.00	52.51
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.01	0.07	0.52	0.00	0.02	0.01	193.28
Total SCAB	0.11	1.34	3.69	0.01	0.10	0.05	1,544.05

Notes: (1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.C-OS-14. Total Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - USE Idaho	0.07	0.24	2.48	0.01	0.06	0.04	673.62
HW - USE Idaho	0.00	0.00	0.02	0.00	0.00	0.00	4.19
Clean - McKittrick/Kramer Metals	0.01	0.03	0.27	0.00	0.01	0.00	73.36
Soil Backfilling	0.01	0.03	0.34	0.00	0.01	0.00	92.30
Construction - Worker commuting	0.01	0.71	0.08	0.00	0.00	0.00	302.74
Subtotal	0.10	1.01	3.18	0.01	0.08	0.05	1,146.21
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Westmorland	0.11	0.45	4.17	0.01	0.12	0.06	1,505.66
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44.43
Soil Category 4 = 200 cy - WCS Texas	0.00	0.00	0.02	0.00	0.00	0.00	8.34
Soil Backfilling	0.01	0.06	0.53	0.00	0.02	0.01	192.23
Construction - Worker commuting	0.01	0.25	0.03	0.00	0.00	0.00	96.56
Subtotal	0.13	0.77	4.88	0.02	0.14	0.07	1,847.21
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.02	0.06	0.60	0.00	0.02	0.01	216.76
HW Soil - US Ecology Idaho	0.01	0.02	0.23	0.00	0.01	0.00	82.02
Soil Backfilling	0.00	0.01	0.06	0.00	0.00	0.00	20.16
Construction - Worker commuting	0.00	0.01	0.00	0.00	0.00	0.00	5.10
Subtotal	0.02	0.11	0.89	0.00	0.03	0.01	324.04
Total SCAB	0.25	1.88	8.95	0.03	0.25	0.13	3,317.46

Notes: (1) Based on disposal sites that would require the highest amount of transport distance through the SCAB.

Table 1.C-OS-15. Peak Annual Emissions for Onroad Vehicles within SCAB to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.01	0.03	0.26	0.00	0.01	0.00	72	65
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	1	0
Clean - Chiquita Canyon/Gillibrand	0.00	0.00	0.01	0.00	0.00	0.00	4	3
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.27	0.42	0.00	0.01	0.01	208	189
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon	0.02	0.07	0.64	0.00	0.02	0.01	232	211
Soil Category 3 - Buttonwillow	0.00	0.01	0.08	0.00	0.00	0.00	28	26
Soil Category 4 - NNSS	0.00	0.00	0.01	0.00	0.00	0.00	4	4
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.03	0.26	1.24	0.00	0.04	0.02	490	445
Total SCAB	0.05	0.53	1.66	0.01	0.05	0.02	697.58	634.17

Note: Peak annual emissions would occur in year 2021.

(1) Based on disposal sites that would require the least amount of transport distance through the SCAB.

Table 1.C-OS-16. Peak Annual Emissions for Onroad Vehicles within SCAB to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.01	0.05	0.50	0.00	0.01	0.01	135	122
HW - US Ecology Idaho	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Clean - McKittrick/Kramer Metals	0.00	0.01	0.05	0.00	0.00	0.00	15	13
Soil Backfilling	0.00	0.01	0.11	0.00	0.00	0.00	31	28
Construction - Worker commuting	0.00	0.24	0.03	0.00	0.00	0.00	101	92
Subtotal	0.02	0.30	0.69	0.00	0.02	0.01	282	256
Soil Remediation								
Soil Categories 1 and 2 - Westmorland	0.10	0.41	3.81	0.01	0.11	0.06	1,374	1,249
Soil Category 3 - US Ecology Idaho	0.00	0.01	0.12	0.00	0.00	0.00	44	40
Soil Category 4 - WCS Texas	0.00	0.00	0.02	0.00	0.00	0.00	8	8
Soil Backfilling	0.01	0.05	0.49	0.00	0.01	0.01	176	160
Construction - Worker commuting	0.00	0.13	0.01	0.00	0.00	0.00	48	44
Subtotal	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Total SCAB	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,758

Notes: Peak annual emissions would occur in year 2021.

(1) Based on disposal sites that would require the highest amount of transport distance through the SCAB.

Table 1.C-OS-17. Summary of Peak Daily Emissions within SCAB for On-Road Vehicles for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Building Demolition								
On-road Vehicles – Nearby Disposal Sites (2)	1.6	6.5	60.6	0.2	1.8	0.9	21,871	
On-road Vehicles – Distant Disposal Sites (3)	3.0	12.2	113.8	0.4	3.3	1.7	41,043	
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites (2)	1.6	6.5	60.6	0.2	1.8	0.9	21,871	
Peak Daily Emissions – Distant Disposal Sites (3)	3.0	12.2	113.8	0.4	3.3	1.7	41,043	

Notes: (1) Peak day emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT within the SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur during Building Demolition. If 32 daily truck trips were to occur during Soil Remediation, they would generate slighlty lower emissions, as the COR Open Space scenario proposes only a total of 13 truck trips to the NNSS and the remaining 19 trucks would travel to a site that would result in fewer VMT within the SCAB.

(3) Based on 32 truck trips per day to the Westmorland site, which would result in the largest VMT within the SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Building Demolition, although Soil Remediation also could generate the same number of daily trips to the Westmorland site.

Table 1.C-OS-18. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - NNSS	0.09	0.32	3.31	0.01	0.08	0.05	900.48
HW - Buttonwillow	0.00	0.00	0.01	0.00	0.00	0.00	2.35
Clean - Chiquita Canyon/Gillibrand							
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.09	0.32	3.32	0.01	0.08	0.05	902.82
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Chiquita Canyon							
Soil Category 3 = 2,000 cy - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	24.89
Soil Category 4 = 200 cy - NNSS	0.00	0.00	0.03	0.00	0.00	0.00	11.14
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.00	0.01	0.10	0.00	0.00	0.00	36.03
Groundwater Remediation							
Bedrock RAD - NNSS	0.02	0.09	0.80	0.00	0.02	0.01	289.76
HW Soil - Buttonwillow	0.00	0.01	0.13	0.00	0.00	0.00	45.95
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.02	0.10	0.93	0.00	0.03	0.01	335.70
Total Outside Ventura County/SCAB	0.11	0.43	4.35	0.01	0.11	0.06	1,274.56

Notes: (1) Based on disposal sites that would require the least amount of transport distance outside Ventura County/SCAB.

Table 1.C-OS-19. Total Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons						
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Building Demolition							
RAD - WCS Texas	0.34	1.24	12.90	0.03	0.32	0.18	3,503.65
HW - USE Idaho	0.00	0.01	0.14	0.00	0.00	0.00	38.68
Clean - McKittrick/Kramer Metals	0.00	0.00	0.04	0.00	0.00	0.00	10.52
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.34	1.26	13.08	0.03	0.33	0.19	3,552.86
Soil Remediation							
Soil Categories 1 and 2 = 36,000 cy - Westmorland	0.02	0.10	0.95	0.00	0.03	0.01	343.20
Soil Category 3 = 2,000 cy - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	410.15
Soil Category 4 = 200 cy - WCS Texas	0.00	0.01	0.12	0.00	0.00	0.00	43.36
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.06	0.24	2.21	0.01	0.06	0.03	796.71
Groundwater Remediation							
Bedrock RAD - WCS Texas	0.08	0.33	3.13	0.01	0.09	0.05	1,127.41
HW Soil - US Ecology Idaho	0.05	0.22	2.10	0.01	0.06	0.03	757.19
Soil Backfilling							
Construction - Worker commuting							
Subtotal	0.14	0.56	5.22	0.02	0.15	0.08	1,884.60
Total Outside Ventura County/SCAB	0.54	2.05	20.51	0.06	0.54	0.30	6,234.17

Notes: (1) Based on disposal sites that would require the greatest amount of transport distance outside Ventura County/SCAB.

Table 1.C-OS-20. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Nearby Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - NNSS	0.02	0.06	0.66	0.00	0.02	0.01	180	164
HW - Buttonwillow	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Clean - Chiquita Canyon/Gillibrand								
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.02	0.06	0.66	0.00	0.02	0.01	181	164
Soil Remediation								
Soil Categories 1 and 2 - Chiquita Canyon								
Soil Category 3 - Buttonwillow	0.00	0.01	0.07	0.00	0.00	0.00	25	23
Soil Category 4 - NNSS	0.00	0.00	0.03	0.00	0.00	0.00	11	10
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.00	0.01	0.10	0.00	0.00	0.00	36	33
Total Outside Ventura County/SCAB	0.02	0.07	0.76	0.00	0.02	0.01	216.60	196.91

Notes: (1) Based on disposal sites that would require least amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.C-OS-21. Peak Annual Emissions for Onroad Vehicles Outside Ventura County/SCAB to Distant Disposal Sites - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Activity/Material Type-Destination (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
RAD - WCS Texas	0.07	0.25	2.58	0.01	0.06	0.04	701	637
HW - US Ecology Idaho	0.00	0.00	0.03	0.00	0.00	0.00	8	7
Clean - McKittrick/Kramer Metals	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.07	0.25	2.62	0.01	0.07	0.04	711	646
Soil Remediation								
Soil Categories - Westmorland	0.02	0.09	0.87	0.00	0.03	0.01	313	285
Soil Category 3 - US Ecology Idaho	0.03	0.12	1.14	0.00	0.03	0.02	410	373
Soil Category 4 - WCS Texas	0.00	0.01	0.12	0.00	0.00	0.00	43	39
Soil Backfilling								
Construction - Worker commuting								
Subtotal	0.06	0.23	2.13	0.01	0.06	0.03	767	697
Total Outside Ventura County/SCAB	0.12	0.48	4.74	0.01	0.13	0.07	1,477.23	1,342.93

Notes: (1) Based on disposal sites that require the greatest amount of transport distance per soil category outside VC/SCAB. Peak annual emissions would occur in 2021.

Table 1.C-OS-22. Summary of Peak Daily Emissions Outside Ventura County/SCAB for On-Road Vehicles for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Pounds per Day (1)							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	
Building Demolition								
On-road Vehicles – Nearby Disposal Sites (2)	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
On-road Vehicles – Distant Disposal Sites (3)	15.4	63.3	591.8	2.0	17.2	8.8	213,473	
Soil Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Groundwater Remediation								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Peak Daily Emissions – Nearby Disposal Sites	4.0	16.3	152.1	0.5	4.4	2.3	54,865	
Peak Daily Emissions – Distant Disposal Sites	15.4	63.3	591.8	2.0	17.2	8.8	213,473	

Notes: (1) Peak annual emissions would occur in year 2021.

(2) Based on 32 truck trips per day to the NNSS, which would result in the largest VMT outside VC/SCAB for any disposal site under the nearby scenario. The table shows that emissions from this activity would occur during Building Demolition. If 32 daily truck trips were to occur during Soil Remediation, they would generate slighlty lower emissions, as the COR Open Space scenario proposes only a total of 13 truck trips to the NNSS and the remaining 19 trucks would travel to a site that would result in fewer VMT outside VC/SCAB.

(3) Based on 32 truck trips per day to the Westmorland site, which would result in the largest VMT outside VC/SCAB for any disposal site under the distant scenario. The table shows that emissions from this activity would occur from Building Demolition, although Soil Remediation also could generate the same number of daily trips to the Westmorland site.

Table 1.C-OS-23. Fugitive Dust Activity Data for Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS

Construction Activity-Soil Type/Equipment Type	*Throughput (Tons)*	*On-site Paved Road Round Trip Distance (Mi)*	*Total Truck Trips*	*Daily Disturbed Acres*	*Work Days*	*Total Acres or Miles (1)*
Excavation - Soil Categories 1 and 2 = 36,000 cy						
Actively Disturbed Ground				3.6	146.9	529
Vacated Disturbed Ground				5.4	146.9	793
Truck Loading - Soil	54,000					
Paved Road Dust - Soil Haul Truck		5.5	2,348			12,913
Excavation - Soil Category 3 = 2,000 cy						
Actively Disturbed Ground				1.0	8.2	8
Vacated Disturbed Ground				1.5	8.2	12
Truck Loading - Soil	3,000					
Paved Road Dust - Soil Haul Truck		5.5	130			715
Excavation - Soil Category 4 = 200 cy						
Actively Disturbed Ground				1.0	0.8	1
Vacated Disturbed Ground				1.5	0.8	1
Truck Loading - Soil	300					
Paved Road Dust - Soil Haul Truck		5.5	13			72
Inactive Disturbed Area						
Total Acreage per Year				7.5	419.8	3,148
Soil Backfilling						
Actively Disturbed Ground				1.0	116.9	117
Stockpile Wind Erosion				0.5	419.8	210
Truck Unloading - Soil	42,975					
Paved Road Dust - Soil Haul Truck		5.5	1,868			10,277

Note: (1) = Total acres for Disturbed Ground, Inactive Disturbed Areas, and Stockpile Wind Erosion and total miles for Paved Road Dust.

Table 1.C-OS-24. Total Fugitive Dust Emissions for Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2 = 36,000 cy							
Actively Disturbed Ground					2.63	0.26	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					2.11	0.52	
Subtotal					4.74	0.78	
Excavation - Soil Category 3 = 2,000 cy							
Actively Disturbed Ground					0.04	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.12	0.03	
Subtotal					0.16	0.03	
Excavation - Soil Category 4 = 200 cy							
Actively Disturbed Ground					0.00	0.00	
Truck Loading - Soil					0.00	0.00	
Paved Road Dust - Soil Haul Truck					0.01	0.00	
Subtotal					0.02	0.00	
Inactive Disturbed Area							
Total Area					0.10	0.02	
Soil Backfilling							
Actively Disturbed Ground					0.58	0.06	
Stockpile Wind Erosion (2)					2.41	0.72	
Truck Unloading - Soil					0.002	0.000	
Paved Road Dust - Soil Haul Truck					1.68	0.41	
Subtotal					4.67	1.19	

Table 1.C-OS-25. Peak Annual Fugitive Dust Emissions for Soil Remediation COR Open Space Scenario Alt. - SSFL Area IV FEIS.

	Tons						
Construction Activity-Soil Type/Equipment Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Excavation - Soil Categories 1 and 2					4.32	0.71	
Excavation - Soil Category 3					0.16	0.03	
Excavation - Soil Category 4					0.02	0.00	
Inactive Disturbed Area					0.09	0.01	
Soil Backfilling					4.28	1.09	
Subtotal					8.88	1.86	

Note: Peak annual fugitive dust emissions would occur in year 2021.

Table 1.C-OS-26. Emission Estimates for Windblown Dust from Inactive Disturbed Areas - Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS

Year	Activity (1)	Annual Disturbed Area (m^2) (1)	U_{10} (m/s) (2)	Threshold Friction Velocity u_t (m/s) (3)	Friction Velocity u* (m/s) (4)	P Uncontrolled (Gm/m^2) (5)	Controlled Pounds/Event (6)		
							PM	PM10	PM2.5
2019	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2020	Demo Buildings	16,193	24.1	1.02	1.278	10.28	184	92	14
2021	Demo Buildings	8,097	24.1	1.02	1.278	10.28	92	46	7
Total - Demolition								229	34
2021	All Soils	33,428	24.1	1.02	1.278	10.28	379	189	28
2022	All Soils	3,007	24.1	1.02	1.278	10.28	34	17	3
Total - Soil Remediation								206	31

Notes: (1) Assumes area is inactive for one year after prior year of active disturbance.

(2) Wind speeds at 10 meter level (U_{10}). Equates to equation #5 presented in AP-42 Section 13.2.5 (EPA 2006b).

(3) Threshold friction velocity value for scoria from AP-42 Section Table 13.2.5-2.

(4) Equates to equation #4 presented in AP-42 Section 13.2.5.

(5) Equates to equation #3 presented in AP-42 Section 13.2.5.

(6) Equal to Disturbed Area times P, then reduced by 50% to simulate use of soil stabilization measures.

Table 1.C-OS-27. Summary of Total Emissions for Off-Road Equipment Usage Soil - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.02	0.02	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.00	0.00	16	15
Demolition - Metal and Building Debris - RAD	0.08	0.56	0.84	0.00	0.04	0.04	122	111
Demolition - Concrete - HW								
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.00	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.00	0.00	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Demolition - Metal and Building Debris - Clean	0.08	0.55	0.82	0.00	0.04	0.04	116	106
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.05	0.36	0.58	0.00	0.03	0.02	70	64
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,138
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 36,000 cy	0.06	0.53	0.58	0.00	0.03	0.02	113	103
Excavation - Soil Category 3 = 2,000 cy	0.00	0.03	0.03	0.00	0.00	0.00	6	5
Excavation - Soil Category 4 = 200 cy	0.00	0.00	0.00	0.00	0.00	0.00	1	1
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.06	0.44	0.59	0.00	0.03	0.02	84	76
Soil Remediation - Generators	0.15	0.85	1.07	0.00	0.05	0.05	136	124
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.00	0.00	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.08	0.00	0.00	0.00	21	19
GW Remediation - HW Soil Removal	0.00	0.01	0.00	0.00	0.00	0.00	1	1
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.02	0.02	0.00	0.00	0.00	4	3
Total Emissions - Off-Road Equipment	2.40	18.03	20.16	0.03	1.11	1.10	3,130	2,845

Notes: All of these emissions would occur in Ventura County.

Table 1.C-OS-28. Summary of Total Emissions for On-road Vehicle Usage within Ventura County - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - All RAD Materials	0.01	0.02	0.09	0.00	0.00	0.00	17	16
Demolition - All HW Materials	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Demolition - All Clean Materials	0.01	0.02	0.11	0.00	0.00	0.00	24	22
Demolition - Inactive Disturbed Area								
Demolition - Soil Backfilling	0.02	0.06	0.37	0.00	0.01	0.00	84	76
Demolition - Generators								
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 36,000 cy	0.01	0.04	0.18	0.00	0.00	0.00	38	35
Excavation - Soil Category 3 = 2,000 cy	0.00	0.00	0.01	0.00	0.00	0.00	2	2
Excavation - Soil Category 4 = 200 cy	0.00	0.00	0.00	0.00	0.00	0.00	0	0
Soil Remediation - Inactive Disturbed Area								
Soil Remediation - Soil Backfilling	0.03	0.11	0.63	0.00	0.01	0.01	173	157
Soil Remediation - Generators								
Soil Remediation - Worker Commutes	0.01	0.23	0.02	0.00	0.00	0.00	85	77
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal	0.00	0.01	0.03	0.00	0.00	0.00	6	5
GW Remediation - HW Soil Removal	0.00	0.00	0.02	0.00	0.00	0.00	4	4
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling	0.00	0.01	0.07	0.00	0.00	0.00	18	17
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4
Total Emissions - On-Road Vehicles (1)	0.09	1.13	1.60	0.01	0.03	0.02	724	657

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.C-OS-29. Summary of Total Fugitive Dust Emissions - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD					0.67	0.13		
Demolition - Asphalt - RAD					0.19	0.04		
Demolition - Metal and Building Debris - RAD					0.63	0.12		
Demolition - Metal and Building Debris - HW					0.02	0.00		
Demolition - Concrete - Clean					0.03	0.01		
Demolition - Asphalt - Clean					0.03	0.01		
Demolition - Metal and Building Debris - Clean					0.61	0.12		
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling					3.66	1.03		
Demolition - Generators								
Demolition - Worker Commutes								
Excavation - Soil Categories 1 and 2 = 36,000 cy					4.74	0.78		
Excavation - Soil Category 3 = 2,000 cy					0.16	0.03		
Excavation - Soil Category 4 = 200 cy					0.02	0.00		
Soil Remediation - Inactive Disturbed Area					0.10	0.02		
Soil Remediation - Soil Backfilling					4.67	1.19		
Soil Remediation - Generators								
Soil Remediation - Worker Commutes								
GW Remediation - Excavate Soil/Ramp Construction					0.14	0.04		
GW Remediation - Bedrock Removal					0.13	0.03		
GW Remediation - HW Soil Removal					0.01	0.00		
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling					0.08	0.02		
GW Remediation - Worker Commutes								
Total Emissions - Fugitive Dust					16.02	3.60		

Notes: All of these emissions would occur in Ventura County.

Table 1.C-OS-30. Summary of Total Emissions within Ventura County by Activity - Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.04	0.31	0.41	0.00	0.69	0.15	73	66
Demolition - Asphalt - RAD	0.01	0.07	0.10	0.00	0.19	0.04	16	15
Demolition - Metal and Building Debris - RAD	0.09	0.58	0.94	0.00	0.67	0.16	139	126
Demolition - Metal and Building Debris - HW	0.00	0.01	0.02	0.00	0.02	0.00	3	3
Demolition - Concrete - Clean	0.00	0.02	0.03	0.00	0.03	0.01	4	4
Demolition - Asphalt - Clean	0.00	0.02	0.02	0.00	0.03	0.01	4	25
Demolition - Metal and Building Debris - Clean	0.08	0.56	0.93	0.00	0.65	0.16	141	128
Demolition - Inactive Disturbed Area					0.11	0.02		
Demolition - Soil Backfilling	0.07	0.41	0.95	0.00	3.70	1.06	154	139
Demolition - Generators	1.84	14.16	14.94	0.03	0.87	0.87	2,352	2,380
Demolition - Worker Commutes	0.01	0.64	0.07	0.00	0.00	0.00	267	242
Excavation - Soil Categories 1 and 2 = 36,000 cy	0.07	0.56	0.77	0.00	4.77	0.81	152	138
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.00	0.16	0.03	8	7
Excavation - Soil Category 4 = 200 cy	0.00	0.00	0.00	0.00	0.02	0.00	1	1
Soil Remediation - Inactive Disturbed Area					0.10	0.02		
Soil Remediation - Soil Backfilling	0.08	0.55	1.22	0.00	4.71	1.22	258	234
Soil Remediation - Generators	0.15	0.85	1.07	0.00	0.05	0.05	136	124
Soil Remediation - Worker Commutes	0.01	0.23	0.02	0.00	0.00	0.00	85	77
GW Remediation - Excavate Soil/Ramp Construction	0.00	0.02	0.02	0.00	0.14	0.04	4	4
GW Remediation - Bedrock Removal	0.01	0.08	0.10	0.00	0.13	0.03	27	24
GW Remediation - HW Soil Removal	0.00	0.01	0.02	0.00	0.01	0.00	5	4
GW Remediation - Inactive Disturbed Area					0.02	0.00		
GW Remediation - Soil Backfilling	0.00	0.03	0.09	0.00	0.08	0.02	22	20
GW Remediation - Worker Commutes	0.00	0.01	0.00	0.00	0.00	0.00	4	4.07
Total Emissions - On-Road Vehicles (1)	2.48	19.16	21.76	0.04	17.16	4.71	3,853	3,766

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County.

Table 1.C-OS-31. Summary of Peak Annual Emissions within Ventura County by Activity for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Demolition - Concrete - RAD	0.01	0.06	0.08	0.000	0.14	0.03	15	13
Demolition - Asphalt - RAD	0.00	0.01	0.02	0.000	0.04	0.01	3	3
Demolition - Metal and Building Debris - RAD	0.02	0.12	0.19	0.000	0.13	0.03	28	25
Demolition - Metal and Building Debris - HW	0.00	0.00	0.00	0.000	0.00	0.00	1	1
Demolition - Concrete - Clean	0.00	0.00	0.01	0.000	0.01	0.00	1	1
Demolition - Asphalt - Clean	0.00	0.00	0.00	0.000	0.01	0.00	1	1
Demolition - Metal and Building Debris - Clean	0.02	0.11	0.19	0.000	0.13	0.03	28	26
Demolition - Inactive Disturbed Area					0.04	0.01		
Demolition - Soil Backfilling	0.02	0.14	0.32	0.001	1.23	0.35	51	47
Demolition - Generators	0.61	4.73	4.99	0.009	0.29	0.29	785	712
Demolition - Worker Commutes	0.00	0.21	0.02	0.001	0.00	0.00	89	81
Excavation - Soil Categories 1 and 2 = 36,000 cy	0.06	0.51	0.70	0.001	4.35	0.74	139	126
Excavation - Soil Category 3 = 2,000 cy	0.01	0.04	0.04	0.000	0.16	0.03	8	7
Excavation - Soil Category 4 = 200 cy	0.00	0.00	0.00	0.000	0.02	0.00	1	1
Soil Remediation - Inactive Disturbed Area					0.09	0.01		
Soil Remediation - Soil Backfilling	0.08	0.51	1.12	0.002	4.32	1.12	236	214
Soil Remediation - Generators	0.13	0.71	0.89	0.002	0.04	0.04	114	103
Soil Remediation - Worker Commutes	0.00	0.11	0.01	0.000	0.00	0.00	43	39
GW Remediation - Excavate Soil/Ramp Construction								
GW Remediation - Bedrock Removal								
GW Remediation - HW Soil Removal								
GW Remediation - Inactive Disturbed Area								
GW Remediation - Soil Backfilling								
GW Remediation - Worker Commutes								
Combined Alternatives Peak Annual Emissions (1)	0.96	7.27	8.57	0.02	11.00	2.71	1,541	1,398

Notes: (1) Based on disposal sites that would require the greatest transport distance through Ventura County. Peak annual emissions of all pollutants would occur from Building Demolition and Soil Remediation in year 2021.

Table 1.C-OS-32. Summary of Total Emissions within Ventura County by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,509
On-road Vehicles – Nearby Disposal Sites	0.04	0.73	0.64	0.00	0.01	0.01	392	357
On-road Vehicles – Distant Disposal Sites	0.04	0.72	0.57	0.00	0.01	0.01	376	341
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.15	16.78	18.40	0.03	6.97	2.48	3,152	2,866
Subtotal – Distant Disposal Sites	2.15	16.77	18.33	0.03	6.97	2.48	3,135	2,850
Soil Remediation								
Off-road Equipment	0.27	1.86	2.27	0.00	0.10	0.10	340	309
On-road Vehicles – Nearby Disposal Sites	0.04	0.37	0.85	0.00	0.01	0.01	299	272
On-road Vehicles – Distant Disposal Sites	0.04	0.37	0.85	0.00	0.01	0.01	299	272
Fugitive Dust					9.69	2.03		
Subtotal – Nearby Disposal Sites	0.31	2.23	3.12	0.01	9.80	2.13	640	582
Subtotal – Distant Disposal Sites	0.31	2.23	3.12	0.01	9.80	2.13	640	582
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
On-road Vehicles – Distant Disposal Sites	0.01	0.03	0.11	0.00	0.00	0.00	32	29
Fugitive Dust					0.38	0.09		
Subtotal – Nearby Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Subtotal – Distant Disposal Sites	0.02	0.15	0.24	0.00	0.39	0.10	62	56
Total Emissions – Nearby Disposal Sites	2.48	19.16	21.76	0.04	17.16	4.71	3,853	3,503
Total Emissions – Distant Disposal Sites	2.48	19.15	21.69	0.04	17.16	4.71	3,837	3,488

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.C-OS-33. Summary of Peak Annual Emissions within Ventura County by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons per Year							
Construction Component/Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	0.70	5.36	5.93	0.01	0.34	0.33	921	837
On-road Vehicles – Nearby Disposal Sites	0.01	0.24	0.21	0.00	0.00	0.00	131	119
On-road Vehicles – Distant Disposal Sites	0.01	0.24	0.19	0.00	0.00	0.00	125	114
Fugitive Dust					1.99	0.49		
Subtotal – Nearby Disposal Sites	0.72	5.60	6.14	0.011	2.33	0.83	1,052	956
Subtotal – Distant Disposal Sites	0.72	5.60	6.12	0.011	2.33	0.83	1,046	951
Soil Remediation								
Off-road Equipment	0.24	1.63	1.99	0.004	0.09	0.09	301	273
On-road Vehicles – Nearby Disposal Sites	0.04	0.25	0.77	0.002	0.01	0.01	239	217
On-road Vehicles – Distant Disposal Sites	0.04	0.25	0.77	0.002	0.01	0.01	239	217
Fugitive Dust					8.88	1.86		
Subtotal – Nearby Disposal Sites	0.27	1.88	2.76	0.01	8.98	1.95	540	491
Subtotal – Distant Disposal Sites	0.27	1.88	2.76	0.01	8.98	1.95	540	491
Groundwater Remediation								
Off-road Equipment								
On-road Vehicles – Nearby Disposal Sites								
On-road Vehicles – Distant Disposal Sites								
Fugitive Dust								
Subtotal – Nearby Disposal Sites								
Subtotal – Distant Disposal Sites								
Peak Annual Emissions – Nearby Disposal Sites	0.99	7.48	8.90	0.02	11.31	2.78	1,592	1,447
Peak Annual Emissions – Distant Disposal Sites	0.99	7.48	8.88	0.02	11.31	2.78	1,586	1,442

Notes: Peak annual emissions of all pollutants would occur from Building Demolition and Soil Remediation activities in year 2021.

Table 1.C-OS-34. Total Emissions by Source Type for the Building Removal, COR Open Space Scenario, and Groundwater Treatment Alts - SSFL Area IV FEIS.

	Tons							
Construction Component/Activity (1)	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Building Demolition								
Off-road Equipment	2.11	16.05	17.76	0.03	1.00	0.99	2,760	2,504
On-road Vehicles – Nearby Disposal Sites	0.19	1.92	5.77	0.02	0.14	0.08	2,070	1,878
On-road Vehicles – Distant Disposal Sites	0.48	2.98	16.83	0.05	0.41	0.24	5,075	4,604
Fugitive Dust					5.95	1.48		
Subtotal – Nearby Disposal Sites	2.30	17.97	23.54	0.05	7.10	2.55	4,829	4,381
Subtotal – Distant Disposal Sites	2.59	19.03	34.59	0.08	7.37	2.71	7,835	7,107
Soil Remediation								
Off-road Equipment	0.27	1.86	2.27	0.00	0.10	0.10	340	309
On-road Vehicles – Nearby Disposal Sites	0.08	0.78	2.31	0.01	0.06	0.03	912	827
On-road Vehicles – Distant Disposal Sites	0.23	1.38	7.94	0.03	0.22	0.11	2,943	2,670
Fugitive Dust					9.69	2.03		
Subtotal – Nearby Disposal Sites	0.36	2.63	4.58	0.01	9.85	2.15	1,252	1,136
Subtotal – Distant Disposal Sites	0.50	3.23	10.21	0.03	10.01	2.24	3,284	2,979
Groundwater Remediation								
Off-road Equipment	0.01	0.12	0.13	0.00	0.01	0.01	30	27
On-road Vehicles – Nearby Disposal Sites	0.04	0.20	1.57	0.01	0.04	0.02	561	509
On-road Vehicles – Distant Disposal Sites	0.16	0.69	6.20	0.02	0.18	0.09	2,237	2,029
Fugitive Dust					0.38	0.09		
Subtotal – Nearby Disposal Sites	0.06	0.32	1.69	0.01	0.43	0.12	591	536
Subtotal – Distant Disposal Sites	0.18	0.82	6.33	0.02	0.57	0.19	2,266	2,056
Total Emissions – Nearby Disposal Sites	2.71	20.93	29.81	0.07	17.37	4.83	6,672	6,053
Total Emissions – Distant Disposal Sites	3.27	23.08	51.13	0.13	17.95	5.14	13,385	12,142

Notes: (1) Based on material trucking mileages for example nearby and distant disposal sites.

Table 1.C-OS-35. Peak Annual Emissions - Combined Building Demolition, COR Open Space Scenario, and Groundwater Treatment Alternatives - SSFL Area IV FEIS.

	Tons per Year							
	VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.94	6.99	7.92	0.01	0.43	0.42	1,222	273
On-Road Vehicles - Nearby Disposal Sites	0.05	0.49	0.98	0.00	0.02	0.01	370	217
On-Road Vehicles - Distant Disposal Sites	0.05	0.49	0.96	0.00	0.02	0.01	364	217
Fugitive Dust					10.86	2.35		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.05	0.53	1.66	0.01	0.05	0.02	698	634
On-Road Vehicles - Distant Disposal Sites	0.14	0.90	5.15	0.02	0.15	0.08	1,933	1,758
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.02	0.07	0.76	0.00	0.02	0.01	217	197
On-Road Vehicles - Distant Disposal Sites	0.12	0.48	4.74	0.01	0.13	0.07	1,477	1,343
Peak Annual Emissions – Nearby Disposal Sites	1.06	8.08	11.32	0.03	11.37	2.81	2,506	2,278
Peak Annual Emissions – Distant Disposal Sites	1.25	8.85	18.77	0.05	11.58	2.92	4,997	4,542

Note: Peak annual emissions would occur in year 2021.

Table 1.C-OS-36. Peak Annual Emissions - Soil Remediation COR Open Space Scenario Alternative - SSFL Area IV FEIS.

	Tons per Year							
Region/Source Type	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*CO2 (mt)*
Ventura County								
Off-road Equipment	0.24	1.63	1.99	0.00	0.09	0.09	301	273
On-Road Vehicles - Nearby Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	239	217
On-Road Vehicles - Distant Disposal Sites	0.04	0.25	0.77	0.00	0.01	0.01	239	217
Fugitive Dust					8.88	1.86		
SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.03	0.26	1.24	0.00	0.04	0.02	490	445
On-Road Vehicles - Distant Disposal Sites	0.12	0.60	4.46	0.02	0.13	0.07	1,651	1,501
Outside Ventura County/SCAB								
On-Road Vehicles - Nearby Disposal Sites	0.00	0.01	0.10	0.00	0.00	0.00	36	33
On-Road Vehicles - Distant Disposal Sites	0.06	0.23	2.13	0.01	0.06	0.03	767	697
Peak Annual Emissions – Nearby Disposal Sites	0.31	2.15	4.10	0.01	9.02	1.97	1,066	969
Peak Annual Emissions – Distant Disposal Sites	0.45	2.71	9.34	0.03	9.17	2.05	2,958	2,689

Note: Peak annual emissions would occur in year 2021.

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Attachment 1.D

Green Vehicle Fleets Emission Factors for On-Road Haul Trucks and Off-road Equipment - Mitigation Measure AQ-1

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Attachment 1.D

Emission Calculations for Implementation of the SSFL Area IV EIS Project Alternatives - Green Fleets

Emission Factors for On-Road Haul Trucks and Off-road Equipment - Mitigation Measure AQ-1

Table 1.D-1. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2017.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)	*Emission Factors (Grams/Mile)*						
5	0.50	2.95	16.53	0.03	0.01	0.01	2,785
10	0.41	2.39	12.52	0.02	0.01	0.01	2,469
15	0.29	1.68	7.47	0.02	0.01	0.01	2,072
20	0.21	1.22	4.14	0.02	0.01	0.01	1,810
25	0.15	0.89	2.21	0.02	0.01	0.01	1,670
30	0.11	0.66	1.35	0.02	0.01	0.01	1,582
35	0.08	0.48	0.89	0.01	0.01	0.00	1,511
40	0.06	0.36	0.63	0.01	0.00	0.00	1,454
45	0.04	0.26	0.46	0.01	0.00	0.00	1,405
50	0.03	0.19	0.35	0.01	0.00	0.00	1,363
55	0.02	0.14	0.27	0.01	0.00	0.00	1,326
60	0.02	0.12	0.24	0.01	0.00	0.00	1,310
65	0.02	0.12	0.24	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-2. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2018.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)	*Emission Factors (Grams/Mile)*						
5	0.47	2.75	14.89	0.03	0.01	0.01	2,785
10	0.38	2.23	11.28	0.02	0.01	0.01	2,469
15	0.27	1.57	6.73	0.02	0.01	0.01	2,072
20	0.19	1.14	3.73	0.02	0.01	0.01	1,810
25	0.14	0.83	1.99	0.02	0.01	0.01	1,670
30	0.10	0.61	1.21	0.02	0.00	0.00	1,582
35	0.08	0.45	0.80	0.01	0.00	0.00	1,511
40	0.06	0.33	0.57	0.01	0.00	0.00	1,454
45	0.04	0.25	0.42	0.01	0.00	0.00	1,405
50	0.03	0.18	0.32	0.01	0.00	0.00	1,363
55	0.02	0.13	0.25	0.01	0.00	0.00	1,326
60	0.02	0.11	0.22	0.01	0.00	0.00	1,310
65	0.02	0.11	0.22	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-3. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2019.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)							
5	0.43	2.56	13.32	0.03	0.01	0.01	2,785
10	0.35	2.07	10.09	0.02	0.01	0.01	2,469
15	0.25	1.46	6.02	0.02	0.01	0.01	2,072
20	0.18	1.06	3.34	0.02	0.01	0.01	1,810
25	0.13	0.77	1.78	0.02	0.00	0.00	1,670
30	0.10	0.57	1.09	0.02	0.00	0.00	1,582
35	0.07	0.42	0.72	0.01	0.00	0.00	1,511
40	0.05	0.31	0.51	0.01	0.00	0.00	1,454
45	0.04	0.23	0.37	0.01	0.00	0.00	1,405
50	0.03	0.17	0.28	0.01	0.00	0.00	1,363
55	0.02	0.12	0.22	0.01	0.00	0.00	1,326
60	0.02	0.11	0.20	0.01	0.00	0.00	1,310
65	0.02	0.11	0.20	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-4. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2020.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)	*Emission Factors (Grams/Mile)*						
5	0.40	2.38	11.84	0.03	0.01	0.01	2,785
10	0.33	1.92	8.97	0.02	0.01	0.01	2,469
15	0.23	1.36	5.35	0.02	0.01	0.01	2,072
20	0.17	0.98	2.97	0.02	0.00	0.00	1,810
25	0.12	0.72	1.58	0.02	0.00	0.00	1,670
30	0.09	0.53	0.96	0.02	0.00	0.00	1,582
35	0.07	0.39	0.64	0.01	0.00	0.00	1,511
40	0.05	0.29	0.45	0.01	0.00	0.00	1,454
45	0.04	0.21	0.33	0.01	0.00	0.00	1,405
50	0.03	0.16	0.25	0.01	0.00	0.00	1,363
55	0.02	0.12	0.20	0.01	0.00	0.00	1,326
60	0.02	0.10	0.18	0.01	0.00	0.00	1,310
65	0.02	0.10	0.18	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-5. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2021.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)	*Emission Factors (Grams/Mile)*						
5	0.37	2.19	10.34	0.03	0.01	0.01	2,785
10	0.30	1.78	7.83	0.02	0.01	0.01	2,469
15	0.21	1.25	4.67	0.02	0.00	0.00	2,072
20	0.15	0.90	2.59	0.02	0.00	0.00	1,810
25	0.11	0.66	1.38	0.02	0.00	0.00	1,670
30	0.08	0.49	0.84	0.02	0.00	0.00	1,582
35	0.06	0.36	0.56	0.01	0.00	0.00	1,511
40	0.04	0.27	0.39	0.01	0.00	0.00	1,454
45	0.03	0.20	0.29	0.01	0.00	0.00	1,405
50	0.02	0.14	0.22	0.01	0.00	0.00	1,363
55	0.02	0.11	0.17	0.01	0.00	0.00	1,326
60	0.02	0.09	0.15	0.01	0.00	0.00	1,310
65	0.02	0.09	0.15	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-6. Emission Factors for a California Average T7 Contruction Truck Fleet - Year 2022.

	Emission Factors (Grams/Hour)						
Mode	*ROG*	*CO*	*NOx*	*SOx*	*PM10*	*PM2_5*	*CO2*
Idle	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Running (mph)	*Emission Factors (Grams/Mile)*						
5	0.34	2.01	8.84	0.03	0.01	0.01	2,785
10	0.28	1.63	6.70	0.02	0.00	0.00	2,469
15	0.19	1.15	4.00	0.02	0.00	0.00	2,072
20	0.14	0.83	2.22	0.02	0.00	0.00	1,810
25	0.10	0.61	1.18	0.02	0.00	0.00	1,670
30	0.08	0.45	0.72	0.02	0.00	0.00	1,582
35	0.06	0.33	0.48	0.01	0.00	0.00	1,511
40	0.04	0.24	0.34	0.01	0.00	0.00	1,454
45	0.03	0.18	0.25	0.01	0.00	0.00	1,405
50	0.02	0.13	0.19	0.01	0.00	0.00	1,363
55	0.02	0.10	0.15	0.01	0.00	0.00	1,326
60	0.01	0.08	0.13	0.01	0.00	0.00	1,310
65	0.01	0.08	0.13	0.01	0.00	0.00	1,310

Note: Annual average factors obtained from EMFAC 2014 (ARB 2015).

Table 1.D-7. T7 Contruction Truck Fleet Populations by Model Year - Project Year 2021.

Model Year	*VMT (miles/day) (1)*	*Fraction of Total Fleet*
2017	46,873	0.22
2018	43,920	0.21
2019	42,588	0.20
2020	43,722	0.21
2021	29,597	0.14
2022	4,055	0.02
Totals	210,755	1.00

Note: (1) EMFAC2014 prediction for statewide year 2021 VMT for each model year of truck.

The fraction of total VMT of each model year is used as a surrogate for its population within the mitigated truck fleet.

Table 1.D-8. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - Idling.

Model Year	EMFAC Fleet Pop.	Emission Factors (Grams/Hour)						
		ROG	CO	NOx	SOx	PM10	PM2_5	CO2
2017	0.22	0.51	1.88	15.51	0.05	0.00	0.00	5,565
2018	0.21	0.51	1.88	15.51	0.05	0.00	0.00	5,565
2019	0.20	0.51	1.88	15.51	0.05	0.00	0.00	5,565
2020	0.21	0.51	1.88	15.51	0.05	0.00	0.00	5,565
2021	0.14	0.51	1.88	15.51	0.05	0.00	0.00	5,565
2022	0.02	0.51	1.88	15.51	0.05	0.00	0.00	5,565
Total Composite Idling (1)		0.51	1.88	15.51	0.05	0.00	0.00	5,565

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-9. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 5 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.50	2.95	16.36	0.03	0.01	0.01	2,785
2018	0.21	0.47	2.75	14.74	0.03	0.01	0.01	2,785
2019	0.20	0.43	2.56	13.18	0.03	0.01	0.01	2,785
2020	0.21	0.40	2.38	11.71	0.03	0.01	0.01	2,785
2021	0.14	0.37	2.19	10.23	0.03	0.01	0.01	2,785
2022	0.02	0.34	2.01	8.75	0.03	0.01	0.01	2,785
Total Composite 5 mph (1)		0.44	2.59	13.41	0.03	0.01	0.01	2,785

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-10. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 10 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.41	2.39	12.39	0.02	0.01	0.01	2,469
2018	0.21	0.38	2.23	11.16	0.02	0.01	0.01	2,469
2019	0.20	0.35	2.07	9.98	0.02	0.01	0.01	2,469
2020	0.21	0.33	1.92	8.87	0.02	0.01	0.01	2,469
2021	0.14	0.30	1.78	7.75	0.02	0.01	0.01	2,469
2022	0.02	0.28	1.63	6.63	0.02	0.00	0.00	2,469
Total Composite 10 mph (1)		0.35	2.09	10.16	0.02	0.01	0.01	2,469

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-11. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 15 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.29	1.68	7.39	0.02	0.01	0.01	2,072
2018	0.21	0.27	1.57	6.66	0.02	0.01	0.01	2,072
2019	0.20	0.25	1.46	5.96	0.02	0.01	0.01	2,072
2020	0.21	0.23	1.36	5.29	0.02	0.01	0.01	2,072
2021	0.14	0.21	1.25	4.62	0.02	0.00	0.00	2,072
2022	0.02	0.19	1.15	3.96	0.02	0.00	0.00	2,072
Total Composite 15 mph (1)		0.25	1.48	6.06	0.02	0.01	0.01	2,072

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-12. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 20 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.21	1.22	4.10	0.02	0.01	0.01	1,810
2018	0.21	0.19	1.14	3.69	0.02	0.01	0.01	1,810
2019	0.20	0.18	1.06	3.30	0.02	0.01	0.01	1,810
2020	0.21	0.17	0.98	2.94	0.02	0.00	0.00	1,810
2021	0.14	0.15	0.90	2.57	0.02	0.00	0.00	1,810
2022	0.02	0.14	0.83	2.19	0.02	0.00	0.00	1,810
Total Composite 20 mph (1)		0.18	1.07	3.36	0.02	0.01	0.01	1,810

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-13. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 25 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.15	0.89	2.18	0.02	0.01	0.01	1,670
2018	0.21	0.14	0.83	1.97	0.02	0.01	0.01	1,670
2019	0.20	0.13	0.77	1.76	0.02	0.00	0.00	1,670
2020	0.21	0.12	0.72	1.56	0.02	0.00	0.00	1,670
2021	0.14	0.11	0.66	1.37	0.02	0.00	0.00	1,670
2022	0.02	0.10	0.61	1.17	0.02	0.00	0.00	1,670
Total Composite 25 mph (1)		0.13	0.78	1.79	0.02	0.00	0.00	1,670

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-14. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 30 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.11	0.66	1.35	0.02	0.01	0.01	1,582
2018	0.21	0.10	0.61	1.21	0.02	0.00	0.00	1,582
2019	0.20	0.10	0.57	1.09	0.02	0.00	0.00	1,582
2020	0.21	0.09	0.53	0.96	0.02	0.00	0.00	1,582
2021	0.14	0.08	0.49	0.84	0.02	0.00	0.00	1,582
2022	0.02	0.08	0.45	0.72	0.02	0.00	0.00	1,582
Total Composite 30 mph (1)		0.10	0.58	1.10	0.02	0.00	0.00	1,582

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-15. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 35 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.08	0.48	0.89	0.01	0.01	0.00	1,511
2018	0.21	0.08	0.45	0.80	0.01	0.00	0.00	1,511
2019	0.20	0.07	0.42	0.72	0.01	0.00	0.00	1,511
2020	0.21	0.07	0.39	0.64	0.01	0.00	0.00	1,511
2021	0.14	0.06	0.36	0.56	0.01	0.00	0.00	1,511
2022	0.02	0.06	0.33	0.48	0.01	0.00	0.00	1,511
Total Composite 35 mph (1)		0.07	0.42	0.73	0.01	0.00	0.00	1,511

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-16. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 40 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.06	0.36	0.63	0.01	0.00	0.00	1,454
2018	0.21	0.06	0.33	0.57	0.01	0.00	0.00	1,454
2019	0.20	0.05	0.31	0.51	0.01	0.00	0.00	1,454
2020	0.21	0.05	0.29	0.45	0.01	0.00	0.00	1,454
2021	0.14	0.04	0.27	0.39	0.01	0.00	0.00	1,454
2022	0.02	0.04	0.24	0.34	0.01	0.00	0.00	1,454
Total Composite 40 mph (1)		0.05	0.31	0.51	0.01	0.00	0.00	1,454

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-17. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 45 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.04	0.26	0.46	0.01	0.00	0.00	1,405
2018	0.21	0.04	0.25	0.42	0.01	0.00	0.00	1,405
2019	0.20	0.04	0.23	0.37	0.01	0.00	0.00	1,405
2020	0.21	0.04	0.21	0.33	0.01	0.00	0.00	1,405
2021	0.14	0.03	0.20	0.29	0.01	0.00	0.00	1,405
2022	0.02	0.03	0.18	0.25	0.01	0.00	0.00	1,405
Total Composite 45 mph (1)		0.04	0.23	0.38	0.01	0.00	0.00	1,405

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-18. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 50 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.03	0.19	0.35	0.01	0.00	0.00	1,363
2018	0.21	0.03	0.18	0.32	0.01	0.00	0.00	1,363
2019	0.20	0.03	0.17	0.28	0.01	0.00	0.00	1,363
2020	0.21	0.03	0.16	0.25	0.01	0.00	0.00	1,363
2021	0.14	0.02	0.14	0.22	0.01	0.00	0.00	1,363
2022	0.02	0.02	0.13	0.19	0.01	0.00	0.00	1,363
Total Composite 50 mph (1)		0.03	0.17	0.29	0.01	0.00	0.00	1,363

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-19 Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 55 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.02	0.14	0.27	0.01	0.00	0.00	1,326
2018	0.21	0.02	0.13	0.25	0.01	0.00	0.00	1,326
2019	0.20	0.02	0.12	0.22	0.01	0.00	0.00	1,326
2020	0.21	0.02	0.12	0.20	0.01	0.00	0.00	1,326
2021	0.14	0.02	0.11	0.17	0.01	0.00	0.00	1,326
2022	0.02	0.02	0.10	0.15	0.01	0.00	0.00	1,326
Total Composite 55 mph (1)		0.02	0.13	0.22	0.01	0.00	0.00	1,326

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-20. Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 60 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.02	0.12	0.24	0.01	0.00	0.00	1,310
2018	0.21	0.02	0.11	0.22	0.01	0.00	0.00	1,310
2019	0.20	0.02	0.11	0.20	0.01	0.00	0.00	1,310
2020	0.21	0.02	0.10	0.18	0.01	0.00	0.00	1,310
2021	0.14	0.02	0.09	0.15	0.01	0.00	0.00	1,310
2022	0.02	0.01	0.08	0.13	0.01	0.00	0.00	1,310
Total Composite 60 mph (1)		0.02	0.11	0.20	0.01	0.00	0.00	1,310

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-21 Composite Emission Factors for the SSFL Area IV and NBZ EIS Green Truck Fleet - 65 mph.

Model Year	EMFAC Fleet Pop.	Running Emission Factors - Gm/Mi						
		ROG	CO	NOx	SOx	PM10	PM2.5	CO2
2017	0.22	0.02	0.12	0.24	0.01	0.00	0.00	1,310
2018	0.21	0.02	0.11	0.22	0.01	0.00	0.00	1,310
2019	0.20	0.02	0.11	0.20	0.01	0.00	0.00	1,310
2020	0.21	0.02	0.10	0.18	0.01	0.00	0.00	1,310
2021	0.14	0.02	0.09	0.15	0.01	0.00	0.00	1,310
2022	0.02	0.01	0.08	0.13	0.01	0.00	0.00	1,310
Total Composite 65 mph (1)		0.02	0.11	0.20	0.01	0.00	0.00	1,310

Note: (1) Equal to 22% of 2017, 21% of 2018, 20% of 2019, 21% of 2020, 14% of 2021, and 2% of 2022 emission factor values,

Table 1.D-22. Mitigated On-road Truck Composite Emission Factors.

Project Scenario	Emission Factors (Grams/Mile)						
	VOC	CO	NOx	SO2	PM10	PM2.5	CO2
Composite - Trip within Ventura County (1)	0.10	0.58	1.84	0.02	0.00	0.00	1,578
Composite - Trip Outside Ventura County (2)	0.04	0.26	0.80	0.01	0.00	0.00	1,401

Notes: (1) Equal to 10/40/50% of 10/25/55 mph factors.

(2) Equal to 5/5/90% of 10/25/55 mph factors.

Table 1.D-23. Comparison of Unmitigated and Mitigated On-road Truck Composite Emission Factors.

Region/Project Scenario	Emission Factors (Grams/Mile)						
	VOC	CO	NOx	SO2	PM10	PM2.5	CO2
Ventura County							
Year 2021 California Average Fleet	0.24	0.97	5.96	0.02	0.13	0.07	1,768
Year 2021 Project Mitigated Fleet	0.10	0.58	1.84	0.02	0.004	0.004	1,578
Individual Pollutant Fractional Reduction	0.59	0.40	0.69	0.11	0.97	0.94	0.11
Pollutant Fractional Reduction (1)	0.66						
Outside Ventura County							
Year 2021 California Average Fleet	0.11	0.46	4.31	0.01	0.13	0.06	1,556
Year 2021 Project Mitigated Fleet	0.04	0.26	0.80	0.01	0.004	0.003	1,401
Individual Pollutant Fractional Reduction	0.61	0.44	0.81	0.10	0.97	0.95	0.10
Pollutant Fractional Reduction (1)	0.71						

Notes: (1) Excludes SO2, PM2.5, and CO2.

Table 1.D-24. Off-Road Equipment Emission Factors.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*						
		VOC	*CO*	*NOx*	*SO2*	*PM10*	*PM2.5*	*CO2*
Year 2021								
Concrete/Industrial Saws - 51 to 120 Hp	D	0.37	3.52	2.91	0.01	0.17	0.17	568
Cranes - 176 to 250 Hp	D	0.35	1.68	4.10	0.01	0.17	0.15	473
Crawler Tractors - 251 to 500 Hp	D	0.28	2.02	3.28	0.01	0.13	0.12	474
Excavators - 176 to 250 Hp	D	0.16	1.10	1.71	0.01	0.05	0.05	472
Excavators - 251 to 500 Hp	D	0.14	1.09	1.33	0.01	0.05	0.04	470
Generator - 6 to 15 Hp	D	0.63	3.53	4.44	0.01	0.20	0.20	568
Generator - 51 to 120 Hp	D	0.33	3.36	2.89	0.01	0.15	0.15	568
Rough Terrain Forklifts - 51 to 120 Hp	D	0.18	3.25	2.29	0.01	0.09	0.08	473
Graders - 176 to 250 Hp	D	0.34	1.31	4.38	0.01	0.14	0.13	475
Off-HighwayTrucks - 121 to 175 Hp	D	0.28	3.32	2.25	0.01	0.11	0.10	470
Off-HighwayTrucks - 251 to 500 Hp	D	0.23	1.34	1.95	0.01	0.07	0.07	475
Rubber Tired Loaders - 26 to 50 Hp	D	1.33	6.45	4.97	0.01	0.41	0.38	525
Rubber Tired Loaders - 121 to 175 Hp	D	0.35	3.35	3.12	0.01	0.17	0.16	471
Sweepers/Scrubbers - 51 to 120 Hp	D	0.44	3.76	3.96	0.01	0.29	0.27	474
Average 2021 Emission Factors		0.39	2.79	3.11	0.01	0.16	0.15	497
Year 2023								
Concrete/Industrial Saws - 51 to 120 Hp	D	0.32	3.51	2.48	0.01	0.12	0.12	568
Cranes - 176 to 250 Hp	D	0.30	1.55	3.23	0.01	0.14	0.12	473
Crawler Tractors - 251 to 500 Hp	D	0.24	1.85	2.48	0.01	0.10	0.09	475
Excavators - 176 to 250 Hp	D	0.14	1.09	1.21	0.01	0.04	0.04	472
Excavators - 251 to 500 Hp	D	0.12	1.05	0.89	0.01	0.03	0.03	470
Generator - 6 to 15 Hp	D	0.62	3.51	4.35	0.01	0.19	0.19	568
Generator - 51 to 120 Hp	D	0.28	3.35	2.48	0.01	0.12	0.12	568
Rough Terrain Forklifts - 51 to 120 Hp	D	0.15	3.24	1.98	0.01	0.06	0.06	473
Graders - 176 to 250 Hp	D	0.28	1.25	3.44	0.01	0.11	0.10	474
Off-HighwayTrucks - 121 to 175 Hp	D	0.24	3.30	1.68	0.01	0.08	0.07	470
Off-HighwayTrucks - 251 to 500 Hp	D	0.19	1.22	1.32	0.01	0.05	0.04	475
Rubber Tired Loaders - 26 to 50 Hp	D	1.05	5.97	4.52	0.01	0.30	0.28	524
Rubber Tired Loaders - 121 to 175 Hp	D	0.27	3.29	2.20	0.01	0.12	0.11	471
Sweepers/Scrubbers - 51 to 120 Hp	D	0.35	3.69	3.29	0.01	0.21	0.19	474
Average 2023 Emission Factors		0.32	2.71	2.54	0.01	0.12	0.11	497

Notes: (1) Data from the California Emission Estimator Model (CalEEMod) User"s Guide, Appendix D Table 3.4 and equate to state average factors from the ARB OFFROAD2011 Model (CAPCOA 2013).

Table 1.D-25. Comparison of Unmitigated and Mitigated Off-road Equipment Emission Factors.

Project Year/Source Type	*Fuel Type*	*Emission Factors (Grams/Horsepower-Hour)*						
		VOC	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
Tier 4 Standards (1)								
Off-Road Equipment - 25-50 Hp (2)	D	0.35	4.10	3.15		0.020		
Off-Road Equipment - 51-120 Hp	D	0.14	3.73	0.30		0.020		
Off-Road Equipment - 121-175 Hp	D	0.14	3.73	0.30		0.015		
Off-Road Equipment - 176-250 Hp	D	0.14	2.61	0.30		0.015		
Off-Road Equipment - 251-500 Hp	D	0.14	2.61	0.30		0.015		
Off-Road Equipment - 501-750 Hp	D	0.14	2.61	0.30		0.015		
Tier 4 Standard Averages (2)		0.18	3.23	0.78		0.017		
Pollutant Fractional Reduction for 2021 Fleet		0.55	(0.16)	0.75		0.89		
Total Pollutant Fractional Reduction for 2021 Fleet (3)		0.51						
Pollutant Fractional Reduction for 2023 Fleet		0.46	(0.19)	0.69		0.86		
Total Pollutant Fractional Reduction for 2023 Fleet (3)		0.46						

Notes: (1) From *Nonroad Compression-Ignition Engines: Exhaust Emission Standards* (USEPA 2016).
https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100OA05.pdf

(2) Tier 4 Standard = 3.5 g/hp-hr for NOx + NMHC (VOC). Data provided equate to 0.1/0.9 fraction of VOC/NOx.

(3) Evaluates VOC, CO, NOx, and PM10.

Attachment 1.E

Emission Calculations for SSFL Cumulative Projects

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Attachment 1.E - Emission Calculations for Implementation of the SSFL Area IV EIS Project Alternatives - Cumulative Emission Calculations for SSFL Projects

Table 1.E-1. Estimation of Peak Annual and Daily Emissions within Ventura County for NASA EIS Activities.

Table 1.E-2. Estimation of Peak Annual Emissions within Ventura County for the Boeing EIS Activities.

Table 1.E-1. Estimation of Peak Annual and Daily Emissions within Ventura County for NASA EIS Activities.

Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10 low*	*PM10 high*	*PM2.5 low*	*PM2.5 high*	*Total CO2 (mt)*
	Tons/Year								
Demolition – Year 1	2.0	11.0	20.0	a	2.0	2.0	1.0	1.0	3,007
Soil Excavation – Years 2 and 3 @ 320k cy - Low (1)	1.0	9.0	14.0	a	852.0		178.0		50,689
Soil Excavation – Years 2 and 3 @ 500k cy - High (1)	1.0	9.0	15.0	a		1,146.0		239.0	78,242
Soil Excavation – Years 2 and 3 @ 870k cy - Highest (2)	1.7	15.7	26.1	a		1,994.0		415.9	136,141
Annual Emissions - Low Range	1.0	9.0	14.0	a	2.0		1.0		53,696
Annual Emissions - High Range	2.0	15.7	26.1	a		1,994.0		415.9	139,148
	Pounds/Day (3)								
Demolition – 1 year	16	88	160	a	16	16	8	8	
Soil Excavation – Years 2 and 3 @ 320k cy - Low (1)	8	72	112	a	6,816		1,424		
Soil Excavation – Years 2 and 3 @ 500k cy - High (1)	8	72	120	a		9,168		1,912	
Soil Excavation – Years 2 and 3 @ 870k cy - Highest (2)	14	125	209	a		15,952		3,327	
Annual Emissions - Low Range	8	72	112	a	16		8		
Annual Emissions - High Range	16	125	209	a		15,952		3,327	

Notes: (1) From the NASA EIS.

(2) Factored emissions from the high year by 8.7/5 to estimate peak annual emisisons for the 870,000 cy scenario. This assumes that these activities would still be completed in 2 years.

(3) Based on 250 working days per year.

Table 1.E-2. Estimation of Peak Annual Emissions within Ventura County for the Boeing EIS Activities.

Activity	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*Total CO2 (mt)*
	Tons/Year						
DOE Soil Excavation (1)							
Off-road Equipment	0.25	1.69	1.99	0.00	0.09	0.09	
On-road Vehicles	0.04	0.25	0.77	0.00	0.01	0.01	
Fugitive Dust					8.88	1.86	
Annual Emissions	0.29	1.94	2.76	0.01	8.99	1.96	79,622
Boeing Soil Excavation (2)							
Off-road Equipment	1.09	7.25	8.52	0.01	0.40	0.38	
On-road Vehicles	0.16	1.08	3.30	0.01	0.06	0.03	
Fugitive Dust					38.06	7.97	
Annual Emissions	1.24	8.32	11.82	0.02	38.52	8.39	13,557
Total Low Cumulative CO2 Emissions - All 3 SSFL Actions							146,875
Total High Cumulative CO2 Emissions - All 3 SSFL Actions							232,327
Boeing	*Pounds/Day (3)*						
Off-road Equipment	8.7	58.0	68.2	0.1	3.2	3.1	
On-road Vehicles	1.2	8.6	26.4	0.1	0.5	0.2	
Fugitive Dust					304.5	63.8	
Daily Emissions Range	9.9	66.6	94.5	0.2	308.1	67.1	

Notes: (1) Max peak year soil remediation emissions from any alternative in 2021.

(2) Factored DOE emissions by ratio of Boeing annual/DOE year 2021 excavation volumes = 150,000/35,000 cy, except CO2 = total DOE emissions * Boeing total/DOE total excavation volumes = 150,000/881,000 cy.

(3) Based on 250 working days per year.

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Attachment 1.F

Fuel Calculations due to Implementation of the SSFL Area IV FEIS Project Alternatives

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Attachment 1.F - Fuel Calculations for Implementation of the SSFL Area IV FEIS Project Alternatives.

Table 1.F-1. Off-Road Equipment Activity and Fuel Usages for Building Removal Alt - SSFL Area IV FEIS (Page 1 of 2).

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Removal Alt - Concrete - RAD								
Excavator - 350	286	D	0.38	1	4	435	67	29,311
Excavator - Concrete Breaker	250	D	0.42	1	8	840	67	56,637
Concrete/Industrial Saw	84	D	0.42	1	5	176	67	11,894
Forklift	94	D	0.40	1	2	75	67	5,070
Loader - 902G	48	D	0.36	1	4	69	67	4,660
Street Sweeper	115	D	0.46	1	2	106	67	7,134
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	67	17,935
Demolition - Asphalt - RAD								
Dozer - D8	310	D	0.43	1	4	533	16	8,358
Excavator - 350	286	D	0.38	1	8	869	16	13,628
Forklift	94	D	0.40	1	2	75	16	1,179
Loader - 902G	48	D	0.36	1	4	69	16	1,083
Street Sweeper	115	D	0.46	1	2	106	16	1,658
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	16	4,170
Demolition - Metal and Building Debris - RAD								
Crane	180	D	0.42	1	6	449	77	34,343
Dozer - D8	310	D	0.43	1	6	800	77	61,224
Excavator - 350	286	D	0.38	1	8	869	77	66,555
Forklift	94	D	0.40	1	2	75	77	5,757
Industrial Saw	84	D	0.42	1	8	279	77	21,369
Loader - 902G	48	D	0.36	1	4	69	77	5,291
Street Sweeper	115	D	0.46	1	2	106	77	8,099
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	77	20,362
Demolition - Concrete - HW								
Excavator - 350	286	D	0.38	1	4	435		
Excavator - Concrete Breaker	250	D	0.42	1	8	840		
Concrete/Industrial Saw	84	D	0.42	1	5	176		
Forklift	94	D	0.40	1	2	75		
Loader - 902G	48	D	0.36	1	4	69		
Street Sweeper	115	D	0.46	1	2	106		
Water Truck - 5000 Gallons	175	D	0.38	1	4	266		
Demolition - Asphalt - HW								
Dozer - D8	310	D	0.43	1	4	533		
Excavator - 350	286	D	0.38	1	8	869		
Forklift	94	D	0.40	1	2	75		
Loader - 938G	158	D	0.36	1	8	455		
Street Sweeper	115	D	0.46	1	2	106		
Water Truck - 5000 Gallons	175	D	0.38	1	4	266		
Total Hp-Hrs								385,717
Total Gallons								19,286

Table 1.F-1. Off-Road Equipment Activity and Fuel Usages for Building Removal Alt - SSFL Area IV FEIS (Page 2 of 2).

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Demolition - Metal and Building Debris - HW								
Crane	180	D	0.42	1	6	449	2	795
Dozer - D8	310	D	0.43	1	6	800	2	1,418
Excavator - 350	286	D	0.38	1	8	869	2	1,542
Forklift	94	D	0.40	1	2	75	2	133
Industrial Saw	84	D	0.42	1	8	279	2	495
Loader - 902G	48	D	0.36	1	4	69	2	123
Street Sweeper	115	D	0.46	1	2	106	2	188
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	2	472
Demolition - Concrete - Clean								
Excavator - 350	286	D	0.38	1	4	435	4	1,573
Excavator - Concrete Breaker	250	D	0.42	1	8	840	4	3,039
Concrete/Industrial Saw	84	D	0.42	1	5	176	4	638
Loader - 938G	158	D	0.36	1	8	455	4	1,646
Street Sweeper	115	D	0.46	1	2	106	4	383
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	4	962
Demolition - Asphalt - Clean								
Dozer - D8	310	D	0.43	1	4	533	3	1,632
Excavator - 350	286	D	0.38	1	8	869	3	2,660
Loader - 938G	158	D	0.36	1	8	455	3	1,392
Street Sweeper	115	D	0.46	1	2	106	3	324
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	3	814
Demolition - Metal and Building Debris - Clean								
Crane	180	D	0.42	1	6	449	66	29,817
Dozer - D8	310	D	0.43	1	6	800	66	53,156
Excavator - 350	286	D	0.38	1	8	869	66	57,785
Industrial Saw	84	D	0.42	1	8	279	66	18,553
Loader - 938G	158	D	0.36	1	8	455	66	30,243
Street Sweeper	115	D	0.46	1	2	106	66	7,032
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	66	17,679
Soil Backfilling								
Dozer - D8	310	D	0.43	1	8	1,066	55	58,604
Grader - 160H	200	D	0.41	1	6	492	55	27,038
Loader - 938G	158	D	0.36	1	8	455	55	25,007
Street Sweeper	115	D	0.46	1	2	106	55	5,814
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	55	14,618
Generators								
Central Trailer Complex	100	D	0.74	2	24	3,552	913	3,241,200
Air Monitoring	7	D	0.74	4	24	497	913	453,768
Temporary Lighting	7	D	0.74	4	10	207	65	13,468
Miscellaneous Use	5	D	0.74	2	10	74	625	46,250
Total Hp-Hrs								4,120,260
Total Gallons - Diesel								206,013
Total Building Removal Hp-Hrs								4,505,977
Total Building Removal Gallons - Diesel								225,299

Table 1.F-2. Off-Road Equipment Activity and Fuel Usages for Soil Remediation Cleanup to AOC LUT Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 769,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	3,139	1,255,196
Excavator - 350	286	D	0.38	1	5.0	543	3,139	1,705,611
Loader - 938G	158	D	0.36	1	3.0	171	3,139	535,601
Street Sweeper	115	D	0.46	1	2.0	106	3,139	332,082
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	3,139	834,914
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2	267	8	2,176
Excavator - 350	286	D	0.38	1	4	435	8	3,549
Forklift	94	D	0.40	1	3	100	8	817
Loader - 902G	48	D	0.36	2	5	173	8	1,411
Street Sweeper	115	D	0.46	1	2	106	8	864
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	8	2,171
Excavation - Soil Category 4 = 110,000 cy								
Dozer - D8	310	D	0.43	1	2	267	449	119,698
Excavator - 350	286	D	0.38	1	4	435	449	195,180
Forklift	94	D	0.40	1	3	100	449	44,957
Loader - 902G	48	D	0.36	2	5	173	449	77,584
Street Sweeper	115	D	0.46	1	2	106	449	47,502
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	449	119,429
Soil Backfilling = 660,750 cy								
Dozer - D8	310	D	0.43	1	4	533	2,697	1,438,008
Grader - 160H	200	D	0.41	1	3	246	2,697	663,447
Loader - 938G	158	D	0.36	1	4	228	2,697	613,608
Street Sweeper	115	D	0.46	1	2	106	2,697	285,336
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	2,697	717,386
Generators								
Air Monitoring	7	D	0.74	4	24	497	9,198	4,573,981
Total Soil Remediation Hp-Hrs								13,570,507
Total Soil Remediation Gallons - Diesel								678,525

Table 1.F-3. Off-Road Equipment Activity and Fuel Usages for Soil Remediation Cleanup to Revised LUT Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 78,000 cy								
Dozer - D8	310	D	0.43	1	3	400	318	127,315
Excavator - 350	286	D	0.38	1	5	543	318	173,001
Loader - 938G	158	D	0.36	1	3	171	318	54,326
Street Sweeper	115	D	0.46	1	2	106	318	33,683
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	318	84,686
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2	267	8	2,176
Excavator - 350	286	D	0.38	1	4	435	8	3,549
Forklift	94	D	0.40	1	3	100	8	816
Loader - 902G	48	D	0.36	2	5	173	8	1,411
Street Sweeper	115	D	0.46	1	2	106	8	864
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	8	2,171
Excavation - Soil Category 4 = 110,000 cy								
Dozer - D8	310	D	0.43	1	2	267	449	119,698
Excavator - 350	286	D	0.38	1	4	435	449	195,180
Forklift	94	D	0.40	1	3	100	449	44,956
Loader - 902G	48	D	0.36	2	5	173	449	77,584
Street Sweeper	115	D	0.46	1	2	106	449	47,502
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	449	119,429
Soil Backfilling = 142,500 cy								
Dozer - D8	310	D	0.43	1	4	533	582	310,127
Grader - 160H	200	D	0.41	1	3	246	582	143,082
Loader - 938G	158	D	0.36	1	4	228	582	132,333
Street Sweeper	115	D	0.46	1	2	106	582	61,537
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	582	154,714
Generators								
Air Monitoring	7	D	0.74	4	24	497	2,000	994,659
Total Soil Remediation Hp-Hrs								2,884,798
Total Soil Remediation Gallons - Diesel								144,240

Table 1.F-4. Off-Road Equipment Activity and Fuel Usages for the COR Residential Scenario Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 49,000 cy								
Dozer - D8	310	D	0.43	1	3.0	400	200	79,980
Excavator - 350	286	D	0.38	1	5.0	543	200	108,680
Loader - 938G	158	D	0.36	1	3.0	171	200	34,128
Street Sweeper	115	D	0.46	1	2.0	106	200	21,160
Water Truck - 5000 Gallons	175	D	0.38	1	4.0	266	200	53,200
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2	267	8	2,176
Excavator - 350	286	D	0.38	1	4	435	8	3,549
Forklift	94	D	0.40	1	3	100	8	816
Loader - 902G	48	D	0.36	2	5	173	8	1,411
Street Sweeper	115	D	0.46	1	2	106	8	864
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	8	2,171
Excavation - Soil Category 4 = 1,000 cy								
Dozer - D8	310	D	0.43	1	2	267	4	1,088
Excavator - 350	286	D	0.38	1	4	435	4	1,774
Forklift	94	D	0.40	1	3	100	4	409
Loader - 902G	48	D	0.36	2	5	173	4	705
Street Sweeper	115	D	0.46	1	2	106	4	432
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	4	1,086
Soil Backfilling = 39,000 cy								
Dozer - D8	310	D	0.43	1	4	533	159	84,877
Grader - 160H	200	D	0.41	1	3	246	159	39,159
Loader - 938G	158	D	0.36	1	4	228	159	36,217
Street Sweeper	115	D	0.46	1	2	106	159	16,842
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	159	42,343
Generators								
Air Monitoring	7	D	0.74	4	24	497	573	284,966
Total Soil Remediation Hp-Hrs								818,033
Total Soil Remediation Gallons - Diesel								40,902

Table 1.F-5. Off-Road Equipment Activity and Fuel Usages for the COR Open Space Scenario Alternative - SSFL Area IV FEIS.

Construction Activity-Soil Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavation - Soil Categories 1 and 2 = 36,000 cy								
Dozer - D8	310	D	0.43	1	3	400	147	58,761
Excavator - 350	286	D	0.38	1	5	543	147	79,847
Loader - 938G	158	D	0.36	1	3	171	147	25,074
Street Sweeper	115	D	0.46	1	2	106	147	15,546
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	147	39,086
Excavation - Soil Category 3 = 2,000 cy								
Dozer - D8	310	D	0.43	1	2	267	8	2,176
Excavator - 350	286	D	0.38	1	4	435	8	3,549
Forklift	94	D	0.40	1	3	100	8	816
Loader - 902G	48	D	0.36	2	5	173	8	1,411
Street Sweeper	115	D	0.46	1	2	106	8	864
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	8	2,171
Excavation - Soil Category 4 = 200 cy								
Dozer - D8	310	D	0.43	1	2	267	1	218
Excavator - 350	286	D	0.38	1	4	435	1	355
Forklift	94	D	0.40	1	3	100	1	82
Loader - 902G	48	D	0.36	2	5	173	1	141
Street Sweeper	115	D	0.46	1	2	106	1	86
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	1	217
Soil Backfilling = 28,650 cy								
Dozer - D8	310	D	0.43	1	4	533	117	62,352
Grader - 160H	200	D	0.41	1	3	246	117	28,767
Loader - 938G	158	D	0.36	1	4	228	117	26,606
Street Sweeper	115	D	0.46	1	2	106	117	12,372
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	117	31,106
Generators								
Air Monitoring	7	D	0.74	4	24	497	438	217,809
Total Soil Remediation Hp-Hrs								609,410
Total Soil Remediation Gallons - Diesel								30,470

Table 1.F-6. Off-Road Equipment Activity and Fuel Usages for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Excavate Soil/Ramp Construction								
Dozer - D8	310	D	0.43	1	8	1,066	3	3,199
Dump truck - Cat D25D - 18 CY	260	D	0.38	1	8	790	3	2,371
Loader - 938G	158	D	0.36	1	8	455	3	1,365
Street Sweeper	115	D	0.46	1	2	106	3	317
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	3	798
Bedrock Removal								
Excavator - 350 with Bedrock Breaker	286	D	0.38	1	8	869	33	28,571
Forklift	94	D	0.40	1	2	75	33	2,471
Loader - 902G	48	D	0.36	1	6	104	33	3,407
Street Sweeper	115	D	0.46	1	1	53	33	1,738
Water Truck - 5000 Gallons	175	D	0.38	1	2	133	33	4,371
HW Soil Removal								
Forklift	94	D	0.40	1	1.5	56	15	846
Loader - 902G	48	D	0.36	1	2.0	35	15	518
Soil Backfilling								
Dozer - D8	310	D	0.43	1	8	1,066	2	2,133
Dump truck - Cat D25D - 18 CY	260	D	0.38	2	8	1,581	2	3,162
Loader - 938G	158	D	0.36	1	8	455	2	910
Street Sweeper	115	D	0.46	1	2	106	2	212
Water Truck - 5000 Gallons	175	D	0.38	1	4	266	2	532
Total Groundwater Remediation Treatment Hp-Hrs								56,921
Total Groundwater Remediation Treatment Gallons - Diesel								2,846

Table 1.F-7. Off-Road Equipment Activity and Fuel Usages for Groundwater MNA Alternative - SSFL Area IV FEIS

Construction Activity-Material Type/Equipment Type	*Hp Rating*	*Fuel Type*	*Ave. Daily Load Factor*	*Number Active*	*Hours/ Day*	*Daily Hp-Hrs*	*Work Days*	*Total Hp-Hrs*
Drill Wells								
Auger Drill	115	D	0.60	2	8	1,104	2	2,208
Drill Rig	260	D	0.60	3	8	3,744	5	18,720
Drilling Fluids Pump	55	D	0.60	1	8	264	10	2,640
Total Hp-Hrs								23,568
Total Gallons - Diesel								1,178

Table 1.F-8. Total Off-Road Equipment Hp-Hr and Fuel Usages for Remediation Alternatives - SSFL Area IV FEIS.

Alternative	*Total Hp-Hrs*	*Total Fuel Usage*
Building Removal	4,505,977	225,299
Soil Remediation Cleanup to AOC LUT	13,570,507	678,525
Soil Remediation Cleanup to Revised LUT	2,884,798	144,240
Soil Conservation of Resources Alternative – Residential Option	818,033	40,902
Soil Conservation of Resources Alternative – Open-Space Option	609,410	30,470
Groundwater Remediation Treatment	56,921	2,846
Groundwater MNA	23,568	1,178
Combined Alternatives - Highest Combination		
Building Removal	4,505,977	225,299
Soil Remediation Cleanup to AOC LUT	13,570,507	678,525
Groundwater Remediation Treatment	56,921	2,846
Totals	18,133,406	906,670

Table 1.F-9. On-Road Vehicle VMT and Fuel Usages for Building Removal Alt - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Demolished Material Type-Destination/Vehicle Type (1)	*Trips (2)*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
RAD - NNSS									
Concrete Haul Truck	482	5.5	0.75	199.3	500	2,652	362	96,084	241,029
Asphalt Haul Truck	149	5.5	0.75	199.3	500	818	112	29,654	74,387
Metal and Building Debris Haul Truck	397	5.5	0.75	199.3	500	2,184	298	79,143	198,532
Total Miles - RAD Materials to NNSS (3)	85.7					5,654	771	204,880	513,949
RAD - WCS Texas									
Concrete Haul Truck	482	5.5	0.75	374	1,945	2,652	362	180,308	937,817
Asphalt Haul Truck	149	5.5	0.75	374	1,945	818	112	55,647	289,433
Metal and Building Debris Haul Truck	397	5.5	0.75	374	1,945	2,184	298	148,517	772,467
Total Miles - RAD Materials to WCS Texas (3)	85.7					5,654	771	384,472	1,999,717
HW - Buttonwillow									
Metal and Building Debris Haul Truck	12	5.5	0.75	127.6	112	66	9	1,531	1,340
Total Miles - HW Materials to Buttonwillow (3)	1.0					66	9	1,531	1,340
HW - US Ecology Idaho									
Metal and Building Debris Haul Truck	12	5.5	0.75	199.3	1,840	66	9	2,392	22,079
Total Miles - HW Materials to US Ecology Idaho (3)	1.0					66	9	2,392	22,079
Clean - Near Disposal Facility									
Concrete Haul Truck - Chiquita Canyon	23	5.5	0.75	63.3		128	17	1,473	
Asphalt Haul Truck - Chiquita Canyon	20	5.5	0.75	63.3		108	15	1,247	
Metal and Building Debris Haul Truck - Gillibrand	417	5.5	20.75	17.8		2,293	8,652	7,422	
Total Miles - Clean Materials to Near DS (3)	38.3					2,530	8,685	10,143	
Clean - Far Disposal Facility									
Concrete Haul Truck - McKittrick	23	5.5	0.75	127.6	140	128	17	2,973	3,253
Ashpalt Haul Truck - McKittrick	20	5.5	0.75	127.6	140	108	15	2,516	2,754
Metal and Building Debris Haul Truck - Kramer Metals	417	5.5	0.75	87.3		2,293	313	36,382	
Total Miles - Clean Materials to Far DS (3)	38.3					2,530	345	41,871	6,007
Soil Backfilling									
Soil Haul Trucks - Import (4)	878	5.5	40	60		4,829	35,120	52,680	
Total Miles - Backfill Soil (3)	73.2					4,829	35,120	52,680	
VMT - Nearby Disposal Sites						13,079	44,585	269,235	515,288
Gallons - Diesel						2,736	8,541	42,466	76,566
Total VMT - Nearby Disposal Sites									842,187
Total Gallons - Diesel - Nearby Disposal Sites									130,309
VMT - Distant Disposal Sites						13,079	36,245	481,414	2,027,804
Gallons - Diesel						2,736	6,943	75,933	301,308
Total VMT - Distant Disposal Sites									2,558,542
Total Gallons - Diesel - Distant Disposal Sites									386,921
Construction - Worker commuting									Total Commuter
Passenger Car/Pickup	37,500	5.5	15	25		206,250	562,500	937,500	1,706,250
Gallons - Gasoline						10,884	21,202	28,136	60,223

Table 1.F-10. On-Road Vehicle VMT and Fuel Usages for Soil Remediation Cleanup to AOC LUT Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 769,000 cy									
Soil Haul Trucks - 23 tons/load to Chiquita Canyon	50,152	5.5	0.75	63.3		275,837	37,614	3,172,125	
Total Miles - Clean Soils to Chiquita Canyon (2)	4,179.3					275,837	37,614	3,172,125	
Soil Haul Trucks - 23 tons/load to Westmorland	50,152	5.5	0.75	374	85	275,837	37,614	18,756,913	4,275,473
Total Miles - Clean Soils to Westmorland (2)	4,179.3					275,837	37,614	18,756,913	4,275,473
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 23 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	717	98	16,643	14,563
Total Miles - HW Soils to Buttonwillow (2)	10.9					717	98	16,643	14,563
Soil Haul Trucks - 23 tons/load to US Ecology Idaho	130	5.5	0.75	199.3	1,840	717	98	25,996	239,993
Total Miles - HW Soils to US Ecology Idaho (2)	10.9					717	98	25,996	239,993
Excavation - Soil Category 4 = 110,000 cy									
Soil Haul Trucks - 23 tons/load to NNSS	7,174	5.5	0.75	199.3	500	39,457	5,380	1,429,761	3,586,598
Total Miles - RAD Soils to NNSS (2)	597.8					39,457	5,380	1,429,761	3,586,598
Soil Haul Trucks - 23 tons/load to WCS Texas	7,174	5.5	0.75	374	1,945	39,457	5,380	2,683,043	13,955,054
Total Miles - RAD Soils to WCS Texas (2)	597.8					39,457	5,380	2,683,043	13,955,054
Soil Backfilling									
Soil Haul Trucks - Import (4)	43,092	5.5	40	60		237,007	1,723,686	2,585,529	
Total Miles - Backfill Soil (3)	3,591.0					237,007	1,723,686	2,585,529	
VMT - Nearby Disposal Sites						553,018	1,766,778	7,204,058	3,601,161
Gallons - Diesel						115,694	338,463	1,136,287	535,091
Total VMT - Nearby Disposal Sites									13,125,015
Total Gallons - Diesel									2,125,535
VMT - Distant Disposal Sites						553,018	1,766,778	24,051,481	18,470,521
Gallons - Diesel						115,694	338,463	3,793,609	2,744,505
Total VMT - Distant Disposal Sites									44,841,797
Total Gallons - Diesel									6,992,272
Construction - Worker commuting									Total Commuting
Passenger Car/Pickup	162,500	5.5	15	25		893,750	2,437,500	4,062,500	7,393,750
Gallons - Gasoline						47,164	91,877	121,924	260,964

Table 1.F-11. On-Road Vehicle VMT and Fuel Usages for Soil Remediation Cleanup to Revised LUT Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 78,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	5,087	5.5	0.75	63.3		27,978	3,815	321,749	
Total Miles - Clean Soils to Chiquita Canyon (2)	424					27,978	3,815	321,749	
Soil Haul Trucks - 20 tons/load to Westmorland	5,087	5.5	0.75	374	85	27,978	3,815	1,902,517	433,662
Total Miles - Clean Soils to Westmorland (2)	424					27,978	3,815	1,902,517	433,662
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 20 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	717	98	16,643	14,563
Total Miles - HW Soils to Buttonwillow (2)	10.9					717	98	16,643	14,563
Soil Haul Trucks - 20 tons/load to USE Idaho	130	5.5	0.75	199.3	1,840	717	98	25,996	239,993
Total Miles - HW Soils to USE Idaho (2)	11					717	98	25,996	239,993
Excavation - Soil Category 4 = 110,000 cy									
Soil Haul Trucks - 20 tons/load to NNSS	7,174	5.5	0.75	199.3	500	39,457	5,380	1,429,761	3,586,598
Total Miles - RAD Soils to NNSS (2)	597.8					39,457	5,380	1,429,761	3,586,598
Soil Haul Trucks - 23 tons/load to WCS Texas	7,174	5.5	0.75	374	1,945	39,457	5,380	2,683,043	13,955,054
Total Miles - RAD Soils to WCS Texas (2)	598					39,457	5,380	2,683,043	13,955,054
Soil Backfilling									
Soil Haul Trucks - Import (4)	9,293	5.5	40	60		51,114	371,737	557,606	
Total Miles - Backfill Soil (3)	774.5					51,114	371,737	557,606	
VMT - Nearby Disposal Sites						119,266	381,031	2,325,759	3,601,161
Gallons - Diesel						24,951	72,994	366,839	535,091
Total VMT - Nearby Disposal Sites									6,427,217
Total Gallons - Diesel									999,875
VMT - Distant Disposal Sites						119,266	381,031	5,169,162	14,628,710
Gallons - Diesel						24,951	72,994	815,325	2,173,657
Total VMT - Distant Disposal Sites									20,298,168
Total Gallons - Diesel									3,086,927
Construction - Worker commuting									Total Commuting
Passenger Car/Pickup	37,500	5.5	15	25		206,250	562,500	937,500	1,706,250
Gallons - Gasoline						10,884	21,202	28,136	60,223

Table 1.F-12. On-Road Vehicle VMT and Fuel Usages for the COR Residential Scenario Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 49,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	3,196	5.5	0.75	63.3		17,576	2,397	202,121	
Total Miles - Clean Soils to Chiquita Canyon (2)	266.3					17,576	2,397	202,121	
Soil Haul Trucks - 20 tons/load to Westmorland	3,196	5.5	0.75	374	85	17,576	2,397	1,195,151	272,424
Total Miles - Clean Soils to Westmorland (2)	266.3					17,576	2,397	1,195,151	272,424
Excavation - Soil Category 3 = 2,000 cy									
Soil Haul Trucks - 20 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	715	98	16,588	14,515
Total Miles - HW Soils to Buttonwillow (2)	10.8					715	98	16,588	14,515
Soil Haul Trucks - 20 tons/load to USE Idaho	130	5.5	0.75	199.3	1,840	715	98	25,909	239,194
Total Miles - HW Soils to USE Idaho (2)	10.8					715	98	25,909	239,194
Excavation - Soil Category 4 = 1,000 cy									
Soil Haul Trucks - 20 tons/load to NNSS	65	5.5	0.75	199.3	500	358	49	12,955	32,497
Total Miles - RAD Soils to NNSS (2)	5.4					358	49	12,955	32,497
Soil Haul Trucks - 23 tons/load to WCS Texas	65	5.5	0.75	374	1,945	358	49	24,310	126,441
Total Miles - RAD Soils to WCS Texas (2)	5.4					358	49	24,310	126,441
Soil Backfilling									
Soil Haul Trucks - Import (4)	2,543	5.5	40	60		13,989	101,739	152,609	
Total Miles - Backfill Soil (3)	212					13,989	101,739	152,609	
VMT - Nearby Disposal Sites						32,637	104,282	384,272	47,011
Gallons - Diesel						6,828	19,977	60,611	6,985
Total VMT - Nearby Disposal Sites									568,203
Total Gallons - Diesel									94,401
VMT - Distant Disposal Sites						32,637	104,282	1,397,978	638,059
Gallons - Diesel						6,828	19,977	220,501	94,808
Total VMT - Distant Disposal Sites									2,172,957
Total Gallons - Diesel									342,115
Construction - Worker commuting									Total Commuting
Passenger Car/Pickup	12,500	5.5	15	25		68,750	187,500	312,500	568,750
Gallons - Gasoline						3,438	9,375	15,625	28,438

(3) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(4) Assumes that source of backfill soil would occur within either Ventura County or the SCAB.

Table 1.F-13. On-Road Vehicle VMT and Fuel Usages for the COR Open-Space Scenario Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Excavated Material Type-Destination/Vehicle Type (1)	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Excavation - Soil Categories 1 and 2 = 36,000 cy									
Soil Haul Trucks - 20 tons/load to Chiquita Canyon	2,348	5.5	0.75	63.3		12,913	1,761	148,500	
Total Miles - Clean Soils to Chiquita Canyon (2)	195.7					12,913	1,761	148,500	
Soil Haul Trucks - 20 tons/load to Westmorland	2,348	5.5	0.75	374	85	12,913	1,761	878,087	200,152
Total Miles - Clean Soils to Westmorland (2)	195.7					12,913	1,761	878,087	200,152
Excavation - Soil Category 3 = 2,000 cy	-								
Soil Haul Trucks - 20 tons/load to Buttonwillow	130	5.5	0.75	127.6	112	715	98	16,588	14,515
Total Miles - HW Soils to Buttonwillow (2)	10.8					715	98	16,588	14,515
Soil Haul Trucks - 20 tons/load to USE Idaho	130	5.5	0.75	199.3	1,840	715	98	25,909	239,194
Total Miles - HW Soils to USE Idaho (2)	10.8					715	98	25,909	239,194
Excavation - Soil Category 4 = 200 cy	-								
Soil Haul Trucks - 20 tons/load to NNSS	13	5.5	0.75	199.3	500	72	10	2,591	6,499
Total Miles - RAD Soils to NNSS (2)	1.1					72	10	2,591	6,499
Soil Haul Trucks - 23 tons/load to WCS Texas	13	5.5	0.75	374	1,945	72	10	4,862	25,288
Total Miles - RAD Soils to WCS Texas (2)	1.1					72	10	4,862	25,288
Soil Backfilling	-								
Soil Haul Trucks - Import (4)	1,868	5.5	40	60		10,277	74,739	112,109	
Total Miles - Backfill Soil (3)	156					10,277	74,739	112,109	
VMT - Nearby Disposal Sites						23,976	76,607	279,788	21,014
Gallons - Diesel						5,016	14,676	44,131	3,122
Total VMT - Nearby Disposal Sites									401,385
Total Gallons - Diesel									66,945
VMT - Distant Disposal Sites						23,976	76,607	1,020,967	464,634
Gallons - Diesel						5,016	14,676	161,036	69,039
Total VMT - Distant Disposal Sites									1,586,184
Total Gallons - Diesel									249,767
Construction - Worker commuting									Total Commuting
Passenger Car/Pickup	12,500	5.5	15	25		68,750	187,500	312,500	568,750
Gallons - Gasoline						3,438	9,375	15,625	28,438

(3) Total Trips = total hours of truck idling on-site, assuming 5 minutes per trip.

(4) Assumes that source of backfill soil would occur within either Ventura County or the SCAB.

Table 1.F-14. On-Road Vehicle VMT and Fuel Usages for Groundwater Remediation Treatment Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Construction Activity-Soil Type/Vehicle Type	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Bedrock Removal = 1,700 cy									
Rock Haul Trucks - 20 tons/load to NNSS	338	5.5	0.75	199.3	500	1,859	254	67,363	168,983
Total Miles - RAD Soils to NNSS (3)	28.2					1,859	254	67,363	168,983
Soil Haul Trucks - 20 tons/load to WCS Texas	338	5.5	0.75	374	1,945	1,859	254	126,412	657,495
Total Miles - RAD Soils to WCS Texas (2)	28.2					1,859	254	126,412	657,495
HW Soils Removal									
Soil Haul Trucks - 20 tons/load to Buttonwillow	240	5.5	0.75	127.6	112	1,320	180	30,624	26,796
Total Miles - HW Soils to Buttonwillow (2)	20.0					1,320	180	30,624	26,796
Soil Haul Trucks - 20 tons/load to US Ecology Idaho	240	5.5	0.75	199.3	1,840	1,320	180	47,832	441,588
Total Miles - HW Soils to US Ecology Idaho (2)	20.0					1,320	180	47,832	441,588
Soil Backfilling									
Soil Haul Trucks - Import (4)	196	5.5	40	60		1,078	7,840	11,760	
VMT - Nearby Disposal Sites						4,257	8,274	109,747	195,779
Gallons - Diesel						891	1,585	17,310	29,091
Total VMT - Nearby Disposal Sites									318,057
Total Gallons - Diesel									48,876
VMT - Distant Disposal Sites						4,257	8,274	186,004	1,099,083
Gallons - Diesel						891	1,585	29,338	163,311
Total VMT - Distant Disposal Sites									1,297,617
Total Gallons - Diesel									195,125
Construction - Worker commuting									Total commuter
Passenger Car/Pickup	660	5.5	15	25		3,630	9,900	16,500	30,030
Gallons - Gasoline						192	373	495	1,060

Table 1.F-15. On-Road Vehicle VMT and Fuel Usages for Groundwater MNA Alternative - SSFL Area IV FEIS.

	Total	Miles/Round Trip				Total Miles			
Construction Activity-Soil Type/Vehicle Type	*Trips*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*	*On-site*	*Vent. Co.*	*SCAB*	*Remainder*
Cuttings to a non-haz waste site - Heavy	5	5.5	0.75	63.3		28	4	316	-
Drilling supplies - Heavy	15	5.5	0.75	60		83	11	900	-
Truck-mounted drill rig - Heavy	5	5.5	0.75	150		28	4	750	-
Well develop and purge water to MWTP - Heavy	17	5.5	0.75	100		94	13	1,700	-
VMT - Nearby Disposal Sites						231	32	3,666	-
Gallons - Diesel						48	6	578	-
Total VMT - Nearby Disposal Sites									3,929
Total Gallons - Diesel									633
Monitoring Sample Delivery-Light	120	5.5	0.75	100		660	90	12,000	
Passenger Car/Pickup-Light	3,510	5.5	15	25		19,305	52,650	87,750	Total commuter
VMT - Nearby Disposal Sites						19,965	52,740	99,750	172,455
Gallons - Gasoline						1,054	1,988	2,994	6,035

Table 1.F-16. Total On-Road Vehicle VMT and Fuel Usages for Combined Building Removal, Cleanup to AOC LUT, and GRT Alternatives - SSFL Area IV FEIS.

Alternative/Activity	*Total Miles*	*Total Fuel Usage*	*Total Off-road + On-road Fuel Usages*
Building Removal			
Haul Trucks - Nearby Disposal Sites	842,187	130,309	355,608
Haul Trucks - Distant Disposal Sites	2,558,542	386,921	612,220
Worker Commutes	1,706,250	60,223	
Soil Remediation Cleanup to AOC LUT Values			
Haul Trucks - Nearby Disposal Sites	13,125,015	2,125,535	2,804,060
Haul Trucks - Distant Disposal Sites	44,841,797	6,992,272	7,670,797
Worker Commutes	7,393,750	260,964	
Soil Remediation Cleanup to Revised LUT Values			
Haul Trucks - Nearby Disposal Sites	6,427,217	999,875	1,144,115
Haul Trucks - Distant Disposal Sites	20,298,168	3,086,927	3,231,167
Worker Commutes	1,706,250	60,223	
Soil Conservation of Resources Alternative – Residential Option			
Haul Trucks - Nearby Disposal Sites	568,203	94,401	135,303
Haul Trucks - Distant Disposal Sites	2,172,957	342,115	383,016
Worker Commutes	568,750	28,438	
Soil Conservation of Resources Alternative – Open-Space Option			
Haul Trucks - Nearby Disposal Sites	401,385	66,945	97,415
Haul Trucks - Distant Disposal Sites	1,586,184	249,767	280,237
Worker Commutes	568,750	28,438	
Groundwater Remediation Treatment			
Haul Trucks - Nearby Disposal Sites	318,057	48,876	51,722
Haul Trucks - Distant Disposal Sites	1,297,617	195,125	197,971
Worker Commutes	30,030	1,060	
Groundwater MNA			
Haul Trucks - Nearby Disposal Sites	3,929	633	1,811
Worker Commutes	172,455	6,035	
Combined Alternatives - Highest Combination			
Haul Trucks - Nearby Disposal Sites	14,285,258	2,304,720	3,211,391
Haul Trucks - Distant Disposal Sites	48,697,956	7,574,317	8,480,987
Worker Commutes	9,130,030	322,247	
Total Off-road and On-road - Nearby Disposal Sites			4,118,061
Total Off-road and On-road - Distant Disposal Sites			9,387,657