City of Livermore
Community Development Department

Springtown Open Space
Concept Plan Phase 1 Project (CIP 202319)

Initial Study/Mitigated Negative Declaration

October 2024

Prepared by

RANEY PLANNING & MANAGEMENT, INC.
25 years
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APPENDICES:

INITIAL STUDY

October 2024

A. OVERVIEW

1. Project Title: Springtown Open Space Concept Plan Phase 1 Project (CIP 202319)

2. Lead Agency Name and Address:
City of Livermore
Planning Division
1052 South Livermore Avenue
Livermore, CA 94550

3. Contact Person and Phone Number:
Susan Frost
Special Projects Coordinator
(925) 960-4434

4. Project Location:
990 & 2010 Bluebell Drive,
Livermore, CA 94551
APNs: 99-33-52, 99-27-41, 99-24-12, 99-24-11-5, 99-24-5-4, 99-39-27, 99-37-27, 99-37-26, and 99-24-9-37

5. Project Sponsor's Name and Address:
City of Livermore
1052 South Livermore Avenue
Livermore, CA 94550

6. General Plan Designation: Open Space - Parks, Trailways, and Recreation Areas (OSP)

7. Zoning Designation: Education and Institutions (E)

8. Required Approvals from Other Public Agencies: N/A

9. Surrounding Land Uses and Setting:

The project site, identified by Assessor's Parcel Numbers (APNs) 99-33-52, 99-27-41, 99-24-12, 99-24-11-5, 99-24-5-4, 99-39-27, 99-37-27, 99-37-26, and 99-24-9-37, is located within the former 85-acre Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park in the City of Livermore, California. The project site does not contain any existing structures and consists of grasses and various trees throughout. The project site encircles a residential subdivision and is surrounded by single- and multi-family residences to the north and east; single-family residences, commercial uses across Interstate (I)-580, and the Springtown Branch Public Library to the south; and single-family residences to the west. The City of Livermore General Plan designates the project site as OSP and the site is zoned E.

10. Project Description Summary:

    The Springtown Open Space Concept Plan Phase 1 Project (CIP 202319) (proposed project) consists of Phase 1 of the Springtown Open Space Concept Plan and would include the development of a four-to-six-acre community park at the southern end of the project site consisting of a playground, picnic area, and community garden. A new parking lot with approximately 20 vehicle spaces would be constructed south of the community park, adjacent to Bluebell Drive. The proposed project would also include four pickleball courts/two tennis courts, a half-basketball court, and an 18-hole disc golf course. The pickleball courts/tennis courts and half-basketball court would be located at the existing Marlin Pound Neighborhood Park, which is approximately one mile north of the community park, across Altamont Creek. The 18-hole disc golf course would be spread throughout the remaining portions of the former Springtown Golf Course. Restrooms, benches, and trash cans would be installed as part of the first phase of the Concept Plan. Overall, the proposed project would result in the disturbance of approximately nine acres within the former Springtown Golf Course and Marlin Pound Neighborhood Park.

11. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), project notification letters were distributed to the Ione Band of Miwok Indians, Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Rumsen Carmel Tribe, Indian Canyon Mutsun Ban of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts, Ohlone Indian Tribe, Wilton Rancheria, Wuksache Indian Tribe/Eshom Valley Band, and Confederated Villages of Lisjan on June 11, 2024. One response was received by the Muwekma Ohlone Tribe on August 2, 2024, confirming receipt of the notification letter; however, the tribe did not request further consultation. Additional requests to consult were not received within the mandatory 30-day response period.

B. SOURCES

The following documents are referenced information sources used for the purpose of this Initial Study:

1. Bay Area Air Quality Management District. *2022 California Environmental Quality Act Guidelines*. April 2023.
2. Bay Area Air Quality Management District. *Air Quality Summary Reports*. Available at: https://www.baaqmd.gov/about-air-quality/air-quality-measurement/air-quality-summaries. Accessed July 2024.
3. CalEPA. *Cortese List Data Resources*. Available at: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed August 2024.
4. California Department of Conservation. *California Earthquake Hazards Zone Application.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed August 2024.
5. California Department of Forestry and Fire Protection. *California Fire Hazard Severity Zone Viewer. Available at:* https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed August 2024.
6. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed July 2024.

7. City of Livermore Water Resources Division. *2020 Urban Water Management Plan*. June 28, 2021.
8. City of Livermore. *Design Standards and Guidelines*. Adopted June 28, 2004.
9. City of Livermore. *Emergency Operations Plan*. January 2018.
10. City of Livermore. *General Plan 2003-2025.* Amended December 2014.
11. City of Livermore. *Livermore Bicycle and Trails Active Transportation Plan.* June 11, 2018.
12. City of Livermore. *Livermore General Plan and Downtown Specific Plan EIR, SCH No. #2003032038.* 2003.
13. City of Livermore. *Livermore Water Reclamation Plant.* Available at: http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/water_reclamation_plant/lwrp.htm. Accessed June 2021.
14. Department of Conservation. *Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed August 2024.
15. Department of Resources Recycling and Recovery. *SWIS Facility Detail, Vasco Road Sanitary Landfill (01-AA-0010).* Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/9?siteID=8. Accessed August 2024.
16. Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed August 2024.
17. Department of Water Resources. *Sustainable Groundwater Management Act 2018 Basin Prioritization*. January 2019.
18. Federal Emergency Management Agency. *Flood Insurance Rate Map 06001C0353G.* Effective August 3, 2009.
19. Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.
20. Historic Resource Associates. *Phase 1 Cultural Resources Study Springtown Open Space Project, Adjacent to Blue Bell Drive and within Marlin Pound Park, Livermore, Alameda County, California 945*50. August 2024.
21. Native American Heritage Commission. *Springtown Open Space Concept Plan Phase 1 Project, Alameda County.* July 3, 2024.
22. Natural Resource Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed August 2024.
23. Pangea Environmental Services, Inc. *Livermore Springtown Soil Sampling Report.* September 4, 2024.
24. Saxelby Acoustics. *Environmental Noise Assessment Springtown Open Space Phase 1, City of Livermore, California*. October 28, 2024.
25. State Water Resources Control Board. *GeoTracker Public Site.* Available at: https://geotracker.waterboards.ca.gov/map/. Accessed August 2024.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less-Than-Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Agriculture and Forest Resources**	☐ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	☐ **Energy**
✖ **Geology and Soils**	☐ **Greenhouse Gas Emissions**	☐ **Hazards and Hazardous Materials**
☐ **Hydrology and Water Quality**	☐ **Land Use and Planning**	☐ **Mineral Resources**
✖ **Noise**	☐ **Population and Housing**	☐ **Public Services**
☐ **Recreation**	☐ **Transportation**	✖ **Tribal Cultural Resources**
☐ **Utilities and Service Systems**	☐ **Wildfire**	☐ **Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✖ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Susan Frost, Special Projects Coordinator	City of Livermore
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) identifies and analyzes the potential environmental impacts of the Springtown Open Space Phase 1 Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures sufficient to reduce the impacts to less-than-significant levels are prescribed.

In 2004, the City of Livermore completed a comprehensive update of the City's General Plan and certified an Environmental Impact Report (EIR) for the updated General Plan.[1] The General Plan EIR[2] is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq*.). The General Plan EIR analyzed full implementation of the General Plan and identified measures to mitigate the significant adverse impacts associated with the General Plan. In 2009, the City certified a Supplemental EIR analyzing proposed amendments to the General Plan to include policies related to Greenhouse Gas (GHG) emissions. The proposed project would be consistent with the land uses anticipated for the site in the General Plan; therefore, in accordance with Section 15150 of the CEQA Guidelines (Section 21083.3 of the Public Resources Code), this IS/MND will tier from the previously certified General Plan EIR (SCH# 2003032038) and addenda thereto as appropriate.

In 2017, the Livermore Area Recreation and Park District (LARPD) prepared the Springtown Open Space Concept Plan (Concept Plan), which details the planned redevelopment of the former Springtown Golf Course. The Concept Plan would allow for improvements to the open space area and add new recreational amenities. The Concept Plan is anticipated to be built-out over several phases. The Concept Plan was accepted by City Council. However, the design of the Concept Plan has changed as a result of the City's ongoing outreach with the community. As discussed above, this IS/MND identifies and analyzes the potential environmental impacts associated with Phase 1 of the Springtown Open Space Concept Plan. Because community outreach and design of the subsequent phases of the Concept Plan are still ongoing, subsequent phases of the Concept Plan have not been fully envisioned yet. Each subsequent phase of the Concept Plan would be subject to separate environmental review, as required by the City of Livermore. A discussion of cumulative impacts associated with the proposed project, in combination with the subsequent phases of the Concept Plan, is included in Section XXI, Mandatory Findings of Significance, of this IS/MND.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and discretionary actions required for the project.

Project Location and Setting

The project site, identified by APNs 99-33-52, 99-27-41, 99-24-12, 99-24-11-5, 99-24-5-4, 99-39-27, 99-37-27, 99-37-26, and 99-24-9-37, is located within the former 85-acre Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park in the City of Livermore, California. The project site does not contain any existing structures and consists of grasses and various trees throughout. The project site encircles a residential subdivision and is surrounded by single- and multi-family residences to the north and east; single-family residences, commercial uses (across I-580), and the Springtown Branch Public Library to the south; and single-family residences to the

[1] City of Livermore. *General Plan 2003-2025.* Amended December 2014.
[2] City of Livermore. *Livermore General Plan and Downtown Specific Plan EIR, SCH No. #2003032038.* 2003.

west (see Figure 1 and Figure 2). The City of Livermore General Plan designates the project site as OSP and the site is zoned E.

Project Components

The proposed project consists of Phase 1 of the Springtown Open Space Concept Plan and would include the development of a four-to-six-acre community park at the southern end of the project site, consisting of a playground, picnic area, and community garden. A new parking lot with approximately 20 vehicle spaces would be constructed south of the community park, adjacent to Bluebell Drive. The proposed project would also include four pickleball courts/two tennis courts, half-basketball court, and an 18-hole disc golf course. The pickleball courts/tennis courts and half-basketball court would be located at the existing Marlin Pound Neighborhood Park, which is approximately one mile north of the proposed community park, across Altamont Creek. The 18-hole disc golf course would be spread throughout the remaining portions of the former Springtown Golf Course. Restrooms, benches, and trach cans would be installed as part of the first phase of the Concept Plan. Overall, the proposed project would result in the disturbance of approximately nine acres within the former Springtown Golf Course and Marlin Pound Neighborhood Park.

Further details regarding the project components are described below.

Community Park

The proposed four-to-six acre community park would be located adjacent to Bluebell Drive on the southern end of the former Springtown Golf Course (see Figure 3 and Figure 4). The community park would be open during daytime hours only, from dawn to 30 minutes after sunset. Lighting features are not currently proposed at the community park; however, temporary lighting may be installed for security purposes, as needed.

The community park design would include a variety of improvements and would support the design goals of the Springtown Open Space Concept Plan. A fenced-in community garden area which would include planter boxes, a storage shed structure, and hose bibbs for watering, would be located in the northeast portion of the park. West of the garden area an all-ages playground, a tot lot, and space for teens and multigenerational games would be developed. The area adjacent to the playground to the north and west would include a community picnic area with shade structures and a multi-purpose lawn. Finally, a two-unit unisex restroom would be constructed east of the proposed playground. The space south of the community garden area would be developed as a temporary parking lot with approximately 20 spaces. The parking lot would use the driveway and curb cut at the existing Livermore Public Library parking lot to the south. The community park would also include the provision of bicycle racks to be used by parkgoers.

Additionally, an existing gravel path which currently meanders through the park site and along Bluebell Drive would be paved as a formal pedestrian/bike path. A pedestrian crosswalk would connect the proposed community park directly to the adjacent multifamily housing. Multiple paved secondary paths for pedestrians would be located throughout the site. The pathways would include tree planting, benches, and small shade structures. Various species of native and adaptive trees would line the paths and add additional shade. In addition, portions of the on-site planting areas would be designed for stormwater management and would use drought-tolerant native and adaptive plants, with consideration for pollinators to enhance productivity in the community garden. Using the existing site soil, a series of low berms would be constructed to buffer the residents northeast and northwest of the multipurpose lawn. Trees would also be planted to buffer views in and out of the site and provide shade for walking trails. In addition, native planting areas would separate the proposed park improvements from Bluebell Drive.

Figure 1
Regional Project Location

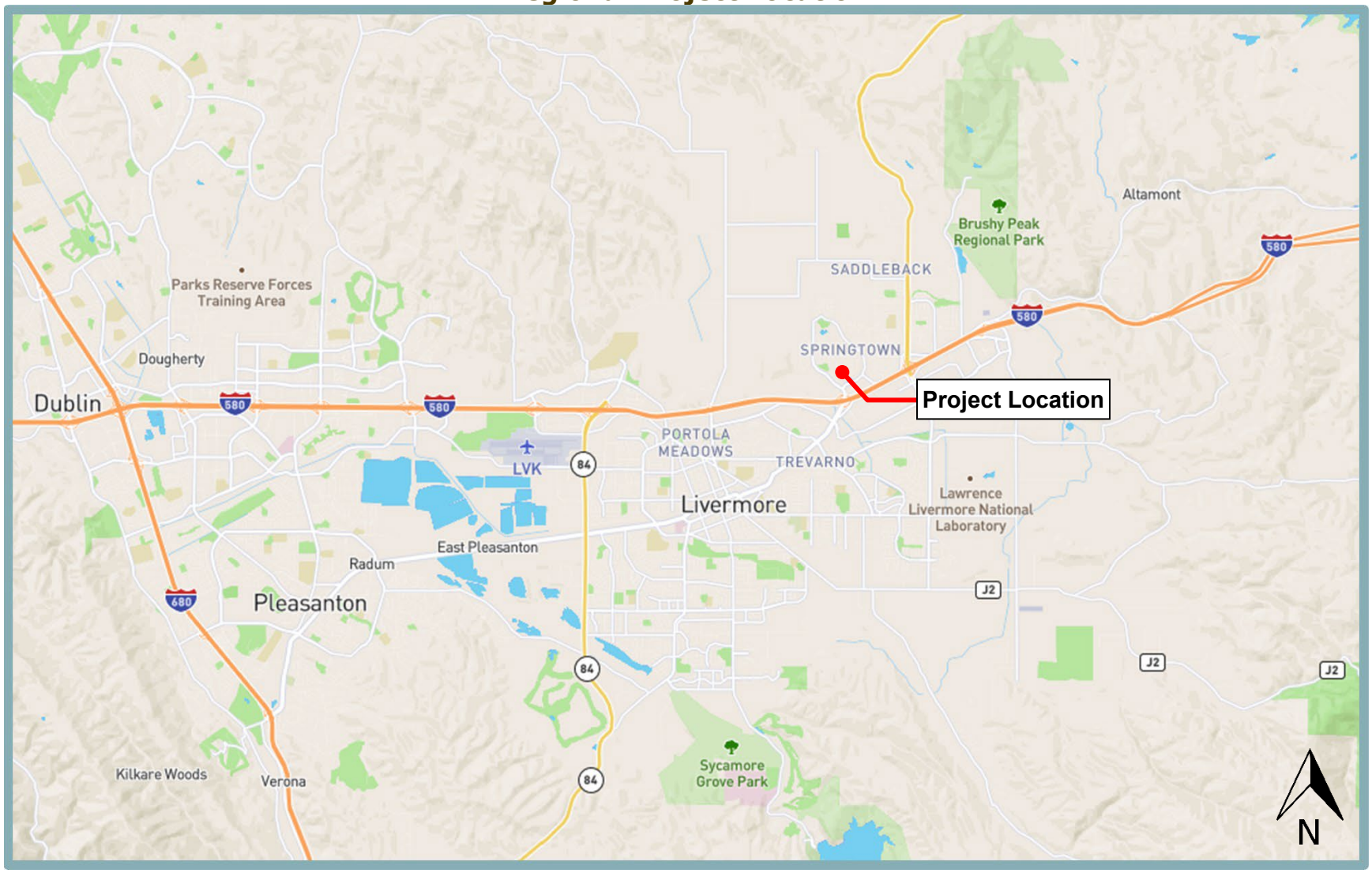

Figure 2
Approximate Project Site Boundaries Map

Note: Project site boundaries are approximate.

Figure 3
Community Park Plan

Figure 4
Context Plan

Following completion of the improvements, all proposed community park amenities would be managed and maintained by the Livermore Area Recreation and Park District (LARPD).

18-Hole Disc Golf Course

The proposed 18-hole disc golf course would be designed to be compatible with the other improvements included in the community park design (see Figure 5). Each disc golf hole would feature a launch pad to tee off from, signs designating hole numbers and directions to the next hole, and disc golf baskets. The launch pad sizes may vary based on topography but would be approximately four feet wide by ten feet long, and would include level and flush pads of concrete, gravel, or artificial turf, with a two-foot apron around all sides. Two different launch pads would be created for each hole to provide options for advanced players and beginners. Additionally, multiple basket locations for each hole would be provided to create variety for course users. Benches, shade structures, and trash receptacles would be provided throughout the disc golf course. Four accessible street crossings would also be constructed to allow park users to safely cross from one section of the open space to the next. Development of the crossings would include replacing existing sidewalk corners with accessible ramps, construction of new crosswalks with solar powered flashing beacons, and replacement of some existing curb cuts with new sidewalk. All proposed amenities associated with the disc golf course would be maintained by the LARPD.

Marlin Pound Neighborhood Park Improvements

As part of the proposed project, additional park improvements, including four pickleball courts/two tennis courts and a half-basketball court would be constructed at the existing Marlin Pound Neighborhood Park, which is located approximately one mile north of the community park, across Altamont Creek (see Figure 6). The proposed sports courts would be open during daytime hours only, from dawn until 30 minutes after sunset. Lighting features are not currently proposed at the new sports courts; however, temporary lighting may be installed for security purposes, as needed. The courts are to be used for informal play only (i.e., not for tournaments or other organized uses). All new amenities proposed at Marlin Pound Neighborhood Park would be maintained by the LARPD.

Discretionary Actions

The proposed project would require the following approvals from the City of Livermore:

- Adoption of the IS/MND;
- Adoption of a Mitigation Monitoring and Reporting Program; and
- Site Plan and Design Review.

Figure 5
Disc Golf Concept Plan

Figure 6
Marlin Pound Neighborhood Park Improvements Concept Plan

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	✖	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	✖	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a,b. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. In general, a project's impact to a scenic vista would occur if development of the project would substantially change or remove a scenic vista. Pursuant to Figure 4-1 of the City's General Plan, the project's disturbance area is not located within the vicinity of an identified scenic vista. In addition, according to the California Scenic Highway Mapping System, the project's disturbance area is not located within the vicinity of an officially designated State Scenic Highway.[3] The nearest designated scenic highway is Interstate I-680 located approximately 9.76 miles west of the project's disturbance area. The nearest eligible scenic highway is I-580, located 2.31 miles south of the project's disturbance area.

Based on the above, development of the proposed project would not have a substantial adverse effect on a scenic vista and would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway. Thus, a ***less-than-significant*** impact would occur.

c. The proposed project would be located within portions of the former Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park. The project's disturbance area does not contain any existing structures and consists of grasses and various trees throughout. The project's disturbance area encircles a residential subdivision and is surrounded by single- and multi-family residences to the north and east; single-family residences, commercial uses, and the Springtown Branch Public Library to the south; and single-family residences to the west. As such, the project's disturbance area is located within an urbanized area, and the relevant threshold would be whether the proposed project would conflict with applicable zoning and other regulations governing scenic quality.

[3] California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed July 2024.

The proposed project would consist of Phase I of the Springtown Open Space Concept Plan and would include the development of a four-to-six-acre community park at the southern end of the project's disturbance area, as well as an 18-hole disc golf course located throughout the former golf course site, and four pickleball courts/two tennis courts and a half-basketball court on a portion of the easterly Marlin Pound Neighborhood Park. The City of Livermore General Plan designates the site OSP per the City's General Plan and the site is zoned E. Accordingly, development of the site as a park would be consistent with the existing use and the site's land use and zoning designations.

The proposed project would require Site Plan and Design Review pursuant to Section 9.07.020 of the City's Development Code. Chapter 9.07 of the City's Development Code specifies that the purpose of Site Plan and Design Review "is to provide a process for the appropriate review of construction and development projects." As part of the design review process, the project would be reviewed for conformance with the City of Livermore Design Standards and Guidelines, which include provisions related to architectural design, landscaping, exterior materials, and compatibility with existing uses.[4] Additionally, consistent with the policies and development standards required of the proposed project such as Parks and Trails Design Guidelines 1.1.1 through 1.1.3 of the City of Livermore Design Standards and Guidelines, the proposed park would be sited and designed to preserve public views within the project area. Compliance with such would ensure consistency with all applicable policies and guidelines related to visual resources in the project vicinity. In addition, the proposed improvements would be relatively minor, with the majority not involving any vertical construction.

Based on the above, the project's disturbance area is in an urbanized area and the proposed project would be consistent with the site's current zoning designation. Thus, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality, and a ***less-than-significant*** impact would occur.

d. Currently, the existing former Springtown Golf Course and Marlin Pound Neighborhood Park do not include lighting features. However, streetlights are provided along the project frontages at Bluebell Drive, and lighting is present associated with the surrounding single-family residences. Due to the urban nature of the project area, the project area experiences light and glare from existing development in the site vicinity. Lighting features are not currently proposed as part of the project. Temporary lighting may be installed for security purposes; however, the improvements would only slightly increase on-site lighting intensity relative to what currently exists in the project vicinity. Furthermore, through the City's Site Plan and Design Review process, the proposed project would be reviewed for consistency with the Design Standards and Guidelines.[5] The Design Standards and Guidelines includes standards and guidelines for luminaire types, and restrictions on shielding levels, placement and orientation of lights, and lighting heights. The project would comply with the foregoing sections of the City's Design Standards and Guidelines.

Given the proposed project's consistency with the site's General Plan land use designation and required compliance with the Design Standards and Guidelines, implementation of the project would result in a ***less-than-significant*** impact with respect to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

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4 City of Livermore. *Design Standards and Guidelines*. Adopted June 28, 2004.
5 *Ibid.*

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✖
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	✖

Discussion

a,e. Pursuant to the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the entirety of the project's disturbance area is characterized as "Urban and Built-Up Land".[6] The project's disturbance area does not contain, and is not located adjacent to, Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Given the designation of the site as Urban and Built-Up Land, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, or otherwise result in the loss of Farmland to non-agricultural use. Therefore, ***no impact*** would occur as a result of the proposed project.

b. The project's disturbance area is not under a Williamson Act contract and is not zoned for agricultural uses. The project's disturbance area is designated as OSP and is zoned E. According to the General Plan EIR, the majority of lands under on-going contracts are located within the western hills, the northernmost area of North Livermore adjacent to the Contra Costa County line, and in the Altamont Hills. Therefore, the proposed project would not conflict with an agricultural use or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project's disturbance area is not considered forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), and is not zoned Timberland Production (as defined by Government Code Section 51104[g]). The City of Livermore General Plan designates the project's disturbance area as OSP and the site is zone E. Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

[6] Department of Conservation. *Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed August 2024.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	✖	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a,b. The City of Livermore is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The SFBAAB area is currently designated as a nonattainment area for the State and federal ozone, State and federal fine particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State respirable particulate matter 10 microns in diameter (PM_{10}) ambient air quality standards (AAQS). The SFBAAB is designated attainment or unclassified for all other AAQS. It should be noted that on January 9, 2013, the U.S. Environmental Protection Agency (USEPA) issued a final rule to determine that the Bay Area has attained the 24-hour $PM_{2.5}$ federal AAQS. Nonetheless, the Bay Area must continue to be designated as nonattainment for the federal $PM_{2.5}$ AAQS until such time as the BAAQMD submits a redesignation request and a maintenance plan to the USEPA, and the USEPA approves the proposed redesignation.

In compliance with regulations, due to the nonattainment designations of the area, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the AAQS, including control strategies to reduce air pollutant emissions through regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the USEPA on November 30, 2001 for review and approval. The most recent State ozone plan is the 2017 Clean Air Plan, adopted on April 19, 2017. The 2017 Clean Air Plan was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although a plan for achieving the State PM_{10} standard is not required, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2017 Clean Air Plan. The control strategy serves as the backbone of the BAAQMD's current PM control program.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures to be implemented in the region to attain the State and federal AAQS within the SFBAAB. Adopted BAAQMD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure

continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with applicable air quality plans. The BAAQMD's established significance thresholds associated with development projects for emissions of the ozone precursors reactive organic gases (ROG) and oxides of nitrogen (NO_X), as well as for PM_{10} and $PM_{2.5}$, expressed in pounds per day (lbs/day) and tons per year (tons/yr), are listed in Table 1. Thus, by exceeding the BAAQMD's mass emission thresholds for emissions of ROG, NO_X, PM_{10}, or $PM_{2.5}$, a project would be considered to conflict with or obstruct implementation of the BAAQMD's air quality planning efforts.

Table 1
BAAQMD Thresholds of Significance

Pollutant	Construction	Operational	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10} (exhaust)	82	82	15
$PM_{2.5}$ (exhaust)	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2017.

The BAAQMD also provides screening criteria to assess a project's potential to exceed the applicable thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$ in Chapter 4 of the BAAQMD's CEQA Air Quality Guidelines (BAAQMD Guidelines). A project that does not exceed the screening level and meets the screening parameters would be considered to result in emissions below the thresholds of significance and would, thus, result in less-than-significant impacts on air quality.

With regard to construction-related criteria pollutant emissions, the BAAQMD Guidelines state that if all the following screening criteria are met, the construction of the proposed project would result in a less-than-significant impact:

- The project size is at or below the applicable screening level size shown in Table 4-1 of the BAAQMD Guidelines.
- All best management practices (BMPs) (see Table 5-2 in Chapter 5, Project-Level Air Quality Impacts, of the BAAQMD Guidelines) are included in the project design and implemented during construction.
- Construction-related activities would not overlap with operational activities.
- Construction-related activities would not include:
    - Demolition;
    - Simultaneous occurrence of two or more construction phases (e.g., paving and building construction would occur simultaneously);
    - Extensive site preparation (e.g., grading, cut and fill, or earth movement);
    - Extensive material transport (e.g., soil import and export requiring a considerable amount of haul truck activity); or
    - Stationary sources (e.g., backup generators) subject to BAAQMD rules and regulations.

With regard to operational criteria pollutant emissions, according to BAAQMD, if a project is below the applicable screening level size shown in Table 4-1 of the BAAQMD

Guidelines, emissions from operation of the project would be below the thresholds of significance and, thus, would result in a less-than-significant impact on air quality.

Construction Emissions

Table 4-1 of the BAAQMD Guidelines provides the acreage at which various development projects could be assumed to exceed the BAAQMD's applicable thresholds. According to Table 4-1 of the BAAQMD Guidelines, the construction screening level size for a city park is 10 acres. As discussed previously, the proposed project would result in the development of a four-to-six-acre community park at the southern end of the former Springtown Golf Course, as well as four pickleball courts/two tennis courts and a half-basketball court at the existing Marlin Pound Neighborhood Park, and an 18-hole disc golf course, which would be spread throughout the remaining areas of the former Springtown Golf Course. Overall, the proposed project would result in a disturbance area of approximately nine acres. Therefore, the proposed project would be below the 10-acre screening level size required by BAAQMD for park uses. In addition, the proposed project does not include any of the aforementioned construction parameters. Furthermore, all projects under the jurisdiction of the BAAQMD are required to implement all of the BAAQMD's Basic Best Management Practices (BMPs) for Construction-Related Fugitive Dust Emissions, which include the following:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
7. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
8. Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a six- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
9. Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations

Compliance with the BAAQMD's measures would be ensured by the City as a condition of project approval. Therefore, the proposed project would meet the BAAQMD construction-related criteria pollutant screening criteria, and a less-than-significant impact would occur related to emissions associated with construction of the proposed project.

Operational Emissions

As discussed above, Table 4-1 of the BAAQMD Guidelines provides the acreage at which various development projects could be assumed to exceed the BAAQMD's applicable thresholds. According to Table 4-1 of the BAAQMD Guidelines, the operational screening level size for a city park is 175 acres. The proposed project would result in the development of a four-to-six-acre community park at the southern end of the former Springtown Golf Course, as well as four pickleball courts/two tennis courts and a half-basketball court at the existing Marlin Pound Neighborhood Park, and an 18-hole disc golf course, which would be spread throughout the remaining areas of the former Springtown Golf Course. Overall, the proposed project would result in a disturbance area of approximately nine acres, which would be well below the 175-acre screening level size required by BAAQMD for park uses. Therefore, a less-than-significant impact would occur related to emissions associated with operation of the proposed project.

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 1 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 1, that project's emissions would be cumulatively considerable, resulting in significant adverse cumulative air quality impacts to the region's existing air quality conditions.

Because the proposed project would meet the BAAQMD screening criteria for both construction and operational emissions, the proposed project would be considered to result in both construction-related and operational emissions below the applicable thresholds of significance. Thus, construction and operations of the project would not be expected to result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

Because the proposed project would not result in construction-related or operational emissions of criteria air pollutants in excess of BAAQMD's thresholds of significance, conflicts with or obstruction of implementation of the applicable regional air quality plans would not occur. In addition, the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State AAQS. Thus, a ***less-than-significant*** impact would result.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly,

the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors are the single-family residences located adjacent to the site's northern/northwestern and southeastern boundaries, with the nearest residence located approximately 10 feet to the southeast of the site.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and TAC emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. High levels of localized CO concentrations are only expected where background levels are high, and traffic volumes and congestion levels are high. Emissions of CO are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood.

In order to provide a conservative indication of whether a project would result in localized CO emissions that would exceed the applicable threshold of significance, the BAAQMD has established screening criteria for localized CO emissions. According to BAAQMD, a proposed project would result in a less-than-significant impact related to localized CO emission concentrations if all of the following conditions are true for the project:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans;
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; and
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, underpass, etc.).

While BAAQMD has established the foregoing screening criteria for potential impacts, it should be noted that the SFBAAB has been in attainment of CAAQS and NAAQS for CO for more than 20 years.[7] Due to the continued attainment of CAAQS and NAAQS, and advances in vehicle emissions technologies, the likelihood that any single project would create a CO hotspot is minimal.

The proposed project would consist of the development of a community park, consistent with the project site's land use and zoning designations. As discussed in Section XVII, Transportation, of this IS/MND, the proposed project is considered to be a local-serving public facility intended to serve the surrounding community and would provide local recreational opportunities for residents. Visitors from outside the project vicinity are not anticipated to travel long distances to the proposed park, as the City of Livermore currently includes a total of 57 parks and recreational facilities, and additional parks and recreational facilities are also located outside of the City limits, within surrounding jurisdictions, such as the City of Dublin and the City of Pleasanton.

[7] Bay Area Air Quality Management District. *Air Quality Summary Reports*. Available at: https://www.baaqmd.gov/about-air-quality/air-quality-measurement/air-quality-summaries. Accessed July 2024.

The Alameda County Transportation Commission is the applicable Congestion Management Agency for the proposed project. Given that the proposed project is consistent with the project site's land use and zoning designations, the proposed project's increase in traffic levels in the vicinity would not cause a conflict with applicable Alameda County Transportation Commission standards. In addition, given the local-serving nature of the proposed project, the maximum traffic volume anticipated at any affected intersection would not reach 44,000 vehicles per hour, and development of the proposed project would not result in the increase of traffic volumes beyond 24,000 vehicles per hour at any intersections where vertical and/or horizontal mixing is substantially limited. Therefore, based on the BAAQMD's screening criteria for localized CO emissions, the proposed project would result in a less-than-significant impact related to localized CO emissions concentrations and would not expose sensitive receptors to substantial concentrations of localized CO.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk.

The proposed project would not involve any land uses or operations that would be considered major sources of TACs, including DPM. As such, the project would not generate any substantial pollutant concentrations during operations.

Short-term, construction-related activities could result in the generation of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions. However, construction is temporary and occurs over a relatively short duration in comparison to the operational lifetime of the proposed project. Health risks are typically associated with exposure to high concentrations of TACs over extended periods of time (e.g., 30 years or greater), whereas the construction period associated with the proposed project would be much shorter.

All construction equipment and operation thereof would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation, which is intended to help reduce emissions associated with off-road diesel vehicles and equipment, including DPM. Project construction would also be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. In addition, construction equipment would operate intermittently throughout the day and only on portions of the site at a time.

Because construction equipment on-site would not operate for long periods of time and would be used at varying locations within the site, associated emissions of DPM would not occur at the same location (or be evenly spread throughout the entire project's disturbance area) for long periods of time. Due to the temporary nature of construction and the relatively short duration of potential exposure to associated emissions, the potential for

any one sensitive receptor in the area to be exposed to concentrations of pollutants for a substantially extended period of time would be low. Therefore, construction associated with the proposed project would not be expected to expose any sensitive receptors to substantial pollutant concentrations.

Criteria Pollutants

Criteria pollutant emissions can cause negative health effects. With regard to the proposed project, the principal criteria pollutants of concern are localized CO, ozone, and PM. As discussed above, the proposed project is not anticipated to result in impacts related to localized exposure of sensitive receptors to substantial concentrations of CO. Unlike CO and many TACs, due to atmospheric chemistry and dynamics, ozone and atmospheric PM typically act to impact public health on a cumulative and regional level, rather than a localized level. Cumulative effects from criteria pollutants are discussed under the cumulative emissions header in section 'a' above.

Conclusion

Based on the above, the proposed project would not expose any sensitive receptors to substantial concentrations of localized CO or TACs during construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Pollutants of principal concern include emissions leading to odors, emission of dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in questions 'a' through 'c' above. Therefore, the following discussion focuses on emissions of odors and dust.

Odors

According to the BAAQMD Guidelines, the ability to detect odors varies considerably among the population and can be subjective.[8] Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The presence of an odor impact is dependent on a number of variables including: the nature of the odor source; the frequency of odor generation; the intensity of odor; the distance of odor source to sensitive receptors; wind direction; and sensitivity of the receptor. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. Typical odor-generating land uses include, but are not limited to, wastewater treatment plants, landfills, and composting facilities. The proposed project would not introduce any such land uses and is not located in the vicinity of any such existing or planned land uses.

Construction activities often include diesel-fueled equipment and heavy-duty trucks, which could create odors associated with diesel fumes that may be considered objectionable. However, construction activities would be temporary, and operation of construction equipment would be restricted to the allowable hours established in Section 9.36.080 of the City's Municipal Code.

[8] Bay Area Air Quality Management District. *2022 California Environmental Quality Act Air Quality Guidelines* [pg. 5-16]. April 2023.

Furthermore, project construction would be required to comply with all applicable BAAQMD rules and regulations, particularly associated with permitting of air pollutant sources. The aforementioned regulations would help to minimize air pollutant emissions, as well as any associated odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

It should be noted that BAAQMD regulates objectionable odors through Regulation 7, Odorous Substances, which does not become applicable until the Air Pollution Control Officer (APCO) receives odor complaints from ten or more complainants within a 90-day period. Once effective, Regulation 7 places general limitation on odorous substances and specific emission limitations on certain odorous compounds, which remain effective until such time that citizen complaints have been received by the APCO for one year. The limits of Regulation 7 become applicable again when the APCO receives odor complaints from five or more complainants within a 90-day period.

Dust

As noted previously, all projects under the jurisdiction of BAAQMD are required to implement the BAAQMD's Basic BMPs for Construction-Related Fugitive Dust Emissions, which include several measures that specifically relate to dust suppression. In addition to the basic BMPs, while not required, projects are strongly encouraged by BAAQMD to implement enhanced BMPs including, but not limited to, the following dust suppression measures:

- Limit the simultaneous occurrence of excavation, grading, and ground-disturbing construction activities.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

The aforementioned measures would ensure that construction of the proposed project does not result in substantial emissions of dust. Following project construction, the development area would be paved or landscaped and would not include any exposed topsoil. Thus, project operations would not generate significant amounts of dust that would adversely affect a substantial number of people.

Conclusion

For the aforementioned reasons, construction and operation of the proposed project would not result in emissions (such as those leading to odors) adversely affecting a substantial number of people, and a ***less-than-significant*** impact would result.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	✖	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	✖	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	✖	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	✖	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	✖	☐

Discussion

a. Special-status species include plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal and State Endangered Species Acts. Both acts afford protection to listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on California Native Plant Society (CNPS) Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

The project's disturbance area is located in an urban area and is completely surrounded by existing development. The site consists of the former Springtown Golf Course and a portion of Marlin Pound Park, and does not currently contain any existing structures. The site consists mainly of disturbed non-native grasses. Thus, the site does not contain sensitive habitats supporting special-status species; however, trees are planted throughout the site and may provide nesting habitat for migratory and nesting birds.

The project's disturbance area is located within the boundaries of the East Alameda County Conservation Strategy (EACCS) within Conservation Zone (CZ) 4. EACCS CZ-4 consists largely of the northeastern portion of the Livermore watershed, with the southern boundary of the CZ defined by I-580.

The EACCS addresses 19 focal species including 13 wildlife species and six plant species, as follows: San Joaquin spearscale (*atriplex joaquiniana),* big tarplant (*blepharizonia plumosa),* Condon's tarplant (*centromadia parryissp. congdonii),* Palmate-bracted bird's beak (*cordylanthus palmatus),* longhorn fairy shrimp (*branchinecta longiantenna),* vernal pool fairy shrimp (*branchinecta lynchi),* callippe silverspot butterfly (*speyeria callippe callippe),* California tiger salamander (*ambystoma californiense),* California red-legged frog (*rana aurora draytonii),* foothill yellow-legged frog (*Rana boylii),* Alameda whipsnake (*masticophis lateralis euryxanthus),* Central California coastal steelhead (oncorhynchus mykiss), Golden eagle (*Aquila chrysaetos),* tricolored blackbird (*agelaius tricolor),* western burrowing owl (*athene cunicularia hypogea),* American badger (*Taxidea taxus),* San Joaquin kit fox (*Vulpes macrotis mutica),* Livermore Valley tarplant *(Deinandra bacigalupii), and* recurved larkspur (*Delphinium recurvatum).*

The objectives of the EACCS include but are not limited to protecting and enhancing natural and semi-natural landscapes that are large enough to accommodate natural processes beneficial to populations of native species, and avoiding or minimizing direct impacts on streams during project construction and indirect impacts that result from post-project activities by implementing avoidance measures. However, while conservation strategies are provided by the EACCS, the document is not considered an adopted habitat conservation plan (HCP) or National Conservation Community Plan (NCCP).

The project's disturbance area's land cover type is "Golf Courses/Urban Parks" as defined by the EACCS. Golf courses and urban parks are composed predominantly of nonnative vegetation and provide limited habitat for native wildlife. Urban parks are unlikely to support any focal species. Golf courses on the fringe of urban areas are known to support California tiger salamander, California red-legged frog, western burrowing owl, or tricolored blackbird, particularly if ponds are present near the golf course. However, habitat quality is typically of lower quality because golf courses apply fertilizers and other chemical treatments that may run off into waterways and onto adjacent lands during rain events.

To confirm the proposed project's potential for substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS, a search of the California Natural Diversity Database (CNDDB) was conducted for special-status species that have been recorded in the vicinity of the project's disturbance area and the site's surrounding area. The CNDDB data was drawn from the disturbance area's U.S. Geological Survey (USGS) quadrangle and surrounding nine USGS quadrangles that define the project region.

The results of the CNDDB database searches are provided below.

Special-Status Plants

Pursuant to Appendix D of the EACCS, the project's disturbance area is located within the range of potential habitat for San Joaquin spearscale, which is a covered species under the EACCS. However, the site is not within the range of potential habitat for any other plant species covered under the EACCS (i.e., recurved larkspur, big tarplant, and

Congdon's tarplant). In addition, based on the results of the CNDBB search, a total of 45 special-status plant species have been documented to occur within the project region.

The majority of the habitat requirements of the documented species in the region include marsh and swamp, chaparral, cismontane woodland, and valley and foothill grassland. As stated above, the project's disturbance area is located in an urban area, completely surrounded by existing development. The project's disturbance area is located on the former Springtown Golf Course and a portion of Marlin Pound Neighborhood Park. Both the former golf course and existing park consist of non-native grasses, and are routinely mowed for weed abatement. Therefore, the project's disturbance area and surrounding area have been actively disturbed for many years. Given the disturbance area's previous disturbance and the urban development surrounding the location, suitable habitat for any of the special-status plant species identified in the nine quadrangle CNDDB search – including wetlands, grasslands, marshes, and swamps – do not exist within the project's disturbance area. While the project site includes aquatic features, such as a man-made pond at the far north portion of the former Springtown Golf Course and Altamont Creek which separates the former golf course from Marlin Pound Neighborhood Park, such features are located outside the disturbance area associated with the proposed project. Thus, the proposed project does not include any development near either aquatic feature that would impact special-status wildlife. Development nearest to the aquatic features would be limited to construction of a shade structure and tee pad for the proposed 18-hole disc golf course. As a result, construction activities associated with the proposed project would not result in adverse effects to special-status plants.

Special-Status Wildlife

Based on the results of the CNDBB search, a total of 39 special-status wildlife species have been documented to occur within the project region. Habitat requirements for the species include but are not limited to chaparral, coastal shrub, broadleaved upland forest, freshwater marsh, and aquatic features. As noted previously, the proposed project would be located within portions of the former Springtown Golf Course and a portion of Marlin Pound Neighborhood Park, in an urban area of the City. The project's disturbance area is completely surrounded by existing development. Both the former golf course and existing park consist of non-native grasses, and are routinely mowed for weed abatement. Therefore, the project's disturbance area and surrounding area have been actively disturbed for many years.

Aquatic features, such as a man-made pond at the far north portion of the former Springtown Golf Course and Altamont Creek, are located outside of the disturbance area associated with the proposed project. Thus, the proposed project would not include any development near either aquatic feature that would impact special-status wildlife. Development nearest to the aquatic features would be limited to a shade structure and tee pad for the proposed 18-hole disc golf course which would result in minor ground disturbance. In addition, the areas of vegetation that exist within the project's disturbance area and vicinity lack open water, native grasslands, rocky outcroppings, marshes or creeks, chaparral vegetation, aquatic vegetation, or other types of high-quality habitat that would be needed to provide for most of the special-status wildlife species identified by the CNDDB search, notably, the amphibians, insects, crustaceans, fish, reptiles, and mammals. As a result, construction activities associated with the proposed project would not result in adverse effects to the aforementioned groups.

However, trees, shrubs, and grassy areas can provide suitable habitat for nesting migratory birds and raptors. As such, existing trees and shrubs on the site and on adjacent parcels and the existing grassy areas of the site may be used by raptors and migratory birds protected by the MBTA. Such trees and shrubs could be removed as part of the proposed project. Consequently, construction activities associated with the proposed project could result in adverse effects to migratory birds and raptors, should construction activities result in the disturbance of nesting birds leading to nest abandonment, or the mortality of individual birds. Construction activities that adversely affect the nesting success of raptors and migratory birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds constitute a violation of State and federal laws. Thus, project-related activities that would occur during the breeding season could result in an adverse effect to species protected under the MBTA, should such species be present.

Thus, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a less-than-significant level.

IV-1 *A pre-construction survey for nesting birds shall be conducted by a qualified biologist within all on-site nesting habitat not more than 14 days prior to site disturbance during the breeding season (February 1st to August 31st). If site disturbance commences outside the breeding season, a pre-construction survey for nesting birds is not required. Survey results shall be submitted to the Community Development Department. If active nests of migratory birds are not detected, further mitigation is not required.*

IV-2 *If nesting raptors or other migratory birds are detected on or adjacent to the site during the survey, an appropriate construction-free buffer shall be established around all active nests. Actual size of the buffer would be determined by the project biologist, and would depend on species, topography, and type of activity that would occur in the vicinity of the nest, but in no case shall be less than 25 feet. The project buffer shall be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer would no longer be required. Buffers shall remain in place for the duration of the breeding season or until a qualified biologist has confirmed that all chicks have fledged and are independent of their parents.*

b,c. The project's disturbance area does not contain any wetlands. While a man-made pond is located at the far north portion of the former Springtown Golf Course and Altamont Creek is located between the former golf course and Marlin Pound Neighborhood Park, such features are located outside of the disturbance area associated with the proposed project. The only disturbance that would occur near the aquatic features would be minimal improvements related to the 18-hole disc golf course, such as a shade structure and tee pad. Therefore, the proposed project would not have a substantial adverse effect on riparian habitat, sensitive natural communities, or federally protected wetlands, and a ***less-than-impact*** would occur.

d. The proposed project would be located within portions of the former Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park and is surrounded by existing development. Thus, the surrounding area does not support any wildlife movement corridors. Altamont Creek, located at the north portion of the former Springtown Golf Course, could be used by migratory fish or as a wildlife corridor for other wildlife species. However, Altamont Creek is located outside of the disturbance area associated with the proposed project. Thus, the proposed project does not include any development near Altamont Creek that would impact special-status wildlife. Development nearest to the aquatic features would be limited to construction of a shade structure and tee pad for the proposed 18-hole disc golf course. As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites. Thus, a ***less-than-significant*** impact would occur.

e. Pursuant to Chapter 12.20 of the City's Municipal Code, which comprises the City's Tree Preservation Ordinance, specifically, Section 12.20.190, removal or encroachment into the protected zone of any "protected trees" on public or private property within the City requires issuance of a tree permit from the City pursuant to the provisions of the Ordinance. Protected trees are defined in Section 12.20.160(M) of the Municipal Code as a single-trunked tree, a multi-trunked tree, or a stand of trees dependent upon each other for survival that meets any one or more of the following criteria:

1. Any tree located on private property occupied by single-family residential development that meets the following criteria:
    a. Any tree with a circumference at breast height (CBH) of 60 inches or more; or
    b. Any California native tree having a circumference (CBH) of 24 inches or more;
2. Any tree located on private property occupied by commercial, industrial, institutional (i.e., religious, public agency, hospital, care facilities, etc.), mixed-use or multifamily residential (two or more units) development with a circumference (CBH) of 24 inches or more; or
3. Any tree located on an undeveloped or underdeveloped property, regardless of zoning district, use, or development status, for which new development is proposed, with a circumference (CBH) of 18 inches or more; or
4. Any tree located in an open space, riparian, or habitat area with a circumference (CBH) of 18 inches or more; or
5. Any tree approved as part of a site plan approval, or required as a condition of approval for a development project, zoning use permit, use permit or other site development review; or
6. Any tree designated by the City Council as determined to be an ancestral tree; and/or
7. Any tree listed on the City's ancestral tree inventory; or
8. Any tree required to be planted as mitigation for unlawfully removed trees.

As part of the proposed project, approximately eight existing on-site trees may need to be removed in order to allow for the development of certain proposed facilities, such as the playground, temporary parking lot, and sport courts. In the case that such on-site trees would need to be removed, the proposed project would be subject to the removal requirements set forth in Chapter 12.20 of the City's Municipal Code, which include

issuance of a tree permit from the City, as well as replacement of any trees proposed for removal.

According to Section 12.20.230(B)(2) of the Municipal Code, the number and type of replacement trees or the amount of funds paid in mitigation shall be provided corresponding to the value of the loss or diminution of economic, aesthetic, environmental, and property values, and in relation to the size, age relative to average lifespan, and location of existing trees to be removed. Replacement value shall not be less than three trees of a minimum 15-gallon size, two trees of a minimum 24-inch box size, or one tree of 48-inch box size for each tree removed. To the extent possible, the type of replacement trees shall be of a species identified under Livermore Municipal Code Section 12.20.160(B) as a California native. For protected trees that are determined by the City to be unhealthy or pose a hazard and where such condition is not the result of an action by the property owner to directly or indirectly damage or remove the tree, replacement shall be required on a one-to-one basis at a minimum of 15-gallon size.

The proposed project includes approximately 100 new trees, both shade trees (75) and accent trees (25). Consistent with the City's Municipal Code and the Climate Action Plan (CAP), proposed tree species would be California native or adaptive species, and also low or very low water use. Any tree replacement that would be required as part of the proposed project would occur in conformance with Livermore Municipal Code Section 12.20.160(B), as verified by the City.

Because the proposed project would be required to comply with the standards set forth within Chapter 12.20 of the City's Municipal Code, which comprises the City's Tree Preservation Ordinance, the proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Therefore, a ***less-than-significant*** impact would occur.

f. The project's disturbance area is within the boundaries of the EACCS, a guidance document for regional conservation and environmental permitting for private and public development projects. While recommended conservation strategies are provided by the EACCS, the document is not considered an adopted HCP or NCCP.

Pursuant to the EACCS, the project's disturbance area is located in CZ-4, which encompasses approximately 9,409 acres located in the north central part of the Conservation Strategy study area in the Livermore Valley. CZ-4 is defined largely by the northeastern portion of the Livermore watershed, with the southern boundary of the CZ defined by I-580. The dominant natural land cover types in the conservation zone are annual grassland (4,253 acres), alkali meadow and scald (258 acres), valley sink scrub (410 acres), alkali wetland (106 acres), and seasonal wetland (347 acres). However, as noted previously, the project's disturbance area is located in an urban area and is surrounded by existing development. As such, the site does not provide suitable habitat for the species included within the EACCS.

Based on the above, the proposed project would not conflict with the applicable provisions of the EACCS, and a ***less-than-significant*** impact would occur related to conflicts with an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	✖	☐	☐

Discussion

The following is based on a Phase 1 Cultural Resources Study prepared for the proposed project by Historic Resource Associates (HRA).[9]

a. Historical resources are features that are associated with the lives of historically-important persons and/or historically-significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics.

The Phase 1 Cultural Resources Study consisted of a literature review to identify any previously recorded historical resources, as well as a field survey, conducted on July 30, 2024, of the entire project site. On June 18, 2024 and July 16, 2024, record searches of the California Historic Resources Information System (CHRIS) were performed by the Northwest Information Center (NWIC) for cultural resource site records and survey reports within the project area. The NWIC concluded that cultural resource studies encompassing the project site have not been conducted. According to the NWIC records search, the project site does not contain historical archaeological resources. In addition, historic resources were not discovered on-site during the July 30 field survey. Therefore, the proposed project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5, and a ***less-than-significant*** impact would occur.

b,c. Based on the results of the records search of the CHRIS, conducted as part of the Phase 1 Cultural Resources Study, the NWIC concluded that the project site does not contain any recorded archaeological resources. In addition, based upon historic photographs, maps, and other documents, and the lack of precontact archeological resources identified within 0.25-mile of the project site, HRA determined that the archaeological site sensitivity of the site was low. Furthermore, the entirety of the project site was subjected to a pedestrian survey at 1-meter intervals and cultural resources, including precontact or historic-period artifacts or other indications of archaeological resources, were not discovered on-site during the field survey, with the exception of a metal irrigation pipe discovered within the former golf course. Finally, a search of the Native American Heritage Commission (NAHC) Sacred Lands File did not yield any information regarding the

[9] Historic Resource Associates. *Phase 1 Cultural Resources Study Springtown Open Space Project, Adjacent to Blue Bell Drive and within Marlin Pound Park, Livermore, Alameda County, California 945*50. August 2024.

presence of Tribal Cultural Resources within the project site or the immediate area.[10] The site has also been subject to past disturbance associated with the former use of the site as a golf course, as well as the current use of Marlin Pound Neighborhood Park. Any subsurface resources would likely have been uncovered as part of the previous site disturbance.

Nonetheless, the City's General Plan notes that prehistoric resources have been discovered within the City's Planning Area. Thus, previously unrecorded archaeological resources, including human remains, have the potential to exist on-site, and such resources could be encountered during ground-disturbing activity related to project construction. Therefore, the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb human remains, including those interred outside of formal cemeteries, should any such resources be encountered during construction. Consequently, impacts could be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

V-1 *In the event a potentially significant cultural resource is encountered during subsurface earthwork activities, all construction activities on-site shall cease and workers should avoid altering the materials until an archaeologist who meets the Secretary of Interior's Professional Qualification Standards for archaeology has evaluated the find(s). The Applicant shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. The qualified archeologist shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to, culturally appropriate temporary and permanent treatment, which may include avoidance of cultural resources, in-place preservation, and/or re-burial on project property so the resource(s) are not subject to further disturbance in perpetuity. If avoidance is determined to be infeasible, pursuant to CEQA Guidelines Section 15126.4(b)(3)(C), a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. If necessary, excavation and evaluation of the find(s) shall comply with Section 15064.5 of the CEQA Guidelines.*

Potentially significant cultural resources include, but are not limited to, stone, bone, glass, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites, including trash pits older than 50 years. Any previously undiscovered resources found during construction within the project site shall be recorded on appropriate Department of Parks and Recreation (DPR) 523 forms and will be submitted to the City of

[10] Native American Heritage Commission. *Springtown Open Space Concept Plan Phase 1 Project, Alameda County.* July 3, 2024.

Livermore, the Northwest Information Center, and the State Historic Preservation Office (SHPO), as required.

V-2 *In the event of the accidental discovery or recognition of any human remains, further excavation or disturbance of the find or any nearby area reasonably suspected to overlie adjacent human remains shall not occur until compliance with the provisions of CEQA Guidelines Section 15064.5(e)(1) and (2) has occurred. The Guidelines specify that in the event of the discovery of human remains other than in a dedicated cemetery, no further excavation at the site or any nearby area suspected to contain human remains shall occur until the County Coroner has been notified to determine if an investigation into the cause of death is required. If the Coroner determines that the remains are Native American, then, within 24 hours, the Coroner must notify the Native American Heritage Commission, which in turn will notify the most likely descendants who may recommend treatment of the remains and any grave goods. The potential exists that the Native American Heritage Commission may be unable to identify a most likely descendant, the most likely descendant fails to make a recommendation within 48 hours after notification by the Native American Heritage Commission, or the landowner or his authorized agent rejects the recommendation by the most likely descendant and mediation by the Native American Heritage Commission fails to provide a measure acceptable to the landowner. In such a case, the landowner or his authorized representative shall rebury the human remains and grave goods with appropriate dignity at a location on the property not subject to further disturbances. Should human remains be encountered, a copy of the resulting County Coroner report noting any written consultation with the Native American Heritage Commission shall be submitted as proof of compliance to the City's Community Development Department.*

VI. ENERGY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	✖	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	✖	☐

Discussion

a,b. The main forms of available energy supplies are electricity, natural gas, and oil. Through existing infrastructure, electrical services are provided to the project area by Pacific Gas and Electric Company (PG&E). During construction, the proposed park project would be subject to regulations regulated by CARB. During operations, the proposed park project would be subject to the 2022 Building Energy Efficiency Standards, and the 2022 California Green Building Standards Code, otherwise known as the CALGreen Code (California Code of Regulations [CCR] Title 24, Part 11), as applicable. Discussions related to the proposed project's potential effects regarding energy demand during construction and operations are provided below.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met via a hookup to the existing electricity grid. Project construction would not involve the use of natural gas appliances or equipment.

All construction equipment and operation thereof would be regulated by the CARB's In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. In addition, as a means of reducing emissions, construction vehicles are required to become cleaner through the use of renewable energy resources. The In-Use Off-Road Diesel Vehicle Regulation would therefore help to improve fuel efficiency for equipment used in construction of the proposed project. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to further reduce demand on oil and limit emissions associated with construction.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, construction activities would be required to comply with all applicable regulations related

to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, PG&E would provide electricity to the park features, as necessary. The proposed project would consume a relatively small amount of electricity during operations associated with the restroom building and associated lighting. Maintenance activities, such as landscape and field maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the park users. The restroom building would be subject to all relevant provisions of the most recent update of the California Building Code Standards (CBSC) including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the CBSC would ensure that the proposed structure would consume energy efficiently.

Based on the above, the increase in energy use during project operations would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. The proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the project's increase in demand.

Conclusion

Based on the above, construction and operations of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

VII. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	✖	☐	☐
iv. Landslides?	☐	✖	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	✖	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	✖	☐	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	✖	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	✖	☐	☐

Discussion

ai-aii The project's disturbance area is not located within the boundaries of an Earthquake Fault Zone, as designated pursuant to the Alquist-Priolo Earthquake Fault Zoning Act.[11] As noted in the City's General Plan, the City is located within the vicinity of the San Andreas, Calaveras, Hayward, and San Jacinto active faults. However, pursuant to Figure 10-1 of the General Plan, the project's disturbance area is not underlain by any active faults or fault trace lines. Thus, fault rupture is not a significant geologic hazard at the site.

Based on the proximity of the project's disturbance area to local and regional faulting, as well as historical seismic activity, the project's disturbance area is considered subject to relatively high ground shaking risk and related effects. Although the proposed project would not include construction of any habitable structures, construction of features such as the new restroom building and play structures would be properly engineered in accordance with the CBSC, which includes engineering standards appropriate for the seismic area in which the project's disturbance area is located. Projects designed in accordance with the CBSC should be able to: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage, but with some non-structural damage; and 3) resist major earthquakes without collapse, but with some structural, as well as non-structural, damage. Although conformance with the CBSC does not guarantee

[11] California Department of Conservation. *California Earthquake Hazards Zone Application.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed August 2024.

that substantial structural damage would not occur in the event of a maximum magnitude earthquake, conformance with the CBSC can reasonably be assumed to ensure that the proposed structure would be survivable in the event of a major earthquake.

Thus, the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death associated with seismic-related ground failure, including rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides. Therefore, a ***less-than-significant*** impact would occur.

b. Issues related to erosion are discussed in Section X, Hydrology and Water Quality, of this IS/MND. As noted therein, the proposed project would not result in substantial soil erosion or the loss of topsoil. Thus, a ***less-than-significant*** impact would occur.

aiii,aiv, c,d. The proposed project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence are discussed in detail below.

Liquefaction

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Because saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. Additionally, loose unsaturated sandy soils have the potential to settle during strong seismic shaking.

As noted in the City's General Plan, the majority of the planning area is underlain by materials which have a very low to moderate liquefaction potential. According to the General Plan, liquefaction potential increases in the vicinity of major drainage channels where loose granular sediments have accumulated as a result of stream processes. Major drainage channels are not located within the disturbance area associated with the proposed park features. However, the project's disturbance area is located within a State of California Seismic Hazard Zone for liquefaction.[12] Therefore, the proposed project could be subject to risk from liquefaction.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. The amount of movement depends on the soil strength, duration and intensity of seismic shaking, topography, and free face geometry. Given that the project's disturbance area does not contain any free faces, the potential for lateral spreading to pose a risk to the proposed project is negligible.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The City has determined

[12] California Department of Conservation. *California Earthquake Hazards Zone Application.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed August 2024.

the potential for seismically induced land sliding to occur would depend on a number of activities contributing to instability, such as extensive irrigation, poor drainage, removal of stabilizing vegetation, and over-steepening of slopes. The project's disturbance area does not feature varying degrees of slope commonly associated with areas at risk for earthquake-induced landslides. Thus, landslides would not occur on-site as a result of the proposed project.

Subsidence/Settlement

Subsidence is the settlement of soils of very low density generally from either oxidation of organic material, desiccation and shrinkage, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. According to the City of Livermore's General Plan EIR, subsidence is not likely to occur within the City. Additionally, compliance with General Plan policies would ensure the proposed project would employ structurally sound building practices. Therefore, the potential for subsidence/settlement to pose a risk to the proposed project features is relatively low.

Expansive Soils

Expansive soils are soils which undergo significant volume change with changes in moisture content. Specifically, such soils shrink and harden when dried and expand and soften when wetted. Expansive soils can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundation. Pursuant to the Natural Resource Conservation Service (NRCS) Web Soil Survey, the majority of the soils underlying the project's disturbance area are made up of Pescadero clay loam content, with the remainder of the project's disturbance area being a mix San Ysidro loam, Solano fine sandy loam, and Sunnyvale clay loam over clay.[13]

Soils with a linear extensibility rating of between three and six percent and a clay content of 25 to 35 percent are characterized by a moderate shrink-swell class (i.e., moderate expansive potential). Soils with a linear extensibility rating of between six and nine percent with a clay content of 35 to 45 percent are characterized by a high shrink-swell class. According to the NRCS Web Soil Survey, the Pescadero clay loam soils on-site have a linear extensibility rating of 6.5 percent, the San Ysidro loam has a linear extensibility rating of 3.3, Solano fine sandy loam has a rating of 4.2, and Sunnyvale clay loam over clay 7.5. In addition, the on-site Pescadero clay loam soil has a clay content of 37.7 percent, San Ysidro Loam has a clay content of 24.5 percent, Solano fine sandy loam has a clay content of 29.4 percent, and Sunnyvale clay loam has a clay content of 43.9 percent. Therefore, the project's disturbance area contains soil types that are considered to be moderate to highly expansive, and the proposed project has the potential to create substantial direct or indirect risks to life or property related to being located on expansive soil.

Conclusion

Based on the above discussion, the proposed project would not result in potential hazards or risks related to landslides, lateral spreading, or subsidence/settlement. It should also be noted that the structures proposed as part of the project, and associated ground disturbance that would occur as a result of the proposed structures, would be minimal. However, the potential exists for liquefaction and soil expansion to occur on-site.

[13] Natural Resource Conservation Service. *Web Soil Survey.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed August 2024.

Therefore, the proposed project could create substantial direct or indirect risks to life or property and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-1 *Prior to approval of any grading permits, a Geotechnical Analysis shall be conducted by a California Registered Civil Engineer or Geotechnical Engineer to characterize the subsurface conditions of the project site. The report shall address and make recommendations on the following:*

- *Road, pavement, and parking area design;*
- *Structural foundations, including retaining wall design (if applicable);*
- *Grading practices;*
- *Erosion/winterization; and*
- *Special problems discovered on-site, (i.e., groundwater, liquefiable soils, expansive/unstable soils, etc.).*

All grading and foundation plans for the project shall be designed by a Civil and Structural Engineer and reviewed and approved by the Director of Public Works/City Engineer, Chief Building Official, and a qualified Geotechnical Engineer prior to issuance of grading and building permits to ensure that all geotechnical recommendations specified in the Geotechnical Analysis are properly incorporated and utilized in the project design.

e. The construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. The City's General Plan indicates that several Pleistocene aged paleontological fossils have been discovered within the City's Planning Area. In particular, the most recent fossil discovery within the City occurred in the vicinity of the Lawrence Livermore National Laboratory, which is approximately 2.24 miles southeast of the project's disturbance area.

As noted in the City's General Plan, the City is underlain by alluvium, which consists mainly of unconsolidated gravel, sand, silt, and clay deposits. Such soil types are not considered unique geologic features and are common within the geographic area of the City. In addition, the City's General Plan does not note the existence of any unique geologic features within the City. Furthermore, given that the proposed project would be located within portions of the former Springtown Golf Course and a portion of Marlin Pound Neighborhood Park, the project's area of disturbance has been subject to previous ground disturbance and is unlikely to contain previously undiscovered paleontological resources. Any subsurface resources would likely have been uncovered as part of the previous site disturbance.

Nonetheless, should previously unknown paleontological resources exist within the project's disturbance area, ground-disturbing activity, such as grading, trenching, or excavating, associated with implementation of the proposed project would have the potential to result in direct or indirect destruction of unique geologic features. Therefore, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-2 *The following requirements shall be noted on project Improvement Plans, subject to review and approval by the City of Livermore Community Development Department. Should any vertebrate fossils (e.g., teeth, bones), an unusually large or dense accumulation of intact invertebrates, or well-preserved plant material (e.g., leaves) be unearthed by the construction crew, then ground-disturbing activity shall be diverted to another part of the project site and a paleontologist shall be called on-site to assess the find and, if significant, recover the find in a timely matter. Finds determined significant by the paleontologist shall then be conserved and deposited with a recognized repository, such as the University of California Museum of Paleontology. The alternative mitigation would be to leave the significant finds in place, determine the extent of significant deposit, and avoid further disturbance of the significant deposit. The City of Livermore Community Development Department shall be notified of the discovery of any paleontological resources.*

VIII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

Discussion

a,b. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

The proposed project is located within the jurisdictional boundaries of BAAQMD. The most recent BAAQMD Air Quality Guidelines were released in April 2023.[14] The updated GHG thresholds address more recent climate change legislation, including Senate Bill (SB) 32, Executive Order (EO) B-55-18, and EO S-03-05, and provide qualitative thresholds, as discussed in further detail below.

BAAQMD Thresholds of Significance

According to BAAQMD's qualitative GHG thresholds of significance, a project must either include specific project design elements (e.g., exclude use of natural gas, achieve a specific reduction in project-generated VMT below the regional average) or be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).[15]

On November 28, 2022, the City of Livermore adopted an updated 2022 CAP, which, according to Section 2 of Appendix D of the CAP, meets the criteria to be a GHG reduction strategy under CEQA Guidelines Section 15183.5(b). Therefore, the following analysis is based on the proposed project's consistency with City's 2022 CAP.

[14] Bay Area Air Quality Management District. *2022 California Environmental Quality Act Guidelines*. April 2023.
[15] *Ibid.*

City of Livermore CAP Consistency

The 2022 CAP is intended to create a roadmap to achieve emissions reductions of 40 percent below 1990 levels by 2030, and carbon neutrality (i.e., net zero carbon emissions) by 2045. The CAP contains mitigation strategies and actions, consistent with State climate mitigation targets, which were developed to reduce the City's GHG emissions to reach its adopted reduction targets for 2030 and 2045. The project's consistency with the applicable mitigation strategies and actions is assessed in Table 2 below. As shown in the table, the proposed project would be consistent with the applicable strategies and actions of the City's CAP.

Table 2
Project Consistency with the Livermore Climate Action Plan

Strategies and Actions	Consistency Discussion
Strategy D-1: Improve water conservation and reuse.	All landscaping improvements would be consistent with Section 13.25 of the Municipal Code, Water Efficient Landscape, and would be irrigated by an automatic irrigation system. In addition, the proposed park would include the use of drought-tolerant native and adaptive plants, and is anticipated to use low-flow toilets in the proposed bathroom. Therefore, the proposed project would generally be consistent with Strategy D-1.
Action D-1.3: Continue implementing the Water Efficient Landscape Ordinance.	As discussed above, all landscaping improvements would be consistent with Section 13.25 of the Municipal Code, Water Efficient Landscape, and would be irrigated by an automatic irrigation system. Therefore, the proposed project would be consistent with Action D-1.3.
Action F-1.5: Require new hardscape to be permeable.	Page 46 of the Livermore CAP recognizes that for Action F-1.5, the City must first update standards for new development hardscape to be consistent with CALGreen Tier 1 and/or increase the current fee for installation of new impervious surfaces. The City has not yet updated its standards and, thus, consistency with Action F-1.5 is not required.
Strategy B-1: Require new buildings to be all-electric and incentivize electrification retrofits of existing buildings.	The proposed project would be built in accordance with Section 15.26.200 of the City of Livermore Municipal Code, which requires all newly constructed buildings within the City to be all-electric. Thus, the proposed project would be consistent with Strategy B-1.
Action B-1.1: Require new construction to be all-electric.	See consistency discussion for Strategy B-1.
Action T-1.1: Expand EV infrastructure to support EV adoption.	The City of Livermore has adopted Reach Code amendments to the CBSC, which include EV charging requirements for new development projects within the City. However, the proposed project would be considered a "remodel" or "addition" to an existing development under the Reach Code, and, thus, the EV requirements would not apply. Therefore, the requirements of Action T-1.1 are generally not applicable to the proposed project.

(Continued on next page)

Table 2
Project Consistency with the Livermore Climate Action Plan

Strategies and Actions	Consistency Discussion
Strategy W-1: Reduce the amount of waste that is landfilled.	The project would be required to comply with all applicable provisions of Chapter 8.08, Solid Waste Management, of the City's Municipal Code. In addition, as discussed below, the proposed project would be required to comply with the CALGreen Code's construction waste diversion standards during construction of the proposed project. Therefore, the proposed project would be generally consistent with Strategy W-1.
Action W-1.5: Reduce construction waste.	The CALGreen Code requires all new construction projects to recycle and/or salvage for reuse a minimum 65 percent of all non-hazardous construction and demolition waste. The proposed project would be required to comply with the CALGreen Code standards, and, therefore, would be consistent with Action W-1.5.

Source: City of Livermore, 2022.

Conclusion

Based on the above, the proposed project would be consistent with the City's CAP, and would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. Thus, a ***less-than-significant*** impact would occur.

IX. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	✖
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	✖
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
g. Expose people or structures, either directly or indirectly, to the risk of loss, injury or death involving wildland fires?	☐	☐	✖	☐

Discussion

a. Park and open space uses are not typically associated with the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Upon completion, the proposed project may involve the use of herbicides and/or fertilizers on-site associated with the proposed landscaping, either of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions, and use would be consistent with what currently occurs on-site. Due to the regulations governing use of such products and the amount anticipated to be used on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. The following discussion provides an analysis of potential hazards and hazardous materials associated with upset or accident conditions related to the proposed construction activities and existing on-site conditions.

Construction Activities

Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used and transported to and from the site during construction. However, the

project contractor would be required to comply with all California Health and Safety Codes regulating the handling, storage, and transportation of hazardous and toxic materials. Pursuant to California Health and Safety Code Section 25510(a), except as provided in subdivision (b), the handler or an employee, authorized representative, agent, or designee of a handler, shall, upon discovery, immediately report any release or threatened release of a hazardous material to the unified program agency (in the case of the proposed project, the Alameda County Department of Environmental Health) in accordance with the regulations adopted pursuant to Section 25510(a). The handler or an employee, authorized representative, agent, or designee of the handler shall provide all State, city, or county fire or public health or safety personnel and emergency response personnel with access to the handler's facilities. In the case of the proposed project, the contractors are required to notify the Alameda County Department of Environmental Health in the event of an accidental release of a hazardous material, who would then monitor the conditions and recommend appropriate remediation measures.

Existing Disturbance Area Conditions

The following discussion is based primarily on a Soil Sampling Report for the project's disturbance area, prepared by Pangea Environmental Services, Inc. (Pangea) (see Appendix A).[16]

Approximately two acres of the proposed community park consist of two former ponds and a former elevated green associated with the former Springtown Golf Course, which was constructed in the 1960s. In 2018, the City of Livermore Public Works Department used soil from an excavation at the Livermore Municipal Airport to fill the ponds, which were approximately three feet deep. According to the City, soils within the airport area have the potential to contain pesticides and metals from past agricultural use. Thus, the objective of the Soil Sampling Report prepared for the proposed project was to conduct soil sampling in the portion of project's disturbance area that includes the two former ponds and former green of the Springtown Golf Course to help determine if any risks to human health for future park uses exist associated with potential pesticides and metals in the fill soils, and to assist with soil characterization for any grading and/or off-site soil disposal that may occur during construction of the park.

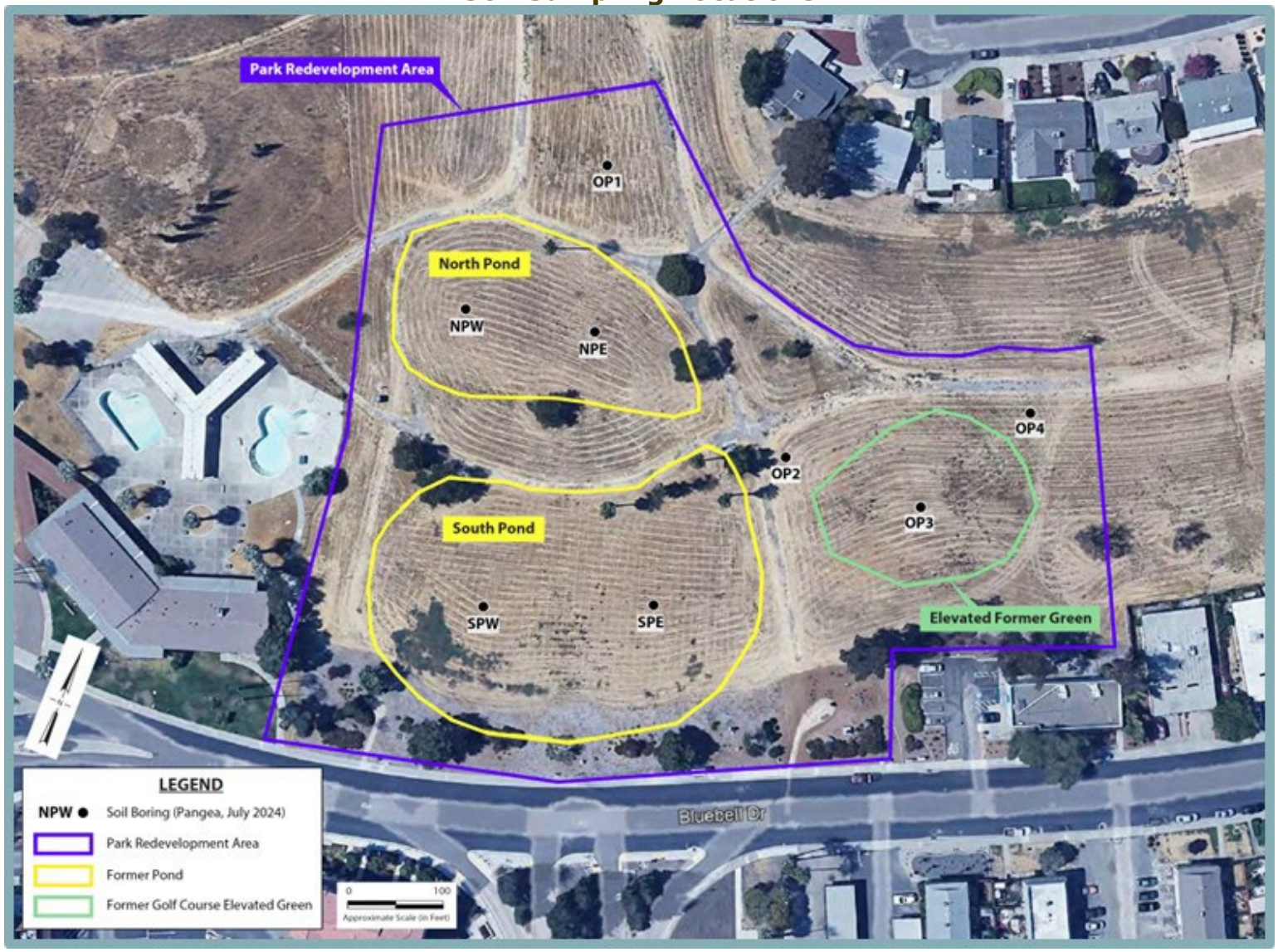
The Soil Sampling Report included soil borings from eight locations within the project's disturbance area. As shown in Figure 7, Pangea performed hand auger borings at the following locations: two in the former north pond (NPW and NPE), two in the former south pond (SPW and SPE), one in the former green (OP3), and three in the area outside of the former ponds and green (OP1, OP2, and OP4).

Soils from each of the borings were analyzed for 17 different metals (including mercury), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and asbestos.

Based on the results of the on-site soil analysis, metals, VOCs, SVOCs, PAHs, herbicides, pesticides, or asbestos were not detected above the San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs) for "significantly vegetated" terrestrial habitat (e.g., parkland), with the exception of selenium, barium, and vanadium.

[16] Pangea Environmental Services, Inc. *Livermore Springtown Soil Sampling Report.* September 4, 2024.

Figure 7
Soil Sampling Locations



Source: Pangea Environmental Services, Inc, 2024.

Selenium, a metal, was detected above the respective terrestrial habitat ESL (2.4 milligrams per kilogram [mg/kg]) in individual soil samples collected from the former south pond area, at 3.50 mg/kg in SPW-3 and 3.03 mg/kg in SPE-3 (both from three feet below ground surface [bgs]), and 2.8 mg/kg from OP1-1 north of the former pond areas at a depth of one foot bgs.

Selenium was also detected at levels that exceeded the background concentration (0.43 mg/kg) and the 95 percent upper confidence limit (1.959 mg/kg) for the metal. Common sources of selenium releases to the environment include coal fly ash deposits from coal combustion, sewage and agricultural runoff, and use as a pest control that repels plant damaging insects while also having a positive effect on the growth of plants. According to the Soil Sampling Report, given the location of the detections above screening levels, the likely source of selenium in soil at the former Springtown Golf Course is the application of reclaimed wastewater to the course or the use of pesticides to deter plant damaging insects, with course runoff flowing to, and concentrating in the ponds; both common practices at golf courses.

Based on current and planned park uses on-site, and exposure pathways for selenium, the selenium detections were determined not to represent a significant risk, and according to Pangea do not warrant further investigation. Pangea recommends that if grading of the former ponds is required, grading should include the use of import or site soil that does not include detections of selenium over the terrestrial ESL.

With regard to the barium and vanadium detected in on-site soils, laboratory analytical reports (see Appendix A of the Soil Sampling Report) determined barium and vanadium were detected at concentrations below the soil background levels.

Overall, the soil analytical data indicates that site soil does not pose a significant human health risk for future park uses, and that special precautions for handling soil are not warranted. Analytical data also indicates that special precautions are not necessary for soil disposal.

Conclusion

Based on the above, the proposed project would result in a ***less-than-significant*** impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

c. The nearest schools relative to the project's disturbance area are Leo R. Croce Elementary School and Andrew N. Christensen Middle School, located approximately 0.7-mile and 1.5 miles from the project's disturbance area, respectively. Therefore, schools are not located within one-quarter mile of the project's disturbance area, and the proposed project would have ***no impact*** related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. Government Code Section 65962.5 requires the California Environmental Protection Agency to annually develop an updated Cortese List. The components of the Cortese List include the Department of Toxic Substances Control (DTSC) Hazardous Waste and Substances Site List, the list of leaking underground storage tank (UST) sites from the State Water Resources Control Board's (SWRCB) GeoTracker database, the list of solid

waste disposal sites identified by the SWRCB, and the list of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the SWRCB. The project's disturbance area is not included on the DTSC Hazardous Waste and Substances Site List,[17] or the list of solid waste disposal sites.[18] Additionally, the SWRCB's GeoTracker database does not identify the project's disturbance area as containing any Leaking Underground Storage Tanks (LUSTs), which is another portion of the Cortese List.[19] Finally, the project's disturbance area is not on the list of active CDO and CAO from the SWRCB. Thus, the proposed project would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

e. The nearest airport to the project's disturbance area is the Livermore Municipal Airport, located approximately 4.5 miles southwest of the site. The site is not covered by an airport land use plan. Therefore, ***no impact*** would occur related to a safety hazard or excessive noise for people working in the project area.

f. The City of Livermore adopted the City of Livermore Emergency Operations Plan in January 2018.[20] The plan provides a basis for future responses to a wide range of citywide hazards and vulnerabilities. The Plan outlines the general authority, organization, and response actions for City of Livermore staff when disasters occur. Implementation of the proposed project would not result in any substantial modifications to the existing roadway system and, thus, would not physically interfere with the Emergency Operations Plan, particularly with any emergency evacuation routes. Furthermore, the proposed project would be consistent with what has been planned for the site and would not include land uses or operations that could impair implementation of the plan. Therefore, the proposed project would not interfere with an emergency evacuation or response plan, and a ***less-than-significant*** impact would occur.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this Initial Study. As noted therein, the project's disturbance area is not located within a Very High Fire Hazard Severity Zone.[21] In addition, the project's disturbance area is located within an urbanized area of the City of Livermore and is surrounded by existing development. The developed nature of the area surrounding the project's disturbance area precludes the spread of wildfire to the site. Thus, the potential for wildland fires to reach the proposed project would be relatively limited. Furthermore, the project would not include the construction of any housing or habitable structures. Therefore, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands, and a ***less-than-significant*** impact would occur.

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17 Department of Toxic Substances Control. *Hazardous Waste and Substances Site List (Cortese).* Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed August 2024.

18 CalEPA. *Cortese List Data Resources*. Available at: https://calepa.ca.gov/sitecleanup/corteselist/. Accessed August 2024.

19 State Water Resources Control Board. *GeoTracker Public Site.* Available at: https://geotracker.waterboards.ca.gov/map/. Accessed August 2024.

20 City of Livermore. *Emergency Operations Plan*. January 2018.

21 California Department of Forestry and Fire Protection. *California Fire Hazard Severity Zone Viewer. Available at:* https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed August 2024.

X. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	✖	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	✖	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	✖	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	✖	☐
iv. Impede or redirect flood flows?	☐	☐	☐	✖
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	✖
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	✖	☐

Discussion

a. The following discussion provides a summary of the proposed project's potential to violate water quality standards/waste discharge requirements or otherwise degrade water quality during construction and operation.

Construction

During the early stages of construction activities, topsoil would be exposed in portions of the site due to excavation of the areas of the site proposed for development. After completion of groundwork and prior to overlaying the ground surface with pavement and landscaping, the potential exists for wind and water erosion to discharge sediment and/or urban pollutants into stormwater runoff, which could adversely affect water quality downstream.

The SWRCB regulates stormwater discharges associated with construction activities where clearing, grading, or excavation results in a land disturbance of one or more acres. The City's National Pollutant Discharge Elimination System (NPDES) permit requires applicants to show proof of coverage under the State's General Construction Permit prior to receipt of any construction permits. Because the disturbance area associated with the proposed project would be over one acre, the proposed project would be subject to the requirements of the State's General Construction Permit. The State's General Construction Permit requires a Storm Water Pollution Prevention Plan (SWPPP) to be

prepared for the site. A SWPPP describes BMPs to control or minimize pollutants from entering stormwater and must address both grading/erosion impacts and non-point source pollution impacts of the development project. Additionally, the project would be required to comply with Chapter 13.45, Stormwater Management and Control Program, of the City's Municipal Code, which includes standards for managing stormwater runoff during construction and operation. Pursuant to Section 13.45.090, any construction contractor performing work in the City must provide filter materials at the catch basin to retain any debris and dirt flowing into the City's stormwater system. Therefore, the proposed project would not discharge sediment or urban pollutants through soil erosion, violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality during the proposed construction activities.

Operation

The proposed project would not involve operations typically associated with the generation or discharge of polluted water. Following completion of project buildout, disrupted areas of the site would be largely covered with landscaping or impervious surfaces and topsoil would no longer be exposed. In addition, given the proposed park uses, the project would not result in a substantial increase in on-site impervious surfaces relative to existing conditions. All municipalities within Alameda County (and the County itself) are required to develop more restrictive surface water control standards for new development projects as part of the renewal of the Countywide NPDES permit. Thus, typical operations of the proposed park would not violate any water quality standards or waste discharge requirements, nor degrade water quality.

The City of Livermore has adopted the County C.3 Stormwater Standards, which require new development and redevelopment projects that create or alter 10,000 or more square feet of impervious area to contain and treat all stormwater runoff from the proposed park. The total amount of new impervious surfaces created by the proposed project would be limited to the development of the Community Park, such as the restroom, temporary parking lot, and playground, as well as the new pickleball/tennis courts and half-basketball court at Marlin Pound Neighborhood Park. Although the new impervious surfaces would be minimal relative to existing conditions, the total square footage of impervious surfaces is anticipated to be 42,249 sf, which is more than the 10,000 sf C.3 Stormwater Standards requirement. Therefore, the project would be subject to the requirements of the C.3 Stormwater Standards related to stormwater treatment, which are included in the City's NPDES General Permit.

Conclusion

Based on the above, the proposed project would not result in the violation of water quality standards or degradation of water quality, and a ***less-than-significant*** impact would occur.

b,e The City of Livermore Water Resources Division would provide water to the proposed project. According to the City of Livermore Water Resources Division 2020 Urban Water Management Plan (UWMP), all potable water distributed through the Livermore Water Resources Division is purchased wholesale from Zone 7 Water Agency.[22] Zone 7 oversees water issues within the Livermore-Amador Valley and is a State Water Project (SWP) contractor. Water sources for the City of Livermore Water Resources Division through Zone 7 include surface water from the SWP, water transferred from the Byron

[22] City of Livermore Water Resources Division. *2020 Urban Water Management Plan* [pg. 4-1]. June 28, 2021.

Bethany Irrigation District, local surface runoff captured in Del Valle Reservoir, groundwater extraction from the Livermore Valley Main Groundwater Basin, non-local groundwater storage in the Semitropic Water Storage District and Cawelo Water District, and future local storage in the Chain-of-Lakes. As such, a portion of the water supplied to the proposed project would be derived from groundwater sources. In December 2021, the Zone 7 Water Agency adopted the Alternative Groundwater Sustainability Plan for the Livermore Valley Groundwater Basin.

Bulletin 118 – Interim Update 2016 defines 517 groundwater basins and subbasins in California. Per the Sustainable Groundwater Management Act (SGMA), the Department of Water Resources (DWR) is required to prioritize the 517 groundwater basins and subbasins as either High, Medium, Low, or Very Low Priority. Each basin's priority determines which provisions of California Statewide Groundwater Elevation Monitoring (CASGEM) and the SGMA apply. The SGMA requires Medium- and High-priority basins to develop groundwater sustainability agencies (GSAs), develop groundwater sustainability plans, and manage groundwater for long-term sustainability. The Livermore Valley Groundwater Basin is considered Medium Priority pursuant to the DWR.[23] In addition, the DWR has not identified the Basin as either in overdraft or expected to be in overdraft.[24]

The proposed project would involve water demand associated with irrigation of the proposed landscaping elements, as well as the proposed restroom building. However, such demand would not represent a substantial increase from previous irrigation conditions at the site, when the Springtown Golf Course was active. In addition, given that the proposed project would be consistent with the site's current General Plan land use and zoning designations, the project would not result in increased use of groundwater supplies beyond what has been anticipated for the site by the City and accounted for in the UWMP. Pursuant to the 2020 UWMP, water supplies are projected to meet expected demand for normal year, single dry year, and multiple dry year scenarios through 2045. In addition, the proposed project would not result in a substantial increase in impervious surfaces relative to existing conditions, and, thus, would not substantially alter groundwater recharge conditions within the project's disturbance area.

Therefore, the proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the Livermore Valley Groundwater Basin. In addition, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, a ***less-than-significant*** impact would occur.

c.i-iii. The proposed project would not result in a substantial increase in impervious surfaces relative to what currently exists at the existing on-site park. In addition, as discussed previously, although the new impervious surfaces would be minimal relative to existing conditions, the total square footage of impervious surfaces is anticipated to be 42,249 sf, which is more than the 10,000 sf C.3 Stormwater Standards requirement. Thus, the proposed project would be subject to the City's C.3 Standards related to stormwater.

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[23] Department of Water Resources. *Sustainable Groundwater Management Act 2018 Basin Prioritization* [Table A-1]. January 2019.

[24] *Ibid.*

Storm water runoff associated with the proposed project would flow to a series of bioretention basins located in the landscaped areas of the proposed community park that would provide treatment and detention of the on-site stormwater runoff. In addition, stormwater runoff from the new impervious surfaces at Marlin Pound Neighborhood Park would be captured by the park's existing stormwater system. Finally, stormwater from minor impervious surfaces associated with the 18-hole disc golf course would be captured by the surrounding grassy areas of the former Springtown Golf Course. The proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, or flooding on- or off-site, create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Consequently, the proposed project would result in a ***less-than-significant*** impact.

c.iv. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map numbers 06001C0353G and 06001C0351G, the project's disturbance area is located entirely within Zone X,[25] which is not defined as a Significant Flood Hazard Area. Therefore, implementation of the proposed project would not impede or redirect flood flows, and ***no impact*** would result.

d. As discussed under question 'c.iv' above, the project's disturbance area is not located within a flood hazard zone. Thus, the proposed project would not be subject to substantial flooding risks. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. Due to the disturbance area's substantial distance from the coast, the proposed project would not be exposed to flooding risks associated with tsunamis. Seiches do not pose a risk to the proposed project, as the project's disturbance area is not located adjacent to any closed body of water. Therefore, the proposed project would not pose a risk related to the release of pollutants due to project inundation due to flooding, tsunami, or seiche, and ***no impact*** would occur.

[25] Federal Emergency Management Agency. *Flood Insurance Rate Map 06001C0353G.* Effective August 3, 2009.

XI. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	✖
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	✖	☐

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land uses so as to change the land use conditions in the surrounding community, or isolate an existing land use. The proposed project would include improvements to the existing on-site Marlin Pound Neighborhood Park as well as the former Springtown Golf Course, thereby generally representing a continuation of current site conditions. As such, the proposed project would not physically divide an established community, and ***no impact*** would occur.

b. The project site is designated OSP pursuant to the City's General Plan and is zoned E. According to the City's General Plan, OSP is applied to areas to be maintained as permanent or semi-permanent open spaces. All proposed structures on parcels designated OSP would be subject to City Design Review. The project's disturbance area consists of grasses and various trees throughout and is located within the former Springtown Golf Course as well as a portion of the current Marlin Pound Neighborhood Park. The proposed project would include the development of a community park consisting of a playground, picnic area, and community garden, as well as the development of four pickle ball courts, tennis courts, a half-basketball court, and an 18-hole disc golf course. Thus, the project would be consistent with the site's current land use and zoning designations.

As discussed throughout this IS/MND, the proposed project would not result in any significant environmental effects that cannot be mitigated to a less-than-significant level by the mitigation measures provided herein. In addition, the proposed project would not conflict with City policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, including, but not limited to, the City's noise standards contained in the General Plan and Municipal Code, and applicable Municipal Code regulations related to stormwater management. Therefore, the proposed project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. Thus, a ***less-than-significant*** impact would occur.

XII. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	✖
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	✖

Discussion

a,b. Pursuant to the City's General Plan, areas within the vicinity of Livermore are underlain by alluvial deposits, which contain significant reserves of sand and gravel deposits suitable for use as aggregate in the production of Portland Concrete Cement. However, the General Plan does not identify any mineral resources in the project area.[26] The General Plan EIR concluded that buildout of the Planning Area, including the project site, would result in a less-than-significant impact to mineral resources with implementation of applicable General Plan policies, including Policies OSC-4.1.P1 through P5, which require the City to take into account potentially available mineral resources within the City, while also ensuring mining operations comply with all applicable City policies and standards. Therefore, ***no impact*** to mineral resources would occur as a result of development of the project.

[26] City of Livermore. *General Plan 2003-2025* [Figure 8-3]. December 2014.

XIII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

The following discussion is based on an Environmental Noise Assessment prepared by Saxelby Acoustics for the proposed project (see Appendix B).[27]

a. The following sections present information regarding applicable noise standards, sensitive noise receptors in proximity to the site, the existing noise environment, and the potential for the proposed project to result in noise impacts during project construction and operation. The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this analysis are A-weighted unless noted otherwise.
- Average, or equivalent, sound level (L_{eq}): The L_{eq} corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour).
- Day-Night Average Level (L_{dn}): The average sound level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.
- Maximum Sound Level (L_{max}): The maximum sound level over a given time-period.
- Median Sound Level (L_{50}): The sound level exceeded 50 percent of the time over a given time-period.
- Community Noise Equivalent Level (CNEL): The 24-hour average noise level with noise occurring during evening (7:00 PM to 10:00 PM) hours weighted by a factor of three and nighttime hours weighted by a factor of ten prior to averaging.

City Noise Standards

Both the City's Municipal Code and General Plan include regulations related to the generation of noise.

Chapter 9.36 of the City's Municipal Code prohibits any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary, unusual or habitual

[27] Saxelby Acoustics. *Environmental Noise Assessment Springtown Open Space Phase 1, City of Livermore, California*. October 28, 2024.

noise, or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the City. Noise sources from both construction and operations of the proposed project are discussed in comparison to the foregoing general standard included in the City's Municipal Code. Construction activities associated with development of the proposed project would be prohibited during the following time periods: 6:00 PM Saturday to 7:00 AM Monday; 8:00 PM to 7:00 AM on Monday, Tuesday, Wednesday and Thursdays; 8:00 PM Friday to 9:00 AM on Saturday; and on all City-observed holidays.

General Plan Policy N-1.5.P1 requires that industrial and commercial uses be designed and operated so as to avoid the generation of noise effects on surrounding sensitive land uses from exceeding the following noise levels for exterior environments:

(a) 55 dBA L_{50} (7:00 AM to 10:00 PM)
(b) 45 dBA L_{50} (10:00 PM to 7:00 AM)

Although the proposed project amenities would not be considered industrial or commercial in nature, the stationary noise level standards which regulate such uses would be most applicable to the proposed project as the standards included in General Plan Policy N-1.5.P1 are the only noise level standards within the General Plan which regulate stationary noise sources. As the proposed project amenities are anticipated to operate during daytime hours only, the applicable stationary noise standard would be 55 dBA L_{50}.

In addition, the City's General Plan Policy N-1.1.P4 establishes acceptable and unacceptable ranges for exterior noise levels at various land uses within the City. The acceptable and unacceptable noise ranges are included in Table 9-7 of the City's General Plan. However, according to Saxelby Acoustics, the intent of the CNEL standards established in General Plan Policy N-1.1.P4 is to direct siting and insulation of new sensitive uses due to transportation noise exposure. The intent is not to regulate stationary noise generating projects.

As such, the most applicable standard to analyze operational noise generated by the proposed proejct are the standards included in Policy N-1.5 P1, above. However, Saxelby notes that if the noise generated by the project were to be calculated in terms of CNEL, the two noise standards would be approximately equal for the proposed project. The City of Livermore has not established a threshold for significant increases in ambient noise. However, the Federal Interagency Committee on Noise (FICON) has developed guidance for determining increases in traffic noise. Therefore, in addition to the 60 dBA L_{dn} limit specified in the City of Livermore Noise Element, increases in the ambient noise environment due to the proposed project were evaluated using the criteria developed by FICON. Although the FICON guidelines were originally developed for aircraft noise impacts, the noise increase thresholds are generally considered appropriate for evaluation of noise increases at noise-sensitive uses such as single-family residences. The significance criteria are provided in Table 3, below.

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Noise-sensitive land uses are typically given special attention in order to achieve protection from excessive noise. In the vicinity of the project's disturbance area, the nearest existing noise-sensitive land uses are single-family residential uses

surrounding the project's disturbance area and multi-family residential uses to the southwest of the project's disturbance area.

Table 3
FICON Noise Exposure Increases for Determining Level of Significance

Noise Exposure without Project	Potential Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise.

Existing Noise Environment

The existing noise environment in the project area is primarily defined by traffic on the local roadway network. Secondary sources include activity at the adjacent park uses.

To quantify the existing ambient noise environment, Saxelby Acoustics conducted continuous long-term (LT) (24-hour) noise level measurements at three locations on the project site and short-term (ST) measurements at three locations. Noise measurement locations are shown on Figure 8 and a summary of the noise level measurement survey results is provided in Table 4. The sound level meters were programmed to record the maximum (L_{max}), median (L_{50}), and average (L_{eq}) noise levels at each site during the survey.

Project Construction Noise

During the proposed construction activities, heavy equipment would be used for excavation, grading, and paving which would temporarily increase ambient noise levels when in use. Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week), and the duration of the construction work.

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to predict noise levels for standard construction equipment anticipated to be used during construction of the proposed project. Noise sources in the RCNM database include actual noise levels and equipment usage percentages.

Table 5 shows predicted construction noise levels for each of the project construction phases associated with the proposed community park and disc golf course. Based on the table, the loudest phase of construction associated with the proposed community park and disc golf course, with an average noise exposure of 87 dBA L_{eq} at 50 feet, would occur during site preparation and grading.

Table 6 shows predicted construction noise levels for each of the project construction phases associated with the Marlin Pound Neighborhood Park improvements. Based on the table, the loudest phase of construction at Marlin Pound Park, with an average noise exposure of 85 dBA L_{eq} at 50 feet would occur during grading.

The City of Livermore has not adopted a formal standard for evaluating temporary construction noise which occurs within allowable hours. Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels.

Figure 8
Noise Measurement Sites

Source: Saxelby Acoustics, 2024.

Table 4
Summary of Existing Background Noise Measurement Data

Location	Date	Daytime L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: Marlin Pound Neighborhood Park East	Friday 7/26/2024	55	52	47	69	47	44	62
	Saturday 7/27/2024	67	52	47	72	61	40	70
	Sunday 7/28/2024	50	50	43	70	40	36	59
LT-2: Marlin Pound Neighborhood Park West	Friday 7/26/2024	54	50	45	66	47	44	61
	Saturday 7/27/2024	61	48	45	65	55	41	68
	Sunday 7/28/2024	49	46	41	66	42	38	57
LT-3: Northwest of Livermore Public Library Springtown Branch	Friday 7/26/2024	58	51	49	65	51	49	61
	Saturday 7/27/2024	58	53	52	65	51	48	66
	Sunday 7/28/2024	53	50	47	64	46	43	58
ST-1	7/25/2024 11:57 AM	N/A	46	44	57	N/A	N/A	N/A
ST-2	7/25/2024 12:24 PM	N/A	53	43	72	N/A	N/A	N/A
ST-3	7/25/2024 12:43 PM	N/A	46	46	52	N/A	N/A	N/A

Notes:
- All values shown in dBA
- Daytime hours: 7:00 AM to 10:00 PM.
- Nighttime Hours: 10:00 PM to 7:00 PM.

Source: Saxelby Acoustics, 2024.

Table 5
Construction Equipment Noise – Community Park and Disc Golf Course

Type of Equipment	Quantity	Hours Per Day	Usage (%)	Maximum L_{max} (dBA at 50 feet)	Hourly Average L_{eq} (dBA at 50 feet)
Site Preparation					
Dozer	2	5	40	82	81
Tractor/Loader/ Backhoe	4	5	40	84	86
				Total	**87**
Grading					
Grader	1	5	40	85	81
Excavator	1	5	40	81	77
Tractor/Loader/ Backhoe	3	5	40	84	85
Dozer	1	5	40	82	78
				Total	**87**
Building Construction					
Crane	1	4	16	81	73
				Total	**73**
Paving					
Paver	1	5	50	77	74
Paving Equipment	1	5	50	77	74
Roller	2	5	20	80	76
				Total	**80**

Source: Federal Highway Administration, Roadway Construction Noise Model, January 2006.

Table 6
Construction Equipment Noise – Marlin Pound Neighborhood Park

Type of Equipment	Quantity	Hours Per Day	Usage (%)	Maximum L_{max} (dBA at 50 feet)	Hourly Average L_{eq} (dBA at 50 feet)
Site Preparation					
Dozer	1	4	40	82	78
Tractor/Loader/ Backhoe	1	4	40	84	80
				Total	**82**
Grading					
Grader	1	4	40	85	81
Excavator	1	4	40	81	77
Tractor/Loader/ Backhoe	1	4	40	84	80
Dozer	1	4	40	82	78
				Total	**85**
Paving					
Paver	1	4	50	77	74
Paving Equipment	1	4	50	77	74
Roller	1	4	20	80	73
				Total	**78**

Source: Federal Highway Administration, Roadway Construction Noise Model, January 2006.

In absence of City standards, Saxelby Acoustics used the Caltrans 12 dBA criterion to evaluate increases due to construction noise associated with the proposed project.

Project-generated construction noise levels at sensitive receptors in the project area were modeled using the noise level data presented in Table 5 and Table 6. The results of the analysis are presented in Table 7 and shown in Figure 9.

As shown in Table 7, the proposed project is predicted to generate construction noise level increases of up to 11.0 dBA at the existing sensitive receptors, which is the less than the 12 dBA noise level increase criterion established by Caltrans. However, construction-related noise could result in sleep interference at existing noise-sensitive receptors in the vicinity of the project site if construction activities were to occur outside the normal daytime hours. Enforcement of time restrictions specified in the City's Noise Ordinance and the use of noise-dampened equipment would be required to ensure that the temporary or periodic increase in ambient noise levels in the project vicinity associated with construction of the proposed project would not be considered substantial.

Project Operational Noise

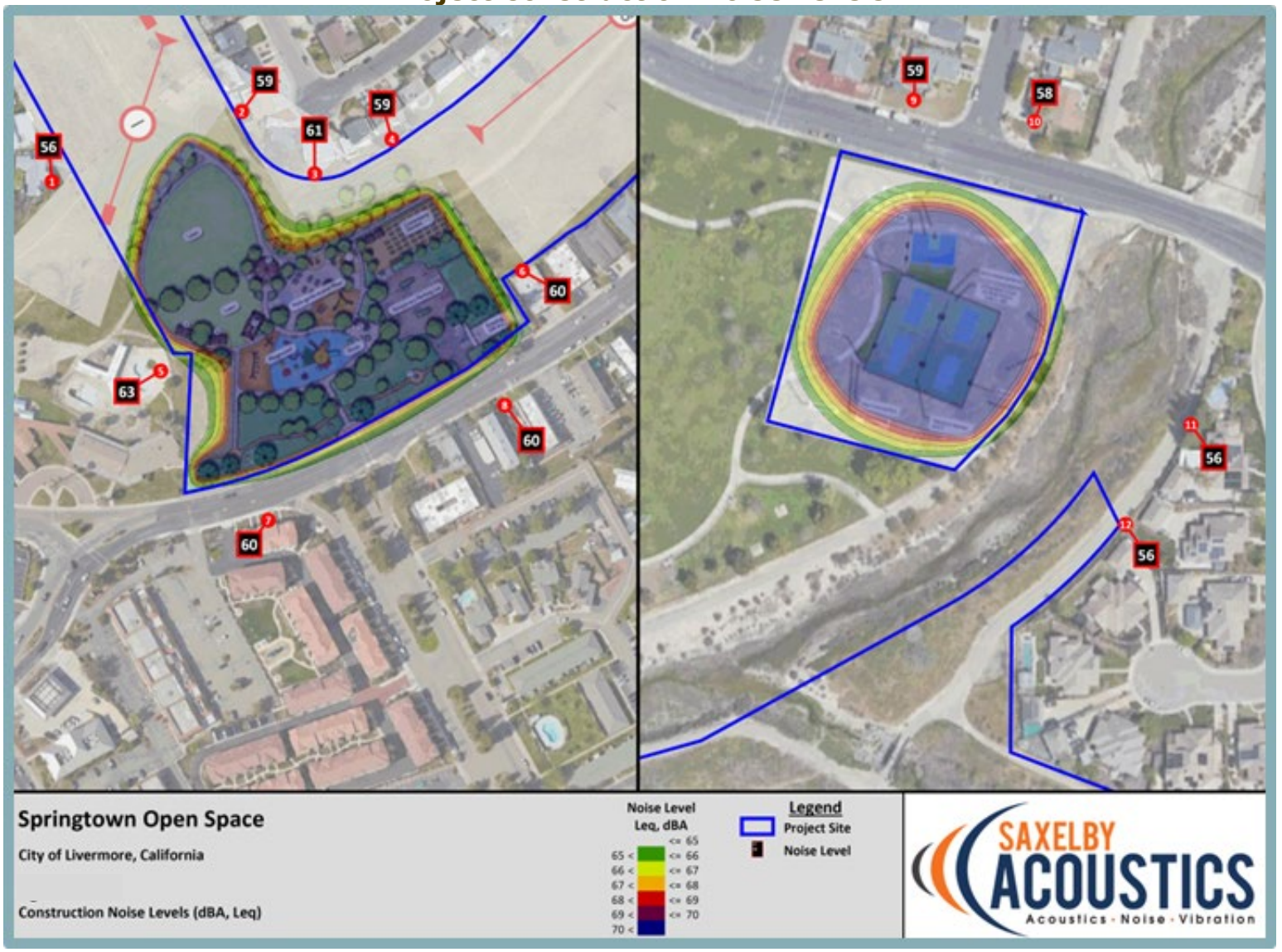
The proposed project consists of Phase 1 of the Springtown Open Space Concept Plan and would result in the development of a four-to-six-acre community park, a new parking lot, four pickle ball courts/two tennis courts, a half-basketball court, and an 18-hole disc golf course.

Table 7
Construction Equipment Noise

Receptor	Representative Noise Measurement Site	Existing Ambient (dBA L_{eq})	Construction Noise (dBA L_{eq})	Ambient + Construction (dBA L_{eq})	Difference (dBA L_{eq})
1	LT-3	52.7	56.0	57.7	5.0
2	LT-3	51.4	58.7	59.4	8.0
3	LT-3	55.1	61.1	62.1	7.0
4	LT-3	54.9	58.7	60.2	5.3
5	LT-3	55.0	62.8	63.5	8.5
6	LT-3	49.2	59.8	60.2	11.0
7	LT-3	61.0	60.1	63.6	2.6
8	LT-3	59.8	59.6	62.7	2.9
9	LT-2	60.5	59.0	62.8	2.3
10	LT-2	58.9	58.4	61.7	2.8
11	LT-2	51.5	55.7	57.1	5.6
12	LT-2	49.2	55.8	56.7	7.5

Source: Saxelby Acoustics, 2024.

Figure 9
Project Construction Noise Levels



Source: Saxelby Acoustics, 2024

As shown on Figure 10, the receptors near the proposed Phase 1 of the project are predicted to be exposed to operational community park noise levels of up to 47 dBA L_{50} during daytime hours. To ensure a conservative analysis, all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active for the predicted noise levels.

The noise level of 47 dBA L_{50} is less than the City of Livermore daytime (7:00 AM to 10:00 PM) noise level standard of 55 dBA L_{50}. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

As shown on Figure 11, the proposed pickleball/tennis and basketball sources at Marlin Pound Neighborhood Park are predicted to generate noise levels of up to 42 dBA L_{50} at the nearest residential receptors to the north. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active in this scenario. In addition, the noise analysis conducted by Saxelby Acoustics for the pickleball/tennis courts assumed that gameplay would occur between two players on a single court. The primary source of noise was determined to be contact between the paddle and ball, with the secondary source of noise being conversation between players. According to the Environmental Noise Analysis, measured noise levels on a court with two players is approximately equivalent to courts with four players.

The noise level of 42 dBA L_{50} is less than the City of Livermore daytime hours (7:00 AM to 10:00 PM) noise level standard of 55 dBA L_{50}. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

As shown on Figure 12, the proposed disc golf course, is predicted to generate noise levels up to 34 dBA L_{50} at the nearby residential uses along the disc golf course. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active in this scenario.

The noise level of 34 dBA L_{50} is less than the City of Livermore daytime hours noise level standard of 55 dBA L_{50}. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

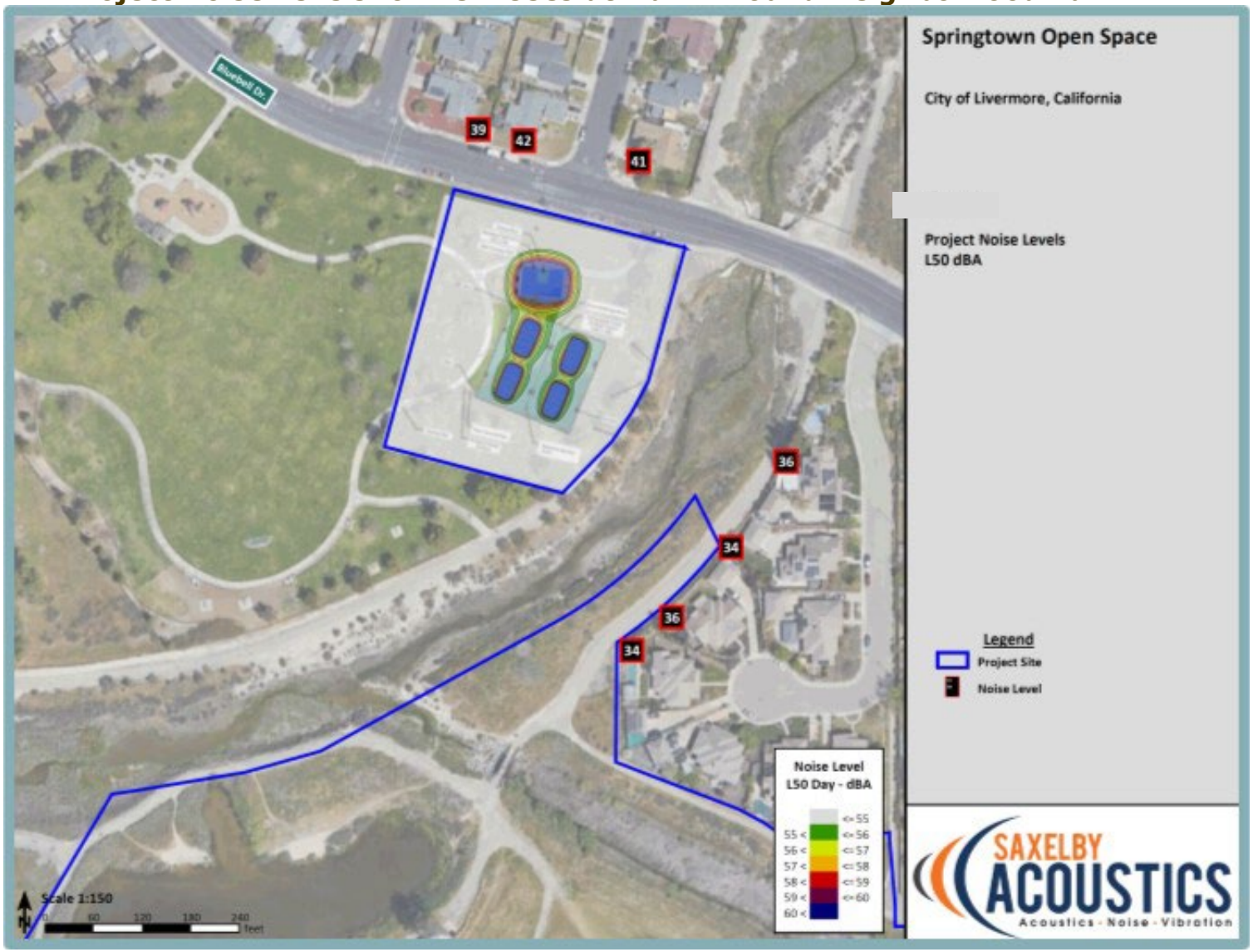
In addition, while the City of Livermore General Plan does not establish a significance threshold for increases in ambient noise sources, in the absence of a specific threshold, Saxelby Acoustics used the FICON criteria to assess increases in the ambient noise environment of the project area. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active for the following analysis.

At the residences near the proposed community park area, the average daytime ambient noise level was measured to be 47 to 52 dBA L_{50} (LT-1) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase.

Figure 10
Project Noise Levels for the Community Park

Source: Saxelby Acoustics, 2024.

Figure 11
Project Noise Levels for New Uses at Marlin Pound Neighborhood Park



Source: Saxelby Acoustics, 2024.

Figure 12
Project Noise Levels for the 18-Hole Disc Golf Course

Source: Saxelby Acoustics, 2024.

The resulting sum of ambient noise (47 dBA L_{50}) plus project-generated noise (47 dBA L_{50}) would be 50 dBA L_{50} which would represent an increase of 3.0 dBA over ambient noise levels, and is less than the +5 dBA increase criterion.

At the residences near the proposed pickleball/tennis courts and basketball court, the average daytime ambient level was measured to be 41 to 45 dBA L_{50} (LT-2) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase.

The resulting sum of ambient noise (41 dBA L_{50}) plus project-generated noise (42 dBA L_{50}) would be 44.5 dBA L_{50} which would represent an increase of 3.5 dBA over ambient noise levels, and is less than the +5 dBA increase criterion.

At the residences near the proposed disc golf course, the average daytime ambient noise level was measured to be 43 to 46 dBA L_{50} (ST-1, ST-2, ST-3) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase. The resulting sum of ambient noise (43 dBA L_{50}) plus project-generated noise (34 dBA L_{50}) would be 43.5 dBA L_{50} which would represent an increase of 0.5 dBA over ambient, and is less than the +5 dBA increase criterion.

Thus, the proposed project would not result in any impacts related to operational noise.

Conclusion

Based on the above, although impacts resulting from project operational noise would be considered to be less than significant, construction of the proposed project could result in the generation of a substantial temporary increase in ambient noise levels in the vicinity of the project in excess of standards established in the City's General Plan and the Municipal Code. Thus, a ***potentially significant*** impact would occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XII-1 *Prior to approval of grading and/or building permits, the City shall establish the following as conditions of approval for any permit that results in the use of construction equipment:*

- *Construction shall be limited to 7:00 AM to 8:00 PM Monday through Saturday.*
- *All construction equipment powered by internal combustion engines shall be properly muffled and maintained.*
- *Quiet construction equipment, particularly air compressors, are to be selected whenever possible. All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.*
- *Unnecessary idling of internal combustion engines is prohibited.*
- *The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance*

between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Proof of compliance shall be submitted to the City of Livermore Community Development Department for review and approval.

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception of the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception, as well as damage to structures, have been developed for vibration levels defined in terms of PPV.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 8, which was developed by Caltrans, shows the vibration levels that would normally be required to result in damage to structures.

Table 8
Effects of Vibration on People and Buildings

PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.

As shown in the table, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Although noise and vibration associated with the construction phase of the project would add to the noise and vibration environment in the immediate project vicinity, construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours, consistent with Section 9.36.080 of the City's Municipal Code.

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utility placement, and parking lot construction occur. Table 9 shows the typical vibration levels produced by construction equipment at various distances. As shown in the table, the most substantial source of groundborne vibrations associated with project construction would be the use of vibratory compactors/rollers.

Table 9
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)	Peak Particle Velocity at 100 Feet (in/sec)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/Drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/Roller	0.210 (less than 0.20 at 26 feet)	0.074	0.026

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006.

As shown in the table, construction vibration levels are less than 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction-related vibrations, especially compactors/rollers, are located further than 26 feet from construction activities using such equipment. Therefore, development of the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

c. The nearest airport to the project's disturbance area is the Livermore Municipal Airport, located approximately 4.5 miles southwest of the site. Given that the project's disturbance area is not located within two miles of a public airport or public use airport, the proposed project would not expose people working in the project area to excessive noise levels associated with such. Thus, ***no impact*** would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	✖
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a. The proposed project would include the development of a community park consisting of a playground, picnic area, and community garden, as well as the development of four pickle ball courts, tennis courts, a half-basketball court, and an 18-hole disc golf course. Given that the project would not include any residential, commercial, or industrial development, the project would not directly or indirectly induce population growth. In addition, the project would not include extension of any major infrastructure. Thus, the proposed project would not induce substantial unplanned population growth in an area, either directly or indirectly, and ***no impact*** would occur.

b. The proposed project would be located within portions of the former Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park. Neither the former Springtown Golf Course, nor the Marlin Pound Neighborhood Park include any habitable structures. As such, the proposed project would not displace existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would occur.

XV. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a-e. The proposed project would include the development of a community park consisting of a playground, picnic area, and community garden, as well as the development of four pickle ball courts, tennis courts, a half-basketball court, and an 18-hole disc golf course. Generally, the proposed project would not result in increased demand for fire or police protection services relative to what currently occurs on-site and within the neighborhood surrounding the project site. In addition, the project would not include construction of any housing or development of new businesses. Thus, the project would not result in population growth such that demand for schools, parks, or other public facilities would increase. Therefore, the proposed project would have a ***less-than-significant*** impact related to the need for new or physically altered fire protection facilities, police protection facilities, schools, parks, or other public facilities, the construction of which could cause significant environmental impacts.

XVI. RECREATION. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	✖	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	✖	☐

Discussion

a,b. The proposed project would include the development of Phase 1 of the proposed Springtown Open Space Concept within the former Springtown Golf Course and a portion of the Marlin Pound Neighborhood Park. The proposed project would not result in population growth that could result in increased demand for existing recreational facilities or cause the construction of new or expansion of existing recreational facilities. In addition, the proposed project would provide additional recreation opportunities for residents within the project area, providing a benefit to the City related to recreational facilities. Thus, a ***less-than-significant*** impact would occur related to recreation.

XVII. TRANSPORTATION. *Would the project:*		Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a.	Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	✖	☐
b.	Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	✖	☐
c.	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	✖	☐
d.	Result in inadequate emergency access?	☐	☐	✖	☐

Discussion

a. The law has changed with respect to how transportation-related impacts may be addressed under CEQA. Traditionally, lead agencies used level of service (LOS) to assess the significance of such impacts, with greater levels of congestion considered to be more significant than lesser levels. Enacted as part of SB 743 (2013), PRC Section 21099, subdivision (b)(1), directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed CEQA Guidelines addressing "criteria for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses."

Pursuant to SB 743, the Natural Resources Agency promulgated CEQA Guidelines Section 15064.3 in late 2018. It became effective in early 2019. Subdivision (a) of that section provides that "[g]enerally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact."

Please refer to Question 'b' for a discussion of VMT.

Pedestrian and Bicycle Facilities

Currently, pedestrian and bicycle facilities are present in the project area. Specifically, paved sidewalks are located within the project vicinity on Bluebell Drive. The City of Livermore maintains three classes of bicycle facilities (Class 1A, Class 2A, and Class 3A). In the project area, a Class 2A bike lane exists on Bluebell Drive. Bicycle facilities and pedestrian facilities are not planned in the study area according to the Livermore Bicycle and Trails Active Transportation Plan.[28] Therefore, the project would not conflict with the existing or proposed facilities. Additionally, as part of the proposed project, an existing gravel path which currently meanders through the park site and along Bluebell Drive would be paved as a formal pedestrian/bike path. A pedestrian crosswalk would connect the proposed community park directly to the adjacent multifamily housing. Multiple paved secondary paths for pedestrians would be located throughout the site. The community park would also include the provision of bicycle racks to be used by parkgoers. Therefore,

[28] City of Livermore. *Livermore Bicycle and Trails Active Transportation Plan.* June 11, 2018.

the proposed project would include the provision of additional bicycle and pedestrian facilities.

Based on the above, the proposed project would not conflict with a program, plan, ordinance, or policy addressing pedestrian or bicycle facilities.

Transit Service and Facilities

Transit service in the City of Livermore is provided by the Livermore Amador Valley Transit Authority (LAVTA). The LAVTA provides the WHEELS service, which provides local public transit to the cities of Dublin, Livermore, and Pleasanton, as well as the adjacent unincorporated areas of Alameda County. LAVTA provides a variety of transportation services, including fixed routes, direct access responsive transit (DART), prime time express bus routes, shuttle service, and Dial-A-Ride. Route 15 provides a loop service to destinations throughout the City of Livermore and stops adjacent to the project site on Springtown Boulevard and Bluebell Drive. Route 15 operates Monday through Sunday from 5:07 AM to 9:48 PM. The proposed project does not propose any features which could conflict with existing or planned transit facilities. The LAVTA bus route serving the project area is adequate to accommodate project-generated transit demand, as local parks typically serve local residents. Therefore, current transit facilities are adequate and the proposed project would not result in any significant impacts to the nearby transit network.

Conclusion

Based on the above, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, and a ***less-than-significant*** impact would occur.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Pursuant to Section 15064.3, analysis of VMT attributable to a project is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. The City of Livermore has not yet adopted a policy or thresholds of significance regarding VMT. Nonetheless, the OPR released a Technical Advisory to evaluate transportation impacts pursuant to CEQA, which includes screening thresholds to identify when a lead agency may screen out VMT impacts. [29]

The OPR Technical Advisory does not specifically address park uses. The proposed park requires consideration of the project's intended visitor base and where such visitors would otherwise have travelled if the project were not constructed. Unless a park project also includes construction of a major new attraction, on its own a park is unlikely to draw substantial numbers of new visitors to the City; the project would, rather, redistribute where visitors travel. The shift in travel patterns and VMT is similar to how OPR considers retail uses, in which many types of retail projects may generally be presumed to have a less-than-significant VMT impact because the total amount of shopping that occurs in a given geographic area tends to remain unchanged, and adding new retail uses to the urban fabric often reduces the distances (i.e., the "miles" in VMT that people need to drive on shopping trips).

[29] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.

While the City, nor OPR has established VMT thresholds related to park uses, other jurisdictions within the State have adopted thresholds consistent with the methodology and approach described above. For example, the City of San Jose was an early adopter of VMT thresholds and has chosen to apply such methodology of treating public facilities, such as parks, similarly to retail, where local-serving public facilities can be expected to shift travel patterns rather than generate new VMT and can generally be presumed to have a less-than-significant transportation-related VMT impact. According to the City of San Jose guidance, public facilities, such as branch libraries, community centers, fire stations, pumping stations, parks, police stations, public schools, or other public utilities, etc., are typically located within established communities and serve local needs. Such services improve people's proximity to recreational, community, and other necessary community needs.

The proposed project would be designed to meet the needs of the surrounding community and would support the design goals of the Springtown Open Space Concept Plan. The proposed project is intended to enhance connectivity for public amenities and improve the existing outdoor space network in the project area. The proposed amenities are intended to serve the surrounding community and would provide local recreational opportunities for residents. In addition, visitors from outside the project vicinity are not anticipated to travel long distances to visit the proposed park, as the City of Livermore currently includes a total of 57 parks and recreational facilities, including community and neighborhood parks, sports fields, open space parks, trails, dog parks, and areas for hikers, bikers, and equestrians, which provide ample recreational opportunities throughout the City. Additional parks and recreational facilities are also located outside the City limits, within surrounding jurisdictions, such as the City of Dublin and the City of Pleasanton, and serve the recreational needs of the residents in such areas.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. The proposed project would be provided vehicular access by an existing driveway along Bluebell Drive. A temporary parking lot would be constructed as part of the proposed project, which would use the existing driveway of the Springtown Library. The proposed project would not result in any changes to the driveway that would affect site access, safety, or sight distance. In addition, emergency response vehicles would be able to access the site by way of Bluebell Drive. The proposed vehicular access and the existing driveway would meet the access requirements for emergency vehicles. Therefore, the proposed project would not substantially increase hazards due to design features or incompatible uses, and emergency access to the site would be adequate. The proposed project would result in a ***less-than-significant*** impact.

XVIII. TRIBAL CULTURAL RESOURCES. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	✖	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS/MND, a Phase 1 Cultural Resources Study was prepared for the proposed project by Historic Resources Associates (HRA). Based on historic photographs, maps, and other documents, and the lack of precontact archeological resources identified within 0.25-mile of the project site, HRA determined that the archeological site sensitivity of the site was low.[30] In addition, a records search of the NAHC Sacred Lands File was completed and the results did not yield any information regarding the presence of cultural resources within the project site or the immediate area.[31] Tribal cultural resources were also not discovered on-site during the July 30 field survey conducted by HRA.

In compliance with AB 52 (Public Resources Code Section 21080.3.1), project notification letters were distributed to the Amah Mutsun Tribal Band of Mission San Juan Baustista, Costanoan Rumsen Carmel Tribe, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts Tribe, Ohlone Indian Tribe, Wilton Rancheria, Wuksache Indian Tribe/Eshom Valley Band, and Confederated Villages of Lisjan on June 11, 2024. One response was received by the Muwekma Ohlone Tribe on August 2, 2024 confirming receipt of the notification letter; however, the tribe did not request further consultation. Additional requests to consult were not received within the mandatory 30-day response period.

While known Tribal Cultural Resources do not exist within the site, the possibility exists that the proposed project could result in a substantial adverse change in the significance of a Tribal Cultural Resource if previously unknown Tribal Cultural Resources are uncovered during ground-disturbing activities. Thus, a ***potentially significant*** impact to Tribal Cultural Resources could occur.

[30] Historic Resource Associates. *Phase 1 Cultural Resources Study Springtown Open Space Project, Adjacent to Blue Bell Drive and with Marlin Pound Park, Livermore, Alameda County, California 94550*. August 2024.

[31] Native American Heritage Commission. *Springtown Open Space Concept Plan Phase 1 Project, Alameda County.* July 3, 2024.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVIII-1 *Implement Mitigation Measures V-1 and V-2.*

XIX. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	✖	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	✖	☐
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	✖	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	✖	☐

Discussion

a. Existing water, sewer, stormwater, and electric utility infrastructure is provided in the project vicinity, and the existing Marlin Pound Neighborhood Park currently includes connections to water and electrical infrastructure. While the proposed park would include the construction of a new bathroom building, the project would not include any substantial modifications to existing utilities in the site vicinity located on Bluebell Drive. The bathroom building would connect to the existing water and sewer line infrastructure located in the project area roadways.

Furthermore, given that the proposed project is consistent with the site's General Plan land use and zoning designations, and that the proposed project would require minimal utility services, standard utility improvements associated with the proposed park have been anticipated by the City, and associated environmental effects have been analyzed in the General Plan EIR. Therefore, the project would result in a ***less-than-significant*** impact related to the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

b. The City of Livermore Water Resources Division would provide water to the proposed project. According to the City of Livermore Water Resources Division 2020 UWMP, all potable water distributed through the Livermore Water Resources Division is purchased wholesale from Zone 7 Water Agency.[32] Zone 7 oversees water issues within the Livermore-Amador Valley and is a SWP contractor. Water sources for the City of

[32] City of Livermore Water Resources Division. *2020 Urban Water Management Plan* [pg. 4-1]. June 28, 2021.

Livermore Water Resources Division through Zone 7 include surface water from the SWP, water transferred from the Byron Bethany Irrigation District, local surface runoff captured in Del Valle Reservoir, groundwater extraction from the Livermore Valley Main Groundwater Basin, non-local groundwater storage in the Semitropic Water Storage District and Cawelo Water District, and future local storage in the Chain-of-Lakes.

The City of Livermore Water Resources Division water service area consists of three water service area zones within the City's urban growth boundary (UGB): the Zone 1 Water Service Area on the west side of the City, which encompasses 2,530 acres, and the Zone 2 and Zone 3 Water Service Areas on the east side of the City, which encompass 5,740 acres. In total, the water service area zones encompass approximately 8,270 acres, or about 13 square miles. The project area is located within Zone 2.[33] Pursuant to the Livermore 2020 UWMP, adequate water supplies will be available to accommodate buildout of the City under normal year, single year, and multiple-dry year demand scenarios.[34]

The proposed project would include the development of a community park consisting of a playground, picnic area, and community garden, and an 18-hole disc golf course on the former Springtown Golf Course, as well as the development of four pickle ball courts, tennis courts, a half-basketball court, on a portion of the existing Marlin Pound Neighborhood Park. Development of the community park would also include the construction of one new restroom building. The restroom building would have flushing toilets and would connect to the existing water main located within Bluebell Drive.

Irrigation at the project site currently includes areas around the existing library and along Bluebell Drive, which result in relatively modest water demands. The proposed project would involve an increase in water demand associated with irrigation of the proposed landscaping elements, as well as the proposed restroom building. However, such demand would not represent a substantial increase from historic water demand associated with the site, such as the irrigation needs associated with the former Springtown Golf Course operations. In addition, all landscaping improvements would be consistent with Section 13.25, Water Efficient Landscape, of the City's Municipal Code and would be irrigated by an automatic irrigation system, and the proposed project would be consistent with the site's General Plan land use and zoning designations.

Based on these factors, the City of Livermore Water Resources Division would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and a ***less-than-significant*** impact would occur.

c. Within the City of Livermore, sewer service is provided by the City of Livermore's Public Services Department. With the exception of two pump stations, all of the wastewater flow in Livermore is conveyed to the City of Livermore Water Reclamation Plant by gravity. Currently, over six million gallons of wastewater per day from throughout the Livermore area are processed at the Water Reclamation Plant, which has a design capacity of 8.5 million gallons per day.[35] Consequently, the Water Reclamation Plant has existing

[33] City of Livermore Water Resources Division. *2020 Urban Water Management Plan* [Figure 1-1]. June 28, 2021.
[34] City of Livermore Water Resources Division. *2020 Urban Water Management Plan* [pg. 14]. June 28, 2021.
[35] City of Livermore. *Livermore Water Reclamation Plant.* Available at: http://www.cityoflivermore.net/citygov/pw/public_works_divisions/wrd/water_reclamation_plant/lwrp.htm. Accessed June 2021.

capacity to treat 1.5 million gallons of additional wastewater per day. Per the General Plan, new facilities at the Water Reclamation Plant would be needed to handle projected ultimate flows occurring under buildout of the City's Planning Area.[36] The City has planned a Phase VI expansion project to address future increases in demand and has a sanitary sewer impact fee program in place to fund the required improvements. Completion of the Phase VI project would provide sufficient capacity for the plant to process the projected ultimate flows.

The proposed project is consistent with the site's current General Plan land use designation. Thus, the demand for wastewater collection and treatment facilities associated with buildout of the site have been anticipated by the City and analyzed in the General Plan EIR. The addition of the bathroom building would create a minor increase in wastewater generation, which would not exceed the WWTP's capacity. In addition, the proposed project would be subject to payment of the City's sanitary sewer impact fee, which would ensure that funds are available to provide for future expansion of the City's Wastewater Reclamation Plant, as necessary. As such, the City would have adequate capacity to serve the wastewater demand projected for the proposed project in addition to the City's existing commitments, and a ***less-than-significant*** impact would occur.

d,e. Solid waste, recyclable materials, and compostable material collection within the City of Livermore is provided through a franchise agreement with Livermore Sanitation, Inc. Currently, Livermore Sanitation, Inc. transports solid waste from Livermore to the Republic Services Vasco Road, LLC Landfill for disposal. The Republic/Vasco Road Landfill is designated as a Class III disposal site that permits the disposal of municipal waste, with separate disposal areas required for asbestos and auto-shredder waste. The Vasco Road Landfill has a remaining capacity of approximately 11,560,000 cubic yards (CY), or 28.7 percent of the total permitted capacity of the landfill (40,207,100 CY).[37]

Given the proposed park uses, the proposed project would result in a relatively small waste generation as compared to the residential or commercial uses within the City. Furthermore, because the proposed project is consistent with the project site's current General Plan land use and zoning designations, the project would not result in increased solid waste generation beyond what has been previously anticipated for the site by the City and analyzed in the General Plan EIR. The proposed project would be required to comply with all applicable provisions in Chapter 8.08, Solid Waste Management, of the City's Municipal Code, including Section 8.08.580 related to construction and demolition waste.

Therefore, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. A ***less-than-significant*** impact related to solid waste would occur as a result of the proposed project.

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[36] City of Livermore. *General Plan 2003-2025.* Amended December 2014.

[37] Department of Resources Recycling and Recovery. *SWIS Facility Detail, Vasco Road Sanitary Landfill (01-AA-0010).* Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/9?siteID=8. Accessed August 2024.

XX. WILDFIRE. *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	✖	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	✖	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	✖	☐

Discussion

a-d. According to the California Department of Forestry and Fire Protection (CAL FIRE) Fire and Resource Assessment Program, the project's disturbance area is not located within or near a Very High Fire Hazard Severity Zone or State Responsibility Area.[38] In addition, the project's disturbance area is surrounded by existing development. The developed nature of the area surrounding the project's disturbance area would help to prevent the spread of wildfire to the site. Furthermore, as discussed throughout this IS/MND (see specifically, Section XVII, Transportation, and Section XIX, Utilities and Service Systems), the proposed project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment. Therefore, the proposed project would not be expected to be subject to or result in substantial adverse effects related to wildfires, and a ***less-than-significant*** impact would occur.

[38] California Department of Forestry and Fire Protection. *California Fire Hazard Severity Zone Viewer. Available at:* https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed August 2024.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, with implementation of Mitigation Measures IV-1 and IV-2, the proposed project would not result in any significant impacts to special-status plant or wildlife species. The project's disturbance area is disturbed and does not contain any known historic or prehistoric resources. Thus, implementation of the proposed project is not anticipated to have the potential to result in impacts related to historic or prehistoric resources. Nevertheless, Mitigation Measures V-1, V-2, and V-3 would ensure that in the event that historic or prehistoric resources are discovered within the project's disturbance area during construction activities, such resources would be protected in compliance with the requirements of CEQA.

Considering the above, the proposed project would not: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Therefore, a ***less-than-significant*** impact would occur.

b. As discussed previously, in 2017, the LARPD prepared the Springtown Open Space Concept Plan, which details the planned redevelopment of the former Springtown Golf Course. The Concept Plan was accepted by City Council. However, the design of the Concept Plan has changed as a result of the City's ongoing outreach with the community.

The proposed project analyzed within this IS/MND, which would include development of a community park, four pickle ball courts/two tennis courts, a half-basketball court, and an 18-hole disc golf course, is Phase 1 of the Springtown Open Space Concept Plan. Subsequent phases of the Concept Plan are anticipated to include the development of a community center, which would be constructed in the location of the currently proposed temporary parking lot shown in Figure 3 of this IS/MND, and construction of two basketball

courts on the east side of the community park site. The community center is anticipated to be approximately 30,000 sf and would include the following amenities: a library, gymnasium, indoor sports areas, classrooms, meeting rooms, and neighborhood services. Future solar site lighting is also anticipated to be added, as needed, for security purposes. However, as discussed above, because community outreach and design of the subsequent phases of the Concept Plan are still ongoing, subsequent phases of the Concept Plan have not been fully envisioned yet.

The proposed project, in combination with subsequent phases of the Concept Plan, could result in increased noise, traffic, and lighting in the project area. However, given the similarity of basketball court uses to the proposed on-site facilities, such as the playground, noise levels associated with the basketball courts are not anticipated to increase beyond what has been anticipated for the proposed project. In addition, all noise associated with the future community building would be indoors. Thus, noise levels associated with the community center are not anticipated to be substantial. With regard to traffic, the future uses would be considered local-serving public facilities intended to serve the surrounding community and would provide local recreational opportunities for residents. Similar to the proposed project, visitors from outside the project vicinity are not anticipated to travel long distances to visit such future uses, given the ample number of parks and recreational facilities located within the City and surrounding areas. Furthermore, all future lighting improvements associated with the community building and basketball courts would be reviewed for consistency with the City's Design Standards and Guidelines, which include standards and guidelines for luminaire types, and restrictions on shielding levels, placement and orientation of lights, and lighting heights.

Given that the community center would be constructed in the location of the currently proposed temporary parking lot shown in Figure 3 of this IS/MND, buildout of the community center would not result in any increased ground disturbance beyond what has been analyzed within this IS/MND. The two basketball courts would be located on the east side of the community park site and are not anticipated to result in any substantial ground disturbance.

As demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to a less-than-significant level through compliance with the mitigation measures set forth herein, as well as applicable General Plan policies, Municipal Code standards, and other applicable local and State regulations. Similar to the proposed project, all future development associated with subsequent phases of the Concept Plan would be required to undergo additional environmental review, as required by the City of Livermore, and would be subject to any future mitigation measures prescribed as part of such additional environmental review, as well as all applicable General Plan policies, Municipal Code standards, and other applicable local and State regulations.

Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, the proposed project would not result in a cumulatively considerable contribution to cumulative impacts in the City of Livermore, and the project's incremental contribution to cumulative impacts would be ***less than significant***.

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Municipal Code standards, other applicable local and State

regulations, and mitigation measures included herein. In addition, as discussed in the Air Quality, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, and Noise sections of this IS/MND, the proposed project would not cause substantial effects to human beings, which cannot be mitigated to less-than-significant levels, including effects related to exposure to air pollutant and GHG emissions, geologic hazards, hazardous materials, and excessive noise. Therefore, the proposed project's impact would be ***less than significant***.

APPENDIX A

SOIL SAMPLING REPORT

September 4, 2024

Joel Waxdeck
City Engineer
Engineering Division
City of Livermore
1052 South Livermore Ave
Livermore, CA 94550
jhwaxdeck@cityoflivermore.net

Re: **Livermore Springtown Soil Sampling Report**
Former Springtown Golf Course
998 Bluebell Drive
Livermore, California

Dear Mr. Waxdeck:

On behalf of the City of Livermore, Pangea Environmental Services, Inc. (Pangea) has prepared this *Livermore Springtown Soil Sampling Report* (Report) for the subject site. This Report documents soil sampling performed to evaluate shallow soil in the vicinity of a park planned for construction under the City of Livermore's (City) Springtown Redevelopment – Phase I. Described below are the project background, soil sampling, and analytical results.

SITE DESCRIPTION AND BACKGROUND

The subject site is currently comprised of a mostly level portion of vacant land in a residential area of Livermore, California. The site is located to the north and northwest of 998 Bluebell Drive in the Springtown residential development (Figure 1). Residential properties are located to the north, east, and south of the site, with commercial properties to the west-southwest. The planned development at the site consists of a park with a playground, plaza, community garden, lawn, open space, and frisbee golf course. The future park size is planned to be approximately 3 to 4 acres. Approximately 2 acres of the future park consists of two former ponds and a former elevated green that were a part of a golf course constructed in the 1960s. In 2018, Livermore Public Works used soil to fill the ponds, which were approximately 3 ft deep.

PURPOSE

Pangea collected soil samples in the area that includes the two former ponds and former green of the old golf course to help determine if there are any human health risks for future park uses, to protect worker

safety, and to assist with soil characterization for any grading and/or offsite soil disposal that may occur during construction of the park.

PROCEDURES

On July 18, 2024, Pangea advanced borings and collected soil samples from eight locations at the site (Figure 2). As shown on Figure 2, Pangea advanced hand auger borings at the following locations: two in the former north pond (NPW and NPE), two in the former south pond (SPW and SPE), one in the former green (OP3), and three in the area outside of the former ponds and green (OP1, OP2, and OP4).

- **Sampling within pond areas:** Pangea advanced borings to 3 ft below ground surface (bgs) in the pond areas (SPW, SPE, NPW, and NPE). Pangea collected grab soil samples from 1, 2, and 3 ft bgs in each of the four pond borings for a total of 12 discrete samples within the pond areas.

  Three four-point composite samples from the pond areas were analyzed. Composite samples consisted of soil from the four pond locations at 1, 2, and 3 ft bgs (e.g., the PCOMP1 sample consisted of soil at 1 ft bgs from borings SPW, SPE, NPW, and NPE).

- **Sampling outside of pond areas:** Pangea advanced borings OP1, OP2, and OP4 to 2 ft bgs, and advanced boring OP3 (in the elevated former green) to 5 ft bgs. Pangea collected grab samples from 1 ft bgs and 2 ft bgs in borings OP1, OP2, and OP4 and from 2 ft bgs and 5 ft bgs in OP3 for a total of eight discrete samples outside of the pond areas.

  One four-point composite sample (OCOMP1) from outside of the pond area was analyzed. This sample consisted of soil at 1 ft bgs from borings OP1, OP2, and OP3, and from 2 ft bgs from OP4.

Discrete soil samples were analyzed for California Administrative Manual (CAM) 17 metals by EPA Method 6010D and 7471B (mercury); diesel-range organics (DRO), oil-range organics (ORO), and gasoline-range organics (GRO) by EPA Method 8015C; herbicides by EPA Method 8151A; and organochlorine pesticides by EPA Method 8081B.

Composite soil samples were analyzed for volatile organic compounds (VOCs) by EPA Method 8260B); semi-volatile organic compounds (SVOCs) and polycyclic aromatic hydrocarbons (PAHs) by EPA Methods 8270E and 8270E-SIM; polychlorinated biphenyls (PCBs) by EPA Method 8082A; and asbestos by AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA Method 600/R-93/116.

Pangea advanced borings using a stainless-steel hand auger and collected soil samples in laboratory-provided sampling containers. The samples were placed into a cooler filled with ice and delivered under chain of custody procedures to Pace Analytical of Mount Juliet, Tennessee (for all analyses other than

asbestos), and to EMSL Analytical of San Leandro, California (for asbestos analysis). Both laboratories are California State-certified analytical laboratories.

SOIL ANALYTICAL RESULTS

As shown on Tables 1 and 2, no metals, VOCs, SVOCs, PAHs, herbicides, pesticides, PCBs, or asbestos were detected in soil samples above the San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels[1] (ESLs) for "significantly vegetated" terrestrial habitat (e.g., parkland) (RWQCB, 2019), except for barium, selenium, and vanadium. Laboratory analytical reports are included in Appendix A. Barium and vanadium were detected at concentrations below their respective background levels in soil.[2]

Selenium, a metal, was the only analyte detected above its respective terrestrial habitat ESL (2.4 mg/kg) in individual soil samples collected from the former south pond area at 3.50 mg/kg in SPW-3 and 3.03 mg/kg in SPE-3 (both from 3 ft bgs), and 2.8 mg/kg from OP1-1 north of the former pond areas at a depth of 1 ft bgs. These results also exceeded the background concentration (0.43 mg/kg) and the 95% upper confidence limit[3] (1.959 mg/kg). Common sources of selenium releases to the environment include coal fly ash deposits from coal combustion, sewage and agricultural runoff, and use as a pest control that repels plant damaging insects while also having a positive effect on the growth of plants. Given the location of the detections above screening levels, the likely source of selenium in soil at the former Springtown Golf course is the application of reclaimed wastewater to the course or the use of pesticides to deter plant damaging insects, with course runoff flowing to, and concentrating in the ponds.

CONCLUSIONS AND RECOMMENDATIONS

Based on the above information, Pangea offers the following conclusions and recommendations:

- No VOCs, SVOCs, PAHs, herbicides, pesticides, PCBs, or asbestos were detected above the terrestrial habitat ESLs in soil samples collected in and around the former pond areas.

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[1] San Francisco Bay Regional Water Quality Control Board, 2019 (RWQCB, 2019). *Environmental Screening Levels*. July 25 (Revision 2).

[2] Arsenic background taken from "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region," by Dylan Jacques Duvergé (December 2011).

3 The upper confidence limit is a probability statement that indicates a level of confidence that the sample detection mean is less than or equal to the calculated UCL. This was calculated using "ProUCL 5.2" software provided by the United States Environmental Protection Agency.

- Selenium was the only metal detected in soil samples above respective terrestrial habitat soil ESLs *and* background concentrations. The selenium detections were within the same order of magnitude as the terrestrial habitat ESL.

- The source of selenium in the soil is likely from the application of pesticide(s) containing selenium or the use of reclaimed wastewater. Both common practices at golf courses.

- Based on current and planned site use (parkland) and exposure pathways, selenium detections do not represent a significant risk and do not warrant further investigation. Pangea recommends that if grading of the ponds and/or surrounding area is required, the City should include the use of import or site soil that does not include detections of selenium over the terrestrial ESL.

- Soil analytical data indicates that site soil does not pose a significant human health risk for future park uses, and that special precautions for handling soil are not warranted to protect future site workers outside of standard best management practices.

- Analytical data indicates that no special precautions are necessary for soil disposal.

Pangea trusts this report comports with your requirements. If you have any questions or comments, I can be reached via phone at (714) 697-8994 or email at tnaughton@pangeaenv.com.

Sincerely,
Pangea Environmental Services, Inc.

Tim Naughton, P.E.
Principal Engineer

cc: Rick Teczon, City of Livermore

ATTACHMENTS

Figure 1	Vicinity Map
Figure 2	Soil Sampling Locations
Table 1	Soil Analytical Data (TPH, Metals, Herbicides, and Pesticides)
Table 2	Soil Analytical Data (VOCs, SVOCs, PCBs, and Asbestos)
Appendix A	Laboratory Analytical Reports

ATTACHMENT 1

Figures and Tables

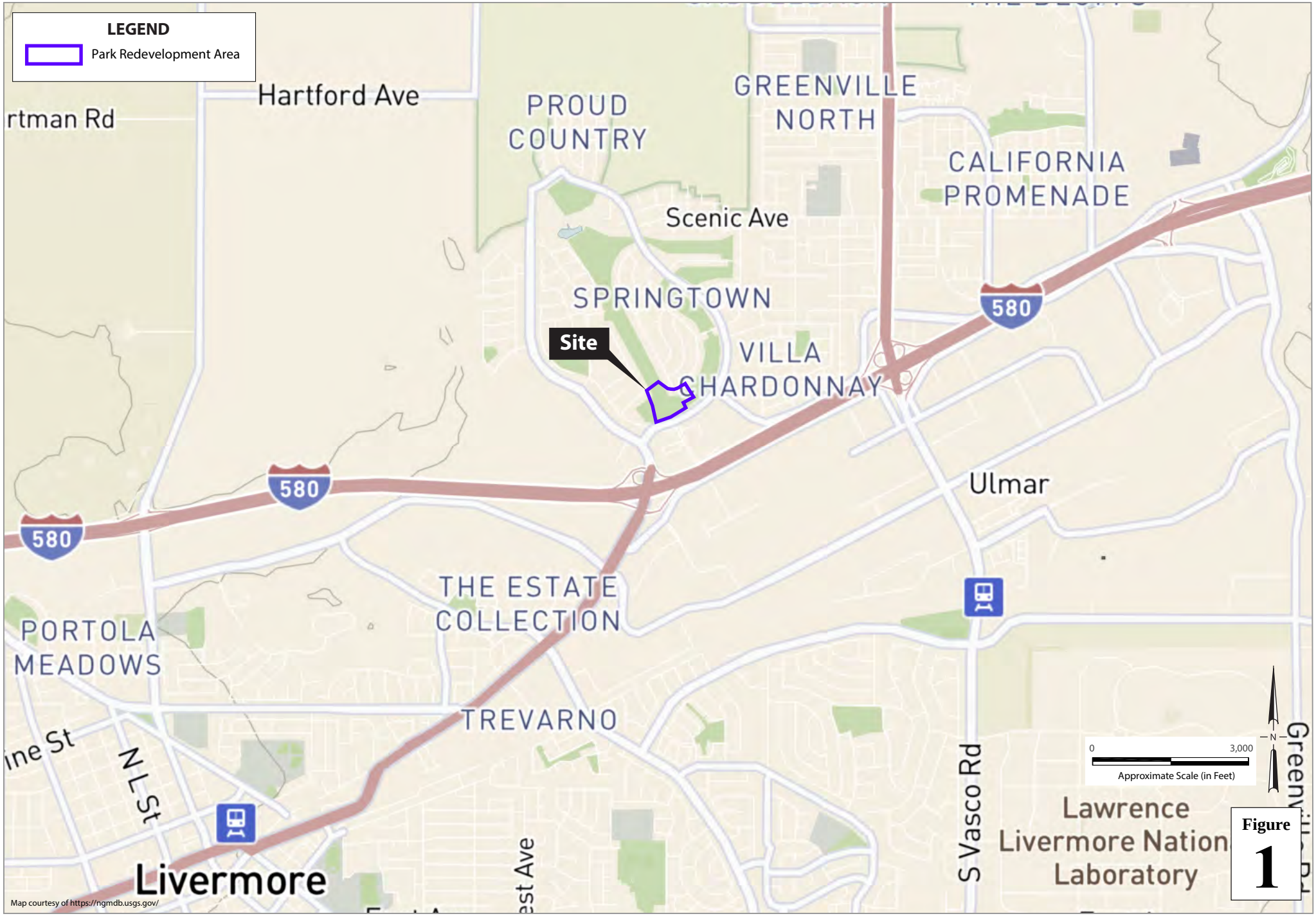

Fig 1 Vicinity Map 2024-08-15 T300

Figure 1

Former Springtown Golf Course
Bluebell Drive
Livermore, California

PANGEA

Vicinity Map

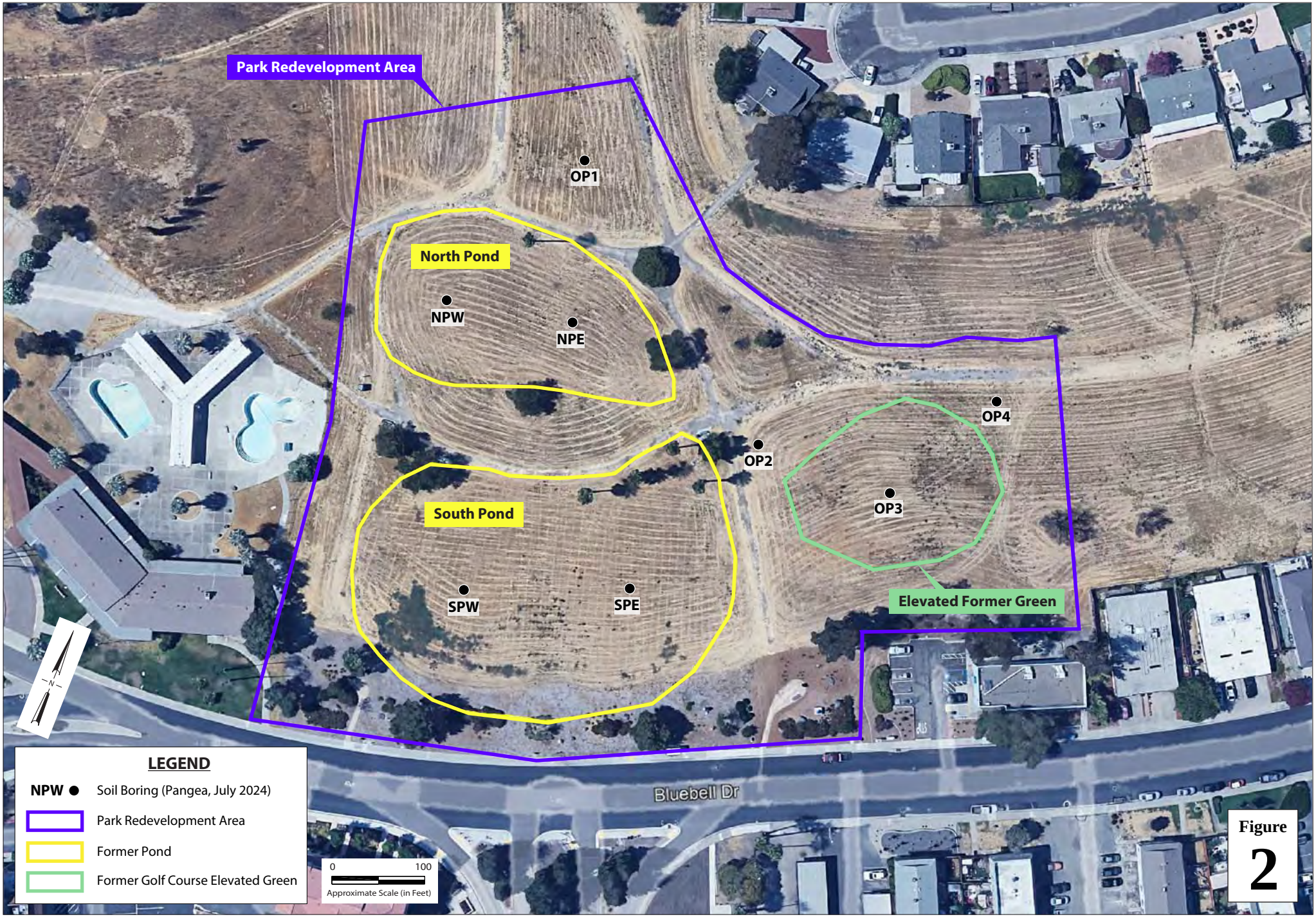

Fig 2 Soil Sampling Locations 2024-08-15 T300

Figure 2

Former Springtown Golf Course
Bluebell Drive
Livermore, California

PANGEA

Soil Sampling Locations

Pangea

Table 1. Soil Analytical Data (TPH, Metals, Herbicides, and Pesticides) - Former Springtown Golf Course, Livermore, California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	TPHg	TPHd	TPHmo	Antimony	Arsenic	Barium	Beryllium	Cadmium	Total Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Chlorinated Herbicides	Organochlorine Pesticides	Notes
			mg/kg																						
		Tier 1 ESL:	100	260	1,600	11	0.067	390	5.0	1.9	160	23	180	32	13	6.9	86	2.4	25	0.78	18	340	varies	varies	
		Terrestrial Habitat ESL:	**120**	**260**	**1,600**	**25**	**25**	**390**	**5.0**	**1.9**	**160**	**50**	**189**	**32**	**15**	**6.9**	**130**	**2.4**	**2.5**	**1.8**	**18**	**340**	**varies**	**varies**	
		Background Levels[1]:	--	--	--	1.95	**11**	1,400	2.7	1.7	1,579	46.9	96.4	97	0.90	9.6	509	0.43	8.30	1.10	288	236	--	--	
NPW-1	07/18/2024	1.0	3.29 B	<90.7	208.2 J J6	<2.27	4.43	192	0.361	0.0708 J	42.6	12.9	26.3	13.6	0.0505	0.411 J	87.6	<2.27	<1.13	<2.27	30.7	45.8	ND	ND	
NPW-2	07/18/2024	2.0	3.14 B	<43.6	87 J	<2.18	2.8	187	0.363	0.13 J	41.7	12.2	24.6	15.7	0.0517	0.25 J	81.6	<2.18	<1.09	<2.18	32.3	48.8	ND	ND	
NPW-3	07/18/2024	3.0	3.07 B	4.26 J	71.7	<2.22	3.44	193	0.359	0.0981 J	45.3	12.5	24.9	13.8	0.0603	0.326 J	89.2	<2.22	<1.11	<2.22	31.5	47	ND	ND	
NPE-1	07/18/2024	1.0	2.87 B	<423	1187	<2.12	3.59	180	0.333	0.111 J	41.4	12.7	25	13.9	0.0328 J	0.234 J	88	<2.12	<1.06	<2.12	28.4	49.9	ND	ND	
NPE-2	07/18/2024	2.0	2.46 B J	9.39 J	163.8	<2.18	3.48	204	0.336	0.0955 J	41.5	12	23.8	13.1	0.0465	0.35 J	79.2	<2.18	<1.09	<2.18	29.2	43.3	ND	ND	
NPE-3	07/18/2024	3.0	3.15 B	<175	338 J	<2.19	3.33	199	0.376	0.191 J	38.1	11.8	23.3	14	0.062	0.309 J	76.6	<2.19	<1.10	<2.19	30.8	44.2	ND	ND	
SPW-1	07/18/2024	1.0	2.72 B J	3.85 J	58.7	<2.18	3.75	191	0.349	0.06 J	84.6	13.8	23.8	13.6	0.0671	0.335 J	129	<2.18	<1.09	<2.18	32.3	50.1	ND	ND	
SPW-2	07/18/2024	2.0	2.58 B J	2.07 J	33.7	1.12 J	8.34	300	0.632	0.203 J	91.2	20.3	37	22.9	0.0422 J	0.336 J	151	<11.0	<1.10	<2.19	71.7	72.6	ND	ND	
SPW-3	07/18/2024	3.0	3 B	4.75	71.5	<2.17	5.84	346	0.469	0.144 J	59.7	13	26.1	12.6	0.14	0.307 J	97.2	**3.5**	0.762 J	<2.17	46.4	51.8	ND	ND	
SPE-1	07/18/2024	1.0	2.15 B J	<43.0	205.1	2.34	8.78	373	0.731	0.208 J	102	23.5	45.1	30.2	0.0363 J	0.521 J	152	<10.8	<1.08	<2.15	84.7	88.6	ND	ND	
SPE-2	07/18/2024	2.0	2.75 B J	<45.0	127.1 J	0.787 J	8.35	311	0.591	0.147 J	83	19.1	35.6	24.2	0.0461	0.44 J	127	<2.25	<1.12	<2.25	68.4	73.2	ND	ND	
SPE-3	07/18/2024	3.0	2.99 B J	<46.1	128.9	<2.31	6.65	301	0.545	0.198 J	65.8	16	29.1	15.2	0.0575	0.353 J	106	**3.03**	0.789 J	<2.31	52.7	58.8	ND	ND	
OP1-1	07/18/2024	1.0	2.84 B J	1.69 J	5.02 J	<2.30	5.93	302	0.593	0.121 J	46.6	9.51	18.6	10.1	0.0229 J	0.235 J	40.1	**2.8**	0.875 J	<2.30	51.7	40.2	ND	ND	
OP1-2	07/18/2024	2.0	2.95 B J	0.866 J	4.79 J	0.637 J	5.44	341	0.47	0.271 J	53	12.9	21	10.4	<0.0454	0.175 J	41.7	<2.27	<1.13	<2.27	55.3	44.4	ND	ND	
OP2-1	07/18/2024	1.0	2.14 B J	2.89 J	37.1	0.998 J	3.09	288	0.67	0.168 J	56.5	12.2	27.4	15	0.0313 J	0.141 J	50.8	1.48 J	<1.06	<2.11	57.2	50.8	ND	ND	
OP2-2	07/18/2024	2.0	3.14 B J	<4.92	<4.92	1.08 J J6	3.43	454 J6	0.819	0.186 J	69.9	15.4	31.7	13.7	<0.0492	0.499 J	60.9	1 J	<1.23	<2.46	80.4	61.6	ND	ND	
OP3-2	07/18/2024	2.0	1.57 B J	3.77 J	74.9	0.768 J	4.34	224	0.362	0.197 J	66.6	16	29.8	14.8	0.0424 J	0.306 J	121	1.41 J	<1.09	<2.18	47.4	58.2	ND	ND	
OP3-5	07/18/2024	5.0	2.51 B J	1.16 J J3 J6	1.64 J J3 J6	1.02 J	9.05	274	0.736	0.184 J	63.6	18.6	26.7	13.2	0.0254 J	<0.613	59.2	1.54 J	<1.23	<2.45	63.2	50.3	ND	ND	
OP4-1	07/18/2024	1.0	2.75 B J	0.994 J	1.52 J	<2.23	2.43	235	0.545	0.153 J	48.8	12	20.2	10.6	0.0217 J	0.205 J	41.8	<2.23	<1.11	<2.23	50.7	39	ND	ND	
OP4-2	07/18/2024	2.0	1.5 B J	1.23 J	<4.59	1.18 J	3.24	427	0.57	0.151 J	53.2	12.5	21.2	10.5	<0.0459 J6 O1	0.356 J	45.6	1.3 J	<1.15	<2.30	64.8	44.1	ND	ND	

Notes and Abbreviations:

ft bgs = feet below ground surface

TPH = total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), and/or motor oil (TPHmo) range. Analyzed by EPA Method 8015.

mg/kg = milligrams per kilogram

< n = chemical not present at a concentration in excess of detection limit shown

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, January 2019 (Revision 2).

1 = background levels (except arsenic) taken from Bradford (1996), "Background Concentrations of Trace and Major Elements in California Soils." Arsenic background taken from "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region," by Dylan Jacques Duverge (December 2011).

ND = Not Detected at levels above laboratory reporting limits. Limits vary by constituent.

B = The same analyte is found in the associated blank.

J = The identification of the analyte is acceptable; the reported value is an estimate.

J3 = The associated batch QC was outside the established quality control range for precision.

J5 = The sample matrix interfered with the ability to make any accurate determination; spike value is high.

J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low.

O1 = The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

Bold = analyte detected above terretrial habitat (significant vegetation) soil ESL, and above background levels where background levels exceed ESL

Gray highlight = analyte concentration exceeds ESL, background, and 95% Upper Confidence Limit (Selenium calculated at 1.959 mg/kg)

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Table 2. Soil Analytical Data (VOCs, SVOCs, PCBs, and Asbestos) - Former Springtown Golf Course, Livermore, California

Boring / Sample ID	Date Sampled	Sample Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Total Xylenes	PCE	TCE	Cis-1,2-DCE	Trans-1,2-DCE	Vinyl Chloride	Naphthalene[2]	MTBE	Methylene Chloride	Other VOCs	PCBs	Anthracene	Acenaphthylene	Benzo (a) anthracene	Benzo (a) pyrene [3]	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Benzo (k) fluoranthene	Chrysene	Bis (2-ethylhexyl) Phthalate	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	Phenanthrene	Pentachlorophenol	Phenol	Pyrene	Other SVOCs	Asbestos	Notes
			mg/kg																																%	
		Tier 1 ESL:	0.025	3.2	0.4	2.1	0.08	0.085	0.19	0.65	0.0015	0.042	0.028	0.12	varies	varies	1.9	6.4	0.63	0.11	1.1	2.5	2.8	2.2	0.8	0.11	0.69	6.0	0.48	7.8	0.013	0.16	45	varies	--	
		Terrestrial Habitat ESL:	**60**	**140.0**	**90.0**	**55.0**	**4.50**	**8.100**	**84**	**84**	**4.3000**	**0.750**	**31.000**	**0.98**	**varies**	**varies**	**3.1**	--	**0.63**	**25**	--	**8.3**	**9.5**	**8.8**	**0.8**	--	**0.69**	--	**0.48**	**7.8**	**0.013**	**9.4**	**4,700**	**varies**		
		Background Levels[1]:	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	**0.9**	--	--		--	--		--	--	--	--	--	1.7	--	--	--	--	
PCOMP1	07/18/2024	1.0	0.000792 J	0.00257 J	<0.00397	<0.0103	<0.00397	<0.00158	<0.00397	<0.00792	<0.00397	<0.0198	<0.00158	<0.0397	ND	<0.0202	0.00707 J	<0.00715	0.106	0.136	0.245	0.13	0.0852	0.181	<3.97	0.025	0.31	<0.00715	0.131	0.1	<3.97	<3.97	0.212	ND	ND	
PCOMP2	07/18/2024	2.0	<0.00124	<0.00620	<0.00310	<0.00805	<0.00310	<0.00124	<0.00310	<0.00620	<0.00310	<0.0155	<0.00124	<0.0310	ND	<0.0189	0.012	0.00421 J	0.205	0.281	0.519 J5	0.297	0.174	0.329	<0.741	0.0483	0.525	0.00259 J	0.288	0.141	<0.741	<0.741	0.371	ND	ND	
PCOMP3	07/18/2024	3.0	<0.00128	<0.00639	<0.00319	<0.00831	<0.00319	<0.00128	<0.00319	<0.00639	<0.00319	<0.0160	<0.00128	<0.0319	ND	<0.0193	0.00903	0.00297 J	0.143	0.201	0.393	0.171	0.136	0.233	<0.755	0.0334	0.428	<0.00680	0.17	0.143	<0.755	<0.755	0.289	ND	ND	
OCOMP1	07/18/2024	1.0-2.0	<0.00126	0.00196 J	<0.00316	<0.00822	<0.00316	<0.00126	<0.00316	<0.00632	<0.00316	<0.0158	<0.00126	<0.0316	ND	<0.0192	0.00504 J	<0.00678	0.0632	0.0961	0.186	0.0743 J	0.0437	0.103	<0.752	0.014	0.189	<0.00678	0.0789	0.0685	<0.752	<0.752	0.131	ND	ND	

Notes and Abbreviations:

ft bgs = feet below ground surface

PCE = tetrachloroethene

TCE = trichloroethene

DCE = dichloroethene

MTBE = methyl tert-butyl ether

VOCs = volatile organic compounds by EPA Method 8260

Other VOCs = volatile organic compounds not otherwise listed

SVOCs = Semi-volatile organic compounds by EPA Method 8270

PCBs = polychlorinated biphelnyls by EPA Method 8082

mg/kg = milligrams per kilogram

< n = chemical not present at a concentration in excess of detection limit shown

ESL = Environmental Screening Level, from California Regional Water Quality Control Board - San Francisco Bay Region, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, January 2019 (Revision 2).

1 = background levels (except arsenic) taken from Bradford (1996), "Background Concentrations of Trace and Major Elements in California Soils." Arsenic background taken from "Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region," by Dylan Jacques Duverge (December 2011).

2 = naphthalene by EPA Method 8260

3 = background level for benzo(a)pyrene taken from DTSC (2009), "Use of the Northern and Southern California Polynuclear Aromatic Hydrocarbon (PAH) Studies in the Manufactured Gas Plant Site Cleanup Process."

ND = Not Detected at levels above laboratory reporting limits. Limits vary by constituent.

J = The identification of the analyte is acceptable; the reported value is an estimate.

Bold = analyte detected above terretrial habitat (significant vegetation) soil ESL, and above background levels where background levels exceed ESL

ATTACHMENT 2

Laboratory Analytical Reports

ANALYTICAL REPORT

August 05, 2024

Pangea Environmental Serv - Berkeley, CA

Sample Delivery Group:	L1759109
Samples Received:	07/19/2024
Project Number:	
Description:	Springtown

Report To:

Dylan Cardiff
1250 Addison St.
Ste. #213
Berkeley, CA 94702

Entire Report Reviewed By:

Brian Ford
Project Manager

TABLE OF CONTENTS

NPW-1 L1759109-01 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 08:40 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 12:15	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 13:26	DJS	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 08:40	07/26/24 15:40	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2329375	20	07/24/24 17:21	07/25/24 04:40	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 08:00	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 03:25	HCS	Mt. Juliet, TN

NPW-2 L1759109-02 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 08:55 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 12:18	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 16:07	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	26.3	07/18/24 08:55	07/26/24 16:47	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2329375	10	07/24/24 17:21	07/25/24 10:22	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 08:10	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 03:35	HCS	Mt. Juliet, TN

NPW-3 L1759109-03 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 09:05 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 12:20	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 16:08	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 09:05	07/26/24 17:11	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	5	07/26/24 07:09	07/26/24 22:11	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 08:20	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 02:34	HCS	Mt. Juliet, TN

NPE-1 L1759109-04 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 09:30 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 12:23	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 15:46	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 09:30	07/26/24 17:33	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	100	07/26/24 07:09	07/26/24 23:07	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 08:51	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 14:23	LTB	Mt. Juliet, TN

NPE-2 L1759109-05 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 09:40 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 11:07	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 15:48	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 09:40	07/26/24 17:56	NCD	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

NPE-2 L1759109-05 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 09:40 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	10	07/26/24 07:09	07/26/24 21:43	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 09:01	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 03:45	HCS	Mt. Juliet, TN

NPE-3 L1759109-06 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 09:50 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328712	1	07/23/24 21:00	07/24/24 12:25	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 15:50	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 09:50	07/26/24 18:19	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	40	07/26/24 07:09	07/26/24 23:21	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 09:42	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 04:06	HCS	Mt. Juliet, TN

SPW-1 L1759109-07 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 07:05 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:41	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329467	1	07/24/24 22:31	07/25/24 15:51	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 07:05	07/26/24 18:42	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 20:47	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 09:52	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2331230	1	07/27/24 16:30	07/28/24 02:44	HCS	Mt. Juliet, TN

SPW-2 L1759109-08 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 07:15 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:43	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2333245	1	07/31/24 08:21	08/01/24 15:57	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2333245	5	07/31/24 08:21	08/01/24 23:06	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25.5	07/18/24 07:15	07/26/24 19:04	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 20:33	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 10:03	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 22:20	HCS	Mt. Juliet, TN

SPW-3 L1759109-09 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 07:35 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:51	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329748	1	07/25/24 12:45	07/26/24 18:59	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 07:35	07/26/24 19:27	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 21:01	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 10:13	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 22:29	HCS	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SPE-1 L1759109-10 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 07:55 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328908	1	07/24/24 05:48	07/24/24 05:54	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:53	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2333245	1	07/31/24 08:21	08/01/24 15:58	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2333245	5	07/31/24 08:21	08/01/24 23:08	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 07:55	07/26/24 19:50	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	10	07/26/24 07:09	07/26/24 22:25	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 10:23	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/02/24 00:24	HCS	Mt. Juliet, TN

SPE-2 L1759109-11 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 08:10 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:56	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2333245	1	07/31/24 08:21	08/01/24 16:00	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 08:10	07/26/24 20:13	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	10	07/26/24 07:09	07/26/24 21:57	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 11:04	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/02/24 00:33	HCS	Mt. Juliet, TN

SPE-3 L1759109-12 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 08:20 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2329227	1	07/25/24 18:04	07/26/24 15:17	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329748	1	07/25/24 12:45	07/26/24 19:00	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25.5	07/18/24 08:20	07/26/24 20:35	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	10	07/26/24 07:09	07/26/24 22:39	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 11:15	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 22:38	HCS	Mt. Juliet, TN

PCOMP1 L1759109-13 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 00:00 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2331009	1.17	07/18/24 00:00	07/27/24 14:46	JAH	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG2332763	1	07/31/24 07:00	07/31/24 14:47	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E	WG2330670	10	07/28/24 09:32	07/29/24 17:10	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2332403	1	07/31/24 08:18	07/31/24 23:32	JRM	Mt. Juliet, TN

PCOMP2 L1759109-14 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 00:00 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2331009	1	07/18/24 00:00	07/27/24 15:06	JAH	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG2332763	1	07/31/24 07:00	07/31/24 16:34	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E	WG2330671	2	07/28/24 09:01	07/31/24 01:00	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2332403	1	07/31/24 08:18	07/31/24 23:50	JRM	Mt. Juliet, TN

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

PCOMP3 L1759109-15 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 00:00 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2331009	1	07/18/24 00:00	07/27/24 15:25	JAH	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG2332763	1	07/31/24 07:00	07/31/24 16:43	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E	WG2330671	2	07/28/24 09:01	07/29/24 21:42	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2332403	1	07/31/24 08:18	08/01/24 00:07	JRM	Mt. Juliet, TN

OP1-1 L1759109-16 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 10:30 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2329227	1	07/25/24 18:04	07/26/24 15:20	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329748	1	07/25/24 12:45	07/26/24 19:02	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	27	07/18/24 10:30	07/26/24 20:58	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 19:50	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 11:25	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 22:47	HCS	Mt. Juliet, TN

OP1-2 L1759109-17 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 10:45 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:58	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:08	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	30.5	07/18/24 10:45	07/26/24 21:20	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 20:04	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328785	1	07/25/24 11:37	07/29/24 11:35	NWH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 22:56	HCS	Mt. Juliet, TN

OP2-1 L1759109-18 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 11:00 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 09:01	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:11	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	26	07/18/24 11:00	07/26/24 21:43	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 20:19	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/29/24 23:11	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 23:22	HCS	Mt. Juliet, TN

OP2-2 L1759109-19 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 11:15 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 09:03	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329452	1	07/24/24 22:09	07/25/24 11:55	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 11:15	07/26/24 22:06	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 18:39	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/29/24 23:52	HMH	Mt. Juliet, TN

OP2-2 L1759109-19 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 11:15 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 23:31	HCS	Mt. Juliet, TN

OP3-2 L1759109-20 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 12:20 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328909	1	07/24/24 05:41	07/24/24 05:46	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 09:06	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:14	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 12:20	07/26/24 22:28	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	2	07/26/24 07:09	07/26/24 21:15	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/30/24 00:02	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/02/24 00:16	HCS	Mt. Juliet, TN

OP3-5 L1759109-21 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 12:35 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328910	1	07/24/24 05:33	07/24/24 05:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 09:08	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:17	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	25	07/18/24 12:35	07/26/24 22:51	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2330416	1	07/26/24 07:09	07/26/24 18:53	KDB	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/30/24 00:12	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 23:40	HCS	Mt. Juliet, TN

OP4-1 L1759109-22 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 11:45 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328910	1	07/24/24 05:33	07/24/24 05:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 09:11	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:20	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	26.3	07/18/24 11:45	07/26/24 23:14	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2332903	1	07/31/24 07:00	07/31/24 20:59	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/30/24 00:23	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 23:49	HCS	Mt. Juliet, TN

OP4-2 L1759109-23 Solid

Collected by: Dylan Cardiff | Collected date/time: 07/18/24 11:55 | Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328910	1	07/24/24 05:33	07/24/24 05:39	KDW	Mt. Juliet, TN
Mercury by Method 7471B	WG2328790	1	07/23/24 20:58	07/24/24 08:26	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2329437	1	07/24/24 22:36	07/25/24 10:23	JTM	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015C	WG2330281	29.5	07/18/24 11:55	07/26/24 23:37	NCD	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015C	WG2332903	1	07/31/24 07:00	07/31/24 20:16	JAS	Mt. Juliet, TN
Chlorinated Acid Herbicides (GC) by Method 8151A	WG2328786	1	07/25/24 07:22	07/30/24 00:33	HMH	Mt. Juliet, TN
Pesticides (GC) by Method 8081B	WG2332911	1	08/01/24 11:57	08/01/24 23:58	HCS	Mt. Juliet, TN

SAMPLE SUMMARY

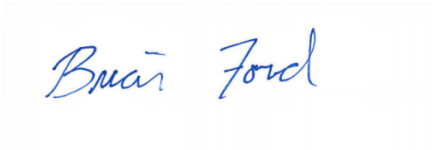
OCOMP1 L1759109-24 Solid

Collected by: Dylan Cardiff
Collected date/time: 07/18/24 00:00
Received date/time: 07/19/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG2328910	1	07/24/24 05:33	07/24/24 05:39	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2331009	1	07/18/24 00:00	07/27/24 15:45	JAH	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG2332763	1	07/31/24 07:00	07/31/24 16:52	LTB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E	WG2330671	2	07/28/24 09:01	07/29/24 21:22	AGW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG2332403	1	07/31/24 08:18	08/01/24 00:25	JRM	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.2		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0505		0.0204	0.0453	1	07/24/2024 12:15	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.617	2.27	1	07/25/2024 13:26	WG2329467
Arsenic	4.43		0.587	2.27	1	07/25/2024 13:26	WG2329467
Barium	192		0.0966	0.567	1	07/25/2024 13:26	WG2329467
Beryllium	0.361		0.0357	0.227	1	07/25/2024 13:26	WG2329467
Cadmium	0.0708	J	0.0534	0.567	1	07/25/2024 13:26	WG2329467
Chromium	42.6		0.151	1.13	1	07/25/2024 13:26	WG2329467
Cobalt	12.9		0.0919	1.13	1	07/25/2024 13:26	WG2329467
Copper	26.3		0.453	2.27	1	07/25/2024 13:26	WG2329467
Lead	13.6		0.236	0.567	1	07/25/2024 13:26	WG2329467
Molybdenum	0.411	J	0.124	0.567	1	07/25/2024 13:26	WG2329467
Nickel	87.6		0.150	2.27	1	07/25/2024 13:26	WG2329467
Selenium	U		0.866	2.27	1	07/25/2024 13:26	WG2329467
Silver	U		0.144	1.13	1	07/25/2024 13:26	WG2329467
Thallium	U		0.447	2.27	1	07/25/2024 13:26	WG2329467
Vanadium	30.7		0.574	2.27	1	07/25/2024 13:26	WG2329467
Zinc	45.8		0.943	5.67	1	07/25/2024 13:26	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.29	B	1.06	3.18	25	07/26/2024 15:40	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 15:40*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		16.7	90.7	20	07/25/2024 04:40	WG2329375
C22-C32 Hydrocarbons	78.2	J J6	30.2	90.7	20	07/25/2024 04:40	WG2329375
C32-C40 Hydrocarbons	130		30.2	90.7	20	07/25/2024 04:40	WG2329375
(S) o-Terphenyl	*91.3*	J7		*18.0-148*		*07/25/2024 04:40*	WG2329375

Sample Narrative:

L1759109-01 WG2329375: Cannot run at lower dilution due to viscosity of extract

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00796	0.0794	1	07/29/2024 08:00	WG2328785
Dalapon	U		0.0128	0.0794	1	07/29/2024 08:00	WG2328785
2,4-DB	U		0.0337	0.0794	1	07/29/2024 08:00	WG2328785
Dicamba	U		0.0178	0.0794	1	07/29/2024 08:00	WG2328785
Dichloroprop	U		0.0278	0.0794	1	07/29/2024 08:00	WG2328785
Dinoseb	U		0.00790	0.0794	1	07/29/2024 08:00	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.502	7.37	1	07/29/2024 08:00	WG2328785
MCPP	U		0.416	7.37	1	07/29/2024 08:00	WG2328785
2,4,5-T	U		0.00966	0.0794	1	07/29/2024 08:00	WG2328785
2,4,5-TP (Silvex)	U		0.0121	0.0794	1	07/29/2024 08:00	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*65.5*			*22.0-132*		*07/29/2024 08:00*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00426	0.0227	1	07/28/2024 03:25	WG2331230
Alpha BHC	U		0.00417	0.0227	1	07/28/2024 03:25	WG2331230
Beta BHC	U		0.00430	0.0227	1	07/28/2024 03:25	WG2331230
Delta BHC	U		0.00392	0.0227	1	07/28/2024 03:25	WG2331230
Gamma BHC	U		0.00390	0.0227	1	07/28/2024 03:25	WG2331230
Chlordane	U		0.117	0.340	1	07/28/2024 03:25	WG2331230
4,4-DDD	U		0.00419	0.0227	1	07/28/2024 03:25	WG2331230
4,4-DDE	U		0.00415	0.0227	1	07/28/2024 03:25	WG2331230
4,4-DDT	U		0.00711	0.0227	1	07/28/2024 03:25	WG2331230
Dieldrin	U		0.00390	0.0227	1	07/28/2024 03:25	WG2331230
Endosulfan I	U		0.00412	0.0227	1	07/28/2024 03:25	WG2331230
Endosulfan II	U		0.00380	0.0227	1	07/28/2024 03:25	WG2331230
Endosulfan sulfate	U		0.00413	0.0227	1	07/28/2024 03:25	WG2331230
Endrin	U		0.00397	0.0227	1	07/28/2024 03:25	WG2331230
Endrin aldehyde	U		0.00384	0.0227	1	07/28/2024 03:25	WG2331230
Endrin ketone	U		0.00806	0.0227	1	07/28/2024 03:25	WG2331230
Hexachlorobenzene	U		0.00392	0.0227	1	07/28/2024 03:25	WG2331230
Heptachlor	U		0.00485	0.0227	1	07/28/2024 03:25	WG2331230
Heptachlor epoxide	U		0.00384	0.0227	1	07/28/2024 03:25	WG2331230
Methoxychlor	U		0.00549	0.0227	1	07/28/2024 03:25	WG2331230
Toxaphene	U		0.141	0.453	1	07/28/2024 03:25	WG2331230
(S) Decachlorobiphenyl	*73.0*			*10.0-135*		*07/28/2024 03:25*	WG2331230
(S) Tetrachloro-m-xylene	*85.5*			*10.0-139*		*07/28/2024 03:25*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.7		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0517		0.0196	0.0436	1	07/24/2024 12:18	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.593	2.18	1	07/25/2024 16:07	WG2329467
Arsenic	2.80		0.565	2.18	1	07/25/2024 16:07	WG2329467
Barium	187		0.0929	0.545	1	07/25/2024 16:07	WG2329467
Beryllium	0.363		0.0344	0.218	1	07/25/2024 16:07	WG2329467
Cadmium	0.130	J	0.0514	0.545	1	07/25/2024 16:07	WG2329467
Chromium	41.7		0.145	1.09	1	07/25/2024 16:07	WG2329467
Cobalt	12.2		0.0884	1.09	1	07/25/2024 16:07	WG2329467
Copper	24.6		0.436	2.18	1	07/25/2024 16:07	WG2329467
Lead	15.7		0.227	0.545	1	07/25/2024 16:07	WG2329467
Molybdenum	0.250	J	0.119	0.545	1	07/25/2024 16:07	WG2329467
Nickel	81.6		0.144	2.18	1	07/25/2024 16:07	WG2329467
Selenium	U		0.833	2.18	1	07/25/2024 16:07	WG2329467
Silver	U		0.139	1.09	1	07/25/2024 16:07	WG2329467
Thallium	U		0.430	2.18	1	07/25/2024 16:07	WG2329467
Vanadium	32.3		0.552	2.18	1	07/25/2024 16:07	WG2329467
Zinc	48.8		0.907	5.45	1	07/25/2024 16:07	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.14	B	1.03	3.10	26.3	07/26/2024 16:47	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*07/26/2024 16:47*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		7.99	43.6	10	07/25/2024 10:22	WG2329375
C22-C32 Hydrocarbons	40.0	J	14.5	43.6	10	07/25/2024 10:22	WG2329375
C32-C40 Hydrocarbons	47.0		14.5	43.6	10	07/25/2024 10:22	WG2329375
(S) o-Terphenyl	*79.9*			*18.0-148*		*07/25/2024 10:22*	WG2329375

Sample Narrative:

L1759109-02 WG2329375: Cannot run at lower dilution due to viscosity of extract

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00766	0.0763	1	07/29/2024 08:10	WG2328785
Dalapon	U		0.0123	0.0763	1	07/29/2024 08:10	WG2328785
2,4-DB	U		0.0324	0.0763	1	07/29/2024 08:10	WG2328785
Dicamba	U		0.0171	0.0763	1	07/29/2024 08:10	WG2328785
Dichloroprop	U		0.0267	0.0763	1	07/29/2024 08:10	WG2328785
Dinoseb	U		0.00760	0.0763	1	07/29/2024 08:10	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.483	7.09	1	07/29/2024 08:10	WG2328785
MCPP	U		0.400	7.09	1	07/29/2024 08:10	WG2328785
2,4,5-T	U		0.00929	0.0763	1	07/29/2024 08:10	WG2328785
2,4,5-TP (Silvex)	U		0.0117	0.0763	1	07/29/2024 08:10	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*72.6*			*22.0-132*		*07/29/2024 08:10*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00410	0.0218	1	07/28/2024 03:35	WG2331230
Alpha BHC	U		0.00401	0.0218	1	07/28/2024 03:35	WG2331230
Beta BHC	U		0.00413	0.0218	1	07/28/2024 03:35	WG2331230
Delta BHC	U		0.00377	0.0218	1	07/28/2024 03:35	WG2331230
Gamma BHC	U		0.00375	0.0218	1	07/28/2024 03:35	WG2331230
Chlordane	U		0.112	0.327	1	07/28/2024 03:35	WG2331230
4,4-DDD	U		0.00404	0.0218	1	07/28/2024 03:35	WG2331230
4,4-DDE	U		0.00399	0.0218	1	07/28/2024 03:35	WG2331230
4,4-DDT	U		0.00684	0.0218	1	07/28/2024 03:35	WG2331230
Dieldrin	U		0.00375	0.0218	1	07/28/2024 03:35	WG2331230
Endosulfan I	U		0.00396	0.0218	1	07/28/2024 03:35	WG2331230
Endosulfan II	U		0.00365	0.0218	1	07/28/2024 03:35	WG2331230
Endosulfan sulfate	U		0.00397	0.0218	1	07/28/2024 03:35	WG2331230
Endrin	U		0.00382	0.0218	1	07/28/2024 03:35	WG2331230
Endrin aldehyde	U		0.00370	0.0218	1	07/28/2024 03:35	WG2331230
Endrin ketone	U		0.00775	0.0218	1	07/28/2024 03:35	WG2331230
Hexachlorobenzene	U		0.00377	0.0218	1	07/28/2024 03:35	WG2331230
Heptachlor	U		0.00467	0.0218	1	07/28/2024 03:35	WG2331230
Heptachlor epoxide	U		0.00370	0.0218	1	07/28/2024 03:35	WG2331230
Methoxychlor	U		0.00528	0.0218	1	07/28/2024 03:35	WG2331230
Toxaphene	U		0.135	0.436	1	07/28/2024 03:35	WG2331230
(S) Decachlorobiphenyl	*75.2*			*10.0-135*		*07/28/2024 03:35*	WG2331230
(S) Tetrachloro-m-xylene	*86.1*			*10.0-139*		*07/28/2024 03:35*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.2		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0603		0.0199	0.0443	1	07/24/2024 12:20	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.603	2.22	1	07/25/2024 16:08	WG2329467
Arsenic	3.44		0.574	2.22	1	07/25/2024 16:08	WG2329467
Barium	193		0.0944	0.554	1	07/25/2024 16:08	WG2329467
Beryllium	0.359		0.0349	0.222	1	07/25/2024 16:08	WG2329467
Cadmium	0.0981	J	0.0522	0.554	1	07/25/2024 16:08	WG2329467
Chromium	45.3		0.147	1.11	1	07/25/2024 16:08	WG2329467
Cobalt	12.5		0.0899	1.11	1	07/25/2024 16:08	WG2329467
Copper	24.9		0.443	2.22	1	07/25/2024 16:08	WG2329467
Lead	13.8		0.230	0.554	1	07/25/2024 16:08	WG2329467
Molybdenum	0.326	J	0.121	0.554	1	07/25/2024 16:08	WG2329467
Nickel	89.2		0.146	2.22	1	07/25/2024 16:08	WG2329467
Selenium	U		0.847	2.22	1	07/25/2024 16:08	WG2329467
Silver	U		0.141	1.11	1	07/25/2024 16:08	WG2329467
Thallium	U		0.437	2.22	1	07/25/2024 16:08	WG2329467
Vanadium	31.5		0.561	2.22	1	07/25/2024 16:08	WG2329467
Zinc	47.0		0.922	5.54	1	07/25/2024 16:08	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.07	B	1.01	3.05	25	07/26/2024 17:11	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*07/26/2024 17:11*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	4.26	J	4.07	22.2	5	07/26/2024 22:11	WG2330416
C22-C32 Hydrocarbons	26.7		7.37	22.2	5	07/26/2024 22:11	WG2330416
C32-C40 Hydrocarbons	45.0		7.37	22.2	5	07/26/2024 22:11	WG2330416
(S) o-Terphenyl	*73.9*			*18.0-148*		*07/26/2024 22:11*	WG2330416

Sample Narrative:

L1759109-03 WG2330416: Cannot run at lower dilution due to viscosity of extract.

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00778	0.0776	1	07/29/2024 08:20	WG2328785
Dalapon	U		0.0125	0.0776	1	07/29/2024 08:20	WG2328785
2,4-DB	U	J6	0.0329	0.0776	1	07/29/2024 08:20	WG2328785
Dicamba	U		0.0174	0.0776	1	07/29/2024 08:20	WG2328785
Dichloroprop	U		0.0271	0.0776	1	07/29/2024 08:20	WG2328785
Dinoseb	U		0.00772	0.0776	1	07/29/2024 08:20	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.491	7.20	1	07/29/2024 08:20	WG2328785
MCPP	U		0.407	7.20	1	07/29/2024 08:20	WG2328785
2,4,5-T	U		0.00944	0.0776	1	07/29/2024 08:20	WG2328785
2,4,5-TP (Silvex)	U		0.0119	0.0776	1	07/29/2024 08:20	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*63.0*			*22.0-132*		*07/29/2024 08:20*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00417	0.0222	1	07/28/2024 02:34	WG2331230
Alpha BHC	U		0.00408	0.0222	1	07/28/2024 02:34	WG2331230
Beta BHC	U		0.00420	0.0222	1	07/28/2024 02:34	WG2331230
Delta BHC	U		0.00383	0.0222	1	07/28/2024 02:34	WG2331230
Gamma BHC	U		0.00381	0.0222	1	07/28/2024 02:34	WG2331230
Chlordane	U		0.114	0.332	1	07/28/2024 02:34	WG2331230
4,4-DDD	U		0.00410	0.0222	1	07/28/2024 02:34	WG2331230
4,4-DDE	U		0.00406	0.0222	1	07/28/2024 02:34	WG2331230
4,4-DDT	U		0.00695	0.0222	1	07/28/2024 02:34	WG2331230
Dieldrin	U		0.00381	0.0222	1	07/28/2024 02:34	WG2331230
Endosulfan I	U		0.00402	0.0222	1	07/28/2024 02:34	WG2331230
Endosulfan II	U		0.00371	0.0222	1	07/28/2024 02:34	WG2331230
Endosulfan sulfate	U		0.00403	0.0222	1	07/28/2024 02:34	WG2331230
Endrin	U		0.00388	0.0222	1	07/28/2024 02:34	WG2331230
Endrin aldehyde	U		0.00376	0.0222	1	07/28/2024 02:34	WG2331230
Endrin ketone	U		0.00788	0.0222	1	07/28/2024 02:34	WG2331230
Hexachlorobenzene	U		0.00383	0.0222	1	07/28/2024 02:34	WG2331230
Heptachlor	U		0.00474	0.0222	1	07/28/2024 02:34	WG2331230
Heptachlor epoxide	U		0.00376	0.0222	1	07/28/2024 02:34	WG2331230
Methoxychlor	U		0.00536	0.0222	1	07/28/2024 02:34	WG2331230
Toxaphene	U		0.137	0.443	1	07/28/2024 02:34	WG2331230
(S) Decachlorobiphenyl	*74.7*			*10.0-135*		*07/28/2024 02:34*	WG2331230
(S) Tetrachloro-m-xylene	*81.8*			*10.0-139*		*07/28/2024 02:34*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.5		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0328	J	0.0191	0.0423	1	07/24/2024 12:23	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.576	2.12	1	07/25/2024 15:46	WG2329467
Arsenic	3.59		0.548	2.12	1	07/25/2024 15:46	WG2329467
Barium	180		0.0902	0.529	1	07/25/2024 15:46	WG2329467
Beryllium	0.333		0.0333	0.212	1	07/25/2024 15:46	WG2329467
Cadmium	0.111	J	0.0499	0.529	1	07/25/2024 15:46	WG2329467
Chromium	41.4		0.141	1.06	1	07/25/2024 15:46	WG2329467
Cobalt	12.7		0.0858	1.06	1	07/25/2024 15:46	WG2329467
Copper	25.0		0.423	2.12	1	07/25/2024 15:46	WG2329467
Lead	13.9		0.220	0.529	1	07/25/2024 15:46	WG2329467
Molybdenum	0.234	J	0.115	0.529	1	07/25/2024 15:46	WG2329467
Nickel	88.0		0.140	2.12	1	07/25/2024 15:46	WG2329467
Selenium	U		0.809	2.12	1	07/25/2024 15:46	WG2329467
Silver	U		0.134	1.06	1	07/25/2024 15:46	WG2329467
Thallium	U		0.417	2.12	1	07/25/2024 15:46	WG2329467
Vanadium	28.4		0.536	2.12	1	07/25/2024 15:46	WG2329467
Zinc	49.9		0.881	5.29	1	07/25/2024 15:46	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.87	B	0.931	2.80	25	07/26/2024 17:33	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 17:33*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		77.6	423	100	07/26/2024 23:07	WG2330416
C22-C32 Hydrocarbons	429		141	423	100	07/26/2024 23:07	WG2330416
C32-C40 Hydrocarbons	758		141	423	100	07/26/2024 23:07	WG2330416
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*07/26/2024 23:07*	WG2330416

Sample Narrative:

L1759109-04 WG2330416: Cannot run at lower dilution due to viscosity of extract

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00743	0.0741	1	07/29/2024 08:51	WG2328785
Dalapon	U		0.0120	0.0741	1	07/29/2024 08:51	WG2328785
2,4-DB	U		0.0314	0.0741	1	07/29/2024 08:51	WG2328785
Dicamba	U		0.0166	0.0741	1	07/29/2024 08:51	WG2328785
Dichloroprop	U		0.0259	0.0741	1	07/29/2024 08:51	WG2328785
Dinoseb	U		0.00738	0.0741	1	07/29/2024 08:51	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.469	6.88	1	07/29/2024 08:51	WG2328785
MCPP	U		0.388	6.88	1	07/29/2024 08:51	WG2328785
2,4,5-T	U		0.00902	0.0741	1	07/29/2024 08:51	WG2328785
2,4,5-TP (Silvex)	U		0.0113	0.0741	1	07/29/2024 08:51	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*77.6*			*22.0-132*		*07/29/2024 08:51*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00398	0.0212	1	07/28/2024 14:23	WG2331230
Alpha BHC	U		0.00390	0.0212	1	07/28/2024 14:23	WG2331230
Beta BHC	U		0.00401	0.0212	1	07/28/2024 14:23	WG2331230
Delta BHC	U		0.00366	0.0212	1	07/28/2024 14:23	WG2331230
Gamma BHC	U		0.00364	0.0212	1	07/28/2024 14:23	WG2331230
Chlordane	U		0.109	0.318	1	07/28/2024 14:23	WG2331230
4,4-DDD	U		0.00392	0.0212	1	07/28/2024 14:23	WG2331230
4,4-DDE	U		0.00387	0.0212	1	07/28/2024 14:23	WG2331230
4,4-DDT	U		0.00664	0.0212	1	07/28/2024 14:23	WG2331230
Dieldrin	U		0.00364	0.0212	1	07/28/2024 14:23	WG2331230
Endosulfan I	U		0.00384	0.0212	1	07/28/2024 14:23	WG2331230
Endosulfan II	U		0.00355	0.0212	1	07/28/2024 14:23	WG2331230
Endosulfan sulfate	U		0.00385	0.0212	1	07/28/2024 14:23	WG2331230
Endrin	U		0.00370	0.0212	1	07/28/2024 14:23	WG2331230
Endrin aldehyde	U		0.00359	0.0212	1	07/28/2024 14:23	WG2331230
Endrin ketone	U		0.00753	0.0212	1	07/28/2024 14:23	WG2331230
Hexachlorobenzene	U		0.00366	0.0212	1	07/28/2024 14:23	WG2331230
Heptachlor	U		0.00453	0.0212	1	07/28/2024 14:23	WG2331230
Heptachlor epoxide	U		0.00359	0.0212	1	07/28/2024 14:23	WG2331230
Methoxychlor	U		0.00512	0.0212	1	07/28/2024 14:23	WG2331230
Toxaphene	U		0.131	0.423	1	07/28/2024 14:23	WG2331230
(S) Decachlorobiphenyl	*91.8*			*10.0-135*		*07/28/2024 14:23*	WG2331230
(S) Tetrachloro-m-xylene	*77.5*			*10.0-139*		*07/28/2024 14:23*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.8		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0465		0.0196	0.0436	1	07/24/2024 11:07	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.593	2.18	1	07/25/2024 15:48	WG2329467
Arsenic	3.48		0.564	2.18	1	07/25/2024 15:48	WG2329467
Barium	204		0.0928	0.545	1	07/25/2024 15:48	WG2329467
Beryllium	0.336		0.0343	0.218	1	07/25/2024 15:48	WG2329467
Cadmium	0.0955	J	0.0513	0.545	1	07/25/2024 15:48	WG2329467
Chromium	41.5		0.145	1.09	1	07/25/2024 15:48	WG2329467
Cobalt	12.0		0.0884	1.09	1	07/25/2024 15:48	WG2329467
Copper	23.8		0.436	2.18	1	07/25/2024 15:48	WG2329467
Lead	13.1		0.227	0.545	1	07/25/2024 15:48	WG2329467
Molybdenum	0.350	J	0.119	0.545	1	07/25/2024 15:48	WG2329467
Nickel	79.2		0.144	2.18	1	07/25/2024 15:48	WG2329467
Selenium	U		0.832	2.18	1	07/25/2024 15:48	WG2329467
Silver	U		0.138	1.09	1	07/25/2024 15:48	WG2329467
Thallium	U		0.429	2.18	1	07/25/2024 15:48	WG2329467
Vanadium	29.2		0.551	2.18	1	07/25/2024 15:48	WG2329467
Zinc	43.3		0.907	5.45	1	07/25/2024 15:48	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.46	B J	0.979	2.95	25	07/26/2024 17:56	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*07/26/2024 17:56*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	9.39	J	7.99	43.6	10	07/26/2024 21:43	WG2330416
C22-C32 Hydrocarbons	60.8		14.5	43.6	10	07/26/2024 21:43	WG2330416
C32-C40 Hydrocarbons	103		14.5	43.6	10	07/26/2024 21:43	WG2330416
(S) o-Terphenyl	*84.8*			*18.0-148*		*07/26/2024 21:43*	WG2330416

Sample Narrative:

L1759109-05 WG2330416: Cannot run at lower dilution due to viscosity of extract

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00765	0.0763	1	07/29/2024 09:01	WG2328785
Dalapon	U		0.0123	0.0763	1	07/29/2024 09:01	WG2328785
2,4-DB	U		0.0324	0.0763	1	07/29/2024 09:01	WG2328785
Dicamba	U		0.0171	0.0763	1	07/29/2024 09:01	WG2328785
Dichloroprop	U		0.0267	0.0763	1	07/29/2024 09:01	WG2328785
Dinoseb	U		0.00759	0.0763	1	07/29/2024 09:01	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.483	7.08	1	07/29/2024 09:01	WG2328785
MCPP	U		0.400	7.08	1	07/29/2024 09:01	WG2328785
2,4,5-T	U		0.00928	0.0763	1	07/29/2024 09:01	WG2328785
2,4,5-TP (Silvex)	U		0.0117	0.0763	1	07/29/2024 09:01	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*66.9*			*22.0-132*		*07/29/2024 09:01*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00410	0.0218	1	07/28/2024 03:45	WG2331230
Alpha BHC	U		0.00401	0.0218	1	07/28/2024 03:45	WG2331230
Beta BHC	U		0.00413	0.0218	1	07/28/2024 03:45	WG2331230
Delta BHC	U		0.00377	0.0218	1	07/28/2024 03:45	WG2331230
Gamma BHC	U		0.00375	0.0218	1	07/28/2024 03:45	WG2331230
Chlordane	U		0.112	0.327	1	07/28/2024 03:45	WG2331230
4,4-DDD	U		0.00403	0.0218	1	07/28/2024 03:45	WG2331230
4,4-DDE	U		0.00399	0.0218	1	07/28/2024 03:45	WG2331230
4,4-DDT	U		0.00683	0.0218	1	07/28/2024 03:45	WG2331230
Dieldrin	U		0.00375	0.0218	1	07/28/2024 03:45	WG2331230
Endosulfan I	U		0.00396	0.0218	1	07/28/2024 03:45	WG2331230
Endosulfan II	U		0.00365	0.0218	1	07/28/2024 03:45	WG2331230
Endosulfan sulfate	U		0.00397	0.0218	1	07/28/2024 03:45	WG2331230
Endrin	U		0.00381	0.0218	1	07/28/2024 03:45	WG2331230
Endrin aldehyde	U		0.00369	0.0218	1	07/28/2024 03:45	WG2331230
Endrin ketone	U		0.00775	0.0218	1	07/28/2024 03:45	WG2331230
Hexachlorobenzene	U		0.00377	0.0218	1	07/28/2024 03:45	WG2331230
Heptachlor	U		0.00466	0.0218	1	07/28/2024 03:45	WG2331230
Heptachlor epoxide	U		0.00369	0.0218	1	07/28/2024 03:45	WG2331230
Methoxychlor	U		0.00527	0.0218	1	07/28/2024 03:45	WG2331230
Toxaphene	U		0.135	0.436	1	07/28/2024 03:45	WG2331230
(S) Decachlorobiphenyl	*70.1*			*10.0-135*		*07/28/2024 03:45*	WG2331230
(S) Tetrachloro-m-xylene	*84.1*			*10.0-139*		*07/28/2024 03:45*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.2		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0620		0.0197	0.0439	1	07/24/2024 12:25	WG2328712

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.597	2.19	1	07/25/2024 15:50	WG2329467
Arsenic	3.33		0.568	2.19	1	07/25/2024 15:50	WG2329467
Barium	199		0.0934	0.548	1	07/25/2024 15:50	WG2329467
Beryllium	0.376		0.0345	0.219	1	07/25/2024 15:50	WG2329467
Cadmium	0.191	J	0.0516	0.548	1	07/25/2024 15:50	WG2329467
Chromium	38.1		0.146	1.10	1	07/25/2024 15:50	WG2329467
Cobalt	11.8		0.0889	1.10	1	07/25/2024 15:50	WG2329467
Copper	23.3		0.439	2.19	1	07/25/2024 15:50	WG2329467
Lead	14.0		0.228	0.548	1	07/25/2024 15:50	WG2329467
Molybdenum	0.309	J	0.120	0.548	1	07/25/2024 15:50	WG2329467
Nickel	76.6		0.145	2.19	1	07/25/2024 15:50	WG2329467
Selenium	U		0.838	2.19	1	07/25/2024 15:50	WG2329467
Silver	U		0.139	1.10	1	07/25/2024 15:50	WG2329467
Thallium	U		0.432	2.19	1	07/25/2024 15:50	WG2329467
Vanadium	30.8		0.555	2.19	1	07/25/2024 15:50	WG2329467
Zinc	44.2		0.912	5.48	1	07/25/2024 15:50	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.15	B	0.992	2.99	25	07/26/2024 18:19	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*07/26/2024 18:19*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		32.1	175	40	07/26/2024 23:21	WG2330416
C22-C32 Hydrocarbons	158	J	58.3	175	40	07/26/2024 23:21	WG2330416
C32-C40 Hydrocarbons	180		58.3	175	40	07/26/2024 23:21	WG2330416
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*07/26/2024 23:21*	WG2330416

Sample Narrative:

L1759109-06 WG2330416: Cannot run at lower dilution due to viscosity of extract

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00770	0.0768	1	07/29/2024 09:42	WG2328785
Dalapon	U		0.0124	0.0768	1	07/29/2024 09:42	WG2328785
2,4-DB	U		0.0326	0.0768	1	07/29/2024 09:42	WG2328785
Dicamba	U		0.0172	0.0768	1	07/29/2024 09:42	WG2328785
Dichloroprop	U		0.0269	0.0768	1	07/29/2024 09:42	WG2328785
Dinoseb	U		0.00764	0.0768	1	07/29/2024 09:42	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.486	7.13	1	07/29/2024 09:42	WG2328785
MCPP	U		0.402	7.13	1	07/29/2024 09:42	WG2328785
2,4,5-T	U		0.00934	0.0768	1	07/29/2024 09:42	WG2328785
2,4,5-TP (Silvex)	U		0.0117	0.0768	1	07/29/2024 09:42	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*56.6*			*22.0-132*		*07/29/2024 09:42*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00412	0.0219	1	07/28/2024 04:06	WG2331230
Alpha BHC	U		0.00404	0.0219	1	07/28/2024 04:06	WG2331230
Beta BHC	U		0.00416	0.0219	1	07/28/2024 04:06	WG2331230
Delta BHC	U		0.00379	0.0219	1	07/28/2024 04:06	WG2331230
Gamma BHC	U		0.00377	0.0219	1	07/28/2024 04:06	WG2331230
Chlordane	U		0.113	0.329	1	07/28/2024 04:06	WG2331230
4,4-DDD	U		0.00406	0.0219	1	07/28/2024 04:06	WG2331230
4,4-DDE	U		0.00401	0.0219	1	07/28/2024 04:06	WG2331230
4,4-DDT	U		0.00688	0.0219	1	07/28/2024 04:06	WG2331230
Dieldrin	U		0.00377	0.0219	1	07/28/2024 04:06	WG2331230
Endosulfan I	U		0.00398	0.0219	1	07/28/2024 04:06	WG2331230
Endosulfan II	U		0.00367	0.0219	1	07/28/2024 04:06	WG2331230
Endosulfan sulfate	U		0.00399	0.0219	1	07/28/2024 04:06	WG2331230
Endrin	U		0.00384	0.0219	1	07/28/2024 04:06	WG2331230
Endrin aldehyde	U		0.00372	0.0219	1	07/28/2024 04:06	WG2331230
Endrin ketone	U		0.00780	0.0219	1	07/28/2024 04:06	WG2331230
Hexachlorobenzene	U		0.00379	0.0219	1	07/28/2024 04:06	WG2331230
Heptachlor	U		0.00469	0.0219	1	07/28/2024 04:06	WG2331230
Heptachlor epoxide	U		0.00372	0.0219	1	07/28/2024 04:06	WG2331230
Methoxychlor	U		0.00531	0.0219	1	07/28/2024 04:06	WG2331230
Toxaphene	U		0.136	0.439	1	07/28/2024 04:06	WG2331230
(S) Decachlorobiphenyl	*83.1*			*10.0-135*		*07/28/2024 04:06*	WG2331230
(S) Tetrachloro-m-xylene	*86.3*			*10.0-139*		*07/28/2024 04:06*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.7		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0671		0.0196	0.0436	1	07/24/2024 08:41	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.593	2.18	1	07/25/2024 15:51	WG2329467
Arsenic	3.75		0.565	2.18	1	07/25/2024 15:51	WG2329467
Barium	191		0.0929	0.545	1	07/25/2024 15:51	WG2329467
Beryllium	0.349		0.0343	0.218	1	07/25/2024 15:51	WG2329467
Cadmium	0.0600	J	0.0513	0.545	1	07/25/2024 15:51	WG2329467
Chromium	84.6		0.145	1.09	1	07/25/2024 15:51	WG2329467
Cobalt	13.8		0.0884	1.09	1	07/25/2024 15:51	WG2329467
Copper	23.8		0.436	2.18	1	07/25/2024 15:51	WG2329467
Lead	13.6		0.227	0.545	1	07/25/2024 15:51	WG2329467
Molybdenum	0.335	J	0.119	0.545	1	07/25/2024 15:51	WG2329467
Nickel	129		0.144	2.18	1	07/25/2024 15:51	WG2329467
Selenium	U		0.833	2.18	1	07/25/2024 15:51	WG2329467
Silver	U		0.138	1.09	1	07/25/2024 15:51	WG2329467
Thallium	U		0.429	2.18	1	07/25/2024 15:51	WG2329467
Vanadium	32.3		0.552	2.18	1	07/25/2024 15:51	WG2329467
Zinc	50.1		0.907	5.45	1	07/25/2024 15:51	WG2329467

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.72	B J	0.980	2.95	25	07/26/2024 18:42	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 18:42*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	3.85	J	0.799	4.36	1	07/26/2024 20:47	WG2330416
C22-C32 Hydrocarbons	25.1		1.45	4.36	1	07/26/2024 20:47	WG2330416
C32-C40 Hydrocarbons	33.6		1.45	4.36	1	07/26/2024 20:47	WG2330416
(S) o-Terphenyl	*108*			*18.0-148*		*07/26/2024 20:47*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00765	0.0763	1	07/29/2024 09:52	WG2328785
Dalapon	U		0.0123	0.0763	1	07/29/2024 09:52	WG2328785
2,4-DB	U		0.0324	0.0763	1	07/29/2024 09:52	WG2328785
Dicamba	U		0.0171	0.0763	1	07/29/2024 09:52	WG2328785
Dichloroprop	U		0.0267	0.0763	1	07/29/2024 09:52	WG2328785
Dinoseb	U		0.00760	0.0763	1	07/29/2024 09:52	WG2328785
MCPA	U		0.483	7.09	1	07/29/2024 09:52	WG2328785
MCPP	U		0.400	7.09	1	07/29/2024 09:52	WG2328785
2,4,5-T	U		0.00929	0.0763	1	07/29/2024 09:52	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0117	0.0763	1	07/29/2024 09:52	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*63.9*			*22.0-132*		*07/29/2024 09:52*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00410	0.0218	1	07/28/2024 02:44	WG2331230
Alpha BHC	U		0.00401	0.0218	1	07/28/2024 02:44	WG2331230
Beta BHC	U		0.00413	0.0218	1	07/28/2024 02:44	WG2331230
Delta BHC	U		0.00377	0.0218	1	07/28/2024 02:44	WG2331230
Gamma BHC	U		0.00375	0.0218	1	07/28/2024 02:44	WG2331230
Chlordane	U		0.112	0.327	1	07/28/2024 02:44	WG2331230
4,4-DDD	U		0.00403	0.0218	1	07/28/2024 02:44	WG2331230
4,4-DDE	U		0.00399	0.0218	1	07/28/2024 02:44	WG2331230
4,4-DDT	U		0.00683	0.0218	1	07/28/2024 02:44	WG2331230
Dieldrin	U		0.00375	0.0218	1	07/28/2024 02:44	WG2331230
Endosulfan I	U		0.00396	0.0218	1	07/28/2024 02:44	WG2331230
Endosulfan II	U		0.00365	0.0218	1	07/28/2024 02:44	WG2331230
Endosulfan sulfate	U		0.00397	0.0218	1	07/28/2024 02:44	WG2331230
Endrin	U		0.00382	0.0218	1	07/28/2024 02:44	WG2331230
Endrin aldehyde	U		0.00370	0.0218	1	07/28/2024 02:44	WG2331230
Endrin ketone	U		0.00775	0.0218	1	07/28/2024 02:44	WG2331230
Hexachlorobenzene	U		0.00377	0.0218	1	07/28/2024 02:44	WG2331230
Heptachlor	U		0.00467	0.0218	1	07/28/2024 02:44	WG2331230
Heptachlor epoxide	U		0.00370	0.0218	1	07/28/2024 02:44	WG2331230
Methoxychlor	U		0.00528	0.0218	1	07/28/2024 02:44	WG2331230
Toxaphene	U		0.135	0.436	1	07/28/2024 02:44	WG2331230
(S) Decachlorobiphenyl	*79.7*			*10.0-135*		*07/28/2024 02:44*	WG2331230
(S) Tetrachloro-m-xylene	*92.4*			*10.0-139*		*07/28/2024 02:44*	WG2331230

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.3		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0422	J	0.0197	0.0438	1	07/24/2024 08:43	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	1.12	J	0.596	2.19	1	08/01/2024 15:57	WG2333245
Arsenic	8.34		0.567	2.19	1	08/01/2024 15:57	WG2333245
Barium	300		0.0933	0.548	1	08/01/2024 15:57	WG2333245
Beryllium	0.632		0.0345	0.219	1	08/01/2024 15:57	WG2333245
Cadmium	0.203	J	0.0516	0.548	1	08/01/2024 15:57	WG2333245
Chromium	91.2		0.146	1.10	1	08/01/2024 15:57	WG2333245
Cobalt	20.3		0.0888	1.10	1	08/01/2024 15:57	WG2333245
Copper	37.0		0.438	2.19	1	08/01/2024 15:57	WG2333245
Lead	22.9		0.228	0.548	1	08/01/2024 15:57	WG2333245
Molybdenum	0.336	J	0.119	0.548	1	08/01/2024 15:57	WG2333245
Nickel	151		0.145	2.19	1	08/01/2024 15:57	WG2333245
Selenium	U		4.18	11.0	5	08/01/2024 23:06	WG2333245
Silver	U		0.139	1.10	1	08/01/2024 15:57	WG2333245
Thallium	U		0.432	2.19	1	08/01/2024 15:57	WG2333245
Vanadium	71.7		0.554	2.19	1	08/01/2024 15:57	WG2333245
Zinc	72.6		0.911	5.48	1	08/01/2024 15:57	WG2333245

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.58	B J	1.01	3.03	25.5	07/26/2024 19:04	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*07/26/2024 19:04*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	2.07	J	0.803	4.38	1	07/26/2024 20:33	WG2330416
C22-C32 Hydrocarbons	12.9		1.46	4.38	1	07/26/2024 20:33	WG2330416
C32-C40 Hydrocarbons	20.8		1.46	4.38	1	07/26/2024 20:33	WG2330416
(S) o-Terphenyl	*87.9*			*18.0-148*		*07/26/2024 20:33*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00769	0.0767	1	07/29/2024 10:03	WG2328785
Dalapon	U		0.0124	0.0767	1	07/29/2024 10:03	WG2328785
2,4-DB	U		0.0325	0.0767	1	07/29/2024 10:03	WG2328785
Dicamba	U		0.0172	0.0767	1	07/29/2024 10:03	WG2328785
Dichloroprop	U		0.0268	0.0767	1	07/29/2024 10:03	WG2328785
Dinoseb	U		0.00764	0.0767	1	07/29/2024 10:03	WG2328785
MCPA	U		0.485	7.12	1	07/29/2024 10:03	WG2328785
MCPP	U		0.402	7.12	1	07/29/2024 10:03	WG2328785
2,4,5-T	U		0.00933	0.0767	1	07/29/2024 10:03	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0117	0.0767	1	07/29/2024 10:03	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*72.1*			*22.0-132*		*07/29/2024 10:03*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00412	0.0219	1	08/01/2024 22:20	WG2332911
Alpha BHC	U		0.00403	0.0219	1	08/01/2024 22:20	WG2332911
Beta BHC	U		0.00415	0.0219	1	08/01/2024 22:20	WG2332911
Delta BHC	U		0.00379	0.0219	1	08/01/2024 22:20	WG2332911
Gamma BHC	U		0.00377	0.0219	1	08/01/2024 22:20	WG2332911
Chlordane	U		0.113	0.329	1	08/01/2024 22:20	WG2332911
4,4-DDD	U		0.00405	0.0219	1	08/01/2024 22:20	WG2332911
4,4-DDE	U		0.00401	0.0219	1	08/01/2024 22:20	WG2332911
4,4-DDT	U		0.00687	0.0219	1	08/01/2024 22:20	WG2332911
Dieldrin	U		0.00377	0.0219	1	08/01/2024 22:20	WG2332911
Endosulfan I	U		0.00398	0.0219	1	08/01/2024 22:20	WG2332911
Endosulfan II	U		0.00367	0.0219	1	08/01/2024 22:20	WG2332911
Endosulfan sulfate	U		0.00399	0.0219	1	08/01/2024 22:20	WG2332911
Endrin	U	J4	0.00383	0.0219	1	08/01/2024 22:20	WG2332911
Endrin aldehyde	U		0.00371	0.0219	1	08/01/2024 22:20	WG2332911
Endrin ketone	U		0.00779	0.0219	1	08/01/2024 22:20	WG2332911
Hexachlorobenzene	U		0.00379	0.0219	1	08/01/2024 22:20	WG2332911
Heptachlor	U		0.00469	0.0219	1	08/01/2024 22:20	WG2332911
Heptachlor epoxide	U		0.00371	0.0219	1	08/01/2024 22:20	WG2332911
Methoxychlor	U		0.00530	0.0219	1	08/01/2024 22:20	WG2332911
Toxaphene	U		0.136	0.438	1	08/01/2024 22:20	WG2332911
(S) Decachlorobiphenyl	*79.4*			*10.0-135*		*08/01/2024 22:20*	WG2332911
(S) Tetrachloro-m-xylene	*95.6*			*10.0-139*		*08/01/2024 22:20*	WG2332911

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	92.3		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.140		0.0195	0.0433	1	07/24/2024 08:51	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.589	2.17	1	07/26/2024 18:59	WG2329748
Arsenic	5.84		0.561	2.17	1	07/26/2024 18:59	WG2329748
Barium	346		0.0923	0.542	1	07/26/2024 18:59	WG2329748
Beryllium	0.469		0.0341	0.217	1	07/26/2024 18:59	WG2329748
Cadmium	0.144	J	0.0510	0.542	1	07/26/2024 18:59	WG2329748
Chromium	59.7		0.144	1.08	1	07/26/2024 18:59	WG2329748
Cobalt	13.0		0.0879	1.08	1	07/26/2024 18:59	WG2329748
Copper	26.1		0.433	2.17	1	07/26/2024 18:59	WG2329748
Lead	12.6		0.225	0.542	1	07/26/2024 18:59	WG2329748
Molybdenum	0.307	J	0.118	0.542	1	07/26/2024 18:59	WG2329748
Nickel	97.2		0.143	2.17	1	07/26/2024 18:59	WG2329748
Selenium	3.50		0.828	2.17	1	07/26/2024 18:59	WG2329748
Silver	0.762	J	0.138	1.08	1	07/26/2024 18:59	WG2329748
Thallium	U		0.427	2.17	1	07/26/2024 18:59	WG2329748
Vanadium	46.4		0.548	2.17	1	07/26/2024 18:59	WG2329748
Zinc	51.8		0.901	5.42	1	07/26/2024 18:59	WG2329748

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.00	B	0.968	2.92	25	07/26/2024 19:27	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 19:27*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	4.75		0.794	4.33	1	07/26/2024 21:01	WG2330416
C22-C32 Hydrocarbons	31.3		1.44	4.33	1	07/26/2024 21:01	WG2330416
C32-C40 Hydrocarbons	40.2		1.44	4.33	1	07/26/2024 21:01	WG2330416
(S) o-Terphenyl	*109*			*18.0-148*		*07/26/2024 21:01*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00761	0.0758	1	07/29/2024 10:13	WG2328785
Dalapon	U		0.0122	0.0758	1	07/29/2024 10:13	WG2328785
2,4-DB	U		0.0322	0.0758	1	07/29/2024 10:13	WG2328785
Dicamba	U		0.0170	0.0758	1	07/29/2024 10:13	WG2328785
Dichloroprop	U		0.0265	0.0758	1	07/29/2024 10:13	WG2328785
Dinoseb	U		0.00755	0.0758	1	07/29/2024 10:13	WG2328785
MCPA	U		0.480	7.04	1	07/29/2024 10:13	WG2328785
MCPP	U		0.398	7.04	1	07/29/2024 10:13	WG2328785
2,4,5-T	U		0.00923	0.0758	1	07/29/2024 10:13	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0116	0.0758	1	07/29/2024 10:13	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*64.8*			*22.0-132*		*07/29/2024 10:13*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00407	0.0217	1	08/01/2024 22:29	WG2332911
Alpha BHC	U		0.00399	0.0217	1	08/01/2024 22:29	WG2332911
Beta BHC	U		0.00411	0.0217	1	08/01/2024 22:29	WG2332911
Delta BHC	U		0.00375	0.0217	1	08/01/2024 22:29	WG2332911
Gamma BHC	U		0.00373	0.0217	1	08/01/2024 22:29	WG2332911
Chlordane	U		0.112	0.325	1	08/01/2024 22:29	WG2332911
4,4-DDD	U		0.00401	0.0217	1	08/01/2024 22:29	WG2332911
4,4-DDE	U		0.00397	0.0217	1	08/01/2024 22:29	WG2332911
4,4-DDT	U		0.00679	0.0217	1	08/01/2024 22:29	WG2332911
Dieldrin	U		0.00373	0.0217	1	08/01/2024 22:29	WG2332911
Endosulfan I	U		0.00393	0.0217	1	08/01/2024 22:29	WG2332911
Endosulfan II	U		0.00363	0.0217	1	08/01/2024 22:29	WG2332911
Endosulfan sulfate	U		0.00394	0.0217	1	08/01/2024 22:29	WG2332911
Endrin	U	J4	0.00379	0.0217	1	08/01/2024 22:29	WG2332911
Endrin aldehyde	U		0.00367	0.0217	1	08/01/2024 22:29	WG2332911
Endrin ketone	U		0.00770	0.0217	1	08/01/2024 22:29	WG2332911
Hexachlorobenzene	U		0.00375	0.0217	1	08/01/2024 22:29	WG2332911
Heptachlor	U		0.00464	0.0217	1	08/01/2024 22:29	WG2332911
Heptachlor epoxide	U		0.00367	0.0217	1	08/01/2024 22:29	WG2332911
Methoxychlor	U		0.00524	0.0217	1	08/01/2024 22:29	WG2332911
Toxaphene	U		0.134	0.433	1	08/01/2024 22:29	WG2332911
(S) Decachlorobiphenyl	*78.7*			*10.0-135*		*08/01/2024 22:29*	WG2332911
(S) Tetrachloro-m-xylene	*92.8*			*10.0-139*		*08/01/2024 22:29*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.0		1	07/24/2024 05:54	WG2328908

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0363	J	0.0194	0.0430	1	07/24/2024 08:53	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	2.34		0.585	2.15	1	08/01/2024 15:58	WG2333245
Arsenic	8.78		0.557	2.15	1	08/01/2024 15:58	WG2333245
Barium	373		0.0916	0.538	1	08/01/2024 15:58	WG2333245
Beryllium	0.731		0.0339	0.215	1	08/01/2024 15:58	WG2333245
Cadmium	0.208	J	0.0507	0.538	1	08/01/2024 15:58	WG2333245
Chromium	102		0.143	1.08	1	08/01/2024 15:58	WG2333245
Cobalt	23.5		0.0872	1.08	1	08/01/2024 15:58	WG2333245
Copper	45.1		0.430	2.15	1	08/01/2024 15:58	WG2333245
Lead	30.2		0.224	0.538	1	08/01/2024 15:58	WG2333245
Molybdenum	0.521	J	0.117	0.538	1	08/01/2024 15:58	WG2333245
Nickel	152		0.142	2.15	1	08/01/2024 15:58	WG2333245
Selenium	U		4.11	10.8	5	08/01/2024 23:08	WG2333245
Silver	U		0.137	1.08	1	08/01/2024 15:58	WG2333245
Thallium	U		0.424	2.15	1	08/01/2024 15:58	WG2333245
Vanadium	84.7		0.544	2.15	1	08/01/2024 15:58	WG2333245
Zinc	88.6		0.895	5.38	1	08/01/2024 15:58	WG2333245

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.15	B J	0.959	2.89	25	07/26/2024 19:50	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*07/26/2024 19:50*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		7.88	43.0	10	07/26/2024 22:25	WG2330416
C22-C32 Hydrocarbons	64.1		14.3	43.0	10	07/26/2024 22:25	WG2330416
C32-C40 Hydrocarbons	141		14.3	43.0	10	07/26/2024 22:25	WG2330416
(S) o-Terphenyl	*90.8*			*18.0-148*		*07/26/2024 22:25*	WG2330416

Sample Narrative:

L1759109-10 WG2330416: Cannot run at lower dilution due to viscosity of extract.

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00755	0.0753	1	07/29/2024 10:23	WG2328785
Dalapon	U		0.0122	0.0753	1	07/29/2024 10:23	WG2328785
2,4-DB	U		0.0319	0.0753	1	07/29/2024 10:23	WG2328785
Dicamba	U		0.0169	0.0753	1	07/29/2024 10:23	WG2328785
Dichloroprop	U		0.0264	0.0753	1	07/29/2024 10:23	WG2328785
Dinoseb	U		0.00750	0.0753	1	07/29/2024 10:23	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.476	6.99	1	07/29/2024 10:23	WG2328785
MCPP	U		0.395	6.99	1	07/29/2024 10:23	WG2328785
2,4,5-T	U		0.00916	0.0753	1	07/29/2024 10:23	WG2328785
2,4,5-TP (Silvex)	U		0.0115	0.0753	1	07/29/2024 10:23	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*77.4*			*22.0-132*		*07/29/2024 10:23*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00404	0.0215	1	08/02/2024 00:24	WG2332911
Alpha BHC	U		0.00396	0.0215	1	08/02/2024 00:24	WG2332911
Beta BHC	U		0.00408	0.0215	1	08/02/2024 00:24	WG2332911
Delta BHC	U		0.00372	0.0215	1	08/02/2024 00:24	WG2332911
Gamma BHC	U		0.00370	0.0215	1	08/02/2024 00:24	WG2332911
Chlordane	U		0.111	0.323	1	08/02/2024 00:24	WG2332911
4,4-DDD	U		0.00398	0.0215	1	08/02/2024 00:24	WG2332911
4,4-DDE	U		0.00394	0.0215	1	08/02/2024 00:24	WG2332911
4,4-DDT	U		0.00674	0.0215	1	08/02/2024 00:24	WG2332911
Dieldrin	U		0.00370	0.0215	1	08/02/2024 00:24	WG2332911
Endosulfan I	U		0.00390	0.0215	1	08/02/2024 00:24	WG2332911
Endosulfan II	U		0.00360	0.0215	1	08/02/2024 00:24	WG2332911
Endosulfan sulfate	U		0.00392	0.0215	1	08/02/2024 00:24	WG2332911
Endrin	U	J4	0.00376	0.0215	1	08/02/2024 00:24	WG2332911
Endrin aldehyde	U		0.00365	0.0215	1	08/02/2024 00:24	WG2332911
Endrin ketone	U		0.00765	0.0215	1	08/02/2024 00:24	WG2332911
Hexachlorobenzene	U		0.00372	0.0215	1	08/02/2024 00:24	WG2332911
Heptachlor	U		0.00460	0.0215	1	08/02/2024 00:24	WG2332911
Heptachlor epoxide	U		0.00365	0.0215	1	08/02/2024 00:24	WG2332911
Methoxychlor	U		0.00521	0.0215	1	08/02/2024 00:24	WG2332911
Toxaphene	U		0.133	0.430	1	08/02/2024 00:24	WG2332911
(S) Decachlorobiphenyl	*94.2*			*10.0-135*		*08/02/2024 00:24*	WG2332911
(S) Tetrachloro-m-xylene	*92.5*			*10.0-139*		*08/02/2024 00:24*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.9		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0461		0.0202	0.0450	1	07/24/2024 08:56	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	0.787	J	0.612	2.25	1	08/01/2024 16:00	WG2333245
Arsenic	8.35		0.583	2.25	1	08/01/2024 16:00	WG2333245
Barium	311		0.0958	0.562	1	08/01/2024 16:00	WG2333245
Beryllium	0.591		0.0354	0.225	1	08/01/2024 16:00	WG2333245
Cadmium	0.147	J	0.0530	0.562	1	08/01/2024 16:00	WG2333245
Chromium	83.0		0.150	1.12	1	08/01/2024 16:00	WG2333245
Cobalt	19.1		0.0912	1.12	1	08/01/2024 16:00	WG2333245
Copper	35.6		0.450	2.25	1	08/01/2024 16:00	WG2333245
Lead	24.2		0.234	0.562	1	08/01/2024 16:00	WG2333245
Molybdenum	0.440	J	0.123	0.562	1	08/01/2024 16:00	WG2333245
Nickel	127		0.148	2.25	1	08/01/2024 16:00	WG2333245
Selenium	U		0.859	2.25	1	08/01/2024 16:00	WG2333245
Silver	U		0.143	1.12	1	08/01/2024 16:00	WG2333245
Thallium	U		0.443	2.25	1	08/01/2024 16:00	WG2333245
Vanadium	68.4		0.569	2.25	1	08/01/2024 16:00	WG2333245
Zinc	73.2		0.936	5.62	1	08/01/2024 16:00	WG2333245

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.75	B J	1.04	3.13	25	07/26/2024 20:13	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*07/26/2024 20:13*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		8.24	45.0	10	07/26/2024 21:57	WG2330416
C22-C32 Hydrocarbons	38.1	J	15.0	45.0	10	07/26/2024 21:57	WG2330416
C32-C40 Hydrocarbons	89.0		15.0	45.0	10	07/26/2024 21:57	WG2330416
(S) o-Terphenyl	*79.4*			*18.0-148*		*07/26/2024 21:57*	WG2330416

Sample Narrative:

L1759109-11 WG2330416: Cannot run at lower dilution due to viscosity of extract.

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00789	0.0787	1	07/29/2024 11:04	WG2328785
Dalapon	U		0.0127	0.0787	1	07/29/2024 11:04	WG2328785
2,4-DB	U		0.0334	0.0787	1	07/29/2024 11:04	WG2328785
Dicamba	U		0.0177	0.0787	1	07/29/2024 11:04	WG2328785
Dichloroprop	U		0.0276	0.0787	1	07/29/2024 11:04	WG2328785
Dinoseb	U		0.00784	0.0787	1	07/29/2024 11:04	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.498	7.31	1	07/29/2024 11:04	WG2328785
MCPP	U		0.413	7.31	1	07/29/2024 11:04	WG2328785
2,4,5-T	U		0.00958	0.0787	1	07/29/2024 11:04	WG2328785
2,4,5-TP (Silvex)	U		0.0120	0.0787	1	07/29/2024 11:04	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*77.1*			*22.0-132*		*07/29/2024 11:04*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00423	0.0225	1	08/02/2024 00:33	WG2332911
Alpha BHC	U		0.00414	0.0225	1	08/02/2024 00:33	WG2332911
Beta BHC	U		0.00426	0.0225	1	08/02/2024 00:33	WG2332911
Delta BHC	U		0.00389	0.0225	1	08/02/2024 00:33	WG2332911
Gamma BHC	U		0.00387	0.0225	1	08/02/2024 00:33	WG2332911
Chlordane	U		0.116	0.337	1	08/02/2024 00:33	WG2332911
4,4-DDD	U		0.00416	0.0225	1	08/02/2024 00:33	WG2332911
4,4-DDE	U		0.00412	0.0225	1	08/02/2024 00:33	WG2332911
4,4-DDT	U		0.00705	0.0225	1	08/02/2024 00:33	WG2332911
Dieldrin	U		0.00387	0.0225	1	08/02/2024 00:33	WG2332911
Endosulfan I	U		0.00408	0.0225	1	08/02/2024 00:33	WG2332911
Endosulfan II	U		0.00377	0.0225	1	08/02/2024 00:33	WG2332911
Endosulfan sulfate	U		0.00409	0.0225	1	08/02/2024 00:33	WG2332911
Endrin	U	J4	0.00394	0.0225	1	08/02/2024 00:33	WG2332911
Endrin aldehyde	U		0.00381	0.0225	1	08/02/2024 00:33	WG2332911
Endrin ketone	U		0.00800	0.0225	1	08/02/2024 00:33	WG2332911
Hexachlorobenzene	U		0.00389	0.0225	1	08/02/2024 00:33	WG2332911
Heptachlor	U		0.00481	0.0225	1	08/02/2024 00:33	WG2332911
Heptachlor epoxide	U		0.00381	0.0225	1	08/02/2024 00:33	WG2332911
Methoxychlor	U		0.00544	0.0225	1	08/02/2024 00:33	WG2332911
Toxaphene	U		0.139	0.450	1	08/02/2024 00:33	WG2332911
(S) Decachlorobiphenyl	*78.6*			*10.0-135*		*08/02/2024 00:33*	WG2332911
(S) Tetrachloro-m-xylene	*92.0*			*10.0-139*		*08/02/2024 00:33*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.8		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0575		0.0207	0.0461	1	07/26/2024 15:17	WG2329227

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.627	2.31	1	07/26/2024 19:00	WG2329748
Arsenic	6.65		0.597	2.31	1	07/26/2024 19:00	WG2329748
Barium	301		0.0982	0.576	1	07/26/2024 19:00	WG2329748
Beryllium	0.545		0.0363	0.231	1	07/26/2024 19:00	WG2329748
Cadmium	0.198	J	0.0543	0.576	1	07/26/2024 19:00	WG2329748
Chromium	65.8		0.153	1.15	1	07/26/2024 19:00	WG2329748
Cobalt	16.0		0.0935	1.15	1	07/26/2024 19:00	WG2329748
Copper	29.1		0.461	2.31	1	07/26/2024 19:00	WG2329748
Lead	15.2		0.240	0.576	1	07/26/2024 19:00	WG2329748
Molybdenum	0.353	J	0.126	0.576	1	07/26/2024 19:00	WG2329748
Nickel	106		0.152	2.31	1	07/26/2024 19:00	WG2329748
Selenium	3.03		0.881	2.31	1	07/26/2024 19:00	WG2329748
Silver	0.789	J	0.146	1.15	1	07/26/2024 19:00	WG2329748
Thallium	U		0.454	2.31	1	07/26/2024 19:00	WG2329748
Vanadium	52.7		0.583	2.31	1	07/26/2024 19:00	WG2329748
Zinc	58.8		0.959	5.76	1	07/26/2024 19:00	WG2329748

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.99	B J	1.10	3.32	25.5	07/26/2024 20:35	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*07/26/2024 20:35*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		8.45	46.1	10	07/26/2024 22:39	WG2330416
C22-C32 Hydrocarbons	50.6		15.3	46.1	10	07/26/2024 22:39	WG2330416
C32-C40 Hydrocarbons	78.3		15.3	46.1	10	07/26/2024 22:39	WG2330416
(S) o-Terphenyl	*88.5*			*18.0-148*		*07/26/2024 22:39*	WG2330416

Sample Narrative:

L1759109-12 WG2330416: Cannot run at lower dilution due to viscosity of extract.

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00809	0.0807	1	07/29/2024 11:15	WG2328785
Dalapon	U		0.0130	0.0807	1	07/29/2024 11:15	WG2328785
2,4-DB	U		0.0342	0.0807	1	07/29/2024 11:15	WG2328785
Dicamba	U		0.0181	0.0807	1	07/29/2024 11:15	WG2328785
Dichloroprop	U		0.0282	0.0807	1	07/29/2024 11:15	WG2328785
Dinoseb	U		0.00803	0.0807	1	07/29/2024 11:15	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.511	7.49	1	07/29/2024 11:15	WG2328785
MCPP	U		0.423	7.49	1	07/29/2024 11:15	WG2328785
2,4,5-T	U		0.00982	0.0807	1	07/29/2024 11:15	WG2328785
2,4,5-TP (Silvex)	U		0.0123	0.0807	1	07/29/2024 11:15	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*71.5*			*22.0-132*		*07/29/2024 11:15*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00433	0.0231	1	08/01/2024 22:38	WG2332911
Alpha BHC	U		0.00424	0.0231	1	08/01/2024 22:38	WG2332911
Beta BHC	U		0.00437	0.0231	1	08/01/2024 22:38	WG2332911
Delta BHC	U		0.00399	0.0231	1	08/01/2024 22:38	WG2332911
Gamma BHC	U		0.00396	0.0231	1	08/01/2024 22:38	WG2332911
Chlordane	U		0.119	0.346	1	08/01/2024 22:38	WG2332911
4,4-DDD	U		0.00426	0.0231	1	08/01/2024 22:38	WG2332911
4,4-DDE	U		0.00422	0.0231	1	08/01/2024 22:38	WG2332911
4,4-DDT	U		0.00723	0.0231	1	08/01/2024 22:38	WG2332911
Dieldrin	U		0.00396	0.0231	1	08/01/2024 22:38	WG2332911
Endosulfan I	U		0.00418	0.0231	1	08/01/2024 22:38	WG2332911
Endosulfan II	U		0.00386	0.0231	1	08/01/2024 22:38	WG2332911
Endosulfan sulfate	U		0.00420	0.0231	1	08/01/2024 22:38	WG2332911
Endrin	U	J4	0.00403	0.0231	1	08/01/2024 22:38	WG2332911
Endrin aldehyde	U		0.00391	0.0231	1	08/01/2024 22:38	WG2332911
Endrin ketone	U		0.00819	0.0231	1	08/01/2024 22:38	WG2332911
Hexachlorobenzene	U		0.00399	0.0231	1	08/01/2024 22:38	WG2332911
Heptachlor	U		0.00493	0.0231	1	08/01/2024 22:38	WG2332911
Heptachlor epoxide	U		0.00391	0.0231	1	08/01/2024 22:38	WG2332911
Methoxychlor	U		0.00558	0.0231	1	08/01/2024 22:38	WG2332911
Toxaphene	U		0.143	0.461	1	08/01/2024 22:38	WG2332911
(S) Decachlorobiphenyl	*82.5*			*10.0-135*		*08/01/2024 22:38*	WG2332911
(S) Tetrachloro-m-xylene	*90.4*			*10.0-139*		*08/01/2024 22:38*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.0		1	07/24/2024 05:46	WG2328909

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3	0.0578	0.0792	1.17	07/27/2024 14:46	WG2331009
Acrylonitrile	U		0.00572	0.0198	1.17	07/27/2024 14:46	WG2331009
Benzene	0.000792	J	0.000740	0.00158	1.17	07/27/2024 14:46	WG2331009
Bromobenzene	U		0.00142	0.0198	1.17	07/27/2024 14:46	WG2331009
Bromodichloromethane	U		0.00115	0.00397	1.17	07/27/2024 14:46	WG2331009
Bromoform	U		0.00186	0.0397	1.17	07/27/2024 14:46	WG2331009
Bromomethane	U		0.00312	0.0198	1.17	07/27/2024 14:46	WG2331009
n-Butylbenzene	U		0.00832	0.0198	1.17	07/27/2024 14:46	WG2331009
sec-Butylbenzene	U		0.00457	0.0198	1.17	07/27/2024 14:46	WG2331009
tert-Butylbenzene	U		0.00309	0.00792	1.17	07/27/2024 14:46	WG2331009
Carbon tetrachloride	U		0.00142	0.00792	1.17	07/27/2024 14:46	WG2331009
Chlorobenzene	U		0.000333	0.00397	1.17	07/27/2024 14:46	WG2331009
Chlorodibromomethane	U		0.000970	0.00397	1.17	07/27/2024 14:46	WG2331009
Chloroethane	U		0.00270	0.00792	1.17	07/27/2024 14:46	WG2331009
Chloroform	U		0.00164	0.00397	1.17	07/27/2024 14:46	WG2331009
Chloromethane	U		0.00690	0.0198	1.17	07/27/2024 14:46	WG2331009
2-Chlorotoluene	U		0.00137	0.00397	1.17	07/27/2024 14:46	WG2331009
4-Chlorotoluene	U		0.000714	0.00792	1.17	07/27/2024 14:46	WG2331009
1,2-Dibromo-3-Chloropropane	U		0.00618	0.0397	1.17	07/27/2024 14:46	WG2331009
1,2-Dibromoethane	U		0.00103	0.00397	1.17	07/27/2024 14:46	WG2331009
Dibromomethane	U		0.00119	0.00792	1.17	07/27/2024 14:46	WG2331009
1,2-Dichlorobenzene	U		0.000673	0.00792	1.17	07/27/2024 14:46	WG2331009
1,3-Dichlorobenzene	U		0.000951	0.00792	1.17	07/27/2024 14:46	WG2331009
1,4-Dichlorobenzene	U		0.00111	0.00792	1.17	07/27/2024 14:46	WG2331009
Dichlorodifluoromethane	U		0.00255	0.00792	1.17	07/27/2024 14:46	WG2331009
1,1-Dichloroethane	U		0.000778	0.00397	1.17	07/27/2024 14:46	WG2331009
1,2-Dichloroethane	U		0.00103	0.00397	1.17	07/27/2024 14:46	WG2331009
1,1-Dichloroethene	U		0.000960	0.00397	1.17	07/27/2024 14:46	WG2331009
cis-1,2-Dichloroethene	U		0.00116	0.00397	1.17	07/27/2024 14:46	WG2331009
trans-1,2-Dichloroethene	U		0.00165	0.00792	1.17	07/27/2024 14:46	WG2331009
1,2-Dichloropropane	U		0.00225	0.00792	1.17	07/27/2024 14:46	WG2331009
1,1-Dichloropropene	U		0.00128	0.00397	1.17	07/27/2024 14:46	WG2331009
1,3-Dichloropropane	U		0.000794	0.00792	1.17	07/27/2024 14:46	WG2331009
cis-1,3-Dichloropropene	U		0.00120	0.00397	1.17	07/27/2024 14:46	WG2331009
trans-1,3-Dichloropropene	U		0.00180	0.00792	1.17	07/27/2024 14:46	WG2331009
2,2-Dichloropropane	U		0.00218	0.00397	1.17	07/27/2024 14:46	WG2331009
Di-isopropyl ether	U		0.000650	0.00158	1.17	07/27/2024 14:46	WG2331009
Ethylbenzene	U		0.00117	0.00397	1.17	07/27/2024 14:46	WG2331009
Hexachloro-1,3-butadiene	U		0.00951	0.0397	1.17	07/27/2024 14:46	WG2331009
Isopropylbenzene	U		0.000673	0.00397	1.17	07/27/2024 14:46	WG2331009
p-Isopropyltoluene	U		0.00404	0.00792	1.17	07/27/2024 14:46	WG2331009
2-Butanone (MEK)	U		0.101	0.158	1.17	07/27/2024 14:46	WG2331009
Methylene Chloride	U		0.0105	0.0397	1.17	07/27/2024 14:46	WG2331009
4-Methyl-2-pentanone (MIBK)	U		0.00362	0.0397	1.17	07/27/2024 14:46	WG2331009
Methyl tert-butyl ether	U		0.000554	0.00158	1.17	07/27/2024 14:46	WG2331009
Naphthalene	U		0.00773	0.0198	1.17	07/27/2024 14:46	WG2331009
n-Propylbenzene	U		0.00150	0.00792	1.17	07/27/2024 14:46	WG2331009
Styrene	U		0.000363	0.0198	1.17	07/27/2024 14:46	WG2331009
1,1,1,2-Tetrachloroethane	U		0.00150	0.00397	1.17	07/27/2024 14:46	WG2331009
1,1,2,2-Tetrachloroethane	U		0.00110	0.00397	1.17	07/27/2024 14:46	WG2331009

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.00119	0.00397	1.17	07/27/2024 14:46	WG2331009
Tetrachloroethene	U		0.00142	0.00397	1.17	07/27/2024 14:46	WG2331009
Toluene	0.00257	J	0.00206	0.00792	1.17	07/27/2024 14:46	WG2331009
1,2,3-Trichlorobenzene	U		0.0116	0.0198	1.17	07/27/2024 14:46	WG2331009
1,2,4-Trichlorobenzene	U		0.00698	0.0198	1.17	07/27/2024 14:46	WG2331009
1,1,1-Trichloroethane	U		0.00146	0.00397	1.17	07/27/2024 14:46	WG2331009
1,1,2-Trichloroethane	U		0.000946	0.00397	1.17	07/27/2024 14:46	WG2331009
Trichloroethene	U		0.000925	0.00158	1.17	07/27/2024 14:46	WG2331009
Trichlorofluoromethane	U		0.00131	0.00397	1.17	07/27/2024 14:46	WG2331009
1,2,3-Trichloropropane	U		0.00257	0.0198	1.17	07/27/2024 14:46	WG2331009
1,2,4-Trimethylbenzene	U		0.00251	0.00792	1.17	07/27/2024 14:46	WG2331009
1,2,3-Trimethylbenzene	U		0.00251	0.00792	1.17	07/27/2024 14:46	WG2331009
1,3,5-Trimethylbenzene	U		0.00317	0.00792	1.17	07/27/2024 14:46	WG2331009
Vinyl chloride	U		0.00184	0.00397	1.17	07/27/2024 14:46	WG2331009
Xylenes, Total	U		0.00140	0.0103	1.17	07/27/2024 14:46	WG2331009
(S) Toluene-d8	*101*			*75.0-131*		*07/27/2024 14:46*	WG2331009
(S) 4-Bromofluorobenzene	*91.1*			*67.0-138*		*07/27/2024 14:46*	WG2331009
(S) 1,2-Dichloroethane-d4	*84.8*			*70.0-130*		*07/27/2024 14:46*	WG2331009

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0141	0.0405	1	07/31/2024 14:47	WG2332763
PCB 1221	U		0.0141	0.0405	1	07/31/2024 14:47	WG2332763
PCB 1232	U		0.0141	0.0405	1	07/31/2024 14:47	WG2332763
PCB 1242	U		0.0141	0.0405	1	07/31/2024 14:47	WG2332763
PCB 1248	U		0.00879	0.0202	1	07/31/2024 14:47	WG2332763
PCB 1254	U		0.00879	0.0202	1	07/31/2024 14:47	WG2332763
PCB 1260	U		0.00879	0.0202	1	07/31/2024 14:47	WG2332763
(S) Decachlorobiphenyl	*97.6*			*10.0-135*		*07/31/2024 14:47*	WG2332763
(S) Tetrachloro-m-xylene	*102*			*10.0-139*		*07/31/2024 14:47*	WG2332763

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.0642	0.397	10	07/29/2024 17:10	WG2330670
Acenaphthylene	U		0.0559	0.397	10	07/29/2024 17:10	WG2330670
Anthracene	U		0.0706	0.397	10	07/29/2024 17:10	WG2330670
Benzo(a)anthracene	0.0922	J	0.0699	0.397	10	07/29/2024 17:10	WG2330670
Benzo(b)fluoranthene	0.202	J	0.0740	0.397	10	07/29/2024 17:10	WG2330670
Benzo(k)fluoranthene	0.0740	J	0.0705	0.397	10	07/29/2024 17:10	WG2330670
Benzo(g,h,i)perylene	0.115	J	0.0725	0.397	10	07/29/2024 17:10	WG2330670
Benzo(a)pyrene	0.115	J	0.0737	0.397	10	07/29/2024 17:10	WG2330670
Bis(2-chlorethoxy)methane	U		0.119	3.97	10	07/29/2024 17:10	WG2330670
Bis(2-chloroethyl)ether	U	C3	0.131	3.97	10	07/29/2024 17:10	WG2330670
2,2-Oxybis(1-Chloropropane)	U		0.172	3.97	10	07/29/2024 17:10	WG2330670
4-Bromophenyl-phenylether	U		0.139	3.97	10	07/29/2024 17:10	WG2330670
2-Chloronaphthalene	U		0.0697	0.397	10	07/29/2024 17:10	WG2330670
4-Chlorophenyl-phenylether	U		0.138	3.97	10	07/29/2024 17:10	WG2330670
Chrysene	0.145	J	0.0788	0.397	10	07/29/2024 17:10	WG2330670
Dibenz(a,h)anthracene	U		0.110	0.397	10	07/29/2024 17:10	WG2330670
3,3-Dichlorobenzidine	U		0.146	3.97	10	07/29/2024 17:10	WG2330670
2,4-Dinitrotoluene	U		0.114	3.97	10	07/29/2024 17:10	WG2330670
2,6-Dinitrotoluene	U		0.130	3.97	10	07/29/2024 17:10	WG2330670
Fluoranthene	0.208	J	0.0716	0.397	10	07/29/2024 17:10	WG2330670

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Fluorene	U		0.0646	0.397	10	07/29/2024 17:10	WG2330670
Hexachlorobenzene	U		0.141	3.97	10	07/29/2024 17:10	WG2330670
Hexachloro-1,3-butadiene	U		0.133	3.97	10	07/29/2024 17:10	WG2330670
Hexachlorocyclopentadiene	U		0.208	3.97	10	07/29/2024 17:10	WG2330670
Hexachloroethane	U		0.156	3.97	10	07/29/2024 17:10	WG2330670
Indeno(1,2,3-cd)pyrene	0.115	J	0.112	0.397	10	07/29/2024 17:10	WG2330670
Isophorone	U		0.121	3.97	10	07/29/2024 17:10	WG2330670
Naphthalene	U		0.0996	0.397	10	07/29/2024 17:10	WG2330670
Nitrobenzene	U		0.138	3.97	10	07/29/2024 17:10	WG2330670
n-Nitrosodimethylamine	U		0.588	3.97	10	07/29/2024 17:10	WG2330670
n-Nitrosodiphenylamine	U		0.300	3.97	10	07/29/2024 17:10	WG2330670
n-Nitrosodi-n-propylamine	U		0.132	3.97	10	07/29/2024 17:10	WG2330670
Phenanthrene	U		0.0787	0.397	10	07/29/2024 17:10	WG2330670
Pyridine	U		0.262	3.97	10	07/29/2024 17:10	WG2330670
Benzylbutyl phthalate	U		0.124	3.97	10	07/29/2024 17:10	WG2330670
Bis(2-ethylhexyl)phthalate	U		0.503	3.97	10	07/29/2024 17:10	WG2330670
Di-n-butyl phthalate	U		0.136	3.97	10	07/29/2024 17:10	WG2330670
Diethyl phthalate	U		0.131	3.97	10	07/29/2024 17:10	WG2330670
Dimethyl phthalate	U		0.841	3.97	10	07/29/2024 17:10	WG2330670
Di-n-octyl phthalate	U		0.268	3.97	10	07/29/2024 17:10	WG2330670
Pyrene	0.167	J	0.0772	0.397	10	07/29/2024 17:10	WG2330670
1,2,4-Trichlorobenzene	U		0.124	3.97	10	07/29/2024 17:10	WG2330670
4-Chloro-3-methylphenol	U		0.129	3.97	10	07/29/2024 17:10	WG2330670
2-Chlorophenol	U		0.131	3.97	10	07/29/2024 17:10	WG2330670
2,4-Dichlorophenol	U		0.116	3.97	10	07/29/2024 17:10	WG2330670
2,4-Dimethylphenol	U		0.104	3.97	10	07/29/2024 17:10	WG2330670
4,6-Dinitro-2-methylphenol	U		0.899	3.97	10	07/29/2024 17:10	WG2330670
2,4-Dinitrophenol	U		0.928	3.97	10	07/29/2024 17:10	WG2330670
2-Methylphenol	U		0.119	3.97	10	07/29/2024 17:10	WG2330670
3&4-Methyl Phenol	U		0.124	3.97	10	07/29/2024 17:10	WG2330670
2-Nitrophenol	U		0.142	3.97	10	07/29/2024 17:10	WG2330670
4-Nitrophenol	U		0.124	3.97	10	07/29/2024 17:10	WG2330670
Pentachlorophenol	U		0.107	3.97	10	07/29/2024 17:10	WG2330670
Phenol	U		0.160	3.97	10	07/29/2024 17:10	WG2330670
2,4,6-Trichlorophenol	U		0.127	3.97	10	07/29/2024 17:10	WG2330670
2,4,5-Trichlorophenol	U		0.135	3.97	10	07/29/2024 17:10	WG2330670
(S) 2-Fluorophenol	*67.1*			*12.0-120*		*07/29/2024 17:10*	WG2330670
(S) Phenol-d5	*61.4*			*10.0-120*		*07/29/2024 17:10*	WG2330670
(S) Nitrobenzene-d5	*54.3*			*10.0-122*		*07/29/2024 17:10*	WG2330670
(S) 2-Fluorobiphenyl	*66.7*			*15.0-120*		*07/29/2024 17:10*	WG2330670
(S) 2,4,6-Tribromophenol	*65.4*			*10.0-127*		*07/29/2024 17:10*	WG2330670
(S) p-Terphenyl-d14	*81.5*			*10.0-120*		*07/29/2024 17:10*	WG2330670

Sample Narrative:

L1759109-13 WG2330670: Dilution due to matrix impact during extract concentration procedure

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00707	J	0.00274	0.00715	1	07/31/2024 23:32	WG2332403
Acenaphthene	U		0.00249	0.00715	1	07/31/2024 23:32	WG2332403
Acenaphthylene	U		0.00257	0.00715	1	07/31/2024 23:32	WG2332403
Benzo(a)anthracene	0.106		0.00206	0.00715	1	07/31/2024 23:32	WG2332403
Benzo(a)pyrene	0.136		0.00213	0.00715	1	07/31/2024 23:32	WG2332403
Benzo(b)fluoranthene	0.245		0.00182	0.00715	1	07/31/2024 23:32	WG2332403
Benzo(g,h,i)perylene	0.130		0.00211	0.00715	1	07/31/2024 23:32	WG2332403

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(k)fluoranthene	0.0852		0.00256	0.00715	1	07/31/2024 23:32	WG2332403
Chrysene	0.181		0.00276	0.00715	1	07/31/2024 23:32	WG2332403
Dibenz(a,h)anthracene	0.0250		0.00205	0.00715	1	07/31/2024 23:32	WG2332403
Fluoranthene	0.310		0.00270	0.00715	1	07/31/2024 23:32	WG2332403
Fluorene	U		0.00244	0.00715	1	07/31/2024 23:32	WG2332403
Indeno(1,2,3-cd)pyrene	0.131		0.00216	0.00715	1	07/31/2024 23:32	WG2332403
Naphthalene	U		0.00486	0.0238	1	07/31/2024 23:32	WG2332403
Phenanthrene	0.100		0.00275	0.00715	1	07/31/2024 23:32	WG2332403
Pyrene	0.212		0.00238	0.00715	1	07/31/2024 23:32	WG2332403
1-Methylnaphthalene	U		0.00535	0.0238	1	07/31/2024 23:32	WG2332403
2-Methylnaphthalene	U		0.00509	0.0238	1	07/31/2024 23:32	WG2332403
2-Chloronaphthalene	U		0.00555	0.0238	1	07/31/2024 23:32	WG2332403
(S) p-Terphenyl-d14	*67.5*			*23.0-120*		*07/31/2024 23:32*	WG2332403
(S) Nitrobenzene-d5	*78.6*			*14.0-149*		*07/31/2024 23:32*	WG2332403
(S) 2-Fluorobiphenyl	*70.0*			*34.0-125*		*07/31/2024 23:32*	WG2332403

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.8		1	07/24/2024 05:46	WG2328909

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3	0.0452	0.0620	1	07/27/2024 15:06	WG2331009
Acrylonitrile	U		0.00447	0.0155	1	07/27/2024 15:06	WG2331009
Benzene	U		0.000579	0.00124	1	07/27/2024 15:06	WG2331009
Bromobenzene	U		0.00112	0.0155	1	07/27/2024 15:06	WG2331009
Bromodichloromethane	U		0.000898	0.00310	1	07/27/2024 15:06	WG2331009
Bromoform	U		0.00145	0.0310	1	07/27/2024 15:06	WG2331009
Bromomethane	U		0.00244	0.0155	1	07/27/2024 15:06	WG2331009
n-Butylbenzene	U		0.00651	0.0155	1	07/27/2024 15:06	WG2331009
sec-Butylbenzene	U		0.00357	0.0155	1	07/27/2024 15:06	WG2331009
tert-Butylbenzene	U		0.00242	0.00620	1	07/27/2024 15:06	WG2331009
Carbon tetrachloride	U		0.00111	0.00620	1	07/27/2024 15:06	WG2331009
Chlorobenzene	U		0.000260	0.00310	1	07/27/2024 15:06	WG2331009
Chlorodibromomethane	U		0.000758	0.00310	1	07/27/2024 15:06	WG2331009
Chloroethane	U		0.00211	0.00620	1	07/27/2024 15:06	WG2331009
Chloroform	U		0.00128	0.00310	1	07/27/2024 15:06	WG2331009
Chloromethane	U		0.00539	0.0155	1	07/27/2024 15:06	WG2331009
2-Chlorotoluene	U		0.00107	0.00310	1	07/27/2024 15:06	WG2331009
4-Chlorotoluene	U		0.000558	0.00620	1	07/27/2024 15:06	WG2331009
1,2-Dibromo-3-Chloropropane	U		0.00483	0.0310	1	07/27/2024 15:06	WG2331009
1,2-Dibromoethane	U		0.000803	0.00310	1	07/27/2024 15:06	WG2331009
Dibromomethane	U		0.000929	0.00620	1	07/27/2024 15:06	WG2331009
1,2-Dichlorobenzene	U		0.000527	0.00620	1	07/27/2024 15:06	WG2331009
1,3-Dichlorobenzene	U		0.000743	0.00620	1	07/27/2024 15:06	WG2331009
1,4-Dichlorobenzene	U		0.000867	0.00620	1	07/27/2024 15:06	WG2331009
Dichlorodifluoromethane	U		0.00199	0.00620	1	07/27/2024 15:06	WG2331009
1,1-Dichloroethane	U		0.000608	0.00310	1	07/27/2024 15:06	WG2331009
1,2-Dichloroethane	U		0.000804	0.00310	1	07/27/2024 15:06	WG2331009
1,1-Dichloroethene	U		0.000751	0.00310	1	07/27/2024 15:06	WG2331009
cis-1,2-Dichloroethene	U		0.000909	0.00310	1	07/27/2024 15:06	WG2331009
trans-1,2-Dichloroethene	U		0.00129	0.00620	1	07/27/2024 15:06	WG2331009
1,2-Dichloropropane	U		0.00176	0.00620	1	07/27/2024 15:06	WG2331009
1,1-Dichloropropene	U		0.00100	0.00310	1	07/27/2024 15:06	WG2331009
1,3-Dichloropropane	U		0.000621	0.00620	1	07/27/2024 15:06	WG2331009
cis-1,3-Dichloropropene	U		0.000938	0.00310	1	07/27/2024 15:06	WG2331009
trans-1,3-Dichloropropene	U		0.00141	0.00620	1	07/27/2024 15:06	WG2331009
2,2-Dichloropropane	U		0.00171	0.00310	1	07/27/2024 15:06	WG2331009
Di-isopropyl ether	U		0.000508	0.00124	1	07/27/2024 15:06	WG2331009
Ethylbenzene	U		0.000913	0.00310	1	07/27/2024 15:06	WG2331009
Hexachloro-1,3-butadiene	U		0.00743	0.0310	1	07/27/2024 15:06	WG2331009
Isopropylbenzene	U		0.000527	0.00310	1	07/27/2024 15:06	WG2331009
p-Isopropyltoluene	U		0.00316	0.00620	1	07/27/2024 15:06	WG2331009
2-Butanone (MEK)	U		0.0787	0.124	1	07/27/2024 15:06	WG2331009
Methylene Chloride	U		0.00823	0.0310	1	07/27/2024 15:06	WG2331009
4-Methyl-2-pentanone (MIBK)	U		0.00283	0.0310	1	07/27/2024 15:06	WG2331009
Methyl tert-butyl ether	U		0.000434	0.00124	1	07/27/2024 15:06	WG2331009
Naphthalene	U		0.00605	0.0155	1	07/27/2024 15:06	WG2331009
n-Propylbenzene	U		0.00118	0.00620	1	07/27/2024 15:06	WG2331009
Styrene	U		0.000284	0.0155	1	07/27/2024 15:06	WG2331009
1,1,1,2-Tetrachloroethane	U		0.00117	0.00310	1	07/27/2024 15:06	WG2331009
1,1,2,2-Tetrachloroethane	U		0.000861	0.00310	1	07/27/2024 15:06	WG2331009

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000934	0.00310	1	07/27/2024 15:06	WG2331009
Tetrachloroethene	U		0.00111	0.00310	1	07/27/2024 15:06	WG2331009
Toluene	U		0.00161	0.00620	1	07/27/2024 15:06	WG2331009
1,2,3-Trichlorobenzene	U		0.00908	0.0155	1	07/27/2024 15:06	WG2331009
1,2,4-Trichlorobenzene	U		0.00545	0.0155	1	07/27/2024 15:06	WG2331009
1,1,1-Trichloroethane	U		0.00114	0.00310	1	07/27/2024 15:06	WG2331009
1,1,2-Trichloroethane	U		0.000740	0.00310	1	07/27/2024 15:06	WG2331009
Trichloroethene	U		0.000724	0.00124	1	07/27/2024 15:06	WG2331009
Trichlorofluoromethane	U		0.00102	0.00310	1	07/27/2024 15:06	WG2331009
1,2,3-Trichloropropane	U		0.00201	0.0155	1	07/27/2024 15:06	WG2331009
1,2,4-Trimethylbenzene	U		0.00196	0.00620	1	07/27/2024 15:06	WG2331009
1,2,3-Trimethylbenzene	U		0.00196	0.00620	1	07/27/2024 15:06	WG2331009
1,3,5-Trimethylbenzene	U		0.00248	0.00620	1	07/27/2024 15:06	WG2331009
Vinyl chloride	U		0.00144	0.00310	1	07/27/2024 15:06	WG2331009
Xylenes, Total	U		0.00109	0.00805	1	07/27/2024 15:06	WG2331009
(S) Toluene-d8	*98.3*			*75.0-131*		*07/27/2024 15:06*	WG2331009
(S) 4-Bromofluorobenzene	*89.8*			*67.0-138*		*07/27/2024 15:06*	WG2331009
(S) 1,2-Dichloroethane-d4	*81.3*			*70.0-130*		*07/27/2024 15:06*	WG2331009

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0131	0.0378	1	07/31/2024 16:34	WG2332763
PCB 1221	U		0.0131	0.0378	1	07/31/2024 16:34	WG2332763
PCB 1232	U		0.0131	0.0378	1	07/31/2024 16:34	WG2332763
PCB 1242	U		0.0131	0.0378	1	07/31/2024 16:34	WG2332763
PCB 1248	U		0.00821	0.0189	1	07/31/2024 16:34	WG2332763
PCB 1254	U		0.00821	0.0189	1	07/31/2024 16:34	WG2332763
PCB 1260	U		0.00821	0.0189	1	07/31/2024 16:34	WG2332763
(S) Decachlorobiphenyl	*98.6*			*10.0-135*		*07/31/2024 16:34*	WG2332763
(S) Tetrachloro-m-xylene	*101*			*10.0-139*		*07/31/2024 16:34*	WG2332763

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.0120	0.0741	2	07/31/2024 01:00	WG2330671
Acenaphthylene	U		0.0104	0.0741	2	07/31/2024 01:00	WG2330671
Anthracene	U		0.0132	0.0741	2	07/31/2024 01:00	WG2330671
Benzo(a)anthracene	0.204		0.0130	0.0741	2	07/31/2024 01:00	WG2330671
Benzo(b)fluoranthene	0.519	J5	0.0138	0.0741	2	07/31/2024 01:00	WG2330671
Benzo(k)fluoranthene	0.174		0.0131	0.0741	2	07/31/2024 01:00	WG2330671
Benzo(g,h,i)perylene	0.297		0.0136	0.0741	2	07/31/2024 01:00	WG2330671
Benzo(a)pyrene	0.281		0.0138	0.0741	2	07/31/2024 01:00	WG2330671
Bis(2-chlorethoxy)methane	U		0.0223	0.741	2	07/31/2024 01:00	WG2330671
Bis(2-chloroethyl)ether	U		0.0245	0.741	2	07/31/2024 01:00	WG2330671
2,2-Oxybis(1-Chloropropane)	U		0.0321	0.741	2	07/31/2024 01:00	WG2330671
4-Bromophenyl-phenylether	U		0.0260	0.741	2	07/31/2024 01:00	WG2330671
2-Chloronaphthalene	U		0.0130	0.0741	2	07/31/2024 01:00	WG2330671
4-Chlorophenyl-phenylether	U		0.0258	0.741	2	07/31/2024 01:00	WG2330671
Chrysene	0.305		0.0147	0.0741	2	07/31/2024 01:00	WG2330671
Dibenz(a,h)anthracene	0.0590	J	0.0206	0.0741	2	07/31/2024 01:00	WG2330671
3,3-Dichlorobenzidine	U	J3	0.0274	0.741	2	07/31/2024 01:00	WG2330671
2,4-Dinitrotoluene	U		0.0213	0.741	2	07/31/2024 01:00	WG2330671
2,6-Dinitrotoluene	U		0.0243	0.741	2	07/31/2024 01:00	WG2330671
Fluoranthene	0.463		0.0134	0.0741	2	07/31/2024 01:00	WG2330671

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Fluorene	U		0.0120	0.0741	2	07/31/2024 01:00	WG2330671
Hexachlorobenzene	U		0.0263	0.741	2	07/31/2024 01:00	WG2330671
Hexachloro-1,3-butadiene	U		0.0249	0.741	2	07/31/2024 01:00	WG2330671
Hexachlorocyclopentadiene	U		0.0390	0.741	2	07/31/2024 01:00	WG2330671
Hexachloroethane	U		0.0292	0.741	2	07/31/2024 01:00	WG2330671
Indeno(1,2,3-cd)pyrene	0.288		0.0209	0.0741	2	07/31/2024 01:00	WG2330671
Isophorone	U		0.0227	0.741	2	07/31/2024 01:00	WG2330671
Naphthalene	U		0.0186	0.0741	2	07/31/2024 01:00	WG2330671
Nitrobenzene	U		0.0258	0.741	2	07/31/2024 01:00	WG2330671
n-Nitrosodimethylamine	U	C3	0.110	0.741	2	07/31/2024 01:00	WG2330671
n-Nitrosodiphenylamine	U		0.0561	0.741	2	07/31/2024 01:00	WG2330671
n-Nitrosodi-n-propylamine	U		0.0247	0.741	2	07/31/2024 01:00	WG2330671
Phenanthrene	0.137		0.0147	0.0741	2	07/31/2024 01:00	WG2330671
Pyridine	U		0.0490	0.741	2	07/31/2024 01:00	WG2330671
Benzylbutyl phthalate	U		0.0232	0.741	2	07/31/2024 01:00	WG2330671
Bis(2-ethylhexyl)phthalate	U		0.0939	0.741	2	07/31/2024 01:00	WG2330671
Di-n-butyl phthalate	U		0.0254	0.741	2	07/31/2024 01:00	WG2330671
Diethyl phthalate	U		0.0245	0.741	2	07/31/2024 01:00	WG2330671
Dimethyl phthalate	U		0.157	0.741	2	07/31/2024 01:00	WG2330671
Di-n-octyl phthalate	U		0.0501	0.741	2	07/31/2024 01:00	WG2330671
Pyrene	0.371		0.0145	0.0741	2	07/31/2024 01:00	WG2330671
1,2,4-Trichlorobenzene	U		0.0232	0.741	2	07/31/2024 01:00	WG2330671
4-Chloro-3-methylphenol	U		0.0240	0.741	2	07/31/2024 01:00	WG2330671
2-Chlorophenol	U		0.0245	0.741	2	07/31/2024 01:00	WG2330671
2,4-Dichlorophenol	U		0.0216	0.741	2	07/31/2024 01:00	WG2330671
2,4-Dimethylphenol	U		0.0194	0.741	2	07/31/2024 01:00	WG2330671
4,6-Dinitro-2-methylphenol	U		0.168	0.741	2	07/31/2024 01:00	WG2330671
2,4-Dinitrophenol	U		0.174	0.741	2	07/31/2024 01:00	WG2330671
2-Methylphenol	U		0.0223	0.741	2	07/31/2024 01:00	WG2330671
3&4-Methyl Phenol	U		0.0232	0.741	2	07/31/2024 01:00	WG2330671
2-Nitrophenol	U		0.0265	0.741	2	07/31/2024 01:00	WG2330671
4-Nitrophenol	U		0.0232	0.741	2	07/31/2024 01:00	WG2330671
Pentachlorophenol	U		0.0199	0.741	2	07/31/2024 01:00	WG2330671
Phenol	U		0.0298	0.741	2	07/31/2024 01:00	WG2330671
2,4,6-Trichlorophenol	U		0.0238	0.741	2	07/31/2024 01:00	WG2330671
2,4,5-Trichlorophenol	U		0.0252	0.741	2	07/31/2024 01:00	WG2330671
(S) 2-Fluorophenol	*74.6*			*12.0-120*		*07/31/2024 01:00*	WG2330671
(S) Phenol-d5	*71.1*			*10.0-120*		*07/31/2024 01:00*	WG2330671
(S) Nitrobenzene-d5	*69.4*			*10.0-122*		*07/31/2024 01:00*	WG2330671
(S) 2-Fluorobiphenyl	*72.2*			*15.0-120*		*07/31/2024 01:00*	WG2330671
(S) 2,4,6-Tribromophenol	*54.7*			*10.0-127*		*07/31/2024 01:00*	WG2330671
(S) p-Terphenyl-d14	*74.1*			*10.0-120*		*07/31/2024 01:00*	WG2330671

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.0120		0.00256	0.00668	1	07/31/2024 23:50	WG2332403
Acenaphthene	U		0.00233	0.00668	1	07/31/2024 23:50	WG2332403
Acenaphthylene	0.00421	J	0.00240	0.00668	1	07/31/2024 23:50	WG2332403
Benzo(a)anthracene	0.205		0.00193	0.00668	1	07/31/2024 23:50	WG2332403
Benzo(a)pyrene	0.255		0.00199	0.00668	1	07/31/2024 23:50	WG2332403
Benzo(b)fluoranthene	0.462		0.00170	0.00668	1	07/31/2024 23:50	WG2332403
Benzo(g,h,i)perylene	0.247		0.00197	0.00668	1	07/31/2024 23:50	WG2332403
Benzo(k)fluoranthene	0.151		0.00239	0.00668	1	07/31/2024 23:50	WG2332403
Chrysene	0.329		0.00258	0.00668	1	07/31/2024 23:50	WG2332403
Dibenz(a,h)anthracene	0.0483		0.00191	0.00668	1	07/31/2024 23:50	WG2332403

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Fluoranthene	0.525		0.00253	0.00668	1	07/31/2024 23:50	WG2332403
Fluorene	0.00259	J	0.00228	0.00668	1	07/31/2024 23:50	WG2332403
Indeno(1,2,3-cd)pyrene	0.248		0.00201	0.00668	1	07/31/2024 23:50	WG2332403
Naphthalene	U		0.00454	0.0223	1	07/31/2024 23:50	WG2332403
Phenanthrene	0.141		0.00257	0.00668	1	07/31/2024 23:50	WG2332403
Pyrene	0.360		0.00223	0.00668	1	07/31/2024 23:50	WG2332403
1-Methylnaphthalene	U		0.00500	0.0223	1	07/31/2024 23:50	WG2332403
2-Methylnaphthalene	U		0.00475	0.0223	1	07/31/2024 23:50	WG2332403
2-Chloronaphthalene	U		0.00519	0.0223	1	07/31/2024 23:50	WG2332403
(S) p-Terphenyl-d14	*66.6*			*23.0-120*		*07/31/2024 23:50*	WG2332403
(S) Nitrobenzene-d5	*87.8*			*14.0-149*		*07/31/2024 23:50*	WG2332403
(S) 2-Fluorobiphenyl	*87.3*			*34.0-125*		*07/31/2024 23:50*	WG2332403

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.3		1	07/24/2024 05:46	WG2328909

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3	0.0466	0.0639	1	07/27/2024 15:25	WG2331009
Acrylonitrile	U		0.00461	0.0160	1	07/27/2024 15:25	WG2331009
Benzene	U		0.000597	0.00128	1	07/27/2024 15:25	WG2331009
Bromobenzene	U		0.00115	0.0160	1	07/27/2024 15:25	WG2331009
Bromodichloromethane	U		0.000926	0.00319	1	07/27/2024 15:25	WG2331009
Bromoform	U		0.00149	0.0319	1	07/27/2024 15:25	WG2331009
Bromomethane	U		0.00252	0.0160	1	07/27/2024 15:25	WG2331009
n-Butylbenzene	U		0.00671	0.0160	1	07/27/2024 15:25	WG2331009
sec-Butylbenzene	U		0.00368	0.0160	1	07/27/2024 15:25	WG2331009
tert-Butylbenzene	U		0.00249	0.00639	1	07/27/2024 15:25	WG2331009
Carbon tetrachloride	U		0.00115	0.00639	1	07/27/2024 15:25	WG2331009
Chlorobenzene	U		0.000268	0.00319	1	07/27/2024 15:25	WG2331009
Chlorodibromomethane	U		0.000782	0.00319	1	07/27/2024 15:25	WG2331009
Chloroethane	U		0.00217	0.00639	1	07/27/2024 15:25	WG2331009
Chloroform	U		0.00132	0.00319	1	07/27/2024 15:25	WG2331009
Chloromethane	U		0.00556	0.0160	1	07/27/2024 15:25	WG2331009
2-Chlorotoluene	U		0.00111	0.00319	1	07/27/2024 15:25	WG2331009
4-Chlorotoluene	U		0.000575	0.00639	1	07/27/2024 15:25	WG2331009
1,2-Dibromo-3-Chloropropane	U		0.00498	0.0319	1	07/27/2024 15:25	WG2331009
1,2-Dibromoethane	U		0.000828	0.00319	1	07/27/2024 15:25	WG2331009
Dibromomethane	U		0.000958	0.00639	1	07/27/2024 15:25	WG2331009
1,2-Dichlorobenzene	U		0.000543	0.00639	1	07/27/2024 15:25	WG2331009
1,3-Dichlorobenzene	U		0.000767	0.00639	1	07/27/2024 15:25	WG2331009
1,4-Dichlorobenzene	U		0.000894	0.00639	1	07/27/2024 15:25	WG2331009
Dichlorodifluoromethane	U		0.00206	0.00639	1	07/27/2024 15:25	WG2331009
1,1-Dichloroethane	U		0.000627	0.00319	1	07/27/2024 15:25	WG2331009
1,2-Dichloroethane	U		0.000829	0.00319	1	07/27/2024 15:25	WG2331009
1,1-Dichloroethene	U		0.000774	0.00319	1	07/27/2024 15:25	WG2331009
cis-1,2-Dichloroethene	U		0.000938	0.00319	1	07/27/2024 15:25	WG2331009
trans-1,2-Dichloroethene	U		0.00133	0.00639	1	07/27/2024 15:25	WG2331009
1,2-Dichloropropane	U		0.00181	0.00639	1	07/27/2024 15:25	WG2331009
1,1-Dichloropropene	U		0.00103	0.00319	1	07/27/2024 15:25	WG2331009
1,3-Dichloropropane	U		0.000640	0.00639	1	07/27/2024 15:25	WG2331009
cis-1,3-Dichloropropene	U		0.000967	0.00319	1	07/27/2024 15:25	WG2331009
trans-1,3-Dichloropropene	U		0.00146	0.00639	1	07/27/2024 15:25	WG2331009
2,2-Dichloropropane	U		0.00176	0.00319	1	07/27/2024 15:25	WG2331009
Di-isopropyl ether	U		0.000524	0.00128	1	07/27/2024 15:25	WG2331009
Ethylbenzene	U		0.000942	0.00319	1	07/27/2024 15:25	WG2331009
Hexachloro-1,3-butadiene	U		0.00767	0.0319	1	07/27/2024 15:25	WG2331009
Isopropylbenzene	U		0.000543	0.00319	1	07/27/2024 15:25	WG2331009
p-Isopropyltoluene	U		0.00326	0.00639	1	07/27/2024 15:25	WG2331009
2-Butanone (MEK)	U		0.0811	0.128	1	07/27/2024 15:25	WG2331009
Methylene Chloride	U		0.00848	0.0319	1	07/27/2024 15:25	WG2331009
4-Methyl-2-pentanone (MIBK)	U		0.00291	0.0319	1	07/27/2024 15:25	WG2331009
Methyl tert-butyl ether	U		0.000447	0.00128	1	07/27/2024 15:25	WG2331009
Naphthalene	U		0.00624	0.0160	1	07/27/2024 15:25	WG2331009
n-Propylbenzene	U		0.00121	0.00639	1	07/27/2024 15:25	WG2331009
Styrene	U		0.000293	0.0160	1	07/27/2024 15:25	WG2331009
1,1,1,2-Tetrachloroethane	U		0.00121	0.00319	1	07/27/2024 15:25	WG2331009
1,1,2,2-Tetrachloroethane	U		0.000888	0.00319	1	07/27/2024 15:25	WG2331009

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000963	0.00319	1	07/27/2024 15:25	WG2331009
Tetrachloroethene	U		0.00114	0.00319	1	07/27/2024 15:25	WG2331009
Toluene	U		0.00166	0.00639	1	07/27/2024 15:25	WG2331009
1,2,3-Trichlorobenzene	U		0.00937	0.0160	1	07/27/2024 15:25	WG2331009
1,2,4-Trichlorobenzene	U		0.00562	0.0160	1	07/27/2024 15:25	WG2331009
1,1,1-Trichloroethane	U		0.00118	0.00319	1	07/27/2024 15:25	WG2331009
1,1,2-Trichloroethane	U		0.000763	0.00319	1	07/27/2024 15:25	WG2331009
Trichloroethene	U		0.000746	0.00128	1	07/27/2024 15:25	WG2331009
Trichlorofluoromethane	U		0.00106	0.00319	1	07/27/2024 15:25	WG2331009
1,2,3-Trichloropropane	U		0.00207	0.0160	1	07/27/2024 15:25	WG2331009
1,2,4-Trimethylbenzene	U		0.00202	0.00639	1	07/27/2024 15:25	WG2331009
1,2,3-Trimethylbenzene	U		0.00202	0.00639	1	07/27/2024 15:25	WG2331009
1,3,5-Trimethylbenzene	U		0.00256	0.00639	1	07/27/2024 15:25	WG2331009
Vinyl chloride	U		0.00148	0.00319	1	07/27/2024 15:25	WG2331009
Xylenes, Total	U		0.00112	0.00831	1	07/27/2024 15:25	WG2331009
(S) Toluene-d8	*98.9*			*75.0-131*		*07/27/2024 15:25*	WG2331009
(S) 4-Bromofluorobenzene	*94.1*			*67.0-138*		*07/27/2024 15:25*	WG2331009
(S) 1,2-Dichloroethane-d4	*81.1*			*70.0-130*		*07/27/2024 15:25*	WG2331009

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0134	0.0385	1	07/31/2024 16:43	WG2332763
PCB 1221	U		0.0134	0.0385	1	07/31/2024 16:43	WG2332763
PCB 1232	U		0.0134	0.0385	1	07/31/2024 16:43	WG2332763
PCB 1242	U		0.0134	0.0385	1	07/31/2024 16:43	WG2332763
PCB 1248	U		0.00836	0.0193	1	07/31/2024 16:43	WG2332763
PCB 1254	U		0.00836	0.0193	1	07/31/2024 16:43	WG2332763
PCB 1260	U		0.00836	0.0193	1	07/31/2024 16:43	WG2332763
(S) Decachlorobiphenyl	*80.1*			*10.0-135*		*07/31/2024 16:43*	WG2332763
(S) Tetrachloro-m-xylene	*89.7*			*10.0-139*		*07/31/2024 16:43*	WG2332763

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.0122	0.0755	2	07/29/2024 21:42	WG2330671
Acenaphthylene	U		0.0106	0.0755	2	07/29/2024 21:42	WG2330671
Anthracene	U		0.0135	0.0755	2	07/29/2024 21:42	WG2330671
Benzo(a)anthracene	0.135		0.0133	0.0755	2	07/29/2024 21:42	WG2330671
Benzo(b)fluoranthene	0.393		0.0140	0.0755	2	07/29/2024 21:42	WG2330671
Benzo(k)fluoranthene	0.136		0.0134	0.0755	2	07/29/2024 21:42	WG2330671
Benzo(g,h,i)perylene	0.153		0.0138	0.0755	2	07/29/2024 21:42	WG2330671
Benzo(a)pyrene	0.201		0.0140	0.0755	2	07/29/2024 21:42	WG2330671
Bis(2-chlorethoxy)methane	U		0.0227	0.755	2	07/29/2024 21:42	WG2330671
Bis(2-chloroethyl)ether	U		0.0249	0.755	2	07/29/2024 21:42	WG2330671
2,2-Oxybis(1-Chloropropane)	U		0.0326	0.755	2	07/29/2024 21:42	WG2330671
4-Bromophenyl-phenylether	U		0.0265	0.755	2	07/29/2024 21:42	WG2330671
2-Chloronaphthalene	U		0.0133	0.0755	2	07/29/2024 21:42	WG2330671
4-Chlorophenyl-phenylether	U		0.0263	0.755	2	07/29/2024 21:42	WG2330671
Chrysene	0.197		0.0150	0.0755	2	07/29/2024 21:42	WG2330671
Dibenz(a,h)anthracene	0.0366	J	0.0210	0.0755	2	07/29/2024 21:42	WG2330671
3,3-Dichlorobenzidine	U		0.0279	0.755	2	07/29/2024 21:42	WG2330671
2,4-Dinitrotoluene	U		0.0216	0.755	2	07/29/2024 21:42	WG2330671
2,6-Dinitrotoluene	U		0.0247	0.755	2	07/29/2024 21:42	WG2330671
Fluoranthene	0.428		0.0136	0.0755	2	07/29/2024 21:42	WG2330671

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Fluorene	U		0.0122	0.0755	2	07/29/2024 21:42	WG2330671
Hexachlorobenzene	U		0.0267	0.755	2	07/29/2024 21:42	WG2330671
Hexachloro-1,3-butadiene	U		0.0254	0.755	2	07/29/2024 21:42	WG2330671
Hexachlorocyclopentadiene	U		0.0397	0.755	2	07/29/2024 21:42	WG2330671
Hexachloroethane	U		0.0297	0.755	2	07/29/2024 21:42	WG2330671
Indeno(1,2,3-cd)pyrene	0.170		0.0213	0.0755	2	07/29/2024 21:42	WG2330671
Isophorone	U		0.0231	0.755	2	07/29/2024 21:42	WG2330671
Naphthalene	U		0.0189	0.0755	2	07/29/2024 21:42	WG2330671
Nitrobenzene	U		0.0263	0.755	2	07/29/2024 21:42	WG2330671
n-Nitrosodimethylamine	U		0.112	0.755	2	07/29/2024 21:42	WG2330671
n-Nitrosodiphenylamine	U		0.0571	0.755	2	07/29/2024 21:42	WG2330671
n-Nitrosodi-n-propylamine	U		0.0252	0.755	2	07/29/2024 21:42	WG2330671
Phenanthrene	0.143		0.0150	0.0755	2	07/29/2024 21:42	WG2330671
Pyridine	U		0.0499	0.755	2	07/29/2024 21:42	WG2330671
Benzylbutyl phthalate	U		0.0236	0.755	2	07/29/2024 21:42	WG2330671
Bis(2-ethylhexyl)phthalate	U		0.0956	0.755	2	07/29/2024 21:42	WG2330671
Di-n-butyl phthalate	U		0.0258	0.755	2	07/29/2024 21:42	WG2330671
Diethyl phthalate	U		0.0249	0.755	2	07/29/2024 21:42	WG2330671
Dimethyl phthalate	U		0.160	0.755	2	07/29/2024 21:42	WG2330671
Di-n-octyl phthalate	U		0.0510	0.755	2	07/29/2024 21:42	WG2330671
Pyrene	0.289		0.0147	0.0755	2	07/29/2024 21:42	WG2330671
1,2,4-Trichlorobenzene	U		0.0236	0.755	2	07/29/2024 21:42	WG2330671
4-Chloro-3-methylphenol	U		0.0245	0.755	2	07/29/2024 21:42	WG2330671
2-Chlorophenol	U		0.0249	0.755	2	07/29/2024 21:42	WG2330671
2,4-Dichlorophenol	U		0.0220	0.755	2	07/29/2024 21:42	WG2330671
2,4-Dimethylphenol	U		0.0197	0.755	2	07/29/2024 21:42	WG2330671
4,6-Dinitro-2-methylphenol	U		0.171	0.755	2	07/29/2024 21:42	WG2330671
2,4-Dinitrophenol	U		0.177	0.755	2	07/29/2024 21:42	WG2330671
2-Methylphenol	U		0.0227	0.755	2	07/29/2024 21:42	WG2330671
3&4-Methyl Phenol	U		0.0236	0.755	2	07/29/2024 21:42	WG2330671
2-Nitrophenol	U		0.0270	0.755	2	07/29/2024 21:42	WG2330671
4-Nitrophenol	U		0.0236	0.755	2	07/29/2024 21:42	WG2330671
Pentachlorophenol	U		0.0203	0.755	2	07/29/2024 21:42	WG2330671
Phenol	U		0.0304	0.755	2	07/29/2024 21:42	WG2330671
2,4,6-Trichlorophenol	U		0.0242	0.755	2	07/29/2024 21:42	WG2330671
2,4,5-Trichlorophenol	U		0.0256	0.755	2	07/29/2024 21:42	WG2330671
(S) 2-Fluorophenol	*68.7*			*12.0-120*		*07/29/2024 21:42*	WG2330671
(S) Phenol-d5	*65.6*			*10.0-120*		*07/29/2024 21:42*	WG2330671
(S) Nitrobenzene-d5	*54.6*			*10.0-122*		*07/29/2024 21:42*	WG2330671
(S) 2-Fluorobiphenyl	*67.5*			*15.0-120*		*07/29/2024 21:42*	WG2330671
(S) 2,4,6-Tribromophenol	*69.5*			*10.0-127*		*07/29/2024 21:42*	WG2330671
(S) p-Terphenyl-d14	*66.3*			*10.0-120*		*07/29/2024 21:42*	WG2330671

Sample Narrative:

L1759109-15 WG2330671: Dilution due to matrix impact during extract concentration procedure.

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00903		0.00261	0.00680	1	08/01/2024 00:07	WG2332403
Acenaphthene	U		0.00237	0.00680	1	08/01/2024 00:07	WG2332403
Acenaphthylene	0.00297	J	0.00245	0.00680	1	08/01/2024 00:07	WG2332403
Benzo(a)anthracene	0.143		0.00196	0.00680	1	08/01/2024 00:07	WG2332403
Benzo(a)pyrene	0.174		0.00203	0.00680	1	08/01/2024 00:07	WG2332403
Benzo(b)fluoranthene	0.315		0.00173	0.00680	1	08/01/2024 00:07	WG2332403
Benzo(g,h,i)perylene	0.171		0.00201	0.00680	1	08/01/2024 00:07	WG2332403

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(k)fluoranthene	0.109		0.00244	0.00680	1	08/01/2024 00:07	WG2332403
Chrysene	0.233		0.00263	0.00680	1	08/01/2024 00:07	WG2332403
Dibenz(a,h)anthracene	0.0334		0.00195	0.00680	1	08/01/2024 00:07	WG2332403
Fluoranthene	0.407		0.00257	0.00680	1	08/01/2024 00:07	WG2332403
Fluorene	U		0.00232	0.00680	1	08/01/2024 00:07	WG2332403
Indeno(1,2,3-cd)pyrene	0.165		0.00205	0.00680	1	08/01/2024 00:07	WG2332403
Naphthalene	U		0.00462	0.0227	1	08/01/2024 00:07	WG2332403
Phenanthrene	0.105		0.00262	0.00680	1	08/01/2024 00:07	WG2332403
Pyrene	0.276		0.00227	0.00680	1	08/01/2024 00:07	WG2332403
1-Methylnaphthalene	U		0.00509	0.0227	1	08/01/2024 00:07	WG2332403
2-Methylnaphthalene	U		0.00484	0.0227	1	08/01/2024 00:07	WG2332403
2-Chloronaphthalene	U		0.00528	0.0227	1	08/01/2024 00:07	WG2332403
(S) p-Terphenyl-d14	*84.3*			*23.0-120*		*08/01/2024 00:07*	WG2332403
(S) Nitrobenzene-d5	*95.2*			*14.0-149*		*08/01/2024 00:07*	WG2332403
(S) 2-Fluorobiphenyl	*94.3*			*34.0-125*		*08/01/2024 00:07*	WG2332403

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.1		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0229	J	0.0207	0.0459	1	07/26/2024 15:20	WG2329227

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.625	2.30	1	07/26/2024 19:02	WG2329748
Arsenic	5.93		0.595	2.30	1	07/26/2024 19:02	WG2329748
Barium	302		0.0978	0.574	1	07/26/2024 19:02	WG2329748
Beryllium	0.593		0.0362	0.230	1	07/26/2024 19:02	WG2329748
Cadmium	0.121	J	0.0541	0.574	1	07/26/2024 19:02	WG2329748
Chromium	46.6		0.153	1.15	1	07/26/2024 19:02	WG2329748
Cobalt	9.51		0.0931	1.15	1	07/26/2024 19:02	WG2329748
Copper	18.6		0.459	2.30	1	07/26/2024 19:02	WG2329748
Lead	10.1		0.239	0.574	1	07/26/2024 19:02	WG2329748
Molybdenum	0.235	J	0.125	0.574	1	07/26/2024 19:02	WG2329748
Nickel	40.1		0.152	2.30	1	07/26/2024 19:02	WG2329748
Selenium	2.80		0.877	2.30	1	07/26/2024 19:02	WG2329748
Silver	0.875	J	0.146	1.15	1	07/26/2024 19:02	WG2329748
Thallium	U		0.452	2.30	1	07/26/2024 19:02	WG2329748
Vanadium	51.7		0.581	2.30	1	07/26/2024 19:02	WG2329748
Zinc	40.2		0.955	5.74	1	07/26/2024 19:02	WG2329748

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.84	B J	1.15	3.47	27	07/26/2024 20:58	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*07/26/2024 20:58*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	1.69	J	0.842	4.59	1	07/26/2024 19:50	WG2330416
C22-C32 Hydrocarbons	2.61	J	1.53	4.59	1	07/26/2024 19:50	WG2330416
C32-C40 Hydrocarbons	2.41	J	1.53	4.59	1	07/26/2024 19:50	WG2330416
(S) o-Terphenyl	*87.5*			*18.0-148*		*07/26/2024 19:50*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00806	0.0804	1	07/29/2024 11:25	WG2328785
Dalapon	U		0.0130	0.0804	1	07/29/2024 11:25	WG2328785
2,4-DB	U		0.0341	0.0804	1	07/29/2024 11:25	WG2328785
Dicamba	U		0.0180	0.0804	1	07/29/2024 11:25	WG2328785
Dichloroprop	U		0.0281	0.0804	1	07/29/2024 11:25	WG2328785
Dinoseb	U		0.00800	0.0804	1	07/29/2024 11:25	WG2328785
MCPA	U		0.509	7.46	1	07/29/2024 11:25	WG2328785
MCPP	U		0.421	7.46	1	07/29/2024 11:25	WG2328785
2,4,5-T	U		0.00978	0.0804	1	07/29/2024 11:25	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0123	0.0804	1	07/29/2024 11:25	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*72.9*			*22.0-132*		*07/29/2024 11:25*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00432	0.0230	1	08/01/2024 22:47	WG2332911
Alpha BHC	U		0.00422	0.0230	1	08/01/2024 22:47	WG2332911
Beta BHC	U		0.00435	0.0230	1	08/01/2024 22:47	WG2332911
Delta BHC	U		0.00397	0.0230	1	08/01/2024 22:47	WG2332911
Gamma BHC	U		0.00395	0.0230	1	08/01/2024 22:47	WG2332911
Chlordane	U		0.118	0.344	1	08/01/2024 22:47	WG2332911
4,4-DDD	U		0.00425	0.0230	1	08/01/2024 22:47	WG2332911
4,4-DDE	U		0.00420	0.0230	1	08/01/2024 22:47	WG2332911
4,4-DDT	U		0.00720	0.0230	1	08/01/2024 22:47	WG2332911
Dieldrin	U		0.00395	0.0230	1	08/01/2024 22:47	WG2332911
Endosulfan I	U		0.00417	0.0230	1	08/01/2024 22:47	WG2332911
Endosulfan II	U		0.00385	0.0230	1	08/01/2024 22:47	WG2332911
Endosulfan sulfate	U		0.00418	0.0230	1	08/01/2024 22:47	WG2332911
Endrin	U	J4	0.00402	0.0230	1	08/01/2024 22:47	WG2332911
Endrin aldehyde	U		0.00389	0.0230	1	08/01/2024 22:47	WG2332911
Endrin ketone	U		0.00816	0.0230	1	08/01/2024 22:47	WG2332911
Hexachlorobenzene	U		0.00397	0.0230	1	08/01/2024 22:47	WG2332911
Heptachlor	U		0.00491	0.0230	1	08/01/2024 22:47	WG2332911
Heptachlor epoxide	U		0.00389	0.0230	1	08/01/2024 22:47	WG2332911
Methoxychlor	U		0.00556	0.0230	1	08/01/2024 22:47	WG2332911
Toxaphene	U		0.142	0.459	1	08/01/2024 22:47	WG2332911
(S) Decachlorobiphenyl	*78.6*			*10.0-135*		*08/01/2024 22:47*	WG2332911
(S) Tetrachloro-m-xylene	*95.5*			*10.0-139*		*08/01/2024 22:47*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.2		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0204	0.0454	1	07/24/2024 08:58	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	0.637	J	0.617	2.27	1	07/25/2024 10:08	WG2329437
Arsenic	5.44		0.587	2.27	1	07/25/2024 10:08	WG2329437
Barium	341		0.0966	0.567	1	07/25/2024 10:08	WG2329437
Beryllium	0.470		0.0357	0.227	1	07/25/2024 10:08	WG2329437
Cadmium	0.271	J	0.0534	0.567	1	07/25/2024 10:08	WG2329437
Chromium	53.0		0.151	1.13	1	07/25/2024 10:08	WG2329437
Cobalt	12.9		0.0920	1.13	1	07/25/2024 10:08	WG2329437
Copper	21.0		0.454	2.27	1	07/25/2024 10:08	WG2329437
Lead	10.4		0.236	0.567	1	07/25/2024 10:08	WG2329437
Molybdenum	0.175	J	0.124	0.567	1	07/25/2024 10:08	WG2329437
Nickel	41.7		0.150	2.27	1	07/25/2024 10:08	WG2329437
Selenium	U		0.866	2.27	1	07/25/2024 10:08	WG2329437
Silver	U		0.144	1.13	1	07/25/2024 10:08	WG2329437
Thallium	U		0.447	2.27	1	07/25/2024 10:08	WG2329437
Vanadium	55.3		0.574	2.27	1	07/25/2024 10:08	WG2329437
Zinc	44.4		0.944	5.67	1	07/25/2024 10:08	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.95	B J	1.26	3.80	30.5	07/26/2024 21:20	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*07/26/2024 21:20*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	0.866	J	0.831	4.54	1	07/26/2024 20:04	WG2330416
C22-C32 Hydrocarbons	2.37	J	1.51	4.54	1	07/26/2024 20:04	WG2330416
C32-C40 Hydrocarbons	2.42	J	1.51	4.54	1	07/26/2024 20:04	WG2330416
(S) o-Terphenyl	*74.1*			*18.0-148*		*07/26/2024 20:04*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00796	0.0794	1	07/29/2024 11:35	WG2328785
Dalapon	U		0.0128	0.0794	1	07/29/2024 11:35	WG2328785
2,4-DB	U		0.0337	0.0794	1	07/29/2024 11:35	WG2328785
Dicamba	U		0.0178	0.0794	1	07/29/2024 11:35	WG2328785
Dichloroprop	U		0.0278	0.0794	1	07/29/2024 11:35	WG2328785
Dinoseb	U		0.00790	0.0794	1	07/29/2024 11:35	WG2328785
MCPA	U		0.502	7.37	1	07/29/2024 11:35	WG2328785
MCPP	U		0.416	7.37	1	07/29/2024 11:35	WG2328785
2,4,5-T	U		0.00966	0.0794	1	07/29/2024 11:35	WG2328785

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0121	0.0794	1	07/29/2024 11:35	WG2328785
(S) 2,4-Dichlorophenyl Acetic Acid	*67.3*			*22.0-132*		*07/29/2024 11:35*	WG2328785

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00426	0.0227	1	08/01/2024 22:56	WG2332911
Alpha BHC	U		0.00417	0.0227	1	08/01/2024 22:56	WG2332911
Beta BHC	U		0.00430	0.0227	1	08/01/2024 22:56	WG2332911
Delta BHC	U		0.00392	0.0227	1	08/01/2024 22:56	WG2332911
Gamma BHC	U		0.00390	0.0227	1	08/01/2024 22:56	WG2332911
Chlordane	U		0.117	0.340	1	08/01/2024 22:56	WG2332911
4,4-DDD	U		0.00420	0.0227	1	08/01/2024 22:56	WG2332911
4,4-DDE	U		0.00415	0.0227	1	08/01/2024 22:56	WG2332911
4,4-DDT	U		0.00711	0.0227	1	08/01/2024 22:56	WG2332911
Dieldrin	U		0.00390	0.0227	1	08/01/2024 22:56	WG2332911
Endosulfan I	U		0.00412	0.0227	1	08/01/2024 22:56	WG2332911
Endosulfan II	U		0.00380	0.0227	1	08/01/2024 22:56	WG2332911
Endosulfan sulfate	U		0.00413	0.0227	1	08/01/2024 22:56	WG2332911
Endrin	U	J4	0.00397	0.0227	1	08/01/2024 22:56	WG2332911
Endrin aldehyde	U		0.00384	0.0227	1	08/01/2024 22:56	WG2332911
Endrin ketone	U		0.00806	0.0227	1	08/01/2024 22:56	WG2332911
Hexachlorobenzene	U		0.00392	0.0227	1	08/01/2024 22:56	WG2332911
Heptachlor	U		0.00485	0.0227	1	08/01/2024 22:56	WG2332911
Heptachlor epoxide	U		0.00384	0.0227	1	08/01/2024 22:56	WG2332911
Methoxychlor	U		0.00549	0.0227	1	08/01/2024 22:56	WG2332911
Toxaphene	U		0.141	0.454	1	08/01/2024 22:56	WG2332911
(S) Decachlorobiphenyl	*70.0*			*10.0-135*		*08/01/2024 22:56*	WG2332911
(S) Tetrachloro-m-xylene	*89.4*			*10.0-139*		*08/01/2024 22:56*	WG2332911

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.6		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0313	J	0.0190	0.0423	1	07/24/2024 09:01	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	0.998	J	0.575	2.11	1	07/25/2024 10:11	WG2329437
Arsenic	3.09		0.548	2.11	1	07/25/2024 10:11	WG2329437
Barium	288		0.0901	0.529	1	07/25/2024 10:11	WG2329437
Beryllium	0.670		0.0333	0.211	1	07/25/2024 10:11	WG2329437
Cadmium	0.168	J	0.0498	0.529	1	07/25/2024 10:11	WG2329437
Chromium	56.5		0.141	1.06	1	07/25/2024 10:11	WG2329437
Cobalt	12.2		0.0858	1.06	1	07/25/2024 10:11	WG2329437
Copper	27.4		0.423	2.11	1	07/25/2024 10:11	WG2329437
Lead	15.0		0.220	0.529	1	07/25/2024 10:11	WG2329437
Molybdenum	0.141	J	0.115	0.529	1	07/25/2024 10:11	WG2329437
Nickel	50.8		0.140	2.11	1	07/25/2024 10:11	WG2329437
Selenium	1.48	J	0.808	2.11	1	07/25/2024 10:11	WG2329437
Silver	U		0.134	1.06	1	07/25/2024 10:11	WG2329437
Thallium	U		0.417	2.11	1	07/25/2024 10:11	WG2329437
Vanadium	57.2		0.535	2.11	1	07/25/2024 10:11	WG2329437
Zinc	50.8		0.880	5.29	1	07/25/2024 10:11	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.14	B J	0.960	2.89	26	07/26/2024 21:43	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*07/26/2024 21:43*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	2.89	J	0.775	4.23	1	07/26/2024 20:19	WG2330416
C22-C32 Hydrocarbons	17.1		1.41	4.23	1	07/26/2024 20:19	WG2330416
C32-C40 Hydrocarbons	20.0		1.41	4.23	1	07/26/2024 20:19	WG2330416
(S) o-Terphenyl	*86.9*			*18.0-148*		*07/26/2024 20:19*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00742	0.0740	1	07/29/2024 23:11	WG2328786
Dalapon	U		0.0119	0.0740	1	07/29/2024 23:11	WG2328786
2,4-DB	U		0.0314	0.0740	1	07/29/2024 23:11	WG2328786
Dicamba	U		0.0166	0.0740	1	07/29/2024 23:11	WG2328786
Dichloroprop	U		0.0259	0.0740	1	07/29/2024 23:11	WG2328786
Dinoseb	U		0.00737	0.0740	1	07/29/2024 23:11	WG2328786
MCPA	U		0.468	6.87	1	07/29/2024 23:11	WG2328786
MCPP	U		0.388	6.87	1	07/29/2024 23:11	WG2328786
2,4,5-T	U		0.00901	0.0740	1	07/29/2024 23:11	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0113	0.0740	1	07/29/2024 23:11	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*68.5*			*22.0-132*		*07/29/2024 23:11*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00398	0.0211	1	08/01/2024 23:22	WG2332911
Alpha BHC	U		0.00389	0.0211	1	08/01/2024 23:22	WG2332911
Beta BHC	U		0.00401	0.0211	1	08/01/2024 23:22	WG2332911
Delta BHC	U		0.00366	0.0211	1	08/01/2024 23:22	WG2332911
Gamma BHC	U		0.00364	0.0211	1	08/01/2024 23:22	WG2332911
Chlordane	U		0.109	0.317	1	08/01/2024 23:22	WG2332911
4,4-DDD	U		0.00391	0.0211	1	08/01/2024 23:22	WG2332911
4,4-DDE	U		0.00387	0.0211	1	08/01/2024 23:22	WG2332911
4,4-DDT	U		0.00663	0.0211	1	08/01/2024 23:22	WG2332911
Dieldrin	U		0.00364	0.0211	1	08/01/2024 23:22	WG2332911
Endosulfan I	U		0.00384	0.0211	1	08/01/2024 23:22	WG2332911
Endosulfan II	U		0.00354	0.0211	1	08/01/2024 23:22	WG2332911
Endosulfan sulfate	U		0.00385	0.0211	1	08/01/2024 23:22	WG2332911
Endrin	U	J4	0.00370	0.0211	1	08/01/2024 23:22	WG2332911
Endrin aldehyde	U		0.00358	0.0211	1	08/01/2024 23:22	WG2332911
Endrin ketone	U		0.00752	0.0211	1	08/01/2024 23:22	WG2332911
Hexachlorobenzene	U		0.00366	0.0211	1	08/01/2024 23:22	WG2332911
Heptachlor	U		0.00453	0.0211	1	08/01/2024 23:22	WG2332911
Heptachlor epoxide	U		0.00358	0.0211	1	08/01/2024 23:22	WG2332911
Methoxychlor	U		0.00512	0.0211	1	08/01/2024 23:22	WG2332911
Toxaphene	U		0.131	0.423	1	08/01/2024 23:22	WG2332911
(S) Decachlorobiphenyl	*73.7*			*10.0-135*		*08/01/2024 23:22*	WG2332911
(S) Tetrachloro-m-xylene	*90.5*			*10.0-139*		*08/01/2024 23:22*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.2		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U		0.0222	0.0492	1	07/24/2024 09:03	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	1.08	J J6	0.670	2.46	1	07/25/2024 11:55	WG2329452
Arsenic	3.43		0.638	2.46	1	07/25/2024 11:55	WG2329452
Barium	454	J6	0.105	0.615	1	07/25/2024 11:55	WG2329452
Beryllium	0.819		0.0388	0.246	1	07/25/2024 11:55	WG2329452
Cadmium	0.186	J	0.0580	0.615	1	07/25/2024 11:55	WG2329452
Chromium	69.9		0.164	1.23	1	07/25/2024 11:55	WG2329452
Cobalt	15.4		0.0998	1.23	1	07/25/2024 11:55	WG2329452
Copper	31.7		0.492	2.46	1	07/25/2024 11:55	WG2329452
Lead	13.7		0.256	0.615	1	07/25/2024 11:55	WG2329452
Molybdenum	0.499	J	0.134	0.615	1	07/25/2024 11:55	WG2329452
Nickel	60.9		0.162	2.46	1	07/25/2024 11:55	WG2329452
Selenium	1.00	J	0.940	2.46	1	07/25/2024 11:55	WG2329452
Silver	U		0.156	1.23	1	07/25/2024 11:55	WG2329452
Thallium	U		0.485	2.46	1	07/25/2024 11:55	WG2329452
Vanadium	80.4		0.623	2.46	1	07/25/2024 11:55	WG2329452
Zinc	61.6		1.02	6.15	1	07/25/2024 11:55	WG2329452

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	3.14	B J	1.22	3.67	25	07/26/2024 22:06	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 22:06*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	U		0.902	4.92	1	07/26/2024 18:39	WG2330416
C22-C32 Hydrocarbons	U		1.64	4.92	1	07/26/2024 18:39	WG2330416
C32-C40 Hydrocarbons	U		1.64	4.92	1	07/26/2024 18:39	WG2330416
(S) o-Terphenyl	*58.8*			*18.0-148*		*07/26/2024 18:39*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00864	0.0862	1	07/29/2024 23:52	WG2328786
Dalapon	U		0.0139	0.0862	1	07/29/2024 23:52	WG2328786
2,4-DB	U		0.0366	0.0862	1	07/29/2024 23:52	WG2328786
Dicamba	U		0.0193	0.0862	1	07/29/2024 23:52	WG2328786
Dichloroprop	U		0.0302	0.0862	1	07/29/2024 23:52	WG2328786
Dinoseb	U		0.00858	0.0862	1	07/29/2024 23:52	WG2328786
MCPA	U		0.545	8.00	1	07/29/2024 23:52	WG2328786
MCPP	U		0.452	8.00	1	07/29/2024 23:52	WG2328786
2,4,5-T	U		0.0105	0.0862	1	07/29/2024 23:52	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0132	0.0862	1	07/29/2024 23:52	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*59.3*			*22.0-132*		*07/29/2024 23:52*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00463	0.0246	1	08/01/2024 23:31	WG2332911
Alpha BHC	U		0.00453	0.0246	1	08/01/2024 23:31	WG2332911
Beta BHC	U		0.00466	0.0246	1	08/01/2024 23:31	WG2332911
Delta BHC	U		0.00426	0.0246	1	08/01/2024 23:31	WG2332911
Gamma BHC	U		0.00423	0.0246	1	08/01/2024 23:31	WG2332911
Chlordane	U		0.127	0.369	1	08/01/2024 23:31	WG2332911
4,4-DDD	U		0.00455	0.0246	1	08/01/2024 23:31	WG2332911
4,4-DDE	U		0.00450	0.0246	1	08/01/2024 23:31	WG2332911
4,4-DDT	U		0.00772	0.0246	1	08/01/2024 23:31	WG2332911
Dieldrin	U		0.00423	0.0246	1	08/01/2024 23:31	WG2332911
Endosulfan I	U		0.00447	0.0246	1	08/01/2024 23:31	WG2332911
Endosulfan II	U		0.00412	0.0246	1	08/01/2024 23:31	WG2332911
Endosulfan sulfate	U		0.00448	0.0246	1	08/01/2024 23:31	WG2332911
Endrin	U	J4	0.00431	0.0246	1	08/01/2024 23:31	WG2332911
Endrin aldehyde	U		0.00417	0.0246	1	08/01/2024 23:31	WG2332911
Endrin ketone	U		0.00875	0.0246	1	08/01/2024 23:31	WG2332911
Hexachlorobenzene	U		0.00426	0.0246	1	08/01/2024 23:31	WG2332911
Heptachlor	U		0.00527	0.0246	1	08/01/2024 23:31	WG2332911
Heptachlor epoxide	U		0.00417	0.0246	1	08/01/2024 23:31	WG2332911
Methoxychlor	U		0.00596	0.0246	1	08/01/2024 23:31	WG2332911
Toxaphene	U		0.153	0.492	1	08/01/2024 23:31	WG2332911
(S) Decachlorobiphenyl	*63.5*			*10.0-135*		*08/01/2024 23:31*	WG2332911
(S) Tetrachloro-m-xylene	*85.1*			*10.0-139*		*08/01/2024 23:31*	WG2332911

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.8		1	07/24/2024 05:46	WG2328909

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0424	J	0.0196	0.0435	1	07/24/2024 09:06	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	0.768	J	0.592	2.18	1	07/25/2024 10:14	WG2329437
Arsenic	4.34		0.564	2.18	1	07/25/2024 10:14	WG2329437
Barium	224		0.0928	0.544	1	07/25/2024 10:14	WG2329437
Beryllium	0.362		0.0343	0.218	1	07/25/2024 10:14	WG2329437
Cadmium	0.197	J	0.0513	0.544	1	07/25/2024 10:14	WG2329437
Chromium	66.6		0.145	1.09	1	07/25/2024 10:14	WG2329437
Cobalt	16.0		0.0883	1.09	1	07/25/2024 10:14	WG2329437
Copper	29.8		0.435	2.18	1	07/25/2024 10:14	WG2329437
Lead	14.8		0.226	0.544	1	07/25/2024 10:14	WG2329437
Molybdenum	0.306	J	0.119	0.544	1	07/25/2024 10:14	WG2329437
Nickel	121		0.144	2.18	1	07/25/2024 10:14	WG2329437
Selenium	1.41	J	0.832	2.18	1	07/25/2024 10:14	WG2329437
Silver	U		0.138	1.09	1	07/25/2024 10:14	WG2329437
Thallium	U		0.429	2.18	1	07/25/2024 10:14	WG2329437
Vanadium	47.4		0.551	2.18	1	07/25/2024 10:14	WG2329437
Zinc	58.2		0.906	5.44	1	07/25/2024 10:14	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	1.57	B J	0.985	2.97	25	07/26/2024 22:28	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*		*07/26/2024 22:28*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	3.77	J	1.60	8.71	2	07/26/2024 21:15	WG2330416
C22-C32 Hydrocarbons	29.2		2.90	8.71	2	07/26/2024 21:15	WG2330416
C32-C40 Hydrocarbons	45.7		2.90	8.71	2	07/26/2024 21:15	WG2330416
(S) o-Terphenyl	*100*			*18.0-148*		*07/26/2024 21:15*	WG2330416

Sample Narrative:

L1759109-20 WG2330416: Dilution due to matrix impact during extract concentration procedure.

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00764	0.0762	1	07/30/2024 00:02	WG2328786
Dalapon	U		0.0123	0.0762	1	07/30/2024 00:02	WG2328786
2,4-DB	U		0.0323	0.0762	1	07/30/2024 00:02	WG2328786
Dicamba	U		0.0171	0.0762	1	07/30/2024 00:02	WG2328786
Dichloroprop	U		0.0267	0.0762	1	07/30/2024 00:02	WG2328786
Dinoseb	U		0.00759	0.0762	1	07/30/2024 00:02	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
MCPA	U		0.482	7.08	1	07/30/2024 00:02	WG2328786
MCPP	U		0.400	7.08	1	07/30/2024 00:02	WG2328786
2,4,5-T	U		0.00928	0.0762	1	07/30/2024 00:02	WG2328786
2,4,5-TP (Silvex)	U		0.0116	0.0762	1	07/30/2024 00:02	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*59.0*			*22.0-132*		*07/30/2024 00:02*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00409	0.0218	1	08/02/2024 00:16	WG2332911
Alpha BHC	U		0.00401	0.0218	1	08/02/2024 00:16	WG2332911
Beta BHC	U		0.00413	0.0218	1	08/02/2024 00:16	WG2332911
Delta BHC	U		0.00377	0.0218	1	08/02/2024 00:16	WG2332911
Gamma BHC	U		0.00375	0.0218	1	08/02/2024 00:16	WG2332911
Chlordane	U		0.112	0.327	1	08/02/2024 00:16	WG2332911
4,4-DDD	U		0.00403	0.0218	1	08/02/2024 00:16	WG2332911
4,4-DDE	U		0.00398	0.0218	1	08/02/2024 00:16	WG2332911
4,4-DDT	U		0.00683	0.0218	1	08/02/2024 00:16	WG2332911
Dieldrin	U		0.00375	0.0218	1	08/02/2024 00:16	WG2332911
Endosulfan I	U		0.00395	0.0218	1	08/02/2024 00:16	WG2332911
Endosulfan II	U		0.00365	0.0218	1	08/02/2024 00:16	WG2332911
Endosulfan sulfate	U		0.00396	0.0218	1	08/02/2024 00:16	WG2332911
Endrin	U	J4	0.00381	0.0218	1	08/02/2024 00:16	WG2332911
Endrin aldehyde	U		0.00369	0.0218	1	08/02/2024 00:16	WG2332911
Endrin ketone	U		0.00774	0.0218	1	08/02/2024 00:16	WG2332911
Hexachlorobenzene	U		0.00377	0.0218	1	08/02/2024 00:16	WG2332911
Heptachlor	U		0.00466	0.0218	1	08/02/2024 00:16	WG2332911
Heptachlor epoxide	U		0.00369	0.0218	1	08/02/2024 00:16	WG2332911
Methoxychlor	U		0.00527	0.0218	1	08/02/2024 00:16	WG2332911
Toxaphene	U		0.135	0.435	1	08/02/2024 00:16	WG2332911
(S) Decachlorobiphenyl	*92.3*			*10.0-135*		*08/02/2024 00:16*	WG2332911
(S) Tetrachloro-m-xylene	*93.6*			*10.0-139*		*08/02/2024 00:16*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.6		1	07/24/2024 05:39	WG2328910

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0254	J	0.0221	0.0490	1	07/24/2024 09:08	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	1.02	J	0.667	2.45	1	07/25/2024 10:17	WG2329437
Arsenic	9.05		0.635	2.45	1	07/25/2024 10:17	WG2329437
Barium	274		0.104	0.613	1	07/25/2024 10:17	WG2329437
Beryllium	0.736		0.0386	0.245	1	07/25/2024 10:17	WG2329437
Cadmium	0.184	J	0.0578	0.613	1	07/25/2024 10:17	WG2329437
Chromium	63.6		0.163	1.23	1	07/25/2024 10:17	WG2329437
Cobalt	18.6		0.0994	1.23	1	07/25/2024 10:17	WG2329437
Copper	26.7		0.490	2.45	1	07/25/2024 10:17	WG2329437
Lead	13.2		0.255	0.613	1	07/25/2024 10:17	WG2329437
Molybdenum	U		0.134	0.613	1	07/25/2024 10:17	WG2329437
Nickel	59.2		0.162	2.45	1	07/25/2024 10:17	WG2329437
Selenium	1.54	J	0.937	2.45	1	07/25/2024 10:17	WG2329437
Silver	U		0.156	1.23	1	07/25/2024 10:17	WG2329437
Thallium	U		0.483	2.45	1	07/25/2024 10:17	WG2329437
Vanadium	63.2		0.620	2.45	1	07/25/2024 10:17	WG2329437
Zinc	50.3		1.02	6.13	1	07/25/2024 10:17	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.51	B J	1.21	3.63	25	07/26/2024 22:51	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*		*07/26/2024 22:51*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	1.16	J J3 J6	0.899	4.90	1	07/26/2024 18:53	WG2330416
C22-C32 Hydrocarbons	1.64	J J3 J6	1.63	4.90	1	07/26/2024 18:53	WG2330416
C32-C40 Hydrocarbons	U		1.63	4.90	1	07/26/2024 18:53	WG2330416
(S) o-Terphenyl	*56.8*			*18.0-148*		*07/26/2024 18:53*	WG2330416

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00861	0.0858	1	07/30/2024 00:12	WG2328786
Dalapon	U		0.0139	0.0858	1	07/30/2024 00:12	WG2328786
2,4-DB	U		0.0364	0.0858	1	07/30/2024 00:12	WG2328786
Dicamba	U		0.0193	0.0858	1	07/30/2024 00:12	WG2328786
Dichloroprop	U		0.0300	0.0858	1	07/30/2024 00:12	WG2328786
Dinoseb	U		0.00855	0.0858	1	07/30/2024 00:12	WG2328786
MCPA	U		0.543	7.97	1	07/30/2024 00:12	WG2328786
MCPP	U		0.450	7.97	1	07/30/2024 00:12	WG2328786
2,4,5-T	U		0.0104	0.0858	1	07/30/2024 00:12	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0131	0.0858	1	07/30/2024 00:12	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*61.2*			*22.0-132*		*07/30/2024 00:12*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00461	0.0245	1	08/01/2024 23:40	WG2332911
Alpha BHC	U		0.00451	0.0245	1	08/01/2024 23:40	WG2332911
Beta BHC	U		0.00465	0.0245	1	08/01/2024 23:40	WG2332911
Delta BHC	U		0.00424	0.0245	1	08/01/2024 23:40	WG2332911
Gamma BHC	U		0.00422	0.0245	1	08/01/2024 23:40	WG2332911
Chlordane	U		0.126	0.368	1	08/01/2024 23:40	WG2332911
4,4-DDD	U		0.00454	0.0245	1	08/01/2024 23:40	WG2332911
4,4-DDE	U		0.00449	0.0245	1	08/01/2024 23:40	WG2332911
4,4-DDT	U		0.00769	0.0245	1	08/01/2024 23:40	WG2332911
Dieldrin	U		0.00422	0.0245	1	08/01/2024 23:40	WG2332911
Endosulfan I	U		0.00445	0.0245	1	08/01/2024 23:40	WG2332911
Endosulfan II	U		0.00411	0.0245	1	08/01/2024 23:40	WG2332911
Endosulfan sulfate	U		0.00446	0.0245	1	08/01/2024 23:40	WG2332911
Endrin	U	J4	0.00429	0.0245	1	08/01/2024 23:40	WG2332911
Endrin aldehyde	U		0.00416	0.0245	1	08/01/2024 23:40	WG2332911
Endrin ketone	U		0.00872	0.0245	1	08/01/2024 23:40	WG2332911
Hexachlorobenzene	U		0.00424	0.0245	1	08/01/2024 23:40	WG2332911
Heptachlor	U		0.00525	0.0245	1	08/01/2024 23:40	WG2332911
Heptachlor epoxide	U		0.00416	0.0245	1	08/01/2024 23:40	WG2332911
Methoxychlor	U		0.00593	0.0245	1	08/01/2024 23:40	WG2332911
Toxaphene	U		0.152	0.490	1	08/01/2024 23:40	WG2332911
(S) Decachlorobiphenyl	*71.6*			*10.0-135*		*08/01/2024 23:40*	WG2332911
(S) Tetrachloro-m-xylene	*91.4*			*10.0-139*		*08/01/2024 23:40*	WG2332911

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.8		1	07/24/2024 05:39	WG2328910

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	0.0217	J	0.0201	0.0446	1	07/24/2024 09:11	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	U		0.606	2.23	1	07/25/2024 10:20	WG2329437
Arsenic	2.43		0.577	2.23	1	07/25/2024 10:20	WG2329437
Barium	235		0.0949	0.557	1	07/25/2024 10:20	WG2329437
Beryllium	0.545		0.0351	0.223	1	07/25/2024 10:20	WG2329437
Cadmium	0.153	J	0.0525	0.557	1	07/25/2024 10:20	WG2329437
Chromium	48.8		0.148	1.11	1	07/25/2024 10:20	WG2329437
Cobalt	12.0		0.0903	1.11	1	07/25/2024 10:20	WG2329437
Copper	20.2		0.446	2.23	1	07/25/2024 10:20	WG2329437
Lead	10.6		0.232	0.557	1	07/25/2024 10:20	WG2329437
Molybdenum	0.205	J	0.121	0.557	1	07/25/2024 10:20	WG2329437
Nickel	41.8		0.147	2.23	1	07/25/2024 10:20	WG2329437
Selenium	U		0.851	2.23	1	07/25/2024 10:20	WG2329437
Silver	U		0.141	1.11	1	07/25/2024 10:20	WG2329437
Thallium	U		0.439	2.23	1	07/25/2024 10:20	WG2329437
Vanadium	50.7		0.564	2.23	1	07/25/2024 10:20	WG2329437
Zinc	39.0		0.927	5.57	1	07/25/2024 10:20	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	2.75	B J	1.07	3.22	26.3	07/26/2024 23:14	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*		*07/26/2024 23:14*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	0.994	J	0.817	4.46	1	07/31/2024 20:59	WG2332903
C22-C32 Hydrocarbons	1.52	J	1.48	4.46	1	07/31/2024 20:59	WG2332903
C32-C40 Hydrocarbons	U		1.48	4.46	1	07/31/2024 20:59	WG2332903
(S) o-Terphenyl	*40.7*			*18.0-148*		*07/31/2024 20:59*	WG2332903

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00782	0.0780	1	07/30/2024 00:23	WG2328786
Dalapon	U		0.0126	0.0780	1	07/30/2024 00:23	WG2328786
2,4-DB	U		0.0331	0.0780	1	07/30/2024 00:23	WG2328786
Dicamba	U		0.0175	0.0780	1	07/30/2024 00:23	WG2328786
Dichloroprop	U		0.0273	0.0780	1	07/30/2024 00:23	WG2328786
Dinoseb	U		0.00776	0.0780	1	07/30/2024 00:23	WG2328786
MCPA	U		0.494	7.24	1	07/30/2024 00:23	WG2328786
MCPP	U		0.409	7.24	1	07/30/2024 00:23	WG2328786
2,4,5-T	U		0.00949	0.0780	1	07/30/2024 00:23	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0119	0.0780	1	07/30/2024 00:23	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*59.5*			*22.0-132*		*07/30/2024 00:23*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00419	0.0223	1	08/01/2024 23:49	WG2332911
Alpha BHC	U		0.00410	0.0223	1	08/01/2024 23:49	WG2332911
Beta BHC	U		0.00422	0.0223	1	08/01/2024 23:49	WG2332911
Delta BHC	U		0.00385	0.0223	1	08/01/2024 23:49	WG2332911
Gamma BHC	U		0.00383	0.0223	1	08/01/2024 23:49	WG2332911
Chlordane	U		0.115	0.334	1	08/01/2024 23:49	WG2332911
4,4-DDD	U		0.00412	0.0223	1	08/01/2024 23:49	WG2332911
4,4-DDE	U		0.00408	0.0223	1	08/01/2024 23:49	WG2332911
4,4-DDT	U		0.00699	0.0223	1	08/01/2024 23:49	WG2332911
Dieldrin	U		0.00383	0.0223	1	08/01/2024 23:49	WG2332911
Endosulfan I	U		0.00404	0.0223	1	08/01/2024 23:49	WG2332911
Endosulfan II	U		0.00373	0.0223	1	08/01/2024 23:49	WG2332911
Endosulfan sulfate	U		0.00406	0.0223	1	08/01/2024 23:49	WG2332911
Endrin	U	J4	0.00390	0.0223	1	08/01/2024 23:49	WG2332911
Endrin aldehyde	U		0.00378	0.0223	1	08/01/2024 23:49	WG2332911
Endrin ketone	U		0.00792	0.0223	1	08/01/2024 23:49	WG2332911
Hexachlorobenzene	U		0.00385	0.0223	1	08/01/2024 23:49	WG2332911
Heptachlor	U		0.00477	0.0223	1	08/01/2024 23:49	WG2332911
Heptachlor epoxide	U		0.00378	0.0223	1	08/01/2024 23:49	WG2332911
Methoxychlor	U		0.00539	0.0223	1	08/01/2024 23:49	WG2332911
Toxaphene	U		0.138	0.446	1	08/01/2024 23:49	WG2332911
(S) Decachlorobiphenyl	*53.1*			*10.0-135*		*08/01/2024 23:49*	WG2332911
(S) Tetrachloro-m-xylene	*78.4*			*10.0-139*		*08/01/2024 23:49*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	87.1		1	07/24/2024 05:39	WG2328910

Mercury by Method 7471B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Mercury	U	J6 O1	0.0207	0.0459	1	07/24/2024 08:26	WG2328790

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Antimony	1.18	J	0.625	2.30	1	07/25/2024 10:23	WG2329437
Arsenic	3.24		0.595	2.30	1	07/25/2024 10:23	WG2329437
Barium	427		0.0979	0.574	1	07/25/2024 10:23	WG2329437
Beryllium	0.570		0.0362	0.230	1	07/25/2024 10:23	WG2329437
Cadmium	0.151	J	0.0541	0.574	1	07/25/2024 10:23	WG2329437
Chromium	53.2		0.153	1.15	1	07/25/2024 10:23	WG2329437
Cobalt	12.5		0.0932	1.15	1	07/25/2024 10:23	WG2329437
Copper	21.2		0.459	2.30	1	07/25/2024 10:23	WG2329437
Lead	10.5		0.239	0.574	1	07/25/2024 10:23	WG2329437
Molybdenum	0.356	J	0.125	0.574	1	07/25/2024 10:23	WG2329437
Nickel	45.6		0.152	2.30	1	07/25/2024 10:23	WG2329437
Selenium	1.30	J	0.878	2.30	1	07/25/2024 10:23	WG2329437
Silver	U		0.146	1.15	1	07/25/2024 10:23	WG2329437
Thallium	U		0.453	2.30	1	07/25/2024 10:23	WG2329437
Vanadium	64.8		0.581	2.30	1	07/25/2024 10:23	WG2329437
Zinc	44.1		0.956	5.74	1	07/25/2024 10:23	WG2329437

Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
TPHG C5 - C12	1.50	B J	1.25	3.76	29.5	07/26/2024 23:37	WG2330281
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*07/26/2024 23:37*	WG2330281

Semi-Volatile Organic Compounds (GC) by Method 8015C

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
C12-C22 Hydrocarbons	1.23	J	0.842	4.59	1	07/31/2024 20:16	WG2332903
C22-C32 Hydrocarbons	U		1.53	4.59	1	07/31/2024 20:16	WG2332903
C32-C40 Hydrocarbons	U		1.53	4.59	1	07/31/2024 20:16	WG2332903
(S) o-Terphenyl	*42.7*			*18.0-148*		*07/31/2024 20:16*	WG2332903

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
2,4-D	U		0.00806	0.0804	1	07/30/2024 00:33	WG2328786
Dalapon	U		0.0130	0.0804	1	07/30/2024 00:33	WG2328786
2,4-DB	U		0.0341	0.0804	1	07/30/2024 00:33	WG2328786
Dicamba	U		0.0180	0.0804	1	07/30/2024 00:33	WG2328786
Dichloroprop	U		0.0281	0.0804	1	07/30/2024 00:33	WG2328786
Dinoseb	U		0.00801	0.0804	1	07/30/2024 00:33	WG2328786
MCPA	U		0.509	7.47	1	07/30/2024 00:33	WG2328786
MCPP	U		0.422	7.47	1	07/30/2024 00:33	WG2328786
2,4,5-T	U		0.00979	0.0804	1	07/30/2024 00:33	WG2328786

Chlorinated Acid Herbicides (GC) by Method 8151A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
2,4,5-TP (Silvex)	U		0.0123	0.0804	1	07/30/2024 00:33	WG2328786
(S) 2,4-Dichlorophenyl Acetic Acid	*48.9*			*22.0-132*		*07/30/2024 00:33*	WG2328786

Pesticides (GC) by Method 8081B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Aldrin	U		0.00432	0.0230	1	08/01/2024 23:58	WG2332911
Alpha BHC	U		0.00423	0.0230	1	08/01/2024 23:58	WG2332911
Beta BHC	U		0.00435	0.0230	1	08/01/2024 23:58	WG2332911
Delta BHC	U		0.00397	0.0230	1	08/01/2024 23:58	WG2332911
Gamma BHC	U		0.00395	0.0230	1	08/01/2024 23:58	WG2332911
Chlordane	U		0.118	0.345	1	08/01/2024 23:58	WG2332911
4,4-DDD	U		0.00425	0.0230	1	08/01/2024 23:58	WG2332911
4,4-DDE	U		0.00420	0.0230	1	08/01/2024 23:58	WG2332911
4,4-DDT	U		0.00720	0.0230	1	08/01/2024 23:58	WG2332911
Dieldrin	U		0.00395	0.0230	1	08/01/2024 23:58	WG2332911
Endosulfan I	U		0.00417	0.0230	1	08/01/2024 23:58	WG2332911
Endosulfan II	U		0.00385	0.0230	1	08/01/2024 23:58	WG2332911
Endosulfan sulfate	U		0.00418	0.0230	1	08/01/2024 23:58	WG2332911
Endrin	U	J4	0.00402	0.0230	1	08/01/2024 23:58	WG2332911
Endrin aldehyde	U		0.00389	0.0230	1	08/01/2024 23:58	WG2332911
Endrin ketone	U		0.00817	0.0230	1	08/01/2024 23:58	WG2332911
Hexachlorobenzene	U		0.00397	0.0230	1	08/01/2024 23:58	WG2332911
Heptachlor	U		0.00492	0.0230	1	08/01/2024 23:58	WG2332911
Heptachlor epoxide	U		0.00389	0.0230	1	08/01/2024 23:58	WG2332911
Methoxychlor	U		0.00556	0.0230	1	08/01/2024 23:58	WG2332911
Toxaphene	U		0.142	0.459	1	08/01/2024 23:58	WG2332911
(S) Decachlorobiphenyl	*57.2*			*10.0-135*		*08/01/2024 23:58*	WG2332911
(S) Tetrachloro-m-xylene	*80.8*			*10.0-139*		*08/01/2024 23:58*	WG2332911

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.5		1	07/24/2024 05:39	WG2328910

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Acetone	U	J3	0.0461	0.0632	1	07/27/2024 15:45	WG2331009
Acrylonitrile	U		0.00456	0.0158	1	07/27/2024 15:45	WG2331009
Benzene	U		0.000590	0.00126	1	07/27/2024 15:45	WG2331009
Bromobenzene	U		0.00114	0.0158	1	07/27/2024 15:45	WG2331009
Bromodichloromethane	U		0.000917	0.00316	1	07/27/2024 15:45	WG2331009
Bromoform	U		0.00148	0.0316	1	07/27/2024 15:45	WG2331009
Bromomethane	U		0.00249	0.0158	1	07/27/2024 15:45	WG2331009
n-Butylbenzene	U		0.00664	0.0158	1	07/27/2024 15:45	WG2331009
sec-Butylbenzene	U		0.00364	0.0158	1	07/27/2024 15:45	WG2331009
tert-Butylbenzene	U		0.00247	0.00632	1	07/27/2024 15:45	WG2331009
Carbon tetrachloride	U		0.00114	0.00632	1	07/27/2024 15:45	WG2331009
Chlorobenzene	U		0.000265	0.00316	1	07/27/2024 15:45	WG2331009
Chlorodibromomethane	U		0.000774	0.00316	1	07/27/2024 15:45	WG2331009
Chloroethane	U		0.00215	0.00632	1	07/27/2024 15:45	WG2331009
Chloroform	U		0.00130	0.00316	1	07/27/2024 15:45	WG2331009
Chloromethane	U		0.00550	0.0158	1	07/27/2024 15:45	WG2331009
2-Chlorotoluene	U		0.00109	0.00316	1	07/27/2024 15:45	WG2331009
4-Chlorotoluene	U		0.000569	0.00632	1	07/27/2024 15:45	WG2331009
1,2-Dibromo-3-Chloropropane	U		0.00493	0.0316	1	07/27/2024 15:45	WG2331009
1,2-Dibromoethane	U		0.000819	0.00316	1	07/27/2024 15:45	WG2331009
Dibromomethane	U		0.000948	0.00632	1	07/27/2024 15:45	WG2331009
1,2-Dichlorobenzene	U		0.000537	0.00632	1	07/27/2024 15:45	WG2331009
1,3-Dichlorobenzene	U		0.000758	0.00632	1	07/27/2024 15:45	WG2331009
1,4-Dichlorobenzene	U		0.000885	0.00632	1	07/27/2024 15:45	WG2331009
Dichlorodifluoromethane	U		0.00204	0.00632	1	07/27/2024 15:45	WG2331009
1,1-Dichloroethane	U		0.000621	0.00316	1	07/27/2024 15:45	WG2331009
1,2-Dichloroethane	U		0.000820	0.00316	1	07/27/2024 15:45	WG2331009
1,1-Dichloroethene	U		0.000766	0.00316	1	07/27/2024 15:45	WG2331009
cis-1,2-Dichloroethene	U		0.000928	0.00316	1	07/27/2024 15:45	WG2331009
trans-1,2-Dichloroethene	U		0.00131	0.00632	1	07/27/2024 15:45	WG2331009
1,2-Dichloropropane	U		0.00180	0.00632	1	07/27/2024 15:45	WG2331009
1,1-Dichloropropene	U		0.00102	0.00316	1	07/27/2024 15:45	WG2331009
1,3-Dichloropropane	U		0.000633	0.00632	1	07/27/2024 15:45	WG2331009
cis-1,3-Dichloropropene	U		0.000957	0.00316	1	07/27/2024 15:45	WG2331009
trans-1,3-Dichloropropene	U		0.00144	0.00632	1	07/27/2024 15:45	WG2331009
2,2-Dichloropropane	U		0.00174	0.00316	1	07/27/2024 15:45	WG2331009
Di-isopropyl ether	U		0.000518	0.00126	1	07/27/2024 15:45	WG2331009
Ethylbenzene	U		0.000932	0.00316	1	07/27/2024 15:45	WG2331009
Hexachloro-1,3-butadiene	U		0.00758	0.0316	1	07/27/2024 15:45	WG2331009
Isopropylbenzene	U		0.000537	0.00316	1	07/27/2024 15:45	WG2331009
p-Isopropyltoluene	U		0.00322	0.00632	1	07/27/2024 15:45	WG2331009
2-Butanone (MEK)	U		0.0803	0.126	1	07/27/2024 15:45	WG2331009
Methylene Chloride	U		0.00839	0.0316	1	07/27/2024 15:45	WG2331009
4-Methyl-2-pentanone (MIBK)	U		0.00288	0.0316	1	07/27/2024 15:45	WG2331009
Methyl tert-butyl ether	U		0.000442	0.00126	1	07/27/2024 15:45	WG2331009
Naphthalene	U		0.00617	0.0158	1	07/27/2024 15:45	WG2331009
n-Propylbenzene	U		0.00120	0.00632	1	07/27/2024 15:45	WG2331009
Styrene	U		0.000289	0.0158	1	07/27/2024 15:45	WG2331009
1,1,1,2-Tetrachloroethane	U		0.00120	0.00316	1	07/27/2024 15:45	WG2331009
1,1,2,2-Tetrachloroethane	U		0.000879	0.00316	1	07/27/2024 15:45	WG2331009

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichlorotrifluoroethane	U		0.000953	0.00316	1	07/27/2024 15:45	WG2331009
Tetrachloroethene	U		0.00113	0.00316	1	07/27/2024 15:45	WG2331009
Toluene	0.00196	J	0.00164	0.00632	1	07/27/2024 15:45	WG2331009
1,2,3-Trichlorobenzene	U		0.00927	0.0158	1	07/27/2024 15:45	WG2331009
1,2,4-Trichlorobenzene	U		0.00556	0.0158	1	07/27/2024 15:45	WG2331009
1,1,1-Trichloroethane	U		0.00117	0.00316	1	07/27/2024 15:45	WG2331009
1,1,2-Trichloroethane	U		0.000755	0.00316	1	07/27/2024 15:45	WG2331009
Trichloroethene	U		0.000738	0.00126	1	07/27/2024 15:45	WG2331009
Trichlorofluoromethane	U		0.00105	0.00316	1	07/27/2024 15:45	WG2331009
1,2,3-Trichloropropane	U		0.00205	0.0158	1	07/27/2024 15:45	WG2331009
1,2,4-Trimethylbenzene	U		0.00200	0.00632	1	07/27/2024 15:45	WG2331009
1,2,3-Trimethylbenzene	U		0.00200	0.00632	1	07/27/2024 15:45	WG2331009
1,3,5-Trimethylbenzene	U		0.00253	0.00632	1	07/27/2024 15:45	WG2331009
Vinyl chloride	U		0.00147	0.00316	1	07/27/2024 15:45	WG2331009
Xylenes, Total	U		0.00111	0.00822	1	07/27/2024 15:45	WG2331009
(S) Toluene-d8	*102*			*75.0-131*		*07/27/2024 15:45*	WG2331009
(S) 4-Bromofluorobenzene	*90.0*			*67.0-138*		*07/27/2024 15:45*	WG2331009
(S) 1,2-Dichloroethane-d4	*89.6*			*70.0-130*		*07/27/2024 15:45*	WG2331009

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0133	0.0384	1	07/31/2024 16:52	WG2332763
PCB 1221	U		0.0133	0.0384	1	07/31/2024 16:52	WG2332763
PCB 1232	U		0.0133	0.0384	1	07/31/2024 16:52	WG2332763
PCB 1242	U		0.0133	0.0384	1	07/31/2024 16:52	WG2332763
PCB 1248	U		0.00834	0.0192	1	07/31/2024 16:52	WG2332763
PCB 1254	U		0.00834	0.0192	1	07/31/2024 16:52	WG2332763
PCB 1260	U		0.00834	0.0192	1	07/31/2024 16:52	WG2332763
(S) Decachlorobiphenyl	*54.2*			*10.0-135*		*07/31/2024 16:52*	WG2332763
(S) Tetrachloro-m-xylene	*85.4*			*10.0-139*		*07/31/2024 16:52*	WG2332763

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.0122	0.0752	2	07/29/2024 21:22	WG2330671
Acenaphthylene	U		0.0106	0.0752	2	07/29/2024 21:22	WG2330671
Anthracene	U		0.0134	0.0752	2	07/29/2024 21:22	WG2330671
Benzo(a)anthracene	0.0613	J	0.0132	0.0752	2	07/29/2024 21:22	WG2330671
Benzo(b)fluoranthene	0.186		0.0140	0.0752	2	07/29/2024 21:22	WG2330671
Benzo(k)fluoranthene	0.0604	J	0.0133	0.0752	2	07/29/2024 21:22	WG2330671
Benzo(g,h,i)perylene	0.0743	J	0.0138	0.0752	2	07/29/2024 21:22	WG2330671
Benzo(a)pyrene	0.0961		0.0140	0.0752	2	07/29/2024 21:22	WG2330671
Bis(2-chlorethoxy)methane	U		0.0226	0.752	2	07/29/2024 21:22	WG2330671
Bis(2-chloroethyl)ether	U		0.0249	0.752	2	07/29/2024 21:22	WG2330671
2,2-Oxybis(1-Chloropropane)	U		0.0325	0.752	2	07/29/2024 21:22	WG2330671
4-Bromophenyl-phenylether	U		0.0264	0.752	2	07/29/2024 21:22	WG2330671
2-Chloronaphthalene	U		0.0132	0.0752	2	07/29/2024 21:22	WG2330671
4-Chlorophenyl-phenylether	U		0.0262	0.752	2	07/29/2024 21:22	WG2330671
Chrysene	0.0991		0.0149	0.0752	2	07/29/2024 21:22	WG2330671
Dibenz(a,h)anthracene	U		0.0209	0.0752	2	07/29/2024 21:22	WG2330671
3,3-Dichlorobenzidine	U		0.0278	0.752	2	07/29/2024 21:22	WG2330671
2,4-Dinitrotoluene	U		0.0216	0.752	2	07/29/2024 21:22	WG2330671
2,6-Dinitrotoluene	U		0.0246	0.752	2	07/29/2024 21:22	WG2330671
Fluoranthene	0.180		0.0136	0.0752	2	07/29/2024 21:22	WG2330671

Semi Volatile Organic Compounds (GC/MS) by Method 8270E

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Fluorene	U		0.0122	0.0752	2	07/29/2024 21:22	WG2330671
Hexachlorobenzene	U		0.0267	0.752	2	07/29/2024 21:22	WG2330671
Hexachloro-1,3-butadiene	U		0.0253	0.752	2	07/29/2024 21:22	WG2330671
Hexachlorocyclopentadiene	U		0.0395	0.752	2	07/29/2024 21:22	WG2330671
Hexachloroethane	U		0.0296	0.752	2	07/29/2024 21:22	WG2330671
Indeno(1,2,3-cd)pyrene	0.0789		0.0212	0.0752	2	07/29/2024 21:22	WG2330671
Isophorone	U		0.0230	0.752	2	07/29/2024 21:22	WG2330671
Naphthalene	U		0.0189	0.0752	2	07/29/2024 21:22	WG2330671
Nitrobenzene	U		0.0262	0.752	2	07/29/2024 21:22	WG2330671
n-Nitrosodimethylamine	U		0.112	0.752	2	07/29/2024 21:22	WG2330671
n-Nitrosodiphenylamine	U		0.0569	0.752	2	07/29/2024 21:22	WG2330671
n-Nitrosodi-n-propylamine	U		0.0251	0.752	2	07/29/2024 21:22	WG2330671
Phenanthrene	0.0597	J	0.0149	0.0752	2	07/29/2024 21:22	WG2330671
Pyridine	U		0.0497	0.752	2	07/29/2024 21:22	WG2330671
Benzylbutyl phthalate	U		0.0235	0.752	2	07/29/2024 21:22	WG2330671
Bis(2-ethylhexyl)phthalate	U		0.0953	0.752	2	07/29/2024 21:22	WG2330671
Di-n-butyl phthalate	U		0.0258	0.752	2	07/29/2024 21:22	WG2330671
Diethyl phthalate	U		0.0249	0.752	2	07/29/2024 21:22	WG2330671
Dimethyl phthalate	U		0.159	0.752	2	07/29/2024 21:22	WG2330671
Di-n-octyl phthalate	U		0.0508	0.752	2	07/29/2024 21:22	WG2330671
Pyrene	0.131		0.0147	0.0752	2	07/29/2024 21:22	WG2330671
1,2,4-Trichlorobenzene	U		0.0235	0.752	2	07/29/2024 21:22	WG2330671
4-Chloro-3-methylphenol	U		0.0244	0.752	2	07/29/2024 21:22	WG2330671
2-Chlorophenol	U		0.0249	0.752	2	07/29/2024 21:22	WG2330671
2,4-Dichlorophenol	U		0.0219	0.752	2	07/29/2024 21:22	WG2330671
2,4-Dimethylphenol	U		0.0197	0.752	2	07/29/2024 21:22	WG2330671
4,6-Dinitro-2-methylphenol	U		0.171	0.752	2	07/29/2024 21:22	WG2330671
2,4-Dinitrophenol	U		0.176	0.752	2	07/29/2024 21:22	WG2330671
2-Methylphenol	U		0.0226	0.752	2	07/29/2024 21:22	WG2330671
3&4-Methyl Phenol	U		0.0235	0.752	2	07/29/2024 21:22	WG2330671
2-Nitrophenol	U		0.0269	0.752	2	07/29/2024 21:22	WG2330671
4-Nitrophenol	U		0.0235	0.752	2	07/29/2024 21:22	WG2330671
Pentachlorophenol	U		0.0202	0.752	2	07/29/2024 21:22	WG2330671
Phenol	U		0.0303	0.752	2	07/29/2024 21:22	WG2330671
2,4,6-Trichlorophenol	U		0.0242	0.752	2	07/29/2024 21:22	WG2330671
2,4,5-Trichlorophenol	U		0.0255	0.752	2	07/29/2024 21:22	WG2330671
(S) 2-Fluorophenol	*74.1*			*12.0-120*		*07/29/2024 21:22*	WG2330671
(S) Phenol-d5	*69.8*			*10.0-120*		*07/29/2024 21:22*	WG2330671
(S) Nitrobenzene-d5	*57.9*			*10.0-122*		*07/29/2024 21:22*	WG2330671
(S) 2-Fluorobiphenyl	*68.7*			*15.0-120*		*07/29/2024 21:22*	WG2330671
(S) 2,4,6-Tribromophenol	*70.1*			*10.0-127*		*07/29/2024 21:22*	WG2330671
(S) p-Terphenyl-d14	*69.0*			*10.0-120*		*07/29/2024 21:22*	WG2330671

Sample Narrative:

L1759109-24 WG2330671: Dilution due to matrix impact during extract concentration procedure.

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00504	J	0.00260	0.00678	1	08/01/2024 00:25	WG2332403
Acenaphthene	U		0.00236	0.00678	1	08/01/2024 00:25	WG2332403
Acenaphthylene	U		0.00244	0.00678	1	08/01/2024 00:25	WG2332403
Benzo(a)anthracene	0.0632		0.00195	0.00678	1	08/01/2024 00:25	WG2332403
Benzo(a)pyrene	0.0725		0.00202	0.00678	1	08/01/2024 00:25	WG2332403
Benzo(b)fluoranthene	0.132		0.00173	0.00678	1	08/01/2024 00:25	WG2332403
Benzo(g,h,i)perylene	0.0688		0.00200	0.00678	1	08/01/2024 00:25	WG2332403

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(k)fluoranthene	0.0437		0.00243	0.00678	1	08/01/2024 00:25	WG2332403
Chrysene	0.103		0.00262	0.00678	1	08/01/2024 00:25	WG2332403
Dibenz(a,h)anthracene	0.0140		0.00194	0.00678	1	08/01/2024 00:25	WG2332403
Fluoranthene	0.189		0.00256	0.00678	1	08/01/2024 00:25	WG2332403
Fluorene	U		0.00232	0.00678	1	08/01/2024 00:25	WG2332403
Indeno(1,2,3-cd)pyrene	0.0672		0.00204	0.00678	1	08/01/2024 00:25	WG2332403
Naphthalene	U		0.00461	0.0226	1	08/01/2024 00:25	WG2332403
Phenanthrene	0.0685		0.00261	0.00678	1	08/01/2024 00:25	WG2332403
Pyrene	0.124		0.00226	0.00678	1	08/01/2024 00:25	WG2332403
1-Methylnaphthalene	U		0.00507	0.0226	1	08/01/2024 00:25	WG2332403
2-Methylnaphthalene	U		0.00482	0.0226	1	08/01/2024 00:25	WG2332403
2-Chloronaphthalene	U		0.00526	0.0226	1	08/01/2024 00:25	WG2332403
(S) p-Terphenyl-d14	*57.4*			*23.0-120*		*08/01/2024 00:25*	WG2332403
(S) Nitrobenzene-d5	*85.2*			*14.0-149*		*08/01/2024 00:25*	WG2332403
(S) 2-Fluorobiphenyl	*73.5*			*34.0-125*		*08/01/2024 00:25*	WG2332403

Method Blank (MB)

(MB) R4097800-1 07/24/24 05:54

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1759109-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1759109-05 07/24/24 05:54 • (DUP) R4097800-3 07/24/24 05:54

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	91.8	92.8	1	1.07		10

Laboratory Control Sample (LCS)

(LCS) R4097800-2 07/24/24 05:54

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4097797-1 07/24/24 05:46

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1759109-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1759109-15 07/24/24 05:46 • (DUP) R4097797-3 07/24/24 05:46

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	88.3	88.7	1	0.493		10

Laboratory Control Sample (LCS)

(LCS) R4097797-2 07/24/24 05:46

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4097786-1 07/24/24 05:39

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00100			

L1759262-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1759262-01 07/24/24 05:39 • (DUP) R4097786-3 07/24/24 05:39

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.9	94.7	1	0.175		10

Laboratory Control Sample (LCS)

(LCS) R4097786-2 07/24/24 05:39

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	90.0-110	

Method Blank (MB)

(MB) R4097836-1 07/24/24 11:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R4097836-2 07/24/24 11:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.527	105	80.0-120	

L1759109-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-05 07/24/24 11:07 • (MS) R4097836-4 07/24/24 11:12 • (MSD) R4097836-5 07/24/24 11:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.545	0.0465	0.612	0.613	104	104	1	75.0-125			0.270	20

Method Blank (MB)

(MB) R4097843-1 07/24/24 08:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R4097843-2 07/24/24 08:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.535	107	80.0-120	

L1759109-23 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-23 07/24/24 08:26 • (MS) R4097843-4 07/24/24 08:31 • (MSD) R4097843-5 07/24/24 08:33

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.574	U	0.389	0.392	67.8	68.3	1	75.0-125	J6	J6	0.778	20

Method Blank (MB)

(MB) R4098993-1 07/26/24 14:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R4098993-2 07/26/24 14:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.500	0.557	111	80.0-120	

L1758975-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758975-01 07/26/24 14:14 • (MS) R4098993-4 07/26/24 14:19 • (MSD) R4098993-5 07/26/24 14:21

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.801	U	0.754	0.751	94.1	93.7	1	75.0-125			0.437	20

Method Blank (MB)

(MB) R4098734-1 07/25/24 09:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.544	2.00
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Beryllium	U		0.0315	0.200
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Cobalt	U		0.0811	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Molybdenum	U		0.109	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Thallium	U		0.394	2.00
Vanadium	U		0.506	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R4098734-2 07/25/24 09:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	106	106	80.0-120	
Arsenic	100	107	107	80.0-120	
Barium	100	113	113	80.0-120	
Beryllium	100	111	111	80.0-120	
Cadmium	100	104	104	80.0-120	
Chromium	100	111	111	80.0-120	
Cobalt	100	106	106	80.0-120	
Copper	100	106	106	80.0-120	
Lead	100	106	106	80.0-120	
Molybdenum	100	113	113	80.0-120	
Nickel	100	106	106	80.0-120	
Selenium	100	102	102	80.0-120	
Silver	20.0	20.5	102	80.0-120	
Thallium	100	107	107	80.0-120	
Vanadium	100	109	109	80.0-120	
Zinc	100	111	111	80.0-120	

L1758613-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758613-20 07/25/24 09:06 • (MS) R4098734-5 07/25/24 09:14 • (MSD) R4098734-6 07/25/24 09:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	115	U	71.1	74.0	61.7	64.2	1	75.0-125	J6	J6	4.01	20
Arsenic	115	U	121	124	105	108	1	75.0-125			2.50	20
Barium	115	142	243	251	87.6	94.4	1	75.0-125			3.16	20
Beryllium	115	0.350	130	135	113	116	1	75.0-125			3.25	20
Cadmium	115	0.272	119	122	103	106	1	75.0-125			2.78	20
Chromium	115	30.0	164	159	116	112	1	75.0-125			3.38	20
Cobalt	115	14.9	143	140	111	109	1	75.0-125			1.55	20
Copper	115	50.8	201	199	131	128	1	75.0-125	J5	J5	1.29	20
Lead	115	20.1	151	150	113	113	1	75.0-125			0.240	20
Molybdenum	115	1.47	122	125	104	107	1	75.0-125			2.54	20
Nickel	115	16.7	143	144	110	110	1	75.0-125			0.246	20
Selenium	115	U	116	118	100	102	1	75.0-125			1.80	20
Silver	23.1	U	23.6	23.8	102	103	1	75.0-125			0.806	20
Thallium	115	U	122	123	106	107	1	75.0-125			0.875	20
Vanadium	115	52.8	177	181	108	111	1	75.0-125			2.17	20
Zinc	115	158	304	344	126	161	1	75.0-125	J5	J5	12.3	20

Method Blank (MB)

(MB) R4098735-1 07/25/24 11:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.544	2.00
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Beryllium	U		0.0315	0.200
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Cobalt	U		0.0811	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Molybdenum	U		0.109	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Thallium	U		0.394	2.00
Vanadium	U		0.506	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R4098735-2 07/25/24 11:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	110	110	80.0-120	
Arsenic	100	114	114	80.0-120	
Barium	100	117	117	80.0-120	
Beryllium	100	114	114	80.0-120	
Cadmium	100	107	107	80.0-120	
Chromium	100	116	116	80.0-120	
Cobalt	100	111	111	80.0-120	
Copper	100	111	111	80.0-120	
Lead	100	110	110	80.0-120	
Molybdenum	100	119	119	80.0-120	
Nickel	100	110	110	80.0-120	
Selenium	100	108	108	80.0-120	
Silver	20.0	21.7	108	80.0-120	
Thallium	100	112	112	80.0-120	
Vanadium	100	113	113	80.0-120	
Zinc	100	115	115	80.0-120	

L1759109-19 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-19 07/25/24 11:55 • (MS) R4098735-5 07/25/24 12:03 • (MSD) R4098735-6 07/25/24 12:06

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	123	1.08	43.6	46.8	34.6	37.1	1	75.0-125	J6	J6	7.05	20
Arsenic	123	3.43	119	117	94.2	92.1	1	75.0-125			2.18	20
Barium	123	454	566	476	90.7	18.2	1	75.0-125		J6	17.1	20
Beryllium	123	0.819	118	117	95.3	94.4	1	75.0-125			0.991	20
Cadmium	123	0.186	113	112	91.9	91.1	1	75.0-125			0.872	20
Chromium	123	69.9	184	181	93.0	90.3	1	75.0-125			1.84	20
Cobalt	123	15.4	135	133	97.1	95.2	1	75.0-125			1.77	20
Copper	123	31.7	150	148	96.0	94.4	1	75.0-125			1.32	20
Lead	123	13.7	131	129	94.9	93.8	1	75.0-125			1.04	20
Molybdenum	123	0.499	108	107	87.5	86.9	1	75.0-125			0.675	20
Nickel	123	60.9	174	171	92.2	89.8	1	75.0-125			1.71	20
Selenium	123	1.00	113	111	90.8	89.1	1	75.0-125			1.92	20
Silver	24.6	U	23.3	23.0	94.7	93.3	1	75.0-125			1.47	20
Thallium	123	U	115	114	93.6	92.9	1	75.0-125			0.763	20
Vanadium	123	80.4	193	189	91.6	88.0	1	75.0-125			2.30	20
Zinc	123	61.6	172	168	89.4	86.4	1	75.0-125			2.19	20

Method Blank (MB)

(MB) R4098442-1 07/25/24 13:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.544	2.00
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Beryllium	U		0.0315	0.200
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Cobalt	U		0.0811	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Molybdenum	U		0.109	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Thallium	U		0.394	2.00
Vanadium	U		0.506	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R4098442-2 07/25/24 13:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	95.0	95.0	80.0-120	
Arsenic	100	93.9	93.9	80.0-120	
Barium	100	97.9	97.9	80.0-120	
Beryllium	100	96.9	96.9	80.0-120	
Cadmium	100	95.6	95.6	80.0-120	
Chromium	100	96.9	96.9	80.0-120	
Cobalt	100	91.5	91.5	80.0-120	
Copper	100	96.5	96.5	80.0-120	
Lead	100	93.6	93.6	80.0-120	
Molybdenum	100	97.2	97.2	80.0-120	
Nickel	100	93.1	93.1	80.0-120	
Selenium	100	93.3	93.3	80.0-120	
Silver	20.0	19.1	95.6	80.0-120	
Thallium	100	94.2	94.2	80.0-120	
Vanadium	100	96.5	96.5	80.0-120	
Zinc	100	94.9	94.9	80.0-120	

L1759369-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759369-10 07/25/24 13:18 • (MS) R4098442-5 07/25/24 13:23 • (MSD) R4098442-6 07/25/24 13:25

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	124	U	84.6	90.3	68.4	72.9	1	75.0-125	J6	J6	6.47	20
Arsenic	124	2.35	105	105	83.0	82.8	1	75.0-125			0.139	20
Barium	124	81.2	188	197	86.7	93.3	1	75.0-125			4.21	20
Beryllium	124	0.551	112	112	90.2	89.7	1	75.0-125			0.523	20
Cadmium	124	0.142	110	110	89.1	88.7	1	75.0-125			0.498	20
Chromium	124	21.2	124	128	83.3	86.3	1	75.0-125			2.93	20
Cobalt	124	12.1	120	121	87.0	87.9	1	75.0-125			0.992	20
Copper	124	13.1	123	122	88.7	88.0	1	75.0-125			0.659	20
Lead	124	21.3	129	130	86.8	87.6	1	75.0-125			0.778	20
Molybdenum	124	0.587	102	102	81.6	81.8	1	75.0-125			0.345	20
Nickel	124	5.67	119	119	91.2	91.9	1	75.0-125			0.675	20
Selenium	124	U	108	107	87.4	86.6	1	75.0-125			0.909	20
Silver	24.7	U	21.7	21.4	87.5	86.5	1	75.0-125			1.13	20
Thallium	124	U	109	110	88.1	88.9	1	75.0-125			0.903	20
Vanadium	124	48.6	152	151	83.4	82.6	1	75.0-125			0.647	20
Zinc	124	29.2	140	146	89.7	94.4	1	75.0-125			4.11	20

Method Blank (MB)

(MB) R4099370-1 07/26/24 18:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.544	2.00
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Beryllium	U		0.0315	0.200
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Cobalt	U		0.0811	1.00
Copper	U		0.400	2.00
Lead	0.236	J	0.208	0.500
Molybdenum	U		0.109	0.500
Nickel	0.191	J	0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Thallium	U		0.394	2.00
Vanadium	U		0.506	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R4099370-2 07/26/24 18:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	101	101	80.0-120	
Arsenic	100	97.4	97.4	80.0-120	
Barium	100	104	104	80.0-120	
Beryllium	100	100	100	80.0-120	
Cadmium	100	97.3	97.3	80.0-120	
Chromium	100	101	101	80.0-120	
Cobalt	100	95.6	95.6	80.0-120	
Copper	100	100	100	80.0-120	
Lead	100	95.4	95.4	80.0-120	
Molybdenum	100	98.7	98.7	80.0-120	
Nickel	100	95.7	95.7	80.0-120	
Selenium	100	91.1	91.1	80.0-120	
Silver	20.0	18.6	93.2	80.0-120	
Thallium	100	97.9	97.9	80.0-120	
Vanadium	100	97.4	97.4	80.0-120	
Zinc	100	97.5	97.5	80.0-120	

L1758900-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758900-06 07/26/24 18:33 • (MS) R4099370-5 07/26/24 18:39 • (MSD) R4099370-6 07/26/24 18:40

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	131	U	53.4	55.7	40.7	42.5	1	75.0-125	J6	J6	4.27	20
Arsenic	131	3.84	119	116	87.7	85.6	1	75.0-125			2.39	20
Barium	131	69.1	335	347	203	212	1	75.0-125	J5	J5	3.59	20
Beryllium	131	0.333	120	118	91.3	89.8	1	75.0-125			1.66	20
Cadmium	131	0.0990	114	111	86.6	84.8	1	75.0-125			2.10	20
Chromium	131	27.3	178	181	115	117	1	75.0-125			1.60	20
Cobalt	131	3.90	130	128	96.3	94.8	1	75.0-125			1.53	20
Copper	131	16.2	158	156	108	107	1	75.0-125			1.14	20
Lead	131	5.96	135	133	98.6	97.1	1	75.0-125			1.50	20
Molybdenum	131	0.244	111	110	84.3	83.4	1	75.0-125			1.15	20
Nickel	131	21.4	180	181	121	121	1	75.0-125			0.591	20
Selenium	131	1.85	117	116	87.8	87.0	1	75.0-125			0.931	20
Silver	26.3	0.488	22.4	22.0	83.6	81.8	1	75.0-125			2.20	20
Thallium	131	U	119	116	90.9	88.2	1	75.0-125			3.05	20
Vanadium	131	46.8	193	198	111	115	1	75.0-125			2.66	20
Zinc	131	38.0	191	194	117	118	1	75.0-125			1.25	20

Method Blank (MB)

(MB) R4101664-1 08/01/24 15:15

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Antimony	U		0.544	2.00
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Beryllium	U		0.0315	0.200
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
Cobalt	U		0.0811	1.00
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Molybdenum	U		0.109	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Thallium	U		0.394	2.00
Vanadium	U		0.506	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R4101664-2 08/01/24 15:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	100	102	102	80.0-120	
Arsenic	100	105	105	80.0-120	
Barium	100	112	112	80.0-120	
Beryllium	100	111	111	80.0-120	
Cadmium	100	105	105	80.0-120	
Chromium	100	110	110	80.0-120	
Cobalt	100	107	107	80.0-120	
Copper	100	107	107	80.0-120	
Lead	100	103	103	80.0-120	
Molybdenum	100	105	105	80.0-120	
Nickel	100	108	108	80.0-120	
Selenium	100	106	106	80.0-120	
Silver	20.0	21.9	110	80.0-120	
Thallium	100	110	110	80.0-120	
Vanadium	100	113	113	80.0-120	
Zinc	100	109	109	80.0-120	

L1758900-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758900-13 08/01/24 15:19 • (MS) R4101664-5 08/01/24 15:23 • (MSD) R4101664-6 08/01/24 15:25

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	112	U	85.7	81.4	76.6	72.8	1	75.0-125		J6	5.12	20
Arsenic	112	2.41	92.9	91.2	81.0	79.4	1	75.0-125			1.85	20
Barium	112	84.4	157	210	65.2	113	1	75.0-125	J6	J3	28.8	20
Beryllium	112	0.125	95.8	91.6	85.5	81.8	1	75.0-125			4.47	20
Cadmium	112	0.0572	89.2	87.4	79.8	78.1	1	75.0-125			2.09	20
Chromium	112	14.7	107	113	82.6	87.8	1	75.0-125			5.27	20
Cobalt	112	5.75	93.4	96.5	78.4	81.2	1	75.0-125			3.27	20
Copper	112	10.0	98.5	103	79.1	83.3	1	75.0-125			4.61	20
Lead	112	9.72	99.3	103	80.1	83.5	1	75.0-125			3.76	20
Molybdenum	112	0.291	92.3	89.5	82.3	79.7	1	75.0-125			3.15	20
Nickel	112	10.6	99.9	104	79.8	83.5	1	75.0-125			4.10	20
Selenium	112	U	85.7	82.9	76.6	74.2	1	75.0-125		J6	3.23	20
Silver	22.4	U	20.1	18.9	90.0	84.4	1	75.0-125			6.51	20
Thallium	112	U	89.1	83.8	79.7	75.0	1	75.0-125			6.11	20
Vanadium	112	46.2	126	150	71.4	93.3	1	75.0-125	J6		17.7	20
Zinc	112	33.4	120	138	77.3	93.9	1	75.0-125			14.4	20

Method Blank (MB)

(MB) R4100472-1 07/26/24 14:27

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	1.98	J	0.830	2.50
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R4100472-2 07/26/24 16:02

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5.00	4.38	87.6	72.0-125	
(S) a,a,a-Trifluorotoluene(FID)			*108*	*77.0-120*	

L1759109-23 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-23 07/26/24 23:37 • (MS) R4100472-3 07/27/24 00:00 • (MSD) R4100472-4 07/27/24 00:24

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	189	1.50	142	150	74.2	78.9	29.5	10.0-141			6.11	29
(S) a,a,a-Trifluorotoluene(FID)					*103*	*103*		*77.0-120*				

Method Blank (MB)

(MB) R4099420-3 07/27/24 11:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00500
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R4099420-3 07/27/24 11:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	0.00877	J	0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*101*			*75.0-131*
(S) 4-Bromofluorobenzene	*91.3*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*81.3*			*70.0-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099420-1 07/27/24 09:25 • (LCSD) R4099420-2 07/27/24 09:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.625	0.691	0.404	111	64.6	10.0-160		J3	52.4	31
Acrylonitrile	0.625	0.576	0.480	92.2	76.8	45.0-153			18.2	22
Benzene	0.125	0.116	0.118	92.8	94.4	70.0-123			1.71	20
Bromobenzene	0.125	0.117	0.114	93.6	91.2	73.0-121			2.60	20
Bromodichloromethane	0.125	0.103	0.104	82.4	83.2	73.0-121			0.966	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099420-1 07/27/24 09:25 • (LCSD) R4099420-2 07/27/24 09:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Bromoform	0.125	0.0972	0.0941	77.8	75.3	64.0-132			3.24	20
Bromomethane	0.125	0.0968	0.116	77.4	92.8	56.0-147			18.0	20
n-Butylbenzene	0.125	0.129	0.127	103	102	68.0-135			1.56	20
sec-Butylbenzene	0.125	0.138	0.141	110	113	74.0-130			2.15	20
tert-Butylbenzene	0.125	0.127	0.127	102	102	75.0-127			0.000	20
Carbon tetrachloride	0.125	0.111	0.115	88.8	92.0	66.0-128			3.54	20
Chlorobenzene	0.125	0.115	0.109	92.0	87.2	76.0-128			5.36	20
Chlorodibromomethane	0.125	0.111	0.102	88.8	81.6	74.0-127			8.45	20
Chloroethane	0.125	0.105	0.107	84.0	85.6	61.0-134			1.89	20
Chloroform	0.125	0.108	0.107	86.4	85.6	72.0-123			0.930	20
Chloromethane	0.125	0.0823	0.0870	65.8	69.6	51.0-138			5.55	20
2-Chlorotoluene	0.125	0.114	0.118	91.2	94.4	75.0-124			3.45	20
4-Chlorotoluene	0.125	0.121	0.124	96.8	99.2	75.0-124			2.45	20
1,2-Dibromo-3-Chloropropane	0.125	0.0965	0.0965	77.2	77.2	59.0-130			0.000	20
1,2-Dibromoethane	0.125	0.116	0.108	92.8	86.4	74.0-128			7.14	20
Dibromomethane	0.125	0.116	0.115	92.8	92.0	75.0-122			0.866	20
1,2-Dichlorobenzene	0.125	0.123	0.124	98.4	99.2	76.0-124			0.810	20
1,3-Dichlorobenzene	0.125	0.128	0.118	102	94.4	76.0-125			8.13	20
1,4-Dichlorobenzene	0.125	0.114	0.120	91.2	96.0	77.0-121			5.13	20
Dichlorodifluoromethane	0.125	0.110	0.116	88.0	92.8	43.0-156			5.31	20
1,1-Dichloroethane	0.125	0.109	0.113	87.2	90.4	70.0-127			3.60	20
1,2-Dichloroethane	0.125	0.103	0.105	82.4	84.0	65.0-131			1.92	20
1,1-Dichloroethene	0.125	0.116	0.119	92.8	95.2	65.0-131			2.55	20
cis-1,2-Dichloroethene	0.125	0.128	0.119	102	95.2	73.0-125			7.29	20
trans-1,2-Dichloroethene	0.125	0.104	0.107	83.2	85.6	71.0-125			2.84	20
1,2-Dichloropropane	0.125	0.111	0.117	88.8	93.6	74.0-125			5.26	20
1,1-Dichloropropene	0.125	0.123	0.131	98.4	105	73.0-125			6.30	20
1,3-Dichloropropane	0.125	0.131	0.126	105	101	80.0-125			3.89	20
cis-1,3-Dichloropropene	0.125	0.115	0.125	92.0	100	76.0-127			8.33	20
trans-1,3-Dichloropropene	0.125	0.121	0.116	96.8	92.8	73.0-127			4.22	20
2,2-Dichloropropane	0.125	0.112	0.118	89.6	94.4	59.0-135			5.22	20
Di-isopropyl ether	0.125	0.0915	0.0919	73.2	73.5	60.0-136			0.436	20
Ethylbenzene	0.125	0.119	0.116	95.2	92.8	74.0-126			2.55	20
Hexachloro-1,3-butadiene	0.125	0.115	0.110	92.0	88.0	57.0-150			4.44	20
Isopropylbenzene	0.125	0.117	0.112	93.6	89.6	72.0-127			4.37	20
p-Isopropyltoluene	0.125	0.134	0.134	107	107	72.0-133			0.000	20
2-Butanone (MEK)	0.625	0.540	0.457	86.4	73.1	30.0-160			16.6	24
Methylene Chloride	0.125	0.118	0.123	94.4	98.4	68.0-123			4.15	20
4-Methyl-2-pentanone (MIBK)	0.625	0.499	0.459	79.8	73.4	56.0-143			8.35	20
Methyl tert-butyl ether	0.125	0.118	0.113	94.4	90.4	66.0-132			4.33	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R4099420-1 07/27/24 09:25 • (LCSD) R4099420-2 07/27/24 09:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Naphthalene	0.125	0.123	0.113	98.4	90.4	59.0-130			8.47	20
n-Propylbenzene	0.125	0.137	0.140	110	112	74.0-126			2.17	20
Styrene	0.125	0.119	0.115	95.2	92.0	72.0-127			3.42	20
1,1,1,2-Tetrachloroethane	0.125	0.108	0.109	86.4	87.2	74.0-129			0.922	20
1,1,2,2-Tetrachloroethane	0.125	0.135	0.137	108	110	68.0-128			1.47	20
1,1,2-Trichlorotrifluoroethane	0.125	0.127	0.122	102	97.6	61.0-139			4.02	20
Tetrachloroethene	0.125	0.110	0.105	88.0	84.0	70.0-136			4.65	20
Toluene	0.125	0.118	0.119	94.4	95.2	75.0-121			0.844	20
1,2,3-Trichlorobenzene	0.125	0.126	0.121	101	96.8	59.0-139			4.05	20
1,2,4-Trichlorobenzene	0.125	0.138	0.113	110	90.4	62.0-137			19.9	20
1,1,1-Trichloroethane	0.125	0.111	0.110	88.8	88.0	69.0-126			0.905	20
1,1,2-Trichloroethane	0.125	0.120	0.116	96.0	92.8	78.0-123			3.39	20
Trichloroethene	0.125	0.108	0.114	86.4	91.2	76.0-126			5.41	20
Trichlorofluoromethane	0.125	0.109	0.113	87.2	90.4	61.0-142			3.60	20
1,2,3-Trichloropropane	0.125	0.126	0.112	101	89.6	67.0-129			11.8	20
1,2,4-Trimethylbenzene	0.125	0.120	0.127	96.0	102	70.0-126			5.67	20
1,2,3-Trimethylbenzene	0.125	0.121	0.122	96.8	97.6	74.0-124			0.823	20
1,3,5-Trimethylbenzene	0.125	0.123	0.121	98.4	96.8	73.0-127			1.64	20
Vinyl chloride	0.125	0.110	0.121	88.0	96.8	63.0-134			9.52	20
Xylenes, Total	0.375	0.363	0.345	96.8	92.0	72.0-127			5.08	20
(S) Toluene-d8				*101*	*99.1*	*75.0-131*				
(S) 4-Bromofluorobenzene				*92.2*	*89.1*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*90.3*	*90.9*	*70.0-130*				

Method Blank (MB)

(MB) R4098220-1 07/25/24 00:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*90.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4098220-2 07/25/24 01:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	21.7	86.8	50.0-150	
C22-C32 Hydrocarbons	25.0	18.6	74.4	50.0-150	
(S) o-Terphenyl			*91.7*	*18.0-148*	

L1759109-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-01 07/25/24 04:40 • (MS) R4098220-3 07/25/24 04:54 • (MSD) R4098220-4 07/25/24 05:08

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	27.9	U	35.8	36.5	128	131	20	50.0-150			1.88	20
C22-C32 Hydrocarbons	24.6	78.2	92.8	76.6	52.4	0.000	20	50.0-150		J6	19.1	20
(S) o-Terphenyl					*89.0*	*92.2*		*18.0-148*	J7	J7		

Sample Narrative:

OS: Cannot run at lower dilution due to viscosity of extract

Method Blank (MB)

(MB) R4099160-1 07/26/24 17:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*71.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4099160-2 07/26/24 18:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	23.1	92.4	50.0-150	
C22-C32 Hydrocarbons	25.0	18.7	74.8	50.0-150	
(S) o-Terphenyl			*73.7*	*18.0-148*	

L1759109-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-21 07/26/24 18:53 • (MS) R4099160-3 07/26/24 19:08 • (MSD) R4099160-4 07/26/24 19:22

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	30.4	1.16	9.71	4.79	28.1	12.0	1	50.0-150	J6	J3 J6	67.8	20
C22-C32 Hydrocarbons	30.4	1.64	5.55	3.67	12.9	6.65	1	50.0-150	J6	J3 J6	41.0	20
(S) o-Terphenyl					*17.7*	*14.8*		*18.0-148*	J2	J2		

Method Blank (MB)

(MB) R4101301-1 07/31/24 18:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
C32-C40 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*59.3*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R4101301-2 07/31/24 18:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C12-C22 Hydrocarbons	25.0	22.5	90.0	50.0-150	
C22-C32 Hydrocarbons	25.0	19.1	76.4	50.0-150	
(S) o-Terphenyl			*63.2*	*18.0-148*	

L1760535-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1760535-01 07/31/24 19:33 • (MS) R4101301-3 07/31/24 19:48 • (MSD) R4101301-4 07/31/24 20:02

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C12-C22 Hydrocarbons	25.7	1.22	23.0	20.1	84.7	73.4	1	50.0-150			13.5	20
C22-C32 Hydrocarbons	25.7	3.70	21.8	19.0	70.2	59.3	1	50.0-150			13.8	20
(S) o-Terphenyl					*61.6*	*54.0*		*18.0-148*				

Method Blank (MB)

(MB) R4099905-1 07/28/24 19:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*66.5*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4099905-2 07/28/24 20:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0439	52.7	40.0-120	J
Dalapon	0.0833	0.0463	55.6	15.0-120	J
2,4-DB	0.0833	0.0327	39.3	25.0-143	J
Dicamba	0.0833	0.0568	68.2	43.0-120	J
Dichloroprop	0.0833	0.0495	59.4	32.0-129	J
Dinoseb	0.0833	0.0382	45.9	10.0-120	J
MCPA	8.33	4.91	58.9	31.0-121	J
MCPP	8.33	5.39	64.7	28.0-133	J
2,4,5-T	0.0833	0.0489	58.7	41.0-120	J
2,4,5-TP (Silvex)	0.0833	0.0509	61.1	42.0-120	J
(S) 2,4-Dichlorophenyl Acetic Acid			*62.9*	*22.0-132*	

L1759109-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-03 07/29/24 08:20 • (MS) R4099905-3 07/29/24 08:31 • (MSD) R4099905-4 07/29/24 08:41

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0914	U	0.0523	0.0450	57.2	49.2	1	10.0-160			15.0	24
Dalapon	0.0914	U	0.0413	0.0389	45.2	42.5	1	10.0-121			6.08	27
2,4-DB	0.0914	U	U	U	0.000	0.000	1	10.0-160	J6	J6	0.000	22

L1759109-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-03 07/29/24 08:20 • (MS) R4099905-3 07/29/24 08:31 • (MSD) R4099905-4 07/29/24 08:41

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Dicamba	0.0914	U	0.0649	0.0594	71.0	65.0	1	10.0-154			8.91	21
Dichloroprop	0.0914	U	0.0637	0.0583	69.7	63.8	1	10.0-158			8.90	20
Dinoseb	0.0914	U	0.0601	0.0533	65.7	58.3	1	10.0-120			11.9	40
MCPA	9.14	U	5.40	5.76	59.0	63.0	1	10.0-160			6.55	40
MCPP	9.14	U	8.83	9.69	96.6	106	1	10.0-160		P	9.22	40
2,4,5-T	0.0914	U	0.0564	0.0502	61.7	54.9	1	10.0-157			11.6	20
2,4,5-TP (Silvex)	0.0914	U	0.0729	0.0667	79.8	73.0	1	10.0-156			8.89	20
(S) 2,4-Dichlorophenyl Acetic Acid					*74.5*	*66.1*		*22.0-132*				

Method Blank (MB)

(MB) R4100275-1 07/29/24 20:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2,4-D	U		0.00702	0.0700
Dalapon	U		0.0113	0.0700
2,4-DB	U		0.0297	0.0700
Dicamba	U		0.0157	0.0700
Dichloroprop	U		0.0245	0.0700
Dinoseb	U		0.00697	0.0700
MCPA	U		0.443	6.50
MCPP	U		0.367	6.50
2,4,5-T	U		0.00852	0.0700
2,4,5-TP (Silvex)	U		0.0107	0.0700
(S) 2,4-Dichlorophenyl Acetic Acid	*82.0*			*22.0-132*

Laboratory Control Sample (LCS)

(LCS) R4100275-2 07/29/24 20:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4-D	0.0833	0.0450	54.0	40.0-120	
Dalapon	0.0833	0.0208	25.0	15.0-120	
2,4-DB	0.0833	0.0448	53.8	25.0-143	
Dicamba	0.0833	0.0554	66.5	43.0-120	
Dichloroprop	0.0833	0.0512	61.5	32.0-129	
Dinoseb	0.0833	0.0350	42.0	10.0-120	
MCPA	8.33	6.02	72.3	31.0-121	
MCPP	8.33	6.22	74.7	28.0-133	
2,4,5-T	0.0833	0.0476	57.1	41.0-120	
2,4,5-TP (Silvex)	0.0833	0.0532	63.9	42.0-120	
(S) 2,4-Dichlorophenyl Acetic Acid			*61.7*	*22.0-132*	

L1759286-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759286-01 07/30/24 00:43 • (MS) R4100275-3 07/30/24 00:53 • (MSD) R4100275-4 07/30/24 01:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2,4-D	0.0830	U	0.0315	0.0354	38.0	42.7	1	10.0-160	J	J	11.7	24
Dalapon	0.0830	U	0.0260	0.0491	31.3	59.2	1	10.0-121	J	J J3	61.5	27
2,4-DB	0.0830	U	U	0.0422	0.000	50.8	1	10.0-160	J6	J J3	200	22
Dicamba	0.0830	U	0.0445	0.0516	53.6	62.2	1	10.0-154	J	J	14.8	21

L1759286-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759286-01 07/30/24 00:43 • (MS) R4100275-3 07/30/24 00:53 • (MSD) R4100275-4 07/30/24 01:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Dichloroprop	0.0830	U	0.0359	0.0633	43.3	76.3	1	10.0-158	J	J J3	55.2	20
Dinoseb	0.0830	U	0.0336	0.0539	40.5	64.9	1	10.0-120	J	J J3	46.4	40
MCPA	8.30	U	2.88	6.92	34.7	83.4	1	10.0-160	J	J3	82.4	40
MCPP	8.30	U	3.22	3.94	38.8	47.5	1	10.0-160	J	J	20.1	40
2,4,5-T	0.0830	U	0.154	0.0423	186	51.0	1	10.0-157	J5 P	J J3	114	20
2,4,5-TP (Silvex)	0.0830	U	0.0602	0.0509	72.5	61.3	1	10.0-156	J	J	16.7	20
(S) 2,4-Dichlorophenyl Acetic Acid					*62.7*	*82.5*		*22.0-132*				

Method Blank (MB)

(MB) R4099352-1 07/28/24 01:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aldrin	U		0.00376	0.0200
Alpha BHC	U		0.00368	0.0200
Beta BHC	U		0.00379	0.0200
Delta BHC	U		0.00346	0.0200
Gamma BHC	U		0.00344	0.0200
Chlordane	U		0.103	0.300
4,4-DDD	U		0.00370	0.0200
4,4-DDE	U		0.00366	0.0200
4,4-DDT	U		0.00627	0.0200
Dieldrin	U		0.00344	0.0200
Endosulfan I	U		0.00363	0.0200
Endosulfan II	U		0.00335	0.0200
Endosulfan sulfate	U		0.00364	0.0200
Endrin	U		0.00350	0.0200
Endrin aldehyde	U		0.00339	0.0200
Endrin ketone	U		0.00711	0.0200
Hexachlorobenzene	U		0.00346	0.0200
Heptachlor	U		0.00428	0.0200
Heptachlor epoxide	U		0.00339	0.0200
Methoxychlor	U		0.00484	0.0200
Toxaphene	U		0.124	0.400
(S) Decachlorobiphenyl	*78.5*			*10.0-135*
(S) Tetrachloro-m-xylene	*91.4*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R4099352-2 07/28/24 01:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aldrin	0.0666	0.0586	88.0	34.0-136	
Alpha BHC	0.0666	0.0578	86.8	34.0-139	
Beta BHC	0.0666	0.0587	88.1	34.0-133	
Delta BHC	0.0666	0.0674	101	34.0-135	
Gamma BHC	0.0666	0.0576	86.5	34.0-136	
4,4-DDD	0.0666	0.0569	85.4	33.0-141	
4,4-DDE	0.0666	0.0538	80.8	34.0-134	
4,4-DDT	0.0666	0.0561	84.2	30.0-143	
Dieldrin	0.0666	0.0555	83.3	35.0-137	
Endosulfan I	0.0666	0.0567	85.1	34.0-134	

Laboratory Control Sample (LCS)

(LCS) R4099352-2 07/28/24 01:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Endosulfan II	0.0666	0.0562	84.4	35.0-132	
Endosulfan sulfate	0.0666	0.0562	84.4	35.0-132	
Endrin	0.0666	0.0594	89.2	34.0-137	
Endrin aldehyde	0.0666	0.0361	54.2	23.0-121	
Endrin ketone	0.0666	0.0539	80.9	35.0-144	
Hexachlorobenzene	0.0666	0.0572	85.9	33.0-129	
Heptachlor	0.0666	0.0583	87.5	36.0-141	
Heptachlor epoxide	0.0666	0.0575	86.3	36.0-134	
Methoxychlor	0.0666	0.0539	80.9	28.0-150	
(S) Decachlorobiphenyl			*77.0*	*10.0-135*	
(S) Tetrachloro-m-xylene			*81.7*	*10.0-139*	

L1759109-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-07 07/28/24 02:44 • (MS) R4099352-3 07/28/24 02:54 • (MSD) R4099352-4 07/28/24 03:05

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aldrin	0.0707	U	0.0645	0.0650	91.2	90.4	1	20.0-135			0.673	37
Alpha BHC	0.0707	U	0.0709	0.0716	100	99.7	1	27.0-140			1.07	35
Beta BHC	0.0707	U	0.0682	0.0682	96.5	95.0	1	23.0-141			0.000	37
Delta BHC	0.0707	U	0.0791	0.0794	112	110	1	21.0-138			0.275	35
Gamma BHC	0.0707	U	0.0693	0.0699	98.0	97.3	1	27.0-137			0.783	36
4,4-DDD	0.0707	U	0.0597	0.0573	84.4	79.8	1	15.0-152			4.10	39
4,4-DDE	0.0707	U	0.0554	0.0567	78.3	78.9	1	10.0-152			2.33	40
4,4-DDT	0.0707	U	0.0588	0.0572	83.1	79.7	1	10.0-151			2.63	40
Dieldrin	0.0707	U	0.0640	0.0627	90.4	87.3	1	17.0-145			2.07	37
Endosulfan I	0.0707	U	0.0631	0.0615	89.2	85.6	1	20.0-137			2.62	36
Endosulfan II	0.0707	U	0.0597	0.0576	84.4	80.1	1	15.0-141			3.72	37
Endosulfan sulfate	0.0707	U	0.0598	0.0579	84.6	80.6	1	15.0-143			3.33	38
Endrin	0.0707	U	0.0645	0.0629	91.2	87.6	1	19.0-143			2.57	37
Endrin aldehyde	0.0707	U	0.0585	0.0581	82.7	80.9	1	10.0-139			0.748	40
Endrin ketone	0.0707	U	0.0607	0.0574	85.8	80.0	1	17.0-149			5.54	38
Hexachlorobenzene	0.0707	U	0.0700	0.0709	98.9	98.6	1	25.0-126			1.24	35
Heptachlor	0.0707	U	0.0653	0.0662	92.3	92.1	1	22.0-138			1.33	37
Heptachlor epoxide	0.0707	U	0.0640	0.0637	90.4	88.6	1	22.0-138			0.512	36
Methoxychlor	0.0707	U	0.0600	0.0524	84.7	73.0	1	10.0-159			13.4	40
(S) Decachlorobiphenyl					*79.2*	*74.1*		*10.0-135*				
(S) Tetrachloro-m-xylene					*91.7*	*92.0*		*10.0-139*				

Method Blank (MB)

(MB) R4101943-1 08/01/24 21:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Aldrin	U		0.00376	0.0200
Alpha BHC	U		0.00368	0.0200
Beta BHC	U		0.00379	0.0200
Delta BHC	U		0.00346	0.0200
Gamma BHC	U		0.00344	0.0200
Chlordane	U		0.103	0.300
4,4-DDD	U		0.00370	0.0200
4,4-DDE	U		0.00366	0.0200
4,4-DDT	U		0.00627	0.0200
Dieldrin	U		0.00344	0.0200
Endosulfan I	U		0.00363	0.0200
Endosulfan II	U		0.00335	0.0200
Endosulfan sulfate	U		0.00364	0.0200
Endrin	U		0.00350	0.0200
Endrin aldehyde	U		0.00339	0.0200
Endrin ketone	U		0.00711	0.0200
Hexachlorobenzene	U		0.00346	0.0200
Heptachlor	U		0.00428	0.0200
Heptachlor epoxide	U		0.00339	0.0200
Methoxychlor	U		0.00484	0.0200
Toxaphene	U		0.124	0.400
(S) Decachlorobiphenyl	*74.5*			*10.0-135*
(S) Tetrachloro-m-xylene	*82.7*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R4101943-2 08/01/24 21:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aldrin	0.0666	0.0623	93.5	34.0-136	
Alpha BHC	0.0666	0.0629	94.4	34.0-139	
Beta BHC	0.0666	0.0581	87.2	34.0-133	
Delta BHC	0.0666	0.0594	89.2	34.0-135	
Gamma BHC	0.0666	0.0618	92.8	34.0-136	
4,4-DDD	0.0666	0.0603	90.5	33.0-141	
4,4-DDE	0.0666	0.0615	92.3	34.0-134	
4,4-DDT	0.0666	0.0557	83.6	30.0-143	
Dieldrin	0.0666	0.0508	76.3	35.0-137	
Endosulfan I	0.0666	0.0620	93.1	34.0-134	

Laboratory Control Sample (LCS)

(LCS) R4101943-2 08/01/24 21:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Endosulfan II	0.0666	0.0580	87.1	35.0-132	
Endosulfan sulfate	0.0666	0.0573	86.0	35.0-132	
Endrin	0.0666	0.0185	27.8	34.0-137	J J4
Endrin aldehyde	0.0666	0.0445	66.8	23.0-121	
Endrin ketone	0.0666	0.0875	131	35.0-144	
Hexachlorobenzene	0.0666	0.0581	87.2	33.0-129	
Heptachlor	0.0666	0.0592	88.9	36.0-141	
Heptachlor epoxide	0.0666	0.0608	91.3	36.0-134	
Methoxychlor	0.0666	0.0502	75.4	28.0-150	
(S) Decachlorobiphenyl			*82.4*	*10.0-135*	
(S) Tetrachloro-m-xylene			*92.9*	*10.0-139*	

L1759109-17 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-17 08/01/24 22:56 • (MS) R4101943-3 08/01/24 23:05 • (MSD) R4101943-4 08/01/24 23:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aldrin	0.0744	U	0.0728	0.0671	97.9	90.7	1	20.0-135			8.10	37
Alpha BHC	0.0744	U	0.0753	0.0704	101	95.1	1	27.0-140			6.69	35
Beta BHC	0.0744	U	0.0691	0.0637	92.8	86.1	1	23.0-141			8.03	37
Delta BHC	0.0744	U	0.0705	0.0650	94.8	87.7	1	21.0-138			8.20	35
Gamma BHC	0.0744	U	0.0735	0.0690	98.8	93.1	1	27.0-137			6.37	36
4,4-DDD	0.0744	U	0.0699	0.0632	93.9	85.3	1	15.0-152			10.1	39
4,4-DDE	0.0744	U	0.0701	0.0640	94.2	86.4	1	10.0-152			9.14	40
4,4-DDT	0.0744	U	0.0638	0.0586	85.8	79.2	1	10.0-151			8.52	40
Dieldrin	0.0744	U	0.0690	0.0635	92.7	85.8	1	17.0-145			8.22	37
Endosulfan I	0.0744	U	0.0717	0.0652	96.3	88.1	1	20.0-137			9.44	36
Endosulfan II	0.0744	U	0.0682	0.0615	91.6	83.0	1	15.0-141			10.3	37
Endosulfan sulfate	0.0744	U	0.0668	0.0600	89.8	81.0	1	15.0-143			10.7	38
Endrin	0.0744	U	0.0576	0.0547	77.4	73.8	1	19.0-143			5.25	37
Endrin aldehyde	0.0744	U	0.0659	0.0580	88.6	78.3	1	10.0-139			12.8	40
Endrin ketone	0.0744	U	0.0750	0.0663	101	89.6	1	17.0-149			12.2	38
Hexachlorobenzene	0.0744	U	0.0688	0.0650	92.5	87.7	1	25.0-126			5.76	35
Heptachlor	0.0744	U	0.0700	0.0659	94.1	89.0	1	22.0-138			6.01	37
Heptachlor epoxide	0.0744	U	0.0713	0.0657	95.9	88.7	1	22.0-138			8.28	36
Methoxychlor	0.0744	U	0.0595	0.0536	80.0	72.4	1	10.0-159			10.4	40
(S) Decachlorobiphenyl					*78.8*	*71.4*		*10.0-135*				
(S) Tetrachloro-m-xylene					*93.3*	*89.6*		*10.0-139*				

Method Blank (MB)

(MB) R4101458-1 07/31/24 14:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.0118	0.0340
PCB 1221	U		0.0118	0.0340
PCB 1232	U		0.0118	0.0340
PCB 1242	U		0.0118	0.0340
PCB 1248	U		0.00738	0.0170
PCB 1254	U		0.00738	0.0170
PCB 1260	U		0.00738	0.0170
(S) Decachlorobiphenyl	*88.9*			*10.0-135*
(S) Tetrachloro-m-xylene	*83.2*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R4101458-2 07/31/24 14:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
PCB 1016	0.167	0.177	106	36.0-141	
PCB 1260	0.167	0.191	114	37.0-145	
(S) Decachlorobiphenyl			*119*	*10.0-135*	
(S) Tetrachloro-m-xylene			*114*	*10.0-139*	

L1759109-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-13 07/31/24 14:47 • (MS) R4101458-3 07/31/24 14:56 • (MSD) R4101458-4 07/31/24 15:05

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1016	0.199	U	0.166	0.124	83.2	62.7	1	10.0-160			28.8	37
PCB 1260	0.199	U	0.133	0.112	67.1	56.7	1	10.0-160			17.3	38
(S) Decachlorobiphenyl					*56.9*	*51.6*		*10.0-135*				
(S) Tetrachloro-m-xylene					*81.8*	*67.9*		*10.0-139*				

Method Blank (MB)

(MB) R4099610-2 07/28/24 19:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00539	0.0333
Acenaphthylene	U		0.00469	0.0333
Anthracene	U		0.00593	0.0333
Benzo(a)anthracene	U		0.00587	0.0333
Benzo(b)fluoranthene	U		0.00621	0.0333
Benzo(k)fluoranthene	U		0.00592	0.0333
Benzo(g,h,i)perylene	U		0.00609	0.0333
Benzo(a)pyrene	U		0.00619	0.0333
Bis(2-chlorethoxy)methane	U		0.0100	0.333
Bis(2-chloroethyl)ether	U		0.0110	0.333
2,2-Oxybis(1-Chloropropane)	U		0.0144	0.333
4-Bromophenyl-phenylether	U		0.0117	0.333
2-Chloronaphthalene	U		0.00585	0.0333
4-Chlorophenyl-phenylether	U		0.0116	0.333
Chrysene	U		0.00662	0.0333
Dibenz(a,h)anthracene	U		0.00923	0.0333
3,3-Dichlorobenzidine	U		0.0123	0.333
2,4-Dinitrotoluene	U		0.00955	0.333
2,6-Dinitrotoluene	U		0.0109	0.333
Fluoranthene	U		0.00601	0.0333
Fluorene	U		0.00542	0.0333
Hexachlorobenzene	U		0.0118	0.333
Hexachloro-1,3-butadiene	U		0.0112	0.333
Hexachlorocyclopentadiene	U		0.0175	0.333
Hexachloroethane	U		0.0131	0.333
Indeno(1,2,3-cd)pyrene	U		0.00941	0.0333
Isophorone	U		0.0102	0.333
Naphthalene	0.0126	J	0.00836	0.0333
Nitrobenzene	U		0.0116	0.333
n-Nitrosodimethylamine	U		0.0494	0.333
n-Nitrosodiphenylamine	U		0.0252	0.333
n-Nitrosodi-n-propylamine	U		0.0111	0.333
Phenanthrene	U		0.00661	0.0333
Pyridine	U		0.0220	0.333
Benzylbutyl phthalate	U		0.0104	0.333
Bis(2-ethylhexyl)phthalate	U		0.0422	0.333
Di-n-butyl phthalate	U		0.0114	0.333
Diethyl phthalate	U		0.0110	0.333
Dimethyl phthalate	U		0.0706	0.333
Di-n-octyl phthalate	U		0.0225	0.333

Method Blank (MB)

(MB) R4099610-2 07/28/24 19:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Pyrene	U		0.00648	0.0333
1,2,4-Trichlorobenzene	U		0.0104	0.333
4-Chloro-3-methylphenol	U		0.0108	0.333
2-Chlorophenol	U		0.0110	0.333
2,4-Dichlorophenol	U		0.00970	0.333
2,4-Dimethylphenol	U		0.00870	0.333
4,6-Dinitro-2-methylphenol	U		0.0755	0.333
2,4-Dinitrophenol	U		0.0779	0.333
2-Methylphenol	U		0.0100	0.333
3&4-Methyl Phenol	U		0.0104	0.333
2-Nitrophenol	U		0.0119	0.333
4-Nitrophenol	U		0.0104	0.333
Pentachlorophenol	U		0.00896	0.333
Phenol	U		0.0134	0.333
2,4,6-Trichlorophenol	U		0.0107	0.333
2,4,5-Trichlorophenol	U		0.0113	0.333
(S) 2-Fluorophenol	*71.6*			*12.0-120*
(S) Phenol-d5	*65.0*			*10.0-120*
(S) Nitrobenzene-d5	*63.1*			*10.0-122*
(S) 2-Fluorobiphenyl	*72.7*			*15.0-120*
(S) 2,4,6-Tribromophenol	*67.6*			*10.0-127*
(S) p-Terphenyl-d14	*86.5*			*10.0-120*

Laboratory Control Sample (LCS)

(LCS) R4099610-1 07/28/24 19:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.666	0.442	66.4	38.0-120	
Acenaphthylene	0.666	0.475	71.3	40.0-120	
Anthracene	0.666	0.505	75.8	42.0-120	
Benzo(a)anthracene	0.666	0.522	78.4	44.0-120	
Benzo(b)fluoranthene	0.666	0.504	75.7	43.0-120	
Benzo(k)fluoranthene	0.666	0.523	78.5	44.0-120	
Benzo(g,h,i)perylene	0.666	0.540	81.1	43.0-120	
Benzo(a)pyrene	0.666	0.524	78.7	45.0-120	
Bis(2-chlorethoxy)methane	0.666	0.344	51.7	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.410	61.6	16.0-120	
2,2-Oxybis(1-Chloropropane)	0.666	0.388	58.3	23.0-120	

Laboratory Control Sample (LCS)

(LCS) R4099610-1 07/28/24 19:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Bromophenyl-phenylether	0.666	0.479	71.9	40.0-120	
2-Chloronaphthalene	0.666	0.430	64.6	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.477	71.6	40.0-120	
Chrysene	0.666	0.513	77.0	43.0-120	
Dibenz(a,h)anthracene	0.666	0.517	77.6	44.0-120	
3,3-Dichlorobenzidine	1.33	1.00	75.2	28.0-120	
2,4-Dinitrotoluene	0.666	0.531	79.7	45.0-120	
2,6-Dinitrotoluene	0.666	0.515	77.3	42.0-120	
Fluoranthene	0.666	0.518	77.8	44.0-120	
Fluorene	0.666	0.497	74.6	41.0-120	
Hexachlorobenzene	0.666	0.460	69.1	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.347	52.1	15.0-120	
Hexachlorocyclopentadiene	0.666	0.411	61.7	15.0-120	
Hexachloroethane	0.666	0.398	59.8	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.506	76.0	45.0-120	
Isophorone	0.666	0.333	50.0	23.0-120	J
Naphthalene	0.666	0.367	55.1	18.0-120	
Nitrobenzene	0.666	0.326	48.9	17.0-120	J
n-Nitrosodimethylamine	0.666	0.410	61.6	10.0-125	
n-Nitrosodiphenylamine	0.666	0.482	72.4	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.401	60.2	26.0-120	
Phenanthrene	0.666	0.493	74.0	42.0-120	
Pyridine	0.666	0.254	38.1	10.0-120	J
Benzylbutyl phthalate	0.666	0.533	80.0	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.542	81.4	41.0-120	
Di-n-butyl phthalate	0.666	0.512	76.9	43.0-120	
Diethyl phthalate	0.666	0.518	77.8	43.0-120	
Dimethyl phthalate	0.666	0.503	75.5	43.0-120	
Di-n-octyl phthalate	0.666	0.517	77.6	40.0-120	
Pyrene	0.666	0.500	75.1	41.0-120	
1,2,4-Trichlorobenzene	0.666	0.352	52.9	17.0-120	
4-Chloro-3-methylphenol	0.666	0.362	54.4	28.0-120	
2-Chlorophenol	0.666	0.435	65.3	28.0-120	
2,4-Dichlorophenol	0.666	0.371	55.7	25.0-120	
2,4-Dimethylphenol	0.666	0.420	63.1	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.526	79.0	16.0-120	
2,4-Dinitrophenol	0.666	0.460	69.1	10.0-120	
2-Methylphenol	0.666	0.430	64.6	35.0-120	
3&4-Methyl Phenol	0.666	0.484	72.7	42.0-120	
2-Nitrophenol	0.666	0.394	59.2	20.0-120	

Laboratory Control Sample (LCS)

(LCS) R4099610-1 07/28/24 19:03

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Nitrophenol	0.666	0.532	79.9	27.0-120	
Pentachlorophenol	0.666	0.407	61.1	29.0-120	
Phenol	0.666	0.397	59.6	28.0-120	
2,4,6-Trichlorophenol	0.666	0.432	64.9	37.0-120	
2,4,5-Trichlorophenol	0.666	0.447	67.1	38.0-120	
(S) 2-Fluorophenol			*67.1*	*12.0-120*	
(S) Phenol-d5			*61.7*	*10.0-120*	
(S) Nitrobenzene-d5			*46.2*	*10.0-122*	
(S) 2-Fluorobiphenyl			*67.6*	*15.0-120*	
(S) 2,4,6-Tribromophenol			*76.1*	*10.0-127*	
(S) p-Terphenyl-d14			*79.9*	*10.0-120*	

L1757151-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757151-06 07/29/24 00:48 • (MS) R4099610-3 07/29/24 01:08 • (MSD) R4099610-4 07/29/24 01:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.662	0.949	0.810	1.62	122	251	100	18.0-120	J J5	J J3 J5	66.7	32
Acenaphthylene	0.662	0.669	1.46	1.26	221	195	100	25.0-120	J J5	J J5	14.7	32
Anthracene	0.662	2.77	1.61	5.26	243	814	100	22.0-120	J J5	J3 J5	106	29
Benzo(a)anthracene	0.662	8.09	4.98	9.95	0.000	288	100	25.0-120	V	J3 V	66.6	29
Benzo(b)fluoranthene	0.662	10.4	7.88	12.6	0.000	341	100	19.0-122	V	J3 V	46.1	31
Benzo(k)fluoranthene	0.662	3.63	2.92	4.55	0.000	142	100	23.0-120	J V	J3 V	43.6	30
Benzo(g,h,i)perylene	0.662	6.03	5.40	7.40	0.000	212	100	10.0-120	V	V	31.3	33
Benzo(a)pyrene	0.662	7.14	5.54	9.12	0.000	307	100	24.0-120	V	J3 V	48.8	30
Bis(2-chlorethoxy)methane	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	34
Bis(2-chloroethyl)ether	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	40
2,2-Oxybis(1-Chloropropane)	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	40
4-Bromophenyl-phenylether	0.662	U	U	U	0.000	0.000	100	27.0-120	J6	J6	0.000	30
2-Chloronaphthalene	0.662	U	U	U	0.000	0.000	100	20.0-120	J6	J6	0.000	32
4-Chlorophenyl-phenylether	0.662	U	U	U	0.000	0.000	100	24.0-120	J6	J6	0.000	29
Chrysene	0.662	6.57	4.42	8.07	0.000	232	100	21.0-120	V	J3 V	58.4	29
Dibenz(a,h)anthracene	0.662	1.23	1.32	1.63	199	252	100	10.0-120	J J5	J J5	21.0	32
3,3-Dichlorobenzidine	1.32	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	34
2,4-Dinitrotoluene	0.662	U	U	U	0.000	0.000	100	30.0-120	J6	J6	0.000	31
2,6-Dinitrotoluene	0.662	U	U	U	0.000	0.000	100	25.0-120	J6	J6	0.000	31
Fluoranthene	0.662	18.9	8.99	22.6	0.000	573	100	18.0-126	V	J3 V	86.2	32
Fluorene	0.662	1.17	0.910	2.31	137	358	100	25.0-120	J J5	J J3 J5	87.0	30
Hexachlorobenzene	0.662	U	U	U	0.000	0.000	100	27.0-120	J6	J6	0.000	28

L1757151-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1757151-06 07/29/24 00:48 • (MS) R4099610-3 07/29/24 01:08 • (MSD) R4099610-4 07/29/24 01:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	38
Hexachlorocyclopentadiene	0.662	U	ND	ND	0.000	0.000	100	10.0-120	J6	J6	0.000	40
Hexachloroethane	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	40
Indeno(1,2,3-cd)pyrene	0.662	5.45	4.66	6.78	0.000	206	100	10.0-120	V	J3 V	37.1	32
Isophorone	0.662	U	U	U	0.000	0.000	100	13.0-120	J6	J6	0.000	34
Naphthalene	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	35
Nitrobenzene	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	36
n-Nitrosodimethylamine	0.662	U	U	U	0.000	0.000	100	10.0-127	J6	J6	0.000	40
n-Nitrosodiphenylamine	0.662	U	U	U	0.000	0.000	100	17.0-120	J6	J6	0.000	29
n-Nitrosodi-n-propylamine	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	37
Phenanthrene	0.662	12.2	4.31	17.7	0.000	851	100	17.0-120	V	J3 V	122	31
Pyridine	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	40
Benzylbutyl phthalate	0.662	U	U	U	0.000	0.000	100	23.0-120	J6	J6	0.000	30
Bis(2-ethylhexyl)phthalate	0.662	U	5.48	U	828	0.000	100	17.0-126	J J5	J3 J6	200	30
Di-n-butyl phthalate	0.662	U	U	U	0.000	0.000	100	30.0-120	J6	J6	0.000	29
Diethyl phthalate	0.662	U	U	U	0.000	0.000	100	26.0-120	J6	J6	0.000	28
Dimethyl phthalate	0.662	U	ND	ND	75.2	66.1	100	25.0-120	J	J	15.4	29
Di-n-octyl phthalate	0.662	U	U	U	0.000	0.000	100	21.0-123	J6	J6	0.000	29
Pyrene	0.662	14.6	8.48	18.5	0.000	604	100	16.0-121	V	J3 V	74.3	32
1,2,4-Trichlorobenzene	0.662	U	U	U	0.000	0.000	100	12.0-120	J6	J6	0.000	37
4-Chloro-3-methylphenol	0.662	U	U	U	0.000	0.000	100	15.0-120	J6	J6	0.000	30
2-Chlorophenol	0.662	U	U	U	0.000	0.000	100	15.0-120	J6	J6	0.000	37
2,4-Dichlorophenol	0.662	U	U	U	0.000	0.000	100	20.0-120	J6	J6	0.000	31
2,4-Dimethylphenol	0.662	U	U	U	0.000	0.000	100	10.0-120	J6	J6	0.000	33
4,6-Dinitro-2-methylphenol	0.662	U	ND	ND	0.000	0.000	100	10.0-120	J6	J6	0.000	39
2,4-Dinitrophenol	0.662	U	U	U	0.000	0.000	100	10.0-121	J6	J6	0.000	40
2-Methylphenol	0.662	U	U	U	0.000	0.000	100	11.0-120	J6	J6	0.000	40
3&4-Methyl Phenol	0.662	U	U	U	0.000	0.000	100	12.0-123	J6	J6	0.000	38
2-Nitrophenol	0.662	U	U	U	0.000	0.000	100	12.0-120	J6	J6	0.000	39
4-Nitrophenol	0.662	U	U	U	0.000	0.000	100	10.0-137	J6	J6	0.000	32
Pentachlorophenol	0.662	U	U	U	0.000	0.000	100	10.0-160	J6	J6	0.000	31
Phenol	0.662	U	U	U	0.000	0.000	100	12.0-120	J6	J6	0.000	38
2,4,6-Trichlorophenol	0.662	U	U	U	0.000	0.000	100	19.0-120	J6	J6	0.000	32
2,4,5-Trichlorophenol	0.662	U	U	U	0.000	0.000	100	20.0-120	J6	J6	0.000	30
(S) 2-Fluorophenol					*61.0*	*66.9*		*12.0-120*	J7	J7		
(S) Phenol-d5					*65.3*	*61.0*		*10.0-120*	J7	J7		
(S) Nitrobenzene-d5					*62.8*	*65.3*		*10.0-122*	J7	J7		
(S) 2-Fluorobiphenyl					*71.3*	*68.7*		*15.0-120*	J7	J7		
(S) 2,4,6-Tribromophenol					*51.8*	*41.6*		*10.0-127*	J7	J7		
(S) p-Terphenyl-d14					*75.2*	*74.3*		*10.0-120*	J7	J7		

Method Blank (MB)

(MB) R4099784-2 07/28/24 22:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00539	0.0333
Acenaphthylene	U		0.00469	0.0333
Anthracene	U		0.00593	0.0333
Benzo(a)anthracene	U		0.00587	0.0333
Benzo(b)fluoranthene	U		0.00621	0.0333
Benzo(k)fluoranthene	U		0.00592	0.0333
Benzo(g,h,i)perylene	U		0.00609	0.0333
Benzo(a)pyrene	U		0.00619	0.0333
Bis(2-chlorethoxy)methane	U		0.0100	0.333
Bis(2-chloroethyl)ether	U		0.0110	0.333
2,2-Oxybis(1-Chloropropane)	U		0.0144	0.333
4-Bromophenyl-phenylether	U		0.0117	0.333
2-Chloronaphthalene	U		0.00585	0.0333
4-Chlorophenyl-phenylether	U		0.0116	0.333
Chrysene	U		0.00662	0.0333
Dibenz(a,h)anthracene	U		0.00923	0.0333
3,3-Dichlorobenzidine	U		0.0123	0.333
2,4-Dinitrotoluene	U		0.00955	0.333
2,6-Dinitrotoluene	U		0.0109	0.333
Fluoranthene	U		0.00601	0.0333
Fluorene	U		0.00542	0.0333
Hexachlorobenzene	U		0.0118	0.333
Hexachloro-1,3-butadiene	U		0.0112	0.333
Hexachlorocyclopentadiene	U		0.0175	0.333
Hexachloroethane	U		0.0131	0.333
Indeno(1,2,3-cd)pyrene	U		0.00941	0.0333
Isophorone	U		0.0102	0.333
Naphthalene	U		0.00836	0.0333
Nitrobenzene	U		0.0116	0.333
n-Nitrosodimethylamine	U		0.0494	0.333
n-Nitrosodiphenylamine	U		0.0252	0.333
n-Nitrosodi-n-propylamine	U		0.0111	0.333
Phenanthrene	U		0.00661	0.0333
Pyridine	U		0.0220	0.333
Benzylbutyl phthalate	U		0.0104	0.333
Bis(2-ethylhexyl)phthalate	U		0.0422	0.333
Di-n-butyl phthalate	U		0.0114	0.333
Diethyl phthalate	U		0.0110	0.333
Dimethyl phthalate	U		0.0706	0.333
Di-n-octyl phthalate	U		0.0225	0.333

Method Blank (MB)

(MB) R4099784-2 07/28/24 22:20

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Pyrene	U		0.00648	0.0333
1,2,4-Trichlorobenzene	U		0.0104	0.333
4-Chloro-3-methylphenol	U		0.0108	0.333
2-Chlorophenol	U		0.0110	0.333
2,4-Dichlorophenol	U		0.00970	0.333
2,4-Dimethylphenol	U		0.00870	0.333
4,6-Dinitro-2-methylphenol	U		0.0755	0.333
2,4-Dinitrophenol	U		0.0779	0.333
2-Methylphenol	U		0.0100	0.333
3&4-Methyl Phenol	U		0.0104	0.333
2-Nitrophenol	U		0.0119	0.333
4-Nitrophenol	U		0.0104	0.333
Pentachlorophenol	U		0.00896	0.333
Phenol	U		0.0134	0.333
2,4,6-Trichlorophenol	U		0.0107	0.333
2,4,5-Trichlorophenol	U		0.0113	0.333
(S) 2-Fluorophenol	*73.7*			*12.0-120*
(S) Phenol-d5	*64.9*			*10.0-120*
(S) Nitrobenzene-d5	*69.7*			*10.0-122*
(S) 2-Fluorobiphenyl	*69.4*			*15.0-120*
(S) 2,4,6-Tribromophenol	*52.7*			*10.0-127*
(S) p-Terphenyl-d14	*76.3*			*10.0-120*

Laboratory Control Sample (LCS)

(LCS) R4099784-1 07/28/24 22:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.666	0.436	65.5	38.0-120	
Acenaphthylene	0.666	0.505	75.8	40.0-120	
Anthracene	0.666	0.505	75.8	42.0-120	
Benzo(a)anthracene	0.666	0.537	80.6	44.0-120	
Benzo(b)fluoranthene	0.666	0.533	80.0	43.0-120	
Benzo(k)fluoranthene	0.666	0.530	79.6	44.0-120	
Benzo(g,h,i)perylene	0.666	0.534	80.2	43.0-120	
Benzo(a)pyrene	0.666	0.555	83.3	45.0-120	
Bis(2-chlorethoxy)methane	0.666	0.408	61.3	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.433	65.0	16.0-120	
2,2-Oxybis(1-Chloropropane)	0.666	0.439	65.9	23.0-120	

Laboratory Control Sample (LCS)

(LCS) R4099784-1 07/28/24 22:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Bromophenyl-phenylether	0.666	0.462	69.4	40.0-120	
2-Chloronaphthalene	0.666	0.452	67.9	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.518	77.8	40.0-120	
Chrysene	0.666	0.515	77.3	43.0-120	
Dibenz(a,h)anthracene	0.666	0.532	79.9	44.0-120	
3,3-Dichlorobenzidine	1.33	0.986	74.1	28.0-120	
2,4-Dinitrotoluene	0.666	0.591	88.7	45.0-120	
2,6-Dinitrotoluene	0.666	0.555	83.3	42.0-120	
Fluoranthene	0.666	0.523	78.5	44.0-120	
Fluorene	0.666	0.501	75.2	41.0-120	
Hexachlorobenzene	0.666	0.394	59.2	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.376	56.5	15.0-120	
Hexachlorocyclopentadiene	0.666	0.446	67.0	15.0-120	
Hexachloroethane	0.666	0.421	63.2	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.520	78.1	45.0-120	
Isophorone	0.666	0.413	62.0	23.0-120	
Naphthalene	0.666	0.377	56.6	18.0-120	
Nitrobenzene	0.666	0.390	58.6	17.0-120	
n-Nitrosodimethylamine	0.666	0.353	53.0	10.0-125	
n-Nitrosodiphenylamine	0.666	0.477	71.6	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.459	68.9	26.0-120	
Phenanthrene	0.666	0.491	73.7	42.0-120	
Pyridine	0.666	0.244	36.6	10.0-120	J
Benzylbutyl phthalate	0.666	0.628	94.3	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.621	93.2	41.0-120	
Di-n-butyl phthalate	0.666	0.535	80.3	43.0-120	
Diethyl phthalate	0.666	0.521	78.2	43.0-120	
Dimethyl phthalate	0.666	0.547	82.1	43.0-120	
Di-n-octyl phthalate	0.666	0.584	87.7	40.0-120	
Pyrene	0.666	0.540	81.1	41.0-120	
1,2,4-Trichlorobenzene	0.666	0.386	58.0	17.0-120	
4-Chloro-3-methylphenol	0.666	0.425	63.8	28.0-120	
2-Chlorophenol	0.666	0.482	72.4	28.0-120	
2,4-Dichlorophenol	0.666	0.372	55.9	25.0-120	
2,4-Dimethylphenol	0.666	0.425	63.8	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.572	85.9	16.0-120	
2,4-Dinitrophenol	0.666	0.486	73.0	10.0-120	
2-Methylphenol	0.666	0.435	65.3	35.0-120	
3&4-Methyl Phenol	0.666	0.455	68.3	42.0-120	
2-Nitrophenol	0.666	0.452	67.9	20.0-120	

Laboratory Control Sample (LCS)

(LCS) R4099784-1 07/28/24 22:00

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Nitrophenol	0.666	0.605	90.8	27.0-120	
Pentachlorophenol	0.666	0.361	54.2	29.0-120	
Phenol	0.666	0.440	66.1	28.0-120	
2,4,6-Trichlorophenol	0.666	0.457	68.6	37.0-120	
2,4,5-Trichlorophenol	0.666	0.434	65.2	38.0-120	
(S) 2-Fluorophenol			*75.1*	*12.0-120*	
(S) Phenol-d5			*66.7*	*10.0-120*	
(S) Nitrobenzene-d5			*58.6*	*10.0-122*	
(S) 2-Fluorobiphenyl			*70.3*	*15.0-120*	
(S) 2,4,6-Tribromophenol			*56.9*	*10.0-127*	
(S) p-Terphenyl-d14			*79.0*	*10.0-120*	

L1759109-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-14 07/31/24 01:00 • (MS) R4100668-1 07/31/24 01:21 • (MSD) R4100668-2 07/31/24 01:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.701	U	0.465	0.469	66.3	66.8	2	18.0-120			0.715	32
Acenaphthylene	0.701	U	0.528	0.528	75.2	75.2	2	25.0-120			0.000	32
Anthracene	0.701	U	0.548	0.531	78.1	75.7	2	22.0-120			3.10	29
Benzo(a)anthracene	0.701	0.204	0.941	0.732	105	75.4	2	25.0-120			24.9	29
Benzo(b)fluoranthene	0.701	0.519	1.42	1.05	129	76.2	2	19.0-122	J5		30.0	31
Benzo(k)fluoranthene	0.701	0.174	0.858	0.705	97.6	75.7	2	23.0-120			19.7	30
Benzo(g,h,i)perylene	0.701	0.297	0.860	0.717	80.3	59.8	2	10.0-120			18.2	33
Benzo(a)pyrene	0.701	0.281	1.03	0.827	107	77.9	2	24.0-120			21.7	30
Bis(2-chlorethoxy)methane	0.701	U	0.460	0.471	65.6	67.1	2	10.0-120	J	J	2.39	34
Bis(2-chloroethyl)ether	0.701	U	0.621	0.552	88.6	78.7	2	10.0-120	J	J	11.8	40
2,2-Oxybis(1-Chloropropane)	0.701	U	0.454	0.447	64.8	63.8	2	10.0-120	J	J	1.48	40
4-Bromophenyl-phenylether	0.701	U	0.484	0.491	69.0	70.0	2	27.0-120	J	J	1.37	30
2-Chloronaphthalene	0.701	U	0.479	0.489	68.3	69.7	2	20.0-120			2.07	32
4-Chlorophenyl-phenylether	0.701	U	0.545	0.542	77.8	77.3	2	24.0-120	J	J	0.614	29
Chrysene	0.701	0.305	1.06	0.808	108	71.7	2	21.0-120			27.1	29
Dibenz(a,h)anthracene	0.701	0.0590	0.553	0.558	70.5	71.1	2	10.0-120			0.802	32
3,3-Dichlorobenzidine	1.40	U	0.441	0.667	31.4	47.5	2	10.0-120	J	J J3	40.8	34
2,4-Dinitrotoluene	0.701	U	0.604	0.602	86.2	85.9	2	30.0-120	J	J	0.369	31
2,6-Dinitrotoluene	0.701	U	0.559	0.593	79.7	84.6	2	25.0-120	J	J	5.99	31
Fluoranthene	0.701	0.463	1.27	0.960	115	70.8	2	18.0-126			27.8	32
Fluorene	0.701	U	0.533	0.531	76.0	75.7	2	25.0-120			0.418	30
Hexachlorobenzene	0.701	U	0.423	0.427	60.3	61.0	2	27.0-120	J	J	1.05	28

L1759109-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-14 07/31/24 01:00 • (MS) R4100668-1 07/31/24 01:21 • (MSD) R4100668-2 07/31/24 01:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexachloro-1,3-butadiene	0.701	U	0.429	0.441	61.1	62.9	2	10.0-120	J	J	2.82	38
Hexachlorocyclopentadiene	0.701	U	0.248	0.213	35.4	30.3	2	10.0-120	J	J	15.5	40
Hexachloroethane	0.701	U	0.426	0.397	60.8	56.7	2	10.0-120	J	J	7.03	40
Indeno(1,2,3-cd)pyrene	0.701	0.288	0.875	0.740	83.7	64.4	2	10.0-120			16.7	32
Isophorone	0.701	U	0.463	0.461	66.0	65.7	2	13.0-120	J	J	0.482	34
Naphthalene	0.701	U	0.434	0.436	61.9	62.2	2	10.0-120			0.512	35
Nitrobenzene	0.701	U	0.445	0.439	63.5	62.5	2	10.0-120	J	J	1.51	36
n-Nitrosodimethylamine	0.701	U	0.366	0.360	52.2	51.3	2	10.0-127	J	J	1.84	40
n-Nitrosodiphenylamine	0.701	U	0.485	0.513	69.2	73.2	2	17.0-120	J	J	5.57	29
n-Nitrosodi-n-propylamine	0.701	U	0.481	0.499	68.6	71.1	2	10.0-120	J	J	3.64	37
Phenanthrene	0.701	0.137	0.697	0.621	79.8	69.0	2	17.0-120			11.5	31
Pyridine	0.701	U	0.281	0.298	40.0	42.5	2	10.0-120	J	J	6.15	40
Benzylbutyl phthalate	0.701	U	0.646	0.651	92.1	92.9	2	23.0-120	J	J	0.858	30
Bis(2-ethylhexyl)phthalate	0.701	U	0.658	0.652	93.8	93.0	2	17.0-126	J	J	0.850	30
Di-n-butyl phthalate	0.701	U	0.541	0.549	77.1	78.3	2	30.0-120	J	J	1.43	29
Diethyl phthalate	0.701	U	0.567	0.568	80.8	81.0	2	26.0-120	J	J	0.196	28
Dimethyl phthalate	0.701	U	0.547	0.550	77.9	78.4	2	25.0-120	J	J	0.609	29
Di-n-octyl phthalate	0.701	U	0.619	0.623	88.3	88.9	2	21.0-123	J	J	0.717	29
Pyrene	0.701	0.371	1.12	0.864	107	70.3	2	16.0-121			26.2	32
1,2,4-Trichlorobenzene	0.701	U	0.453	0.455	64.6	64.9	2	12.0-120	J	J	0.490	37
4-Chloro-3-methylphenol	0.701	U	0.476	0.472	67.9	67.3	2	15.0-120	J	J	0.939	30
2-Chlorophenol	0.701	U	0.501	0.496	71.4	70.8	2	15.0-120	J	J	0.893	37
2,4-Dichlorophenol	0.701	U	0.499	0.511	71.1	72.9	2	20.0-120	J	J	2.43	31
2,4-Dimethylphenol	0.701	U	0.501	0.520	71.4	74.1	2	10.0-120	J	J	3.71	33
4,6-Dinitro-2-methylphenol	0.701	U	0.629	0.621	89.7	88.6	2	10.0-120	J	J	1.25	39
2,4-Dinitrophenol	0.701	U	0.646	0.587	92.1	83.7	2	10.0-121	J	J	9.58	40
2-Methylphenol	0.701	U	0.509	0.510	72.5	72.7	2	11.0-120	J	J	0.219	40
3&4-Methyl Phenol	0.701	U	0.555	0.557	79.2	79.4	2	12.0-123	J	J	0.200	38
2-Nitrophenol	0.701	U	0.501	0.519	71.4	74.0	2	12.0-120	J	J	3.49	39
4-Nitrophenol	0.701	U	0.704	0.681	100	97.1	2	10.0-137	J	J	3.22	32
Pentachlorophenol	0.701	U	0.282	0.275	40.2	39.2	2	10.0-160	J	J	2.40	31
Phenol	0.701	U	0.506	0.502	72.2	71.6	2	12.0-120	J	J	0.883	38
2,4,6-Trichlorophenol	0.701	U	0.501	0.510	71.4	72.7	2	19.0-120	J	J	1.76	32
2,4,5-Trichlorophenol	0.701	U	0.472	0.474	67.3	67.6	2	20.0-120	J	J	0.471	30
(S) 2-Fluorophenol					*73.0*	*71.6*		*12.0-120*				
(S) Phenol-d5					*71.2*	*70.6*		*10.0-120*				
(S) Nitrobenzene-d5					*62.5*	*65.4*		*10.0-122*				
(S) 2-Fluorobiphenyl					*72.7*	*69.8*		*15.0-120*				
(S) 2,4,6-Tribromophenol					*59.5*	*63.0*		*10.0-127*				

L1759109-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1759109-14 07/31/24 01:00 • (MS) R4100668-1 07/31/24 01:21 • (MSD) R4100668-2 07/31/24 01:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
(S) p-Terphenyl-d14					*74.9*	*74.0*		*10.0-120*				

Method Blank (MB)

(MB) R4101533-2 07/31/24 18:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) p-Terphenyl-d14	*97.5*			*23.0-120*
(S) Nitrobenzene-d5	*89.8*			*14.0-149*
(S) 2-Fluorobiphenyl	*103*			*34.0-125*

Laboratory Control Sample (LCS)

(LCS) R4101533-1 07/31/24 18:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0766	95.8	50.0-126	
Acenaphthene	0.0800	0.0736	92.0	50.0-120	
Acenaphthylene	0.0800	0.0773	96.6	50.0-120	
Benzo(a)anthracene	0.0800	0.0758	94.8	45.0-120	
Benzo(a)pyrene	0.0800	0.0671	83.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0693	86.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0695	86.9	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0704	88.0	49.0-125	
Chrysene	0.0800	0.0788	98.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0627	78.4	47.0-125	
Fluoranthene	0.0800	0.0812	102	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R4101533-1 07/31/24 18:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0788	98.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0634	79.3	46.0-125	
Naphthalene	0.0800	0.0757	94.6	50.0-120	
Phenanthrene	0.0800	0.0784	98.0	47.0-120	
Pyrene	0.0800	0.0755	94.4	43.0-123	
1-Methylnaphthalene	0.0800	0.0776	97.0	51.0-121	
2-Methylnaphthalene	0.0800	0.0747	93.4	50.0-120	
2-Chloronaphthalene	0.0800	0.0798	99.8	50.0-120	
(S) p-Terphenyl-d14			*101*	*23.0-120*	
(S) Nitrobenzene-d5			*103*	*14.0-149*	
(S) 2-Fluorobiphenyl			*109*	*34.0-125*	

L1758581-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1758581-07 07/31/24 19:41 • (MS) R4101533-3 07/31/24 19:59 • (MSD) R4101533-4 07/31/24 20:17

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0941	U	0.0581	0.0523	61.7	55.0	1	10.0-145			10.4	30
Acenaphthene	0.0941	U	0.0576	0.0542	61.2	57.0	1	14.0-127			6.14	27
Acenaphthylene	0.0941	U	0.0605	0.0577	64.3	60.7	1	21.0-124			4.77	25
Benzo(a)anthracene	0.0941	U	0.0556	0.0489	59.1	51.4	1	10.0-139			12.9	30
Benzo(a)pyrene	0.0941	U	0.0515	0.0448	54.7	47.2	1	10.0-141			13.7	31
Benzo(b)fluoranthene	0.0941	U	0.0473	0.0408	50.3	42.9	1	10.0-140			14.7	36
Benzo(g,h,i)perylene	0.0941	U	0.0497	0.0439	52.9	46.1	1	10.0-140			12.6	33
Benzo(k)fluoranthene	0.0941	U	0.0545	0.0486	57.9	51.2	1	10.0-137			11.4	31
Chrysene	0.0941	U	0.0642	0.0583	68.2	61.3	1	10.0-145			9.60	30
Dibenz(a,h)anthracene	0.0941	U	0.0522	0.0481	55.5	50.6	1	10.0-132			8.06	31
Fluoranthene	0.0941	U	0.0572	0.0513	60.8	54.0	1	10.0-153			10.8	33
Fluorene	0.0941	U	0.0625	0.0584	66.4	61.5	1	11.0-130			6.69	29
Indeno(1,2,3-cd)pyrene	0.0941	U	0.0447	0.0379	47.5	39.8	1	10.0-137			16.6	32
Naphthalene	0.0941	U	0.0602	0.0575	63.9	60.4	1	10.0-135			4.58	27
Phenanthrene	0.0941	U	0.0592	0.0544	62.9	57.2	1	10.0-144			8.41	31
Pyrene	0.0941	U	0.0538	0.0496	57.2	52.2	1	10.0-148			8.06	35
1-Methylnaphthalene	0.0941	U	0.0617	0.0586	65.6	61.6	1	10.0-142			5.30	28
2-Methylnaphthalene	0.0941	U	0.0605	0.0564	64.3	59.3	1	10.0-137			7.13	28
2-Chloronaphthalene	0.0941	U	0.0644	0.0609	68.5	64.0	1	29.0-120			5.67	24
(S) p-Terphenyl-d14					*63.4*	*66.3*		*23.0-120*				
(S) Nitrobenzene-d5					*80.6*	*68.2*		*14.0-149*				
(S) 2-Fluorobiphenyl					*74.4*	*71.8*		*34.0-125*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
MDL (dry)	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

GLOSSARY OF TERMS

Qualifier	Description
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P	RPD between the primary and confirmatory analysis exceeded 40%.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
Pangea Environmental Serv - Berkeley, CA

1250 Addison St.

Billing Information:
AP
1250 Addison St.
Ste. #213
Berkeley, CA 94702

Pres Chk

Report to:
Dylan Cardiff

Email To:
dcardiff@pangeaenv.com;tnaughton@pangeae

Project Description:
Springtown

City/State Collected:
Livermore CA

Please Circle:
(PT) MT CT ET

Phone:
510 836 3700

Client Project #

Lab Project #
PANENVOCA-SPRINGTOWN

Collected by (print):
Dylan Cardiff

Site/Facility ID #

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed
Standard

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CAM17 Metals 16ozClr-NoPres	DRO/ORO 8015 16ozClr-NoPres	GRO 8015 40mlAmb/MeOH10ml/Syr	Herbs 8151 16ozClr-NoPres	OCPs 8081 16ozClr-NoPres	PAHs 8270SIM 2ozClr-NoPres	PCBs 8082 2ozClr-NoPres	SVOCs 8270 2ozClr-NoPres	TCLP/STLC* 16ozClr-NoPres	VOCs 8260 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
NPW-1	Grab	SS	1	7/18/24	8:40	2	X	X	X	X	X				X			-01
NPW-2			2		8:55		X	X	X	X	X				X			-02
NPW-3			3		9:05		X	X	X	X	X				X			-03
NPE-1			1		9:30		X	X	X	X	X				X			-04
NPE-2			2		9:40		X	X	X	X	X				X			-05
NPE-3			3		9:50		X	X	X	X	X				X			-06
SPW-1			1		7:05		X	X	X	X	X				X			-07
SPW-2			2		7:15		X	X	X	X	X				X			-08
SPW-3			3		7:35		X	X	X	X	X				X			-09
SPE-1			1		7:55		X	X	X	X	X				X			-10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: *TCLP/STLC: extract and hold for metals.
terracores: one methanol for discrete analysis, one methanol for lab compositing.
PCOMP1 = NPW-1 + NPE-1 + SPW-1 + SPE-1 composited by lab
PCOMP2 = same but for 2s PCOMP3 = same but for 3s

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	7/18/24	14:50	PACE		
PACE	7/19/24	16:30	SWA CARGO	Temp: HK 7/19/24 C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
			CROZIER	07.19.24 0800	

Chain of Custody Page 1 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L759109

Table #

Acctnum: PANENVOCA
Template: T256679
Prelogin: P1089398
PM: 110 - Brian Ford
PB:

Shipped Via:

Company Name/Address:
Pangea Environmental Serv - Berkeley, CA

1250 Addison St.

Billing Information:
AP
1250 Addison St.
Ste. #213
Berkeley, CA 94702

Report to:
Dylan Cardiff

Email To:
dcardiff@pangeaenv.com;tnaughton@pangeae

Project Description: springtown

City/State Collected: Livermore CA

Please Circle: (PT) MT CT ET

Phone: 510 836-3700

Client Project #

Lab Project #
PANENVOCA-SPRINGTOWN

Collected by (print): Dylan Cardiff

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Chain of Custody Page 2 of 3

Pace
PEOPLE ADVANCING SCIENCE

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SDG # L1759109

Table #

Acctnum: **PANENVOCA**

Template: **T256679**

Prelogin: **P1089398**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CAM17 Metals 16ozClr-NoPres	DRO/ORO 8015 16ozClr-NoPres	GRO 8015 40mlAmb/MeOH10ml/Syr	Herbs 8151 16ozClr-NoPres	OCPs 8081 16ozClr-NoPres	PAHs 8270SIM 2ozClr-NoPres	PCBs 8082 2ozClr-NoPres	SVOCs 8270 2ozClr-NoPres	TCLP/STLC* 16ozClr-NoPres	VOCs 8260 40mlAmb/MeOH10ml/Syr	Remarks	Sample # (lab only)
SPE-2	Grab	SS	2	7/18/24	8:10	2	X	X	X	X	X				X			-11
SPE-3	Grab	SS	3		8:20	2	X	X	X	X	X				X			-12
PCOMP1	Comp	SS	1		—	8						X	X	X		X		-13
PCOMP2	Comp	SS	2		—	8						X	X	X		X		-14
PCOMP3	Comp	SS	3		—	8						X	X	X		X		-15
		SS																
		SS																
		SS																
		SS																
		SS																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*TCLP/STLC: extract and hold for metals.
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pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: (Yes) / No HCl / MeoH TBR	If preservation required by Login: Date/Time
	7/18/24	14:50	PACE	2	
PACE	7/18/24	16:30	SWA CARIO	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 07-19-24 Time: 0800	Hold: Condition: NCF / OK

Company Name/Address:
Pangea Environmental Serv - Berkeley, CA

1250 Addison St.

Billing Information:
AP
1250 Addison St.
Ste. #213
Berkeley, CA 94702

Pres Chk

Report to:
Dylan Cardiff

Email To:
dcardiff@pangeaenv.com;tnaughton@pangeae

Project Description: Springtown

City/State Collected: Livermore CA

Please Circle: PT MT CT ET

Phone: 510 836-3700

Client Project #

Lab Project #
PANENVOCA-SPRINGTOWN

Collected by (print): Dylan Cardiff

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CAM17 Metals 16ozClr-NoPres	DRO/ORO 8015 16ozClr-NoPres	GRO 8015 40mlAmb/MeOH 10ml/Syr	Herbs 8151 16ozClr-NoPres	OCPs 8081 16ozClr-NoPres	PAHs 8270SIM 2ozClr-NoPres	PCBs 8082 2ozClr-NoPres	SVOCs 8270 2ozClr-NoPres	TCLP/STLC* 16ozClr-NoPres	VOCs 8260 40mlAmb/MeOH 10ml/Syr	Remarks	Sample # (lab only)
OP1-1	Grab	SS	1	7/18/24	10:30	2	X	X	X	X	X				X			-16
OP1-2		SS	2		10:45	4	X	X	X	X	X				X			-17
OP2-1		SS	1		11:00	2	X	X	X	X	X				X			-18
OP2-2		SS	2		11:15	4	X	X	X	X	X				X			-19
OP3-2		SS	2		12:20	2	X	X	X	X	X				X			-20
OP3-5		SS	5		12:35	4	X	X	X	X	X				X			-21
OP4-1		SS	1		11:45	2	X	X	X	X	X				X			-22
OP4-2		SS	2		11:55	4	X	X	X	X	X				X			-23
OCOMP1	Comp	SS			—	8					X	X	X	X		X		-24
		SS																

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:*TCLP/STLC: extract and hold for metals.
terracores: one methanol for discrete analysis, one methanol for lab compositing.
OCOMP1= OP1-1+OP2-1+OP3-2+OP4-1 composited by lab

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	7/18/24	14:50	PACE
PACE	7/19/24	16:30	SWA CARGO
			Received for lab by: (Signature)
			CROOKED

Trip Blank Received: Yes / No
HCl / MeoH
TBR

Temp: °C Bottles Received:

Date: 07.19.24 Time: 0800

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Chain of Custody Page 3 of 3

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # U759109

Table #

Acctnum: **PANENVOCA**
Template: **T256679**
Prelogin: **P1089398**
PM: **110 - Brian Ford**
PB:

Shipped Via:

LT59109

Fed Ex tracking #	Gun ID	Temperature
SWA	EDA9	5.6+0.3=5.9
SWA	EDA9	0.6+0.3=0.9

Name

Date

7/19-NCF-PANENVOCA L1759109

R5

Time estimate: oh **Time spent:** oh

Members

Hailey Robertson (responsible) BF Brian Ford

Due on *23 July 2024 8:00 AM* for target *Done*

- [x] Login Clarification needed
- [ ] Chain of custody is incomplete
- [ ] Please specify Metals requested
- [ ] Please specify TCLP requested
- [ ] Received additional samples not listed on COC
- [ ] Sample IDs on containers do not match IDs on COC
- [ ] Client did not "X" analysis
- [ ] Chain of Custody is missing
- [ ] If no COC: Received by:_____
- [ ] If no COC: Date/Time:_____
- [ ] If no COC: Temp./Cont.Rec./pH:_____
- [ ] If no COC: Carrier:_____
- [ ] If no COC: Tracking #:_____
- [ ] Client informed by call
- [x] Client informed by Email
- [ ] Client informed by Voicemail
- [ ] Date/Time:_____
- [x] PM initials:_____bjf_____
- [ ] Client Contact:_____

Comments

Hailey Robertson *19 July 2024 4:57 PM*

Received extra samples for ID: NPW-1 but missing containers for SPW-1 containers have 2 separate times on them. One set says collected @ 0840 and the other says collected @ 0705. Also received extra samples for ID: NPW-2 but missing containers for SPW-2 containers have 2 separate times on them. One set says collected @ 0855 and the other says collected @ 0715.

All of the NP and SP samples have 4 containers 2 containers have a C next to the ID. How are we proceeding with these? Are these possibly the comp containers?

Brian Ford *23 July 2024 7:23 AM*

Containers NPW-1 with time 0840, use for NPW-1
Containers NPW-1 with time 0705, use for SPW-1
Containers NPW-2 with time 0855, use for NPW-2
Containers NPW-2 with time 0715, use for SPW-2

You can ignore the C, use whatever containers are best for lab compositing. One terracore vial is for the discrete, and one set is for the lab composite.

Hailey Robertson *23 July 2024 8:18 AM*

Are we running both the Discrete and the comp samples or are we placing the discrete on hold?

Brian Ford *23 July 2024 8:43 AM*

we are running both the discretes and the composites.

Hailey Robertson *23 July 2024 8:54 AM*

Done

EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order:	092413451
Customer ID:	PANG75
Customer PO:	
Project ID:	

Attention:	Tim Naughton Pangea Environmental 1250 Addison Street Suite 213 Berkeley, CA 94702-1764	**Phone:**	(510) 836-3700
		Fax:	
		Received:	07/18/2024 3:30 PM
		Analysis Date:	07/24/2024
		Collected:	
Project:	SPRINGTOWN		

Test Report: Asbestos Analysis of Soils via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
PCPMP1 *092413451-0001*	FIELD COMPOSITE OF 4-1' SAMPLES	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
PCOMP2 *092413451-0002*	FIELD COMPOSITE OF 4-2' SAMPLES	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
PCOMP3 *092413451-0003*	FIELD COMPOSITE OF 4-3' SAMPLES	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**
OCOMP1 *092413451-0004*	FIELD COMPOSITE OF 3-1' & 1-2' SAMPLES	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Analyst(s)

Adam C. Fink (4)

Oscar Merino, Laboratory Manager
or other approved signatory

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 07/25/2024 00:48:01

OrderID: 092413451

EMSL ANALYTICAL, INC.
TESTING LABS • PRODUCTS • TRAINING

Asbestos Chain of Custody (Air, Bulk, Soil)
California Customers

EMSL Order Number / Lab Use Only: 092413451

EMSL Analytical, Inc.
464 McCormick St.
San Leandro, CA 94577

PHONE: (510) 895-3675
EMAIL: SanLeandroLab@emsl.com

If Bill-To is the same as Report-To leave this section blank. Third-party billing requires written authorization

Customer Information		Billing Information	
Customer ID:		Billing ID:	
Company Name:	Pangea Environmental Services, Inc	Company Name:	Pangea
Contact Name:	Tim Naughton	Billing Contact:	Mari Corpus
Street Address:	1250 Addison St Suite 213	Street Address:	1250 Addison St Suite 213
City, State, Zip:	Berkeley CA 94702	City, State, Zip:	Berkeley CA 94702
Country:	USA	Country:	USA
Phone:	510-836-3700	Phone:	510-836-3700
Email(s) for Report:	tnaughton@pangeaenv.com	Email(s) for Invoice:	accounts_payable@pangeaenv.com

Project Information

Project Name/No:	Springtown	Purchase Order:	
EMSL LIMS Project ID. (If applicable, EMSL will provide)		US State where samples collected:	CA
State of Connecticut (CT) must select project location:	☐ Commercial (Taxable) ☐ Residential (Non-Taxable)		
Sampled By Name:	Dylan Cassiff	Sampled By Signature:	
No. of Samples in Shipment			

Turn-Around-Time (TAT)

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 32 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☒ 1 Week ☐ 2 Week

TEM Air 3-6 Hour, please call ahead to schedule. 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.

Test Selection

PCM Air
- ☐ NIOSH 7400
- ☐ NIOSH 7400 w/ 8hr. TWA

PLM - Bulk (reporting limit)
- ☐ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)
- ☐ POINT COUNT
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0 08%)
- POINT COUNT w/ GRAVIMETRIC
  - ☐ 400 (<0.25%) ☐ 1,000 (<0.1%) ☐ 1,200 (<0 08%)

TEM - Air
- ☐ AHERA 40 CFR, Part 763
- ☐ CARB Modified AHERA
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312*

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ TEM EPA 600/R-93/116 w Milling Prep (0 1%)

TEM - Settled Dust
- ☐ Microvac - ASTM D5755
- ☐ Wipe - ASTM D6480
- ☐ Qualitative via Filtration Prep
- ☐ Qualitative via Drop Mount Prep

Soil - Rock - Vermiculite (reporting limit)*
- ☒ PLM CARB 435 - Level A (<0.25%)
- ☐ PLM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level B (<0.1%)
- ☐ TEM CARB 435 - Level C (<0 01%)
- ☐ CARB Guidance Compliance Prep
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.25%)
- ☐ PLM EPA 600/R-93/116 with milling prep (<0.1%)
- ☐ TEM EPA 600/R-93/116 with milling prep (<0.1%)

Other

*Please call with your project-specific requirements.

☐ Positive Stop - Clearly Identified Homogeneous Areas (HA) | Filter Pore Size (Air Samples) ☐ 0.8um ☐ 0.45um

Sample Number	Sample Location / Description	Volume, Area or Homogeneous Area	Date / Time Sampled (Air Monitoring Only)
PCOMP1	Field composite of 4-1' samples		
PCOMP2	Field composite of 4-2' samples		
PCOMP3	Field composite of 4-3' samples		
OCOMP1	Field composite of 3-1' & 1-2' samples		

Special Instructions and/or Regulatory Requirements (Sample Specifications, Processing Methods, Limits of Detection, etc.)

Method of Shipment:		Sample Condition Upon Receipt:	
Relinquished by:	Date/Time: 7/18/24 15:30	Received by: Oscar Mendez	Date/Time: 7/18/24 3:30PM
Relinquished by:	Date/Time:	Received by:	Date/Time

Controlled Document - COC-51 Asbestos CA Clients R2 02/26/2021

☐ AGREE TO ELECTRONIC SIGNATURE (By checking, I consent to signing this Chain of Custody document by electronic signature)

EMSL Analytical, Inc.'s Laboratory Terms and Conditions are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, Inc. constitutes acceptance and acknowledgment of all terms and conditions by Customer.

APPENDIX B

ENVIRONMENTAL NOISE ASSESSMENT

Environmental Noise Assessment

Springtown Open Space Phase 1

City of Livermore, California

October 28, 2024

Project #240602

Prepared for:

Raney Planning & Management, Inc.
1501 Sports Drive, Suite A
Sacramento, CA 95834

Prepared by:

Saxelby Acoustics LLC

Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

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915 Highland Pointe Drive, Suite 250
Roseville, CA 95678

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INTRODUCTION

The Springtown Open Space project is located in the City of Livermore, California. The project will be constructed in phases. Phase 1 will develop the southern portion of the project site near the Livermore Public Library Springtown branch. This phase will include several playgrounds, a parking lot, picnic areas, a lawn area, and a community garden. Subsequent phases of the project will include the addition of four pickleball courts and a half basketball court at Marlin Pound Neighborhood Park as well as the addition of a disc golf course along the existing walking trails. Primary noise sources associated with the project include parking lot movements and recreation amenities.

Sensitive receptors in the project area include single-family and multifamily residences surrounding the proposed project amenities. The purpose of this analysis is to predict the noise generation associated with pickleball and playgrounds to demonstrate compliance with the applicable City of Livermore noise level standards.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

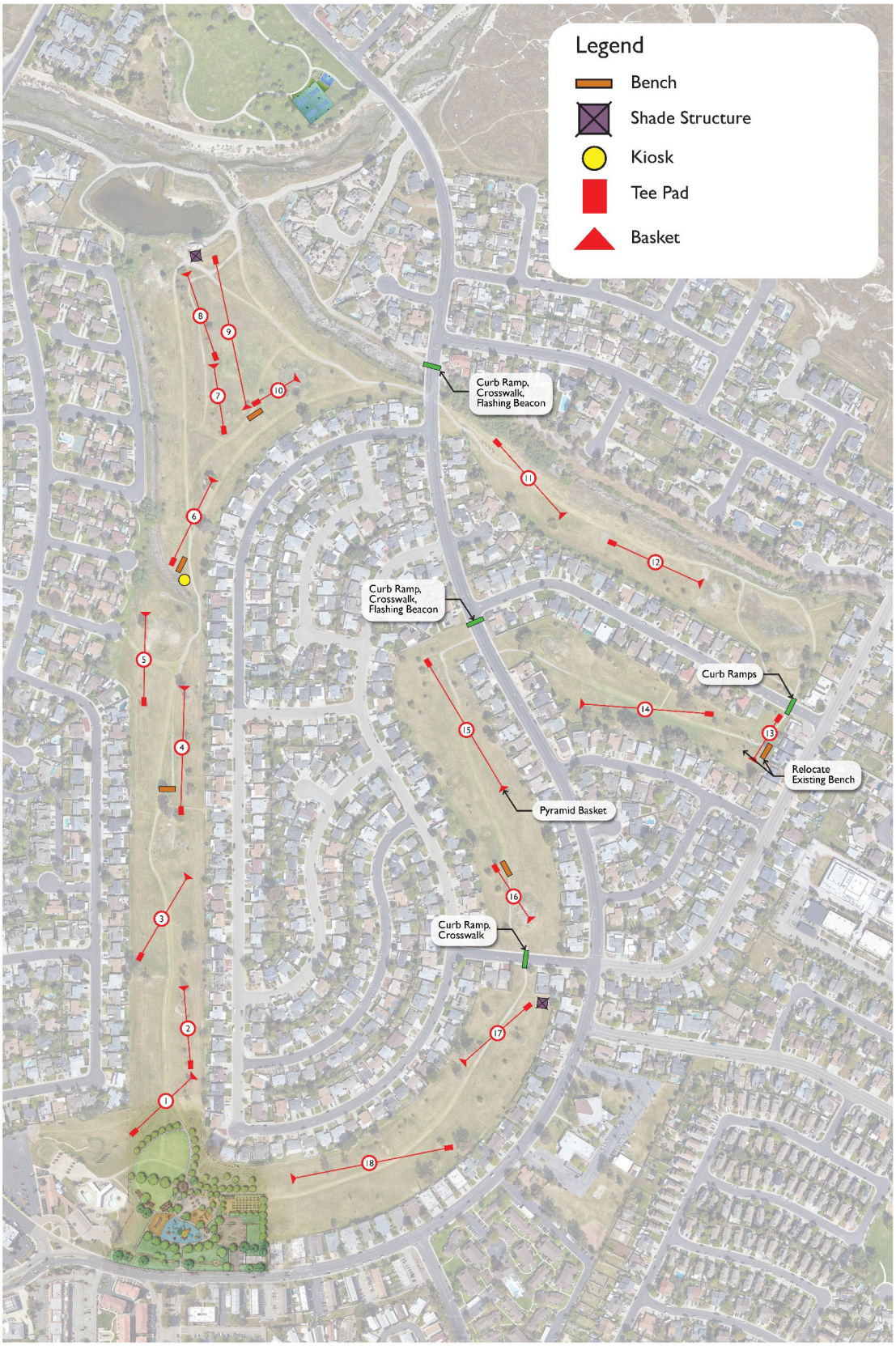
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.



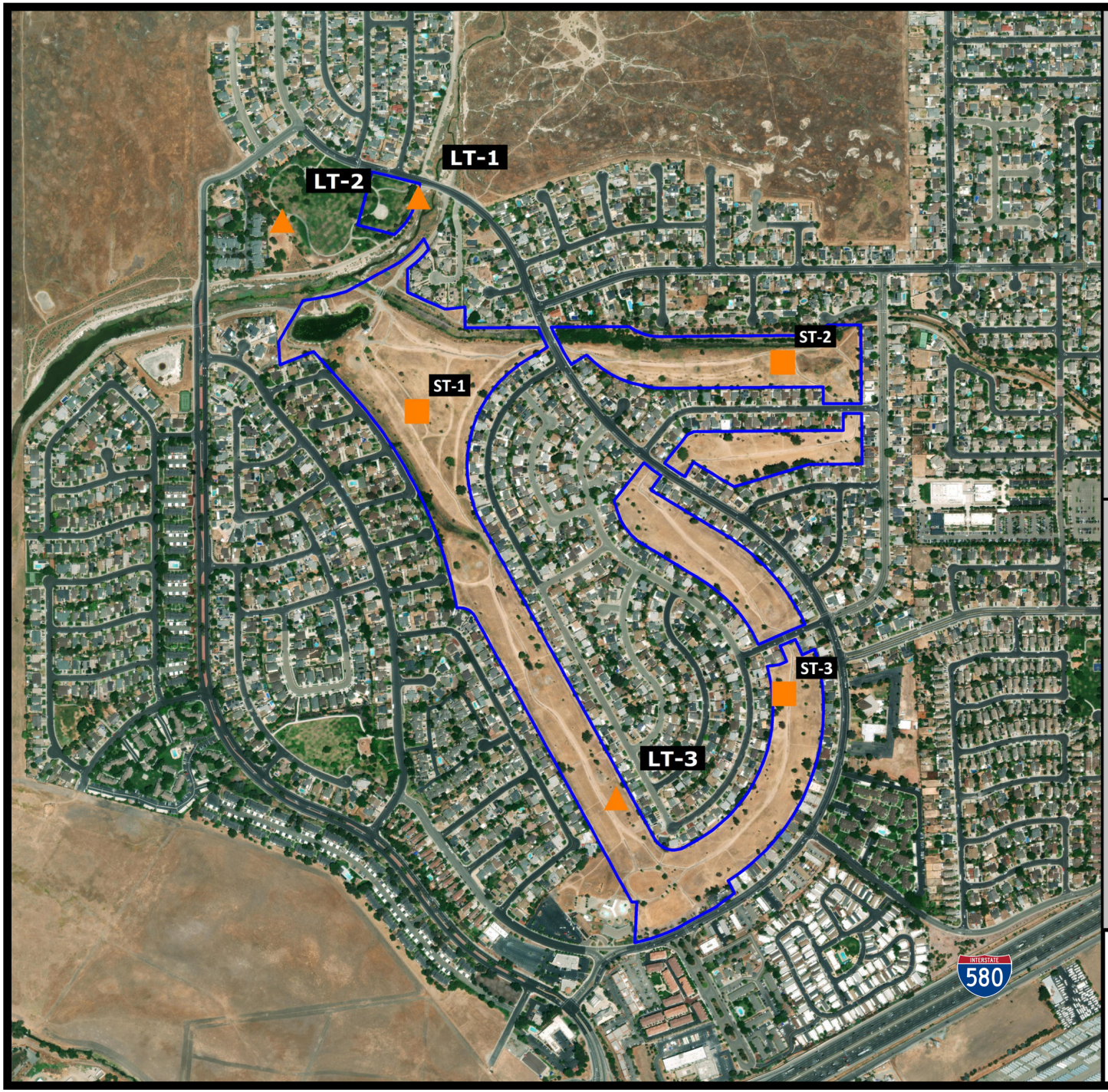
Spring Town Open Space

City of Livermore, California

Figure 1

Project Site Plan

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration



Springtown Open Space

City of Livermore, California

Figure 2

Noise Measurement Sites

Legend

- Project Site
- Noise Measurement Site - Long Term
- Noise Measurement Site - Short Term

0.0 mi 0.5 mi 1.0 mi 1.5 mi 2.0 mi

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 08/07/2024

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses surrounding the project site and multifamily residential uses to the southwest of the project site.

EXISTING GENERAL AMBIENT NOISE LEVELS

The ambient noise environment in the project vicinity is primarily defined by traffic on the local roadway network. Secondary sources include activity at the adjacent park uses. To quantify the existing ambient noise environment, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at three locations on the project site and short term measurements at three locations. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 and 831 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL 200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

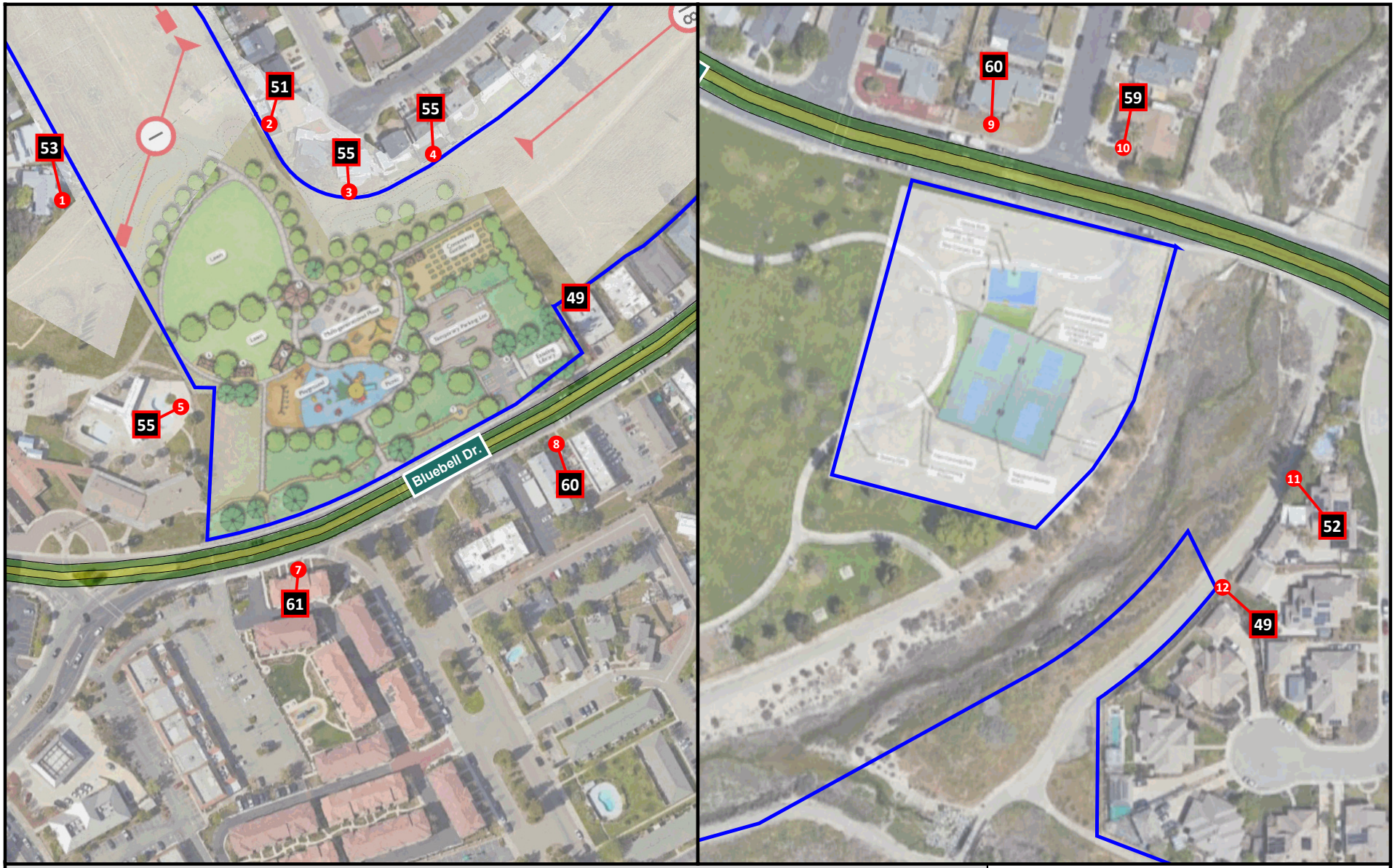
TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Site	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1: Marlin Pound Neighborhood Park East	Friday, July 26, 2024	55	52	47	69	47	44	62
	Saturday, July 27, 2024	67	52	47	72	61	40	70
	Sunday, July 28, 2024	50	50	43	70	40	36	59
LT-2: Marlin Pound Neighborhood Park West	Friday, July 26, 2024	54	50	45	66	47	44	61
	Saturday, July 27, 2024	61	48	45	65	55	41	68
	Sunday, July 28, 2024	49	46	41	66	42	38	57
LT-3: Northwest of Livermore Public Library Springtown Branch	Friday, July 26, 2024	58	51	49	65	51	49	61
	Saturday, July 27, 2024	58	53	52	65	51	48	66
	Sunday, July 28, 2024	53	50	47	64	46	43	58
ST-1	7/25/24 11:57 AM	N/A	46	44	57	N/A	N/A	N/A
ST-2	7/25/24 12:24 PM	N/A	53	43	72	N/A	N/A	N/A
ST-3	7/25/24 12:43 PM	N/A	46	46	52	N/A	N/A	N/A

Notes:

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics 2024*

Saxelby Acoustics utilized the SoundPLAN modeling software and the ambient noise level data presented in **Table 2** to model existing noise levels at sensitive receptors in the project vicinity. This analysis is presented graphically in **Figure 3**.



Springtown Open Space

City of Livermore, California

Figure 3
Average Existing Transportation Noise Levels (dBA, Leq)

Noise Level
Leq, dBA
<= 65
65 < <= 70
70 <

Legend
Project Site
Noise Level

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EVALUATION OF PROJECT OPERATIONAL NOISE ON EXISTING SENSITIVE RECEPTORS

Outdoor recreational noise associated with the proposed recreational amenities and parking lot traffic circulation are considered to be the primary noise sources for this project. The following is a list of assumptions used for the noise modeling. Project operational noise is assumed to occur during daytime (7:00 am. to 10:00 p.m.) hours only.

Play Areas: The proposed play areas are predicted to generate approximately 50 dBA L_{50} at 50 feet based on measurements at similar parks. Saxelby Acoustics data.

On-Site Circulation: Saxelby Acoustics assumed 20 passenger vehicle movements in the peak hour at the parking lot of Phase 1. One heavy truck trip was included to account for trash collection. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks. Saxelby Acoustics data.

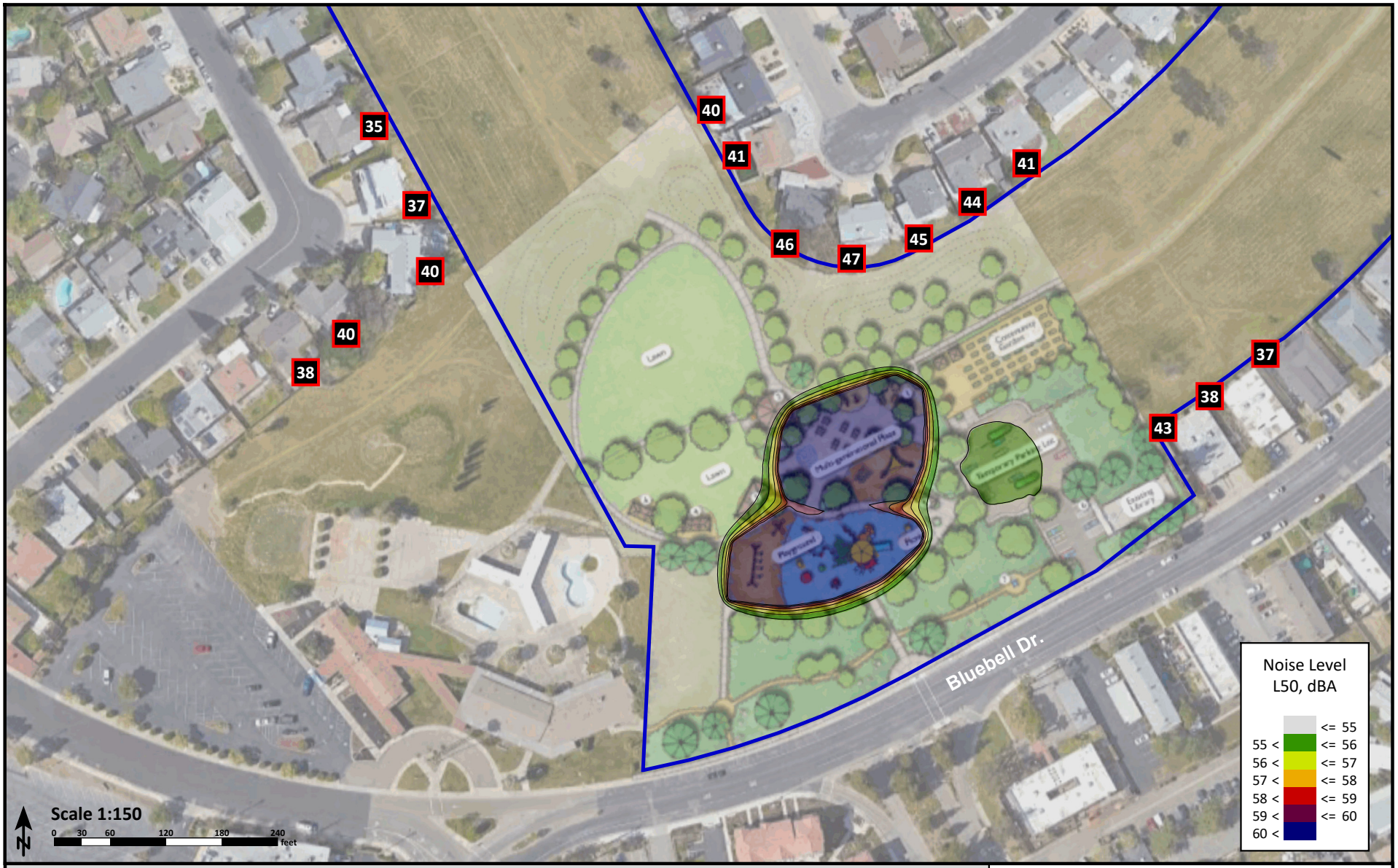
Pickleball Courts: Pickleball gameplay is expected to produce noise levels of approximately 48 dBA L_{50} at 25 feet from the edge of a single court. Gameplay consisted of two players on a single court. The primary source of noise was contact between the paddle and ball. The secondary source of noise was conversation between players. Measured noise levels on a court with two players was approximately equivalent to courts with four players. Saxelby Acoustics data.

Basketball Courts: The proposed basketball courts are predicted to generate 50 dBA L_{50} at 50 feet from the center of the court.

Disc Golf: Noise emanating from disc golf primarily originates from players conversing. Saxelby Acoustics assumed 50 people on the disc golf course speaking at a "very loud" speaking voice continuously.

Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed amenities, existing and proposed buildings, topographic data, and locations of sensitive receptors. It was assumed that all sources would be active during a peak hour of activity. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation.

Figure 3 shows project noise levels at the sensitive receptors in the vicinity of Phase 1 of the project. **Figure 4** shows the project noise levels at the sensitive receptors in the vicinity of the proposed pickleball and basketball courts. **Figure 5** shows project noise levels at sensitive receptors along the proposed disc golf course. It should be noted that all project sources were assumed to be active in each of the figures.



Springtown Open Space

City of Livermore, California

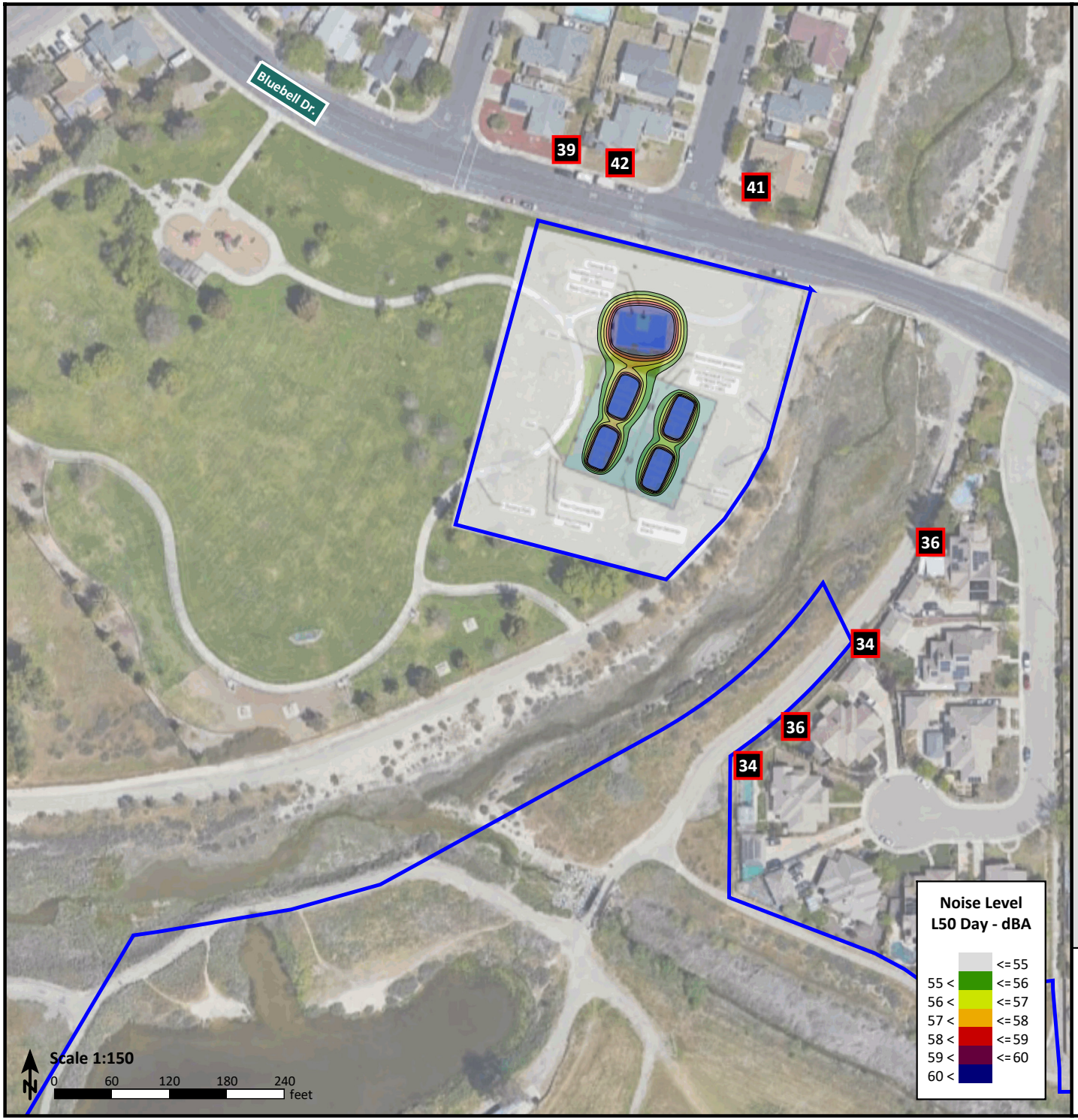
Figure 4
Project Noise Levels (dBA, L50)

Legend

Project Boundary

Noise Level

SAXELBY ACOUSTICS
Acoustics · Noise · Vibration



Springtown Open Space

City of Livermore, California

Figure 5

Project Noise Levels
L50 dBA

Legend

Project Site

Noise Level

SAXELBY ACOUSTICS
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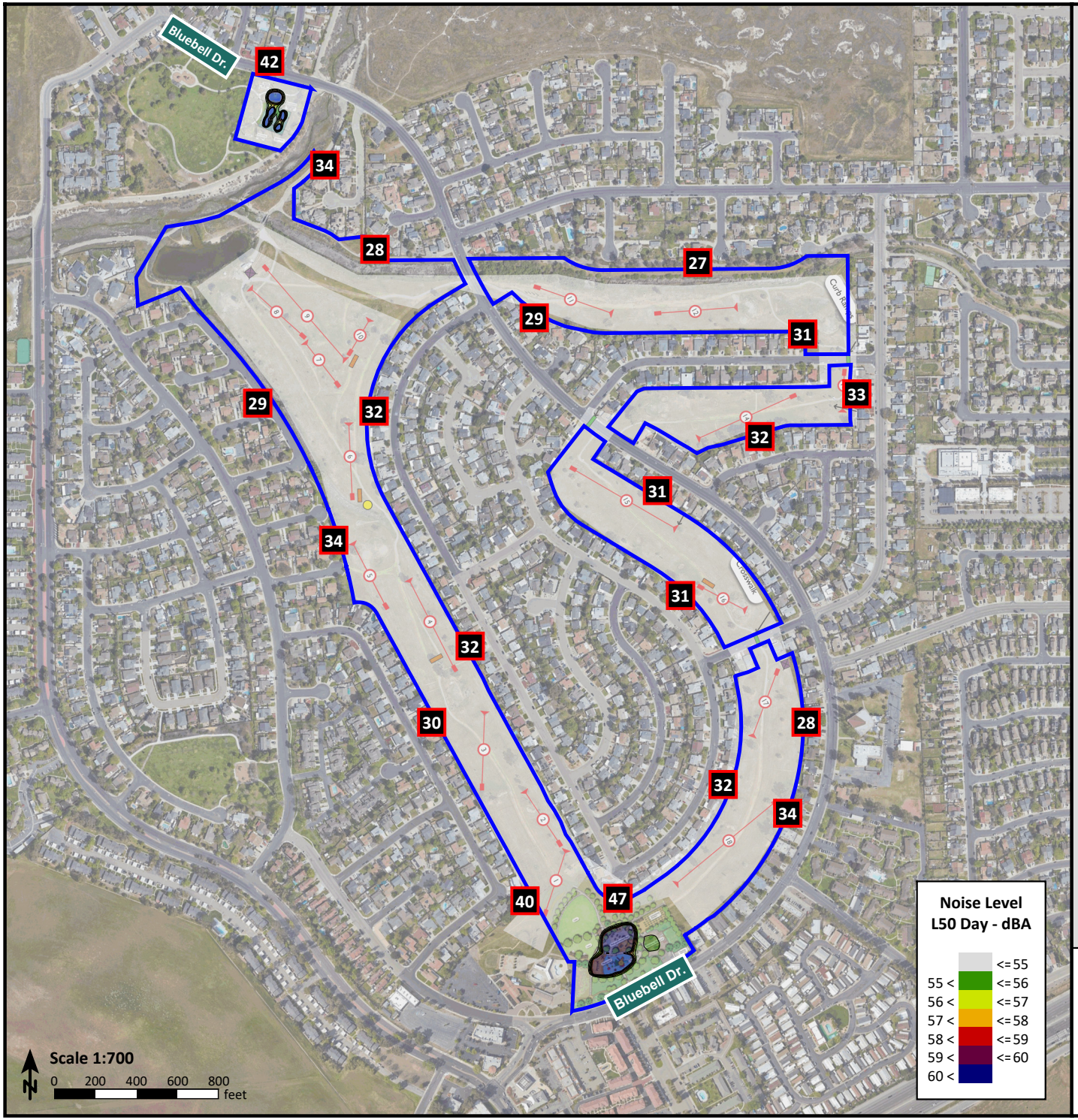

Springtown Open Space

City of Livermore, California

Figure 6

Project Noise Levels
L50 dBA

Legend

Project Site

Noise Level

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TRANSPORTATION NOISE LEVELS ON PROJECT SITE

Saxelby Acoustics used the SoundPLAN noise model and the noise level data in **Table 2** to calculate traffic noise levels at the proposed residential uses due to traffic on Bluebell Drive. Inputs to the SoundPLAN noise model include topography, existing structures, roadway elevations. The results of this analysis are shown graphically on **Figure 6**.

Springtown Open Space

City of Livermore, California

Figure 7
Transportation Noise Levels (dBA, Ldn)

Noise Level
Ldn, dBA
<= 70
70 < <= 75
75 <

Legend
Project Site
Noise Level

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CONSTRUCTION NOISE ENVIRONMENT

The Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) was used to predict noise levels for standard construction equipment used for roadway improvement projects. The assessment of potential significant noise effects due to construction is based on the standards and procedures described in the Federal Transit Authority (FTA) guidance manual and FHWA's RCNM.

The RCNM is a Windows-based noise prediction model that enables the prediction of construction noise levels for a variety of construction equipment based on a compilation of empirical data and the application of acoustical propagation formulas. It enables the calculation of construction noise levels in more detail than the manual methods, which eliminates the need to collect extensive amounts of project-specific input data. RCNM allows for the modeling of multiple pieces of construction equipment working either independently or simultaneously, the character of noise emission, and the usage factors for each piece of equipment.

Construction noise varies depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week), and the duration of the construction work.

Noise sources in the RCNM database include actual noise levels and equipment usage percentages. This source data was used in this construction noise analysis. **Table 3** shows predicted construction noise levels for each of the construction phases for the Springtown Park Improvements. **Table 4** shows predicted construction noise levels for each of the construction phases for the Pickleball Courts Improvements at Marlin Pound Park.

TABLE 3: CONSTRUCTION EQUIPMENT NOISE LEVELS SPRINGTOWN PARK IMPROVEMENTS

Equipment	Quantity	Hours Per Day	Usage (%)	Maximum, L_{max} (dBA at 50 feet)	Hourly Average, L_{eq} (dBA at 50 feet)
Site Preparation					
Dozer	2	5	40	82	81
Tractor/Loader/Backhoe	4	5	40	84	86
				Total:	**87**
Grading					
Grader	1	5	40	85	81
Excavator	1	5	40	81	77
Tractor/Loader/Backhoe	3	5	40	84	85
Dozer	1	5	40	82	78
				Total:	**87**
Building Construction					
Crane	1	4	16	81	73
				Total:	**73**
Paving					
Paver	1	5	50	77	74
Paving Equipment	1	5	50	77	74
Roller	2	5	20	80	76
				Total:	**80**

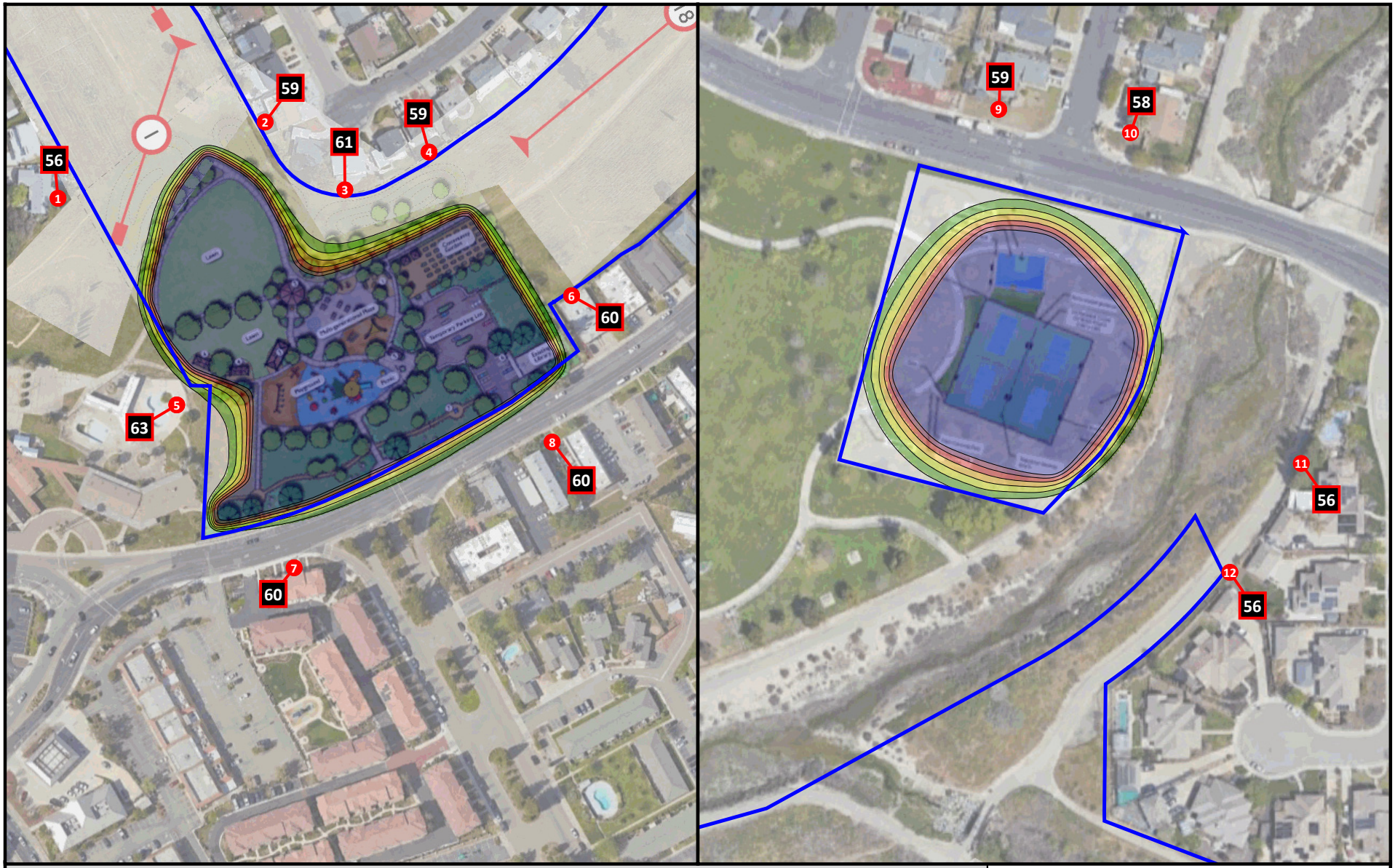
Source: FHWA, Roadway Construction Noise Model (RCNM), January 2006.

TABLE 4: CONSTRUCTION EQUIPMENT NOISE LEVELS MARLIN POUND PARK IMPROVEMENTS

Equipment	Quantity	Hours Per Day	Usage (%)	Maximum, L_{max} (dBA at 50 feet)	Hourly Average, L_{eq} (dBA at 50 feet)
Site Preparation					
Dozer	1	4	40	82	78
Tractor/Loader/Backhoe	1	4	40	84	80
				Total:	**82**
Grading					
Grader	1	4	40	85	81
Excavator	1	4	40	81	77
Tractor/Loader/Backhoe	1	4	40	84	80
Dozer	1	4	40	82	78
				Total:	**85**
Paving					
Paver	1	4	50	77	74
Paving Equipment	1	4	50	77	74
Roller	1	4	20	80	73
				Total:	**78**

Source: FHWA, Roadway Construction Noise Model (RCNM), January 2006.

Based upon the **Table 3** data, the loudest phase of construction at Springtown Park with an average noise exposure of 87 dBA L_{eq} at 50 feet would occur during site preparation and grading. Based upon the **Table 4** data, the loudest phase of construction at Marlin Pound Park with an average noise exposure of 85 dBA L_{eq} at 50 feet would occur during grading. The results of the construction noise analysis are shown graphically on **Figure 8**.



Springtown Open Space

City of Livermore, California

Figure 8
Construction Noise Levels (dBA, Leq)

Noise Level Leq, dBA	
	<= 65
65 <	<= 66
66 <	<= 67
67 <	<= 68
68 <	<= 69
69 <	<= 70
70 <	

Legend
Project Site
Noise Level

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CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 5** shows the typical vibration levels produced by construction equipment.

TABLE 5: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed more below under the Thresholds of Significance section.

LOCAL

City of Livermore General Plan

Objective N-1.1 Establish appropriate noise levels, design standards, and noise reduction techniques for all areas to minimize the adverse effects of noise.

Policies

P1. The City shall emphasize noise considerations when making land use planning decisions.

P2. Noise analysis shall be measured in dBA CNEL or dBA Ldn as defined in this Element.

P3. The City shall maintain a pattern of land uses that separates noise-sensitive land uses from major noise sources to the extent possible.

P4. The City shall use the Land Use Compatibility Guidelines for Exterior Noise (measured in dBA CNEL or L_{dn}) contained in Table 9-7 in this Element to direct the siting, design, and insulation of new development to reduce exposure to excessive noise. Within the 2030 Airport CNEL Noise Contours illustrated in Figure 9-2, the Noise Compatibility policies contained in section 3.3.1 et. Seq. of the Livermore Airport Land Use Compatibility Plan ("ALUCP"), dated August 2012, shall apply in conjunction with citywide General Plan Noise Element policies. Where warranted, the City shall employ discretionary review of new development to ensure that the community will be protected from excessive noise levels. The City shall evaluate potential noise impacts and recommend mitigation measures through discretionary review procedures such as environmental review, design review, and evaluation of use permits. (Reso. 2013-113)

TABLE 6: LIVERMORE LAND USE COMPATIBILITY TABLE

Land Use	Normally Acceptable[a] (dBA)	Conditionally Acceptable[a] (dBA)	Normally Unacceptable[a] (dBA)	Clearly Unacceptable[a] (dBA)
Residential-Low Density, Single-Family, Duplex, Mobile Homes	≤60	55-70	70-75	>75
Residential Multi-Family	≤65	60-70	70-75	>75
Transient Lodging, Hotels, Motels	≤65	60-70	70-80	>80
School, Library, Church, Hospital, Nursing Home	≤70	60-70	70-80	>80
Auditorium, Concert Hall, Amphitheater	X	<70	X	>65
Sports Arena, Outdoor Spectator Sports	X	<75	X	>70
Playground, Neighborhood Park	≤70	X	70-75	>75
Golf Course, Water Recreation, Cemetery	≤75	X	70-80	>80
Office Building, Business Commercial, Professional, Retail	≤70	70-75	>75	X
Industrial, Manufacturing, Utilities, Agricultural	≤75	70-80	>75	X

[a] Where dBA levels overlap between these categories, determination of noise level acceptability will be made on a project-by-project basis. dBA is measured in CNEL or Ldn (see N-1.1.P4)

P5. Review development proposals with respect to the Land Use Compatibility Guidelines for Exterior Noise in Table 9-7 as follows:

- (a) Normally Acceptable: If the noise level is within the "normally acceptable" level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses.
- (b) Conditionally Acceptable: If the noise level is within the "conditionally acceptable" level, noise exposure would be conditionally acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors.
- (c) Normally Unacceptable: If the noise level is within the "normally unacceptable" level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to reduce the exposure of people to unacceptable noise levels.
- (d) Clearly Unacceptable: If the noise level is within the "clearly unacceptable" level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the project to adequately reduce exposure of people to unacceptable noise levels.

P6. In an effort to support active uses in the Downtown Area, the Downtown Area shall be subject to a different noise standard than the rest of the City, as follows:

- Downtown Core District: Between 7 a.m. and 12 a.m., exterior noise levels of up to 75 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 65 dBA would be considered Normally Acceptable for all uses.
- Boulevard and Transit Gateway Districts: Between 7 a.m. and 12 a.m., exterior noise levels up to 70 dBA would be considered Normally Acceptable for all uses; and, between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.
- North and South Side Neighborhood Districts: Between 7 a.m. and 12 a.m., exterior noise levels of up to 65 dBA would be considered Normally Acceptable for all uses; and between 12 a.m. and 7 a.m., exterior noise levels up to 60 dBA would be considered Normally Acceptable for all uses.
- For all residential development in the Downtown Area, interior noise levels of up to 45 dBA with windows closed would be considered Normally Acceptable.

P7. The City shall work with LARPD to locate new neighborhood parks such that the existing and anticipated future noise environment is conducive to passive and active outdoor recreational activities, whenever possible.

P8. Development in the Isabel Neighborhood area is subject to modified noise standards similar to those in the Downtown Specific Plan(see Figure 3-3 for boundaries). Refer to the Isabel Neighborhood Specific Plan (INSP) for the noise standards applicable to the Isabel Neighborhood area.

Objective N-1.2 Adopt design standards and identify effective noise attenuation programs to prevent noise or reduce noise to acceptable levels.

Policies

P1. When crafting mitigation programs for adverse noise exposure from new development, the City shall encourage the use of noise attenuation programs that avoid constructing sound walls.

P2. The City shall require applicants for new noise-sensitive development, such as private schools, residences, and private hospitals, in areas subject to noise levels greater than 65 dBA CNEL to obtain the services of a professional acoustical engineer to provide a technical analysis and to design mitigation measures to attenuate noise to acceptable levels.

P3. The City shall require the control of noise at the source for new development deemed to be noise generators through site design, building design, landscaping, hours of operation, and other techniques.

P4. The City shall require operational limitations and feasible noise buffering for new uses that generate significant noise impacts near sensitive uses.

P5. During all phases of construction, the City shall take measures to minimize the exposure of neighboring properties to excessive noise levels from construction related activity.

P6. The City shall require mitigation measures to minimize noise impacts on surrounding areas as part of the permit review process for land uses of a temporary nature, such as fairs or exhibits. The noise level from the temporary use should be in conformance with the noise level guidelines for nearby land uses.

P7. The City shall seek to reduce impacts from ground borne vibrations associated with rail operations by requiring that habitable buildings are sited at least 100-feet from the centerline of the tracks, whenever feasible. An interior noise level of up to 45 dBA, with windows closed, must not be exceeded.

P8. It shall be the responsibility of new development or new land uses to be consistent with noise standards appropriate and sensitive to adjacent land uses.

Objective N-1.5 Reduce the level of noise generated by mechanical and other noise-generating equipment by means of public education, regulation, and/or political action.

Policies

P1. The City shall require that industrial and commercial uses be designed and operated so as to avoid the generation of noise effects on surrounding sensitive land uses (e.g., residential, churches, schools, hospitals) from exceeding the following noise levels for exterior environments:

A. 55 dBA L50 (7:00 a.m. to 10:00 p.m.)

B. 45 dBA L50 (10:00 p.m. to 7:00 a.m.)

P2. In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary source noise standards in Policy N-1.5.P1, above, may be exceeded within the receiving land use by:

A. 5 dBA for a cumulative period of no more than fifteen (15) minutes in any hour.

B. 10 dBA for a cumulative period of no more than five (5) minutes in any hour.

C. 15 dBA for a cumulative period of no more than one (1) minute in any hour.

P3. In order to allow for temporary construction, demolition or maintenance noise and other necessary short-term noise events, the stationary noise standards in Policy N-1.5.P1, above, shall not be exceeded within the receiving land use by more than 15 dBA for any period of time.

P4. The following sources of noise are exempt from the standard in N-1.5.P1: motor vehicles on public streets; trains; emergency equipment, vehicles, devices, and activities; temporary construction, maintenance, or demolition activities conducted between the hours of 7:00 a.m. and 8:00 p.m.

City of Livermore Municipal Code

9.36.010 Findings and purpose of provisions.

It is hereby found and declared as follows:

A. That the making, creation or maintenance of loud, unnecessary, unnatural, unusual or habitual noises which are prolonged, unusual and unnatural in their time, place and use, affect and are a detriment to the public health, comfort, safety, welfare and prosperity of the residents of the City; and

B. That the necessity in the public interest for the provisions and prohibitions set forth in this chapter is declared as a matter of legislative determination and public policy, and it is further declared that the provisions of this chapter are in pursuance of and for the purpose of securing and promoting the public health, comfort, safety, welfare and prosperity, and the peace and quiet of the City and its inhabitants;

C. That in many instances the problems created by such noise can best be solved by better communication between neighbors, which the City encourages, but that those problems can become sufficiently severe to warrant the impositions of the provisions and prohibitions set forth in this chapter. (Ord. 2065 § 1(A), 2018; Ord. 1128 § 2, 1983; 1960 code § 13B.1)

9.36.020 Loud, disturbing, unusual and unnecessary noise – Prohibited.

It is unlawful for any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary, unusual or habitual noise, or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the City. (Ord. 2065 § 1(A), 2018; Ord. 1128 § 2, 1983; 1960 code § 13B.2)

9.36.030 Loud, disturbing, unusual and unnecessary noise – Designated.

The following noises, set out in LMC 9.36.040 through 9.36.100, among others, are hereby declared to be loud, disturbing, unnecessary, unusual or habitual noises in violation of the provisions of this chapter; provided, however, such enumeration shall not be deemed or construed as in any degree exclusive, but merely illustrative, it being the intent and purpose of the provisions of this chapter to include and prohibit all noises of the kind and character described in LMC 9.36.020. (Ord. 1128 § 2, 1983; 1960 code § 13B.3)

9.36.040 Blowers, fans and combustion engines.

The operation of any noise -creating blower, power fan or internal combustion engine, the operation of which causes noise due to the explosion of operating gases or fluids, is prohibited, unless the noise from such blower or fan is muffled and such engine is equipped with a muffler device to deaden such noise in such a manner so

as not to be plainly audible at a distance of either 75 feet from the source of the noise, or between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday and Thursdays; 8:00 p.m. Friday to 9:00 a.m. on Saturday or at all on city-observed holidays. (Ord. 1672 § 1, 2002; Ord. 1128 § 2, 1983; 1960 code § 13B.3(g))

9.36.050 Exhausts from engines, boats or vehicles.

The discharge into the open air of the exhaust of any steam engine, stationary internal-combustion engine, motorboat or motor vehicle, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom in such a manner so as not to be plainly audible at the distance of either 75 feet from the source of the noise, or the property line, whichever is greater, is prohibited. (Ord. 1128 § 2, 1983; 1960 code § 13B.3(c))

9.36.060 Loading and unloading vehicles and opening crates and containers.

The creation of loud and excessive noise in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates and containers is prohibited. (Ord. 1128 § 2, 1983; 1960 code § 13B.3(d))

9.36.070 Noises adjacent to schools, courts, churches and hospitals.

The creation of any excessive noise on any street adjacent to any school, institution of learning, church or court while the same is in use, or adjacent to any hospital, which noise unreasonably interferes with the workings of such institution, or which disturbs or unduly annoys patients in the hospital is prohibited, provided conspicuous signs are displayed in such streets, indicating that the streets are adjacent to a school, hospital or court. (Ord. 1128 § 2, 1983; 1960 code § 13B.3(e))

9.36.080 Hammers, pile drivers, pneumatic tools and similar equipment.

The operation between the hours of 6:00 p.m. Saturday to 7:00 a.m. Monday; 8:00 p.m. to 7:00 a.m. on Monday, Tuesday, Wednesday and Thursdays; 8:00 p.m. Friday to 9:00 a.m. on Saturday or at all on city-observed holidays of any pile driver, pneumatic tools, derrick, electric hoist, sandblaster or other equipment used in construction, demolition or other repair work, the use of which is attended by loud or unusual noise, is prohibited. (Ord. 1672 § 2, 2002; Ord. 1128 § 2, 1983; 1960 code § 13B.3(f))

9.36.090 Radios, phonographs, musical instruments and similar devices.

The following are prohibited:

A. The using or operating, or permitting to be played, used or operated, of any radio receiving set, musical instrument, phonograph or other machine or device for the producing or reproducing of sound in such a manner as to disturb the peace, quiet and comfort of the neighboring inhabitants, or at any time with louder volume than is necessary for convenient hearing for the persons who are in the room, vehicle or chamber in which such machine or device is operated, and who are voluntary listeners thereto; and

B. The operation of such set, instrument, phonograph, machine or device between the hours of 11:00 p.m. and 7:00 a.m. in such manner as to be plainly audible at a distance of either 75 feet from the source of the noise, or the property line, whichever is greater, which shall be prima facie evidence of a violation of the provisions of LMC 9.36.040 through 9.36.100. (Ord. 1128 § 2, 1983; 1960 code § 13B.3(a))

9.36.100 Yelling, shouting and similar noise.

Yelling, shouting, hooting, whistling or singing on the public streets between the hours of 11:00 p.m. and 7:00 a.m., or at any time or place so as to annoy or disturb the quiet, comfort or repose of persons in any office or in any dwelling, hotel or other type of residence, or of any persons in the vicinity, is prohibited. (Ord. 1128 § 2, 1983; 1960 code § 13B.3(b))

9.36.110 Exceptions.

A. Any homeowner/resident constructing home improvements to their residence and doing the work themselves (without a contractor present) with a valid building permit (if required) shall be allowed to utilize noise generating construction tools and equipment between the hours of 7:00 a.m. through 11:00 p.m. seven days a week.

B. Outdoor noise levels associated with a short-term rental, operating with a valid permit, are prohibited between the hours of 10:00 p.m. and 8:00 a.m., or at any time or place so as to annoy or disturb the quiet, comfort, or repose of persons in any office or dwelling, hotel, or other type of residence, or of any persons in the vicinity. Additional short-term rental regulations are contained in Chapter 5.90 LMC.

C. Industrial areas located more than 500 feet from a residential development are exempt from the noise hour restrictions.

D. The city engineer and/or building official shall have the authority to authorize construction activities during the hours restricted by this chapter for the following reasons:

1. A public agency, other than the City, requires as a condition of a permit that the construction be done during the restricted hours.

2. Public health, safety or welfare requires the work to be done during the restricted hours.

3. Specific construction activities (such as large concrete foundation pours) can be identified and approved to occur as an exemption to this ordinance in the conditions of approval for a project at the time of the public hearing.

E. If the city engineer and/or building official approves the exception or it is an exception allowed by the conditions of approval for the project, the following shall be done by the contractor or city staff:

1. Notify the Livermore police department, watch commander, at least 24 hours in advance.

2. Notify residents and business owners that are adjacent to the work area at least 24 hours in advance. The limits of this notification shall be determined by the city engineer and/or building official. (Ord. 2120 § 3, 2020; Ord. 2065 § 1(A), 2018; Ord. 1672 § 3, 2002)

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 7**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 7 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Transportation Related Earthborne Vibrations. Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-c]).

Would the project:

a. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b. Generate excessive groundborne vibration or groundborne noise levels?

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it "increases substantially the ambient noise levels for adjoining areas." Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project noise conditions. **Table 8** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 8: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON).

Based on the **Table 8** data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the **Table 8** criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Temporary Construction Noise Impacts

With temporary noise impacts (construction), identification of "substantial increases" depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the City of Livermore General Plan Noise Element, construction activities operating between 7:00 am and 8:00 pm are exempted from the City's noise level standards.

The City has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing

residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: ***Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Operational Noise at Existing Sensitive Receptors

Compliance with City General Plan

The City of Livermore General Plan Objective N-1.5 Policy 1 establishes a noise level standard of 55 dBA L_{50} during daytime (7:00 a.m. to 10:00 p.m.) hours and 45 dBA L_{50} during nighttime (10:00 p.m. to 7:00 a.m.) hours for industrial and commercial uses. Although the proposed project amenities would not be considered industrial or commercial, the stationary noise level standards which regulate those uses would be most applicable to the proposed project as these are the only noise level standards within the General Plan which regulate stationary noise sources. As the proposed project amenities are anticipated to operate during daytime hours only, the applicable standard would be 55 dBA L_{50}.

As shown on **Figure 3**, the receptors near the proposed Phase 1 of the project are predicted to be exposed to noise levels of up to 47 dBA L_{50} during daytime hours. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active in this scenario. This is less than the City of Livermore daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 55 dBA L_{50}. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

As shown on **Figure 4**, the proposed pickleball and basketball sources are predicted to generate noise levels of up to 42 dBA L_{50}. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active in this scenario. This is less than the City of Livermore daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 55 dBA L_{50}. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

As shown on **Figure 5**, the proposed disc golf course is predicted to generate noise levels of up to 34 dBA L_{50} at the nearby residential uses along the disc golf course. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active in this scenario. This is less than the City of Livermore daytime (7:00 a.m. to 10:00 p.m.) noise level standard of 55 dBA L50. The proposed park amenities are expected to operate during daytime hours only. Therefore, the Phase 1 noise sources are predicted to comply with the City of Livermore noise level standards.

Analysis of Significance of Long-Term Project-Related Noise Increases

The City of Livermore General Plan does not establish a significance threshold for increases in stationary noise sources. In the absence of a specific threshold, Saxelby Acoustics utilizes the FICON criteria to assess increases in ambient noise environment. It should be noted that all proposed amenities (including the community park, disc golf course, pickleball/tennis courts, and basketball court) were assumed to be active for the analysis below.

At the residences near the proposed Phase 1 of the project, the average daytime ambient noise level was measured to be 47-52 dBA L_{50} (LT-3) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase. The resulting sum of ambient noise (47 dBA L_{50}) plus project generated noise (47 dBA L_{50}) would be 50 dBA L_{50}. This would represent an increase of 3.0 dBA over ambient, which is less than the +5 dBA increase criterion.

At the residences near the proposed pickleball courts and basketball courts, the average daytime ambient noise level was measured to be 41-45 dBA L_{50} (LT-2) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase. The resulting sum of ambient noise (41 dBA L_{50}) plus project generated noise (42 dBA L_{50}) would be 44.5 dBA L_{50}. This would represent an increase of 3.5 dBA over ambient, which is less than the +5 dBA increase criterion.

At the residences along the proposed disc golf course, the average daytime ambient noise level was measured to be 43-46 dBA L_{50} (ST-1, ST-2, ST-3) based upon the ambient noise level survey. An increase of +5.0 dBA or greater would constitute a significant increase. The resulting sum of ambient noise (43 dBA L_{50}) plus project generated noise (34 dBA L_{50}) would be 43.5 dBA L_{50}. This would represent an increase of 0.5 dBA over ambient, which is less than the +5 dBA increase criterion.

Therefore, this is a ***less-than-significant*** impact, and no mitigation is required.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours. Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. Construction noise levels were modeled using the input data shown in **Tables 3 and 4** and evaluated for significance in **Table 9** below. **Figure 8** shows modeled construction noise level contours as well as the locations of the analyzed receptors.

TABLE 9: CONSTRUCTION NOISE LEVEL INCREASES

Receptor	Representative Noise Measurement Site	Existing Ambient (dBA L_{eq})	Construction Noise (dBA L_{eq})	Ambient + Construction (dBA L_{eq})	Difference (dBA L_{eq})
1	LT-3	52.7	56.0	57.7	5.0
2	LT-3	51.4	58.7	59.4	8.0
3	LT-3	55.1	61.1	62.1	7.0
4	LT-3	54.9	58.7	60.2	5.3
5	LT-3	55.0	62.8	63.5	8.5
6	LT-3	49.2	59.8	60.2	11.0
7	LT-3	61.0	60.1	63.6	2.6
8	LT-3	59.8	59.6	62.7	2.9
9	LT-2	60.5	59.0	62.8	2.3
10	LT-2	58.9	58.4	61.7	2.8
11	LT-2	51.5	55.7	57.1	5.6
12	LT-2	49.2	55.8	56.7	7.5

As shown in **Table 9**, the proposed project is predicted to generate construction noise level increases of up to 11.0 dBA at the existing sensitive receptors. This is less than the +12 dB significance threshold.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***. Mitigation measure 1(a) would reduce construction noise impacts to ***less-than-significant***.

Transportation Noise on Project Site (Non-CEQA Issue)

Exterior Transportation Noise

Compliance with City's standards on new noise-sensitive receptors is not a CEQA consideration. However, this information is provided here so that a determination can be made regarding the ability of the proposed project to meet the requirements of the City of Livermore for exterior noise levels at new sensitive uses proposed under the project.

As shown on **Figure 7**, several of the proposed park amenities are predicted to be exposed to exterior transportation noise levels up to approximately 65 dBA L_{dn}. This would meet the 70 dBA limit for playgrounds and neighborhood parks established by the City of Livermore. Therefore, no additional noise control measures would be required.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

1(a) The City shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction shall be limited to 7:00 a.m. to 8:00 p.m. Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Timing/Implementation: Implemented prior to approval of grading and/or building permits
Enforcement/Monitoring: City of Livermore

Implementation of mitigation measures 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant***.

Impact 2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 4** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located further than 26 feet from typical construction activities. At distances greater than 26 feet construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

Impact 3: ***For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

There are no airports within two miles of the project vicinity. Therefore, this impact is not applicable to the proposed project.

REFERENCES

American National Standards Institute. (1998). *[Standard] ANSI S1.43-1997 (R2007): Specifications for integrating-averaging sound level meters*. New York: Acoustical Society of America.

American Standard Testing Methods, *Standard Guide for Measurement of Outdoor A-Weighted Sound Levels, American Standard Testing Methods (ASTM) E1014-08*, 2008.

ASTM E1014-12. *Standard Guide for Measurement of Outdoor A-Weighted Sound Levels*. ASTM International. West Conshohocken, PA. 2012.

ASTM E1780-12. *Standard Guide for Measuring Outdoor Sound Received from a Nearby Fixed Source.* ASTM International. West Conshohocken, PA. 2012.

Barry, T M. (1978). *FHWA highway traffic noise prediction model* (FHWA-RD-77-108). Washington, DC: U.S. Department of transportation, Federal highway administration, Office of research, Office of environmental policy.

California Department of Transportation (Caltrans), *Technical Noise Supplement, Traffic Noise Analysis Protocol*, September 2013.

California Department of Transportation (Caltrans), *Traffic Noise Analysis Protocol*, May 2011.

Egan, M. D. (1988). Architectural acoustics. United States of America: McGraw-Hill Book Company.

Federal Highway Administration. *FHWA Roadway Construction Noise Model User's Guide.* FHWA-HEP-05-054 DOT-VNTSC-FHWA-05-01. January 2006.

Hanson, Carl E. (Carl Elmer). (2006). *Transit noise and vibration impact assessment*. Washington, DC: U.S. Department of Transportation, Federal Transit Administration, Office of Planning and Environment.

International Electrotechnical Commission. Technical committee 29: Electroacoustics. International Organization of Legal Metrology. (2013). *Electroacoustics: Sound level meters*.

International Organization for Standardization. (1996). *Acoustic - ISO 9613-2: Attenuation of sound during propagation outdoors. Part 2: General methods of calculation*. Ginevra: I.S.O.

Miller, L. N., Bolt, Beranek, & and Newman, Inc. (1981). *Noise control for buildings and manufacturing plants*. Cambridge, MA: Bolt, Beranek and Newman, Inc.

SoundPLAN. SoundPLAN GmbH. Backnang, Germany. http://www.soundplan.eu/english/

Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

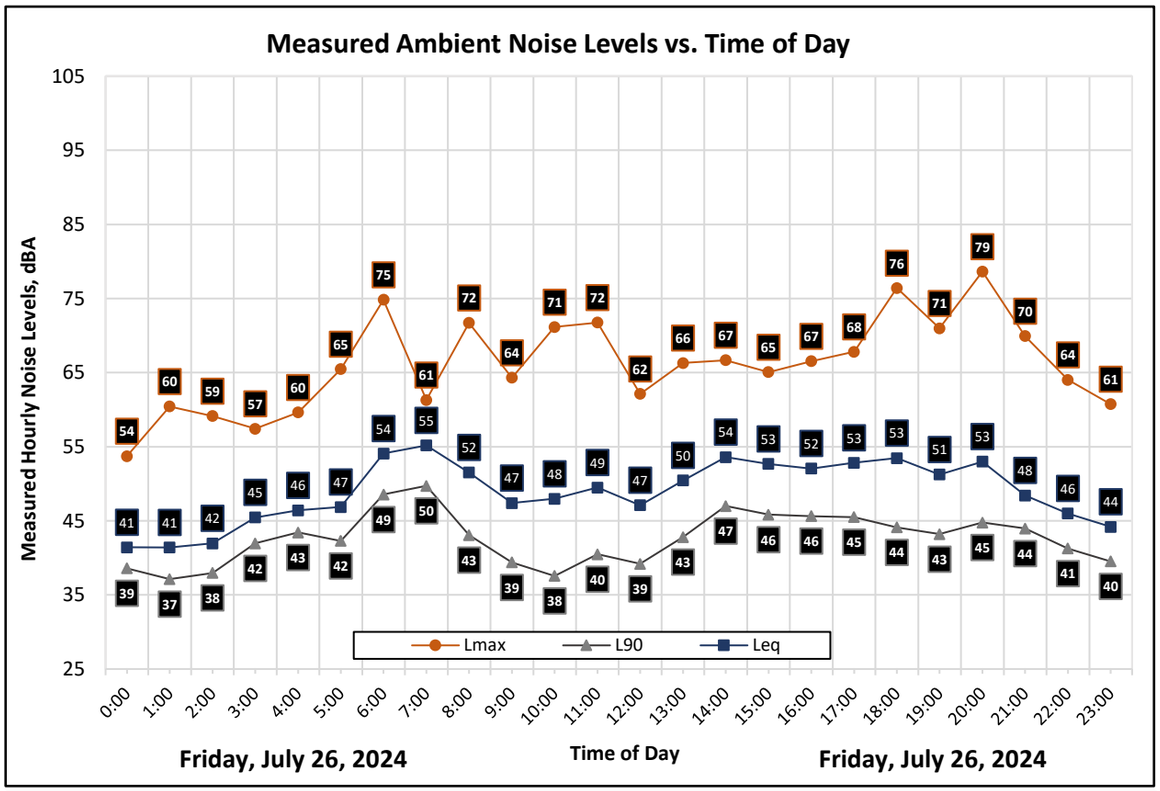
Appendix B: Continuous Long-Term and Short-Term Ambient Noise Measurement Results

Appendix B1a: Continuous Noise Monitoring Results

Site: LT-1
Project: Springtown Open Space Phase 1 **Meter:** LDL 820-8
Location: Northern Project Boundary **Calibrator:** CAL200
Coordinates: (37.7183246, -121.7435095)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, July 26, 2024	0:00	41	54	41	39
Friday, July 26, 2024	1:00	41	60	40	37
Friday, July 26, 2024	2:00	42	59	40	38
Friday, July 26, 2024	3:00	45	57	45	42
Friday, July 26, 2024	4:00	46	60	46	43
Friday, July 26, 2024	5:00	47	65	44	42
Friday, July 26, 2024	6:00	54	75	53	49
Friday, July 26, 2024	7:00	55	61	55	50
Friday, July 26, 2024	8:00	52	72	47	43
Friday, July 26, 2024	9:00	47	64	43	39
Friday, July 26, 2024	10:00	48	71	41	38
Friday, July 26, 2024	11:00	49	72	45	40
Friday, July 26, 2024	12:00	47	62	43	39
Friday, July 26, 2024	13:00	50	66	48	43
Friday, July 26, 2024	14:00	54	67	51	47
Friday, July 26, 2024	15:00	53	65	51	46
Friday, July 26, 2024	16:00	52	67	50	46
Friday, July 26, 2024	17:00	53	68	50	45
Friday, July 26, 2024	18:00	53	76	48	44
Friday, July 26, 2024	19:00	51	71	47	43
Friday, July 26, 2024	20:00	53	79	47	45
Friday, July 26, 2024	21:00	48	70	46	44
Friday, July 26, 2024	22:00	46	64	43	41
Friday, July 26, 2024	23:00	44	61	42	40

Statistics	Leq	Lmax	L50	L90
Day Average	52	69	47	43
Night Average	47	62	44	41
Day Low	47	61	41	38
Day High	55	79	55	50
Night Low	41	54	40	37
Night High	54	75	53	49
Ldn	55	Day %		82
CNEL	55	Night %		18

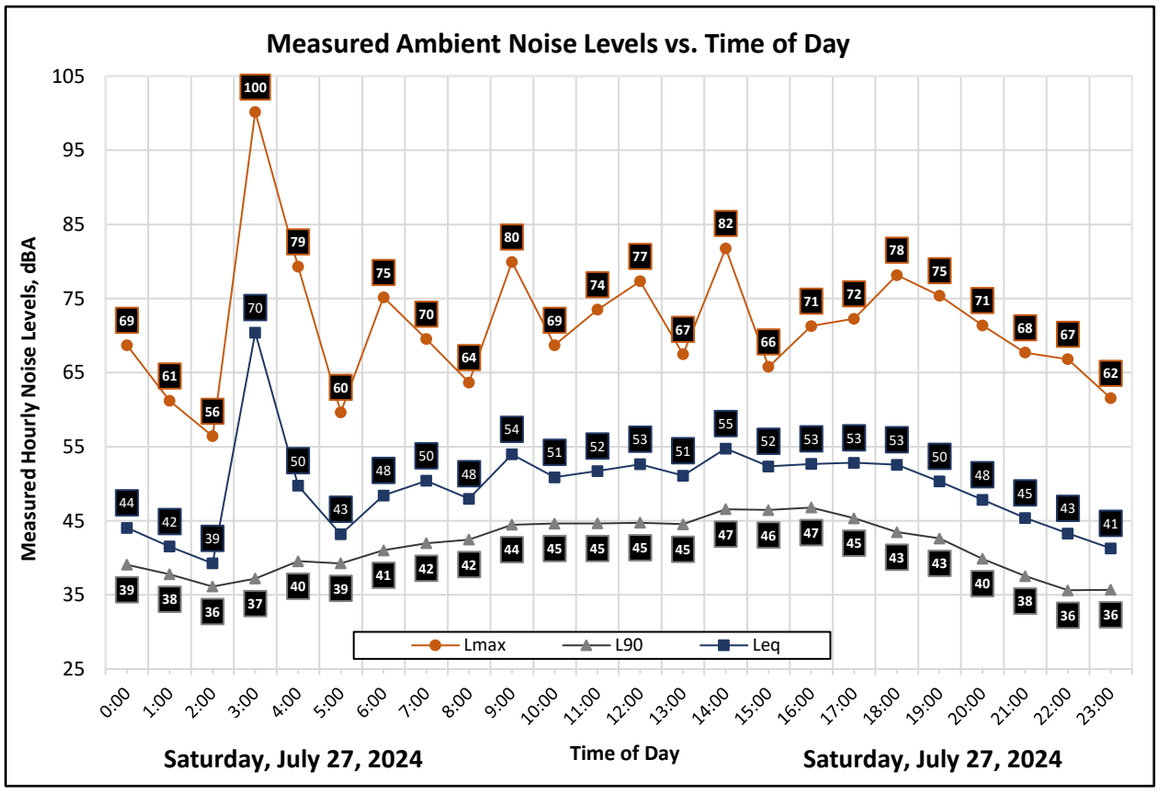


Appendix B1b: Continuous Noise Monitoring Results

Site: LT-1
Project: Springtown Open Space Phase 1 **Meter:** LDL 820-8
Location: Northern Project Boundary **Calibrator:** CAL200
Coordinates: (37.7183246, -121.7435095)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, July 27, 2024	0:00	44	69	41	39
Saturday, July 27, 2024	1:00	42	61	40	38
Saturday, July 27, 2024	2:00	39	56	38	36
Saturday, July 27, 2024	3:00	70	100	39	37
Saturday, July 27, 2024	4:00	50	79	42	40
Saturday, July 27, 2024	5:00	43	60	41	39
Saturday, July 27, 2024	6:00	48	75	43	41
Saturday, July 27, 2024	7:00	50	70	45	42
Saturday, July 27, 2024	8:00	48	64	45	42
Saturday, July 27, 2024	9:00	54	80	48	44
Saturday, July 27, 2024	10:00	51	69	47	45
Saturday, July 27, 2024	11:00	52	74	48	45
Saturday, July 27, 2024	12:00	53	77	49	45
Saturday, July 27, 2024	13:00	51	67	48	45
Saturday, July 27, 2024	14:00	55	82	50	47
Saturday, July 27, 2024	15:00	52	66	50	46
Saturday, July 27, 2024	16:00	53	71	50	47
Saturday, July 27, 2024	17:00	53	72	49	45
Saturday, July 27, 2024	18:00	53	78	47	43
Saturday, July 27, 2024	19:00	50	75	47	43
Saturday, July 27, 2024	20:00	48	71	43	40
Saturday, July 27, 2024	21:00	45	68	40	38
Saturday, July 27, 2024	22:00	43	67	38	36
Saturday, July 27, 2024	23:00	41	62	38	36

Statistics	Leq	Lmax	L50	L90
Day Average	52	72	47	44
Night Average	61	70	40	38
Day Low	45	64	40	38
Day High	55	82	50	47
Night Low	39	56	38	36
Night High	70	100	43	41
Ldn	67	Day %		17
CNEL	67	Night %		83

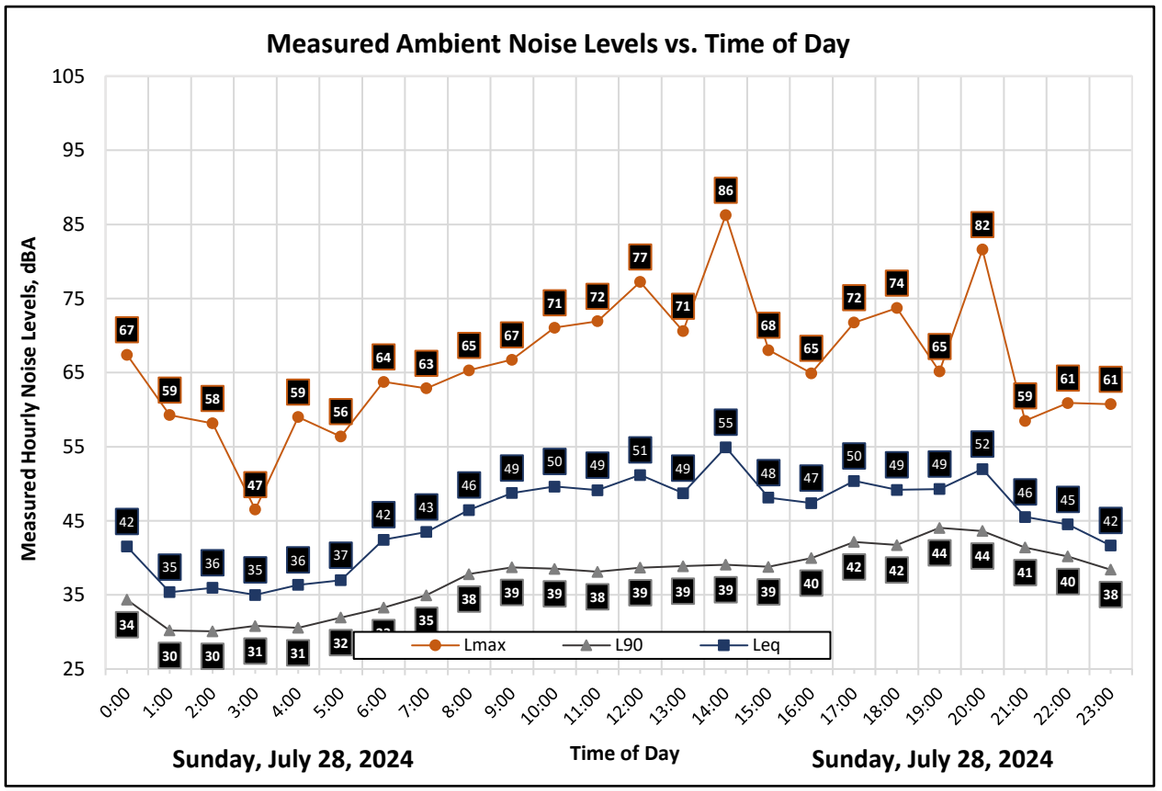


Appendix B1c: Continuous Noise Monitoring Results

Site: LT-1
Project: Springtown Open Space Phase 1 **Meter:** LDL 820-8
Location: Northern Project Boundary **Calibrator:** CAL200
Coordinates: (37.7183246, -121.7435095)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, July 28, 2024	0:00	42	67	37	34
Sunday, July 28, 2024	1:00	35	59	32	30
Sunday, July 28, 2024	2:00	36	58	32	30
Sunday, July 28, 2024	3:00	35	47	34	31
Sunday, July 28, 2024	4:00	36	59	34	31
Sunday, July 28, 2024	5:00	37	56	35	32
Sunday, July 28, 2024	6:00	42	64	36	33
Sunday, July 28, 2024	7:00	43	63	39	35
Sunday, July 28, 2024	8:00	46	65	40	38
Sunday, July 28, 2024	9:00	49	67	43	39
Sunday, July 28, 2024	10:00	50	71	43	39
Sunday, July 28, 2024	11:00	49	72	41	38
Sunday, July 28, 2024	12:00	51	77	42	39
Sunday, July 28, 2024	13:00	49	71	43	39
Sunday, July 28, 2024	14:00	55	86	43	39
Sunday, July 28, 2024	15:00	48	68	42	39
Sunday, July 28, 2024	16:00	47	65	43	40
Sunday, July 28, 2024	17:00	50	72	46	42
Sunday, July 28, 2024	18:00	49	74	45	42
Sunday, July 28, 2024	19:00	49	65	47	44
Sunday, July 28, 2024	20:00	52	82	46	44
Sunday, July 28, 2024	21:00	46	59	43	41
Sunday, July 28, 2024	22:00	45	61	42	40
Sunday, July 28, 2024	23:00	42	61	40	38

Statistics	Leq	Lmax	L50	L90
Day Average	50	70	43	40
Night Average	40	59	36	33
Day Low	43	59	39	35
Day High	55	86	47	44
Night Low	35	47	32	30
Night High	45	67	42	40
Ldn	50	Day %		94
CNEL	51	Night %		6

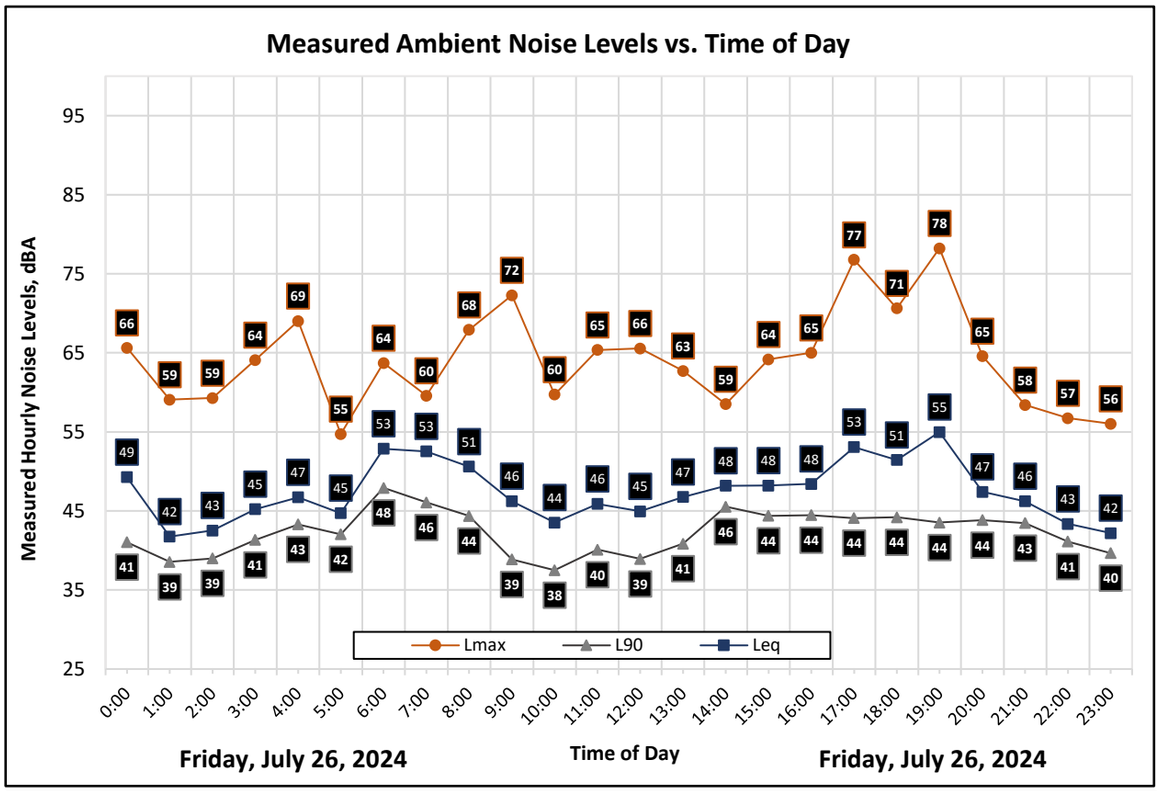


Appendix B2a: Continuous Noise Monitoring Results

Site: LT-2
Project: Springtown Open Space Phase 1
Location: Northwestern Project Boundary
Coordinates: (37.7179692, -121.7463171)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, July 26, 2024	0:00	49	66	44	41
Friday, July 26, 2024	1:00	42	59	41	39
Friday, July 26, 2024	2:00	43	59	41	39
Friday, July 26, 2024	3:00	45	64	44	41
Friday, July 26, 2024	4:00	47	69	45	43
Friday, July 26, 2024	5:00	45	55	44	42
Friday, July 26, 2024	6:00	53	64	52	48
Friday, July 26, 2024	7:00	53	60	52	46
Friday, July 26, 2024	8:00	51	68	47	44
Friday, July 26, 2024	9:00	46	72	41	39
Friday, July 26, 2024	10:00	44	60	40	38
Friday, July 26, 2024	11:00	46	65	43	40
Friday, July 26, 2024	12:00	45	66	41	39
Friday, July 26, 2024	13:00	47	63	45	41
Friday, July 26, 2024	14:00	48	59	47	46
Friday, July 26, 2024	15:00	48	64	47	44
Friday, July 26, 2024	16:00	48	65	47	44
Friday, July 26, 2024	17:00	53	77	46	44
Friday, July 26, 2024	18:00	51	71	46	44
Friday, July 26, 2024	19:00	55	78	48	44
Friday, July 26, 2024	20:00	47	65	45	44
Friday, July 26, 2024	21:00	46	58	45	43
Friday, July 26, 2024	22:00	43	57	43	41
Friday, July 26, 2024	23:00	42	56	41	40

Statistics	Leq	Lmax	L50	L90
Day Average	50	66	45	43
Night Average	47	61	44	42
Day Low	44	58	40	38
Day High	55	78	52	46
Night Low	42	55	41	39
Night High	53	69	52	48
Ldn	54	Day %		76
CNEL	55	Night %		24

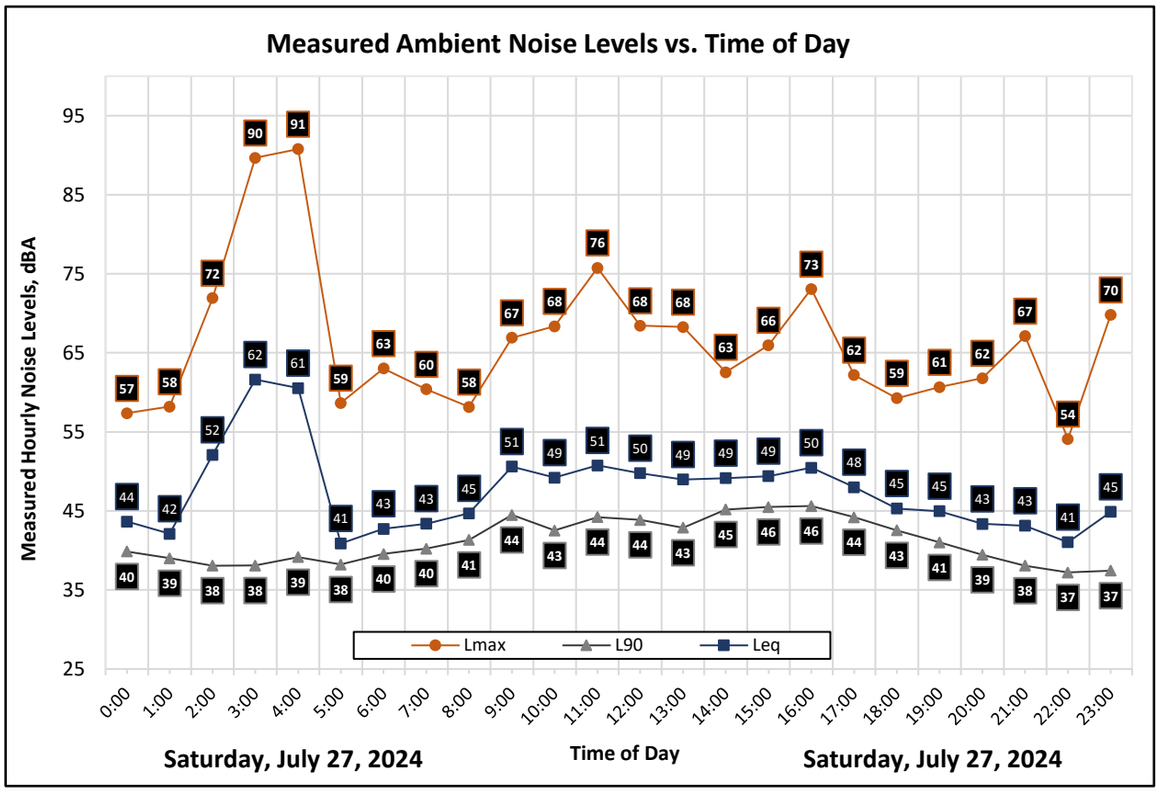


Appendix B2b: Continuous Noise Monitoring Results

Site: LT-2
Project: Springtown Open Space Phase 1
Meter: LDL 820-5
Location: Northwestern Project Boundary
Calibrator: CAL200
Coordinates: (37.7179692, -121.7463171)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, July 27, 2024	0:00	44	57	42	40
Saturday, July 27, 2024	1:00	42	58	41	39
Saturday, July 27, 2024	2:00	52	72	41	38
Saturday, July 27, 2024	3:00	62	90	40	38
Saturday, July 27, 2024	4:00	61	91	41	39
Saturday, July 27, 2024	5:00	41	59	40	38
Saturday, July 27, 2024	6:00	43	63	41	40
Saturday, July 27, 2024	7:00	43	60	42	40
Saturday, July 27, 2024	8:00	45	58	44	41
Saturday, July 27, 2024	9:00	51	67	47	44
Saturday, July 27, 2024	10:00	49	68	45	43
Saturday, July 27, 2024	11:00	51	76	48	44
Saturday, July 27, 2024	12:00	50	68	47	44
Saturday, July 27, 2024	13:00	49	68	46	43
Saturday, July 27, 2024	14:00	49	63	48	45
Saturday, July 27, 2024	15:00	49	66	48	46
Saturday, July 27, 2024	16:00	50	73	48	46
Saturday, July 27, 2024	17:00	48	62	46	44
Saturday, July 27, 2024	18:00	45	59	45	43
Saturday, July 27, 2024	19:00	45	61	43	41
Saturday, July 27, 2024	20:00	43	62	41	39
Saturday, July 27, 2024	21:00	43	67	40	38
Saturday, July 27, 2024	22:00	41	54	39	37
Saturday, July 27, 2024	23:00	45	70	40	37

Statistics	Leq	Lmax	L50	L90
Day Average	48	65	45	43
Night Average	55	68	41	39
Day Low	43	58	40	38
Day High	51	76	48	46
Night Low	41	54	39	37
Night High	62	91	42	40
Ldn	61	Day %		26
CNEL	61	Night %		74

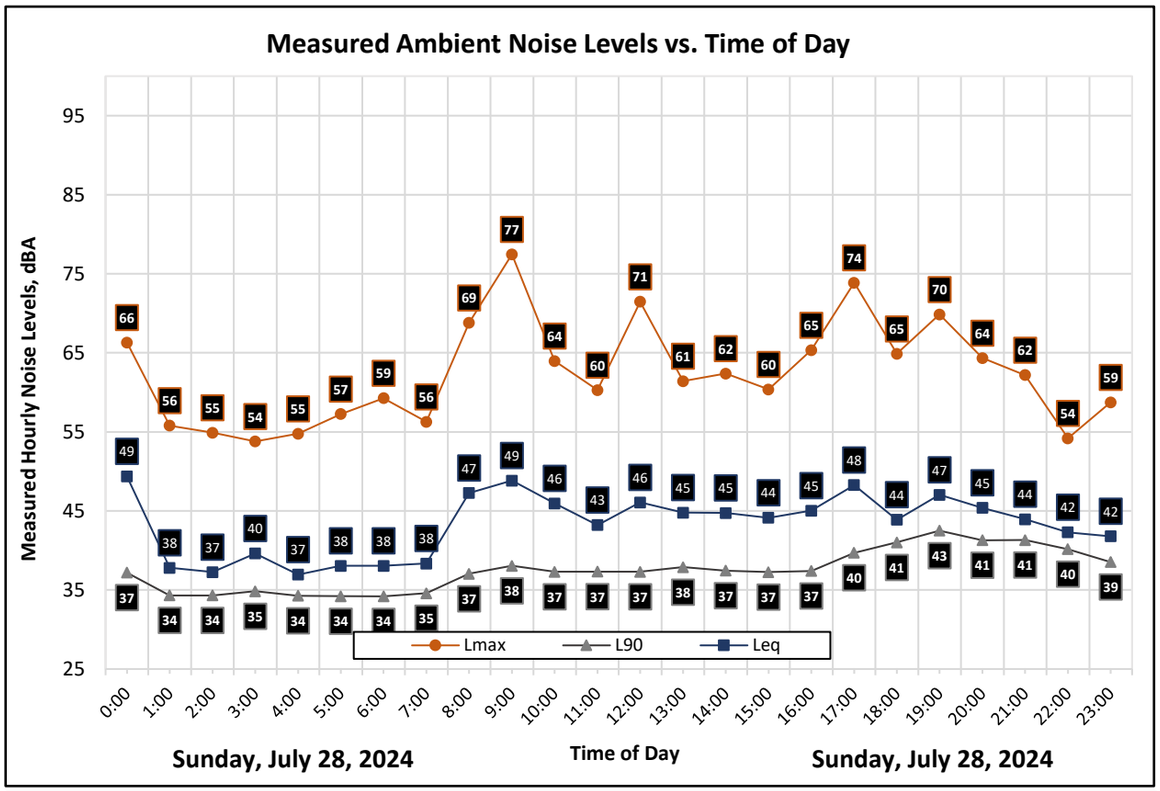


Appendix B2c: Continuous Noise Monitoring Results

Site: LT-2
Project: Springtown Open Space Phase 1
Location: Northwestern Project Boundary
Coordinates: (37.7179692, -121.7463171)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, July 28, 2024	0:00	49	66	43	37
Sunday, July 28, 2024	1:00	38	56	36	34
Sunday, July 28, 2024	2:00	37	55	36	34
Sunday, July 28, 2024	3:00	40	54	37	35
Sunday, July 28, 2024	4:00	37	55	36	34
Sunday, July 28, 2024	5:00	38	57	36	34
Sunday, July 28, 2024	6:00	38	59	36	34
Sunday, July 28, 2024	7:00	38	56	36	35
Sunday, July 28, 2024	8:00	47	69	40	37
Sunday, July 28, 2024	9:00	49	77	40	38
Sunday, July 28, 2024	10:00	46	64	40	37
Sunday, July 28, 2024	11:00	43	60	40	37
Sunday, July 28, 2024	12:00	46	71	40	37
Sunday, July 28, 2024	13:00	45	61	41	38
Sunday, July 28, 2024	14:00	45	62	40	37
Sunday, July 28, 2024	15:00	44	60	40	37
Sunday, July 28, 2024	16:00	45	65	41	37
Sunday, July 28, 2024	17:00	48	74	42	40
Sunday, July 28, 2024	18:00	44	65	43	41
Sunday, July 28, 2024	19:00	47	70	45	43
Sunday, July 28, 2024	20:00	45	64	44	41
Sunday, July 28, 2024	21:00	44	62	43	41
Sunday, July 28, 2024	22:00	42	54	42	40
Sunday, July 28, 2024	23:00	42	59	40	39

Statistics	Leq	Lmax	L50	L90
Day Average	46	66	41	38
Night Average	42	57	38	36
Day Low	38	56	36	35
Day High	49	77	45	43
Night Low	37	54	36	34
Night High	49	66	43	40
Ldn	49	Day %		78
CNEL	50	Night %		22

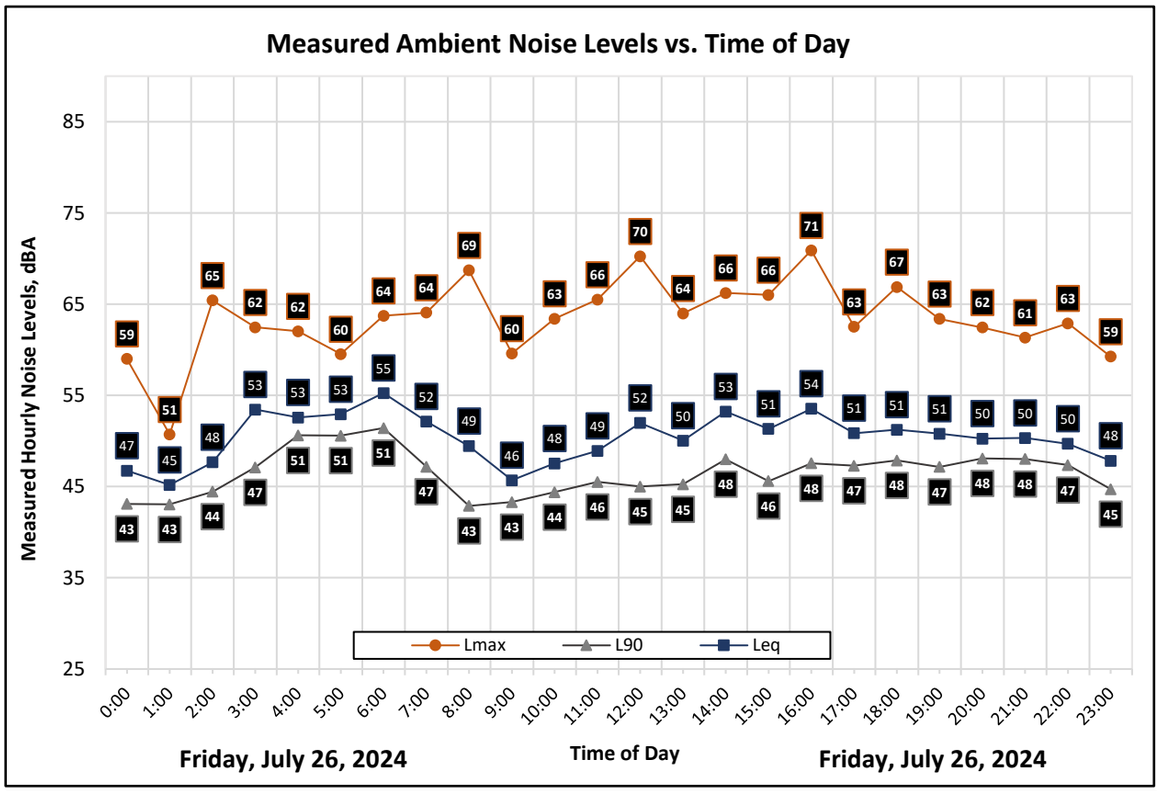


Appendix B3a: Continuous Noise Monitoring Results

Site: LT-3
Project: Springtown Open Space Phase 1 — **Meter:** LDL 820-6
Location: Southern Project Boundary — **Calibrator:** CAL200
Coordinates: (37.7084890, -121.7396129)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, July 26, 2024	0:00	47	59	46	43
Friday, July 26, 2024	1:00	45	51	45	43
Friday, July 26, 2024	2:00	48	65	47	44
Friday, July 26, 2024	3:00	53	62	51	47
Friday, July 26, 2024	4:00	53	62	52	51
Friday, July 26, 2024	5:00	53	60	52	51
Friday, July 26, 2024	6:00	55	64	54	51
Friday, July 26, 2024	7:00	52	64	51	47
Friday, July 26, 2024	8:00	49	69	46	43
Friday, July 26, 2024	9:00	46	60	45	43
Friday, July 26, 2024	10:00	48	63	47	44
Friday, July 26, 2024	11:00	49	66	48	46
Friday, July 26, 2024	12:00	52	70	47	45
Friday, July 26, 2024	13:00	50	64	48	45
Friday, July 26, 2024	14:00	53	66	51	48
Friday, July 26, 2024	15:00	51	66	49	46
Friday, July 26, 2024	16:00	54	71	51	48
Friday, July 26, 2024	17:00	51	63	49	47
Friday, July 26, 2024	18:00	51	67	50	48
Friday, July 26, 2024	19:00	51	63	49	47
Friday, July 26, 2024	20:00	50	62	50	48
Friday, July 26, 2024	21:00	50	61	50	48
Friday, July 26, 2024	22:00	50	63	49	47
Friday, July 26, 2024	23:00	48	59	47	45

Statistics	Leq	Lmax	L50	L90
Day Average	51	65	49	46
Night Average	51	61	49	47
Day Low	46	60	45	43
Day High	54	71	51	48
Night Low	45	51	45	43
Night High	55	65	54	51
Ldn	58	Day %		60
CNEL	58	Night %		40

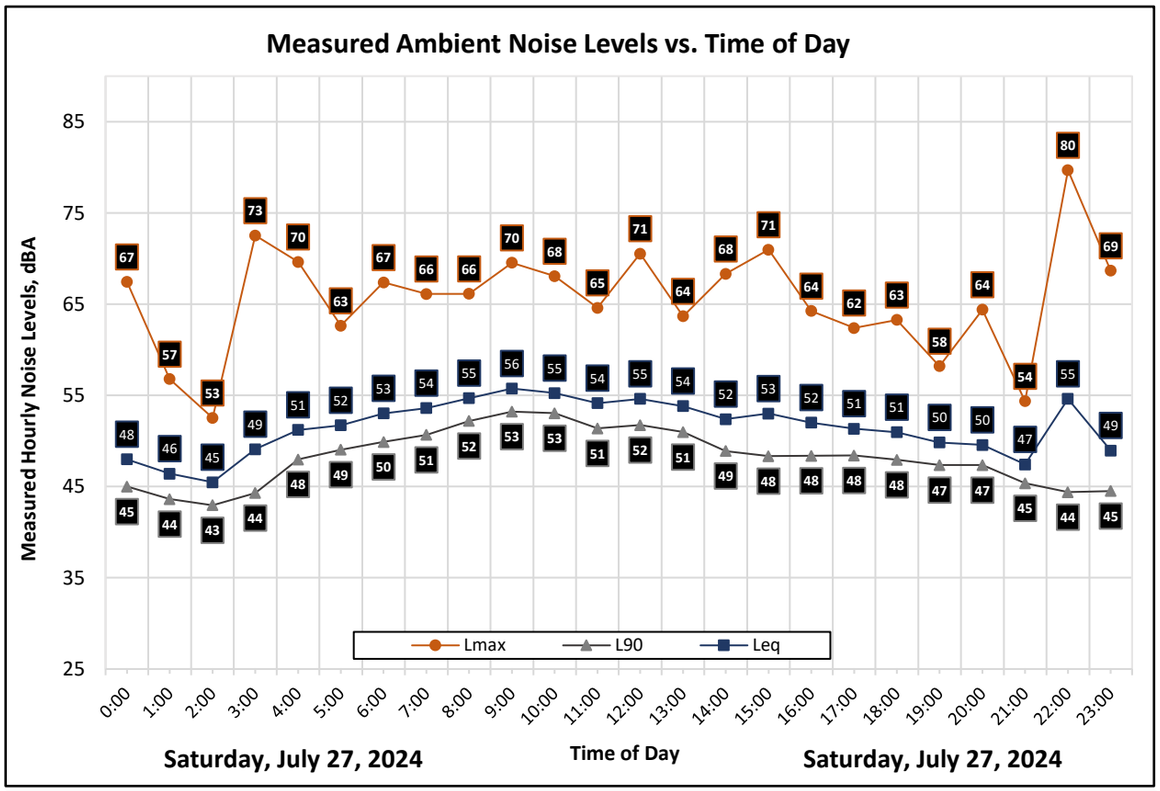


Appendix B3b: Continuous Noise Monitoring Results

Site: LT-3
Project: Springtown Open Space Phase 1
Location: Southern Project Boundary
Coordinates: (37.7084890, -121.7396129)
Meter: LDL 820-6
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, July 27, 2024	0:00	48	67	47	45
Saturday, July 27, 2024	1:00	46	57	46	44
Saturday, July 27, 2024	2:00	45	53	45	43
Saturday, July 27, 2024	3:00	49	73	48	44
Saturday, July 27, 2024	4:00	51	70	50	48
Saturday, July 27, 2024	5:00	52	63	51	49
Saturday, July 27, 2024	6:00	53	67	52	50
Saturday, July 27, 2024	7:00	54	66	53	51
Saturday, July 27, 2024	8:00	55	66	54	52
Saturday, July 27, 2024	9:00	56	70	55	53
Saturday, July 27, 2024	10:00	55	68	55	53
Saturday, July 27, 2024	11:00	54	65	54	51
Saturday, July 27, 2024	12:00	55	71	54	52
Saturday, July 27, 2024	13:00	54	64	54	51
Saturday, July 27, 2024	14:00	52	68	51	49
Saturday, July 27, 2024	15:00	53	71	51	48
Saturday, July 27, 2024	16:00	52	64	50	48
Saturday, July 27, 2024	17:00	51	62	50	48
Saturday, July 27, 2024	18:00	51	63	50	48
Saturday, July 27, 2024	19:00	50	58	49	47
Saturday, July 27, 2024	20:00	50	64	49	47
Saturday, July 27, 2024	21:00	47	54	47	45
Saturday, July 27, 2024	22:00	55	80	46	44
Saturday, July 27, 2024	23:00	49	69	47	45

Statistics	Leq	Lmax	L50	L90
Day Average	53	65	52	50
Night Average	51	66	48	46
Day Low	47	54	47	45
Day High	56	71	55	53
Night Low	45	53	45	43
Night High	55	80	52	50
Ldn	58	Day %		74
CNEL	58	Night %		26

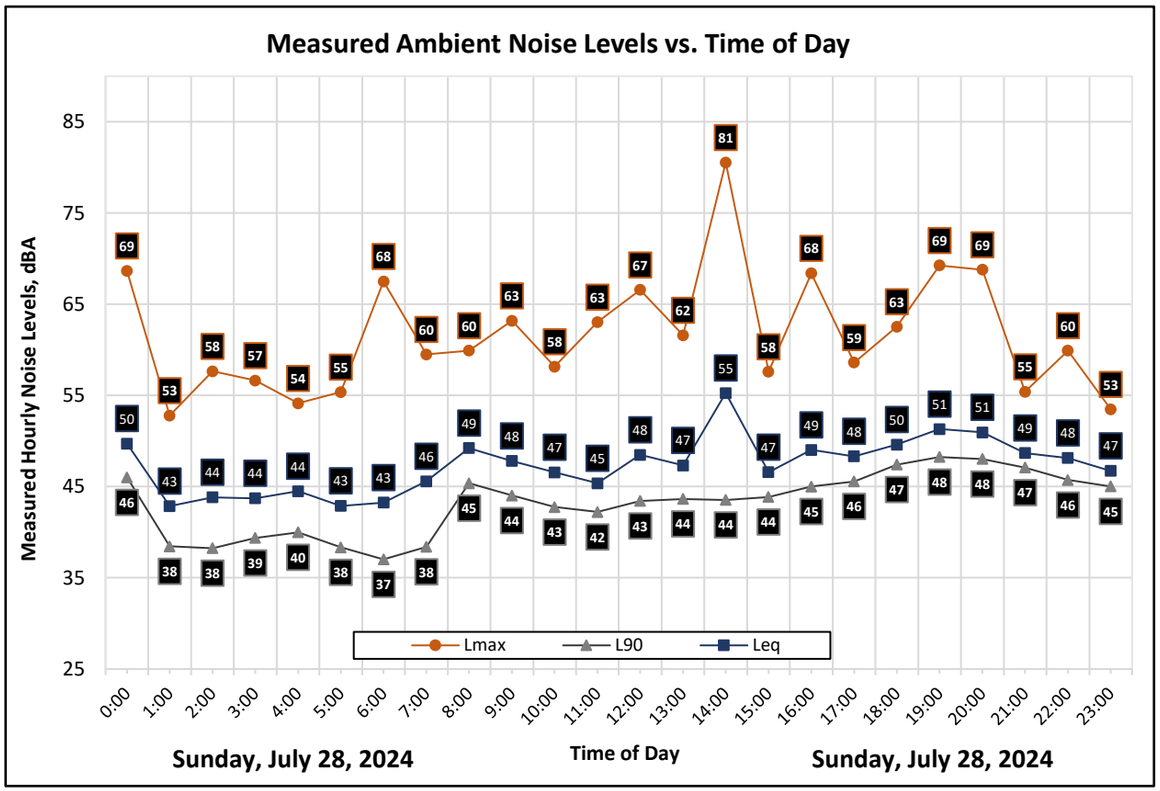


Appendix B3c: Continuous Noise Monitoring Results

Site: LT-3
Project: Springtown Open Space Phase 1
Meter: LDL 820-6
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (37.7084890, -121.7396129)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, July 28, 2024	0:00	50	69	48	46
Sunday, July 28, 2024	1:00	43	53	41	38
Sunday, July 28, 2024	2:00	44	58	41	38
Sunday, July 28, 2024	3:00	44	57	43	39
Sunday, July 28, 2024	4:00	44	54	43	40
Sunday, July 28, 2024	5:00	43	55	41	38
Sunday, July 28, 2024	6:00	43	68	39	37
Sunday, July 28, 2024	7:00	46	60	43	38
Sunday, July 28, 2024	8:00	49	60	48	45
Sunday, July 28, 2024	9:00	48	63	46	44
Sunday, July 28, 2024	10:00	47	58	45	43
Sunday, July 28, 2024	11:00	45	63	44	42
Sunday, July 28, 2024	12:00	48	67	46	43
Sunday, July 28, 2024	13:00	47	62	46	44
Sunday, July 28, 2024	14:00	55	81	46	44
Sunday, July 28, 2024	15:00	47	58	46	44
Sunday, July 28, 2024	16:00	49	68	47	45
Sunday, July 28, 2024	17:00	48	59	47	46
Sunday, July 28, 2024	18:00	50	63	49	47
Sunday, July 28, 2024	19:00	51	69	50	48
Sunday, July 28, 2024	20:00	51	69	50	48
Sunday, July 28, 2024	21:00	49	55	49	47
Sunday, July 28, 2024	22:00	48	60	48	46
Sunday, July 28, 2024	23:00	47	53	46	45

Statistics	Leq	Lmax	L50	L90
Day Average	50	64	47	45
Night Average	46	58	43	41
Day Low	45	55	43	38
Day High	55	81	50	48
Night Low	43	53	39	37
Night High	50	69	48	46
Ldn	53	Day %		80
CNEL	54	Night %		20



Appendix B4 : Short Term Noise Monitoring Results

Site: ST-1
Project: Springtown Open Space Phase 1
Location: Northern Boundary of Project Site
Coordinates: (37.7148303, -121.7435960)
Meter: LDL 831-5
Calibrator: CAL200

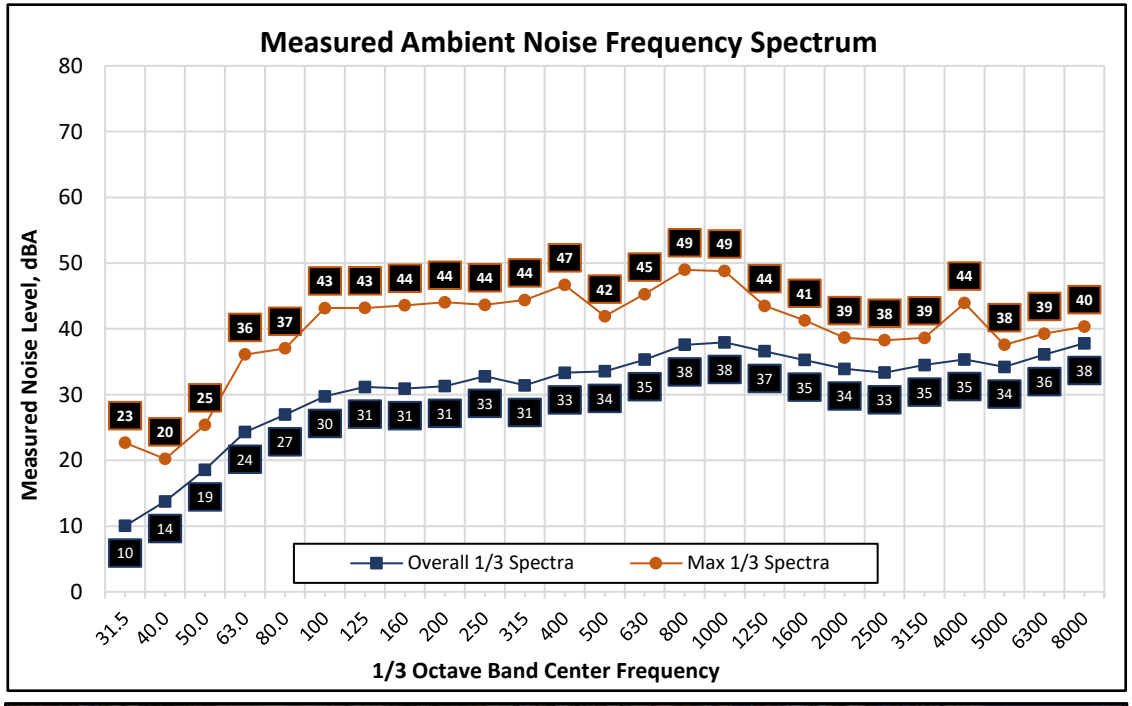
Start: 2024-07-25 11:57:57
Stop: 2024-07-25 12:07:57
SLM: Model 831
Serial: 2658

Measurement Results, dBA

Duration:	0:10
L_{eq}:	46
L_{max}:	57
L_{min}:	40
L_{50}:	44
L_{90}:	42

Notes

Primary noise source was distant traffic noise from Springtown Boulevard and natural sounds such as birds. Secondary noise sources include blowers, lawnmowers and planes overhead.



Appendix B5 : Short Term Noise Monitoring Results

Site: ST-2
Project: Springtown Open Space Phase 1
Location: Eastern Boundary of Project Site
Coordinates: (37.7155480, -121.7360691)

Meter: LDL 831-5
Calibrator: CAL200

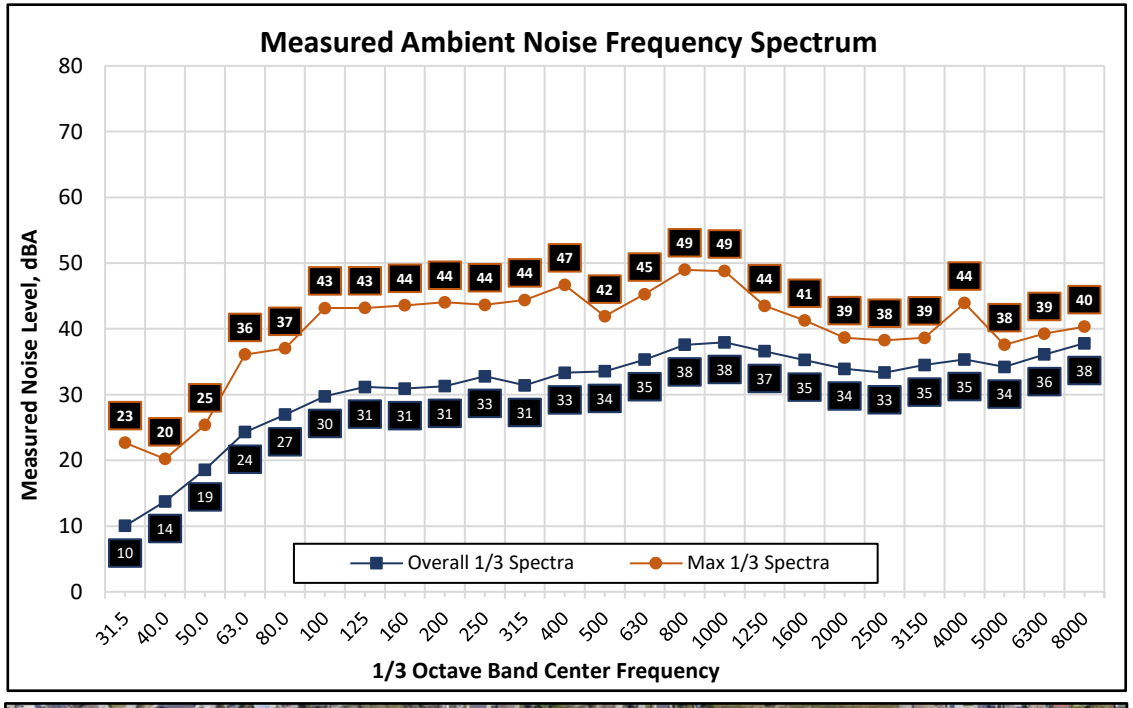
Start: 2024-07-25 12:24:05
Stop: 2024-07-25 12:34:05
SLM: Model 831
Serial: 2658

Measurement Results, dBA

Duration:	0:10
L_{eq}:	53
L_{max}:	72
L_{min}:	38
L_{50}:	43
L_{90}:	39

Notes

Primary noise source was distant traffic noise from Heather Lane and dog barking from adjacent houses. Secondary noise sources include planes.



Appendix B6 : Short Term Noise Monitoring Results

Site: ST-3
Project: Springtown Open Space Phase 1
Location: Southern Boundary of Project Site
Coordinates: (37.7101463, -121.7361365)
Meter: LDL 831-5
Calibrator: CAL200

Start: 2024-07-25 12:43:13
Stop: 2024-07-25 12:53:13
SLM: Model 831
Serial: 2658

Measurement Results, dBA

Duration:	0:10
L_{eq}:	46
L_{max}:	52
L_{min}:	44
L_{50}:	46
L_{90}:	45

Notes

Primary noise source was distant traffic noise from Highway 580 and H-VAC from adjacent houses. Secondary noise sources include planes and construction noise.