FINAL INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

for the

MARINA HIGH SCHOOL MULTI-USE FIELD PROJECT

Prepared for:
Monterey Peninsula Unified School District

Prepared by:
Denise Duffy & Associates

February 8, 2024

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CHAPTER 1. INTRODUCTION

BACKGROUND

The Monterey Peninsula Unified School District (District or MPUSD) circulated a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the Marina High School Multi-Use Field Project (proposed project). The District has determined that the proposed project will not have a significant effect on the environment. The District will therefore consider adoption of a Mitigated Negative Declaration for the proposed project at the scheduled Board hearing on February 13, 2024.

PROJECT SUMMARY DESCRIPTION

The proposed project is located on the existing Marina High School (Marina High School or Marina High) campus located at 298 Patton Parkway in the City of Marina. The District intends to construct various improvements to the existing athletic fields within the 5.71-acre Marina High School property. In summary, the proposed project includes the following elements:

- New field lighting would be installed, consisting of up to seven (7) MUSCO-designed light emitting diode (LED). The proposed field lighting would be dimmable from 30 percent to as much as 17 percent to allow for reduced intensity of lighting. These Lights would be mounted on four (4) approximately 80-foot-high lighting poles, two (2) approximately 99-foot-high lighting poles, and one (1) approximately 70-foot-high lighting pole, located at the north, southeast, and southwest of the existing athletic fields;
- New 686-seat bleachers, scoreboard, storage units and an enclosed, 24 feet by 8 feet dedicated sound booth at the north edge of existing athletic fields and 213-seat bleachers to replace the current bleachers at the baseball field and new scoreboard and storage units at the southern corner of the existing athletic fields;
- Renovation and improvements to the existing athletic fields, including installation of artificial turf on all athletic fields (covering approximately 120,000 square feet[1]), new olive core baseball in-field (a sustainable alternative to traditional rubber surfaces), new moveable field goals for football and goal posts for soccer to replace existing goal posts, and new rubber track surfacing along the north and west boundaries of the athletic fields;
- New plaza to the east of the existing athletic fields, replacing a portion of the existing upper parking lot and a new marquee sign at the entrance to the fields;
- Reconfiguration of the existing parking lot and addition of a new parking lot to the east of the lower athletic fields;[2]
- New impervious surfaces totaling 34,100 sf and stormwater treatment facilities to meet state requirements; and
- Landscaping including removal of 13 trees and planting of 74 trees.

[1] Corrected amount of artificial turf is provided in this Final ISMND by the District, as further presented in this document.
[2] The existing basketball courts would be reconfigured to accommodate the new parking area.

Though not included in the initial construction phase of this project, this environmental document also analyzes the future development of a 2,000 sf new concessions stand and restroom to be located near the new plaza.[3]

PUBLIC REVIEW PERIOD:

The 30-day public review period for the Draft Initial Study/Mitigated Negative Declaration commenced on January 3, 2024 and ended on February 1, 2024.

COMMENTS RECEIVED:

The following lists the comment letter received on the Draft IS/MND to date. The comments are summarized, and responses are provided in the **Comments and Responses** section of this Final IS/MND:

1. *Louise J. Miranda Ramirez – Ohlone/Costanoan-Esselen Nation – January 28, 2024 (email)*
2. *Diane Conway, President, Safe Healthy Playing Fields, Inc. – January 31, 2024*
3. *Cynthia Fan – February 1, 2024*

Reproductions of the correspondence referenced above are included as **Attachment A** to this Final IS/MND.

[3] If future design of the concessions stand/restroom exceeds 2,000 sf, then additional environmental review under CEQA may be required.

CHAPTER 2. COMMENTS AND RESPONSES

This Chapter provides responses to comments received on the Draft IS/MND. Where comments raise environmental issues that result in additions or deletions to the text, tables, or figures in the IS/MND, a brief description of the change is given and the reader is directed to **Chapter 3, Changes to the Draft IS/MND**. The responses below pertain to environmental issues raised by the two comment letters and one email correspondence. The response format below addresses comments raised by multiple commenters to minimize repetition.

Some comments received do not raise environmental issues or do not comment on the analysis in the IS/MND and, thus, do not require a response. These comments generally express an opinion on whether the project should be approved. These comments are hereby part of the project record and will be available to decision makers in considering the project.

TOPICAL COMMENTS AND RESPONSES

REQUEST FOR TRIBAL CONSULTATION (LETTER 1)

MPUSD received a comment letter via email from Louise J. Miranda Ramirez, Tribal Chairwoman of the Ohlone/Costanoan-Esselen Nation on January 28, 2024 (see **Attachment A**) requesting consultation with MPUSD on the proposed project. The comment letter referenced an attached letter requesting consultation, which was not included on the email. The only email attachment was a scanned copy of the Notice of Intent (NOI) distributed as part of public noticing for the Draft IS/MND. Associate Superintendent Ryan Altemeyer responded to the email on January 28, 2024 with a request that the missing attachment be provided and to discuss scheduling a consultation. No response was received. Mr. Altemeyer sent another follow-up email to Ms. Miranda Ramirez on February 5, 2024, again requesting a copy of the letter attachment and to discuss scheduling a consultation. As of this writing, no response has been received from Ms. Miranda Ramirez or Ohlone/Costanoan-Esselen Nation.

As discussed in Section 4.18. Tribal Cultural Resources, of the Draft IS/MND, the District performed Assembly Bill (AB) 52 Outreach via certified USPS mail on February 24, 2023. This included outreach to Ms. Miranda Ramirez as the identified contact for the Ohlone/Costanoan-Esselen Nation. The parties contacted were asked to consider the letter and project information as notification of a proposed project as required under CEQA and AB 52. Comments were requested in writing within 30 days. No responses were received within the 30-day period identified in the AB 52 letter. Therefore, the District is considered to have fulfilled its requirements pursuant to AB 52.

The proposed project includes mitigation measures (see pages 80-82 of the Draft IS/MND) related to the protection of cultural and tribal cultural resources. Mitigation Measure CR-1A requires that construction personnel conducting ground disturbing activities receive a cultural resources sensitivity training prior to the initiation of construction. Mitigation Measure CR-1B outlines procedures for stopping construction and evaluating finds in the event that cultural resources or tribal cultural resources are discovered on site. Mitigation Measure CR-2 outlines procedures for stopping construction in the event of the discovery of human remains interred on the project site, including procedure for notifying the Native American Heritage Commission if the remains are determined to be prehistoric.

The District remains open to consultation on the proposed project with Ohlone/Costanoan-Esselen and other tribal organizations should they follow up with the District, including working with Ms. Miranda Ramirez to set up tribal consultation in the event that the proposed project is approved.

COMMON TOPICS AND APPROACH TO ADDRESS (LETTERS 2 AND 3)

Two of the three letters received as comments on the IS/MND identified opposition to the use of artificial turf and advocated use of natural grasses for this project. These are from Diane Conway, President, Safe Healthy Playing Fields, Inc (Letter 2), and a letter from Cynthia Fan (Letter 3). The common issues raised are addressed topically below, as the letters and concerns were similar in nature. A number of the comments are issues that address the overall industry, and do not raise issues related to the specific project. Specifically, the letters cite their concerns over adverse environmental impacts resulting from any project that uses artificial turf. Concerns cited are addressed topically below. Overall, it should be noted that there is no prohibition on use of artificial turf in local, state or federal standards or mandates. The decision on selection of natural grass or synthetic materials for athletic fields is the Districts, and this decision is not within the responsibility or purview of this IS/MND. Therefore, those comments advocating the District not use the proposed artificial turf materials are referred to decision-makers and not further addressed in this document. Those comments that address project level impacts related to the proposed project are addressed below.

Amount of Impervious Surfaces/Project Description:

Safe Healthy Playing Fields, Inc. noted the listed synthetic turf square footage area in the Draft IS/MND is inaccurate. The District has provided an updated figure to correct this error. The proposed project would install 124,050 sf of synthetic turf. While the estimate of synthetic turf area in the Draft IS/MND was understated, the mapping and area shown in the IS/MND and technical documentation provided as a basis of the document assessed the entire field areas for installation and use of artificial turf for the project area. Thus, the stormwater analysis, in particular, correctly assesses the total of new synthetic turf installation of 124,050 sf. The commenter asserts that the previously provided number of 7,889 sf of synthetic turf installation would understate the amount of impermeable surfacing. However, as noted in responses below, and detailed further in the Astroturf information provided in **Attachment B**, the materials proposed for this project site are not impermeable. The proposed synthetic turf is not considered an impervious surface (see comment response on page 6 of this Final IS/MND) and would not substantially contribute to increased runoff not already considered in the proposed project and impacts addressed in this IS/MND.

Thus, the stormwater facilities for the proposed project have been designed in accordance with the actual square footage of synthetic turf and the turf proposed for the site, is in fact, permeable. Thus, no new significant impact and no additional mitigation measures are required as a result of this correction.

This change has been noted in **Chapter 3, Changes to the Draft IS/MND** and addressed in each topical section as appropriate in this Chapter, including revising the square footage on pages 9, 98, and 123 of the Draft IS/MND.

CMAS Agreement with ProGrass West

Comment Letter 3 raises a concern that a CMAS agreement for the installation of artificial turf was approved with ProGrass West prior to completion of the CEQA process. The District provides the following response:

California Multiple Award Schedules (CMAS) is a procurement process described by the State of California as offering a "wide variety" of commodities and services "at prices which have been assessed [by the State] to be fair, reasonable and competitive. The CMAS Program creates a pool of suppliers that an agency can solicit offers from." https://www.dgs.ca.gov/PD/About/Page-Content/PD-Branch-Intro-Accordion-List/Acquisitions/California-Multiple-Award-Schedules. In order to take advantage of favorable pricing, the District entered into a contract with ProGrass West as a CMAS provider. While the contract locks in the pricing, the District is not obligated to proceed with the work or to purchase the materials. Pursuant to the contract terms, "The Owner may, at any time, terminate the Contract for the owner's convenience and without cause." (Section 13, "Termination".) No work has commenced under the ProGrass West contract, and the District is not irrevocably committed to move forward with the project under that contract. The District respectfully disagrees with the assertion that their Board action violated CEQA as the approval of this contract with ProGrass West does not represent the approval of a project under CEQA or a pre-commitment to carry out the project.

Further, there is no commitment of resources or physical impact to the environment as a result of this contract approval. While the District executed a purchase agreement to lock in a price, the agreement would or may not be implemented and cannot in fact, proceed until the project's completion of CEQA and Board approval of the project; thus the agreement was contingent upon completion of CEQA compliance.

Adequacy of Distribution of IS/MND

Comment Letter 3 asserts the District as Lead Agency did not provide adequate distribution to specific agencies cited in the letter. The District prepared a Notice of Completion (NOC) form as part of the State-level public review for the proposed project. The NOC is a required document, the form and content of which is mandated by the Office of Planning and Research (OPR) for public review of CEQA documents. This NOC included a list of reviewing agencies checklist that was filled out by the District based on the known areas of controversy associated with the proposed project. The comment letter states that the Department of Toxic Substances Control (DTSC) should have been included on the list of State Reviewing Agencies for the NOC checklist form sent to the State to initiate state agency review. However, the reviewing agencies checklist provides a first level recommendation by the Lead Agency to OPR staff as to which agencies may have interest in reviewing a project. Final distribution of an environmental document is evaluated upon review by OPR staff, considering the project and the CEQA document submitted by the Lead Agency, and the decision to send a document to state agencies for review is up to OPR staff. The notice of availability of the Draft IS/MND was made publicly available online on the State's website and online at District's website as well as at the District's administrative office for all interested parties to review.

In addition, Ms. Fan (Comment Letter 3) asserts that a "proposed ND or MND and its initial study must be attached to the NOI and sent to every Responsible and Trustee Agency concerned with the project and every other public agency with jurisdiction by law over resources affected by the project." The State is responsible for distribution to state agencies, as discussed above. Additionally, as of this writing, the DTSC does not have any legal or permitting authority over the proposed project that would grant it status as a

"Responsible Agency" as defined by Cal. Code Regs. Tit. 14, § 15381.[4] In addition, DTSC does not meet Cal. Code Regs. Tit. 14, § 15386's definition as a "Trustee Agency" as DTSC does not have "jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California".[5] As a result, DTSC can be considered neither a Responsible or Trustee Agency for the proposed project as defined by CEQA.

Safe Healthy Playing Fields' comment letter (Comment Letter 2) notes that the project site is part of the former Fort Ord Superfund Site and also questions why the US EPA was not listed as a reporting agency in the Draft IS/MND. However, the site was surveyed and cleared of operational ordinance (OE) prior to construction of Marina High School and the existing site improvements (MPUSD, 2010).[6] This information has been added to the Draft IS/MND as shown in **Chapter 3** of this Final IS/MND. As a result, further coordination with the US EPA was not required for the proposed project.

The Draft IS/MND was adequately noticed and circulated for public review in accordance with CEQA requirements. As a result, the District has met its obligations for public review under CEQA. No further response to this comment is required.

ARTIFICIAL TURF

As noted above, there were two letters that raised concerns regarding the proposed installation of artificial turf grass for the proposed project's renovated athletic fields. As identified on Page 9 of the Draft IS/MND, the proposed project includes replacing the existing grass athletic fields and installing new synthetic turf. Since both letters raised common concerns and provided much of the same information, the following master response on all issues related to artificial turf is provided.

Hazardous Materials/Safety

The comment letters raise several concerns related to the installation of artificial turf containing Per- and Polyfluorinated Substances (PFAS). The Center for Disease Control (CDC) identifies PFAS as an environmental concern as they 1) do not break down in the environment, 2) can move through soils and contaminate drinking water sources, and 3) build up in fish and wildlife (CDC, 2022)[7]. The comment letters assert that the proposed project could result in PFAS-related environmental impacts during manufacturing, use, and disposal as a result of the use of artificial turf.

Per the District's provider, the artificial turf installed as part of the proposed project would be free of PFAS. This would be verified by pre- and post-manufacturing laboratory tests conducted by a third-party analytical chemistry lab on behalf of AstroTurf to ensure that PFAS concentrations are below detectable limits (AstroTurf, 2023). As a result, the proposed project would not result in the release of PFAS into the environment. In addition, the proposed project would use "Organic 201" infill, consisting of natural cork and olive components as infill on the synthetic turf in place of traditional rubber crumb infill. Organic 201 is certified to be 100 percent free of chemical contamination, including PFAS (Amorim Sports, 2020). No

[4] https://www.law.cornell.edu/regulations/california/14-CCR-15381#:~:text=%22Responsible%20agency%22%20means%20a%20public,an%20EIR%20or%20negative%20declaration.

[5] https://govt.westlaw.com/calregs/Document/I8E4FB3085B4D11EC976B000D3A7C4BC3?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

[6] Monterey Peninsula Unified School District, Draft Environmental Impact Report for the Marina Middle School, High School & Joint Use Community Recreation Facilities. January 2010

7 https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html#:~:text=Print,in%20a%20variety%20of%20products.

additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

The comment letters raise several concerns related to the use of the synthetic turf and potential for plastics, microplastics, and nano plastics released due to wear from use of the synthetic turf over time, exposure to severe weather, and ultraviolet rays from the sun. Comments also state that stormwater runoff would carry these into drains, or dispersed into the air by wind, shoes, and clothing. Additionally, the commenters state that there is potential for these plastics to absorb bacteria and chemicals.

Stormwater management features have been designed and installed for the proposed project that would reduce and filter materials as part of the BMPs and stormwater runoff. The synthetic field turf included as part of the proposed project includes permeable layers designed to drain at a rate of over 30-inches per hour. Stormwater runoff would be directed from the synthetic turf to a stormwater system specifically designed to serve the proposed project. Additionally, the proposed project uses olive and cork-based infill materials which will substantially reduce plastics, microplastics, and nano plastics compared to traditional rubber-based synthetic turf fields. The synthetic turf would utilize Astroturf "Rootzone" technology to minimize field migration, including infill materials and plastics, microplastics, and nano plastics from synthetic grass blades. In addition, the synthetic turf would use antimicrobial technology to prevent buildup of bacteria. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

Safe Healthy Playing Fields' (Comment Letter 1) comment letter raised concerns related to athlete safety and heat related illness as a result of heat absorption by synthetic turf playing fields. The proposed project is located within the City of Marina, where the summers are short, comfortable, dry, and mostly clear and the winters are short, cold, wet, and partly cloudy. Average temperatures in the City of Marina typically vary from 44 degrees Fahrenheit to 70 degrees Fahrenheit and are rarely below 36 degrees Fahrenheit or above 80 degrees Fahrenheit. The highest temperature recorded as a one day event in Marina was 94 degrees Fahrenheit (Weather Underground, 2024).[8] Typical temperatures are much lower and during single-event high temperatures, the School administration and coaches regularly monitor physical activity for students and athletes to ensure safety (personal communication with Ryan Altemeyer, February 2024). Additionally, the comments are general in nature and did not review the proposed type of materials and technology for this project or project site location and climate. The proposed project would install AstroTurf, which includes cooling technology to reduce surface temperatures by as much as 40 degrees Fahrenheit compared to other synthetic turf brands. The implementation of this cooling technology combined with the generally moderate climate would reduce risks of heat related illnesses. (See **Attachment B**). The proposed use of artificial turf at this site does not raise a new significant environmental impact related to health risk. The comment is noted and referred to decision makers for their consideration during the approval process. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

Impervious Surfaces and Erosion

Safe Healthy Playing Fields' comment letters raise several concerns related to impervious surfaces and runoff from installation of synthetic turf. Their letter quotes a US EPA definition of impervious surfaces that includes artificial turf as an example of an impervious surface. However, the synthetic field turf included as part of the proposed project includes permeable layers designed to drain at a rate of over 30-

[8] https://www.wunderground.com/history/daily/us/ca/marina/KCAMARIN16/date/2019-9-6

inches per hour. Stormwater runoff would be directed from the synthetic turf to a stormwater system specifically designed to serve the proposed project. These stormwater systems would prevent on and offsite erosion. While extreme weather conditions such as atmospheric rivers or bomb cyclones may occur during the life of the proposed project, the stormwater facilities designed for the proposed project would have adequate capacity to manage flood flows under worst-case flooding scenarios (see page 98 of the Draft IS/MND). The project is designed to incorporate Best Management Practices (BMPs) to control sediment and erosion runoff events and protect water quality. In accordance with the applicable requirements, developments are required to identify appropriate BMPs to control the volume, rate, and potential pollutant load of storm water runoff from new development and redevelopment Projects to minimize the generation, transport and discharge of pollutants. These requirements may include a combination of structural and non-structural BMPs and would include requirements to ensure the proper long-term operation and maintenance of said BMPs. In addition, the proposed project site is located in FEMA Flood Zone X, which is identified as an area of "Minimal Flood Hazard" (see page 98 of the Draft IS/MND).

The comment claims there could be potentially significant impacts due to an increase in impervious surface but provides no support for that claim. CEQA Guidelines section 15204(c) states that "Reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of their comments." While the comments raise concerns regarding the use of artificial turf in general, the commenter does not provide the factual basis how the proposed project would result in a significant impact based upon the use of artificial turf. As stated above, the proposed project type of synthetic field turf provides permeable layers designed to drain at a rate of over 30-inches per hour, runoff would be directed from the synthetic turf to a stormwater system specifically designed to serve the proposed project, and all applicable standards and BMPs are applied.

The comment does not raise a new significant environmental impact related to stormwater, flooding or erosion. As a result, impacts would be less than significant. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

General Comments on Cumulative Impacts under CEQA

The comment letters raise several concerns related to cumulatively considerable impacts from use of artificial turf at the project site. These comments are addressed by topical area below for waste impacts and greenhouse gasses. This response provides an overview of requirements under CEQA related to cumulative impacts and a project's contribution in assessing cumulative impacts.

In accordance with CEQA, the discussion of cumulative impacts must reflect the severity of the impacts and the likelihood of their occurrence; however, the discussion need not be as detailed as the discussion of environmental impacts attributable to the project alone. Further, the discussion is guided by the standards of practicality and reasonableness. Section 15130(a) of the CEQA Guidelines also requires that an EIR discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable.

Cumulative Waste Generation Impacts

The comment letters raise several concerns related to cumulatively considerable waste impacts. The commenters assert that the synthetic turf would need to be replaced on an eight to ten year basis over the life of the proposed project. They further assert that there are no large scale recycling operations

available to handle recycling of synthetic turf, and that the proposed project would have a cumulatively considerable contribution to waste generation. However, the synthetic turf included in the proposed project uses infill materials that are 100 percent recyclable (Amorim Sports, 2020) instead of traditional rubber-based infill materials that would require landfill disposal. In addition, solid waste generated by the proposed project, including waste produced by turf replacement, would be accommodated by the estimated remaining capacity of 48,560,000 cubic yards (CY) available at the Monterey Peninsula Landfill (see page 123 of the Draft IS/MND). The synthetic turf would not contain measurable amounts of PFAS that could impact the landfill, as discussed above on Page 5 of this Final IS/MND. The comment also appears to address cumulative concerns on a national and global nature related to ability of artificial turf to be adequately recycled. The commenter claims there could be potentially significant impacts due to an increase in waste generation but provides no support for that claim for this project. While the comments raise concerns regarding the use of artificial turf in general, the commenter does not provide the factual basis how the proposed project would result in a significant impact based upon the use of artificial turf in this location and proposed project, and the available landfill capacity presented above. The comment does not raise a new significant environmental impact related to the proposed project's waste generation or provide evidence to support a significant contribution to cumulative impact related to waste generation. As a result, impacts would be less than significant. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

Cumulative Greenhouse Gas Emissions Impacts

The comment letters raise several concerns related to cumulatively considerable greenhouse gas (GHG) emissions impacts. Specifically, the commenters point to additional GHG impacts related to manufacture, transport, and disposal of synthetic turf. Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, it need not consider the effect significant but shall briefly describe the basis for its conclusion. As further clarified in Section 15065 of the CEQA Guidelines, "cumulatively considerable" means that the incremental effects of an individual 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. The fact that a cumulative impact is on the whole significant does not necessarily mean that the project-related contribution to that impact is also significant. Instead, under CEQA, a project-related contribution to a significant cumulative impact is only significant if the contribution is cumulatively considerable. The comment also appears to address cumulative concerns on a national and global nature related to GHG emissions. The commenter claims there could be cumulatively considerable significant impacts due to an increase in GHG emissions but provides no support for that claim for this project. While the comments raise concerns regarding the use of artificial turf in general, the commenter does not provide the factual basis how the proposed project would result in a significant impact based upon the use of artificial turf in this location and proposed project, and the discussion of GHG in this air basin or project area. In this case, the analysis of GHG emissions was conducted and found to be less than significant. GHG emissions were evaluated for the proposed project using CalEEMod, as described in Section 4.8 of the Draft IS/MND. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for to quantifying potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. Cumulative analysis, as defined by CEQA, requires the analysis of the incremental effects of a project when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects, not a comprehensive analysis of manufacture to disposal emissions for components of a project. The Draft IS/MND concluded that the proposed project would not have a cumulative impact when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects based on the CalEEMod modeling conducted

for the proposed project, considering the regional air basin and the impacts from this project site as discussed in the IS/MND (see page 63 of the Draft IS/MND). GHG emissions from project construction and operation were estimated using CalEEMod, Version 2020.4.0. The model calculates emissions of the following GHGs: carbon dioxide (CO2), nitrous oxide (N2O), and methane (CH4), reported as carbon dioxide equivalents (CO2e). The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (California Air Pollution Control Officers Association 2021). CalEEMod output files for the project are included in Appendix B of the Draft IS/MND. In addition, the Air Quality analysis in the Draft IS/MND reported the estimated amortized annual greenhouse gas emissions generated by the operation of the proposed project[9] would be 1,917 MT/year of CO2e, which is below the threshold of 10,000 MT/year of CO2e. The IS/MND addressed emissions appropriately and concluded the operational emissions associated with the proposed project would be less than significant (see page 91 of the Draft IS/MND). The comment does not raise a new significant environmental impact related to project level impacts on GHG emissions. As a result, impacts would be less than significant. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of these comments.

Environmental Justice

Ms. Fan (Comment Letter 3) comments that the proposed project would result in impacts related to Environmental Justice. However, unlike the National Environmental Policy Act (NEPA), CEQA does not require a standalone evaluation of Environmental Justice as part of the preparation of an IS/MND. There are no federal sources of funding related to the proposed project that would require environmental evaluation of the proposed project under NEPA. Therefore, Ms. Fan's comments related to Environmental Justice are not relevant to the adequacy of the IS/MND under CEQA. No further response is required.

Feasible Alternatives to Turf

Both comment letters noted that the Draft IS/MND did not include an evaluation of feasible alternatives to the proposed project, specifically the use of natural grass turf. However, while CEQA Guidelines Section 15126.6 requires that an EIR describe and evaluate a reasonable range of alternatives to a project, this requirement does not apply to an IS/MND. No further response is required.

ADDITIONAL ISSUES RAISED

Involvement of Field Management Expert

Ms. Fan (Comment Letter 3) asserts that the District should consult with a sports field management expert during the design phase of the proposed project. This comment is not related to the adequacy of the environmental analysis of the Draft IS/MND for the proposed project. No further response is required.

Exposure to Airport Hazards

Safe Healthy Playing Fields' comment letter (Comment Letter 2) incorrectly states that the Draft IS/MND found that the proposed project would have "no impact" related to hazards from being within the boundaries of an adopted airport land use plan. As discussed on page 94 of the Draft IS/MND, the proposed project was determined to have "a less than significant impact" related to hazards from being within the boundaries of an adopted airport land use plan. The proposed project would be consistent with the Marina Municipal Airport Land Use Compatibility Plan's maximum non-residential intensity of 300

[9] Including the correct square footage of synthetic turf, entered as a land use of "Arena" in CalEEMod.

persons per acre, as it would have a maximum occupancy for a single event of 720 persons over a 5.71 acre site. Additionally, the proposed project is a continuation of an existing use and regularly hosts events at the facility. The proposed project would add lighting to increase the use, particularly at night, but not change the use of the site. The maximum project height of 99 feet would not represent a flight hazard as defined by the ALUCP. The existing athletic fields and the greater Marina High School campus are within the area considered as Airport Influence Area (AIA) per the ALUCP. While the proposed project includes the introduction of new impervious surfaces (not including the pervious synthetic turf), the proposed project includes stormwater retention facilities would manage pollutants from runoff in accordance with Regional Water Quality Control Board requirements (page 97 of the Draft IS/MND), including those deposited by planes travelling in the flight path of the Marina Municipal Airport. The analysis in the IS/MND is adequately supported with a qualitative analysis. The commenter claims there could be impact due pollutants due to airplane fuel but provides no evidence that this would result in a significant impact at the project site. As stated above, the proposed project type of synthetic field turf provides permeable layers designed to drain at a rate of over 30-inches per hour, runoff would be directed from the synthetic turf to a stormwater system specifically designed to serve the proposed project, and all applicable standards and BMPs would be applied. The comment does not raise a new significant environmental impact related to project level impacts on airport hazards. As a result, impacts would be less than significant. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of this comment.

Stadium Lighting

Safe Healthy Playing Fields' comment letter asserts that the height of the stadium lighting is "excessive" and will result in negative impacts to migrating and nesting pollinators, including birds and bats. However, the lighting components of the proposed project are designed to minimize light spillover and focus directly on the playing field (pages 73-74 of the Draft IS/MND). In addition, use of the stadium lighting would be strictly limited to the months of August through March, outside of the peak bird nesting season (approximately May through July), and would generally not be used past 8:00 pm with the exception of up to six (6) football games per year, where lights would be used for events scheduled to end by 10:30 pm. The project site is surrounded by other sources of diffuse light (existing residential and commercial uses) and would not mimic the conditions in studies of avian deaths associated with light sources. The proposed project has been designed so as not to result in significant impacts to either avian or bat species. Biological surveys and evaluation of impacts to avian species were conducted as part of the IS/MND and documented in Section 4.4 of the Draft IS/MND and Appendix B to the Draft IS/MND. Mitigation measures, including Mitigation Measure BIO-4 for impacts to bats and Mitigation Measure BIO-6 for impacts to nesting avian species, were identified as appropriate to address impacts from construction of the field and field lighting to species. The comment does not raise a new significant environmental impact related to project level impacts on avian species. As a result, impacts would be less than significant. No additional mitigation measures or changes to the text of the Draft IS/MND are required as a result of this comment.

OVERVIEW OF ALL COMMENTS/CEQA SUBSTANTIAL EVIDENCE

The following section addresses changes to the IS/MND to address comments received on the Draft IS/MND. None of the comments resulted in a "substantial revision" of the mitigated negative declaration, as defined by CEQA Guidelines §15073.5, and the written responses and any new information presented in **Chapter 3** serve to clarify, amplify or make minor modifications to the IS/MND to aid the reader or to consider requests from the commenters. No new significant effects were identified since the

commencement of the public review period that would require mitigation measures or project revisions to be added in order to reduce the effects to less than significant.

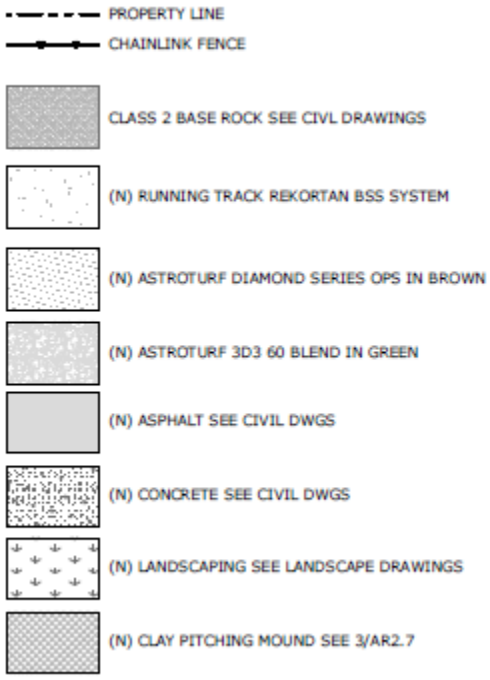
CHAPTER 3. CHANGES TO THE DRAFT IS/MND

The following section shows changes to the Draft IS/MND based on public comments received during the public review period. Additions to the text are shown in underlined font, and deletions from the text are shown in ~~strikethrough~~ font.

Page 9, under Section 1.3 Project Description, is modified as follows:

- A total of ~~7,889~~ 124,050 sf of new synthetic turf;

Pages 11-14, Figures 5a-5d, are modified to include a legend showing surface types (see Attachment D) as follows:



Page 92, under Section 4.9.1 Environmental Setting, is modified as follows:

The California Department of Toxic Substances Control (DTSC) uses databases such as EnviroStor GeoTracker, and Cortese to map the location of hazardous waste sites including sites that have been remediated, sites currently undergoing remediation, and sites that require cleanup. The DTSC EnviroStor Database indicates that there were 28 contaminated sites in Monterey County that are listed in federal or state databases (Monterey County, 2010). Based on a search of the above databases, no hazardous materials contamination has been documented within the project site. The project site is located on a portion of the former Fort Ord Superfund site. However, the site was surveyed and cleared of operational ordinance (OE) prior to construction of Marina High School and the existing site improvements (MPUSD, 2010).

Page 98, under Section 4.10.2 Environmental Impacts, Impact b), is modified as follows:

b) **Less than Significant Impact.** The proposed project site is currently served by MCWD and would not represent an intensification of water use on the site compared to existing conditions. Improvements to the existing baseball field, including new olive core in-field (a sustainable alternative to traditional rubber surfaces), running track, and installation of artificial turf on the field areas would reduce water use compared to existing conditions. Minor water use would be associated with operation of the concessions stand and restroom components of the proposed project during events, however, this would be offset by the reduction of irrigated turf and installation of artificial surfaces not requiring regular irrigation. MCWD's water supply is sourced primarily from the Salinas Valley Groundwater Basin, subbasin 180/400. Groundwater extraction is closely regulated and monitored by the Monterey County Water Resources Agency (MCWRA) and the Salinas Valley Groundwater Sustainability Agency (SVGWSA). The proposed project includes ~~7,889~~ 124,050 sf of new synthetic turf to replace existing natural turf, which would result in a net decrease in water use as the synthetic turf would not need to be irrigated. While the specific reduction in overall water use associated with the proposed project is not known at this time, the proposed project would reduce water use compared to conditions and water use associated with operation of the proposed project would fall within the existing allocation of water for Marina High School. This represents a less than significant impact. (1, 2)

Page 123, under Section 4.19.2 Environmental Impacts, Impact b), is modified as follows:

b) **Less than Significant Impact**. Water service to Marina High School is provided by MCWD. As stated above, the proposed project includes construction of a new concessions stand and restrooms which would use potable water. This would increase water use on the project site compared to existing conditions. The restrooms and concessions stand would connect to the existing water infrastructure currently serving Marina High School and would represent a minor increase in the school's water demand. The proposed project also includes the replacement of the existing grass athletic fields with ~~7,889~~ 124,050 sf of new synthetic turf that does not require irrigation, which would offset the increase in water use from the concessions stand and restroom (see also **Section 4.10 Hydrology and Water Quality**). In addition, MCWD has indicated they have ample water supplies to serve their existing customers, including Marina High School, for foreseeable normal, dry, and multiple dry years.[10] This represents a less than significant impact. (1, 2, 26)

[10] https://www.mcwd.org/docs/engr_files/edfp/uwmp/MCWD_2020_UWMP_20210630.pdf

Attachment A

Comment Letters Received on Draft IS/MND

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From: Louise Ramirez <ramirez.louise@yahoo.com>
Date: Sun Jan 28, 2024, 09:59 PM GMT
Subject: IS/MND
To: ramirez.louise@yahoo.com, raltemeyer@mpusd.k12.ca.us

Saleki Atsa,

Attached please find attached OCEN's letter requesting consultation on Marina High Scholl Multi-use Field Project.

Louise J. Miranda Ramirez
Tribal Chairwoman
Ohlone/Costanoan-Esselen Nation

www.ohlonecostanoanesselennation.org

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Safe Healthy Playing Fields Inc.

www.safehealthyplayingfields.org
31 January, 2024

To: Mr. Ryan Altemeyer:
Re: MND Draft Review, Marina High School Multi-Use Playing Field

These comments are submitted by Safe Healthy Playing Fields, Inc. (SHFPI), an all-volunteer 501-c-3 non-profit. We are committed to educating communities, policy-makers and elected officials about the realities of plastic fields versus natural grass fields and other synthetic surfaces for their parks and schools. Our constituency ranges from concerned individuals to community and civic organizations, legal, healthcare and science professionals, municipal leaders and state legislators.

The Mitigated Negative Declaration (MND) proposed by Monterey Peninsula Unified School District for a synthetic turf playing field at Marina High School is an effort to circumvent CEQA requirements by disregarding legislative and regulatory schemes, current research, and alternatives as well as providing misleading information.

The proposed project is misrepresenting the amount of plastic grass carpet to be used, and therefore the amount of impermeable surfacing. 7,889 ft^2 is a gross understatement of the planned addition of synthetic turf. The stated size (pp 13, 102, 127) of the MND is not playable for any sport and certainly not for a multi-use field.

Legislative and Regulatory Schemes:

An awareness of legislative and regulatory schemes is a requirement under Title 14. Natural Resources. Division 6. California Natural Resources Agency, Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act, Article 1. General § 15004. Time of Preparation.

CA DTSC - regulation of PFAS as a chemical class at the PPQ (Parts Per Quadrillion) level
CA DTSC - Microplastics, added to Priority Chemicals List
CA DTSC - PFAS and other chemicals in synthetic turf (pg. 14).
CA Statewide Microplastics Strategy - Senate Bill No. 1263, Chapter 609, 2018
CA Coastal Commission - conditioned permit for UCSB Cesar Uyesaka Baseball for natural grass only, due to microplastic pollution concerns. No removal of trees was also conditioned in the permit.

Hazardous Substances; Current Reasearch:

The draft MND prepared by Denise Duffy and Associates states:

> *"…The proposed project site does not include any locations listed on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.5. There would be no impact in connection with the proposed project."*

Government Code Section 65962.5.5 is not locatable. Further, the code was updated, effective 1 January 2023 and operative 1 January 2024.

Chemical hazards and carcinogens in synthetic turf include per- and polyfluoroalkyl substances (PFAS), heavy metals, endocrine disruptors, phthalates, volatile and semi-volatile organic compounds, flame retardants and more. PFAS leachate from the plastic carpet 'blades', the backing, the full-field shockpad, infill used to support the fake grass blades, and the hundreds of gallons of glue needed for installation and ongoing repair has been documented.

The synthetic turf industry concedes it uses PFAS in manufacturing, as indicated in a letter sent to CA Senator Ben Allen by the CEO and President of the trade association, the Synthetic Turf Council, in June 2023. This is significant because PFAS, a class of over 14,000 chemicals, dubbed as "forever chemicals," persist in the environment and bioaccumulate in everything: humans, wildlife, soil, water and aquatic organisms. They have been shown to have myriad negative health impacts including various diseases, disorders and cancers. Newly released research (24 Aug 2023) indicates age related increased risk of cancer from chemicals in synthetic turf:

PFAS are so highly toxic that the state of CA is working on regulating them at the Part Per Quadrillion (PPQ) level.

They threaten biodiversity, our food chain and our health. They never leave.

PFAS were first discovered in synthetic turf in 2019 and have been found in every sample and component tested since, including plastic grass blades, backing, shock pads and the two plant based infills tested.

Obtained from public records, PFAS found to date in synthetic turf components and plant based infill include:

- D2-N-EtFOSAA
- D3-EtFOSA
- D9-EtFOSE
- 6:2 FTS
- 6:2 FTSA
- 7:3 FTCA
- 8:2 FTOH
- 12C2-4:2 FTS
- 13C2-6:2 FTS
- 13C2-8:2 FTS
- GenX
- D3-MeFOSA
- D3-N-MeFOSAA
- D7-MeFOSE
- MTP
- PFBA
- PFBS
- PFDA
- PFHpA
- PFHxA
- PFHxS
- PFNA
- PFOA
- PFOS
- PFPeA
- PFPrA
- PFTrDA
- PMPA
- PPF Acid
- PTFE
- PVDF
- R-EVE

Major research on PFAS in synthetic turf by renowned researchers Dr. Graham Peaslee and Dr. Heather Whitehead is slated to be published in winter of 2024.

Claims by industry to be able to manufacture synthetic turf without PFAS is false at best and illegally spreading disinformation- reportable to both the CA Office of the Attorney General (OAG) as well as the Federal Trade Commission (FTC).

All manufacturers should be able to provide independent third party testing using the most up to date methods or otherwise be able to provide independent third party testing showing less than one PPM

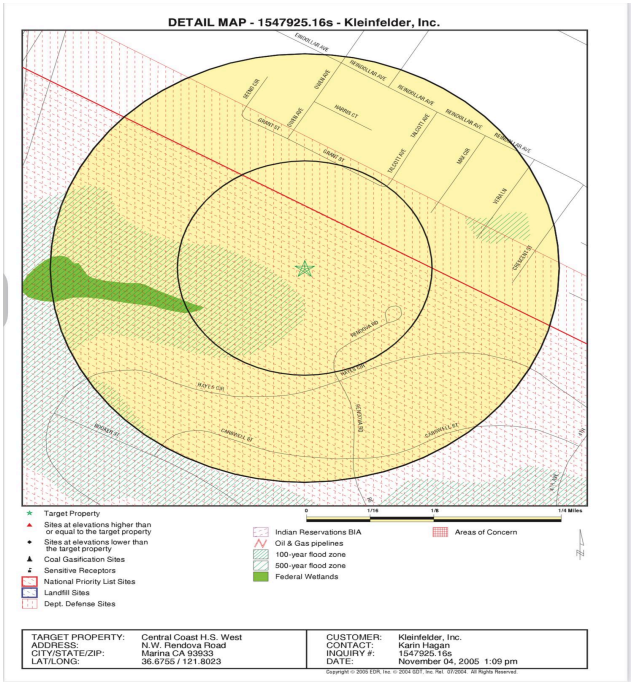
(Part Per Million) of TOF (Total Organic Fluorine). Commercial laboratories can test for 70 of the over 14,000 PFAS chemicals at the two PPT (Parts Per Trillion) level. It should be noted that absence of proof is not proof of absence when only a small percentage of PFAS can be tested for. Signed affidavits from manufacturers and associated industries have also been proven false, are reportable, and are not acceptable in lieu of independent third party testing.

Shredded olive pits, the reported plant based infill chosen for the project, has not been tested for safe use in playing fields. No plant, mineral or other alternative infill has. It should also be noted that plant based infills have the potential to contain pesticides and PFAS- whether added in processing or as a result of PFAS in water for irrigating olive groves, or use of PFAS containing conventional fertilizers, biosolids or pesticides.

The proposed project will, therefore, "Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly."

Marina already has frightfully high levels of drinking water contaminants, including arsenic, hexavalent chromium, haloacetic acids (HAA9), total trihalomethanes (TTHMs), nitrite, nitrate and more. Choosing to install synthetic turf is choosing to risk further contamination of Marina's drinking water supply. Installing a filtration system, using the best BMPs, will have the effect of putting a sponge over a drain. It may capture a small portion of the microplastics but will do nothing to capture PFAS and other chemical leachate.

Dubbed "Plan A," Marina's aquifer will be further compromised by adding 10's of thousands of square feet of impervious surfacing, thereby preventing recharging of the groundwater. It will also be compromised by contamination with toxic and carcinogenic chemicals leaching from the plastics and potentially from the infill. The proposed project area also appears to incorporate a federal wetlands area within a 100 year flood zone.



Impervious surface:

Synthetic turf is classified as ***impervious*** by both the US EPA and the State of California. U.S. EPA has defined impervious surfaces:

> *"...areas such as gravel roads...that will be compacted through design or use to reduce their impermeability."* It has further defined impervious surfaces as*…[a]ny surface that prevents or significantly impedes the infiltration of water into the underlying soil. This can include but is not limited to: roads, driveways, parking areas and other areas created using non porous material; buildings, rooftops, structures,* ***artificial turf*** *and compacted gravel or soil."*

Compaction, in addition to the impervious plastic surface, result in increased runoff. Despite synthetic turf industry claims, laboratory testing is not the same as reality. Synthetic turf is unable to handle the amount of rain that comes with an atmospheric river or bomb cyclone.

Scripps Institute of Oceanography, University of California San Diego reported 46 total atmospheric rivers along the U.S. West Coast, causing disastrous flooding and loss of property and life during the 2022 to 2023 rainy season. With predictions of a coming El Niño, increasing frequency and severity of atmospheric events overall, consideration of synthetic turf is antithetical to environmental responsibility and an even poorer choice for a product that must be replaced every 8 to 10 years on average.





The project will "provide substantial additional sources of polluted runoff."

Potential for erosion:

Mitigation for potential erosion during construction does not address the potential for erosion subsequent to placing 10's of thousands of square feet of impermeable plastic surfacing on the school site.

> *"As impervious surfaces increase, stormwater runoff increases in quantity, speed, temperature, and pollutant load. When impervious surfaces reach 10–20% of local watershed area, surface runoff doubles and continues to increase until, at 100% impervious surface coverage, runoff is five times that of a forested watershed. Excessive stormwater runoff also increases the potential for flooding."* US EPA Impervious Surface Fact Sheet



Urban Forestry & Urban Greening
Volume 63, August 2021, 127232

Artificial lawns exhibit increased runoff and decreased water retention compared to living lawns following controlled rainfall experiments

Thomas J. Simpson, Robert A. Francis

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https://doi.org/10.1016/j.ufug.2021.127232 Get rights and content

https://www.sciencedirect.com/science/article/abs/pii/S1618866721002570

Greenhouse gas emissions:

Title 14. Natural Resources. Division 6. California Natural Resources Agency
Chapter 3. Guidelines for the Implementation of the California Environmental Quality Act
Article 1. General
§ 15004. Time of Preparation
(2)

> *"…public agencies **shall not** undertake actions concerning the proposed public project that would have a significant adverse effect or **limit the choice of alternatives** or mitigation measures, before completion of CEQA compliance."*
>
> *"In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. **The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes.**"*

Synthetic turf off gasses methane and ethylene in ever increasing amounts. Methane traps 90% more heat than carbon dioxide and is 21 times more potent. Land based plastics produce 2 times more methane and 76 times more ethylene than those found in our waterways and oceans. Synthetic turf fields create massive toxic heat islands:

- Heat islands are significantly larger that the footprint of a synthetic field
- All aspects of each individual blade contribute to the overall size of the heat island
- There are ~60,912 plastic blades per square yard

A 2017 Swedish study of total life cycle emissions on a modeled 7881m2 synthetic field concluded GHG emissions would be 527 tons of CO_2E (carbon dioxide equivalents) over a ten year period. This is

exclusive of any emissions attributed to manufacturing, tree felling, stump removal and excavation required for construction. It is also exclusive of the polluting effects of transportation to the work site and diesel powered heavy machinery for multiple weeks, ultimate removal and transportation to a final, not interim, disposal site. It is exclusive of the emissions produced in manufacturing and the 450+ years the turf will continue to off gas while it continues to degrade.

The emission of methane, ethylene, ethane and CO_2 from 10's of thousands of yards of plastic grass carpeting are unaccounted for in the MND review draft. In a life cycle analysis, emissions from manufacturing, transportation to the work site, the number of years of its "useful" life, transportation to site of final, not interim, disposition and the hundreds of years to decompose should be included.

The number of trees required to mitigate the CO_2e (carbon dioxide equivalents) is estimated to be 3700 trees per 84,830.37ft² of plastic carpeting. The project plans only call for 69-73 new trees. In addition, the excavation of the existing grass, soil and downing and removing stumps of trees will release large amounts of sequestered carbon, which is unaccounted for in the MND draft review. The older the trees, the greater the release of GHGs.

The choice of plant based infill will add an additional 70% to the GHG emissions, which is not included in the MND. Calling the olive pit infill "organic" is misleading. Organic simply means carbon based. Humans and animals are carbon based. So is PFAS. The olive pits are crushed and shredded, creating increasing amounts of dust over time, and exposing athletics to the chemicals in the dust as well as any other accumulated toxicants landing on the field over time. Olive pit infill is 1 to 15 kg per meter^2. Olive pit infill is generally not 100% olive pit, thereby potentially adding additional toxic materials to the proposed field, such as silica sand. Silica sand has been on the CA Proposition 65 List since 1988 due to cancer risk via inhalation…which athletes will be exposed to.

Plant based infills add excessive nutrients to the soil and water table. The excessive nutrients, synthetic turf and microplastics are implicated in the increasing frequency of toxic algal blooms and red tides.

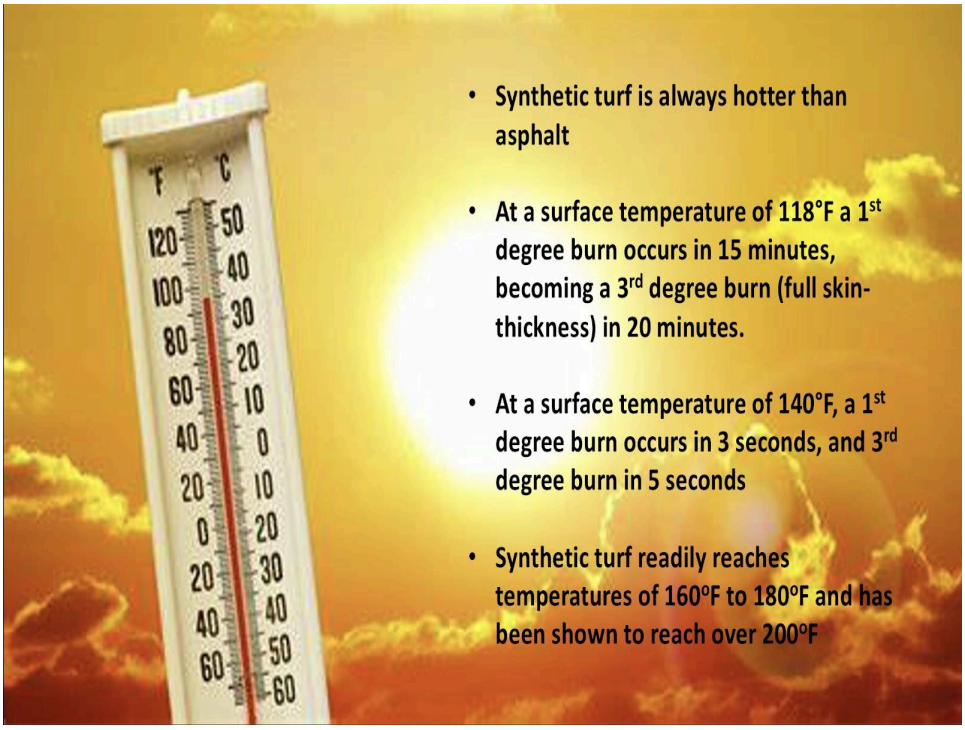
With CA no longer in drought status and the availability of hybrid grasses able to thrive in all climatic zones, the failure to a consider natural grass makes the alternatives, a CEQA requirement, and save taxpayer monies even more unacceptable.

Industry claims regarding pesticides, maintenance and water usage are outdated, disproven, and perpetuates disinformation. Organic field maintenance has been proven to save money over time. There are electric mowers capable of mowing two acres on a single charge. There are even electric chalk markers that can be operated remotely.

Heat:

Synthetic turf readily becomes much hotter than asphalt, reaching temperatures of 160^{0}F to 180^{0}F (regardless of infill type) and have even reached well in excess of 200^{0}F. Excavation of top soil and compacting the underlying earth, covering it with layers of plastic, has negative consequences for all living organisms and biodiversity. Synthetic turf does not allow natural filtration, cooling and carbon sequestration.

Athletes are increasingly impacted by heat related illness playing on synthetic surfaces. Deaths from heat stroke doubled from 2015 to 2017 when compared to the 5 preceding years. Football players are eleven times more likely to suffer a heat related illness with playing on synthetic turf being a contributing factor.



.

Heat island effects, visible from satellite:

Cooling effect of natural grass playing fields at Soldier Field, Lower Presidio, Monterey, CA



Heat island effect over synthetic playing fields at Monterey Peninsula College



Side by side comparison of natural grass v. plastic synthetic turf at Seaside High School

***noticeable despite cloudy conditions**



Hazardous Waste:

"Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. Hazardous materials and waste can result in public health hazards if improperly handled, released into the soil or groundwater, or through airborne releases in vapors, fumes, or dust." Pg. 96 of MND review draft.

PFAS and other toxic and carcinogenic chemicals from synthetic turf are known to leach into air, water and soil. As the plastic blades, backing and shock pad break down due to friction, UV radiation and other environmental exposures, dust is created and released into the environment, posing significant human and environmental risk.

Microplastic blade loss estimates vary widely, from 139 pounds/year (2023) to 551-661 pounds/year. The International Association for Sports and Leisure Facilities states (27 Aug 2019):

> *"mechanical wear from high tread loads – as arising during football or rugby – causes tiny particles or blades of artificial grass to break off. This amounts to 250 to 300 kg per year for modern sports pitches."*

Microplastics not only leach PFAS and other chemicals, they adsorb other chemicals and bacteria, posing particular risk to the food chain.

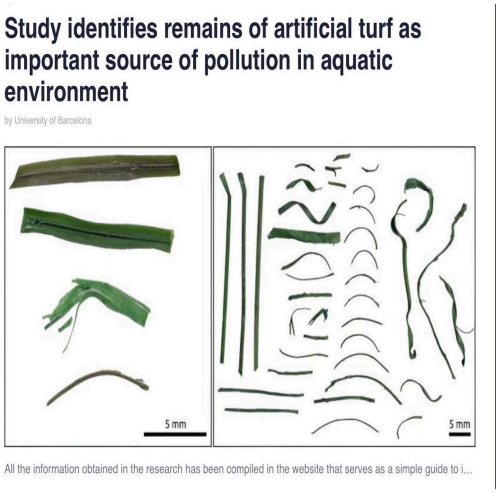
In humans, micro- and nano-plastics have been found in:

- Heart
- Liver and spleen
- Lungs
- Blood
- Placenta (maternal and fetal sides)
- Newborn and adult feces

- Breastmilk
- Brain
- Testes and semen

Microplastic synthetic turf blades have been found in Lake Tahoe and the ocean. In 2021, researchers found that synthetic turf fields in Toronto contribute the 2nd highest amount of microplastics to the environment with only litter contributing a higher amount. This makes synthetic turf clearly a major point source of PFAS and microplastic pollution that cannot go unaddressed.

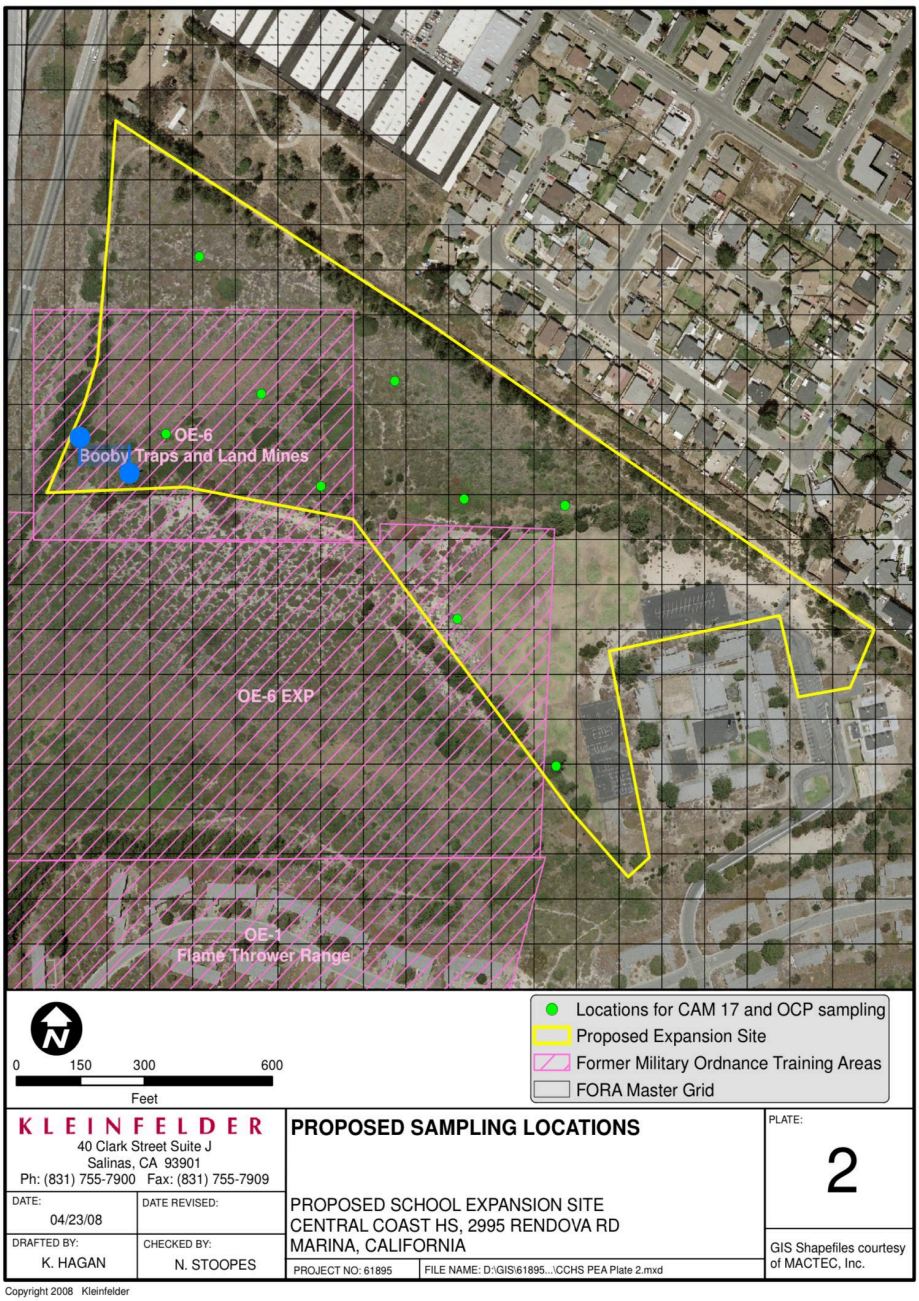




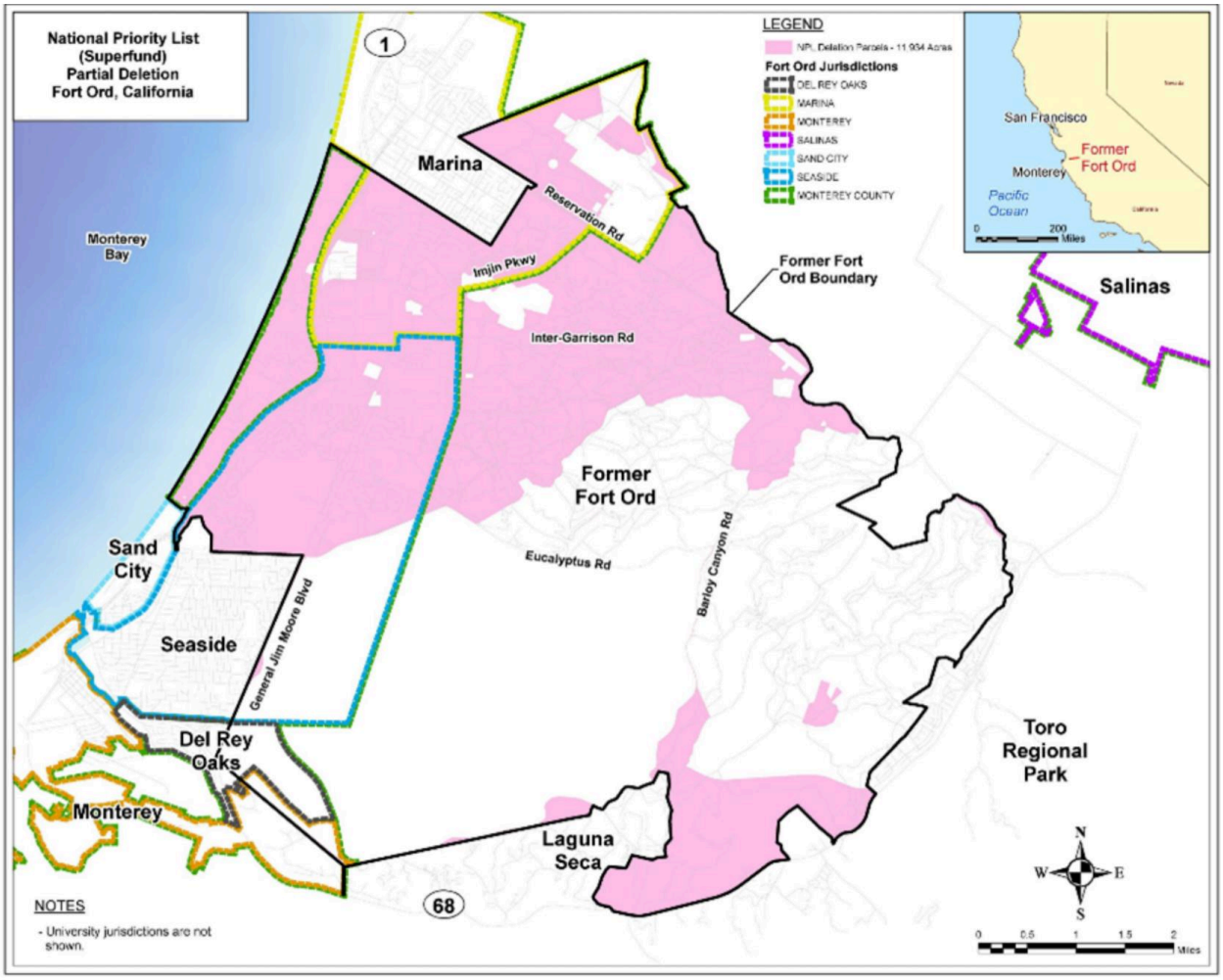


On 13 December, the CA Coastal Commission conditioned a permit for the Cesar Uyesaka Baseball stadium, requiring NATURAL GRASS, citing microplastic pollution.

Of extreme concern is an open case with CA Department of Toxic Substances Control (DTSC) regarding not just an artillery range (concerns for lead in soil and related health risks), but also an explosive ordinance range from the former Fort Ord military base. DTSC has been contacted to verify that the issue of investigation of the explosive ordinance range remains open. It is also noted that the MND draft review does not include DTSC as a reporting agency as it did with the CEQA.net filings for the Monterey Peninsula High School filings. This simply cannot go unaddressed.



From the US EPA website, it appears the project area lies within a section of the Fort Ord Superfund Site that has not been released. Given the additional concerns of Superfund Site status, we question why the US EPA is not a listed reporting agency in the MND draft



The pink portions represent the 11,934 acres of former Fort Ord which were deleted from the NPL.

Synthetic turf is not recyclable.

It is a mixed petrochemical based plastic. Synthetic turf is a single use consumer product (so designated by the CA Commission on Recycling Markets and Curbside Recycling).

- Requires 685 gallons of petroleum based oil to manufacture 2k pounds of plastic; A petrochemical product, a regulation sized (~80k sq ft) field contains 13,700 gallons of oil.
- Creates massive heat islands far greater than their actual footprint
- Releases ever increasing amounts of methane and ethylene for the 450+ years it takes to decompose
- Contains chemicals that cause significant human and environmental health risks, that are bioaccumulative and create negative health and environmental impacts for generations
- Generates 500,000 pounds of plastic waste every 8 years on average: 40,000 pounds of blades and backing, over 400,000 pounds of infill per 80,000 sq foot regulation sized field.
- NOT recyclable, making it a LINEAR product, not a sustainable product.

Landfilling, donating, selling, improperly or illegally disposing of synthetic turf continues to contribute to greenhouse gas emissions, PFAS and other toxic and carcinogenic chemical leachate and microplastic pollution.

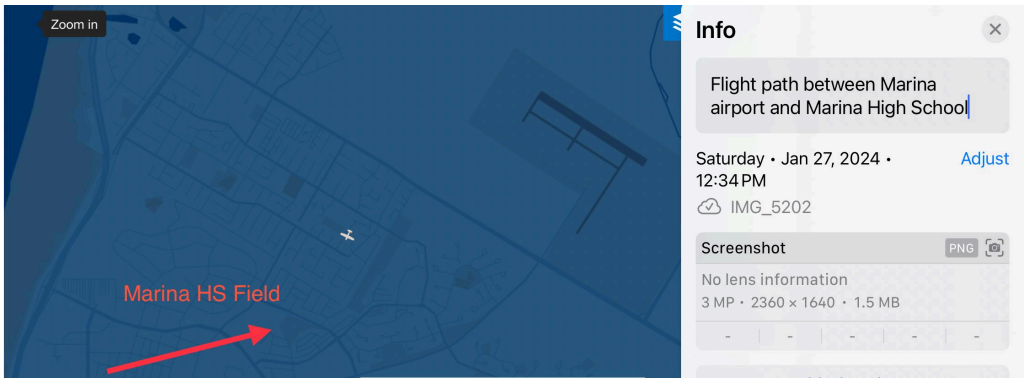
When “mechanically” recycled (chopped up, essentially) for use in other products, the toxic and carcinogenic effects are added to the new product. When shipped out of state for “advanced chemical recycling” (banned in CA under SB54-Allen, signed into law in 2022), they contribute to the negative human and environmental health effects of Environmental and Social Justice communities.

Exposure to leaded aviation fuel:

The MND review draft incorrectly reports no impact “…within two miles of a public airport or public use airport, would the project result in a safety hazard…” The eastern end of the proposed plastic field is 1,0461ft., 1.98 miles from the Marina airport.

> *“Pollutants from aerial and terrestrial sources accumulate on impervious surfaces until runoff from a precipitation event carries sediment, nutrients, metals, and pesticides into stormwater drains and directly to local water bodies. As impervious surfaces increase, stormwater runoff increases in quantity, speed, temperature, and pollutant load. When impervious surfaces reach 10–20% of local watershed area, surface runoff doubles and continues to increase until, at 100% impervious surface coverage, runoff is five times that of a forested watershed. Excessive stormwater runoff also increases the potential for flooding.”* US EPA Impervious Surface Fact Sheet

In addition to airport proximity, Marina Municipal Airport provides lead containing AVGas for small planes. Jet fuel A is kerosene based. Lead was discontinued in fuel for motor vehicles, yet it is still used in AVGas. There is no safe level of lead (CDC, EPA, WHO). People living in flight paths are at risk of the neurotoxic effects of lead poisoning and children are most susceptible. Both Marina Middle and High Schools are in the flight path of the airport.





The proposed project **will** degrade the quality of the environment.

Projected $12.3 million

Likely does not provide for hidden costs for:

- Maintenance contract for synthetic turf- failure to maintain will void warranty.
- Annual hardness testing (i.e. GMax)- often a condition of warranty.
- Infill replenishment- required to maintain GMax score.
- Repairs.
- Removal and transport.
- Disposal- hazardous landfilling may be required in the future. ReGen site handles 3k pounds/day. Unclear they would accept an exorbitant amount this project and others in the area would involve.
- Endangered/threatened species training by specialist.
- Hiring of a qualified wildlife biologist (raptors, bats; migratory birds/nesting monitoring; woodrats; coast horned lizard; CA legless lizard).
- Hiring of a qualified cultural resource specialist or archeologist.
- Cultural resource training on prehistoric or historic-era subsurface archaeological features or deposits.
- Potential expenses for preparation, evaluation, implementation, data recovery plans and reports.
- Future legal defense against lawsuits (injuries; Clean Water Act violation(s)).

Alternative options:

Lighting will extend hours of play for natural grass fields. Lighting extending 90 feet high is excessive and will negatively impact migrating and nesting pollinators, including birds and bats. Pollinators are integral to biodiversity and pest control. They are responsible for every third bite of food we eat. Synthetic turf has been known to cause a marked decrease in bird populations.

Grass fields actively sequester carbon dioxide and provide a cooling function that is especially dramatic when compared to the heat generated by synthetic turf. Grass naturally filters toxins, performs important eco-services for the soil beneath, and provides widely dispersed rainwater infiltration allowing absorption and recharging of the water table. Additionally:

- Research suggests that grasses can accumulate and deposit carbon into the soil by approximately one-half ton of carbon per acre for 30 to 40 years.
- As a natural grass playing field, the net carbon sequestration rate is estimated at between 300 and 3420 lbs of carbon per year.
- Organic management and zero emission maintenance equipment mitigate emissions, reduce costs over time, and increase carbon sequestration.
- Electric mowers for playing fields and chalk markers are available.
- Drought and desert tolerant varieties of natural grass appropriate for lawns, parks and high use playing fields are available.
- An 82,622 ft^2 natural grass field would produce enough daily oxygen for nearly 463 people.

With soil sampling and soil food biome analysis, appropriate drought tolerant seed or sod selection, professionally installed and maintained natural grass can last without replacement for 30 years (Jerad Minnick, High-use natural grass sports surface specialist; Management, Maryland SoccerPlex; Owner, Natural Grass Advisory Group™)

A turfgrass manager (not gardeners or landscapers) can generally manage 5 natural grass playing fields. It would be a cost effective investment with the savings realized from drought tolerant natural grass rather than the exorbitant expense for plastic fields that last from 8-12 years on average (some have failed as early as 1 to 4 years). It should be noted that synthetic turf may not be replaceable with upcoming regulation.

Programs in natural turf management include UC Riverside, Washington State University, Oregon State University (online certificate program), University of Arizona, Colorado State University and Texas A&M, to name a few.

Organically managed, high use fields utilized by park goers and organized sports teams have been in use for years in many areas across the country, including Irvine parks, which has won many awards for its organic management. Pepperdine University is an additional example.

Once established, organically managed fields become increasingly more cost effective. Opportunities for two year pilot projects with expert guidance exist. Two to three playing fields are generally preferred.

Loss of natural green open spaces negatively impacts mental health. Exposure to healthy soil and vegetation is also necessary for a healthy immune system development.

The American Psychological Association finds:

> *"…exposure to nature has been linked to a host of benefits, including improved attention, lower stress, better mood, reduced risk of psychiatric disorders and even upticks in empathy and cooperation."*

> Natural green spaces have been shown to mitigate aggressive behavior in adolescents and significantly reduce the growing risk of psychiatric disorders and suicide mortality. Natural green spaces also reduce health risks such as asthma.
>
> *"Studies have found that students who attend schools with green spaces tend to have better grades, higher test scores, and better attendance rates than those who do not."*
> Initially published in Center for Climate, Health, and the Global Environment, Harvard

With the significant savings of natural grass over petrochemical plastic grass, electric or solar powered maintenance is easily achievable. The savings can also be applied to teacher salaries, deferred maintenance, and support for current and new classroom educational programs. A college credit Turf Grass Management program comes to mind.

Choosing to install plastic synthetic turf is choosing:

- Climate change
- Contamination of air, water and soil with "forever" chemicals
- Increased risk of chemical related illness, injury, heat stroke, death
- Loss of biodiversity Increased legal liability
- Increased taxpayer burden

No one "needs" plastic grass carpet. No one needs more PFAS and other toxic and carcinogenic chemical exposure, least of all in an area with known high levels of contamination and federally protected wetlands. We urge you to not proceed with the proposed project for synthetic turf.

Respectfully submitted,

Diana Conway, President
Dianne Woelke MSN, Board Member
Safe Healthy Playing Fields, Inc.
https://www.safehealthyplayingfields.org
SHPFI is an all-volunteer nonprofit 501-c-3

Re: public comments on the draft IS/MND for Marina HS Multi-Use Field Project

February 1, 2024

To: Ryan Altemeyer, Associate Superintendent of Business Services, Monterey Peninsula Unified School District, 700 Pacific Street, Monterey, CA 93942, raltemeyer@mpusd.k12.ca.us

Please find below my public comments on the draft INITIAL STUDY/ MITIGATED NEGATIVE DECLARATION for the MARINA HIGH SCHOOL MULTI-USE FIELD PROJECT.

Significant adverse environmental impacts result from projects using artificial turf. These impacts include, but are not limited to, plastic degradation, offsite transport of microplastics, increased burden to plastic-saturated waste streams, chemical leaching, water quality impacts, questionable likelihood of genuine recycling at end-of-life, and other end-of-life disposal concerns.

While choosing 100%-plant-sourced infill is definitely an improvement over infilling the plastic grass with microplastics, the elephant in the room is that infill is just one component of an artificial turf system. Even if certified Organic infill existed (and to my knowledge it does not), this single attribute of the artificial turf system could not compensate for the adverse environmental impacts of all the plastic and chemicals that go into the plastic grass fibers themselves, the carpet backing, the shockpad, and adhesives. Beware that every “new and improved feature” of artificial turf comes with more chemicals such as antimicrobials, flame retardants, etc.

It is illogical that a local agency like MPUSD should be able to install artificial turf when you consider that a California state agency, one with environmental experts on staff, is so concerned about significant adverse environmental impacts of artificial turf that it concluded in December 2023, based on its obligations under CEQA, that it could not permit artificial turf installation even with mitigation measures like “PFAS-free” components, plant-based infill instead of tire crumbs, microplastic retention strategies, and an asserted existence of a facility recycling artificial turf.

MPUSD'S PROCEDURAL FAILURES REGARDING CEQA COMPLIANCE

CEQA requires that the board be apprised of a project's environmental impacts ***before*** the board approves the project. Why did MPUSD's Board approve a CMAS agreement with Prograss West on April 11, 2023 in the amount of $2,471,755 for the installation of synthetic turf at Marina High School, i.e. ***before*** finalizing this CEQA IS/MND?

"The proposed ND or MND and its initial study must be attached to the NOI and sent to every Responsible and Trustee Agency concerned with the project and every other public agency with jurisdiction by law over resources affected by the project." (State CEQA Guidelines § 15073.) Why is the Department of Toxic Substances Control not listed among the State Reviewing Agencies for this MND?

SIGNIFICANT CUMULATIVE ADVERSE ENVIRONMENTAL IMPACT FROM ARTIFICIAL TURF DISPOSAL

With regard to the never-ending repetition of disposal of massive quantities of artificial turf product component waste not yet safely recyclable at scale, the MND lacks substantial evidence to support its finding that no significant cumulative adverse environmental impact exists. Disposal and the inability to safely and genuinely recycle artificial turf at scale causes great long-lasting and severe environmental effects. My reference to *genuine* recycling alludes to the fact that repurposing, downcycling, incineration, and pyrolysis are unsustainable solutions. My reference to lack of availability for recycling *at scale* alludes to the fact that there is no substantiated evidence provided that this is happening anywhere in the country. Industry's attempts to provide true recycling at scale continue to be met with obstacles and may never come to fruition. Plastic waste sent to a landfill will never decompose. The capacity of many landfills are reported to be rapidly depleting. Successive iterations of artificial turf replacement projects, which will be necessary every 8-12 years forever, constitute significant cumulative adverse environmental impact.

So much of the plastic carpet pile height of artificial turf has broken off after about 8-10 years (typical warranty period) of use, that the carpet fibers are too short to keep the infill material contained and so the whole carpet becomes due for replacement. The issue of how to handle artificial turf waste when you're done

with it is a significant environmental concern given both the sheer volume of the waste and the hazardous nature of its content.

Take a look at this brief video showing the volume of waste generated by just ***one*** artificial turf sports field replacement this past summer in Saratoga. Due to heavy use, artificial turf sports fields wear out and become due for replacement after a mere 8-10 years. Imagine generating that volume of waste shown in the video *every* 8 years! Now multiply that by the number of artificial turf fields owned by MPUSD.

Artificial turf is often promoted as being “recyclable”. However this messaging from the industry is misleading. The artificial turf industry (and plastics industry in general) has been greenwashing consumers for years when it comes to the subject of recycling. Recycling of artificial turf is a notoriously challenging task, not economically viable over the long-term, and would constitute a source of further microplastic and chemical pollution (ex: recycling of plastic is reported to pollute the air around the facility). To my knowledge, there is no facility in the country that recycles artificial turf at scale. Please don’t unquestioningly trust claims that artificial turf is now being recycled or that recycling facilities will be operational by the time you’re done with the turf. Despite many years of repeated assurances from industry that recycling is just-around-the-corner, attempts to make this a scalable option have encountered one failure after another. If recycling of artificial turf were a realistic, economically viable, scalable solution, massive stockpiles of unwanted, used turf wouldn’t be a thing.

- Being “recyclable” is not the same as being “recycled”.
- Repurposing is not recycling.
- Downcycling is not recycling. Furthermore, we should question the viability of a solution that depends on a high level of sustained demand for downcycled products, like decking and other construction materials incorporating plastic waste, especially those that would contain hazardous and undisclosed chemicals like PFAS. “Evidence shows that such practices exacerbate the negative ecological, health, and social impacts of plastic waste and increase demand for continued production of new (virgin) plastics by creating new markets for plastic wastes.” - July 2023 research, “Assessing benefits and risks of incorporating plastic waste in construction materials” Front. Built Environ., Sec. Sustainable Design and Construction, https://doi.org/10.3389/fbuil.2023.1206474
- Incineration is not recycling.

- “Advanced recycling”, a.k.a. chemical recycling or pyrolysis, is not recycling. (It’s greenwashed terminology for a form of incineration.)
- Recycling a relatively small number of fields is not the same as recycling at scale. If the manufacturer claims large-scale recycling is happening, critically examine whether the referenced operation may in fact be a small-scale performative operation existing purely as a strategy to increase sales, i.e. to market to school district and municipal decision-makers like yourselves with pre-purchase inquiries about the sustainability of artificial turf.

If you’re being told there’s a facility doing *true* recycling of artificial turf *at scale*, please request and share the facility name, location, years in operation, evidence of the volume of artificial turf it recycles annually, and evidence that it is true recycling, as opposed to one of the situations listed above. Please also factor into your budget the cost of transporting the used turf to the facility, especially if you’d be sending it to a facility across the country or overseas.

The capacity of many landfills are reported to be rapidly depleting. Even if there’s room in a landfill, the PFAS and nanoplastics may contaminate local groundwater. Please confirm local landfills have remaining capacity to house the volume of never-ending, never-decomposing artificial turf waste you would be disposing of on a regular basis. Fields typically become due for carpet replacement after approximately 8-10 years. Recognize the possibility that, especially as chemical regulation increases, artificial turf disposal in landfills may eventually be prohibited… It may become a requirement to treat artificial turf as hazardous waste, given known hazards like PFAS, which may also increase your cost for disposal.

SIGNIFICANT CUMULATIVE ADVERSE ENVIRONMENTAL IMPACT FROM ARTIFICIAL TURF’S PFAS

Regulatory bodies and the federal government have prioritized rules related to PFAS reduction and safety for good reason. PFAS is a very serious threat to the environment with irreversible consequences.

With regard to PFAS pollution, the MND lacks substantial evidence to support its finding that no significant cumulative adverse environmental impact exists. PFAS pollution occurs where PFAS is manufactured, will occur from the Marina HS site of installation, and will occur wherever the waste products are taken after Marina

HS is done with them every 8-12 years forever. PFAS leach from landfills and are released into the air by incineration. Because PFAS are of chemical structures designed to last hundreds of years, they *accumulate* in the environment day after day. Successive iterations of the artificial turf replacement projects, which will be necessary every 8-12 years forever, constitute significant cumulative adverse environmental impact.

There is substantiated concern with evidence cited here for PFAS exposure to field users and for PFAS to potentially leach from the synthetic turf into groundwater, surface water, and eventually drinking water. “Every sample of artificial turf tested by academic institutions and NGOs have resulted in positive results for PFAS,” writes Dr. Kyla Bennett of Public Employees for Environmental Responsibility.

See this summary of PFAS and other chemicals of concern in a sample of FieldTurf.

> **Conclusion.** The artificial turf proposed by Harvard-Westlake does contain PFAS, including two PFAS that are of critical concern, PFOA and PFOS. Indeed, the industry now acknowledges that all artificial turf contains PFAS. A bill proposing to ban artificial turf containing PFAS in California led to the Synthetic Turf Council testifying that:
>
> > The bill a (sic) ban on the sale of artificial turf containing intentionally added PFAS on January 1, 2024 to certain public entities and by January 1, 2025 for all sales in California. These dates do not provide enough time for manufacturers and suppliers to develop viable alternatives for the market place…[4]

Dr. Jamie DeWitt, Professor of Pharmacology and Toxicology of the Brody School of Medicine at East Carolina University who researches the toxicity of PFAS and how they affect the immune system, writes: “All PFAS, regardless of their specific chemistries present, have at least one ‘characteristic of concern’ associated with them. The vast majority of PFAS are persistent, which means that they will remain in the environment for years, to decades, to centuries, serving as continual sources of exposure. Many PFAS are known to bioaccumulate, or move from the environment into the bodies of living organisms where they can potentially interact with biological molecules to produce toxicity.”

Common tactics used to mislead buyers on the subject of PFAS are to cite results from tests that only test for a small subset of the thousands of chemicals in the PFAS class or to use test procedures that do not reflect the weathering and abuse the product takes during the years it is installed on site. I believe total organic fluorine testing and SPLP are recommended. Dr. Kyla Bennett and Dr. Graham Peaslee would be experts worth consulting to confirm.

Claims that artificial turf has acceptably low levels of PFAS were tested with the wrong test. As an example, see this explainer.

Please do not fall for claims of "certified PFAS-free" synthetic turf. Here is a cautionary tale about the City of Portsmouth, NH. The city was promised a "certified PFAS-free" synthetic field by the engineering consultants and manufacturers (FieldTurf). This promise was not delivered. E&E News provides a third-party assessment of the situation that unfolded: "'Our community has been deceived': Turf wars mount over PFAS."

There is no evidence bioretention systems can adequately remove PFAS from the water that runs off an artificial turf system. PFAS in the dissolved form (i.e., less adherence to sediment) may leach through the mulch/biotreatment soil media and enter the underdrain of the bioretention systems and/or native soil.

Artificial turf promoters claiming a product contains minimal to no PFAS are routinely found guilty of citing the results of inappropriately-limited testing and of self-defining "minimal" as meeting a self-defined PFAS threshold that is not health protective.

Often the referenced tests:

- fail to reflect real-world conditions such as harsh weathering conditions, frequent mechanical abrasion, and extensive UV exposure
- test for a mere fraction of the thousands of toxic PFAS
- don't test for PFAS-based processing aids

For example, the California Proposition 65 and US EPA's Method 537 are not relevant standards for asserting a product is PFAS-free.

PFAS chemicals are so dangerous that experts are recommending all non-essential uses of PFAS be banned. So even if artificial turf has *less* PFAS than some other consumer products, that does *not* mean it's safe.

There are artificial turf manufacturers claiming “PFAS-free” products while presumably hoping customers won’t notice they are self-defining “PFAS-free” to mean their product may contain *as little as* 100,000,000 ppt of PFAS (i.e. 100 ppm of PFAS).

100,000,000 ppt constitutes a very significant amount of PFAS. Let’s put this in perspective. PFOS is one of the PFAS chemicals routinely found in artificial turf. The U.S. Environmental Protection Agency states that PFOS is likely to cause cancer. It states that, similar to lead, there is no dose below which PFOS is considered safe. It has proposed a goal of 0 ppt of PFOS in drinking water but due to the limitations of testing will tolerate up to 4 ppt. With a goal of 0 ppt and a limit of only 4 ppt, how can an artificial turf’s whopping 100,000,000 ppt of PFAS possibly be safe?

Ecology Center recommends that an artificial turf manufacturer claiming PFAS-free turf fiber be expected to produce testing results showing no more than 1,000,000 ppt of total organic fluorine or total fluorine. Can Marina HS’s proposed artificial turf do that, especially when all the system components are accounted for?

SIGNIFICANT CUMULATIVE ADVERSE ENVIRONMENTAL IMPACT FROM ARTIFICIAL TURF’S PLASTICS, MICROPLASTICS, NANOPLASTICS

With regard to plastic, microplastic, and nanoplastic pollution, the MND lacks substantial evidence to support its finding that no significant cumulative adverse environmental impact exists. These types of pollution occur where plastic nurdles are transported, where plastics are manufactured, will occur from the Marina HS site of installation, and will occur wherever the waste products are taken after Marina HS is done with them every 8-12 years forever. Because plastics are of chemical structures designed to last hundreds of years, they will *accumulate* somewhere in the environment day after day. Successive iterations of the artificial turf replacement projects, which will be necessary every 8-12 years forever, constitute significant cumulative adverse environmental impact.

Here is substantiated evidence plastic pollution from artificial turf is already occurring:
2023 research, de Haan, W. P., Quintana, R., Vilas, C., Cózar, A., Canals, M., Uviedo, O., &; Sanchez-Vidal, A. The dark side of artificial greening: Plastic turfs

as widespread pollutants of aquatic environments. Environmental Pollution, 334, 122094. https://doi.org/10.1016/j.envpol.2023.122094

Microplastics escape from synthetic turf systems into the environment. These microplastics include pieces of the plastic turf fibers as well as plastic-based infills. Examples of plastic-based infills include tire crumbs and polymer-fused cork. Infill breaks down and synthetic turf fibers detach from the plastic carpet pile or break off. This results from the aging and weakening of the product, subjected to ultraviolet rays, heat, wind, and rain, and the continual grinding of the carpet and infill under heavy foot traffic. Local filtration systems, netting, and walk-off mats do not adequately limit the escape of macro- and micro-particulate and chemically-laced dust from the site of the synthetic turf system. Some of the particulate winds up carried much further distances away by wind, shoes, and clothing. Citizen scientists have provided plenty of photographic and video evidence of the small plastic fibers and infill blowing long distances from artificial turf fields where they can contaminate the local watershed and also be washed into storm drains. Here is my own evidence that microplastics escape from synthetic turf, a video taken recently at a high school artificial turf field showing some of the plastic turf fibers and black tire crumbs, which are also considered microplastics, that are initiating their journey out into the world far from the field. Again, it's not just the microplastics that can be seen by the naked eye migrating off the fields into the environment. Nanoplastics and chemicals that can not be seen with the naked eye are also migrating off the fields into the environment.

2023 research finds that synthetic turf fibers account for up to 15% of the meso- and macroplastics in rivers and sea surface waters! Synthetic turf fibers are a significant source of plastic pollution to natural aquatic environments. They are found in Lake Tahoe. They are found in the ocean.

SIGNIFICANT CUMULATIVE ADVERSE ENVIRONMENTAL IMPACT FROM ARTIFICIAL TURF'S GREENHOUSE GASES

With regard to greenhouse gases, the MND lacks substantial evidence to support its finding that no significant cumulative adverse environmental impact exists. Successive iterations of the artificial turf replacement projects, which will be necessary every 8-12 years forever, constitute significant cumulative adverse environmental impacts.

2018 research by Dr. Sarah-Jeanne Royer of Scripps Institute of Oceanography and International Pacific Research Center reports that LDPE (Low Density Polyethylene) plastic, which is the kind in synthetic turf, offgasses methane and ethylene in ever increasing amounts. Methane traps 90% more heat than carbon dioxide and is 21 times more potent. Land based plastics produce 2 times more methane and 76 times more ethylene than those found in our waterways and oceans.

Please refer to the details provided in this letter from Dr. Royer explaining how her research makes it clear that, because of its composition and surface area, synthetic turf "has a distinctly large contribution to climate change in comparison to other plastics."

THE ENVIRONMENTAL INJUSTICE OF ARTIFICIAL TURF

Production, transport, use, and disposal of artificial turf all are guilty of contaminating water, soil, and air. As such, environmental justice issues span the lifecycle of artificial turf, a fossil-fuel-derived plastic product. This includes negative impacts on communities near fossil-fuel extraction sites. It includes negative impacts on communities near facilities manufacturing artificial turf, its plastics, and the hundreds of chemicals found in those plastics, many of which have been identified as toxic. For example, modern-day news abounds with stories of communities (like those in northern Georgia where carpet and artificial turf are manufactured) whose drinking water supplies have become contaminated with PFAS. PFAS are known as "Forever Chemicals", because they accumulate in our bodies and the environment and last essentially forever. As artificial turfs reach their useful end-of-life, a massive amount of waste is being incinerated or landfilled. Incinerators and landfills are often sited in sacrifice zones, i.e. near disadvantaged communities. Both incineration and landfilling pollute soil, air, and water. Note that PFAS is not destroyed by incineration nor wholly contained by landfills.

Does CEQA not require you to consider the upstream and downstream impacts of a project if they are out of the local area or out of state? Are California public agencies permitted to choose upstream sourcing and downstream disposal options out of the area or state to avoid having to acknowledge its responsibility for some of the significant adverse environmental impacts of its actions??

The State of California's Office of Attorney General, under the heading "Environment & Public Health", has a lot to say about plastics:

> Plastic manufacturing itself is highly hazardous, with the pollution burden being primarily borne by low-income communities and communities of color. Plastics manufacturing plants and materials recovery facilities, which are often sited in or near marginalized communities, generate hundreds of millions of tons of toxic air pollution each year. Ninety-nine percent of plastic is made from fossil fuels. The process of making plastic — from the extraction of oil and gas through the stages of manufacturing polymers — is a highly polluting process and a significant source of greenhouse gas emissions. The plastic industry's greenhouse gas emissions are expected to surpass those of coal-fired power in the United States by 2030. While California has aggressive programs in place to reduce greenhouse gas emissions and transition to a clean economy, plastic production remains on the rise, threatening state climate goals and exacerbating the impacts of the climate crisis.

Source: https://oag.ca.gov/plastics

FEASIBILITY OF AN ALTERNATIVE TO ARTIFICIAL TURF: NATURAL GRASS

The board and the public need to be educated about the environmental consequences of artificial turf and the alternatives to using artificial turf before the board vote. This is the purpose of undertaking the CEQA review process.

The MND fails to include a proper evaluation of the feasibility of well-managed natural grass. To establish this, it will be necessary to consult with professional sports field **managers** who have had long-term success keeping natural grass sports fields, fields that have high-volume usage and year-round availability needs comparable to Marina High School's, in safe condition on a public school budget. They are the only experts qualified to conclude whether natural grass is infeasible for Marina High School's needs.

Does MPUSD's design firm and construction firm have extensive experience designing and constructing for public agencies natural grass sports fields that have proven to hold up to long-term, year-round high-use? If not, their input

would be insufficient for concluding natural grass infeasible for Marina HS. **Seek out the input of professional sports field managers that have a record of long-term success (10+ years) with year-round, high-use natural grass sports fields for public agencies.** These experts exist and MPUSD should be talking to them.

As for where to source such expertise, I recommend the following:

- Professional sports field ***managers*** that fit exactly this description are being made available to public agencies by the nonprofit Beyond Pesticides through their "Parks for a Sustainable Future" program. The organization has relayed that they welcome public agencies to reach out to their team at sustainableparks@beyondpesticides.org to learn more. Through this program, MPUSD staff can be trained to economically keep natural grass in safe condition. This program is teaching public schools and Parks & Rec departments how to prevent worn/bare spots, mud, and pests on high-use natural grass playing fields in order to give the kids a consistent, level playing surface. The program would serve as an ideal vehicle for demonstrating to the MPUSD community that real grass sports fields can be affordably kept in safe condition for Marina HS's year-round high-volume usage needs. The program's emphasis would be on training the managers of MPUSD's natural grass fields and supporting their success. With the professional development gained via this training program, the MPUSD grounds team would learn to keep soil rich with microbial life, enabling resilient, thriving natural grass. (Both a bonus and a key to success of this program is that the field management methods are organic and create more resilient turf that retains moisture and requires less watering. Organic management is safer for the grounds crew, field users, and the environment.)
- As a secondary resource for professional input on the feasibility of natural grass for MPUSD, consult with Certified Sports Field Managers (CSFMs) that have demonstrated years of success managing real grass fields on a public school budget for communities with usage and availability needs similar to Marina HS's. Does MPUSD's field design firm or construction firms have a CSFM that fits this description? Note also that MPUSD's field manager(s) are not certified as CSFMs. CSFMs are certified by the professional association called Sports Field Management Association (SFMA). The SFMA board president, Sun Roesslain, may be particularly helpful in helping MPUSD assess the feasibility of natural grass. She is a CSFM that is part of a 2-person crew managing national-award winning

natural grass fields for a set of 6 public high schools. She is also networked with a number of the 250ish CSFMs across the country, and may therefore be able to recommend other CSFMs for MPUSD to talk to regarding strategies for successful management with natural grass under MPUSD's year-round high-volume usage needs. She should also be able to refer you to professional development opportunities for MPUSD's field manager(s) to supplement what they get from the aforementioned Beyond Pesticides training program. I encourage you to consider supporting MPUSD's field manager(s) in earning CSFM certification.

INPUT FROM A PROPERLY-VETTED SPORTS FIELD MANAGEMENT EXPERT IS CRITICAL DURING THE PLANNING AND DESIGN PHASE OF THIS PROJECT

Please do not relegate consultation with a sports field management expert to the field maintenance phase of this project, i.e. after the field is designed and the renovations complete.

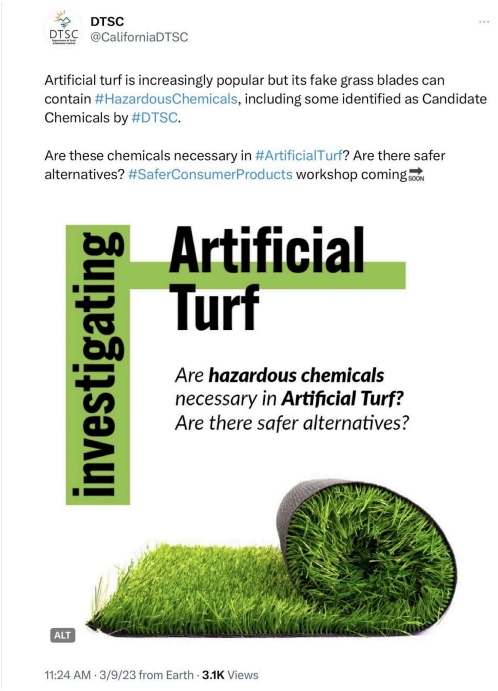
The timing of when you consult field management experts matters. **Their input is critical during the planning phase of a project as described in the preceding section. Their input is equally critical during the design phase of the project.** For example, their input during the design phase may include requesting that construction specifications identify minimum levels of organic matter and microbial activity in the soil mix applied to the fields. Getting details like this into the design could save significant time and resources post-construction. If the field were to be constructed without the soil conditions that are ideal for organic landscape management, Marina HS may suffer with years of poorly draining fields as the field manager works to recover from this design mistake.

It can not be overstated that field ***design***, field ***construction*** and field ***management*** are distinct areas of expertise. **Critical to the success of the fields is that, during the design phase, MPUSD source input from the appropriate experts on all three.** If MPUSD's *design* firm or *construction* firm claims to have an expert in field *management*, request the list of public-agency-owned natural grass fields subjected to year-round, high use that this field *management* expert has been instrumental in keeping in safe condition for over 10 years. Call the owners of these fields to confirm that it was indeed this expert that was responsible for the successful management of the field. Please

share the list of fields with the public to build public confidence that guidance is indeed being sought from well-qualified professionals. This reassurance would be appreciated by natural grass advocates. It would also be appreciated by artificial turf advocates that are skeptical natural grass can meet community needs. In addition, the broader community appreciates messaging of this nature as an encouraging sign that its tax dollars are being well-managed.

IF YOU REJECT ARTIFICIAL TURF, YOU'D BE IN GOOD COMPANY

- The California government itself, specifically its Department of Toxic Substances Control, now acknowledges there are hazardous chemicals in the blades of plastic grass. (In the past, concerns around artificial turf had been focused primarily on the hazardous chemicals in the tire crumbs that were used as infill, but this new concern for the chemicals in the plastic grass itself means that even Organically-infilled artificial turf systems are hazardous.)



- The California legislature, by wide margin, passed a bill in 2023 allowing cities and counties to ban artificial turf.
- Millbrae just recently banned artificial turf by unanimous vote of the city council.
- A SF Bay area county medical association advises against the use of artificial turf, providing many citations evidencing its harms.

- Sunnyvale's City Council just recently voted unanimously to keep artificial turf out of Lakewood Park.

CONCLUSION

Please refrain from installing any more artificial turf anywhere in the district. Artificial turf systems have significant adverse environmental impacts that can not be mitigated to less than significant levels. The feasible alternative of organically-managed natural grass enables avoidance of these impacts. Choose grass and be done with this. If this choice is not yet obvious to you, it will be once the mandated Environmental Impact Report is completed.

Thank you for having the awareness and foresight to proceed cautiously with this issue. Hopefully, the information shared here and by others like Safe Healthy Playing Fields Inc. can help guide thoughtful discussion.

Sincerely,
Cynthia Fan

Attachment B

Astroturf Product Details

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ALL SYNTHETIC TURF IS NOT CREATED EQUAL

AstroTurf



All AstroTurf® is synthetic turf but not all synthetic turf is AstroTurf®

Synthetic turf was designed to replicate natural grass and provide an option for those who either couldn't grow and /or maintain grass, or had usage demands that natural grass cannot keep up with. To replicate natural grass you want a uniform, predictable, consistent playing surface that has the durability to last for 8+ years. Over the years synthetic turf systems have been developed with different characteristics.

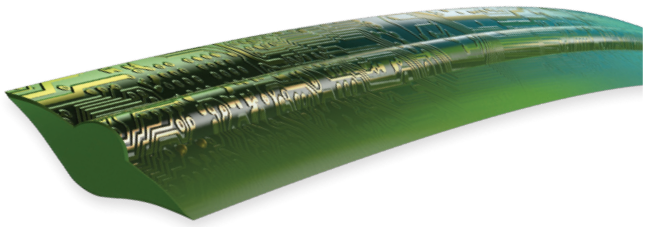
Not all turf is created equal - here are some areas that separate AstroTurf turf systems from the systems created by others in the industry.

ROOTZONE

ASTROTURF ROOTZONE® TECHNOLOGY

- Encapsulates infill, keeps it where it is supposed to be, minimizes splash and migration.
- This leads to more consistent playing surfaces which reduces the risk of lower extremity injury as shown in studies such as the Michigan State study.
- The AstroTurf RootZone keeps your field on the field. Minimal amounts of infill leave the playing field either on athletes' clothing/equipment or through migration of the field. Therefore, there is no risk of any surrounding area contaminants, groundwater, etc. and this is in line with section 1 of the Synthetic Turf Council and European Synthetic Turf Council's guidelines for infill control.

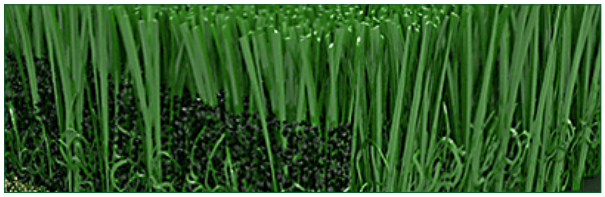
ASTROTURF TRIONIC® PLUS TECHNOLOGY



- Co-polymers of Nylon and Polyethylene make the fibers stronger, stand up more and last longer, while still providing the soft feel of Polyethylene.
- Sharkskin technology reduces friction on the skin which leads to less abrasiveness.
- Statblock™ Antistatic additive inhibits static electricity by up to 17x which helps keep infill in place, adds to the consistency provided by the Rootzone® and provides greater comfort to participants on the field.
- DualChill™ Thermal shield provides a 42% improvement in IR reflectivity which strengthens fibers and allows them to be more resilient and durable over longer time periods, as well as reducing the speed that the fibers heat up leading to decreased fiber temperature vs other turf systems over similar time exposure.
- Sanitized™ antimicrobial technology helps eliminates bacterial odors and prevents buildup of microbes on the fibers.

HEAVIER FACE WEIGHT SYSTEMS

- Turf systems are replaced when synthetic turf fibers wear out. Having a heavier, denser turf system will increase durability and provide a longer lasting turf time.
- Increased density also provides for better performance, especially over time, and more consistent footing.



RESEARCH & DEVELOPMENT



- AstroTurf invests the highest amount in research for natural grass systems and synthetic turf in the industry.
- Over the past decade and more, we have dedicated ourselves to a long-term partnership with the University of Tennessee aimed at comprehending the similarities and distinctions between natural grass and synthetic turf. Our goal has been to develop synthetic turf systems that exhibit comparable safety and performance attributes to those of natural grass.
- AstroTurf systems with Rootzones have proven to be the closest replication to natural grass for safety and performance.

TESTING



- All AstroTurf systems are put through stringent internal and external testing to ensure the provided turf meets the expectations of the required specifications.
- Our raw materials and finished goods have been submitted to third-party analytical chemistry labs and tested for 32 PFAS using state-of-the-art procedures finding that PFAS concentrations were below detectable limits.
- AstroTurf performs more thorough 3rd party field testing on its fields than others and looks beyond just GMax testing to ensure that all performance and safety aspects are being met, this includes the One Turf testing (AAA) that is aligned with FIFA/World Rugby/ FIH and is considered the gold standard in turf testing.

SUSTAINABILITY



- AstroTurf and its parent company Sport Group are committed to sustainability now and for the future. We are 'ESG Industry top-rated'.
- We work with infill providers to offer a range of infills including organic infills and USDA Bio-preferred offerings.
- We offer CO2 Zero products and continue to expand that technology into further product offerings.
- We have partnered with recycling companies with a goal of zero landfill waste for manufacturing, installation, and end of life turf in the near future.

MANUFACTURING



- AstroTurf controls all aspects of its manufacturing and installation processes, from initial masterbatch through to finished installed field.
- This ensures the highest level of quality control and that we can ensure only the formulation and ingredients that should be added to the system are added.
- All synthetic turf products currently produced at AstroTurf are manufactured without PFAS.
- AstroTurf specifies that all turf ingredients be free of PFAS when purchasing raw materials.

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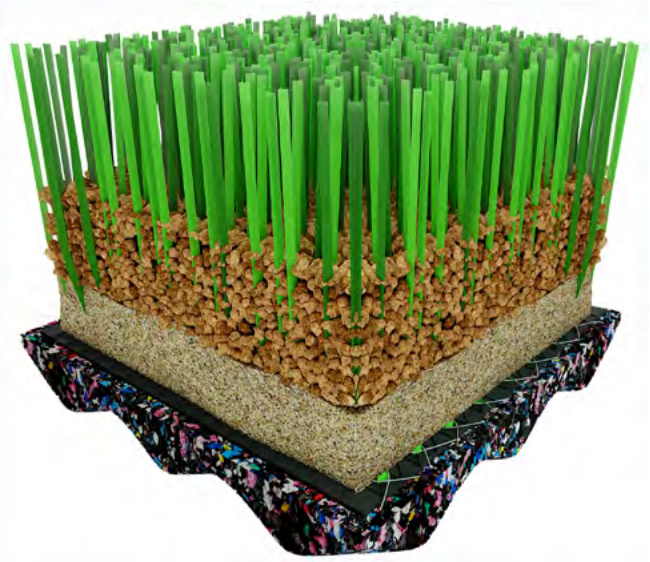
AstroTurf Corporation 2680 Abutment Rd, Dalton, GA 30721 (800) 723-TURF
help@astroturf.com www.astroturf.com @AstroTurfUSA

AMORIM SPORTS

Organic 201

Preliminary Material Data Sheet

Material Description & Properties



Amorim Organic 201 is a natural infill for artificial turf, based on cork and olive components in a special processed way and optimized composition. **Amorim Organic 201** is a perfect 100% natural solution for systems that require a naturally affordable product without compromising player safety and environmental concerns. It optimized long term characteristics of sport functionality of artificial turf systems without compromising naturality.

Physical and mechanical properties

Cork Granule Size (mm)	1–3 mm
Bulk Density (kg/m^3) [1]	590 +/- 6%
Moisture Content (%) [2]	<20

(1) ISO 2031
(2) ISO 2190

Benefits

Sport function

- Balanced elasticity and compression resistance (cork elasticity / olive resistance)
- Have lower surface temperature
- Long term stability in outdoor sport application
- Sustainability

Construction

- Natural technology and materials
- Phatalates free
- Biodegradable
- Heavy metals pass (EN71-3 cat3)
- Decay resistance

Sustainability

- 100% natural, renewable and recyclable
- 100% free of chemical contamination

The data provided in this Preliminary Material Data Sheet represents typical values. This information is not intended to be used as a purchasing specification and does not imply suitability for use in a specific application. Failure to select the proper product may result in either product damage or personal injury. Please contact Amorim Sports regarding recommendations for specific applications. Amorim Sports expressly disclaims all warranties, including any implied warranties or merchantability or of fitness for a particular purpose. Amorim Sports is not liable for any indirect, special, incidental, consequential, or punitive damages as a result of using the information listed in this material data sheet, any of its brochures, its products or any future use or re-use of them by any person or entity. For contractual purposes, please request our Product Specifications Sheet (PDA).

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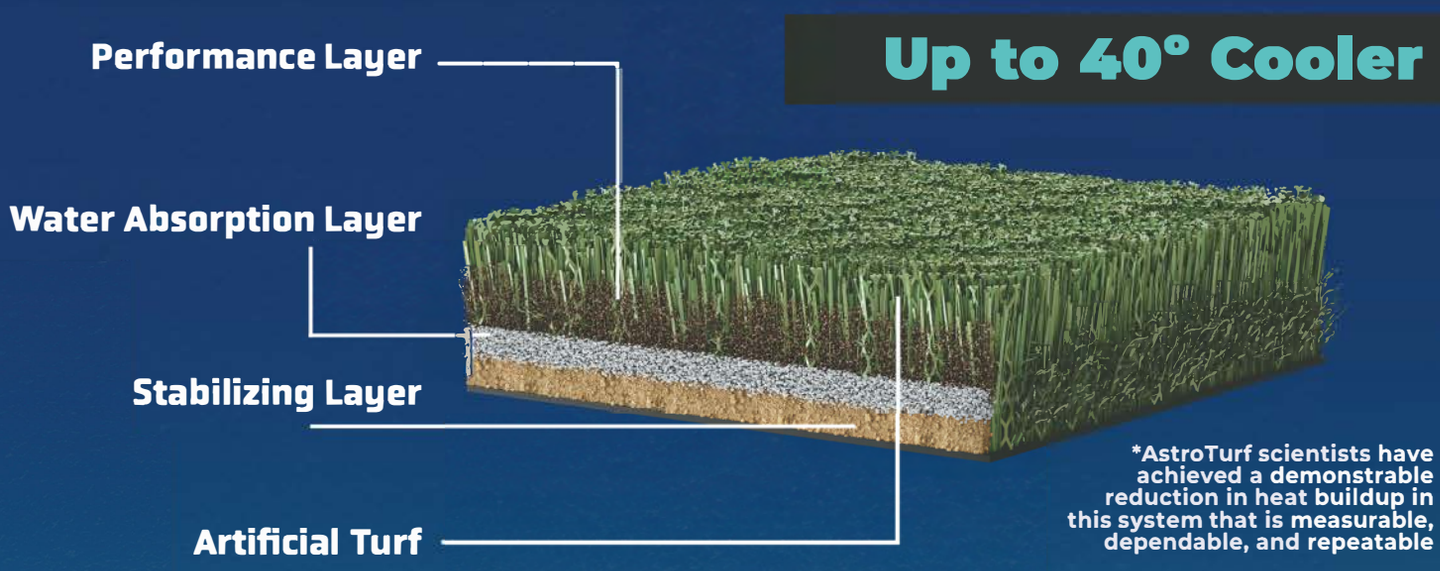
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ASTROTURF AQUIFER SYSTEM

Introducing the AstroTurf Aquifer System
A patent pending artificial turf system with shielded water absorber layer.

DISCOVER A COOLER, HIGHER-PERFORMING, AND LONGER-LASTING ARTIFICIAL TURF WITH THE ASTROTURF AQUIFER SYSTEM. THIS INNOVATIVE SYSTEM IS DESIGNED TO REDUCE SURFACE TEMPERATURE AND CONSERVE WATER, CREATING A COMFORTABLE AND ECO-FRIENDLY PLAYING SURFACE.

Up to 40° Cooler



*AstroTurf scientists have achieved a demonstrable reduction in heat buildup in this system that is measurable, dependable, and repeatable

PERFORMANCE LAYER

SHIELDING THE WATER ABSORPTION LAYER FROM SUN-LIGHT AND WIND, THIS LAYER SLOWS DOWN EVAPORATION AND MAINTAINS A STABLE HUMIDITY GRADIENT. THIS ENSURES A LASTING COOLING EFFECT, WHILE REDUCING DUST GENERATION AND PROTECTING PLAYERS' SKIN.

WATER ABSORPTION LAYER

FEATURING ZEOLITE, A POROUS AND WATER ABSORBENT MATERIAL, THIS LAYER ACTS AS A WATER RESERVOIR. IT SOAKS UP WATER AND RELEASES IT SLOWLY, PREVENTING OVERHEATING OF THE TURF AND REDUCES THE NEED FOR IRRIGATION.

STABILIZING LAYER

POSITIONED BETWEEN THE BACKING AND THE WATER ABSORPTION LAYER, THIS OPTIONAL LAYER SERVES AS BALLAST FOR THE SYSTEM AND AN ADDITIONAL WATER RESERVOIR WHEN THE WATER ABSORBER LAYER BECOMES SATURATED.

ARTIFICIAL TURF

THE 3D SERIES IS ASTROTURF'S MOST POPULAR PRODUCT LINE. IT FEATURES A ROOTZONE® TEXTURIZED LAYER OF FIBERS THAT DRAW DOWN TO ENCAPSULATE INFILL, RESULTING IN MINIMAL INFILL SPLASH, BETTER SHOCK ABSORBENCY, AND LESS INFILL MIGRATION THAN BASIC SYSTEMS.

» Cooler » High Performing » Longer Lasting

THE POWER OF ZEOLITE

ZEOLITE, A NATURAL VOLCANIC MINERAL FOUND IN THE UNITED STATES, IS THE REQUISITE COMPONENT IN THE ASTROTURF AQUIFER SYSTEM'S WATER ABSORPTION LAYER. WITH ITS UNIQUE HONEYCOMB STRUCTURE, ZEOLITE HAS A HIGH-WATER ABSORPTION CAPACITY, MAKING IT PERFECT FOR REDUCING SURFACE TEMPERATURES AND CONSERVING WATER. ZEOLITE IS SAFE, NON-TOXIC, AND ENVIRONMENTALLY FRIENDLY.



- COOLS TURF FIBERS THROUGH SLOW WATER EVAPORATION.
- NATURALLY ELIMINATES ODORS IN TURF.
- ALLOWS RAINWATER TO FLOW THROUGH DRAINAGE HOLES EVEN AFTER SETTLING.
- ENVIRONMENTALLY BENEFICIAL AS IT IS 100% NATURAL IN COMPOSITION.
- THE HONEYCOMB FRAMEWORK AND A NET NEGATIVE CHARGE ALLOWS ZEOLITE TO BOTH ABSORB LIQUIDS AND NEUTRALIZE COMPOUNDS.

UPGRADE YOUR PLAYING SURFACE WITH THE ASTROTURF AQUIFER SYSTEM, FEATURING ADVANCED TECHNOLOGY THAT KEEPS YOUR TURF COOL, COMFORTABLE, AND ECO-FRIENDLY. EXPERIENCE THE BENEFITS OF A HIGH-PERFORMANCE TURF SYSTEM THAT IS DESIGNED TO LAST!



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2/22/2023

To Whom It May Concern:

AstroTurf Corporation are committed to sustainability and recycling in the synthetic turf industry now and in the future. Our plans and goals are in line with the Sport Group ESG targets and goals. As of February 2023 Sport Group is 'ESG Industry top-rated'.

Sustainalytics' ESG Risk Ratings measure a company's exposure to industry-specific material ESG risks and evaluate how well a company is managing those risks. In companies rated by Sustainalytics, Sport Group's rating (February 2023) is:

- 4th out of 143 companies in our Building Products industry group (top 3%)
- 944 out of all 15,062 of all rated companies globally (top 7%)

More information can be found at ESG — Sport Group (sportgroup-holding.com).

AstroTurf are actively engaged with, and/or developing, partnerships for recycling manufacturing and installation waste as well as end of life turf in regional locations throughout the US.

If there are any questions please feel free to contact me.

R. Mitchell

Rob Mitchell
Vice President of Business Development
(312) 221 7708
Rob.mitchell@astroturf.com
www.astroturf.com

AstroTurf Products Are Not Manufactured with PFAS

PFAS have become an increasingly debated topic with contamination now commonly found in groundwater, rainwater, and soil. Artificial turf has also come under scrutiny as a possible source of PFAS. All synthetic turf products currently produced at AstroTurf are manufactured without PFAS. AstroTurf specifies that all turf ingredients be free of PFAS when purchasing raw materials. Our raw materials and finished goods have been submitted to third-party analytical chemistry labs and tested for 32 PFAS using state-of-the-art procedures finding that PFAS concentrations were below detectable limits. In 2020, AstroTurf removed a fluorinated polymer (non-migrating and not one of the 32 PFAS of concern) from the turf construction. This was a proactive decision over and above the regulation to eliminate doubt of PFAS during testing. AstroTurf continues to be the leader in artificial turf - safe for consumers - safe for the environment. As we understand the concern on the presence of these chemicals, AstroTurf will continue to monitor and safeguard the quality and safety of their products.

AstroTurf prides itself on its responsibility to the health and safety of our customers and employees, to the environment and to manufacturing in a responsible manner.

Anthony Daniell
Director of Research and Development
Synthetic Turf Resources

410 Callahan Road Dalton, GA 30721 Office: 706-272-4200 ext: 5210
Email: anthony.daniell@syntheticturfresources.com
Note: This report is confidential material belonging to AstroTurf and may only be used by authorized agents and/or clients. AstroTurf accepts no responsibility whatsoever to third parties to whom this report, or any part thereof, is made known.

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Attachment C

Draft IS/MND

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INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

for the

MARINA HIGH SCHOOL MULTI-USE FIELD PROJECT

Prepared for:
Monterey Peninsula Unified School District

Prepared by:
Denise Duffy & Associates

January 3, 2024

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Chapter 1. Introduction and Project Description

Project Title	Marina High School Multi-Use Field Project
Lead Agency Contact Person and Phone Number	Monterey Peninsula Unified School District Ryan Altemeyer, Associate Superintendent of Business Services 700 Pacific Street Monterey, CA 93942
Date Prepared	January 3, 2024
Prepared by	Denise Duffy & Associates, Inc. 947 Cass Street, Suite 5 Monterey, CA 93940
Project Location	Marina High School 298 Patton Parkway Marina, CA 93933 APN: 031-021-006-000
Project Sponsor Name and Address	Monterey Peninsula Unified School District 700 Pacific Street Monterey, CA 93942
General Plan Designation (City of Marina)	Public Facilities
Zoning (City of Marina)	Public Facility District (PF-E)

1.1 Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared to evaluate the potential environmental effects associated with the Marina High School Multi-Use Field Project (project or proposed project), in Marina, California. This IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 et. seq., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 et. seq.

An IS/MND is an informational document prepared by a lead agency to determine if a project may have a significant effect on the environment (CEQA Guidelines §15063, subd. (a)). If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the lead agency determines that revisions in the project plans or proposals made by or agreed to by the applicant mitigate the potentially significant effects to a less-than-significant level, an Initial Study/Mitigated Negative Declaration may be prepared instead of an EIR (CEQA Guidelines §15070, subd. (b)). In this instance, the lead agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This IS/MND conforms to the content requirements under CEQA Guidelines §15071.

The Monterey Peninsula Unified School District (District or MPUSD) is acting as the Lead Agency pursuant to CEQA Guidelines §15050(a). As the Lead Agency, the District oversaw preparation of this IS/MND pursuant to CEQA Guidelines §15063, §15070, and §15152. This IS/MND will be circulated for agency and public review during a 30-day public review period pursuant to CEQA Guidelines §15073. Comments received by the District on this IS/MND will be reviewed and considered as part of the deliberative process in accordance with CEQA Guidelines §15074.

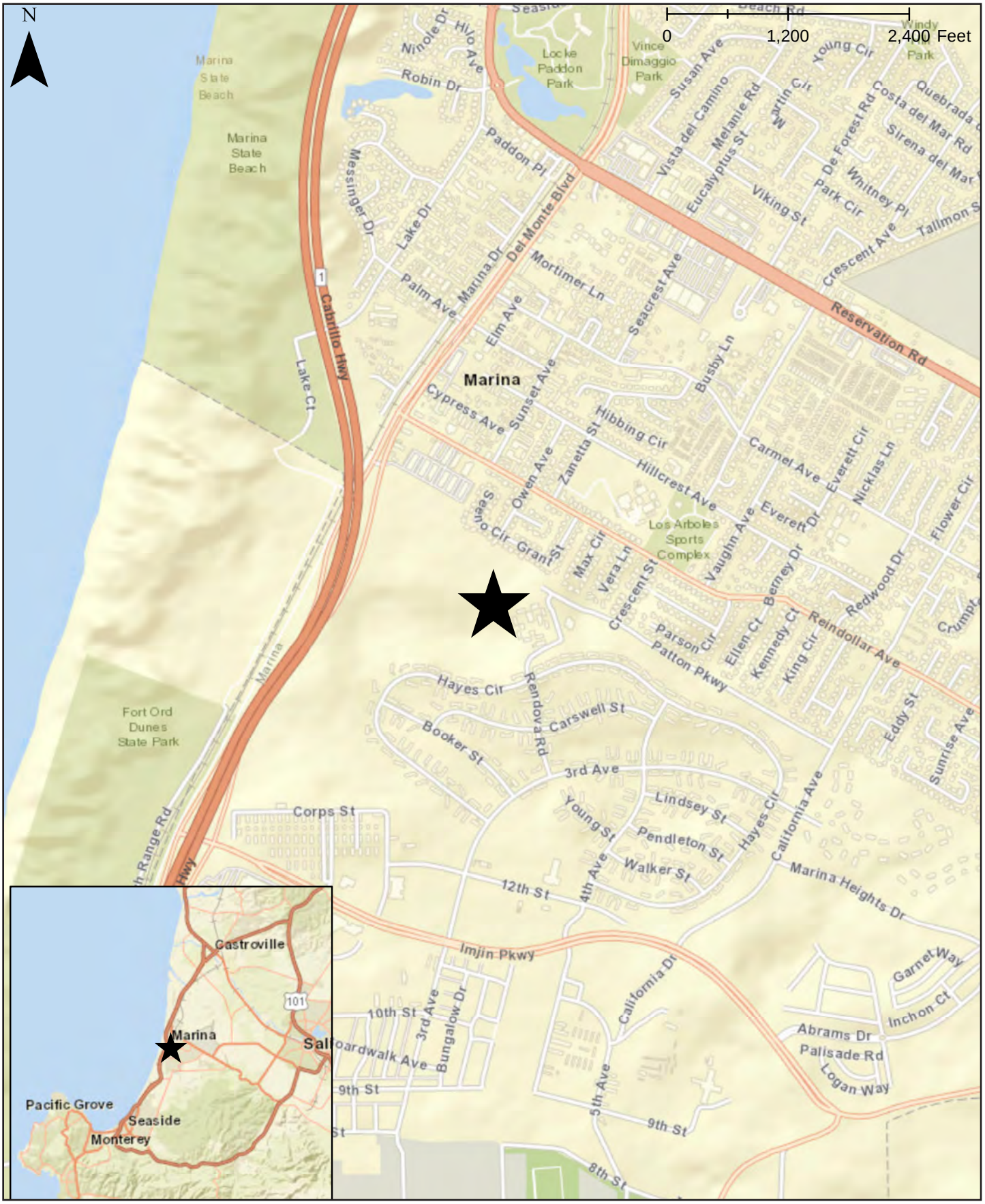
The following section is consistent with the requirements of CEQA Guidelines §15124 to the extent that it is applicable to the project. This section contains a detailed description of the project location, existing setting, project components and relevant project characteristics, and applicable regulatory requirements.

1.2 Project Location and Existing Setting

The project site consists of a single 5.71-acre parcel (APN 031-021-006-000). The project site is located on the existing Marina High School (Marina High School or Marina High) campus located at 298 Patton Parkway in the City of Marina. Marina High School is operated by the Monterey Peninsula Unified School District (MPUSD). The project is zoned as Public Facility District (PF-E) and carries a general plan designation of Public Facilities. **Figure 1** presents the regional location of the project site, while **Figure 2** presents an aerial photograph of the project site.

The project site consists of the existing athletic fields located in the northwestern area of the Marina High School campus, the existing parking lot on the northeast side of campus, and the existing basketball courts located near the center of campus. The existing athletic fields consist of grass fields, dirt, fencing, a few trees, and a baseball field with various portable bleachers, storage areas, and two team dugouts. The existing parking lot consists of a paved parking area for student vehicles, fencing, a student drop-off area, security lighting, sandy, undeveloped areas, and various trees and shrubs. The existing basketball area consists of paved areas, basketball hoops and painted court, fencing, and grassy sandy areas with sparse trees and shrubs. The existing athletic field is used for football and soccer practice. Marina High School's football "home games " are currently played at off-site locations such as Monterey Peninsula College's Community Field and Seaside High School as the existing athletic fields are unsuitable for such events. The existing athletic fields currently lack a public address (PA) system. Photographs of the existing project site conditions are provided in **Figure 3a – Figure 3c**.

The project site is part of the Marina High School campus as discussed above. The project site is bordered by open space and trails to the north and west. Existing residential land uses are located to the north and the east of the project site, and defunct residential units associated with the former Fort Ord military facility are located to the south (as shown on **Figure 2**). Habitat types on the project site consist of landscaped/developed (4.8 acres), ruderal/disturbed (0.9 acres), and Monterey pine forest (0.2 acres), see **Figure 4**.



Regional Map

Marina High School Multi-Use Field Project
Initial Study

Figure
1



Vicinity Map

Marina High School Multi-Use Field Project
Initial Study

Figure
2



Photo #1: East facing view of property from north side of project site.



Photo #2: West facing view of property from northwest side of project site.



Photo #3: Southeast facing view of property from northwest side of project site.



Photo #4: East facing view of north side of property from north side of project site.

Site Photos

Marina High School Multi-Use Field Project
Initial Study

Figure
3a



Photo #5: North facing view of property from south side of project site.



Photo #6: Northeast facing view of property from south side of project site.



Photo #7: Southeast facing view of property from center of project site.



Photo #8: South facing view of property from south side of project site.

Site Photos

Marina High School Multi-Use Field Project
Initial Study

Figure
3b



Photo #9: Southeast facing view of property from north side of project site.



Photo #10: East facing view of property from center of project site.



Photo #11: West facing view of property from east side of project site.

Source: Google



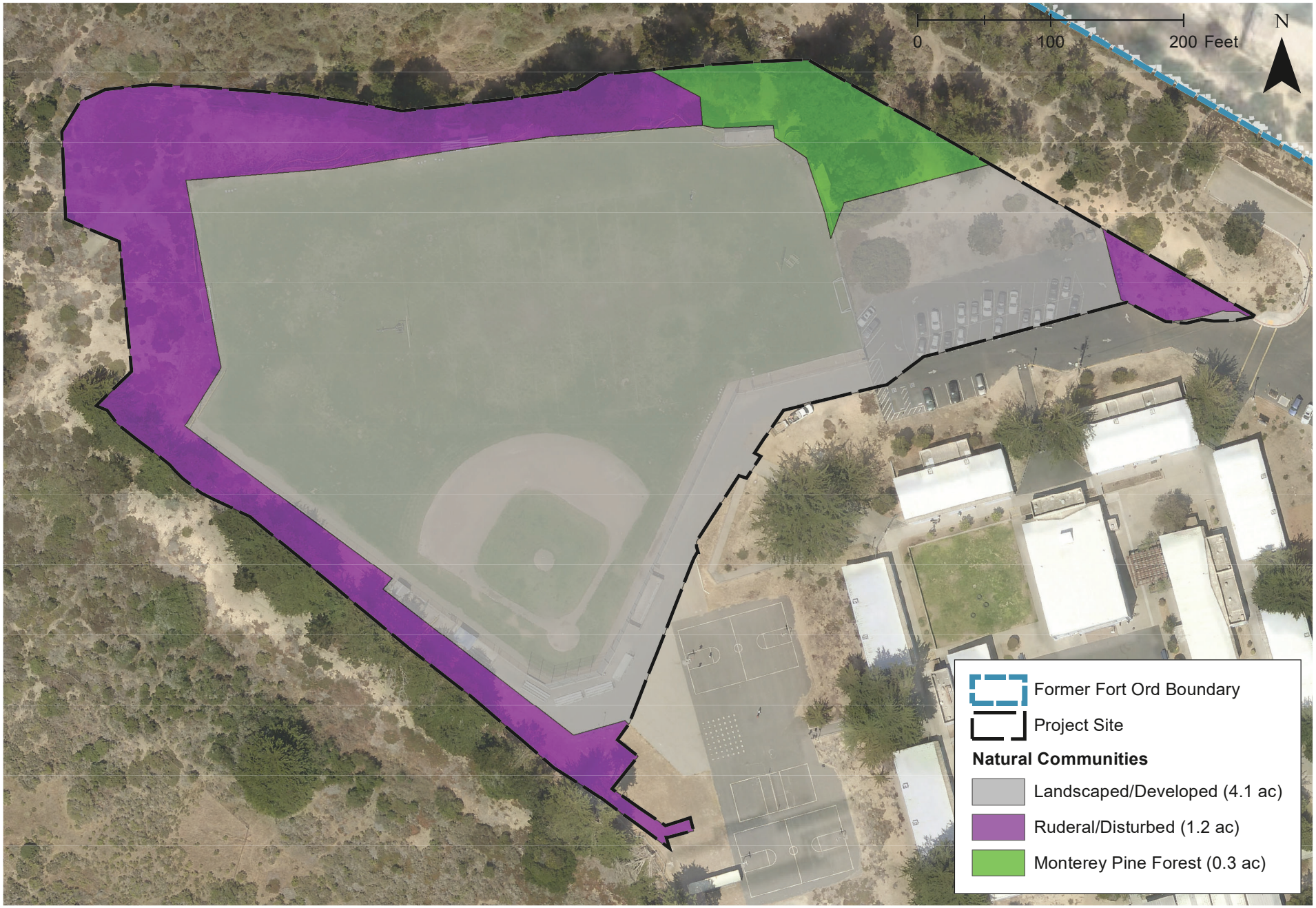
Photo #12: West facing view of property from east side of project site.

Source: Google

Site Photos

Marina High School Multi-Use Field Project
Initial Study

Figure
3c



Source: DD&A, 2023

Habitat Map

Marina High School Multi-Use Field Project
Initial Study

Figure
4

1.3 Project Description

The Monterey Peninsula Unified School District (District) intends to construct various improvements to the existing athletic fields at Marina High. The Marina High School Multi-Use Field Project (proposed project) consists of the following components:

- New field lighting consisting of up to seven (7) MUSCO-designed light emitting diode (LED) (models TLC-BT-575, TLC-LED 400, TLC-LED 600, TLC-LED900, and TLC-LED-1500) ranging from 46,500 lumens to 160,000 in strength. The proposed field lighting would be dimmable from 30 percent to as much as 17 percent (for the TLC-LED-1500) to allow for reduced intensity of lighting. The MUSCO lighting is designed to minimize light spillage and glare and meets the guidelines set by the International Dark-Sky Association. These lights would be mounted on four (4) approximately 80-foot-high lighting poles, two (2) approximately 99-foot-high lighting poles, and one (1) approximately 70-foot-high lighting pole, located at the north, southeast, and southwest of the existing athletic fields;
- New 686-seat bleachers at the north edge of existing athletic fields and 213-seat bleachers at the southern corner of the existing athletic fields. The 686-seat bleachers would have an enclosed, 24 feet by 8 feet dedicated sound booth for athletic events, consisting of a PA system and controls for the scoreboard. The 213-seat bleachers would replace the current bleachers at the baseball field and would not include a sound booth but would contain the necessary infrastructure to install one in the future. In addition, 22 assisted listening devices would be installed in the bleachers at the north edge of the athletic fields and nine (9) assisted listening devices would be installed in the bleachers at the southern corner of the athletic fields;
- New scoreboards, one (1) above the sound booth on the northern bleachers for football and soccer, and one (1) at the southeast side of the site for baseball;
- New sun sails located at the northeastern corner of the existing athletic fields;
- Installation of moveable field goals for football and goal posts for soccer to replace existing goal posts, and new rubber track surfacing along the north and west boundaries of the athletic fields (including four (4) lanes for the 100-yard dash);
- Improvements to the existing baseball field, including new olive core in-field (a sustainable alternative to traditional rubber surfaces, primarily consisting of shredded olive pits mixed with sand), installation of artificial turf, moveable outfield fencing, batting cage, and reconfigured dugouts, bullpens, and storage areas;
- Dedicated storage units for track and field, lacrosse/field hockey, football, and soccer at the north side of the site, as well as a dedicated storage unit for baseball on the southwestern side of the site;
- Stormwater treatment facilities, consisting of standard conveyance methods comprised of inlets and solid storm drainpipe in compliance with Regional Water Quality Control Board standards (see **Section 4.10 Hydrology and Water Quality** for additional discussion);
- Reconfiguration of the existing parking lot and addition of a new parking lot with new ADA and electric vehicle parking to the east of the lower athletic fields;[1]
- A total of 34,100 sf of new impervious surfaces;
- A total of 7,889 sf of new synthetic turf;

[1] The existing basketball courts would be reconfigured to accommodate the new parking area.

- New marquee sign at the entrance to the fields;
- Removal of 13 trees and planting of 74 trees; and
- New plaza to the east of the existing athletic fields, including a flagpole, wrap around bench, and decorative inlaid lettering, replacing a portion of the existing upper parking lot currently in this area.

Though not included in the initial construction phase of this project, this environmental document also analyzes the future development of a 2,000 sf new concessions stand and restroom to be located near the new plaza.[2] **Figures 5a – Figure 6b** illustrate the proposed site plans and **Figure 7a-7c** show the proposed lighting polls and elevations.

CONSTRUCTION ACTIVITIES AND SCHEDULE

Construction of the proposed project is anticipated to begin in November 2023 and would last 14 months. The earliest operational date of the proposed project is January 2025. Construction of the proposed project is expected to include site preparation, grading, installation of new surfaces (pavement, artificial turf, and olive core baseball field), installation of the new field lighting and bleachers, and construction of the baseball dugouts, plaza, and concessions stand. No demolition of structures is proposed, however, portions of the existing fencing, asphalt parking lot, and the basketball court would be removed and/or reconfigured.

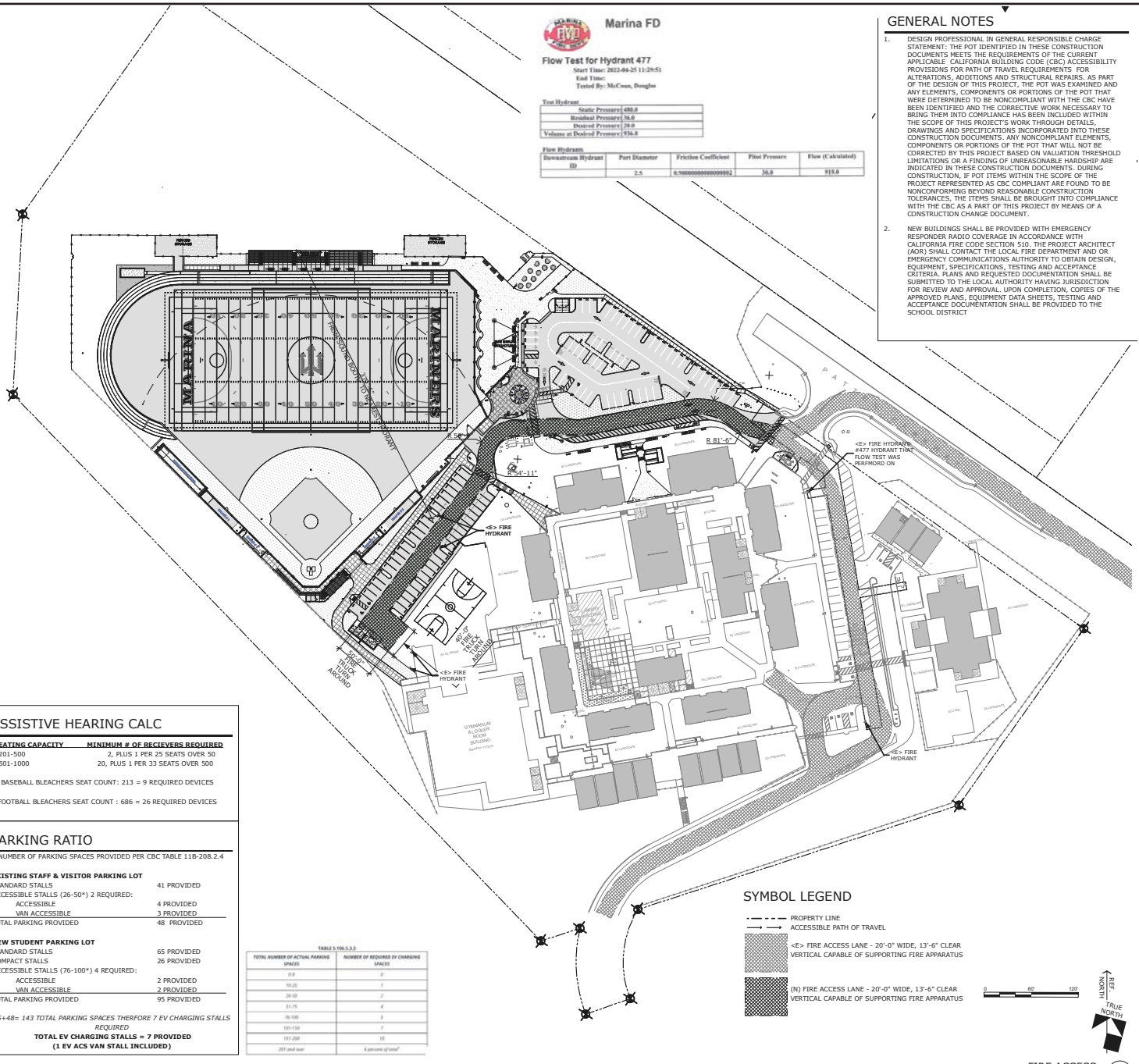
GRADING

The proposed project would require grading as part of site preparation. The proposed project would result in a total of 5,520 cubic yards (CY) of cut and 12,785 CY of fill; 7,265 CY of fill would be imported from an offsite location. The maximum excavation associated with site grading is anticipated to be 4.8 feet below surface. The proposed grading and drainage plans are illustrated in **Figure 8a-Figure 8c**.

LIGHTING

The proposed project includes the installation of up to seven (7) new field lighting poles and associated LED lights to illuminate the athletic fields for outdoor events. MUSCO would provide the LED field lighting, which would consist of models TLC-BT-575, TLC-LED 400, TLC-LED 600, TLC-LED900, and TLC-LED-1500. The strength of these lights would range from 46,500 lumens to 160,000 lumens in strength. A total of seven lighting polls are proposed to illuminate both the football and baseball areas of the athletic fields. The seven (7) field lighting polls are also developed by MUSCO Lighting and consists of three different models. Four (4) of the proposed field lighting poles are the LSS80B-9 model, two (2) are the LSS100B-13 model, and the remaining pole is the LSS70A-4. Of these polls, the LSS80B-9 model is approximately 80 feet in height, the LSS100B-13 is approximately 99 feet in height, and the LSS70A-4 is approximately 70 feet in height. Foundation depths would be 16 feet for the LSS80B-9 model, 18 feet for the LSS100B-13 model, and 12 feet for the LSS70A-4 model. The foundations for each of the three lighting poll types would be 36-inches in diameter.

[2] If future design of the concessions stand/restroom exceeds 2,000 sf, then additional environmental review under CEQA may be required.



ASSISTIVE HEARING CALC

SEATING CAPACITY	MINIMUM # OF RECIEVERS REQUIRED
201-500	2, PLUS 1 PER 25 SEATS OVER 50
501-1000	20, PLUS 1 PER 33 SEATS OVER 500

BASEBALL BLEACHERS SEAT COUNT: 213 = 9 REQUIRED DEVICES

FOOTBALL BLEACHERS SEAT COUNT : 686 = 26 REQUIRED DEVICES

PARKING RATIO

* NUMBER OF PARKING SPACES PROVIDED PER CBC TABLE 11B-208.2.4

EXISTING STAFF & VISITOR PARKING LOT	
STANDARD STALLS	41 PROVIDED
ACCESSIBLE STALLS (26-50*) 2 REQUIRED:	
ACCESSIBLE	4 PROVIDED
VAN ACCESSIBLE	3 PROVIDED
TOTAL PARKING PROVIDED	48 PROVIDED
NEW STUDENT PARKING LOT	
STANDARD STALLS	65 PROVIDED
COMPACT STALLS	26 PROVIDED
ACCESSIBLE STALLS (76-100*) 4 REQUIRED:	
ACCESSIBLE	2 PROVIDED
VAN ACCESSIBLE	2 PROVIDED
TOTAL PARKING PROVIDED	95 PROVIDED

95+48= 143 TOTAL PARKING SPACES THERFORE 7 EV CHARGING STALLS REQUIRED

TOTAL EV CHARGING STALLS = 7 PROVIDED
(1 EV ACS VAN STALL INCLUDED)

TABLE 5.106.5.3.3

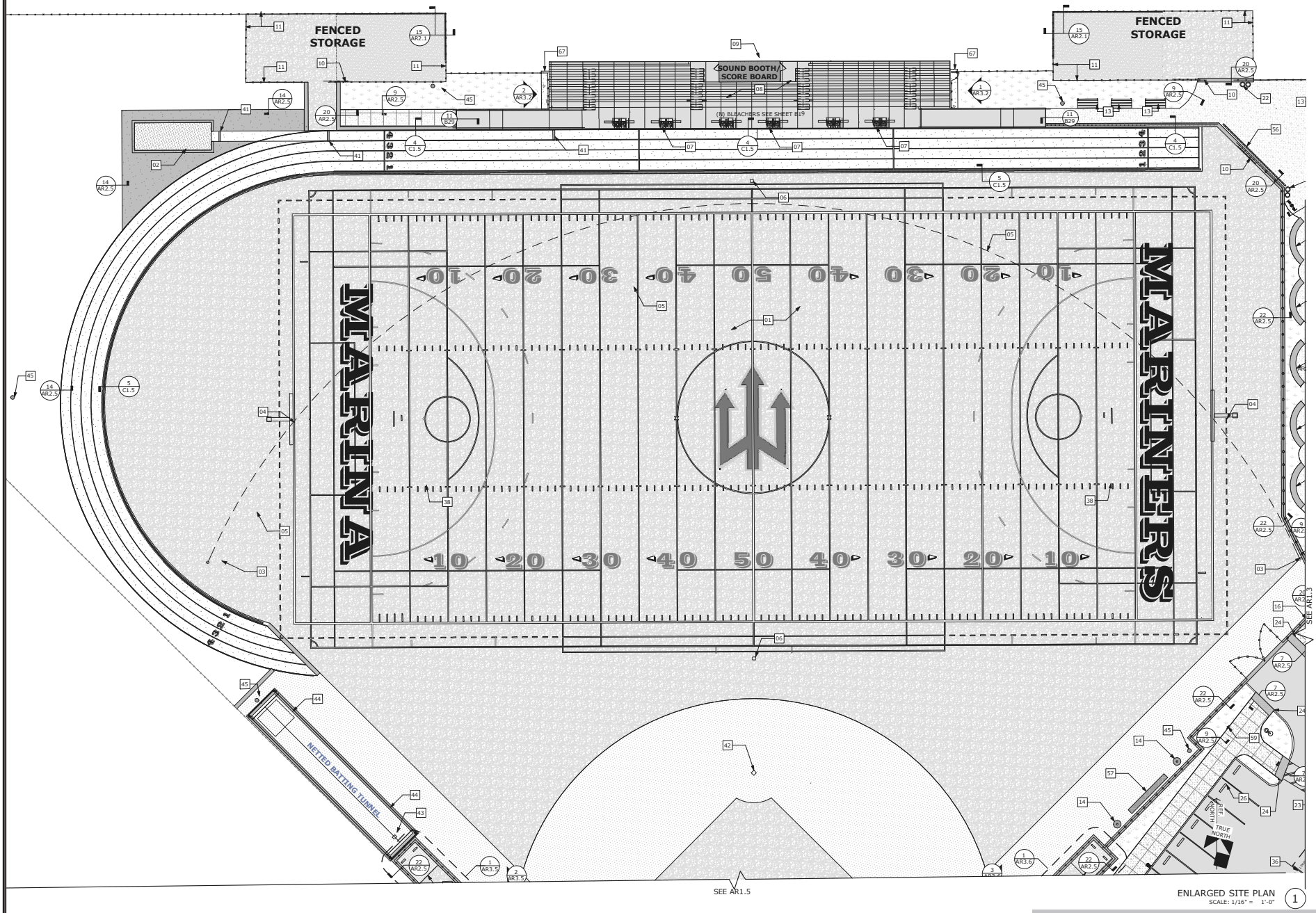
TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

Source: Weston Miles Architects, December 2022

Site Plan - Overall

Marina High School Multi-Use Field Project
Initial Study

Figure
5a

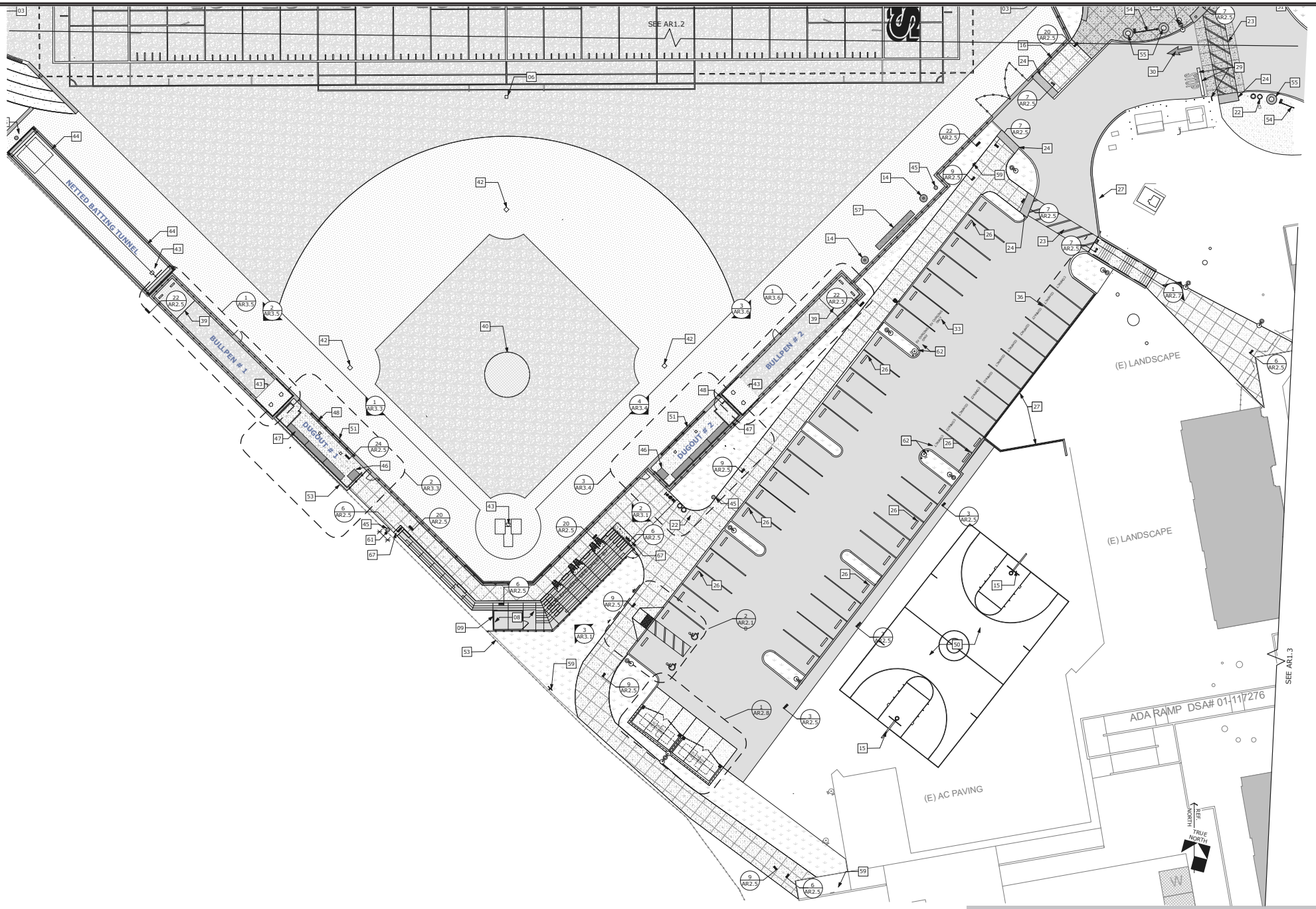


Source: Weston Miles Architects, December 2022

Site Plan - Football Field

Figure 5b

Marina High School Multi-Use Field Project
Initial Study

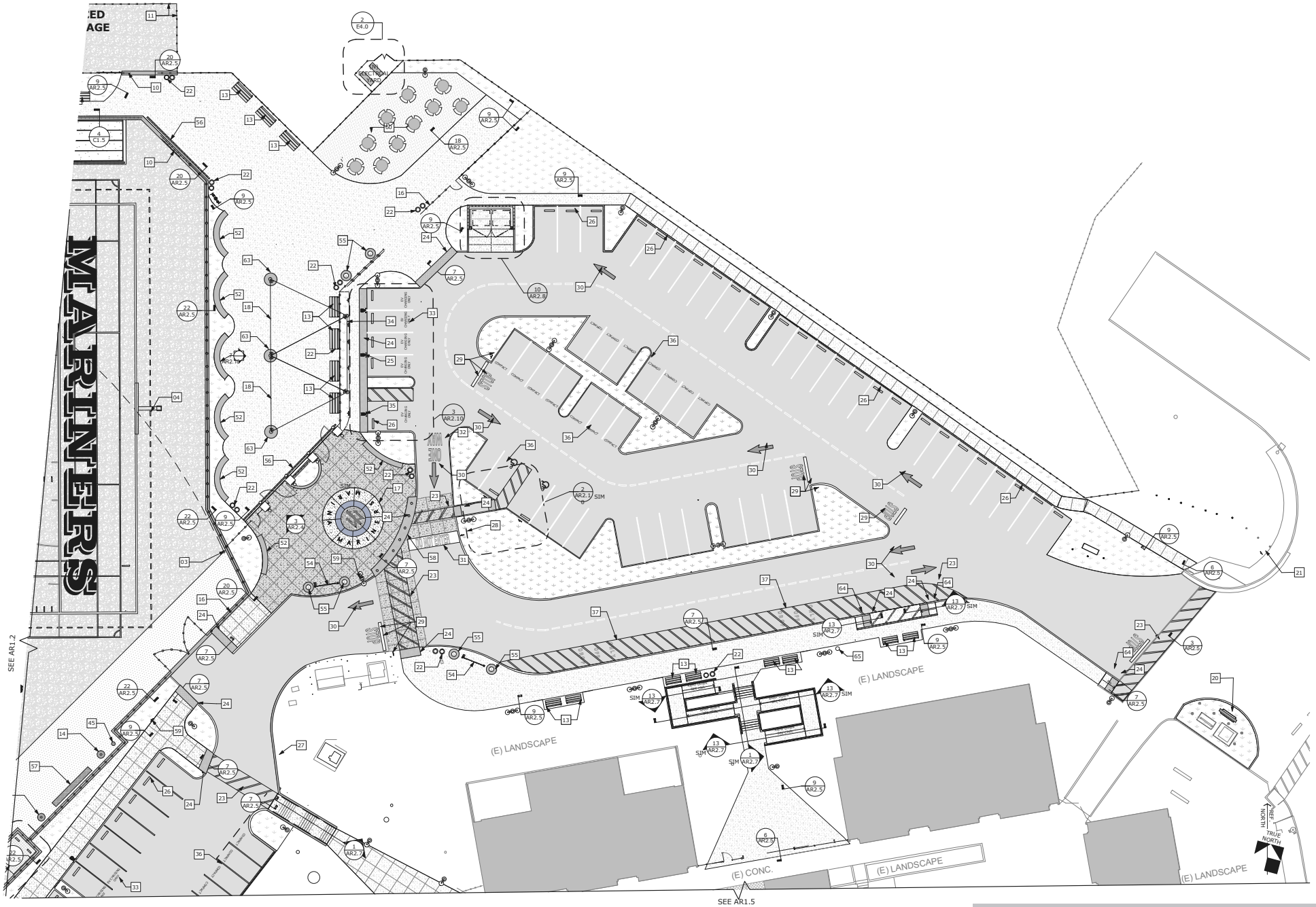


Source: Weston Miles Architects, December 2022

Site Plan - Baseball Field & Lower Parking Lot

Marina High School Multi-Use Field Project
Initial Study

Figure
5c

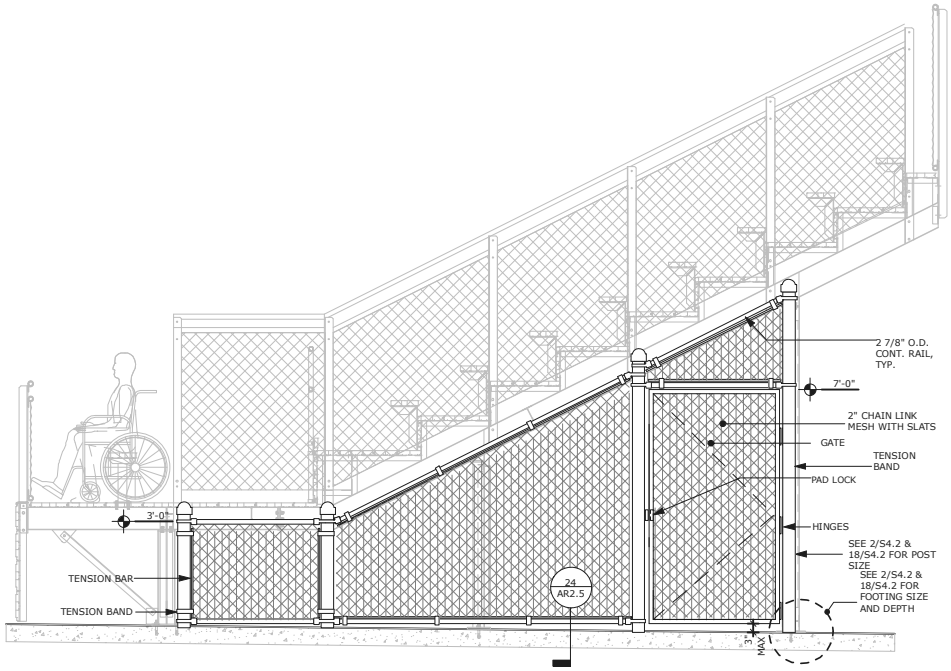


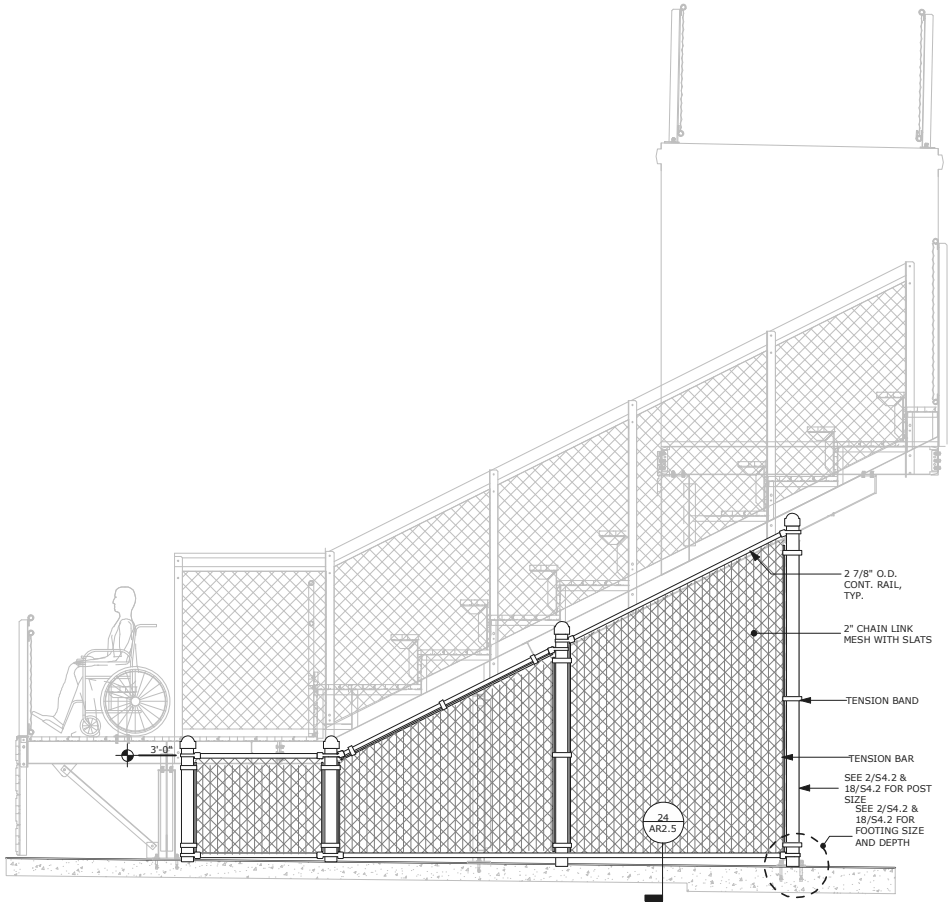
Source: Weston Miles Architects, December 2022

Site Plan - Upper Parking Lot & Entry

Marina High School Multi-Use Field Project
Initial Study

Figure
5d



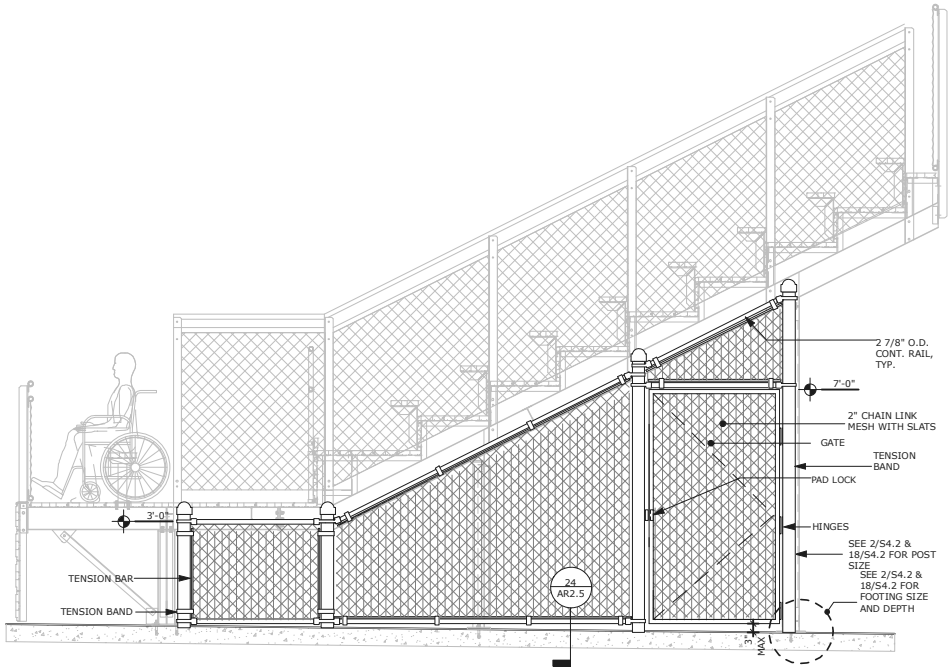


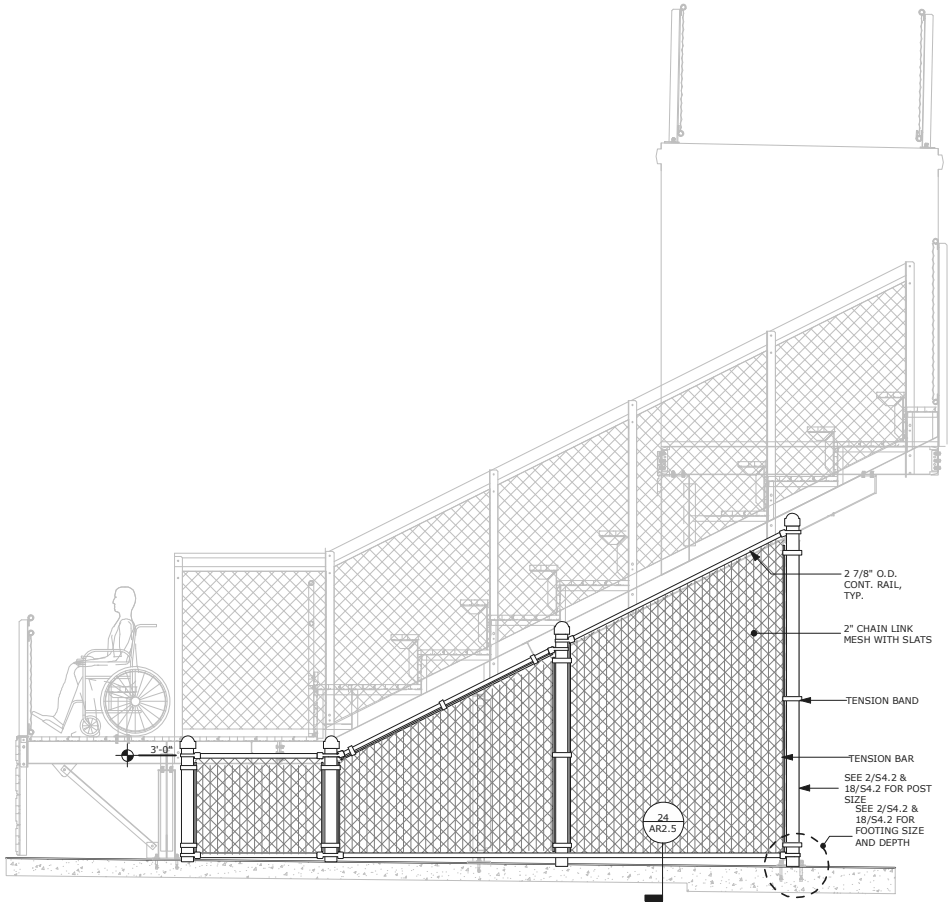
Source: Weston Miles Architects, December 2022

Bleacher Plans - Football

Figure
6a

Marina High School Multi-Use Field Project
Initial Study



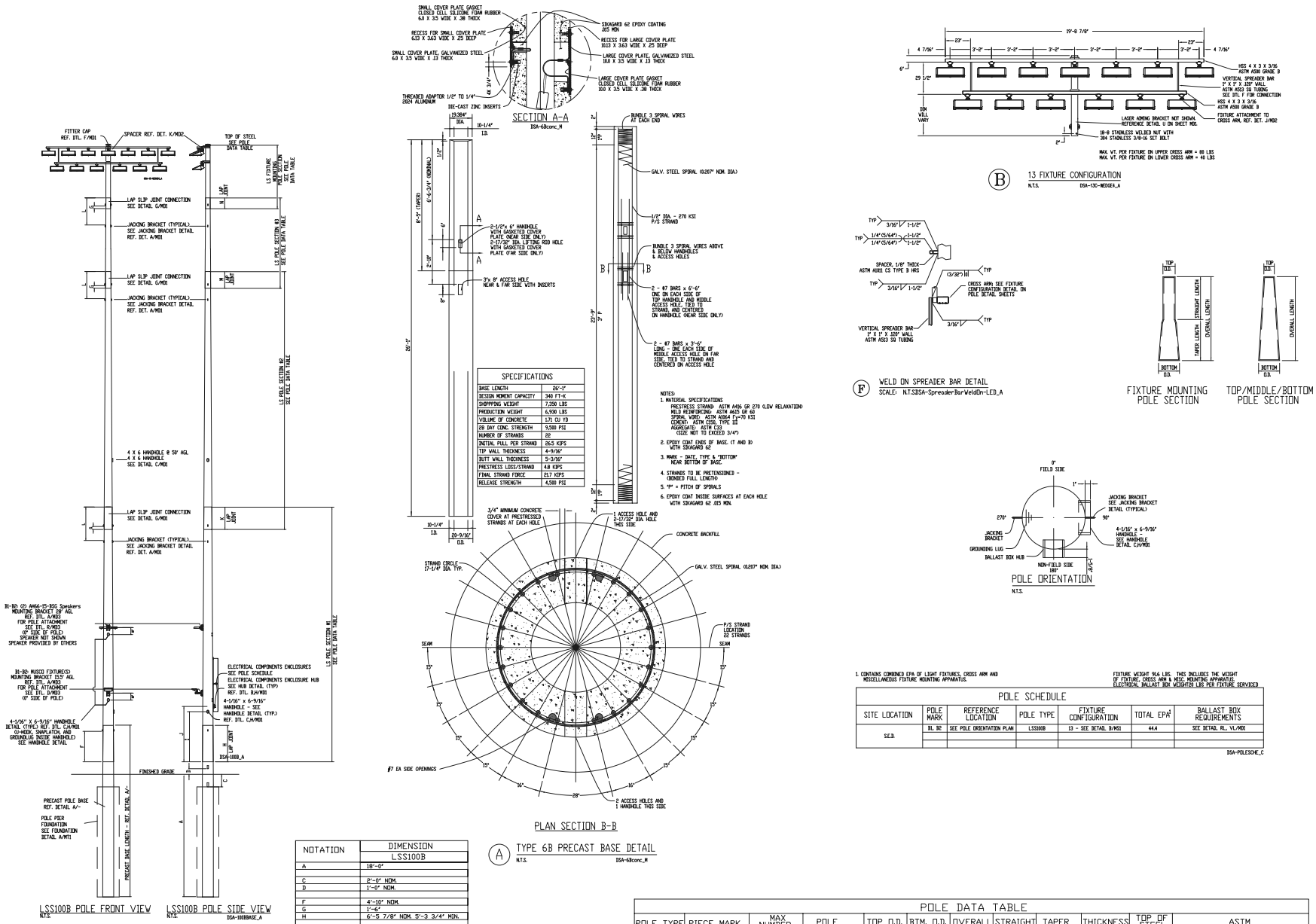


Source: Weston Miles Architects, December 2022

Bleacher Plans - Baseball

Figure
6b

Marina High School Multi-Use Field Project
Initial Study



SPECIFICATIONS	
BASE LENGTH	26'-1"
DESIGN MOMENT CAPACITY	340 FT-K
SHIPPING WEIGHT	7,350 LBS
PRODUCTION WEIGHT	6,930 LBS
VOLUME OF CONCRETE	1.71 CU YD
28 DAY CONC. STRENGTH	9,500 PSI
NUMBER OF STRANDS	22
INITIAL PULL PER STRAND	26.5 KIPS
TIP WALL THICKNESS	4-9/16"
BUTT WALL THICKNESS	5-3/16"
PRESTRESS LOSS/STRAND	4.8 KIPS
FINAL STRAND FORCE	21.7 KIPS
RELEASE STRENGTH	4,500 PSI

NOTES:
1. MATERIAL SPECIFICATIONS
PRESTRESS STRAND: ASTM A416 GR 270 (LOW RELAXATION)
MILD REINFORCING: ASTM A615 GR 60
SPIRAL WIRE: ASTM A1064 Fy=70 KSI
CEMENT: ASTM C150, TYPE III
AGGREGATE: ASTM C33
(SIZE NOT TO EXCEED 3/4")
2. EPOXY COAT ENDS OF BASE, (T AND B) WITH SIKAGARD 62
3. MARK - DATE, TYPE & "BOTTOM" NEAR BOTTOM OF BASE.
4. STRANDS TO BE PRETENSIONED - DEBONDED FULL LENGTH)
5. "P" = PITCH OF SPIRALS
6. EPOXY COAT INSIDE SURFACES AT EACH HOLE WITH SIKAGARD 62 .015 MIN

NOTATION	DIMENSION LSS100B
A	18'-0"
C	2'-0" NOM.
D	1'-0" NOM.
F	4'-10" NOM.
G	1'-6"
H	6'-5 7/8" NOM. 5'-3 3/4" MIN.
I	8'-1 1/2" NOM.
J	9'-3 1/2" NOM.
K	4'-7 7/8" NOM. 3'-1 3/8" MIN.
L	5'-6 1/2" NOM.
M	3'-2 3/8" NOM. 2'-1 3/8" MIN.
N	2'-2" NOM. 1'-8 1/2" MIN.

1. CONTAINS COMBINED EPA OF LIGHT FIXTURES, CROSS ARM AND MISCELLANEOUS FIXTURE MOUNTING APPARATUS.

FIXTURE WEIGHT 156 LBS. THIS INCLUDES THE WEIGHT OF FIXTURE, CROSS ARM & MISC. MOUNTING APPARATUS. ELECTRICAL BALLAST BOX WEIGHS120 LBS PER FIXTURE SERVICED

POLE SCHEDULE						
SITE LOCATION	POLE MARK	REFERENCE LOCATION	POLE TYPE	FIXTURE CONFIGURATION	TOTAL EPA[1]	BALLAST BOX REQUIREMENTS
S.E.B.	B1, B2	SEE POLE ORIENTATION PLAN	LSS100B	13 - SEE DETAIL B/M01	44.4	SEE DETAIL R1, V1, M01

DSA-POLESCHE_C

POLE DATA TABLE										
POLE TYPE	PIECE MARK	MAX NUMBER OF X-Arms	POLE SECTION	TOP O.D. (INCHES)	BTM. O.D. (INCHES)	OVERALL LENGTH	STRAIGHT LENGTH	TAPER LENGTH	THICKNESS (INCHES)	TOP OF STEEL NOMINAL	ASTM REFERENCE
LSS100B	LS-2017	2	FIXTURE MOUNTING	8.000"	8.781"	5'-3"	3'-1"	2'-2"	.125	99'-4 3/4"	A513 (Fy=38ksi)
	MP-4TTDSA-9		#3	8.190"	10.940"	19'-7 3/4"	------	19'-7 3/4"	.179	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-5BTDSA		#2	10.133"	15.965"	41'-7 7/8"	------	41'-7 7/8"	.179	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-7BTDSA-D		#1	14.954"	20.770"	41'-6 1/2"	------	41'-6 1/2"	.239	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-6BDSA		PRECAST BASE	FOR PRECAST MEMBER PROPERTIES SEE PRECAST BASE DETAIL A/-						

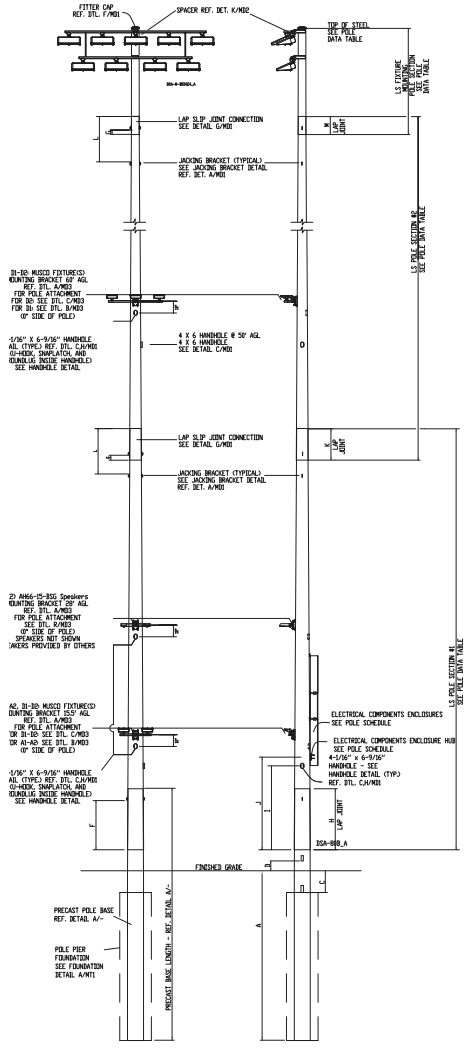
DSA-100BBT_J

Source: MUSCO Lighting, December 2022

Elevations & Details - Lighting Poll 100B

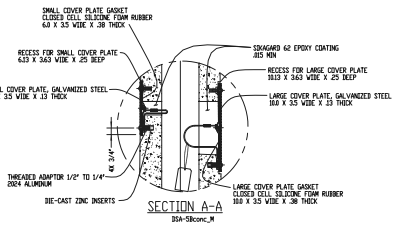
Figure 7a

Marina High School Multi-Use Field Project
Initial Study

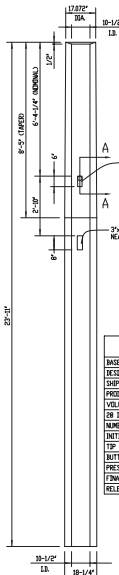


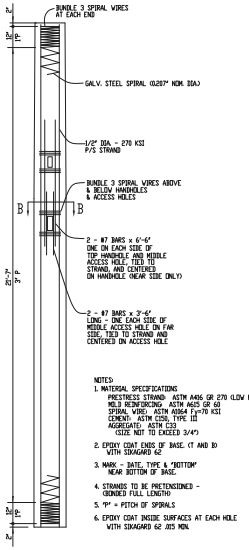
LSS80B POLE FRONT VIEW
N.T.S.

LSS80B POLE SIDE VIEW
N.T.S.
DSA-BBBASE_A



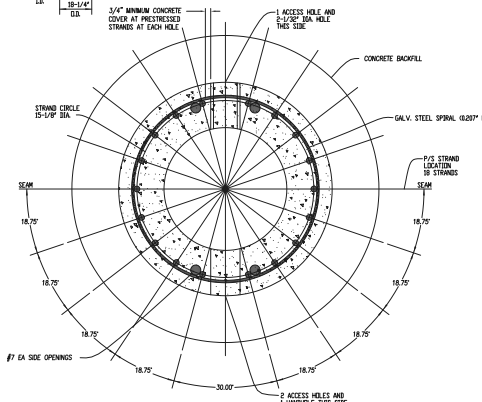
SECTION A-A
DSA-SBconc_M





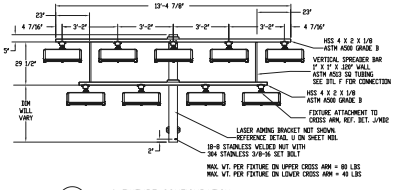
SPECIFICATIONS	
BASE LENGTH	23'-11"
DESIGN MOMENT CAPACITY	218 FT-K
SHIPPING WEIGHT	4909 LBS
PRODUCTION WEIGHT	4580 LBS
VOLUME OF CONCRETE	1.13 CU YD
28 DAY CONC. STRENGTH	9,500 PSI
NUMBER OF STRANDS	18
INITIAL PULL PER STRAND	26.5 KIPS
PRESTRESS LOSS/STRAND	4.8 KIPS
FINAL STRAND FORCE	21.7 KIPS
RELEASE STRENGTH	5,000 PSI

NOTES:
1. MATERIAL SPECIFICATIONS
   PRESTRESS STRAND: ASTM A416 GR 270 (LOW RELAXATION)
   MILD REINFORCING: ASTM A615 GR 60
   SPIRAL WIRE: ASTM A1064 Fy=70 KSI
   CEMENT: ASTM C150, TYPE III
   AGGREGATE: ASTM C33
   (SIZE NOT TO EXCEED 3/4")
2. EPOXY COAT ENDS OF BASE (T AND B) WITH SIKAGARD 62
3. MARK - DATE, TYPE & "BOTTOM" NEAR BOTTOM OF BASE.
4. STRANDS TO BE PRETENSIONED - DEBONDED FULL LENGTH
5. "P" = PITCH OF SPIRALS
6. EPOXY COAT INSIDE SURFACES AT EACH HOLE WITH SIKAGARD 62 .025 MIN.

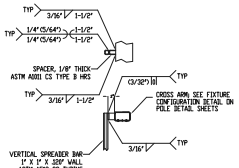


PLAN SECTION B-B

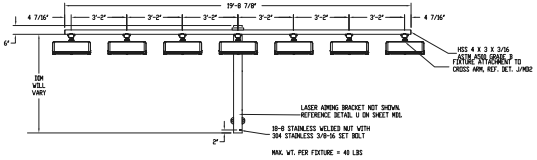
A TYPE 5B PRECAST BASE DETAIL
N.T.S.
DSA-SBconc_M



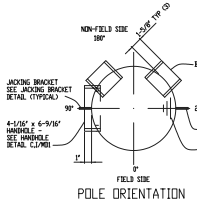
B 9 FIXTURE CONFIGURATION
N.T.S.
DSA-9C-WEDGE4_A



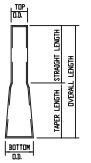
F WELD ON SPREADER BAR DETAIL
SCALE: N.T.SDSA-SpreaderBarWeldOn-LED_A



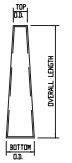
D 7 FIXTURE CONFIGURATION
N.T.S.
DSA-7C-WEDGE4_A



POLE ORIENTATION
N.T.S.



FIXTURE MOUNTING POLE SECTION



TOP/MIDDLE/BOTTOM POLE SECTION

1. CONTAINS COMBINED EPA OF LIGHT FIXTURES, CROSS ARM AND MISCELLANEOUS FIXTURE MOUNTING APPARATUS.

FIXTURE WEIGHT 76.8 LBS. THIS INCLUDES THE WEIGHT OF FIXTURE, CROSS ARM & MISC. MOUNTING APPARATUS. ELECTRICAL BALLAST BOX WEIGHT 28 LBS PER FIXTURE SERVICED

POLE SCHEDULE

SITE LOCATION	POLE MARK	REFERENCE LOCATION	POLE TYPE	FIXTURE CONFIGURATION	TOTAL EPA[1]	BALLAST BOX REQUIREMENTS
S.E.S.	2G-D2	SEE POLE ORIENTATION PLAN	LSS80B	9 - SEE DETAIL B/M03	27.8	SEE DETAIL VL, D/M01
	A1	SEE POLE ORIENTATION PLAN	LSS80B	7 - SEE DETAIL B/M03		SEE DETAIL TL/M01
	A2	SEE POLE ORIENTATION PLAN	LSS80B	7 - SEE DETAIL B/M03		SEE DETAIL TL, D/M01

DSA-POLESCHE_C

NOTATION	DIMENSION LSS80B
A	16'-0"
C	2'-0" NOM.
D	1'-0" NOM.
F	4'-8" NOM.
G	1'-6"
H	6'-1 1/2" NOM. 5'-3 3/4" MIN.
I	7'-11 1/2" NOM.
J	9'-1 1/2" NOM.
K 5 (Max X-arms)	3'-11 1/4" NOM. 2'-7 5/8" MIN.
L	4'-11 1/2" NOM.
M 2 (Max X-arms)	2'-2" NOM. 1'-8 1/2" MIN.
M 5 (Max X-arms)	2'-2" NOM. 1'-9 3/8" MIN.

POLE DATA TABLE

POLE TYPE	PIECE MARK	MAX NUMBER OF X-Arms	POLE SECTION	TOP O.D. (INCHES)	BTM. O.D. (INCHES)	OVERALL LENGTH	STRAIGHT LENGTH	TAPER LENGTH	THICKNESS (INCHES)	TOP OF STEEL NOMINAL	ASTM REFERENCE
LSS80B	LS-2017	2	FIXTURE MOUNTING	8.000"	8.781"	5'-3"	3'-1"	2'-2"	.125	80"-1 7/8"	A513 (Fy=38ksi)
	MP-4BTTDSA-9	2	#2	8.190"	13.582"	38'-6 1/8"	-----	38'-6 1/8"	.179	-----	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-6BTDSA-D	5	#1	12.672"	18.407"	40'-11 5/8"	-----	40'-11 5/8"	.239	-----	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-5BDSA		PRECAST BASE	FOR PRECAST MEMBER PROPERTIES SEE PRECAST BASE DETAIL A/-							

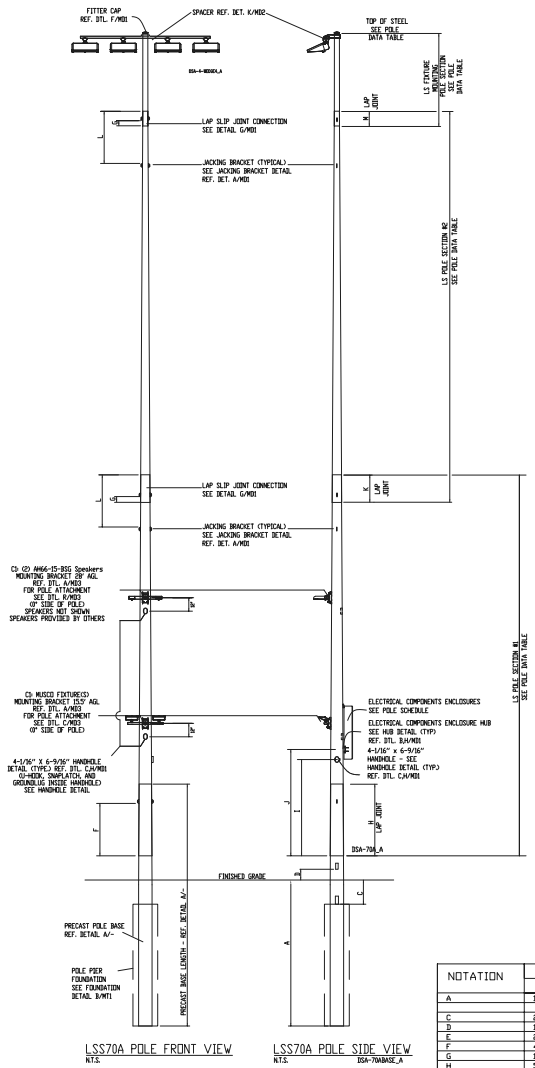
DSA-80

Source: MUSCO Lighting, December 2022

Elevations & Details - Lighting Poll 80B

Figure 7b

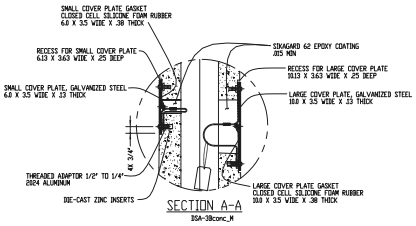
Marina High School Multi-Use Field Project
Initial Study



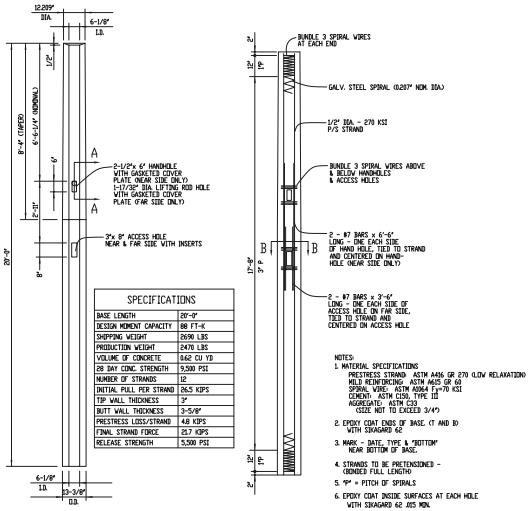
LSS70A POLE FRONT VIEW
N.T.S.

LSS70A POLE SIDE VIEW
N.T.S. DSA-70ABASE_A

NOTATION	DIMENSION LSS70A
A	12'-0"
C	2'-0" NOM.
D	1'-0" NOM.
E	2'-0 5/8" NOM.
F	4'-4" NOM.
G	1'-6"
H	5'-11 3/8" NOM. 5'-3 3/4" MIN.
I	7'-7 1/2" NOM.
J	8'-9 1/2" NOM.
K	3'-7 1/4" NOM. 1'-10 1/4" MIN.
L	4'-7" NOM.
M	1'-8" NOM. 11 1/2" MIN.

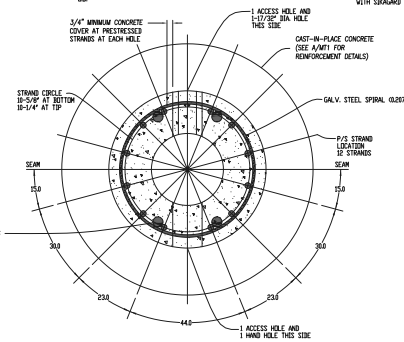


SECTION A-A
DSA-38conc_M



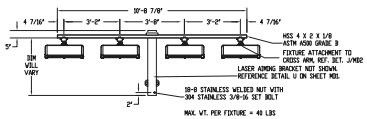
SPECIFICATIONS	
BASE LENGTH	28'-0"
DESIGN MOMENT CAPACITY	88 FT-K
SHIPPING WEIGHT	2690 LBS
PRODUCTION WEIGHT	2470 LBS
VOLUME OF CONCRETE	0.62 CU YD
28 DAY CONC. STRENGTH	9,500 PSI
NUMBER OF STRANDS	12
INITIAL PULL PER STRAND	26.5 KIPS
TIP WALL THICKNESS	3"
BUTT WALL THICKNESS	3-5/8"
PRESTRESS LOSS/STRAND	4.8 KIPS
FINAL STRAND FORCE	21.7 KIPS
RELEASE STRENGTH	5,500 PSI

NOTES:
1. MATERIAL SPECIFICATIONS
PRESTRESS STRAND - ASTM A416 GR 270 (LOW RELAXATION)
MILD REINFORCING - ASTM A615 GR 60
SPIRAL WIRE - ASTM A1064 Fy=70 KSI
CEMENT - ASTM C150, TYPE III
AGGREGATE: ASTM C33
(SIZE NOT TO EXCEED 3/4")
2. EPOXY COAT ENDS OF BASE. (T AND B)
WITH SIKAGARD 62
3. MARK - DATE, TYPE & "BOTTOM"
NEAR BOTTOM OF BASE.
4. STRANDS TO BE PRETENSIONED -
(DENOTED FULL LENGTH)
5. "P" = PITCH OF SPIRALS
6. EPOXY COAT INSIDE SURFACES AT EACH HOLE
WITH SIKAGARD 62 .015 MIN.

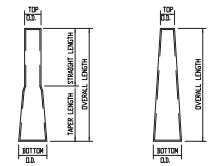


PLAN SECTION B-B

A TYPE 3B PRECAST BASE DETAIL
N.T.S. DSA-38conc_M

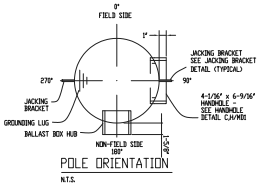


B 4 FIXTURE CONFIGURATION
N.T.S. DSA-4C-WEDGE4_A



FIXTURE MOUNTING POLE SECTION

TOP/MIDDLE/BOTTOM POLE SECTION



POLE ORIENTATION
N.T.S.

1. CONTAINS COMBINED EPA OF LIGHT FIXTURES, CROSS ARM AND MISCELLANEOUS FIXTURE MOUNTING APPARATUS.

FIXTURE WEIGHT 50.0 LBS. THIS INCLUDES THE WEIGHT OF FIXTURE, CROSS ARM & MISC. MOUNTING APPARATUS. ELECTRICAL BALLAST BOX WEIGHT 28 LBS PER FIXTURE SERVICED

POLE SCHEDULE						
SITE LOCATION	POLE MARK	REFERENCE LOCATION	POLE TYPE	FIXTURE CONFIGURATION	TOTAL EPA¹	BALLAST BOX REQUIREMENTS
S.E.D.	C1	SEE POLE ORIENTATION PLAN	LSS70A	4 - SEE DETAIL B/M02	11.9	SEE DETAIL SL/M01

DSA-POLESCHE_C

POLE DATA TABLE										
POLE TYPE	PIECE MARK	MAX NUMBER OF X-Arms	POLE SECTION	TOP O.D. (INCHES)	BTM. O.D. (INCHES)	OVERALL LENGTH	STRAIGHT LENGTH	TAPER LENGTH	THICKNESS (INCHES)	TOP OF STEEL NOMINAL	ASTM REFERENCE
LSS70A	LS-2000	1	FIXTURE MOUNTING	4.750"	5.081"	5'-3"	3'-7"	1'-8"	.120	70"-1 3/4"	A513 (Fy=38ksi)
	MP-1TDSA		M2	4.596"	9.630"	35'-11 1/2"	------	35'-11 1/2"	.120	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-3BT-D		M1	8.886"	13.400"	32'-2 7/8"	------	32'-2 7/8"	.179	------	A595A (Fy=55 ksi) or A572, Gr 55 or 65
	MP-3BDSA		PRECAST BASE	FOR PRECAST MEMBER PROPERTIES SEE PRECAST BASE DETAIL A/-						

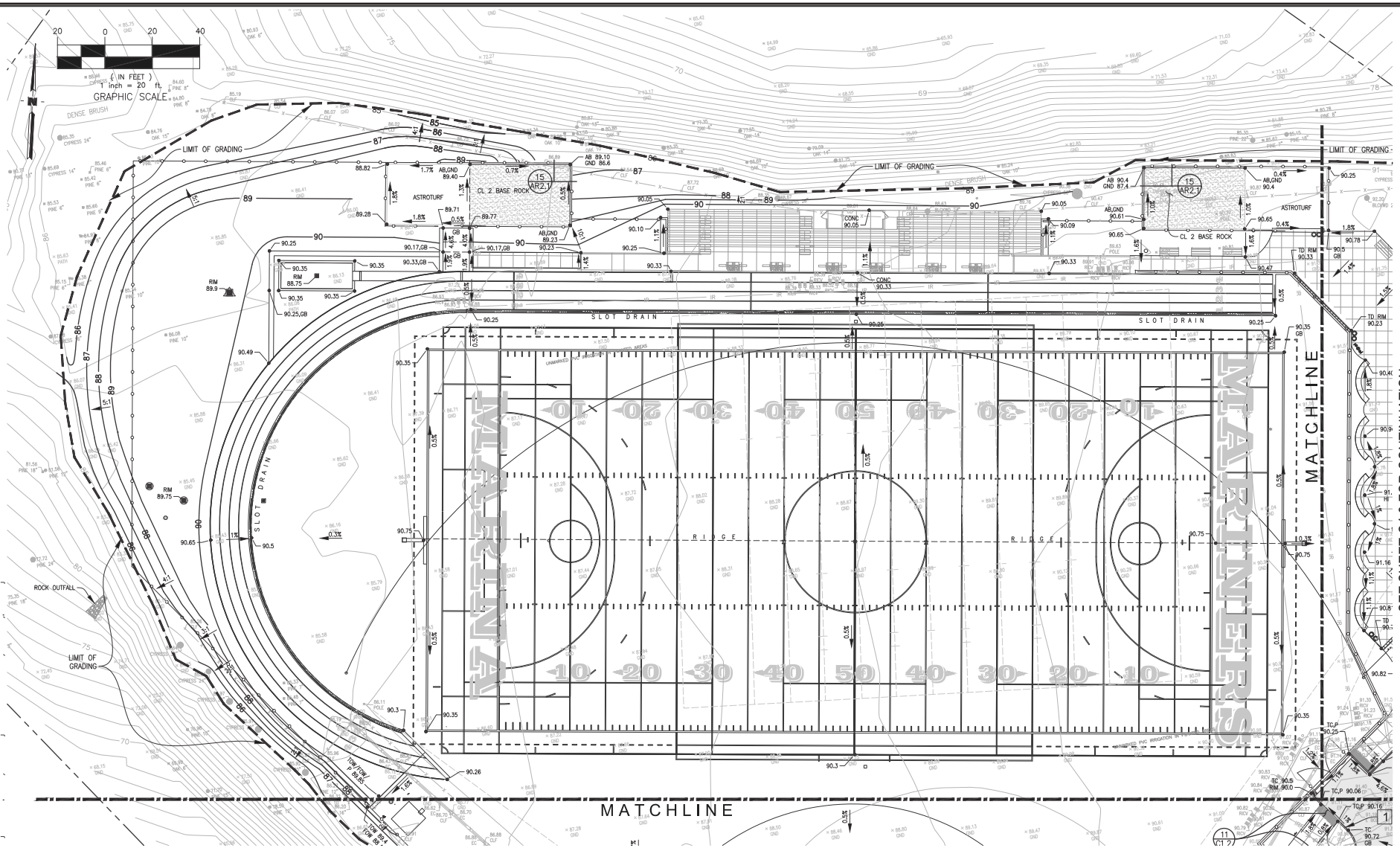
DSA-7MAST_J

Source: MUSCO Lighting, December 2022

Elevations & Details - Lighting Poll 70A

Marina High School Multi-Use Field Project
Initial Study

Figure
7c



KEY NOTES:

1 CURB HEIGHT VARIES 0" TO 6"

ESTIMATED EARHWORKS:

CUT 5,520 CUBIC YARDS
FILL 12,785 CUBIC YARDS
NET: 7,265 CUBIC YARDS FILL (IMPORT)

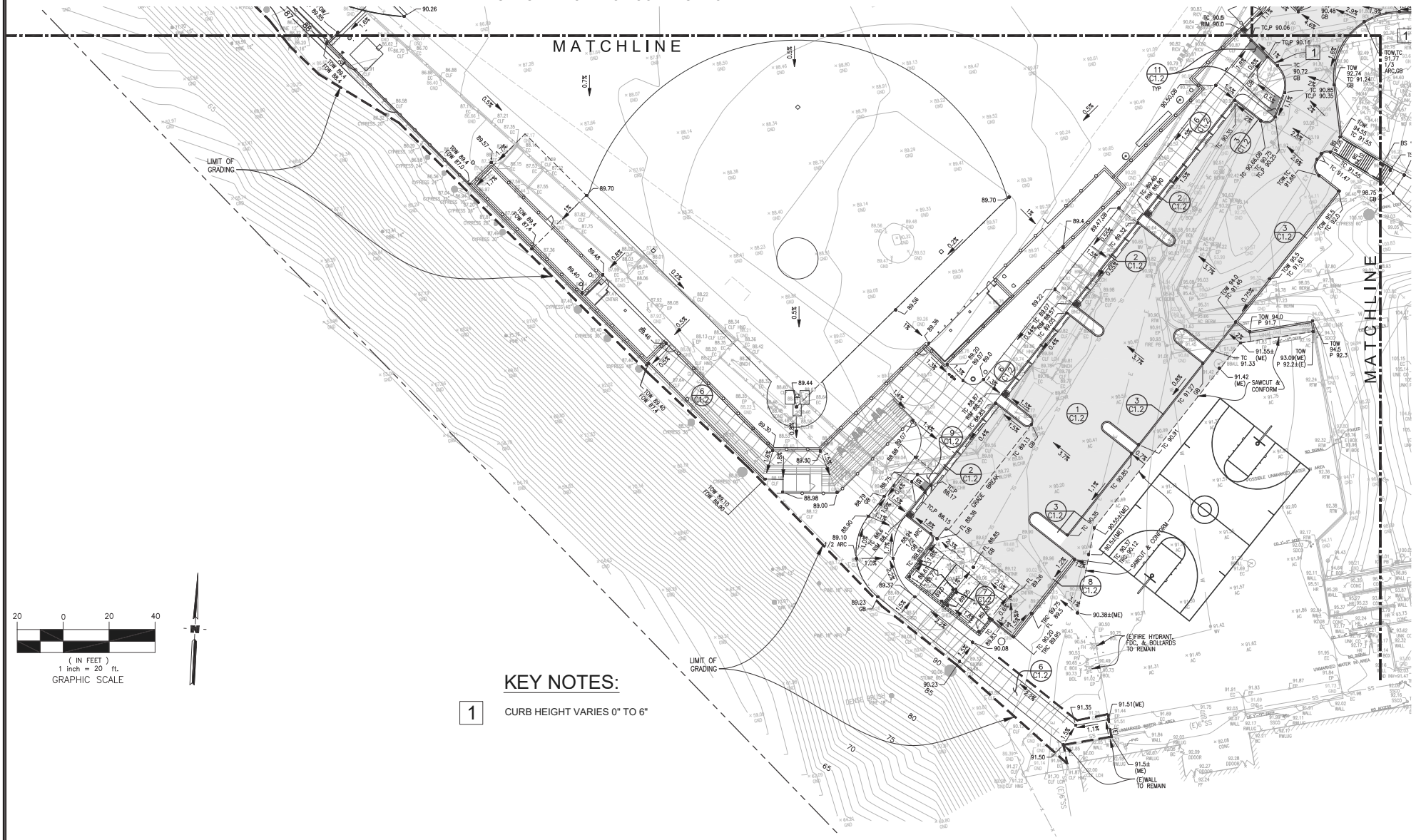
ESTIMATED QUANTITIES ARE TAKEN AS THE DIFFERENCE BETWEEN EXISTING AND FINISH GRADES AND DO NOT TAKE INTO ACCOUNT SHRINKAGE FROM COMPACTION OR EXPANSION FROM EXCAVATION. ADDITIONALLY, STRUCTURAL PAVEMENT SECTION MATERIAL AND THE FIELD SECTION MATERIALS ARE NOT IN THE ESTIMATED QUANTITIES.
MAXIMUM CUT DEPTH - 4.75 FT
MAXIMUM FILL DEPTH - 4.8 FT

Source: Weston Miles Architects, December 2023

Grading and Drainage Plan - Football Field

Marina High School Multi-Use Field Project
Initial Study

Figure
8a

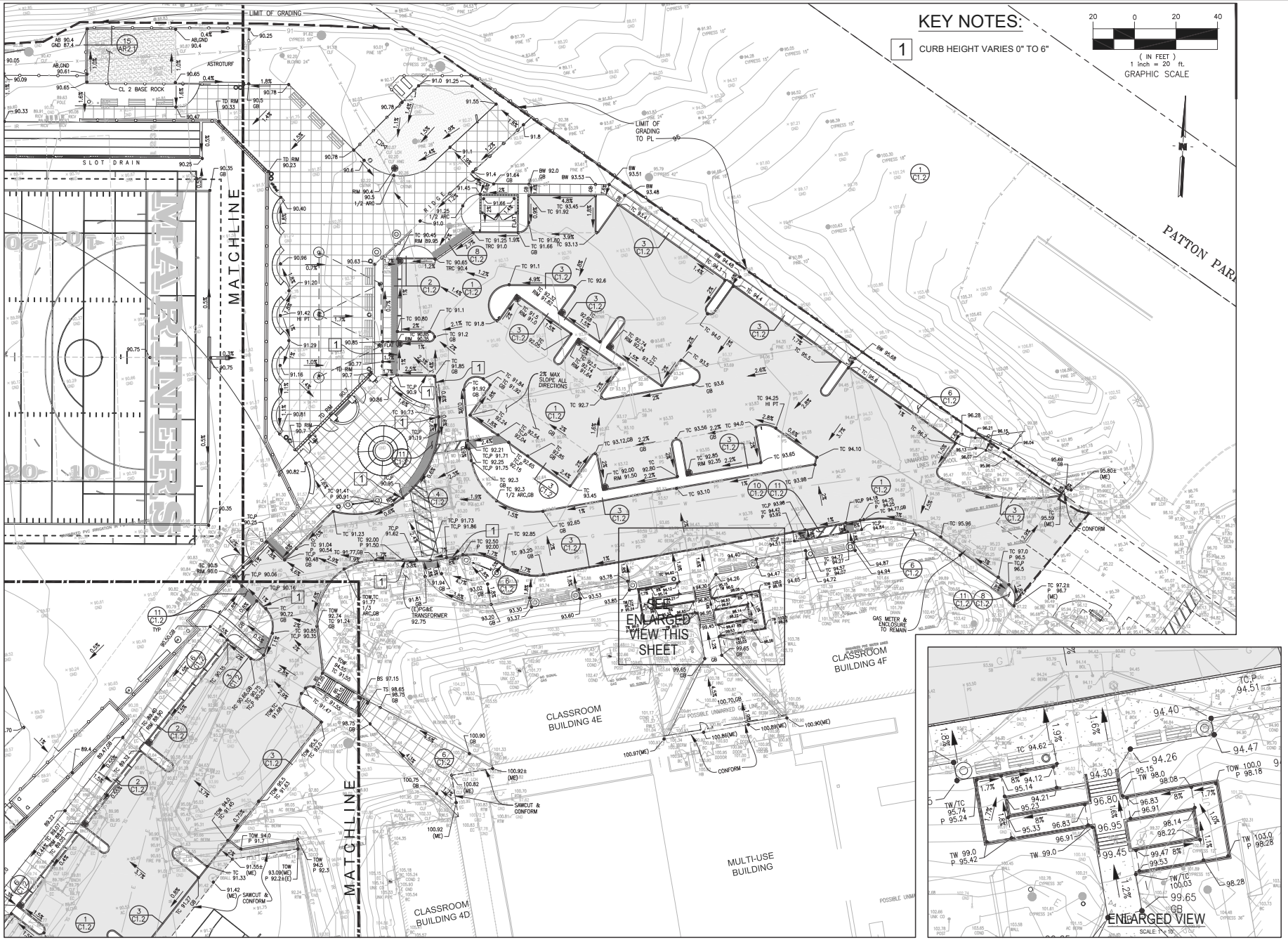


Source: Weston Miles Architects, July 2023

Grading and Drainage Plan - Baseball Field

Figure
8b

Marina High School Multi-Use Field Project
Initial Study



Source: Weston Miles Architects, July 2023

Grading and Drainage Plan - Upper Parking Lot

Marina High School Multi-Use Field Project
Initial Study

Figure
8c

The proposed field lighting is designed to focus light on the athletic fields and minimize light spillage on adjacent areas and properties. The field lighting has been designed by MUSCO to comply with the regulations and standards published by the International Dark Sky Association.[3]

The proposed project is intended to expand the timing and use of the existing school field facilities for several sports teams including the following: football, soccer, baseball, lacrosse, hockey and track and field. See **Table 2** for a detailed anticipated event lighting schedule provided by the MPUSD, which provides a summary of the anticipated uses of the fields after the lights are installed. No uses of the fields are proposed before sunrise. Proposed lighting would be used on select evenings to accommodate athletic practices and competitions, primarily during the winter months when the sun sets early or during home football games. Thus, use of the field lighting would be limited to the months of August through March. Lights would be utilized for practices, which would be scheduled to conclude no later than 8pm. Use of the field lighting for school-related games would not last past 8pm, with the exception of six (6) football games a year where events would be scheduled to conclude by 10:30pm. Lighting would be reduced to the dimmest possible setting to allow safe exit of participants and attendees and to allow maintenance crews sufficient visibility for clean-up activities and is anticipated to be used no later than 11:00pm.

The proposed project also includes security lighting throughout the upper parking lot, student drop off area, plaza, concession/restroom area, and lower parking lot. All of the proposed security lighting is designed to limit offsite light spillage. The lighting poll designs and elevations for the proposed project are provided in **Figures 7a – Figure 7c**.

ACCESS AND PARKING

The proposed project includes various improvements and reconfiguration of the existing upper parking lot, including new trash enclosure in the northwest corner, new student drop-off area, new decorative fencing and security gate, security lighting, new cross walk, and new stairs and ADA ramp configuration. The reconfigured parking lot would have a total of 48 spaces, including four (4) ADA-compliant spaces and three (3) ADA-compliant van accessible spaces. As part of the reconfiguration of the existing upper parking lot, the existing student drop-off area and traffic flow would also be reconfigured (see **Figure 5d**). Project plans, including the reconfigured parking lot site plans, are subject to review and approval by the Division of the State Architect.

The proposed project would also include the creation of a new parking lot located east of the lower portion of the existing athletic fields. The new lower parking lot would consist of 95 new parking spaces, including 26 compact spaces, two (2) ADA-compliant spaces, and two (2) ADA-compliant van accessible spaces. A reconfiguration of the existing basketball court would occur as part of the proposed project to accommodate the new lower parking lot. The lower parking lot would also include a new retaining wall, trash enclosure, and 10-foot-wide ADA-compliant sidewalk to connect the existing gymnasium to the athletic fields.

For events where large crowds are anticipated, such as certain football games and graduation ceremonies, additional off-site parking would be provided at MPUSD's Los Arboles Middle School campus and other available MPUSD parking areas as needed.

[3] International Dark Sky Association standards for certification are discussed under Aesthetics Section. Generally, designing outdoor lighting to program standards protects the natural night environment by controlling light pollution. https://darksky.org/

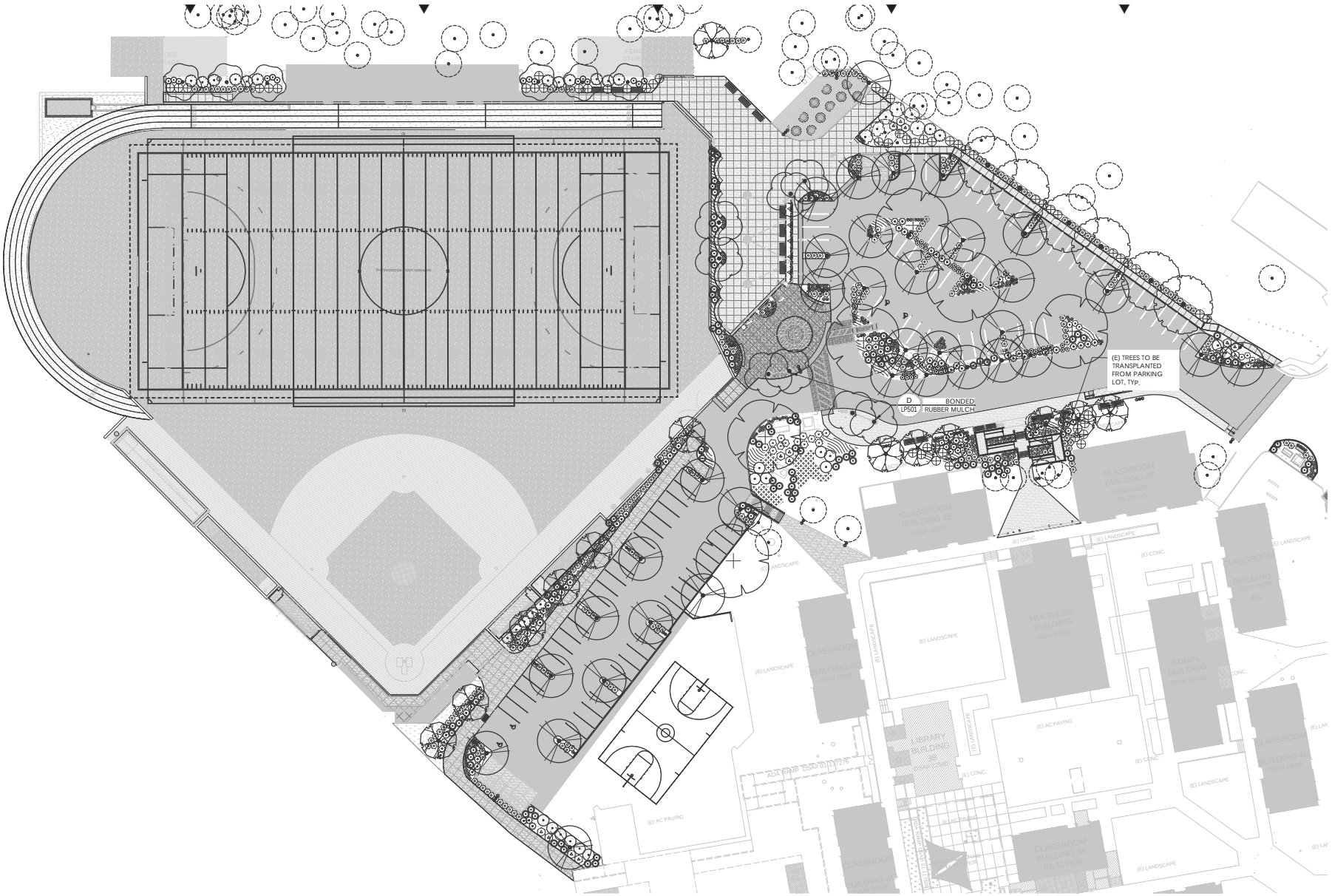
LANDSCAPE AND TREE REMOVAL

The proposed project includes landscaping, consisting of planting trees, shrubs, and groundcover. The proposed project includes the removal of 13 trees and planting of 74 replacement trees. The City of Marina requires a tree removal permit to remove, relocate, or damage a living tree within its limits. Replacement tree species are anticipated to include purple-leaf bailey acacia, marina strawberry tree, Monterey cypress, New Zealand Christmas tree, Monterey pine, and valley oak. Trees would be located throughout the reconfigured upper parking lot, the new lower parking lot, the plaza area, and behind the football bleachers. A landscape plan is provided in **Figure 9**.

ATTENDANCE AND EVENT SCHEDULE

The proposed project is anticipated to continue to accommodate regular physical education (PE) classes, as well as athletic events for students and the community.

The proposed project would accommodate events and/or practices for Marina High's existing Baseball, Football, Soccer, Track and Field, and Cheer, as well as non-athletic events including school rallies and graduation. In addition, the proposed project would potentially be used for newly organized Marina High teams for sports such as Lacrosse, Girls' Flag Football, and Field Hockey. The proposed project would be utilized on a near-daily basis on weekdays during the school year; in addition, community athletic leagues or clubs would potentially use the site during weekend hours (see **Table 2** for proposed event types and frequency of events). While the proposed project would be used for track and field practice, no formal events are anticipated to be held at the proposed project site for track and field as a complete track circuit suitable for competitive track and field events is not included as part of the proposed project. Marina High School track and field meets would continue to be held offsite. The estimated attendance for athletic competitions upon installation of the proposed field lights would vary by sport and other factors, such as level of competition (e.g., regular season vs. postseason) and weather conditions. Currently, Marina High football and soccer teams play "home games" at alternate facilities located at Seaside High School and Monterey Peninsula College. An increase in number of Home Games is anticipated with the installation of the field lights, as Marina High football and soccer teams would be able to host events at their home field. An increase in attendance resulting from the Proposed Project is expected by having games at night as opposed to afternoon events. The projected increase in attendees for each school-affiliated sport is presented in **Table 1**. Nighttime games and practices would be scheduled to end at 8:00 pm, except for up to six (6) football games per year that would be scheduled to end at 10:30 pm. Following conclusion of nighttime events, the field lighting would be reduced to the dimmest possible setting to allow safe exit of participants and attendees and to allow maintenance crews sufficient visibility for clean-up activities (assumed to be a minimum reduction of 50 percent); the field lighting would be turned off at the earliest possible time following conclusion of these activities. The field lighting would also be operated at the dimmest possible setting during practices to allow for safe visibility for participants (assumed to be a minimum reduction of 50 percent).



Source: RRM Design, December 2022

Landscape Plan

Marina High School Multi-Use Field Project
Initial Study

Figure
9

Table 1 Historic and Projected Attendance for Marina High School Sporting Events				
Sport	**Existing Use?**	**Historic Attendance**	**Projected Attendance**	**Net Projected Attendance Increase**
Baseball	Yes	50	50	0
Soccer	Yes	20	50	+30
Football	Yes*	100	300	+200
Field Hockey	No	0	50	+50
Lacrosse	No	0	50	+50
See **Table 2** for number of games per year with expected lighting by event. * Currently practice only				

In addition, the proposed project could be utilized as a site for both non-athletic school events and community athletic events. Non-athletic school events would include graduation ceremonies and homecoming rallies; school rallies would have the highest projected attendance of all non-athletic events, with an estimated 720 participants (see **Table 2**). School rallies and graduation ceremonies are currently held at the school and would not represent an increase in use, but would provide for use of the new PA system. Non-athletic school events would occur only during the day and would not require use of the field lights. Community athletic leagues or clubs would potentially use the site during weekend hours. Community groups would be able to utilize the proposed project from 8am to sunset during the period of April to September, and 8am to 8pm between October to March, on a weekly basis during weekend days when school is not in session. The facility would be open to the community for use during after-school hours, school breaks, and on weekends. Use of the field lights and PA is not proposed for most community events, which are anticipated to end at 4pm. However, the proposed project could host additional community events up until 8pm that would utilize the field lighting between October-March during times when school is not in session. A complete list of events, including projected frequency of use, date ranges, days of the week, start and end times, number of participants, and use of field lights and PA, is provided in **Table 2**.

Table 2 Projected Event Information, Frequency, and Timing										
Activity	**Frequency of Use**	**Currently Held On-Campus?**	**Months of Use**	**Days of Use**	**Start & End Times**	**Use of Field Lights Proposed?**	**Anticipated # of Events Using Field Lights**	**Use of PA Proposed?**	**Anticipated # of Participants**	**Net New Participants**
Current School Activities										
School Rally	4 times per year	Yes	Sept, Jan, March, and June	N/A	12:00pm - 1:30pm	No	N/A	Yes	720	0
Graduation	Once per Year	Yes	June	N/A	TBD	No	N/A	Yes	150	0
PE	Daily	Yes	August–June	M-F	8:30 am - 5:30 pm	No	N/A	No	80	0
Football Games	6 times per year	No	Sept–Jan	Friday	3:30pm – 10:00pm	Yes until 10:30pm	6	Yes	80	80
Soccer Games	10 times per year	Yes	Nov–Feb	M-F, Select Saturdays	3:30pm - 8:00pm (varsity and JV)	Yes until 8:00pm	10	Yes	38	0
Baseball Games	12 times per year	Yes	Feb-June	M-F, Select Saturdays	3:30pm-6:00pm (5:00pm-8:00pm select night games)	Yes Select Games until 8:00pm	Up to 12	No	25	0
Football Practice	Daily	Yes	June – Jan	M-F, Select Saturdays	3:30pm-6:30pm (with occasional 5:00pm - 8:00pm practice)	Yes August - November until 8:00pm	TBD	No	80	0
Track and Field Practice	Daily	No	Feb-June	M-F, Select Saturdays	3:30pm – 6:00pm	No	N/A	No	55	55
Soccer Practice	Daily	Yes	Nov–Feb	M-F, Select Saturdays	3:30pm-6:30pm (with occasional 5:00pm -	Yes October-March until 8:00pm	TBD	No	38	0

Table 2 Projected Event Information, Frequency, and Timing										
Activity	**Frequency of Use**	**Currently Held On-Campus?**	**Months of Use**	**Days of Use**	**Start & End Times**	**Use of Field Lights Proposed?**	**Anticipated # of Events Using Field Lights**	**Use of PA Proposed?**	**Anticipated # of Participants**	**Net New Participants**
					8:00pm practice)	(some practices may run from 5:00pm-8:00pm)				
Baseball Practice	Daily	Yes	Feb-June	M-F, Select Saturdays	3:30pm – 6:00pm	No	N/A	No	25	0
Cheer	Daily	Yes	Aug-June	M-F, Select Saturdays	3:30pm – 6:00pm	No	N/A	No	22	0
Potential Future School Activities										
Girls' Flag Football Games	6 times per year	No	Aug-Nov	M-F, Select Saturdays	3:30pm – 6:00pm (6:30pm-8:00pm select night games)	Yes Oct-Nov until 8:00pm	TBD	Yes	25	25
Field Hockey Games	6 times per year	No	Aug-Nov	M-F, Select Saturdays	3:30pm – 6:00pm (6:30pm-8:00pm select night games)	Yes Oct-Nov until 8:00pm	TBD	Yes	25	25
Lacrosse Games	12 times per year	No	Jan-May	M-F, Select Saturdays	3:30pm – 6:00pm (6:30pm-8:00pm select night games)	Yes Jan-March until 8:00pm	TBD	Yes	25	25

Table 2
Projected Event Information, Frequency, and Timing

Activity	Frequency of Use	Currently Held On-Campus?	Months of Use	Days of Use	Start & End Times	Use of Field Lights Proposed?	Anticipated # of Events Using Field Lights	Use of PA Proposed?	Anticipated # of Participants	Net New Participants
Anticipated Community Activities*										
Marina Youth Soccer	Weekly	No	Aug-Oct	Sat/Sun	8:00am-4:00pm	No	N/A	No	200	200
Marina Youth Baseball	Weekly	No	Feb-June	Sat/Sun	8:00am-4:00pm	No	N/A	No	150	150

* Additional community activities/uses could potentially use the proposed project between 8:00am to sunset between April to September and 8:00am to 8:00pm between October to March when school is not in session. Lighting use for community events would be limited to October to March.

Use of the proposed field lights would be specific to select evenings to accommodate athletic practices and competitions, primarily during the winter months when the sun sets early or during home football and soccer games. Practices for all sports would be scheduled to end by 8pm and use of the field lighting would be limited to the hours after sunset and before 8pm for these regular events. As described above in **Table 2**, soccer games and baseball games are not new uses as home games have previously been held on-site and do not represent an expanded use under the proposed project. The project will change the time for these events to allow for later scheduling. Estimated attendance for baseball is not expected to change, while the attendance for soccer games is estimated to increase from 20 to 50 spectators as shown on **Table 1**.

1.4 Project Approvals

MPUSD is the CEQA lead agency for the proposed project and, as a result, has the primary authority for approval for the proposed project. The City of Marina is a responsible agency under CEQA. Additional approvals for the proposed project would be required from the following state and local agencies:

- Division of the State Architect (DSA) – Approval of Construction Drawings
- Central Coast Regional Water Quality Control Board (RWQCB) – National Pollution Discharge Elimination Permit (NPDES)
- RWQCB – Construction General Permit
- City of Marina – Tree Removal Permit

The RWQCB would be a responsible agency as defined by CEQA. In addition, the field lighting component of the proposed project will be seeking a Fixture Seal of Approval from the International Dark Sky Association (IDSA) to ensure the proposed project would be consistent with policies for reducing nighttime light pollution, minimizing glare, and reducing light trespass. IDSA reviewed the initial plans for the proposed project and provided feedback to improve the design aspects relating to light pollution and spillage. Project plans were revised by the project architect to ensure that the final plans would be IDSA compliant. IDSA issued a Phase 1 letter of design compliance on October 26, 2023. IDSA will perform a Phase 2 field review of the installed field lights following construction to verify installation compliance with IDSA standards.

Chapter 2. Environmental Factors Potentially Affected

The environmental factors identified below are discussed within **Chapter 4. Initial Study Environmental Checklist.** Sources used for analysis of environmental effects are cited in parenthesis after each discussion and are listed in **Chapter 5. References**.

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

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Chapter 3. Determination

On the basis of this initial evaluation:

☐ 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 project proponent. 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" impact 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 or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

12/22/2023
Date

Daniel Diffenbaugh
Printed Name

Monterey Peninsula Unified School District
For

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Chapter 4. Initial Study Environmental Checklist

The following chapter assesses the environmental consequences associated with the proposed project. Mitigation measures, where appropriate, are identified to address potential impacts.

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except “No Impact” answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A “No Impact” answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A “No Impact” answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on project-specific screening analysis).

2. All answers must take into account the whole action involved, including offsite as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate information sources for potential impacts (e.g., general plans, zoning ordinances) into the checklist references. Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

a) The significance criteria or threshold, if any, used to evaluate each question; and
b) The mitigation measure identified, if any, to reduce the impact to less than significance.

4.1 Aesthetics

4.1.1 Environmental Setting

The coastal landscape of Monterey County is aesthetically rich and visually diverse, and some areas, such as the Monterey Peninsula, are recognized and highly regarded for their aesthetic quality. The proposed project is located on the existing Marina High School campus, in Marina, California. Views in and around the proposed project site include sand dunes to the west, the Marina High School campus to the south, the existing parking lot to the east, and wooded areas to the north.

4.1.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS. Would the project:				
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?	☐	☒	☐	☐

4.1.3 Explanation

a-b) **Less than Significant Impact.** The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. *Policy 4.126.3* of the City of Marina General Plan states that "The visual character and scenic resources of the Marina Planning Area shall be protected for the enjoyment of current and future generations. To this end, ocean views from Highway One shall be maintained to the greatest possible extent". There are no scenic vistas located on the proposed project site, as the project site is occupied by Marina High School. Ocean views across the proposed project site are not widely available from adjacent land due to topography and vegetation. The proposed project is located east of State Route 1, which is designated by Caltrans as an eligible Scenic

Highway. However, due to existing topography and landscaping, views of the proposed project site are minimal from State Route 1. More specifically, the only component of the proposed project that would be visible from State Route 1 would be the light poles. As discussed above, the portion of State Route 1 nearest to the project site is not a designated scenic highway, and scenic resources would not be significantly impacted by the proposed project.

The proposed project would not require the removal of any rock outcroppings or historic buildings. While tree removal is anticipated, none of the trees marked for removal carry any designation as a scenic resource. All tree removal would be conducted per the requirements of a tree removal permit issued by the City of Marina (**Appendix C**). The proposed project would have less than significant impacts related to views of scenic vistas or damaging scenic resources visible from a scenic highway. (1, 2, 3, 4, 5, 7)

c) **Less than Significant Impact.** The proposed project is located in an urbanized area within the City of Marina. The City of Marina's General Plan states that new development should maintain continuity with the City's history and be responsive to the climate and the natural and scenic features of the local and regional setting (City of Marina, 2023). In addition, the City of Marina's General Plan highlights that landscape screening and restoration shall be provided as appropriate for new development, which should be sited and designed to retain scenic views of inland hills from State Route 1. Construction activities would temporarily alter the visual character of the proposed project site. However, presence of construction equipment would be temporary, as equipment would be removed following completion of construction. Therefore, the short-term visual impacts from construction activities would remain less than significant.

As previously stated, the proposed project would be largely screened from view from State Route 1 by existing vegetation and topography, which also screens views of inland hills from the portion of State Route 1 adjacent to the project site. However, as shown on **Figures 10a-10o,** the proposed field lighting would be visible from adjacent viewpoints, including from State Route 1 in the vicinity of the Del Monte Avenue exit (see **Figure 10e**) and the existing residential areas located to the east and north (see **Figures 10g** and **10i**). Due to existing tree plantings and topography, as well as the speed of vehicles travelling the highway, the portion of State Route 1 where the proposed field lighting would be visible would be limited in duration.

As shown on **Figure 2, Vicinity Map**, the nearest homes to Marina High School are located on Grant Street approximately 250 feet northeast of the proposed project and approximately 315 feet from the nearest proposed field lighting. The proposed project sits at a higher elevation than the surrounding single-family residential neighborhoods of the City of Marina. The field lights would be visible from the public views of the City neighboring single-family neighborhoods (see **Figures 10g** and **10i**). However, views of the proposed project from these locations would be broken up by the intervening landform, road and slope, and existing landform and landscape trees. Additionally, the poles would be of a small diameter (particularly as viewed from a distance) and the light silver/grey color of the steel poles would tend to blend in with the sky background when not in use. When the field lighting is in use offsite glare and light spillage would be minimized as discussed further under impact d). Therefore, the proposed light poles would not substantially degrade the existing visual character or quality of public views of the viewshed from nearby roadways and this impact would be less than significant.



VIEW LOCATOR

Marina High School City of Marina, CA

digital imaging studio

Source: Design Imaging Studios, June 2023

Visual Simulation - Viewpoint Map

Marina High School Multi-Use Field Project
Initial Study

Figure
10a



Source: Design Imaging Studios, June 2023

Visual Simulation - View 1 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10b



Source: Design Imaging Studios, November 2023

Visual Simulation - View 1 - Nighttime Proposed

Figure 10c

Marina High School Multi-Use Field Project
Initial Study



Source: Design Imaging Studios, June 2023

Visual Simulation - View 2 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10d



Source: Design Imaging Studios, November 2023

Visual Simulation - View 2 - Nighttime Proposed

Marina High School Multi-Use Field Project
Initial Study

Figure
10e



VIEW -03 Existing Day **Seeno Circle Grant Dr.** **Marina High School City of Marina, CA** digital imaging studio dis

Source: Design Imaging Studios, June 2023

Visual Simulation - View 3 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10f



VIEW -03 Proposed Night

Seeno Circle Grant Dr.

Marina High School City of Marina, CA digital imaging studio dis

Source: Design Imaging Studios, November 2023

Visual Simulation - View 3 - Nighttime Proposed

Marina High School Multi-Use Field Project
Initial Study

Figure
10g



Source: Design Imaging Studios, June 2023

Visual Simulation - View 4 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10h



Source: Design Imaging Studios, November 2023

Visual Simulation - View 4 - Nighttime Proposed

Figure 10i

Marina High School Multi-Use Field Project
Initial Study



VIEW -05 Existing Day | Patton Pkwy. | Marina High School City of Marina, CA digital imaging studio dis

Source: Design Imaging Studios, June 2023

Visual Simulation - View 5 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10j



VIEW -05 Proposed Night | Patton Pkwy. | Marina High School City of Marina, CA digital imaging studio dis

Source: Design Imaging Studios, November 2023

Visual Simulation - View 5 - Nighttime Proposed

Marina High School Multi-Use Field Project
Initial Study

Figure
10k

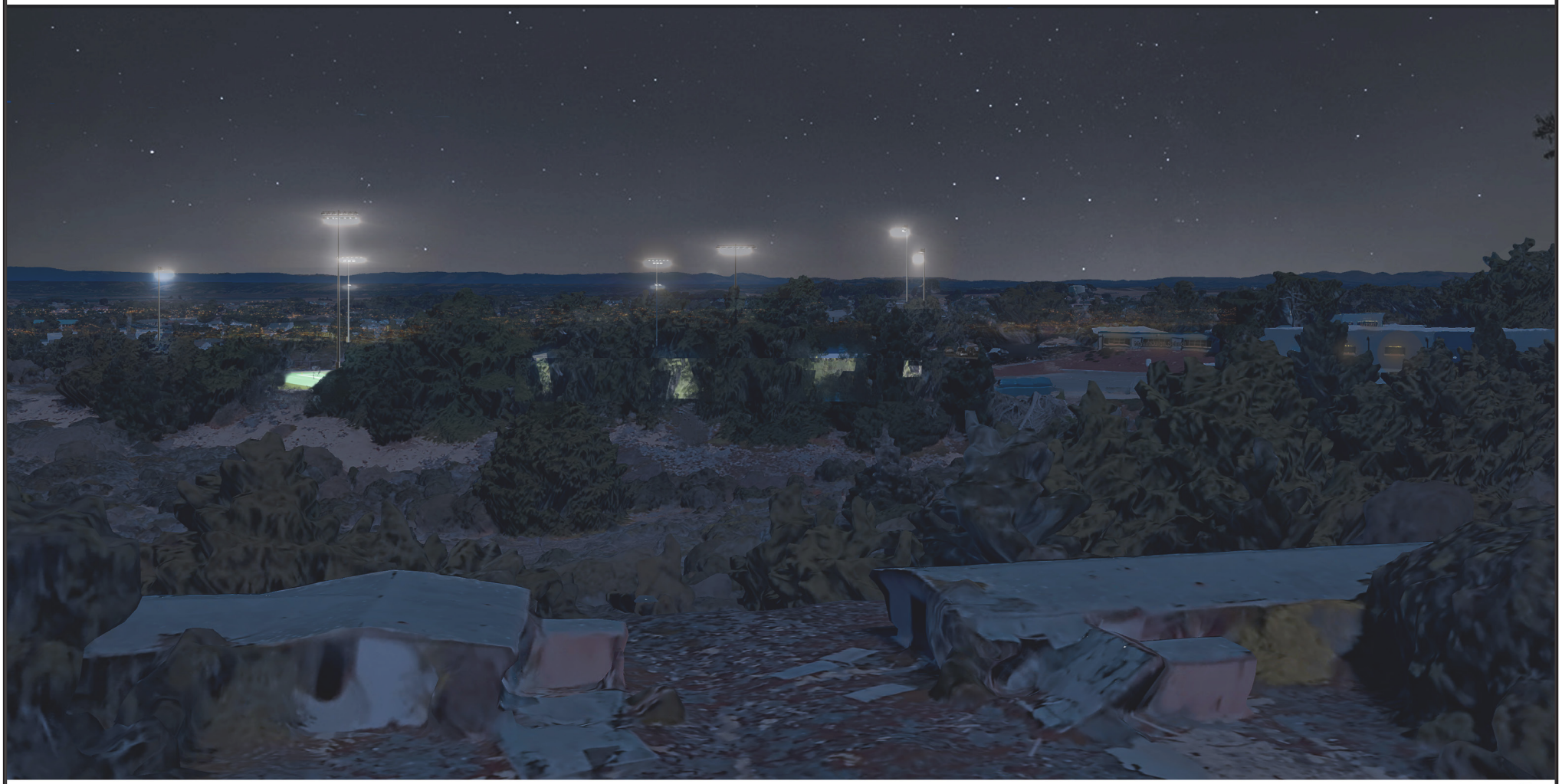


Source: Design Imaging Studios, June 2023

Visual Simulation - View 6 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10l



VIEW -06 Proposed Night "Oblique" Hayes Circle Marina High School City of Marina, CA digital imaging studio

Source: Design Imaging Studios, November 2023

Visual Simulation - View 6 - Nighttime Proposed

Marina High School Multi-Use Field Project
Initial Study

Figure
10m



Source: Design Imaging Studios, June 2023

Visual Simulation - View 7 - Daytime Existing

Marina High School Multi-Use Field Project
Initial Study

Figure
10n



VIEW -07 Proposed Night "Oblique" **Reindollar Ave. (Shell Station)**

digital imaging studio dis

Source: Design Imaging Studios, November 2023

Visual Simulation - View 7 - Nighttime Proposed

Marina High School Multi-Use Field Project
Initial Study

Figure
10o

The proposed project would not conflict with regulations governing scenic quality. This represents a less than significant impact. (1, 2, 3, 4 ,5)

d) **Less than Significant with Mitigation Incorporated.** Construction Impacts: The proposed project would not require nighttime construction, for this reason, the proposed project would have a less than significant impact related to creation of a new source of substantial light or glare which would adversely affect day or nighttime views in the area during construction.

Operational Impacts. The proposed project includes new field lighting for nighttime events during operation. The new field lighting would be considered a new source of substantial light or glare which could adversely affect nighttime views. As shown on **Figure 2, Vicinity Map**, the nearest homes to Marina High School are located on Grant Street approximately 250 feet northeast of the proposed project and approximately 315 feet from the nearest proposed field lighting. The proposed project sits at a higher elevation than the surrounding neighborhood and State Route 1 to the north. Views of the proposed project site are partially screened due to topography, vegetation to the north and east, and sand dunes to the west. Additionally, the poles would be of a small diameter (particularly as viewed from a distance) and the light silver/grey color of the steel poles would tend to blend in with the sky background when not in use.

Digital Imaging Studios performed a "before-and-after" visual simulation to determine visual impacts from the proposed field lighting from nearby public vantage points. Image editing software was utilized to transpose the proposed field lighting onto the project site, consistent with the exact locations of each lighting poll and the specific lighting equipment proposed for the project, and lighting conditions were altered to reflect future views at dusk. A viewpoint map of the visual simulations is provided in **Figure 10a**, and before-and-after visual simulations from each of the identified viewpoints are provided in **Figures 10b-10o**.

As shown on **Figures 10b-10o,** the proposed field lighting would be visible during nighttime operations from the identified adjacent viewpoints (see **Figures 10e, 10g, 10i,** and **10k**) and would represent a new source of light during nighttime operations.

The field lighting has been designed to focus light on the athletic fields and minimize light pollution, including ambient light pollution and spillage onto adjacent properties (see **Figures 7a-7c** for information on lighting design and **Appendix G** for a depiction of light spillage during operation of the field lighting). **Figures 10e, 10g, 10i,** and **10k** provide photo simulations to demonstrate potential for the light generated by the field lighting component of the proposed project during nighttime use. Impacts from light and glare as viewed from off-site viewing locations would be minimized through distance from viewing areas and use of IDSA compliant lighting fixtures.

As discussed previously, the proposed field lighting is specifically designed to be focused on the athletic fields and to minimize offsite spillage and glare. The proposed project sought certification from the IDSA. The IDSA is a non-profit group that provides objective, third-party certifications for "products, designs, and completed projects that minimize glare, reduce light trespass, and don't pollute the night sky."[4] To achieve compliance with IDSA standards, lighting design and installed lighting projects must minimize glare, reduce light trespass, and reduce light pollution. To be certified, design and installed lighting must:

[4] https://darksky.org/what-we-do/darksky-approved/

- Restrict the amount of upward-directed light;
- Avoid glare;
- Avoid over-lighting;
- Utilize dimming and other appropriate lighting controls; and
- Minimize short-wavelength (bluish) light in the nighttime environment.

IDSA reviewed the initial plans for the proposed project and provided feedback to improve the design aspects relating to light pollution and spillage. Project plans were revised by the project architect to ensure that the final plans would be IDSA compliant. IDSA issued a letter of design compliance on October 26, 2023 (**Appendix H**). The IDSA letter affirms that the field lighting component of the proposed project would:

- Minimize neighborhood nuisance light by greatly reducing spill light and glare in the local area.
- Manage high angle light, thus dramatically decreasing offsite light trespass and sky glow.
- Mitigate neighborhood light pollution and sky glow, which will benefit the environment, the astronomy community, and others impacted by poorly designed outdoor sports facilities.
- Minimize light output, thereby reducing energy consumption and avoiding over lighting.

IDSA will perform a further field review of the installed field lights following construction to verify installation compliance with IDSA standards (see **MM AES-1**, below).

A simulation showing nighttime use of the field lighting and the resulting light spillage was prepared for the proposed project by MUSCO and is provided in **Appendix G**. **Appendix G** measures the light intensity from the field lighting component of the proposed project in "footcandles".[5] For comparison purposes, typical lighting levels measured horizontally at ground level consist of the following:

- Clear, sunny daylight: 8,000-10,000 footcandles
- Cloudy sky: 1,000-1,500 footcandles
- Street lighting: from 1 to 2 footcandles
- Moonlight: 0.03 footcandles

As shown in **Appendix G**, the light spillage associated with the field lighting component would be at 0.0 footcandles (no light spillage) at the parking lot to the east and the vegetated area north of the proposed project. Spillage from the field lighting component of the proposed project would be limited to the existing campus and vegetated area to the north and would not reach the residential uses north or east of the proposed project. The brightness at these nearby sensitive visual receptors resulting from light spillage from operation of the field lighting would be less than the brightness from moonlight under normal ambient conditions.

[5] A footcandle is a measurement of light intensity. One (1) footcandle represents the amount of light required to saturate a one-foot square with one lumen of light.

For the purposes of this environmental analysis, the proposed project's compliance with IDSA requirements is assumed to represent a less than significant impact under CEQA. To ensure a less than significant impact, the proposed project includes the following mitigation measure:

Impact AES-1: The proposed project could result in new sources of nighttime light as viewed from public vantage points from operation of the field lighting. This impact would be reduced through limited nighttime use as proposed by the High School, as well as the following mitigation.

MM AES-1: Prior to operation of the field lighting component of the proposed project, the District shall initiate Phase 2 of the IDSA Fixture Seal of Approval process. This would consist of retaining IDSA to perform a field visit and inspection of the constructed field lighting to confirm that the lighting was constructed in accordance with the requirements of the IDSA Fixture Seal of Approval issued for the proposed project. The IDSA will verify the proposed project's compliance with IDSA standards by issuing a "DarkSky Approved certificate" for the proposed project. If the installation is not in compliance with IDSA standards, the affected components of the field lighting will be removed and reinstalled based on IDSA recommendations. Operation of the field lighting component of the proposed project shall not occur until a DarkSky Approved certificate is issued for the proposed project.

In addition, the District has identified that operation of the proposed field lighting would be used for a maximum of six (6) home football games and up to 22 evening nighttime baseball and soccer games (not including practices) per year during October to March, with nighttime events scheduled to end at 10:30pm for football games or earlier for all other uses (refer to **Table 2**). The field lighting would be visible from sensitive residential receptors to the east and north (see **Figures 10g** and **10i**); however, no direct spillage would occur on these receptors as described above (see **Figures 11a** and **11b**, as well as **Appendix G**). However, to address potential impacts related to nighttime light and glare, the proposed project includes **MM AES-2** to limit the number of events where the field lighting would be utilized.

Impact AES-2: Use of the field lighting would create a new source of light or glare which would adversely affect nighttime views of the area.

MM AES-2: MPUSD shall implement the following restrictions to limit the use of the field lighting component of the proposed project.

- Use of Field Lighting for Games: While lights may be used for all evening football games, lights shall be used only for up to 22 total games played by each of the other field sports (soccer and baseball) during the months of October to March. This would consist of up to 12 baseball games and up to ten (10) soccer games. Any future additional athletic uses at the athletic fields occurring between October and March would be limited to four (4) events requiring use of the stadium lighting. Field sport games other than football shall end by 8:00 p.m. and lights shall be turned off by 8:30 p.m. Lights shall not be used for any games during the months of April through September.

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A2	80'	0'	15.46'	TLC-BT-575	1	0	1
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-900	7	0	7
1	TOTALS					9	1	8

Marina High School Sports Fields

Marina,CA

GRID SUMMARY	
Name:	**BB Path of Egress**
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

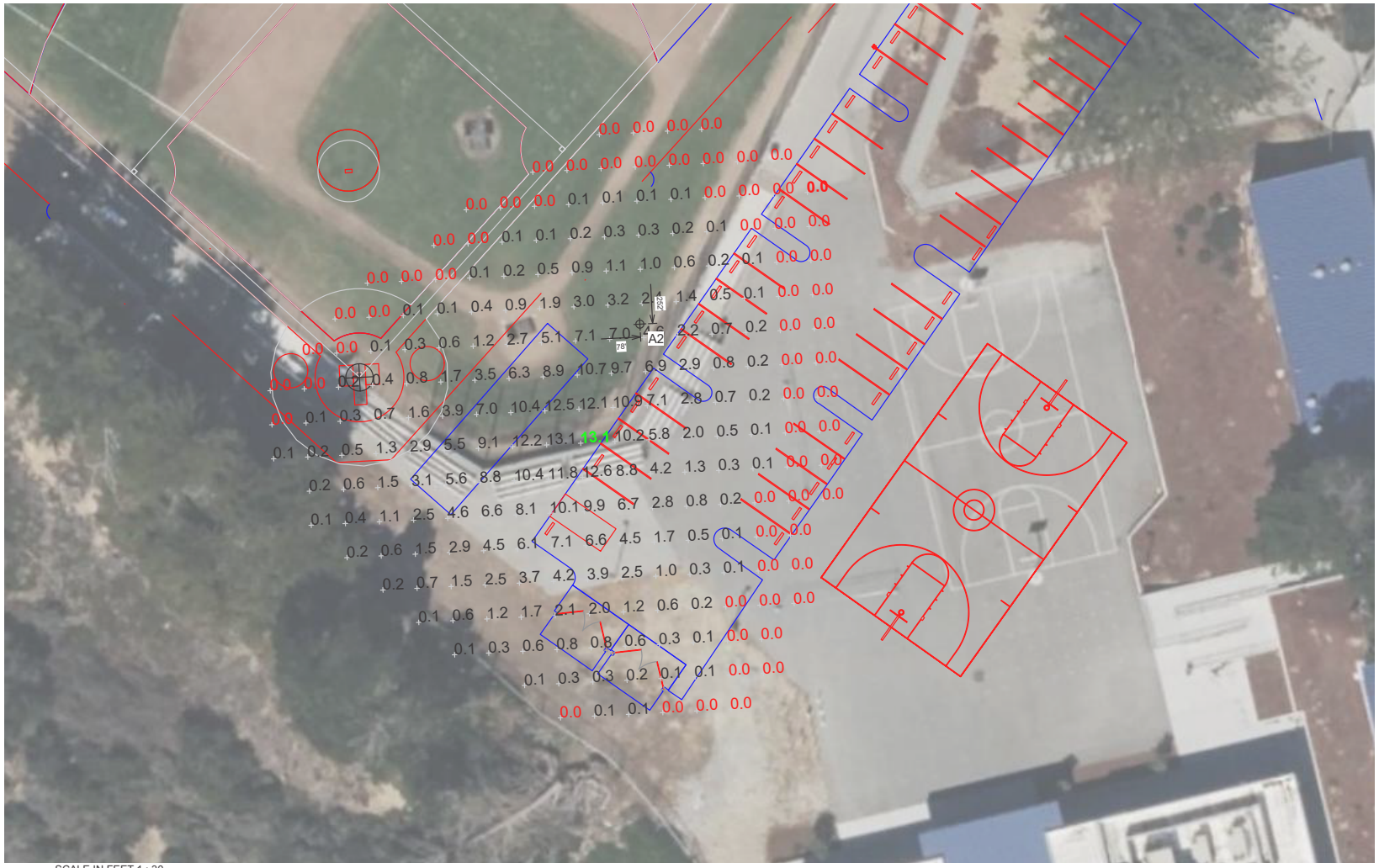
ILLUMINATION SUMMARY	
MAINTAINED HORIZONTAL FOOTCANDLES	
	Entire Grid
Scan Average:	**1.98**
Maximum:	13
Minimum:	0
Avg / Min:	15640.05
Max / Min:	**103316.25**
UG (adjacent pts):	36.20
CU:	1.00
No. of Points:	226
LUMINAIRE INFORMATION	
Applied Circuits:	C
No. of Luminaires:	**1**
Total Load:	0.4 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Source: MUSCO, 2023

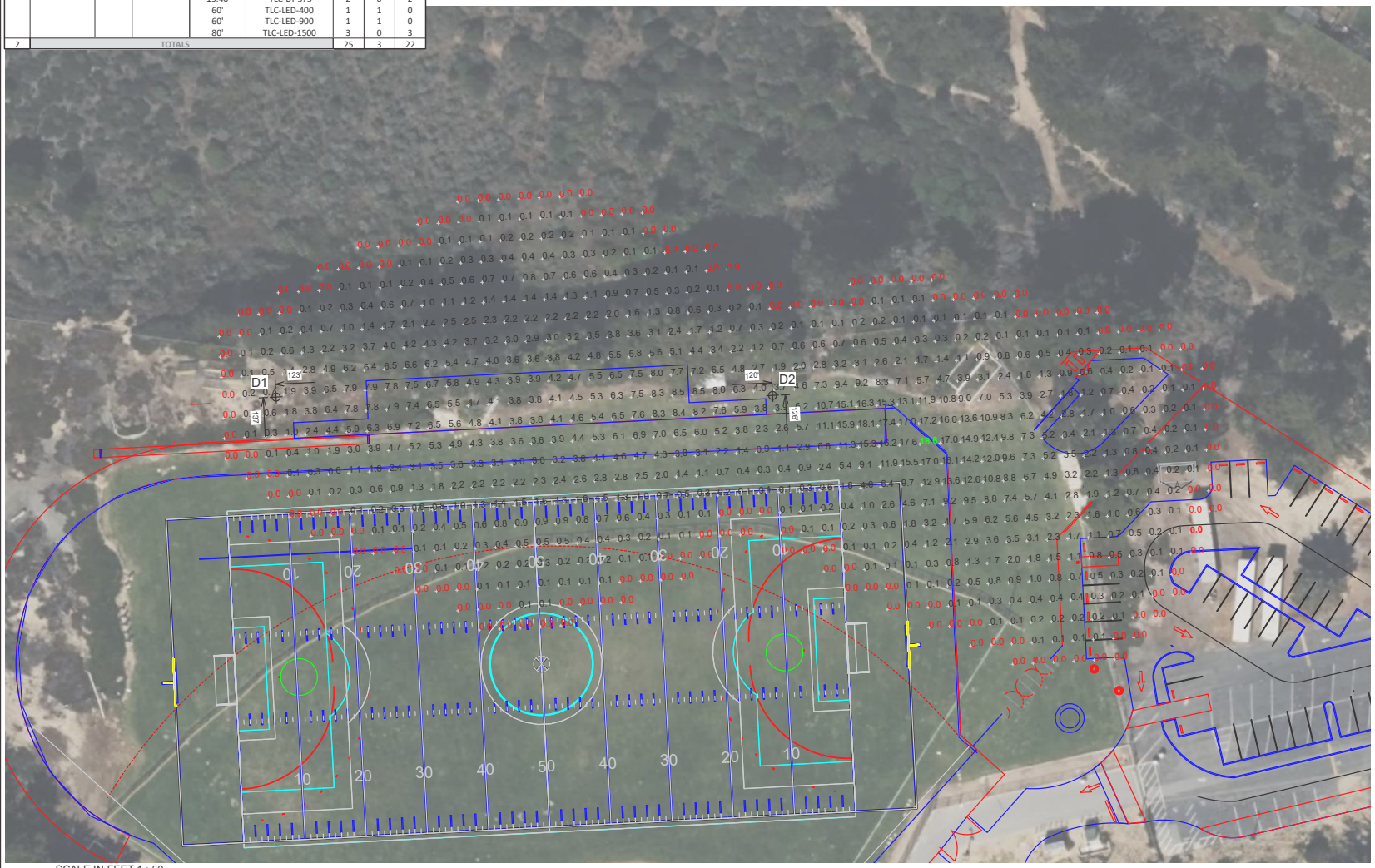
Spillage Map - South

Marina High School Multi-Use Field Project
Initial Study

Figure
11a

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	D1	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-1500	3	0	3
1	D2	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				60'	TLC-LED-900	1	1	0
				80'	TLC-LED-1500	3	0	3
2	TOTALS					25	3	22



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	FB Path of Egress
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	2.31
Maximum:	19
Minimum:	0
Avg / Min:	2036.12
Max / Min:	16372.90
UG (adjacent pts):	73.90
CU:	1.00
No. of Points:	807

LUMINAIRE INFORMATION

Applied Circuits:	D
No. of Luminaires:	3
Total Load:	1.69 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Source: MUSCO, 2023

Spillage Map - North

Marina High School Multi-Use Field Project
Initial Study

Figure
11b

- Use of Field Lighting for Practices: Lights shall be used for field sports practices only during the months of October to March. Field sports practices shall end by 8:00 p.m. and lights shall be turned off by 8:30 p.m. Lights shall not be used for any practices during the months of April through September.
- Weekday use: Any use of the athletic fields by non-school related groups shall end by 6:00 p.m.
- Weekend use: On weekends, use of the athletic fields for school-related activities shall end by 6:00 p.m. or sunset (whichever occurs first) and non-school related activities shall end by 4:00 p.m. Use of the field lighting shall be prohibited on weekends.

MUSCO has designed the field lighting system in compliance with IDSA standards. **Appendix G** demonstrates that the proposed project would not result in light spillage on adjacent residential land uses. Furthermore, compliance with IDSA requirements and issuance of a IDSA certification as required under **Mitigation Measure AES-1** and additional measures restricting use of the field lighting under **MM AES-2** would ensure that the proposed project would have 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. (1, 2, 3, 4, 5)

4.2 Agricultural and Forest Resources

4.2.1 Environmental Setting

In California, agricultural land is given consideration under CEQA. According to Public Resources Code §21060.1, "agricultural land" is identified as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland as defined by the U.S. Department of Agriculture land inventory and monitoring criteria, as modified for California. CEQA also requires consideration of lands that are under Williamson Act contract. The California Department of Conservation, under the Farmland Mapping and Monitoring Program (FMMP), produces maps and statistical data that are used for analyzing impacts on California's agricultural resources. The FMMP produces Important Farmland Maps, which identify five agricultural-related categories plus two non-agricultural listings, each category is summarized below:

- Prime Farmland is land that has the best combination of physical and chemical characteristics for crop production. It has the soil quality, growing season, and moisture needed to produce sustained high yields of crops when appropriately treated and managed.
- Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and chemical characteristics for crop production.
- Unique Farmland is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance which has been used for the production of specific high economic value crops.
- Farmland of Local Importance is either currently producing crops, or has the capacity of production, and does not meet the criteria of the categories above.
- Grazing Land is land which the existing vegetation, grown naturally or through management, is suited for the grazing of livestock.
- Urban Land is land which is currently occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel.
- Other Land is land not included in any mapping category which may be low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than forty acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

4.2.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
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 uses?	☐	☐	☐	☒
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?	☐	☐	☐	☒

4.2.3 Explanation

a) **No Impact.** The entirety of the proposed project site is designated as "Urban or Built Up Land" on the Important Farmlands Map for Monterey County.[6] The proposed project site is not zoned for agricultural use and is not located on or near land mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance under the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (DOC, 2018). For these reasons, the proposed project

[6] https://maps.conservation.ca.gov/DLRP/CIFF/

would not result in the conversion of farmland to non-agricultural use and no impact would occur. (1, 2, 8)

b) **No Impact.** There are no known Williamson Act contracts in the proposed project area or within the project vicinity. Thus, the proposed project would not lead to conflicts with Williamson Act contracts and would result in no impact. (1, 2)

c-d) **No Impact.** The project site does not contain any forest land as defined in Public Resources Code § 12220(g), timberland as defined by Public Resources Code § 4526, or property zoned for Timberland Production as defined by Government Code § 51104(g). As a result, there would be no impact related to the loss of forest resources, the rezoning of forest land or timberland, or the conversion of forest land to non-forest use. (1, 2)

e) **No Impact.** As discussed above, the proposed project area does not include any parcels designated as Farmland. The proposed project involves reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. As a result, the proposed project would have no impact related to other changes in the existing environment which could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use. (1, 2, 8)

4.3 Air Quality

4.3.1 Environmental Setting

The federal Clean Air Act and the California Clean Air Act mandate the control and reduction of certain air pollutants. Under these Acts, the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for specific "criteria" pollutants. These pollutants are carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen oxides (NO_X), particulate matter less than 10 microns in diameter (PM_{10}), lead, and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

The project site is located within the North Central Coast Air Basin (NCCAB), which is comprised of Santa Cruz, San Benito, and Monterey Counties, and is regulated by the Monterey Bay Air Resources District (MBARD), which was formally known as the Monterey Bay Unified Air Pollution Control District.

The U.S. EPA administers the National Ambient Air Quality Standards (NAAQS) under the Federal Clean Air Act. The U.S. EPA sets the NAAQS and determines if areas meet those standards. Violations of ambient air quality standards are based on air pollutant monitoring data and evaluated for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard. The NCCAB is in attainment for all NAAQS and for all California Ambient Air Quality Standards (CAAQS) except O_3 and PM_{10}. The primary sources of O_3 and PM_{10} in the NCCAB are from automobile engine combustion. To address exceedance of these CAAQS, MBARD has developed and implemented several plans including the 2005 Particulate Matter Plan, the 2007 Federal Maintenance Plan, and the 2012-2015 Air Quality Management Plan (AQMP), a revision to the 2012 Triennial Plan. NCCAB Attainment Status to National and California Ambient Air Quality can be found in **Table 3** below.

Table 3
North Central Coast Air Basin Attainment Status

Pollutant	State Designation[1]	National Designation[2]
Ozone (O_3)	**Nonattainment - Transitional**	Attainment/Unclassified[3]
Inhalable Particulates (PM_{10})	**Nonattainment**	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment/Unclassified[4]
Carbon Monoxide (CO)	Unclassified	Attainment/Unclassified
Nitrogen Dioxide (NO_2)	Attainment	Attainment/Unclassified[5]
Sulfur Dioxide (SO_2)	Attainment	Attainment[6]
Lead	Attainment	Attainment/Unclassified[7]

Notes:
Non attainment designations shown in **Bold.**
1) The State Designations apply to the entire NCCAB and are based on air quality data from 2017. Source: Monterey Bay Air Resources District Air Quality Management Plan 2012-2015; https://www.mbard.org/files/6632732f5/2012-2015-AQMP_FINAL.pdf
2) The National Designations apply to Monterey County only and are based on air quality data from as recent as January 31, 2021. Source: California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants; https://www3.epa.gov/airquality/greenbook/anayo_ca.html
3) On March 12, 2008, EPA adopted a new 8-hour ozone standard of 0.075 ppm. In April 2012, EPA designated the NCCAB attainment/unclassified based on 2009-2011 data.
4) This includes the 2006 24-hour standard of 35 µg/m^3 and the 2012 annual standard of 12 µg/m^3.
5) In 2012, EPA designated the entire state as attainment/unclassified for the 2010 NO_2 standard.
6) In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 primary SO_2 standard. Final designations to be addressed in future EPA actions.
7) On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m^3 to 0.15 µg/m^3. Final designations were made by EPA in November 2011.

Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally established criteria is considered a significant impact for purposes of CEQA, whether or not such emissions have been accounted for in regional air planning. Any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants.

Sensitive receptors are more susceptible to the effects of air pollution than the general population. Land uses that are considered sensitive receptors include residences, schools, and health care facilities. Off-site sensitive receptors in the vicinity of the project site consist of existing residential units to the north and northeast.[7]

4.3.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
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 substantial emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

4.3.3 Explanation

a) **Less than Significant Impact.** CEQA Guidelines §15125(b) requires an evaluation of project consistency with applicable regional plans, including the AQMP. As stated above, MBARD has developed and implemented several plans to address exceedance of State air quality standards, including the 2012-2015 AQMP. MBARD is required to update their AQMP once every three years; the most recent update was the 2012-2015 AQMP (MBARD, 2017) which was approved in March of 2017. This plan addresses attainment of the State ozone standard and federal air quality standard. The AQMP accommodates growth by projecting growth in emissions based on population forecasts prepared by the Association of Monterey Bay Area Governments (AMBAG)

[7] Residential units are also located to the south of the existing campus. However, these units are unoccupied.

and other indicators. The proposed project would not result in any increase in employment, nor would the proposed project result in increased population growth. The proposed project would be consistent with the MBARD 2012-2015 AQMP. For these reasons, implementation of the proposed project is not anticipated to result in a substantial increase in either direct or indirect emissions that would conflict with or obstruct implementation of the AQMP. This impact is considered less-than-significant. (1, 2, 9, 10)

b) **Less than Significant Impact.** The MBARD 2016 CEQA Air Quality Guidelines ("Guidelines") contains thresholds of significance for evaluating potential air quality effects of projects subject to the requirements of CEQA. According to MBARD, a project will not have a significant air quality effect on the environment, if the following criteria are met:

Construction of the project will:

- Emit (from all sources, including exhaust and fugitive dust) less than;
  - 137 pounds per day of oxides of nitrogen (NO_x);
  - 137 pounds per day of reactive organic gases (ROG);
  - 82 pounds per day of respirable particulate matter (PM_{10});
  - 55 pounds per day of fine particulate matter ($PM_{2.5}$); and,
  - 550 pounds per day carbon monoxide (CO).

Operation of the project will:

- Emit (from all project sources, mobile, area, and stationary) less than;
  - 137 pounds per day of oxides of nitrogen (NO_x)
  - 137 pounds per day of reactive organic gases (ROG)
  - 82 pounds per day of PM_{10}
  - 55 pounds per day of $PM_{2.5}$
  - 550 pounds per day carbon monoxide (CO)
- Not cause or contribute to a violation of any California or National Ambient Air Quality Standard;
- Not result in a cumulatively considerable net increase of any criteria pollutant for with the project region is non-attainment;
- Not exceed the health risk public notification thresholds adopted by the MBARD;
- Not create objectionable odors affecting a substantial number of people; and,
- Be consistent with the adopted federal and state Air Quality Plans (MBARD, 2016).

Construction

The MBARD Guidelines for evaluating impacts during construction state that if a project generates less than 82 lb./day of PM_{10} emissions, the project is considered to have less than significant impacts (MBARD, 2016). The Guidelines also state that a project will result in less than significant impacts if daily ground-disturbing activities entail less than 8.1 acres of minimal earthmoving, or less than 2.2 acres of grading and excavation per day. Construction projects below these acreage thresholds would be below the applicable MBARD 82 lb./day threshold of significance and would constitute a less than significant effect for the purposes of CEQA (MBARD, 2016). The proposed project would require 7,625 CY of fill, and grading of 6.5 acres. The proposed project would not generate more than 2.2 acres of grading and excavation per day or 8.1 acres of minimal earthmoving per day, as the 6.5-acres to be graded over ten working days would result in an

average of 0.65-acres graded per day. As a result, the proposed project would result in a less than significant construction-related air quality effect.

Construction of the proposed project would result in temporary increases in emissions of inhalable particulates ($PM_{2.5}$ and PM_{10}), VOC, CO, and NO_x associated with construction-related activities. **Table 4. Construction Air Quality Emissions** below, provides detailed information on these construction emissions (see also **Appendix A**). Construction-related fugitive dust emissions associated with the proposed project would be generated from site grading and construction. In addition to construction-related fugitive dust, exhaust emissions associated with construction vehicles and equipment would also be generated. The proposed project includes the following standard best management practices to reduce construction air quality emissions:

- Limiting vehicle speeds on unpaved roads and services to five (5) mph.
- Daily sweeping of paved surfaces.
- Use of high efficiency lighting.
- Daily watering of unpaved surfaces.

Table 4. Construction Air Quality Emissions

	Emissions in Pounds/Day				
	NO_x	$PM_{2.5}$	PM_{10}	ROG	CO
Significance Threshold (MBARD)	137*	55	82	137*	550
Emissions generated by the Project	36	7.74	52.9	3.73	33.7
Exceed Threshold?	No	No	No	No	No

Emissions Source: **Appendix A**
Significance Threshold Source: MBARD, 2016
* Applies to non-typical construction equipment (i.e., well drilling) MBARD has identified that construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone (i.e., VOC or NO_x), are accommodated in the emission inventories of State- and federally-required air plans. Temporary emissions associated with the operation of construction equipment have been accommodated in State- and federally-required air plans.

As described above in **Table 4**, the proposed project would not exceed MBARD's daily thresholds for criteria pollutant emissions during construction. The proposed project would result in a less than significant impact related to construction air quality emissions.

Operation

Operation of the proposed project would result in air quality emissions associated with use of the field lighting, maintenance, and vehicle trips to and from the proposed project during athletic events. All components of the proposed project have been designed in accordance with applicable regulatory requirements limiting air quality emissions. As shown below in **Table 5**, all operational emissions of the proposed project would be below applicable MBARD thresholds of significance.

Table 5. Operational Air Quality Emissions

	Emissions in Pounds/Day				
	NO_x	$PM_{2.5}$	PM_{10}	ROG	CO
Significance Threshold (MBARD)	137	55	82	137	550
Emissions generated by the Project	7.39	6.75	53.3	10.7	53.1
Exceed Threshold?	No	No	No	No	No

Emissions Source: **Appendix A**
Significance Threshold Source: MBARD, 2016

As described above in **Table 5**, the proposed project would not exceed MBARD's daily thresholds for criteria pollutant emissions during construction. The proposed project would result in a less than significant impact related to construction air quality emissions. (1, 2, 9, 10, 11)

c) **Less than Significant Impact**. A "sensitive receptor" is generally defined as any residence including private homes, condominiums, apartments, or living quarters; education resources such as preschools and kindergarten through grade twelve ("k-12") schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. The proposed project is located in the existing Marina High School campus and surrounded by residential uses. Therefore, impacts to sensitive receptors could occur, but would be minimized with implementation of the following standard construction best management practices ("BMPs"):

- Water all active construction areas as required with non-potable sources to the extent feasible; frequency should be based on the type of operation, soil, and wind exposure and minimized to prevent wasteful use of water and non-stormwater runoff.
- Prohibit grading activities during periods of high wind (over 15 mph).
- Hand sweep daily within paved areas.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
- Enclose, cover, or water daily exposed stockpiles (dirt, sand, aggregate, etc.).
- Replant vegetation in disturbed areas as quickly as possible.
- Provide stabilized construction entrances/exits to limit sediment tracking from the site.

In addition, as identified above, the proposed project would not exceed applicable MBARD thresholds of significance during construction. Therefore, with implementation of the above BMPs, construction of the proposed project would result in a less than significant impact related to exposure of sensitive receptors to substantial pollutant concentrations. Operation of the proposed project would not likely result in increased air quality impacts beyond existing levels. (1, 2, 9, 10, 11)

d) **Less than Significant Impact**. Construction of the proposed project could generate temporary odors from construction equipment (e.g., diesel exhaust) which could be noticeable at times to residences, students, and faculty in the proposed project's vicinity. These odors would cease upon completion of construction. Traffic to and from home games would result in increased temporary odors from vehicles compared to existing conditions. These odors would be infrequent and would cease following the end of the scheduled game and the exit of attendees. The proposed project is a reconfiguration of an existing athletic fields and would not include any new uses that would introduce sources of odor or other types of emissions adversely impacting a significant number of people. This represents a less than significant impact. (1, 2, 3, 9, 10)

4.4 Biological Resources

4.4.1 Environmental Setting

DD&A biologists Patric Krabacher, Liz Camilo, Kimiya Ghadiri, and Rikki Lougee conducted biological surveys of the project site on November 10 and November 23, 2022, and April 14, June 20, and July 19, 2023. Biological surveys consisted of a reconnaissance-level survey of the project site to characterize habitats present within the site, including any potentially sensitive habitats, and to identify any special-status plant or wildlife species or suitable habitat for these species within the site, and focused botanical surveys to identify presence or absence of special-status plant species within the site. Survey methods included walking the entire project site to identify these resources. The results of this survey are summarized in **Appendix B** of this Initial Study. DD&A biologists also conducted a tree inventory of the project site on October 14, 2022. The results of this tree inventory are summarized in **Appendix C** of this Initial Study. In addition, DD&A had previously conducted focused surveys for Monterey gilia within a portion of the proposed project site in 2021. Data collected during these surveys were used to assess the environmental conditions of the project site and its surroundings, evaluate environmental constraints in the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts.

However, as described in **Appendix B**, much of the proposed project site contains two (2) natural communities, ruderal/disturbed and planted Monterey pine forest. No sensitive habitats occur within or directly adjacent to the site. Four special-status plant species, sandmat manzanita, Monterey ceanothus, Monterey spineflower, and Monterey gilia are known to occur within the project site. In addition, several special-status wildlife species, including Townsend's big-eared bat, Monterey dusky-footed woodrat (MDFW), Northern California legless lizard, coast horned lizard, and raptors and other nesting birds also have the potential to occur within the site. Finally, trees which are protected by the City are present within and adjacent to the project site.

4.4.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES. Would the project:				
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 Game 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, or regulations or by	☐	☐	☐	☒

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
the California Department of Fish and Game or U.S. Fish and Wildlife Service?				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (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 native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native 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 Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

4.4.3 Explanation

a) **Less than Significant with Mitigation Incorporated.** As described in **Appendix B**, three non-Habitat Management Plan (HMP) special-status wildlife species (Townsend's big-eared bat, MDFW, and coast horned lizard) and one HMP wildlife species (Northern California legless lizard) have the potential to occur within and directly adjacent to the project site. In addition, raptors and other nesting birds have the potential to nest within any of the large trees present within and directly adjacent to the project site. If present within or directly adjacent to the site, construction activities could result in injury, nest abandonment, or mortality of individuals. This represents a potentially significant impact. However, with implementation of **Mitigation Measures BIO-1 through BIO-6**, impacts to Townsend's big-eared bat, MDFW, coast horned lizard, and raptors and other nesting birds would be reduced to a less than significant level.

As described in **Appendix B**, impacts within development parcels to special-status species addressed in the HMP are considered less than significant if the recipients of former Fort Ord land are in compliance with the Fort Ord HMP and 2017 Programmatic BO. The 2017 Programmatic BO and HMP require the identification of sensitive botanical resources within the development parcels that may be salvaged for use in restoration activities in reserve areas (Service, 2017 and ACOE, 1997). In addition, pursuant to HMP and deed covenants, the local land use jurisdictions that receive disposed land with restrictions or management guidelines identified in the HMP, including the City of Marina, are required to prepare their respective resource management plans

(RMPs) within six (6) months of land transfer and acquisition. However, in 1997, instead of preparing RMPs, the local jurisdictions jointly initiated a base-wide incidental take permit application process with the Service that included the preparation of a habitat conservation plan, which effectively incorporated the requirements of the HMP. Thus, in coordination with the Service, over a period of over 20 years, the local jurisdictions prepared a Draft Fort Ord Habitat Conservation Plan (HCP). In June 2020, the local jurisdictions decided not to approve the Fort Ord HCP and not to collectively pursue base-wide incidental take permits. As a result, the Service has requested that the local jurisdictions initiate the steps necessary to comply with the HMP now that the Fort Ord HCP and base-wide incidental take permits are no longer proposed. The City of Marina is currently preparing their RMP and anticipate approval by the Service and CDFW in Spring of 2024, which would comply with the requirements of the HMP. Therefore, if the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND and MMRP (i.e., the City has an approved RMP), impacts to Northern California legless lizard within the project site would be less than significant because the impacts to this species were addressed and mitigated through implementation of the HMP. However, if the City of Marina is not in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND and MMRP, impacts to Northern California legless lizard would be potentially significant. The implementation of **Mitigation Measures BIO-1 through BIO-3** would reduce impacts to Northern California legless lizard to a less-than-significant level.

Impact BIO-1: The proposed project could 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 CDFW or the Service.

MM BIO-1: The following best management practices will be implemented during construction (i.e., pre-, during, and post-construction) to reduce impacts to special-status species:

- A qualified biologist will conduct an Employee Education Program for the construction crew prior to any construction activities. The qualified biologist will meet with the construction crew at the onset of construction at the project site to educate the construction crew on the following: 1) the appropriate access route(s) in and out of the construction area and review project boundaries; 2) how a biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species and sensitive habitats that are known or may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the Service and CDFW; and 6) the proper procedures if a special-status species is encountered within the project site.

- Trees and vegetation not planned for removal or trimming will be protected prior to and during construction to the maximum possible with exclusionary fencing, such as Environmentally Sensitive Area (ESA) fencing for herbaceous and shrubby vegetation or protective wood barriers for trees. Only certified weed-free straw will be used to avoid the introduction of non-native, invasive species. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact.
- Following construction, disturbed areas will be restored to pre-project contours to the maximum extent possible and will be revegetated using locally occurring native species and native erosion control seed mix, per the recommendations of a qualified biologist.
- Grading, excavating, and other activities that involve substantial soil disturbance will be planned and implemented in consultation with a qualified hydrologist, engineer, or erosion control specialist, and will utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation (pre-, during, and post-construction).
- No firearms will be allowed on the project site at any time.
- All food-related and other trash will be disposed of in closed containers and removed from the project site at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel will not feed or otherwise attract wildlife to the area.

MM BIO-2 MPUSD will retain a qualified biologist to monitor all ground disturbing construction activities (i.e., vegetation removal, grading, excavation, or similar activities) to protect any special-status species encountered. Any handling and relocation protocols of special-status wildlife species will be conducted by a qualified biologist with an appropriate scientific collection permit. After ground disturbing project activities are complete, the qualified biologist will train an individual from the construction crew to act as the on-site construction biological monitor. The construction biological monitor will be the contact for any special-status wildlife species encounters, will conduct daily inspections of equipment and materials stored on site and any holes or trenches prior to the commencement of work, and will ensure that all installed fencing stays in place throughout the construction period. The qualified biologist will then conduct regular scheduled and unscheduled visits to ensure the construction biological monitor is satisfactorily implementing all appropriate mitigation protocols. The qualified biologist and the construction monitor shall complete a daily log summarizing activities and environmental compliance throughout the duration of the project. The log will also include any special-status wildlife species observed and relocated.

MM BIO-3 The following measures will be implemented to reduce the introduction and spread of non-native, invasive species:

- Any landscaping or replanting required for the project will not use species listed as noxious by the California Department of Food and Agriculture (CDFA) or invasive by the California Invasive Plant Council (Cal-IPC).
- Bare and disturbed soil will be landscaped with CDFA recommended seed mix or plantings from locally adopted species to preclude the invasion of noxious weeds in the project site.
- Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds, before mobilizing to arrive at the construction site and before leaving the construction site.
- All non-native, invasive plant species will be removed from disturbed areas prior to replanting.

MM BIO-4 To avoid and reduce impacts to Townsend's big-eared bat, any tree limbing or removal operations should occur between September 15 and November 1. If tree limbing or removal operations must occur outside the period of September 15 through November 1, MPUSD will retain a qualified biologist to conduct a survey for roosting bats, as follows:

- For any trees, snags, or buildings that could provide roosting space for cavity- or foliage-roosting bats, potential bat roost features shall be thoroughly evaluated to determine if bats are present. Visual inspection and/or acoustic surveys shall be utilized as initial techniques.
- If roosting bats are found, the biologist shall develop and implement acceptable passive exclusion methods in coordination with or based on CDFW recommendations. If feasible, exclusion shall take place during the appropriate windows (September 15 and November 1) to avoid harming bat maternity roosts and/or winter hibernacula. Authorization from CDFW is required to evict winter hibernacula for bats.
- If established maternity colonies are found, the biologist will coordinate with CDFW to establish a buffer around the colony that protects pre-volant young from construction disturbances until the young can fly or to implement other measures acceptable to CDFW.
- If a tree is determined not to be an active roost site for roosting bats, it may be immediately limbed or removed. If foliage- roosting bats are determined to be present, limbs shall be lowered, inspected for bats by a qualified biologist, and chipped immediately or moved to a dump site. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections shall be dropped on downed limbs or limb piles that have not been in place since the previous day.

MM BIO-5 Not more than thirty (30) days prior to the start of construction, a qualified biologist shall conduct a survey of suitable habitat within the project site to locate existing MDFW nests. Any MDFW nests identified within the project site shall be mapped and flagged for avoidance. Graphics depicting all MDFW nests shall be provided to the construction contractor. Any MDFW nests that cannot be avoided shall be relocated according to the following procedures:

- Each active nest shall be disturbed by the qualified biologist to the degree that the woodrats leave the nest and seek refuge elsewhere.
- Nests shall be dismantled during the non-breeding season (between October 1 and December 31), if possible.
- If a litter of young is found or suspected, nest material shall be replaced and the nest left alone for 2-3 weeks; after this time, the nest will be rechecked to verify that young are capable of independent survival before proceeding with nest dismantling.

MM BIO-6 Construction activities that may directly (e.g., vegetation removal) or indirectly (e.g., noise/ground disturbance) affect protected nesting avian species will be timed to avoid the breeding and nesting season. Specifically, vegetation and/or tree removal can be scheduled after September 15 and before February 1. Alternatively, a qualified biologist will be retained by the project applicant to conduct pre-construction surveys for nesting raptors and other protected avian species within 500 feet of proposed construction activities if construction occurs between February 1 and September 15. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through September). Because some bird species nest early in spring and others nest later in summer, and because some species breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify MPUSD and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place (generally 500 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

Operation of the field lights component of the proposed project would result in new light source in the area. Research indicates that urban nighttime lighting can adversely affect birds. There is evidence to show that in some cases, lighting can impact bird species by drawing them toward development, where they may collide with structures; however, these studies largely relate to sources of light that are substantially prominent and intense in comparison to their surroundings,

such as offshore oil platforms (Huppop et al., 2016) and the light beams that are part of the September 11 memorial in New York City (Furuya, 2017). The latter study found that the light installation "strongly concentrates and disorients migrants flying over a heavily urbanized area" (Furuya, 2017). Even if birds do not collide with structures, there is a concern that once a bird is within a light beam, they are reluctant to return to darker areas and will fly until exhaustion (Ogden, 1996). The lighting component of the proposed project would be directly focused on the field and would be designed to minimize light spillover (see *Section 4.1 Aesthetics* for additional information). Field lighting would be limited to the months of August through March, outside of the peak bird nesting season (approximately May through July), and would generally not be used past 8pm with the exception of up to six (6) football games per year, where lights would be used for events scheduled to end by 10:30 pm (refer to **Section 1.3 Project Description**). In addition, the project site lies directly adjacent to existing residential and commercial uses, which are also sources of diffuse light. As a result, the project does not mimic the conditions in studies of avian deaths associated with light sources.

Foraging bats have the potential to occur within the project site. Nighttime lighting can adversely affect bats while foraging at night. For example, insects may be attracted to certain kinds of light, which would then attract bats and expose them to predators. Some bat species avoid LED lights, so they are unable to cross or feed at sites with artificial lighting. Nighttime lighting studies generally focus on overall urban lighting (e.g., Rowse et al., 2015), although at least one study has focused on sport stadiums and concluded that light pollution at stadiums may homogenize urban bat diversity by favoring select urban exploiter species (Schoeman, 2015) However, similar to lighting impacts to birds described above, lighting at the site would be directly focused on the field and would be designed to minimize light spillover into adjacent habitat, and the number of nighttime activities would be limited in quantity and duration (refer to **Section 1.3 Project Description**). As a result, the project has been sufficiently designed such that nighttime lighting would not result in significant impact to foraging bats or on bat diversity. Therefore, operational impacts to wildlife would be less than significant and no mitigation is required.

Three HMP plant species, sandmat manzanita, Monterey ceanothus, and Monterey spineflower, are known to occur within the project site; eight (8) individuals plus approximately 1,336 square feet of sandmat manzanita, two (2) individuals plus approximately 130 square feet of Monterey ceanothus, and one Monterey spineflower individual were observed within the project site during focused botanical surveys in 2022 and 2023. In addition, a population of 137 Monterey gilia plants was observed directly abutting the project site. These species are also known to occur directly adjacent to the project site in suitable habitat. Where present within or directly adjacent to the site, construction activities could result in adverse impacts to these species, including loss of individuals, soil compaction, dust, loss of habitat, erosion, and introduction and spread of non-native, invasive species. The project could also result in impacts to special-status plant populations outside of the project site if construction activities occur outside of the proposed work limits. Impacts to Monterey gilia would be considered take of a state listed species. This is a potentially significant impact.

As described above and in the Approach to Analysis within **Appendix B**, impacts within development parcels to special-status species addressed in the HMP are considered less than significant if the former Fort Ord land recipients are compliance with the HMP and 2017 Programmatic BO. Therefore, if the City of Marina is in compliance with the HMP and 2017

Programmatic BO at the time of project approval and adoption of the IS/MND and MMRP, impacts to sandmat manzanita, Monterey ceanothus, Monterey spineflower, and Monterey gilia would be less than significant. However, the take of Monterey gilia would still be prohibited under the California Endangered Species Act ("CESA") without authorization from the CDFW and, therefore, impacts to this species would require an incidental take permit. The project has been designed to avoid impacts to Monterey gilia. Implementation of **Mitigation Measures BIO-1** through **BIO-3** and **BIO-7** and **BIO-8** would further avoid all potential project impacts to Monterey gilia and preclude the need for an ITP.

If the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND and MMRP, while not required to reduce a significant impact, **Mitigation Measures BIO-1** through **BIO-3** and **BIO-9** and **BIO-10** would be implemented to further reduce less-than-significant impacts to other special-status HMP plant species within the project site. **Mitigation Measure BIO-10** acknowledges that MPUSD will determine whether salvage of special-status HMP plant populations which would be impacted by the project is feasible and if so, seed and topsoil salvage would occur to support reseeding and restoration efforts on- or off-site. However, if the City of Marina is not in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND and MMRP, implementation of **Mitigation Measures BIO-1** through **BIO-3** and **BIO-9** would reduce impacts to a less-than-significant level by requiring education; protective measures during construction; monitoring; invasive species control; avoidance; and, if avoidance if all individuals is not possible, replacement of any individuals impacted following construction.

Impact BIO-2: The proposed project is located within the boundaries of the HMP and could have a substantial adverse effect on special-status HMP plant species with the potential to occur within the project site.

MM BIO-7: To avoid all impacts to the Monterey gilia population abutting the project site, the population shall be enclosed with temporary ESA fencing prior to vegetation removal and ground-disturbing activities. Fencing shall be installed under the supervision of a qualified biologist. A qualified biologist shall be onsite throughout all initial vegetation removal and ground-disturbing activities to ensure the Monterey gilia population is avoided. Following initial vegetation removal and ground-disturbing activities, a qualified biologist shall train a member of the construction crew to act as the daily on-site monitor, and the qualified biologist shall monitor protective fencing at least once per week throughout the duration of construction to ensure that fencing remains intact and the Monterey gilia population remains undisturbed. Any damaged fencing shall be repaired immediately. The qualified biologist shall keep daily logs and shall prepare monthly reports documenting the status of protective fencing and the Monterey gilia population.

MM BIO-8: To prevent impacts to special-status plant populations outside of the project site, temporary ESA fencing shall be installed along the entire perimeter of the project site where it abuts natural (i.e., not developed or landscaped) habitat prior to construction. Construction activities, including access or staging, shall be prohibited beyond the fenceline. A qualified biologist shall monitor the installation of protective fencing and shall monitor fencing at least once per week

throughout the duration of construction to ensure that fencing remains intact, and that adjacent habitat remains undisturbed. Any damaged fencing shall be repaired immediately. The qualified biologist shall prepare monthly reports documenting the status of protective fencing.

MM BIO-9 Sandmat manzanita, Monterey ceanothus, and Monterey spineflower shall be avoided to the greatest extent feasible. Individuals or populations within or adjacent to the project site which are not scheduled for removal shall be protected prior to and during construction to the maximum possible through the use of exclusionary fencing or flagging. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact. If avoidance is not feasible, the impacted area for each species shall be quantified during final design and each species shall be replaced at a 1:1 success ratio for the acreage or individuals impacted (depending on species impacted), and a Restoration Plan shall be prepared by a qualified biologist and implemented. The plan shall include, but is not limited to:

- A description of the baseline conditions of the habitats within the work site, including the presence of any special-status species, their locations, and densities;
- Procedures to control and/or eliminate non-native invasive species within the work site;
- A detailed description of on-site and/or off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications, which may include but is not limited to, an increased planting ratio to ensure the 1:1 success ratio; and
- A monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

MM BIO-10: Salvage efforts for HMP species that do not require take authorization from the Service or CDFW (i.e., sandmat manzanita, Monterey ceanothus, and Monterey spineflower) shall be evaluated by a qualified biologist in coordination with MPUSD to further reduce impacts per the requirements of the HMP and BO. Where salvage is determined feasible and proposed, seed collection should occur from plants within the project site and/or topsoil should be salvaged within occupied areas to be disturbed. Seeds shall be collected during the appropriate time of year for each species by qualified biologists. The collected seeds and topsoil shall be used to revegetate temporarily disturbed construction areas and reseeding and restoration efforts on- or off-site, as determined appropriate by the qualified biologist and MPUSD.

Implementation of the mitigation measures identified above would reduce these impacts to less than significant. (1, 2, 3 ,6, 12)

b) **No Impact.** The proposed project site does not contain any riparian habitats or any other sensitive habitat types (**Appendix B**). As a result, the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations. (1, 2, 6)

c) **No Impact**. The proposed project site does not contain any state or federally protected wetlands or other waters (**Appendix B**). As a result, the proposed project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act. (1, 2, 6)

d) **Less than Significant Impact**. As described in **Appendix B**, wildlife movement corridors are pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or man-made factors, such as urbanization. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species, and therefore, adversely affect both genetic and species diversity. Corridors often partially or largely mitigate the adverse effects of fragmentation by 1) allowing animals to move between remaining habitats to replenish depleted populations and increase the gene pool available; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (e.g., fire and disease) will result in population or species extinction; and 3) serving as travel paths for individual animals moving throughout their home range in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

The 2010 Monterey County General Plan EIR identified a number of significant wildlife movement corridors and linkages within the vicinity of the former Fort Ord, including Linkage 308: Fort Ord – Ventana; Linkage 322: Highway 68 Western Crossing; Linkage 350: Sierra de Salinas – Toro Peak; Linkage 339: Salinas Valley Floor; and Linkage 378: Salinas River – Pinnacles National Monument (County, 2010). The HMP considered conservation area connectivity as an essential component of the design of the conservation areas and corridors within the former Fort Ord. The HMP created conservation areas and corridors with the purpose of linking the plant and animal populations in the northern portion of the former base at the Marina Municipal Airport to the populations in the south at the Fort Ord National Monument and the El Toro Creek undercrossing of Highway 68. The implementation of the HMP preserves over 18,500 acres of a variety of habitats supporting a variety of common and special-status plant species and maintains a north-south wildlife corridor across the former Fort Ord lands to connect with the primary, significant wildlife linkages. The General Plan for the City of Marina does not specify important wildlife corridors.

The project site is not located within any of the significant wildlife movement corridors or linkages identified above. As discussed in **Appendix B**, most of the project site is comprised of ruderal and/or developed areas. In addition, the project site lies adjacent to existing roads and residential uses, which in general isolates the project site from other undeveloped areas. As such, the project site provides little use as a corridor for wildlife movement. Therefore, the proposed project would not disconnect, fragment, or otherwise impeded wildlife movement in the area. This impact is less than significant, and no mitigation is required. (1, 2, 3, 6, 12, 13)

e) **Less than Significant Impact**. DD&A identified 78 trees within and directly adjacent to the project site (DD&A, 2022). Construction of the proposed project could result in permanent impacts to

trees within the project site. The proposed project includes the removal of 13 trees and planting of 74 replacement trees. As discussed in **Appendix C**, the City of Marina requires a tree removal permit to remove, relocate, or damage a living tree within its limits. MPUSD will comply with Marina Code and obtain a tree removal permit prior to construction. Therefore, all tree removal would occur according to applicable City tree policies and ordinance and no mitigation is required. This represents a less than significant impact. (1, 2, 3, 7)

f) **Less than Significant with Mitigation**. The project site is not located within an approved Habitat Conservation Plan (HCP) or Natural Community Conservation Planning (NCCP) area. However, the site is located within the former Fort Ord and the plan area of the HMP. As described in the "Approach to Analysis", the proposed land use is consistent with the approved HMP as it is located within parcels designated for "development". The project will comply with the requirements of the HMP, as applicable. Therefore, this impact is less than significant. Additionally, while not required to reduce a significant impact, implementation of **Mitigation Measure BIO-10** (which acknowledges that MPUSD will determine whether salvage of special-status HMP plants is feasible and if so, seed and topsoil salvage would occur to support reseeding and restoration efforts on- or off-site) will further ensure compliance with the HMP. (1, 2, 12)

4.5 Cultural Resources

4.5.1 Environmental Setting

The project site is located on a portion of the existing Marina High School campus. The potential for cultural resources on the project site was previously analyzed in the *Monterey Peninsula Unified School District, Draft Environmental Impact Report for the Marina Middle School, High School & Joint Use Community Recreation Facilities*; no archaeological resources are known to exist on the site.[8] Native American consultation was also conducted in accordance with Assembly Bill 52, as discussed in **Section 4.18 Tribal Cultural Resources**.

4.5.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

4.5.3 Explanation

a) **No Impact**. CEQA Guidelines §15064.5 describes a historical resources as: 1) any resource that is listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources; 2) a resource included in a local register of historical resources; and, 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant based on substantial evidence in light of the whole record. A substantial change includes the physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings such that the significance would be materially impaired (CEQA Guidelines §15064.5(b)).

The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. The project site does not contain any historic resources listed in the California Inventory of Historical Resources, California Historical Landmarks, or the National Register of Historic Places. The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements, and implementation of the project would

[8] Monterey Peninsula Unified School District, Draft Environmental Impact Report for the Marina Middle School, High School & Joint Use Community Recreation Facilities. January 2010

not have an impact on a historical resource as defined in accordance with the requirements of CEQA. There would be no impact as a result of the proposed project. (1, 2, 3)

b) **Less than Significant Impact with Mitigation Incorporated.** Public Resources Code §21083.2 requires that lead agencies evaluate potential impacts to archaeological resources. Specifically, lead agencies must determine whether a project may have a significant effect or cause a substantial adverse change in the significance of an archaeological resource.

The proposed project is located on a previously disturbed site and there are no known archaeological resources located on the site. However, the proposed project would involve ground-disturbing activities, including excavation, that could potentially impact sub-surface archaeological resources. In order to reduce potential impacts to a less-than-significant level, mitigation is necessary. The implementation of the following mitigation measures would ensure that potential adverse impacts would be reduced to a less than significant level. (1, 2, 3, 14)

Impact CR-1: The proposed project involves subsurface activity that has the potential to disturb previously unknown archaeological resources.

Mitigation

MM CR-1A Prior to commencement of construction activities, all project personnel conducting ground-disturbing activities shall receive training from a qualified archaeologist regarding the potential for exposing subsurface cultural resources, appropriate work practices for implementing mitigation measures and complying with applicable laws and regulations, and how to recognize possible buried resources. The training shall include a presentation of procedures to follow upon discovery or suspected discovery of cultural resource materials, including Native American remains and their treatment, and actions that may be taken if there is violation of applicable laws.

MM CR-1B In the event that any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil ("midden"), that could conceal cultural deposits are discovered during construction, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist shall be retained to assess the significance of the find. An exclusion area shall be established with signage and protective barriers. Entry into the area shall be limited to authorized personnel and a qualified cultural resources specialist or archaeologist, and the contractor shall immediately notify MPUSD.

Preservation in place (avoidance) is the preferred method of mitigation for impacts on cultural resources (CEQA Guidelines section 15126.4(b)(3)(A)) and is required unless the cultural resources specialist or qualified archaeologist determines that another method would provide superior mitigation of impacts to the resource. No additional mitigation is necessary if the resource can be completely avoided, but the resource shall be recorded on DPR 523 forms, which shall be filled with the Northwest Information Center.

The qualified cultural resources specialist or archaeologist shall follow the procedures below if the resource cannot be completely avoided.

- **Determine if the resource is a pre-historic or historical resource**: The qualified cultural resources specialist or archaeologist shall determine if there is a potential for the resource to be a pre-historic or historical resource. Work can resume if there is no potential for the resource to qualify as a historical resource. If there is a potential for the resource to be a pre-historic or historic resource, the qualified cultural resources specialist or archaeologist shall prepare an Evaluation Plan.
- **Prepare an Evaluation Plan**: The Evaluation Plan shall be prepared specific to the resource and shall contain procedures used to determine if the discovered resource is an historical resource. The Evaluation Plan shall include enough discussion of background and context to provide for evaluation of the resource under the historical resource criteria. The Plan shall include a description of procedures that will be used to gather information for the evaluation, which may include but not be limited to excavation, written documentation, interviews, and photography. For any archaeological resource testing, the Evaluation Plan shall describe testing procedures, such as surface collection, test excavations, analysis methods, and reporting procedure.
- **Implement Evaluation Plan**: The evaluation plan shall be implemented in the field, and the subsequent report shall evaluate the resource based on the criteria contained in the Evaluation Plan, making a conclusion whether the resource is historical. If the resource is not historical, protective barriers can be removed and work can continue in the area. If the resource is historical, the qualified cultural resources specialist or archaeologist shall prepare a Data Recovery Plan.
- **Prepare a Data Recovery Plan**: A Data Recovery Plan shall be prepared consistent with CEQA Guidelines Section 15126.4(b)(3)(C) and Public Resources Code Section 21083.2. The Data Recovery Plan will contain a description of how data recovery will mitigate impacts to the resource to less than significant. The Plan shall contain a description of level of effort (e.g., quantity of excavation units), excavation procedures, laboratory methods, types of samples to be collected (e.g., sediment), and the techniques that will be used to obtain information about the features of the site that meet the criteria of a historical resource. Additionally, the Data Recovery Plan shall include a description of the reporting procedure. Once the Data Recovery Plan is completed, field work can commence. Work can resume in the area once the qualified cultural resources specialist/archaeologist determines that no additional information needs to be recovered to satisfy fieldwork, reporting, and documentation requirements to reduce impacts to less than significant.
- **Prepare a Data Recovery Report**: A Data Recovery Report shall be prepared following completion of data recovery field work. The Report shall present results of data recovery, including field methods used, location and size of excavations, and analysis of materials recovered. The Report shall contain

conclusions made based on the field work as well as where any recovered artifacts, samples, and documentation will be curated. Curation facilities must meet requirements of 36 Code of Federal Regulations 79. The Data Recovery Report shall be submitted to the Northwest Information Center, with all impacted known resources recorded on DPR 523 forms.

With implementation of the mitigation measures identified above, the proposed project would have a less than significant impact on archaeological resources.

c) **Less than Significant Impact with Mitigation Incorporated.** No human remains, including those interred outside of formal cemeteries, are known to occur within the project site. While the likelihood of human remains, including those interred outside of a formal cemetery, within the project site is low, it is possible that previously unknown human remains may be present. Previously unknown human remains could be impacted during construction. To reduce potential impacts to a less-than-significant level, mitigation is necessary. The implementation of the following mitigation measure would ensure that potential adverse impacts with respect to disturbing human remains located outside of formal cemeteries would be reduced to a less than significant level. (1, 2, 3)

Impact CR-2: The proposed project involves subsurface activity that has the potential to disturb previously unknown human remains located outside of a formal cemetery.

Mitigation

MM CR-2 In the event that human remains are discovered during ground-disturbing activities, all ground disturbing work will cease immediately in accordance with California Health and Safety Code Section 7050.5. The project contractor would then immediately notify the County Coroner, and ground disturbance shall not resume until the coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access.

4.6 Energy

4.6.1 Environmental Setting

The State's 100 Percent Clean Energy Act of 2018 sets a State policy that eligible renewable energy and zero-carbon resources supply 100 percent of all retail sales of electricity in California by 2045. Executive Order (EO) B-55-18 was also issued in September 2018 establishing a new statewide goal to achieve "carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter."[9]

Starting in 2018, all PG&E customers within Monterey, San Benito, and Santa Cruz Counties were automatically enrolled in Central Coast Community Energy (3CE, originally called Monterey Bay Community Power). 3CE is a locally controlled public agency providing carbon-free electricity to residents and businesses. Formed in February 2017, 3CE is a joint powers authority, and is based on a local energy model called community choice energy. 3CE partners with PG&E, which continues to provide billing, power transmission and distribution, customer service, grid maintenance services and natural gas services to Monterey County. 3CE's standard electricity offering, is carbon free and is classified as 31 percent renewable (3CE, 2021).

4.6.2 Environmental Impacts

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

4.6.3 Explanation

a) **Less than Significant Impact.** The proposed project is located on the existing Marina High School campus, which consumes energy in the form of electricity and natural gas during operations. The proposed project involves reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, and other improvements. The anticipated construction schedule assumes the project would be built out over a period of approximately 14 months. Construction of the proposed project would result in a temporary increase in energy consumption associated with site preparation, grading, and construction activities. Petroleum-based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. The construction energy use has not been determined at this time. However, the overall construction schedule and process is

[9] https://www.ca.gov/archive/gov39/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf

designed to be efficient in order to avoid excess monetary costs, as equipment and fuel are not typically used wastefully due to the added expense associated with renting, maintaining, and fueling of construction equipment. As a result, construction of the proposed project would have a less than significant impact related to wasteful, inefficient, or unnecessary consumption of energy during project construction or operation.

Operation of the proposed project would result in increased energy consumption compared to existing conditions. However, the increase in energy use from the proposed project would be offset by the reduction in off-site energy consumption associated with hosting and travelling to "home games" at alternate facilities (i.e., Seaside High School or Monterey Peninsula College). In addition, all energy-consuming uses associated with the proposed project would be used only for scheduled school and community events and would not result in excessive energy use from daily use. All field lighting fixtures to be installed would be rated at a minimum of 95% efficiency (Musco Datasheets, 2022). As a result, operation of the proposed project would have a less than significant impact related to wasteful, inefficient, or unnecessary consumption of energy during project construction or operation. (1, 2, 3, 4, 9, 10, 11)

b) **Less than Significant Impact.** Operation of the proposed project would consume energy during operation of the proposed project and from trips to and from the project site during school and community athletic events. As stated above under impact a), increased energy use resulting from the proposed project would be offset due to the reduction in off-site energy consumption associated with hosting and travelling to "home games" at alternate facilities. In addition, the proposed project would be designed and constructed to the standards of all applicable state and local standards for renewable energy and energy efficiency. This represents a less than significant impact. (1, 2, 3, 4, 9, 10, 11)

4.7 Geology and Soils

Cleary Consultants, Inc. (Cleary) prepared a *Preliminary Geotechnical Recommendations* technical memorandum for the proposed project. This memorandum was followed up by a full Geotechnical and Geologic Hazards Investigation. This section is based, in part, on the findings of these technical documents. Copies of both documents are provided as **Appendix D**.

4.7.1 Environmental Setting

Regional Overview

Geologic structure in Central California is primarily the result of tectonic events that have occurred during the past 30 million years. It is widely believed that the numerous faults in this area are related to movements along the boundary between the Pacific and North American tectonic plates. The relative motion between these two tectonic plates is taken up largely along the northwest-trending San Andreas Fault system, which defines the regional boundary between the two plates. Changes in sea level and tectonic uplift resulted in a complicated depositional environment that produced the complex geology of the Monterey Bay region. Faulting and folding have deformed and displaced the geologic units in the region, and the granitic basement and overlying tertiary deposits have been juxtaposed along many of the northwest/southeast-trending faults.

According to the Monterey County General Plan, the County is located in one of the most seismically active regions in the world. The largest earthquake fault in the region is the San Andreas, a major active fault which traverses the eastern portion of the County and located about 19 miles northeast of the proposed project area. No major earthquakes have occurred on these faults during the past 100 years. Many areas within the County are susceptible to seismic hazards such as strong ground shaking, liquefaction, and earthquake-induced landslides. In addition, erosion hazards are present in the agricultural areas of the Salinas and Pajaro Valleys (Monterey County, 2010).

Site-Specific Conditions

Subsurface Conditions

Cleary performed site visits to the project site on September 20th through September 22nd and on October 6th, 2022. Cleary performed 19 exploratory borings at the project site at a maximum depth of 45 feet. The exploratory borings generally encountered interbedded medium dense to very dense sand, as well as silty sand layers. The near-surface soils encountered in the borings are considered to have a low expansion potential (**Appendix D**).

Groundwater

Free groundwater was not encountered in the exploratory borings within the maximum depth explored (45 feet). However, as noted in **Appendix D**, borings were only open for a period of a few hours, and this may not have been sufficiently long to establish the stabilized water table conditions. A search of the California State Water Resources Control Board (SWRCB) GeoTracker website did not provide relevant groundwater data in the vicinity of the project site.

Liquefaction, Soil Densification, and Landslides

A review of the Monterey County Geologic Hazards Map shows that the project site is located in an area with low susceptibility to liquefaction. Cleary's investigation found that the project site is generally underlain by medium dense to very dense older stabilized clean dune sand and silty sand to the maximum depth explored (45 feet). Soil samples were obtained and subjected to laboratory testing to determine

liquefaction characteristics. (**Appendix D**). Cleary concluded that there was no risk seismically induced liquefaction at the project site.

A review of the Monterey County Geologic Hazards Map also shows that the project site is located in an area with low susceptibility for landslides.

4.7.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS. Would the project:				
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 or 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 18-1-B 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?	☐	☐	☐	☒

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS. Would the project:				
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

4.7.3 Explanation

a.i) **Less than Significant Impact**. As described in **Appendix D**, no active or potentially active faults are mapped either crossing or projecting toward the proposed project site. In addition, the project site is not located within a fault rupture hazard zone as mapped by the California Division of Mines and Geology. As a result, the proposed project would not be affected by the rupture of a known fault. The proposed project would have a less than significant impact with respect to damage or loss of life as a result of rupture of a known earthquake fault. (1, 2, 15)

a.ii) **Less than Significant Impact.** Due to its location in a seismically active region, the proposed project would be subject to strong seismic ground shaking during their design life in the event of a major earthquake on any of the region's active faults. This could pose a risk to structures and infrastructure included under the proposed project. Seismic impacts will be minimized by implementation of standard engineering and construction techniques in compliance with the requirements of the California and Uniform Building Codes, and consistent with the design recommendations discussed in the geotechnical report (**Appendix D**). The proposed project would have a less than significant impact related to damage or loss of life as a result of strong seismic ground shaking. (1, 2, 16, 17)

a.iii) **Less than Significant Impact**. As described above, the project site may be subject to strong ground shaking in the event of a major earthquake. No known active or potentially active faults cross or project towards the project site, and the project site is not located within a fault rupture hazard zone based on mapping available from the California Division of Mines and Geology (**Appendix D**). The Monterey County Geologic Hazards Map indicates that the site is located in an area with low susceptibility to liquefaction. Cleary performed laboratory testing of soil samples, as described above, and determined that there was no risk seismically induced liquefaction at the project site (**Appendix D**). The proposed project would be designed in accordance with the requirements of the California and Uniform Building Codes, and consistent with the design recommendations discussed in the geotechnical report (**Appendix D**) which would further reduce impacts related to seismic ground failure. This represents a less than significant impact. (1, 2, 16, 17)

a.iv) **Less than Significant Impact**. As stated above, the project site is located in an area mapped for low risk of landslides. The proposed project would be constructed according to all recommendations of the site-specific geotechnical report (**Appendix D**). Construction and operation of the proposed project would not expose risk of loss, injury, or death as a result of landslides. This represents a less than significant impact. (1, 2, 16, 17)

b) **Less than Significant Impact with Mitigation Incorporated**. The proposed project would require grading that could increase erosion on the project site compared to existing conditions. Construction of the proposed project would require the export of 5,520 cubic yards (CY) of cut and the import of 12,785 CY of fill. While the amount of grading on the site is anticipated to be minimal, implementation of the following mitigation measure would ensure that temporary erosion related to site preparation would result in a less than significant impact. (1, 2, 16, 17)

Mitigation Measures

Impact GEO-1: The proposed project involves grading that could result in a temporary increase in erosion during construction.

MM GEO-1 During construction activities, the construction contractor shall implement the following erosion control measures and associated BMPs to reduce soil disturbance and the potential for erosion and sedimentation as a result of the project:

- Stockpiling and disposing of demolition debris, concrete, and soil.
- Protecting existing storm drain inlets and stabilizing disturbed areas.
- Hydroseeding/re-vegetating disturbed areas.
- Minimizing areas of impervious surfaces.
- Implementing runoff controls (e.g., percolation basins and drainage facilities).
- Properly managing construction materials in accordance with the California Building Code.
- Managing waste, aggressively controlling litter, and implementing sediment controls.
- Limiting grading to the minimum area necessary for construction and operation of the project.

The City of Marina shall verify the conditions identified above are shown on project plans prior to issuance of any grading or building permit.

With implementation of the mitigation identified above, the proposed project would have a less than significant impact related to soil erosion or the substantial loss of topsoil.

c) **Less than Significant Impact**. As described above, soils at the project site typically consists of medium dense to very dense sand, as well as silty sand layers (**Appendix D**). A review of the Monterey County Geologic Hazards Map shows that the project site is located in an area with low susceptibility to liquefaction. Cleary performed laboratory testing of soil samples, as described above, and determined that there was no risk seismically induced liquefaction at the project site (**Appendix D**). This represents a less than significant impact. (1, 2, 16, 17)

d) **Less than Significant Impact**. The near-surface soils encountered during geotechnical borings were determined to have a low expansion potential based on their plasticity characteristics (**Appendix D**). As a result, the potential for direct or indirect impacts from expansive soils is considered low. In addition, the proposed project would be designed and constructed according to site specific recommendations identified in **Appendix D**. This represents a less than significant impact. (1, 2, 16, 17)

e) **No Impact.** The proposed project would not result in any potential adverse effects due to soils being incapable of supporting septic disposal since the proposed project would not involve the construction of septic systems. No septic systems are known to exist on the site. No impact would occur. (1, 2)

f) **No Impact**. There are no known paleontological resources or unique geologic features within the proposed project area. The project site is not listed within an area identified as containing paleontological resources nor is it located in close proximity to any known paleontological resources per the City of Marina's General Plan EIR[10]. Moreover, a review of nearly 700 known fossil localities within the County of Monterey was conducted by paleontologists in 2001; 12 fossil sites were identified as having outstanding scientific value (Rosenberg, 2001). The proposed project site is not located on or near any of those sites. Excavation activities associated with the project would be limited to 4.8 feet in depth and would be unlikely to encounter any paleontological resources. The proposed project would not impact any paleontological resources or unique geological features since none are known to occur in the project area. (1, 2, 3)

[10] City of Marina, *Final Environmental Impact Report on the Draft Marina General Plan*, August 2000. Available at: https://www.cityofmarina.org/DocumentCenter/View/1158/final-eir-pdf?bidId=

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Various gases in the earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space, but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases, which are transparent to solar radiation, are effective in absorbing infrared radiation. As a result, the radiation that otherwise would have escaped back into space is retained, resulting in a warming of the atmosphere known as the greenhouse effect. Among the prominent GHGs contributing to the greenhouse effect, or climate change, are carbon dioxide (CO_2), methane (CH_4), O_3, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for enhancing the greenhouse effect. In California, the transportation sector is the largest emitter of GHGs.

The proposed project is located in the NCCAB, where air quality is regulated by MBARD. Neither the state, MBARD, nor Monterey County have adopted GHG emissions thresholds or a GHG emissions reduction plan that would apply to the proposed project. However, it is important to note that other air districts within the State of California have adopted recommended CEQA significance thresholds for GHG emissions. For instance, on March 28, 2012, the San Luis Obispo Air Pollution Control District (SLOAPCD) approved thresholds of significance for the evaluation of project-related increases of GHG emissions. The SLOAPCD's significance thresholds include both qualitative and quantitative threshold options, which include a qualitative threshold that is consistent with the AB 32 scoping plan measures and goals and a quantitative bright-line threshold of 1,150 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year. The GHG significance thresholds are based on AB 32 GHG emission reduction goals, which take into consideration the emission reduction strategies outlined in the California Air Resources Board's Scoping Plan. Development projects located within these jurisdictions that would exceed these thresholds would be considered to have a potentially significant impact on the environment which could conflict with applicable GHG-reduction plans, policies, and regulations. Projects with GHG emissions that do not exceed the applicable threshold would be considered to have a less-than-significant impact on the environment and would not be anticipated to conflict with AB 32 GHG emission reduction goals. Given that the MBARD has not yet adopted recommended GHG significance thresholds, the above thresholds are relied upon for evaluation of projects.

4.8.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS. Would the project:				
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	☐	☐	☐	☒

4.8.3 Explanation

a) **Less than Significant Impact**. The project is located in the NCCAB, where air quality is regulated by MBARD. MBARD has determined that if a project emits less than 10,000 metric tons per year (MT/yr) of Carbon Dioxide equivalent (CO_2e), then its impact would be considered less than significant. This calculation is determined by combining the estimated greenhouse gas emissions generated by construction, amortized over a 30-year period, with the estimated annual GHG emissions resulting from the operation of the project.

The proposed project would result in minor temporary emissions due to construction-related activities. Due to the short construction period, proposed minor earthmoving, and overall temporary construction impacts, the project would not generate greenhouse gases that would have a significant impact on the environment.

The reconfigured athletic fields would be utilized most frequently by daytime physical education classes consisting of Marina High students. Day-to-day operations of the reconfigured athletic fields associated with school use would be comparable to existing uses and would not result in increased vehicle trips or other activities that would lead to increased operational GHG emissions. Operational emissions from evening use would also occur as a result of vehicle trips to and from the site associated with athletic events. This occurrence would represent increased usage of the athletic fields compared to existing conditions and would generate additional vehicle trips that would lead to increased operational GHG emissions. Operational emissions of CO_2e are quantified in **Appendix A**. The estimated amortized annual greenhouse gas emissions generated by the operation of the proposed project would be 1,917 MT/year of CO_2e, which is below the threshold of 10,000 MT/year of CO_2e. Therefore, operational emissions associated with the proposed project would be less than significant. (1, 2, 9, 10)

b) **No Impact**. As stated above, the proposed project is located in the NCCAB, where air quality is regulated by MBARD. Neither the State nor MBARD have adopted a GHG emissions reduction plan that would apply to the proposed project. The City of Marina has not adopted a Climate Action Plan or equivalent document to regulate GHG emissions. The proposed project would therefore not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, as no such plans would apply to the proposed project. No impact would occur. (1, 2)

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed, or otherwise managed. Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. Hazardous materials and waste can result in public health hazards if improperly handled, released into the soil or groundwater, or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer.

The California Department of Toxic Substances Control (DTSC) uses databases such as EnviroStor GeoTracker, and Cortese to map the location of hazardous waste sites including sites that have been remediated, sites currently undergoing remediation, and sites that require cleanup. The DTSC EnviroStor Database indicates that there were 28 contaminated sites in Monterey County that are listed in federal or state databases (Monterey County, 2010). Based on a search of the above databases, no hazardous materials contamination has been documented within the project site.

The California Department of Forestry and Fire Protection (CalFire) prepares maps of Fire Hazard Severity Zones (FHSZ), which are used to develop recommendations for local land use agencies and for general planning purposes. The project site is located in a local responsibility area (LRA). The project site is not located in a moderate, high, or very high fire hazard severity zones, as delineated by CalFire.

4.9.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
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 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?	☐	☐	☐	☒

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
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 a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

4.9.3 Explanation

a) **Less than Significant Impact**. The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. Operation of the proposed project would not involve the routine transport, use or disposal of hazardous materials. Construction of the proposed project would require the temporary transport, use and disposal of potentially hazardous materials during construction activities. However, this would be temporary and would cease upon completion of the proposed project. All hazardous materials would be transported, used, and disposed of in accordance with all manufacturers' recommendations. As a result, this represents a less than significant impact. (1, 2, 3)

b) **Less than Significant Impact**. The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements, located within the existing Marina High School Campus. Land use on the site has consisted of athletic events and outdoor physical education classes associated with the school. No historical use of hazardous materials or chemicals is known to have occurred on the project site. Construction of the proposed project would require the temporary transport, use and disposal of potentially hazardous materials during construction activities. All hazardous materials would be transported, used, and disposed of in accordance with all manufacturers' recommendations. Operation of the proposed project would not utilize hazardous materials that

would have the potential to be accidentally released into the environment. This represents a less than significant impact. (1, 2, 3)

c) **Less than Significant Impact**. The proposed project is located entirely on the existing Marina High School campus and is therefore located within a quarter mile of an existing school. In addition, Los Arboles Middle School is located about 1,000 feet north of the site. Operation of the proposed project would not require the handling or emissions of hazardous materials. However, construction activities would require temporary handling of potentially hazardous materials. Although, as described under impact a), all hazardous materials would be transported, used, and disposed of in accordance with all manufacturers' recommendations. In addition, areas under construction would be off limits to students and faculty throughout construction. This represents a less than significant impact. (1, 2, 3)

d) **No Impact**. The proposed project site does not include any locations listed on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.5. There would be no impact in connection with the proposed project. (1, 2, 18)

e) **Less than Significant Impact**. The Marina Municipal Airport is located approximately 1.8 miles east of the proposed project site. The proposed project is located within the Airport Influence Area (Zone 7) identified in the Marina Municipal Airport's Land Use Plan[11]. The Airport Influence Area (AIA) is defined as an area where airport-related factors may significantly affect land uses or necessitate restrictions on those uses as determined by an Airport Land Use Commission, but where the aircraft accident risk level is considered low. The AIA includes prohibited land uses such as flight hazards, outdoor stadiums, and other forms of high intensity uses. However, the proposed project is a modification to an existing, non-conforming use as defined by Section 4.1.4.1 of the Marina Municipal Airport Land Use Compatibility Plan (ALUCP)[12], The ALUCP states that objects shorter than 100 feet generally are not airspace obstructions unless they are at a ground elevation far above that of the airport. The airport elevation is approximately 140 feet above mean sea level, while the proposed project site is about 90 feet above mean sea level. The field lighting component of the proposed project would have a maximum height of 99 feet and would not represent a flight hazard. Additionally, the proposed project is not located within the runway safety zone for Marina Municipal Airport.

The ALUCP states that the maximum non-residential intensity inside the AIA is 300 persons per acre. The proposed project would have a maximum seating capacity of 686 for a single-event across a 5.71-acre site, which is below the maximum non-residential intensity is 300 persons per acre. The maximum number of attendees/participants at a single event would be 720 persons for school rallies, which is also below the maximum non-residential intensity is 300 persons per acre. The proposed project would be consistent with the maximum non-residential intensity outlined in the ALUCP.

Caltrans regulates the development of new school sites within two nautical miles of existing or planned airport runways under California Code of Regulations, Title 21, Section 3570. However, the proposed project represents improvements to an existing school site and would not be subject to further review by Caltrans. There would be a less than significant impact in connection with the proposed project. (1, 2, 3, 19)

[11] Coffman Associates, Inc., *Final Airport Master Plan for Marina Municipal Airport,* May 2018.
[12] Coffman Associates, Inc., *Marina Municipal Airport Land Use Compatibility Plan, May 2019*

f) **No Impact**. The major evacuation route in the vicinity of the proposed project is State Route 1. Construction of the proposed project would take place on the existing Marina High School grounds and would not require any road closures that would impair implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan. The operation of the proposed project would increase the frequency of athletic events and the overall attendance at athletic events compared to existing conditions. Therefore, operation of the proposed project would result in increased traffic on State Route 1 (the closest major evacuation route) in the event of a local or regional emergency. However, attendance at athletic events would be less than attendance during regular school hours and would not be expected to generate traffic exceeding the capacity of nearby roadways. The proposed project would have no impact with respect to interfering with an adopted emergency response plan. (1, 2, 3, 13)

g) **Less than Significant Impact**. The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements on the existing Marina High School campus. The proposed project is located in an LRA and is not identified as a Very High Fire Hazard Severity Zone (VHFHSZ) by CalFire. The proposed use would be similar to existing uses and would not introduce new sensitive land uses that could be impacted by wildfire. This represents a less than significant impact. (1, 2, 20)

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

Flooding

The Federal Emergency Management Agency (FEMA) Flood Map for the project area indicated that the project site is within Flood Hazard Zone X. (**Appendix E**). Flood Zone X is defined as an area of "Minimal Flood Hazard".

The proposed project site is not located within the mapped inundation area of any dams.[13] The project site is outside of the runup zone resulting from a seismically generated tsunami (State of California Tsunami Inundation Map, 2021). The project site is also not within the vicinity of any lakes or reservoirs, therefore there is not a hazard at the site from seiches.

4.10.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY. Would the project:				
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;	☐	☐	☒	☐

[13] California Department of Water Resources. Inundation Map Viewer. Available at: https://fmds.water.ca.gov/webgis/?appid=dam_prototype_v2

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY. Would the project:				
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?	☐	☐	☒	☐

4.10.3 Explanation

a) **Less than Significant with Mitigation Incorporated**. The proposed project would increase the amount of impervious surfaces on the site by 34,100 SF compared to existing conditions. As a result, the proposed project would increase site runoff, which would have the potential to degrade surface or groundwater quality in violation of water quality and/or waste discharge requirements. The proposed project would disturb more than one (1) acre and would be required to obtain a State NPDES Construction General Permit. Compliance with the requirements of the NPDES Construction General Permit would ensure that the potential water quality impacts from construction of the proposed project would be minimized. In addition, the project includes **Mitigation Measure GEO-1** to reduce impacts related to erosion to a less than significant level.

The proposed project would include stormwater retention facilities to manage flood flows during project operation. These facilities would consist of standard conveyance methods comprised of inlets and solid storm drainpipe. Runoff would be conveyed from the paved areas to an infiltration system composed of open bottom arched pipes underlain with open graded gravel which allows for infiltration into the site soils, which have a very high natural infiltration rate of well over 10 inches per hour. The first row of the chamber system would act as a trash capture system, which would be cleaned via access ports. These facilities are designed to provide filtration in accordance with Regional Water Quality Control Board requirements to manage worst case flooding scenarios. In addition, this system has been designed in conformance with engineering standards and practices (including those set by the American Association of State Highway and Transportation Officials) regarding both storm water quality and storm water discharge rates. As a result, the proposed project would not violate any water quality standards or waste discharge requirements. This represents a less than significant impact. (1, 2)

b) **Less than Significant Impact.** The proposed project site is currently served by MCWD and would not represent an intensification of water use on the site compared to existing conditions.

Improvements to the existing baseball field, including new olive core in-field (a sustainable alternative to traditional rubber surfaces), running track, and installation of artificial turf on the field areas would reduce water use compared to existing conditions. Minor water use would be associated with operation of the concessions stand and restroom components of the proposed project during events, however, this would be offset by the reduction of irrigated turf and installation of artificial surfaces not requiring regular irrigation. MCWD's water supply is sourced primarily from the Salinas Valley Groundwater Basin, subbasin 180/400. Groundwater extraction is closely regulated and monitored by the Monterey County Water Resources Agency (MCWRA) and the Salinas Valley Groundwater Sustainability Agency (SVGWSA). The proposed project includes 7,889 sf of new synthetic turf to replace existing natural turf, which would result in a net decrease in water use as the synthetic turf would not need to be irrigated. While the specific reduction in overall water use associated with the proposed project is not known at this time, the proposed project would reduce water use compared to conditions and water use associated with operation of the proposed project would fall within the existing allocation of water for Marina High School. This represents a less than significant impact. (1, 2)

ci-iv) **Less than Significant Impact.** The proposed project is located on the existing Marina High School campus. There are no steams or rivers located within or immediately adjacent to the proposed project site. The proposed project includes grading as well as the addition of 34,100 sf of new impervious surfaces. These changes to the existing site conditions have the potential to result in the impediment or redirection of flood flows on the site.

The proposed project would utilize temporary erosion control measures during construction to prevent erosion and siltation and manage runoff. These temporary measures are anticipated to include, but are not limited to, sandbags, twice daily watering of exposed dirt stockpiles, and covering of truck trips importing or exporting soils to or from the site.

The proposed project includes stormwater retention facilities, as described under impact a), above, to manage flood flows during project operation. These facilities are designed to manage worst case flooding scenarios. Changes to the onsite flood flow would be accommodated by these stormwater retention facilities and would not result in hazardous conditions related to the impediment or redirection of flood flows on the site. Redirection of flood flows to these facilities would minimize erosion potential or siltation both on and off-site during project operation. This represents a less than significant impact. (1, 2)

d) **No Impact.** The proposed project is located in FEMA Flood Zone X, which is identified as an area of "Minimal Flood Hazard" (**Appendix E**). As a result, the risk of flooding at the site is considered low. The site is not located in a tsunami or seiche zone. Flood flows on the site would be directed to new and existing treatment facilities. The proposed project would have no impact due to the release of pollutants as a result of site flooding. (1, 2, 21)

e) **Less than Significant Impact.** The proposed project would result in changes to the existing runoff characteristics of the project site. Changes in runoff characteristics have the potential to result in a conflict or obstruction of implementation of a water quality control plan or sustainable groundwater management plan. The SVGWSA is the agency responsible for implementing the Groundwater Sustainability Plan for the Salinas Valley Groundwater Basin. As stated above, the proposed project would be required to acquire an NPDES permit for runoff and erosion control. Adherence to the requirements of the NPDES permit would ensure that the proposed project

would not conflict or obstruct implementation of a water quality control plan or sustainable groundwater management plan. This represents a less than significant impact. (1, 2, 3)

4.11 Land Use and Planning

4.11.1 Environmental Setting

The proposed project is located within the City of Marina. The proposed project site is designated PF – Public Facilities under the City's General Plan. The site carries a corresponding zoning designation of Public Facility District (PF-E).

4.11.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING. Would the project:				
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?	☐	☐	☐	☒

4.11.3 Explanation

a) **No Impact**. As described above, the proposed project involves the reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. The proposed project would be located entirely within the existing grounds of Marina High School and would not physically divide an established community. No impact would occur. (1, 2)

b) **No Impact**. As stated above, the proposed project is zoned Public Facility District (PF-E) and carries a corresponding General Plan designation of PF – Public Facilities. The proposed project involves reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements, which would be consistent with the existing land use, as well as the zoning and general plan designations of the site. The proposed project would be consistent with the ALUCP for the Marina Municipal Airport as described in Section 4.9 Hazards and Hazardous Materials. No impact would occur. (1, 2, 3)

4.12 Mineral Resources

4.12.1 Environmental Setting

Historic mineral production in Monterey County included sand and gravel mining for construction materials, mining for industrial materials (diatomite, clay, quartz, and dimension stone) and metallic minerals (chromite, placer gold, manganese, mercury, platinum, and silver). The Monterey County 2010 General Plan identifies areas of mineral resource significance in the vicinity of the Cities of Marina, Sand City and Seaside. All other areas either do not contain aggregate resources or have not been classified. The City's General Plan EIR identifies that the City is located largely within mineral resource zone 2 (MRZ-2) as designated by the State Mining and Geology Board[14].

4.12.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES. Would the project:				
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?	☐	☐	☒	☐

4.12.3 Explanation

a-b) **Less than Significant Impact**. No known mineral resources in Monterey County are located within the proposed project area. However, the proposed project area is located in an area underlain by MRZ-2 as shown on the Department of Conservation's Mineral Land Classification Maps. MRZ-2 is defined as "Areas where geologic information indicates the presence of significant construction aggregate resources"[15]. However, the proposed project site is located on an existing public school facility and would not be an appropriate location for future mineral extraction. Therefore, the proposed project would not result in 1) the loss of availability of a known mineral resource that would be of value to the region and residents of the state or 2) the loss of availability of a locally important mineral resources recovery site delineated on a local general plan, specific plan, or other land use plan. The proposed project would have a less than significant impact on mineral resources. (1, 2, 22)

[14] Marina, City of, *Final Environmental Impact Report on the Draft Marina General Plan*, August 2000. Available at: https://www.cityofmarina.org/DocumentCenter/View/1158/final-eir-pdf?bidId=

[15] California Department of Conservation, Mineral Resource Zone Map for Construction Aggregate in the Monterey Bay Production-Consumption Region, 2021.

4.13 Noise

4.13.1 Environmental Setting

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is defined as unwanted sound. Environmental noise is frequently measured in decibels (dB). The A-weighted decibel (dBA) is used to reflect the human ear's sensitivity to sounds of different frequencies. On this scale, the sound level of normal talking is about 60 to 65 dBA. Because people are more sensitive to nighttime noise, sleep disturbance usually occurs at 40 to 45 dBA.

The most commonly used measurement scale used to account for a person's increased sensitivity to nighttime noise is the Community Noise Equivalent Level (CNEL). The CNEL is a noise scale used to describe the overall noise environment of a given area from a variety of sources. The CNEL applies a weighting factor to evening and nighttime values.

Generally, noise levels diminish as distance from the noise source increases. Some land uses are more sensitive to noise than others. Noise sensitive land uses are generally defined as residences, transient lodging, schools, hospitals, nursing homes, churches, meeting halls, and office buildings. Noise sensitive receptors in the vicinity of the project site consist of existing residences to the north and northwest, as close as 250 feet from the project site.

The predominant sources of noise at the project site would be vehicle noise from State Route 1, as well as activities at the Marina High School campus. In addition, the project is partially within the area identified in the Airport Master Plan for the Marina Municipal Airport.

Construction noise is a temporary noise source that is generated from a variety of construction activities occurring both on- and off-site. These activities can include demolition, hauling of materials, grading, building construction, and construction traffic. Generally, construction equipment can generate noise levels in the range of 70 to 90 decibels at a distance of 50 feet. However, construction noise is generally not constant during the daytime hours. The proposed project would not require nighttime construction.

4.13.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE. Would the project result in:				
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?	☐	☐	☒	☐

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE. Would the project result in:				
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?	☐	☐	☒	☐

4.13.3 Explanation

a) **Less than Significant with Mitigation Incorporated.** The City of Marina's General Plan establishes land use compatibility criteria in terms of the Community Noise Equivalent Level (CNEL) to describe noise exposure for noise compatibility planning purposes.[16] The City of Marina's General Plan identifies an acceptable maximum exterior noise level of 60 dB and a conditionally acceptable maximum noise level of 70 dB for residential receptors. The General Plan also identifies a maximum interior noise level of 45 dB for residential receptors.

However, the Section 9.24.050 of the City's municipal code offers exemptions from noise restrictions, including for "activities on or in publicly owned property and facilities, or by public employees…are exempt provided that such activities have been authorized by the owner of such property or facilities or its agent". The reconfigured athletic fields at the Marina High School campus, a publicly owned facility, would be considered a use authorized by MPUSD, a public agency. Therefore, operation of the proposed project would be exempt from City regulations governing noise compliance. However, to address potential community concerns related to noise generated by the proposed project, operational noise from the proposed project is still analyzed below based on the conditionally acceptable outdoor maximum noise level of 70 dB identified by the City's General Plan for residential uses.

Construction Noise

Construction of the proposed project would generate increased temporary noise. Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts over extended periods of time.

[16] CNEL is defined as the time-weighted energy average noise level for a 24-hour day with a 5 dB (technically 4.77 dB) penalty added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m. and a 10 dB penalty added to noise levels occurring during the nighttime hours between 10:00 p.m. and 7:00 a.m. The CNEL represents cumulative exposure to noise over an extended period of time and is therefore calculated based upon annual average conditions.

Construction equipment required for the proposed project is expected to consist of a scraper/blade, backhoes, rollers, excavators, haul trucks, welders, and generators. **Table 6** provides typical noise levels of heavy equipment likely to be used in construction activity based on Federal Highway Administration (FHWA) standards. The concrete/industrial saw would generate the highest noise level at 90 dB. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor.

Table 6
Noise Levels Generated by Construction Equipment

Equipment Type	Typical Noise Level (dB) at 50 feet
Backhoe	80
Concrete/Industrial Saw	90
Concrete Mixer	85
Concrete Pump	82
Dozer	85
Dump Truck	84
Excavator	85
Front Loader	80
Generator	82
Grader	85
Jackhammer	85
Paver	85
Pneumatic Tools	85
Scraper	85

Source: FHWA 2006:3

Construction activities occurring in the evening and nighttime hours would result in increased noise levels at nearby residential receptors. Construction of the proposed project is expected to last approximately 14 months. Existing noise-sensitive receptors that could be exposed to construction-noise include the single-family homes located about 250 feet northeast of the project site on Grant Street, as well as residences on Max Court to the East, and high school buildings on the existing campus. Construction activities would be located 200 feet or more from the nearest residential receptors. As stated above, construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor, which means the loudest piece of equipment (concrete/industrial saw at 90 dB) would be expected to result in a maximum noise level of 66dB or less at the nearest residential receptors. This distance, combined with the existing topography and vegetation between the project site and the sensitive residential receptors, would result in construction levels below the 70dB conditionally acceptable maximum noise level for residential receptors. In addition, the construction noise would not represent a permanent increase in noise levels. While construction-related noise would be temporary in nature, temporary impacts to residential receptors may occur, which could represent a significant impact. This would be reduced to a less than significant impact with implementation of the following mitigation measure.

Impact NSE-1: The proposed project could result in temporary evening and nighttime noise impacts at nearby sensitive receptors associated with construction activities.

MM NSE-1: The following noise reduction measures would be applied to the proposed project throughout construction:

- Noise generating construction operations shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. Saturday and 10:00 a.m. to 5:00 p.m. Sunday.
- All internal combustion engine-driven equipment shall be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Stationary noise-generating equipment (including, but not limited to, air compressors and portable power generators) shall be located as far as possible from sensitive receptors when in operation.
- The construction contractor shall construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses.
- Prior to construction, the construction contractor shall notify all adjacent business, residences, and other noise-sensitive land uses of the construction schedule, in writing, and provide a written schedule of "noisy" construction activities to the adjacent land uses and nearby residences.
- The construction contractor shall designate a "disturbance coordinator" who shall be responsible for responding to any complaints received regarding construction noise. The disturbance coordinator shall determine the cause of the noise complaint and work to implement reasonable measures to correct the problem. The telephone number for the disturbance coordinator shall be posted at the construction site and included in the notice sent to adjacent business, residences, and other noise-sensitive land uses.

Incorporation of the mitigation measure above would ensure that construction noise does not impact nearby sensitive receptors during construction. In addition, it is important to note that no single construction activity would take place in the same location for the entire 14-month construction period.

Operational Noise

Use of the proposed stadium would result in increased noise during evening events. The project includes the installation of new field lighting to facilitate evening and nighttime athletic events. The primary sources of noise during athletic events at the stadium are crowd noise and speech and music amplified on the public address system. Athletic events would occur on an infrequent basis as noted in **Table 2**. Noise levels from these events would be lessened by the existing topography and vegetation located between the proposed project and sensitive receptors located at nearby residences. However, these events could still result in increased noise levels exceeding the conditionally acceptable maximum exterior noise level of 70 dB for residential receptors. To reduce this impact to a less than significant level, the following mitigation is proposed.

Impact NSE-2: The proposed project would result in temporary evening and nighttime noise impacts at nearby sensitive receptors associated with athletic events.

MM NSE-2: Prior to operation of the proposed project for nighttime athletic events, MPUSD shall prepare a noise reduction plan based on City of Marina General Plan's noise standards to deal with evening and nighttime noise impacts. The noise reduction plan shall include, at a minimum, the following restrictions that shall be placed on all nighttime athletic events.

- Prohibit use of the public address system when it is not specifically necessary for a game, event, or other activity. For example, safety-related announcements, announcements required by governing leagues, and announcements regarding game play such as scoring summaries are necessary and shall be allowed. Announcements that are meant to induce cheering by the crowd, however, are not necessary. This direction shall be posted at the control station for the public address system.
- The public address system shall be designed to focus the sound within the bleacher areas and minimize spillover to adjacent residential areas. This shall involve specifying the direction and height of the loudspeakers, as well as using the minimum volume levels required for intelligibility over background crowd noise.
- Events shall be scheduled to conclude before 10:30 p.m. or earlier.

The noise reduction plan shall be made publicly available on the MPUSD and Marina High School websites and shall identify a point of contact for noise-related complaints associated with evening and nighttime use of the proposed project.

Implementation of the mitigation measure above, combined with the existing topography and vegetation between the project site and the sensitive receptors, would ensure that intermittent noise levels from operation of the proposed project would be below the conditionally acceptable maximum exterior noise level of 70 dB for residential receptors. In addition, the proposed project would be considered exempt as an authorized public use under Section 9.24.050 of the City's municipal code. Therefore, the proposed project would have a less than significant impact on operational noise with incorporation of mitigation. (1, 2, 3)

b) **Less than Significant with Mitigation Incorporated.** Construction of the proposed project would generate vibrations as a result of grading, earthmoving, and other activities. Vibration generated in the construction process is groundborne and diminishes in intensity as distance from the source of the vibration increases. Low levels of groundborne vibration are typically imperceptible, while moderate levels of vibration can result in low rumbling sounds and detectable vibrations. High levels of vibration can cause annoyance and sleep disturbance at receptors.

Construction Vibration

Construction of the proposed project would not utilize pile drivers. Construction activities utilizing dozers or other large equipment would generate the highest levels of vibration. Construction equipment can generate ground vibration levels of 0.089 in/sec peak particle velocity (PPV) at a distance of 25 feet based on Federal Transit Administration (FTA) guidance.[17] Caltrans notes that vibration levels exceeding 0.2 PPV can result in structural damage to conventional structures

[17] https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

within a radius of 15 feet. No buildings are located within 15 feet of the edge of the construction area, with the exception of two classrooms on the north side of the campus that would be within 15 feet of sidewalk that would be replaced as part of the proposed project. Heavy equipment use associated with sidewalk replacement has the potential to result in structural damage at these two classrooms. This represents a potentially significant impact. **Mitigation Measure NSE-3**, below, would be implemented to reduce impacts to a less than significant level.

Impact NSE-3: Construction of the project would generate vibration levels exceeding the Caltrans threshold of 0.2 in/sec PPV or more at buildings of normal conventional construction within 15 feet of the project site.

MM NSE-3: Prior to the initiation of ground disturbing activities, MPUSD shall retain a qualified consultant to prepare a construction vibration monitoring plan. The construction vibration monitoring plan shall include the following measures to be implemented during construction of the proposed project where vibration levels due to construction activities would exceed 0.2 in/sec PPV at adjacent conventional buildings.

- Schedule construction activities within 15 feet of conventional structures in periods where these structures are unoccupied, if feasible.
- Place operating equipment on the construction site as far as possible from vibration-sensitive receptors.
- Where feasible, smaller equipment to minimize vibration levels to below 0.2 in/sec PPV shall be used during vibration producing construction activities occurring within 15 feet of an existing conventional building.
- Avoid using vibratory rollers and clam shovel drops near sensitive areas.
- If feasible, select demolition methods not involving impact tools.
- Modify/design or identify alternative construction methods to reduce vibration levels below the limits.
- Avoid dropping heavy equipment and use alternative methods for breaking up existing pavement, such as a pavement grinder, instead of dropping heavy objects, within 30 feet of adjacent buildings.
- Designate a person responsible for registering and investigating claims of excessive vibration. The contact information of such person shall be clearly posted on the construction site.

The adjacent classrooms are defined as “Category 3” in the FTA’s Transit Noise and Vibration Impact Assessment Manual. Category 3 receptors are defined as receptors where an impact would occur when exposed to vibration velocity (vdB) exceeding 83 vdB within a distance of 35 feet. Assuming school is in session, or the classroom is otherwise occupied during replacement of the adjacent asphalt path, occupants of these classrooms could be exposed to construction vibration exceeding 83 vdB during heavy construction activity, which would represent a potentially significant impact. The proposed project would implement the **Mitigation Measure NSE-3** to reduce impacts on sensitive receptors from groundborne vibration to a less than significant level.

Operational Vibration

Operation of the proposed project would generate additional vibration during athletic events compared to existing conditions. However, athletic events would be located on the athletic fields, which are more than 200 feet away from the nearest residential receptors and more than 100 feet away from the nearest structure. As a result, operational impacts related to vibration would be less than significant. (1, 2, 3)

c) **Less Than Significant Impact.** The proposed project is located approximately 1.8 miles from the Marina Municipal Airport. According to the Airport Master Plan for the Marina Municipal Airport, the eastern portion of the project site is within Zone 6 – Airport Influence Area (City of Marina, 2018). However, the project is located outside the arrival and departure tracks shown in the Airport Master Plan and would not be subject excessive airport noise levels. In addition, the proposed project consists of reconfiguration of the existing athletic fields and would not result in the introduction of new land uses that would be exposed to aircraft noise. This represents a less than significant impact. (1, 2, 19)

4.14 Population and Housing

4.14.1 Environmental Setting

In 2020, AMBAG published a new regional growth forecast projecting a 2025 population of 452,761 and 2035 population of 476,028 for Monterey County. The proposed project would not include any new housing or result in the need for any new housing.

4.14.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.3 Explanation

a) **No Impact**. Under CEQA, a project can have direct and/or indirect growth inducement potential. A project would directly induce growth by resulting in construction of new housing that would result in new residents in the project area. A project may indirectly induce growth in a number of ways, including:

- Substantial stimulation of economic activity which would result in the need for additional housing and services to support new employment demand; and/or
- Removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service; for example, construction of a major sewer line with excess capacity through an undeveloped area.

Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities.

The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements on the existing Marina High School Campus. The proposed project would not directly lead to population growth as it does not propose any new housing units or new sources of employment. The proposed project would not indirectly lead to population growth through the expansion of

infrastructure, as no major infrastructure is included. The proposed population would not induce population growth and no impact would occur. (1, 2)

b) **No Impact.** The proposed project would not displace any individuals or result in the requirement of replacement housing elsewhere in the community. The proposed project involves reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements, and does not involve any new housing or infrastructure, nor does the proposed project propose any activities that would change, or otherwise affect regional communities, populations, or residences. As a result, there would be no impact related to the displacement of individuals or replacement of existing housing. (1, 2)

4.15 Public Services

4.15.1 Environmental Setting

Fire Protection: Fire protection to the proposed project site is provided by the City of Marina Fire Department (Fire Department). The Fire Department operates out of a single location located at 211 Hillcrest Avenue. The Fire Department consists of 15 sworn personnel and one non-sworn support staff[18].

Police Protection: Police protection to the proposed project site is provided by the City of Marina Police Department (Police Department). The Fire Department operates out of a single location located at 211 Hillcrest Avenue. The Fire Department consists of 29 sworn personnel and nine non-sworn support staff[19].

Schools: Public schools within the City, including the proposed project site, are operated by the District. As discussed previously, the proposed project site is located on the existing Marina High School campus.

Parks: Parks service within the City is provided by the City of Marina Recreation and Cultural Services Department (Recreation Department). The Recreation Department operates a youth center, teen center, and senior center, as well as a skate park, various community events, and several parks.

4.15.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or 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:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

4.15.3 Explanation

a) **Less than Significant Impact.** The proposed project would consist of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. The Fire Department currently provides fire protection services to the proposed project site, including during practices and games currently held at the site. While construction of the proposed project would result in intensification of use on the

[18] City of Marina. Fire Department. Available at: https://cityofmarina.org/24/Fire-Department
[19] City of Marina. Police Department. Available at: https://www.cityofmarina.org/17/Police-Department

proposed project site compared to existing conditions, this construction would not result in a substantial increase in demand on fire services compared to existing conditions and would not require new or expanded fire protection facilities. This represents a less than significant impact. (1, 2, 3, 22)

b) **Less than Significant Impact.** The proposed project would consist of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. The Police Department currently provides law enforcement services to the proposed project site, including during practices and games currently held at the site. While construction of the proposed project would result in some intensification of use on the proposed project site compared to existing conditions, this would not result in a substantial increase in demand on law enforcement services compared to existing conditions and would not require new or expanded police facilities. This represents a less than significant impact. (1, 2, 3, 24)

c) **No Impact.** The proposed project would consist of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. The proposed project is located on the existing Marina High School campus. Construction of the proposed project would not result in increased demand on school services compared to existing conditions and would not require new or expanded educational facilities beyond what is included under the proposed project. No impact would occur. (1, 2)

d) **No Impact.** The proposed project would consist of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements and would not result in increases in population that would increase demand on local parks. No impact would occur. (1, 2)

d) **No Impact.** The proposed project would consist of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements and would not result in increases in population that would increase demand on other public services. No impact would occur. (1, 2)

4.16 Recreation

4.16.1 Environmental Setting

The parks service within the City is provided by the City's Recreation Department. The Recreation Department operates a youth center, teen center, and senior center, as well as a skate park, various community events, and several parks.

4.16.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION. Would the project:				
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?	☐	☒	☐	☐

4.16.3 Explanation

a) **No Impact.** The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements. Construction of a new multi-use sports field on the Marina High School site would not result in increased use of existing neighborhood or regional park facilities compared to existing conditions. No impact would occur. (1, 2)

b) **Less than Significant Impact with Mitigation Incorporated.** The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements on the existing Marina High School site. The proposed project consists of improvements to an existing school field and related onsite recreational facilities, which would result in adverse physical effects on the environment. However, mitigation (**MMs BIO-1** through **BIO-9, CR-1A** and **CR-1B, CR-2, GEO-1,** and **NSE-1** through **NSE-3**) has been provided as identified throughout this initial study to reduce this impact to a less than significant level. (1, 2)

4.17 Transportation

4.17.1 Environmental Setting

The proposed project is located on the existing Marina High School Campus. The project site is accessed via Patton Parkway, a two-lane, two-directional east-west roadway with a pedestrian sidewalk on the southern side and a bicycle trail on the northern side. Regional access to the project site is provided by State Route 1, a four-lane, two-directional north-south highway. Transit service to the Marina community is provided by Monterey-Salinas Transit (MST). The proposed project is served most directly by MST routes 17, 18, and 23, which stops along Del Monte Boulevard, approximately 2,000 feet to the northwest.

According to previous CEQA guidelines, a Project may have a significant effect on the environment if it would cause an increase in traffic that is substantial in relation to the street system's existing traffic load and capacity. Vehicle Miles Travelled (VMT) is now the metric to evaluate project impacts on transportation and circulation. VMT measures the number of miles travelled by motor vehicles that can be attributed to a project, regardless of passenger count. At the time of publication of this document, neither the City of Marina, MPUSD, nor the County of Monterey have established a methodology or thresholds of significance for VMT.

AMBAG's *2040 Metropolitan Transportation Plan/Sustainable Communities Strategy* provided a VMT forecast for Monterey County, San Benito County, and Santa Cruz County for the year 2040 utilizing 2015 conditions as a baseline. AMBAG forecasts an approximately 24 percent increase in VMT in 2040 compared to 2015 measurements, as described in **Table 7** below.

Table 7
AMBAG 2015 VMT and 2040 Forecasted Daily VMT

County	2015	2040 Forecast
Monterey	9,764,441	12,091,679
San Benito	1,382,599	2,119,312
Santa Cruz	4,688,870	5,476,518
AMBAG Regional Total	15,835,910	19,687,508

Source: AMBAG, *2040 Metropolitan Transportation Plan/Sustainable Communities Strategy*, June 2018

The Governor's Office of Planning and Researched prepared a Technical Advisory on Evaluating Transportation Impacts (OPR 2018) to provide guidance on conducting analyses consistent with SB 743 and the revised CEQA Guidelines.[20] Per the Technical Advisory, projects that would reduce vehicle trips compared to existing conditions generally may be assumed to cause a less-than-significant transportation impact, providing that there is no substantial evidence indicating otherwise (OPR 2018).

[20] https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

4.17.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with a 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 (for example, sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

4.17.3 Explanation

a) **Less than Significant Impact.** The proposed project consists of the reconfiguration and improvement of the existing athletic fields at Marina High School. No work on public roadways would occur as a result of the proposed project. As a result, the direct impacts of construction would not substantially impact the area's public roadways. Construction will not require any temporary closure of any lane or any other part of the City's circulation system. Construction-related vehicle trips would be generated from a variety of sources during construction of the project including, but not limited to, haul trucks, material delivery trucks, and construction workers. Given temporary duration of construction activity and existing capacity on local roadways, project construction is not anticipated to conflict with any applicable plan, policy or ordinance related to the transportation system that could result in a substantial adverse environmental effect.

A reconfiguration and expansion of the existing parking lot is included as part of the proposed project. However, the parking lot would not be considered a public roadway due to its location entirely within the Marina High School campus. The proposed project would result in a change of time for certain school games and a minimal increase in traffic during athletic events, as described in **Table 2**. However, the increased traffic would largely be confined to the Marina High School campus and associated with specific evening events. In addition, the proposed project would take existing trips from Marina to Monterey Peninsula College and Seaside High School for off-site "home" football games and convert these to shorter trips to Marina High School. The proposed project would not substantially impact local transit, roadways, or bicycle and pedestrian facilities. As a result, the proposed project would have a less than significant impact with respect to conflicting with a program, plan, ordinance, or policy addressing the circulation system. (1, 2, 3)

b) **Less than Significant Impact**. VMT was adopted as the appropriate metric for evaluating transportation impacts with the adoption of State CEQA Guidelines Section 15064.3 on December 28, 2018. The VMT metric replaced the previously widespread Level of Service (LOS) evaluation with the intent to shift the focus of transportation impact analysis from traffic congestion to total greenhouse gas emissions from vehicle travel. CEQA Guidelines Section 15064.3 subdivision (b) contains four criteria for analyzing the transportation impacts from a project. The proposed project's consistency with these criteria is evaluated below:

- Section 15064.3(b)(1) addresses land use projects. The proposed project consists of the reconfiguration and improvement of the existing athletic fields at Marina High and would be considered a land use project. CEQA Guidelines Section 15064.3(b)(1) describes that projects with specified proximity to "major" or "high quality" transit should be presumed to cause a less than significant transportation impact. As discussed above, the proposed project is served most directly by MST routes 17, 18, and 23, which stops along Del Monte Boulevard, approximately 2,000 feet to the northwest. The proposed project site is not located near a major transit hub. As a result, the transit service in the vicinity of the project would not be considered "major" or "high quality". Therefore, this aspect of CEQA Guidelines Section 15064.3 subdivision (b)(1) does not apply to the proposed project.

  This section also states that projects which would decrease VMT compared to existing conditions would be presumed to have a less than significant impact. Traffic studies conducted for Valley High Sports Complex in Santa Ana Unified School District, St. Vincent Sports Complex at St. Ambrose University, and Carmel High School Stadium in Carmel, California, observed average vehicle occupancy of five, four, and 3.24 persons per vehicle, respectively (Kimley Horn 2023). Current attendance for off-site "home" football games is estimated to be 100 people, and attendance is projected to increase to 300 people with implementation of the proposed project. Assuming that trips would originate from the approximate center of the City of Marina's downtown area (assumed to be the 200 block of Reservation Road)[21], the trip length for off-site home games at Seaside High would be approximately 6.4 miles and the trip length for off-site home games at Monterey Peninsula College would be approximately 9.7 miles, compared to a trip length of approximately 1.4 miles for future games at Marina High. Assuming an average vehicle occupancy of approximately four persons per vehicle (25 total vehicles) and a trip length of approximately ten (10) miles, regular season home football games at MPC currently generate 50 one-way traffic trips (accounting for 25 trips to and 25 trips from MPC) and 500 VMT under existing conditions. Assuming an average vehicle occupancy of approximately four persons per vehicle (25 total vehicles) and a trip length of approximately 6.4 miles, regular season home football games at Seaside High currently generate 50 one-way traffic trips (accounting for 25 trips to and 25 trips from Seaside High) and 320 VMT under existing conditions. With implementation of the proposed project, home games would be held at Marina High, with a vehicle occupancy of approximately four persons per vehicle (75 total vehicles) and a trip length of 1.4 miles, regular season home football games currently generate 150 one-way traffic trips (accounting for 75 trips to and 75 trips from Marina High) and 210 VMT six times per year as identified in **Table 2**. Therefore, the proposed project would reasonably be expected to result in decreased

[21] This location was chosen due to its central location in the City's downtown area and the proximity of high-density residential uses.

VMT per trip when comparing the length of the existing vehicle trips occurring to Seaside High School and Monterey Peninsula College (associated with Marina High School's six current "home" football games) compared to the length of vehicle trips to future home games at Marina High School, resulting in an overall decrease in VMT for specific events with the proposed project compared to existing conditions. For these reasons, the proposed project is consistent with this aspect of CEQA Guidelines Section 15064.3 subdivision (b)(1), as discussed further below.

- Section 15064.3(b)(2) addresses transportation projects. The proposed project consists of the reconfiguration and improvement of the existing athletic fields at Marina High and does not include any new public transportation or roadway systems. Therefore, this section does not apply to the proposed project.
- Section 15064.3(b)(3), Qualitative Analysis, states that if existing models or methods are not available to estimate the vehicle miles traveled for the project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. As stated above, neither the City of Marina, MPUSD, nor the County of Monterey have officially established or adopted a methodology or thresholds of significance for VMT. A qualitative analysis is provided herein and therefore the proposed project is consistent with this aspect of CEQA Guidelines Section 15064.3 subdivision (b).
- Section 15064.3(b)(4), Methodology, states that lead agencies such as MPUSD have discretion to choose the most appropriate methodology to evaluate VMT subject to other applicable standards such as CEQA Guidelines Section 15151 (standards of adequacy for EIR analyses). The proposed project uses the screening threshold for small projects recommended in OPR's MPUSD has not formally adopted VMT thresholds to date. Therefore, the 2018 VMT Technical Advisory is used for the proposed project and no alternate threshold is proposed. Therefore, the proposed project is consistent with this aspect of CEQA Guidelines Section 15064.3 subdivision (b).

As discussed above, per OPR's 2018 VMT Technical Advisory, projects which decrease VMT compared to existing conditions generally may be assumed to cause a less-than-significant transportation impact, providing that there is no substantial evidence indicating otherwise (OPR 2018). Therefore, the VMT attributable to the project would result in a less-than-significant VMT impact if it would decrease VMT compared to existing conditions, which represent the thresholds of significance for VMT for the proposed project.

Construction

Construction of the proposed project could generate vehicle trips associated with hauling equipment and materials to and from the site, as well as trips associated with construction worker commute. The number of trips would vary based on the phase and duration of the construction activities and are not known with certainty at this time. However, the proposed project consists of the reconfiguration of an existing athletic field, the reconfiguration of the existing parking lot, and the addition of a concession stand, restroom, and plaza over a period of 14 months. The scale and intensity of the proposed project would not be expected to result in vehicle trips meeting or exceeding 110 new vehicle trips per day due to construction activities being spread out through the overall 14-month length of the construction period and the limited overall scale of construction activities associated with the proposed project. In addition, these trips are

temporary in nature and would cease upon completion of the proposed project. Therefore, construction period vehicle trips would not result in a permanent VMT increase compared to existing conditions. As a result, the proposed project would have a less than significant VMT impact during construction.

Operation

The proposed project would introduce new athletic facilities, field lighting, and other improvements to the existing Marina High School campus. These improvements would allow for additional athletic events, most notably nighttime football games, that would not be possible under existing conditions. The proposed field lighting would allow Marina High School to host night-time football games which are currently hosted at Monterey Peninsula College (approximately seven miles south of the site) or Seaside High (approximately four miles south of the site). The Marina High School football season occurs between August and November with six (6) home games typically occurring on Fridays. The proposed field lighting would allow these games to be played at Marina High School rather than offsite locations. Game spectators typically consist of Marina High School students, family members, and students and family members of the visiting team. Games would typically be scheduled to start shortly after the conclusion of regular school hours, with junior varsity games being played first and varsity games to follow. The District estimated that home football games would attract an average crowd of 300 spectators as noted in **Table 1**. Based on the Kimley Horn study cited previously, the average vehicle occupancy is anticipated to be four (4) persons per vehicle.

Using the estimated attendance provided by the District, each home game could result in approximately 75 vehicle trips per game. Spread over a year, the proposed project would result in approximately 450 total vehicle trips previously traveling to and from Monterey Peninsula College or Seaside High School accessing the Marina High School site instead.

It is important to note that a minimum of 25 of these vehicle trips would not be considered “new” trips as the trips would already occur to the events previously held at Monterey Peninsula College or Seaside High School and would be diverted to Marina High School as a result of the proposed project. These events would continue to be scheduled annually with or without implementation of the proposed project. The overall increase in attendance at home football games is anticipated to increase from 100 to 300 as a result of the proposed project. However, due to the distance to Marina High School compared to Monterey Peninsula College or Seaside High School, the overall VMT would be less with implementation of the proposed project compared to current conditions as Marina High School students and families would have to travel a lesser distance to games at Marina High School. As discussed above, assuming that trips would originate from 200 block of Reservation Road, as a central point within the City’s downtown area in close proximity to high-density residential uses, the trip length for off-site home games at Seaside High would be approximately 6.4 miles and the trip length for off-site home games at Monterey Peninsula College would be approximately ten (10) miles without the proposed project, compared to a trip length of approximately 1.4 miles for future games at Marina High with the proposed project. Additionally, playing games at Marina High School would further reduce trips as some students would stay on campus following the conclusion of the school day. The proposed project would facilitate nighttime use of the athletic fields for practices and games for other school sports including baseball and soccer as described in **Table 2**. However, these events would take place immediately following school hours and the participants would already be located on campus.

The average VMT per vehicle trip would decrease from either ten (for games at MPC) or 6.4 (for games at Seaside High) to 1.4 (for games at Marina High) and the overall VMT per game would decrease from either 500 (for games at MPC) or 320 (for games at Seaside High) to 210 (for games at Marina High). Therefore, even with the increase in average attendance from 100 to 300 persons per game, both the average VMT per vehicle trip and overall VMT per game would be substantially lower with the operation of the proposed project compared to existing conditions as the home athletic events would be held at Marina High School and would no longer be held at further away offsite locations such as Seaside High School and Monterey Peninsula College.

The proposed project would clearly lessen overall VMT compared to existing conditions due to home athletic events being located at Marina High School compared to further away, offsite locations such as Seaside High School and Monterey Peninsula College. Therefore, using OPR guidance, because the project would reduce overall VMT compared to existing conditions, this impact related to VMT would not conflict or be inconsistent with CEQA Guidelines section 15064.3(b).

Conclusion

Based on the analysis above, the project would be consistent with State CEQA Guidelines Section 15064.3 subdivision (b), representing a less than significant impact. (1, 2, 3, 25)

c) **Less than Significant Impact.** The proposed project would reconfigure the existing parking lot and add a new parking lot south of the athletic fields, (**Figures 5a-5d**) but would not result in any changes to public roadways. The reconfigured parking lot has been designed to improve safety for student drop-off during both regular school hours and after-school events compared to existing conditions, including limiting portions of the lot to one-way traffic. Pedestrian crosswalks for the lower parking lot would be constructed to allow maximum visibility of pedestrians to vehicles accessing the lower parking lot. The reconfigured parking lot would not substantially increase hazards due to a geometric design feature or an incompatible use. This represents a less than significant impact. (1, 2, 3)

d) **Less than Significant Impact.** As stated above in impact c), the proposed project would not result in changes to public roads that would be used for emergency response at the project site. The reconfigured parking lot would provide emergency vehicle access. Final design of emergency vehicle access would require approval from the Department of State Architect, which would ensure that the proposed project provides adequate access to emergency vehicles. This represents a less than significant impact. (1, 2, 3, 4)

4.18 Tribal Cultural Resources

4.18.1 Environmental Settings

California Assembly Bill (AB) 52, in effect since July 2015, provides CEQA protections for tribal cultural resources. All lead agencies approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impact of a project on tribal cultural resources before releasing an environmental document. Under California Public Resources Code §21074, tribal cultural resources include site features, places, cultural landscapes, sacred places, or objects that are of cultural value to a tribe and that are eligible for or listed on the California Register of Historical Resources (CRHR) or a local historic register, or that the lead agency has determined to be of significant tribal cultural value.

On February 7, 2023, MPUSD contacted the Native American Heritage Commission (NAHC) to request a search of the Sacred Lands File of Native American cultural resources and the current list of Native American contacts for the project location in order to initiate consultation under AB 52. The NAHC responded on February 19, 2023, that the search of the Sacred Lands File for the immediate area of the project was negative. The NAHC also provided a list of Native American Contacts.

MPUSD contacted the nine Native American groups and/or individuals identified by NAHC in fulfillment of AB 52 requirements. MPUSD sent letters to these contacts via certified USPS mail on February 24, 2023. A sample letter is presented in **Appendix F**. These letters consisted of the project description and objective and a project location map. The parties contacted were asked to consider the letter and project information as notification of a proposed project as required under CEQA and AB 52. Comments were requested in writing within 30 days. Return contact information was provided to facilitate multiple options for responses by letter, email, or phone. Two letters were returned undelivered. MPUSD attempted to contact the recipients by phone. No responses were received to the initial or the subsequent AB 52 outreach.

4.18.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
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), or	☐	☐	☐	☒

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
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 Section5024.1, the lead agency shall consider the significance of the resource to a California Native America Tribe.	☐	☒	☐	☐

4.18.3 Explanation

a) **No Impact.** As discussed in **Section 4.5.3**, there are no historical structures or resources within or adjacent to the proposed project site. The project consists of the reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements and does not involve the removal of any existing structures or impacts to historic resources, as none occur within or adjacent to the site. As a result, the proposed project would have no impact on eligible historic resources. (1, 2, 3)

b) **Less than Significant Impact with Mitigation Incorporated.** As discussed above, MPUSD contacted the nine Native American groups and/or individuals identified by NAHC in fulfillment of AB 52 requirements. MPUSD sent letters to these contacts via certified USPS mail on February 24, 2023. No requests for consultation were received in response to the AB 52 outreach letters sent out to identified tribal contacts. As a result, no tribal resources are known or expected to occur on the site. However, previously undocumented tribal resources could potentially be discovered on the site during ground disturbing activities. The project would implement **Mitigation Measures CR-1** and **CR-2** (see **Section 4.5.3**) to reduce impacts related to the discovery of unknown cultural and/or tribal resources to a less than significant level. (1, 2, 3)

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

Utilities and services are furnished to the project area by the following providers:

- Wastewater Treatment: Monterey One Water (M1W)
- Water Service: Marina Coast Water District (MCWD)
- Solid Waste: GreenWaste Recovery
- Natural Gas & Electricity: 3CE, PG&E

4.19.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the project:				
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 would 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 statuses and regulations related to solid waste?	☐	☐	☒	☐

4.19.3 Explanation

a) **Less than Significant Impact**. The proposed project consists of reconfiguration of the existing athletic fields and the installation of new field lighting, bleachers, concessions stand, restrooms, and other improvements, including the addition of a new concessions stand and restrooms. These project components would require additional water and wastewater service. However, Marina High School has existing water and wastewater infrastructure in place. These project components would be connected to the existing utility systems and would not require the construction of new water treatment facilities or the expansion of any existing facilities. The proposed project has been designed so as to not interfere with any existing utilities and would not require relocation of any existing utilities. This represents a less than significant impact. (1, 2, 3)

b) **Less than Significant Impact**. Water service to Marina High School is provided by MCWD. As stated above, the proposed project includes construction of a new concessions stand and restrooms which would use potable water. This would increase water use on the project site compared to existing conditions. The restrooms and concessions stand would connect to the existing water infrastructure currently serving Marina High School and would represent a minor increase in the school's water demand. The proposed project also includes the replacement of the existing grass athletic fields with 7,889 sf of new synthetic turf that does not require irrigation, which would offset the increase in water use from the concessions stand and restroom (see also **Section 4.10 Hydrology and Water Quality**). In addition, MCWD has indicated they have ample water supplies to serve their existing customers, including Marina High School, for foreseeable normal, dry, and multiple dry years.[22] This represents a less than significant impact. (1, 2, 26)

c) **Less than Significant Impact**. Wastewater treatment service to Marina High School is provided by M1W. As stated above, the proposed project includes construction of a new concessions stand and restrooms which would generate wastewater. The restrooms would connect to the existing wastewater infrastructure currently serving Marina High School and would represent a minor increase in the school's overall wastewater demand. As a result, the proposed project would have a less than significant impact related to increasing wastewater generation. (1, 2)

d) **Less Than Significant Impact**. Solid waste produced during construction and demolition, as well as operations of the proposed project would be sent to the Monterey Peninsula Landfill and Materials Recovery Facility located north of the City of Marina. The Monterey Peninsula Landfill has an estimated remaining capacity of 48,560,000 cubic yards (CY)[23]. The proposed project is located within the existing Marina High School campus, which is served by the Monterey Peninsula Landfill. The proposed project would result in a minimal increase in solid waste generation compared to existing conditions. This represents a less than significant impact. (1, 2, 27)

[22] https://www.mcwd.org/docs/engr_files/edfp/uwmp/MCWD_2020_UWMP_20210630.pdf
[23] CalRecycle, SWIS Facility/Site Activity Details - Monterey Peninsula Landfill (27-AA-0010). Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/2642?siteID=1976

e) **Less Than Significant Impact**. The California Integrated Waste Management Act (AB 939) requires cities and counties to divert a minimum of 50 percent of their solid waste from landfills. Waste disposal for the proposed project would be provided by GreenWaste Recovery, consistent with the existing service for Marina High School. GreenWaste transfers collected waste for processing at the Monterey Regional Waste Management District (MRWMD) at the Monterey Peninsula Landfill. MRWMD meets or exceeds the 50 percent diversion rate mandated by AB 939.[24] (1, 2, 28)

[24] https://regenmonterey.org/materials-recovery-facility/#1510161385263-418f4e78-ad16

4.20 Wildfire

4.20.1 Environmental Setting

The proposed project site is located within a Local Responsibility Area according to the CalFire fire hazard severity zone map viewer[25]. The project site is not located within a very high fire severity zone (VHFSZ).

4.20.2 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
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 impact 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?	☐	☐	☐	☒

4.20.3 Explanation

a-d) **No Impact.** The proposed project is not located in or near a state responsibility area and is not located on lands classified as a very high fire hazard severity zone. As a result, the proposed project would have no impact with respect to impairing an adopted emergency response plan, exacerbating wildfire due to slope and other factors, requiring installation or maintenance of infrastructure that would exacerbate fire risk, or exposing people or structures to significant risk as a result of runoff, post-fire slope instability, or drainage changes. (1, 2, 3, 29)

[25] CalFire, Fire Hazard Severity Zones Map. Available at: https://egis.fire.ca.gov/FHSZ/

4.21 Mandatory Findings of Significance

4.21.1 Environmental Impacts

Environmental Impacts	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:				
a) Have the potential to 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, 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) 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) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

4.21.2 Explanation

a) **Less than Significant Impact with Mitigation.** The proposed project would not 1) degrade the quality of environment, 2) substantially reduce the habitat of a fish or wildlife species, 3) cause a fish or wildlife population 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 major periods of California history or prehistory. The proposed project would result in temporary construction-related impacts that would be mitigated to a less-than-significant level through the incorporation of mitigation measures identified in this Initial Study. All operational impacts associated with the proposed project would also be reduced to a less-than-significant level through the incorporation of mitigation.

The proposed project could result in potentially significant impacts on candidate, sensitive, or special status species. However, implementation of **Mitigation Measures BIO-1** and **BIO-10** identified above under **Section 4.4 Biological Resources**, would reduce these impacts to less-than-significant levels.

The proposed project site is not known to contain unique archaeological or tribal cultural resources. However, construction of the proposed project could result in the discovery of previously unknown archaeological or tribal cultural resources. However, implementation of **Mitigation Measures CR-1A, CR-1B,** and **CR-2** identified above under **Section 4.5 Cultural Resources**, would reduce these impacts to less-than-significant levels.

The proposed project could result in potentially significant temporary noise and vibration impacts during construction. However, implementation of **Mitigation Measures NSE-1** and **NSE-3** identified above under **Section 4.13 Noise**, would reduce these impacts to less-than-significant levels. In addition, the proposed project could result in potentially significant evening and nighttime noise impacts at nearby sensitive receptors associated with athletic events. However, implementation of **Mitigation Measure NSE-2** identified above under **Section 4.13 Noise**, would reduce this impact to a less-than-significant level. (Source 1-29)

b) **Less than Significant Impact.** In order to determine whether a cumulative effect requires an EIR, the lead agency shall consider whether the impact is significant and whether the effects of the project are cumulatively considerable (CEQA Guidelines §15064(h)(1). This IS/MND contains mitigation to ensure that all impacts would be minimized to a less-than-significant level. As a result, construction and operation of the proposed project would be required to comply with identified mitigation and applicable policies as described in this IS/MND.

CEQA allows a lead agency to determine that a project's contribution to a potential cumulative impact is not considerable and thus not significant when mitigation measures identified in the initial study will render those potential impacts less than considerable (CEQA Guidelines 15064(h)(2). The proposed project would not result in cumulatively considerable impacts. Noise impacts were found to be less than cumulatively considerable. Other impacts, including criteria air emissions, would be less than cumulatively considerable with adherence to development standards and regulations. (Source 1-29)

c) **Less than Significant Impact**. The proposed project consists of the reconfiguration of the existing athletic fields and the addition of field lighting at the existing Marina High School campus. The Proposed Project could result in adverse environmental effects that could result in substantial adverse direct or indirect impacts on human beings. Specifically, the proposed project would result in impacts from generation of noise exceeding established thresholds at nearby sensitive receptors during construction and operation of the proposed project, and impacts related to vibration at sensitive receptors during construction. However, implementation of **Mitigation Measures NSE-1** through **NSE-3** would reduce these impacts to a less than significant level. (Source 1-29)

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Chapter 5. References

LEAD AGENCY

Monterey Peninsula Unified School District
Ryan Altemeyer, Associate Superintendent of Business Services
Heidi Lizarbe, Senior Administrative Assistant

REPORT PREPARATION

Denise Duffy & Associates, Inc.
Denise Duffy, Principal
Patric Krabacher, Senior Environmental Scientist/Certified Arborist
Robyn Simpson, Associate Planner
Liz Camilo, Associate Environmental Scientist
Oliviya Wyse, Associate Planner
Troy Lawson, Assistant Planner
Luke Hiserman, Assistant Planner

Design Imaging Studios
Patrick Ghiringhelli, 3D Design Director

PROJECT TEAM

Weston Miles Architects
Lesley Miles AIA, LEED AP, Principal
Charles Weston, Principal Designer
Sharon Morris, CID, Senior Designer/Project Manager

MUSCO Sports Lighting, LLC
Bob Crookham, Sales Executive
Alicia Dieleman, Sales Coordinator
Bryce Miles, Project Engineer

Aurum Consulting Engineers
Jhim Handrex Meza, P.E., Electrical Engineer II
Najib Anwary, Senior Project Manager

RGM Kramer, Inc.
Rick Mickey, Senior Project Manager
Nadov Rader, Project Manager

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15. EQZAPP
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28. ReGen Monterey Website
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Appendix A

CalEEMod Results

Marina High School Summary Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Marina High School
Construction Start Date	2/6/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.80
Precipitation (days)	32.6
Location	298 Patton Pkwy, Marina, CA 93933, USA
County	Monterey
City	Marina
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3262
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.16

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Arena	142	1000sqft	3.27	142,000	20,819	108,010	—	High School Multi Use SportiStadium
Parking Lot	85.0	Space	0.76	0.00	0.00	0.00	—	Parking Lot

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-9	Use Dust Suppressants
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads
Transportation	T-14*	Provide Electric Vehicle Charging Infrastructure
Transportation	T-34*	Provide Bike Parking
Energy	E-7*	Require Higher Efficacy Public Street and Area Lighting
Natural Lands	N-2	Expand Urban Tree Planting

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10T	PM2.5T
Daily, Summer (Max)	—	—	—	—	—
Unmit.	21.9	19.8	20.1	52.9	5.76
Mit.	21.9	19.8	20.1	52.9	5.76
% Reduced	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—
Unmit.	21.9	36.0	33.7	52.9	5.76

Mit.	21.9	36.0	33.7	52.9	5.76
% Reduced	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—
Unmit.	1.24	9.85	11.5	27.8	3.31
Mit.	1.24	9.85	11.5	27.8	3.31
% Reduced	—	—	—	—	—
Annual (Max)	—	—	—	—	—
Unmit.	0.23	1.80	2.09	5.08	0.60
Mit.	0.23	1.80	2.09	5.08	0.60
% Reduced	—	—	—	—	—

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10T	PM2.5T
Daily, Summer (Max)	—	—	—	—	—
Unmit.	10.5	5.68	52.4	—	—
Mit.	10.5	5.67	52.4	—	—
% Reduced	< 0.5%	< 0.5%	—	—	—
Daily, Winter (Max)	—	—	—	—	—
Unmit.	9.41	6.63	46.5	—	—
Mit.	9.41	6.62	46.5	—	—
% Reduced	< 0.5%	< 0.5%	—	—	—
Average Daily (Max)	—	—	—	—	—
Unmit.	10.0	6.27	48.2	—	—
Mit.	10.0	6.26	48.2	—	—
% Reduced	< 0.5%	< 0.5%	—	—	—
Annual (Max)	—	—	—	—	—

Unmit.	1.83	1.14	8.80	—	—
Mit.	1.83	1.14	8.80	—	—
% Reduced	< 0.5%	< 0.5%	—	—	—

6. Climate Risk Detailed Report

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	68.0
Healthy Places Index Score for Project Location (b)	19.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

Appendix B

Biological Assessment

Marina High School Multi-Sports Field Project
Biological Resources Report

December 2023

Prepared for

Monterey Peninsula Unified School District
P.O. Box 1031
Monterey, California 93942

Prepared by

Denise Duffy & Associates, Inc.
947 Cass Street, Suite 5
Monterey, California 93940

Contact: Erin Harwayne
(831) 373 – 4341

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1. INTRODUCTION

1.1 Project Description

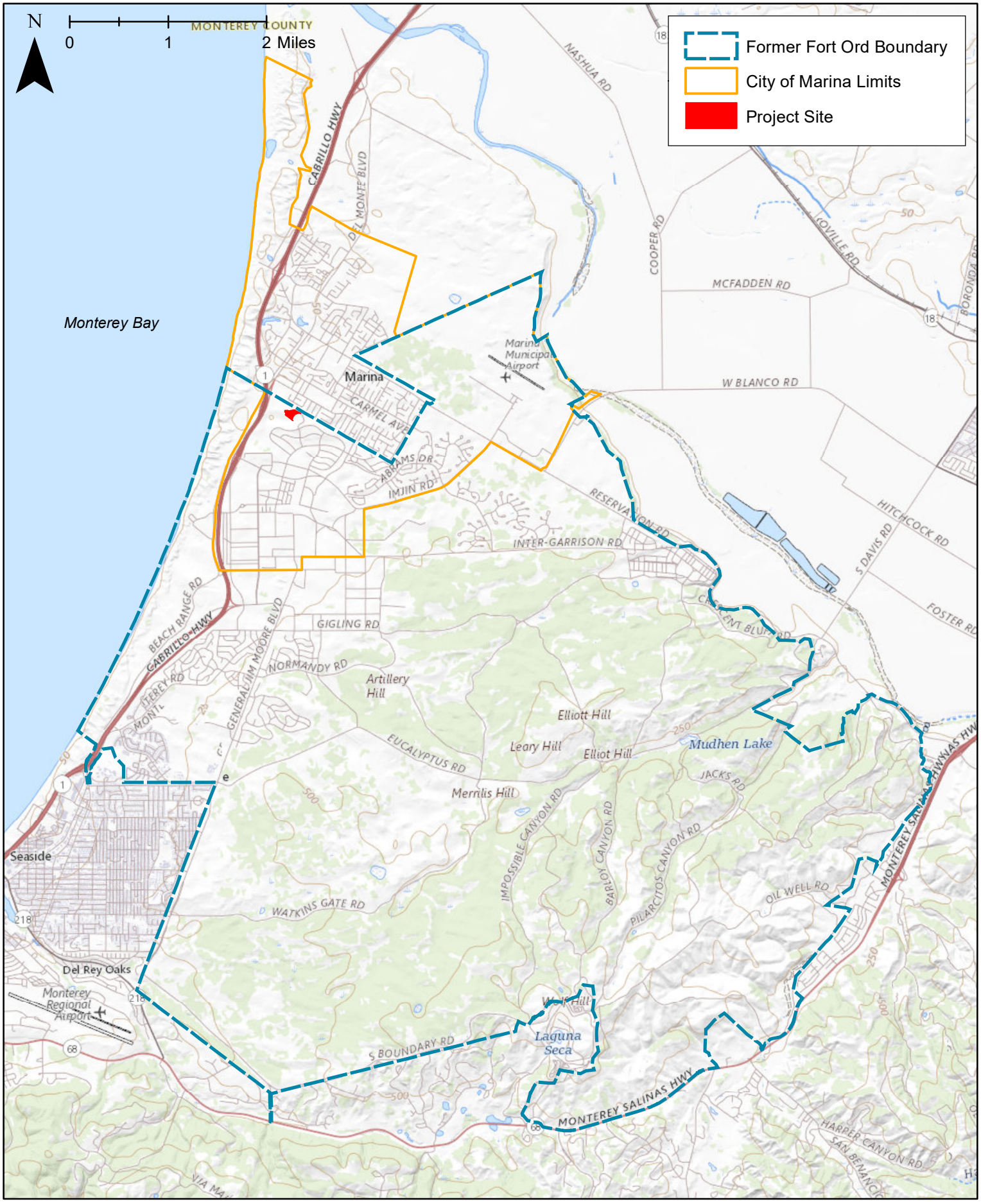
Denise Duffy & Associates, Inc. (DD&A) is contracted by Monterey Peninsula Unified School District (MPUSD) to provide environmental consulting services for the Marina High School Multi-Sports Field Project (project or proposed project), located on the Marina High School campus in the City of Marina (City), California. The project consists of various improvements to approximately 5.6 acres of existing athletic fields and adjacent areas at Marina High School.

To satisfy the reporting criteria of MPUSD and other agencies, DD&A completed a biological assessment of the project site to determine if sensitive biological resources are present or have the potential to occur within and in the vicinity of the site. This report describes the existing biological resources within and adjacent to the project site, including any special-status species or sensitive habitats which occur or have the potential to occur within and adjacent to the site. This report also assesses the potential impacts to biological resources that may result from full buildout of the project and recommends appropriate minimization and mitigation measures necessary to reduce those impacts to a less-than-significant level in accordance with the California Environmental Quality Act (CEQA). In addition, this report includes an overview of applicable federal, state, and local regulation, regulatory, and responsible agencies with jurisdiction over sensitive resources within the project site and the relevant permits for biological resources that could be required for the project.

1.2 Summary of Results

Most of the project site is landscaped or developed; however, two natural communities, ruderal/disturbed and planted Monterey pine forest, occur within the site. No sensitive habitats occur within or directly adjacent to the site. Four special-status plant species, including sandmat manzanita, Monterey ceanothus, Monterey spineflower, and Monterey gilia, are known to occur within and/or directly adjacent to the project site. In addition, several special-status wildlife species, including Townsend's big-eared bat, Monterey dusky-footed woodrat, Northern California legless lizard, coast horned lizard, and raptors and other nesting birds, also have the potential to occur within the site. Finally, trees which are protected by the City are present within and adjacent to the project site.

Avoidance, minimization, or mitigation measures are identified in this report to avoid or reduce potential impacts to these sensitive biological resources to a less than-significant level under CEQA. An incidental take permit (ITP) from the California Department of Fish and Wildlife (CDFW) would be required for potential project impacts to Monterey gilia; however, the project has been designed to avoid impacts to Monterey gilia and preclude the need for an ITP. In addition, a tree removal permit from the City would be required for removal of any living trees within City limits. No other regulatory permits for biological resources are anticipated for the project.

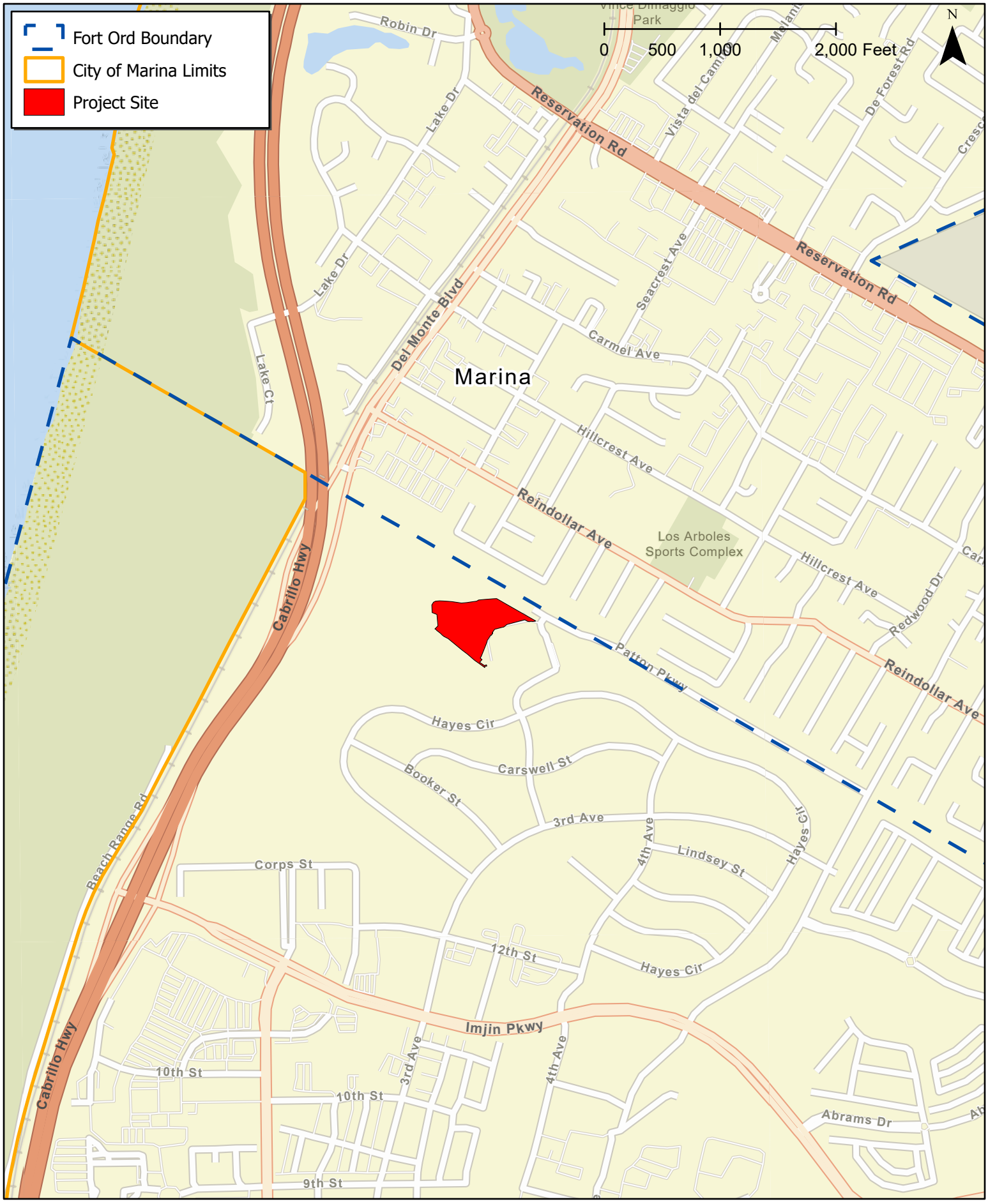


Regional Location

Date	Figure
12/18/2023	1
Scale: 1 in = 7,000 ft	

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Path: D:\GIS\GIS_Projects\2022-52 Marina High StadiumFinal Products\Bio Report\Fig 1 - Regional Location.mxd



Project Location

Date	Scale	Figure
12/18/2023	1 in = 0 mi	2

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

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2. METHODS

2.1 Personnel and Survey Methods

DD&A biologists Patric Krabacher, Liz Camilo, Kimiya Ghadiri, and Rikki Lougee conducted biological surveys of the project site on October 14, November 10, and November 23, 2022, and April 14, June 20, and July 19, 2023. Biological surveys consisted of a reconnaissance-level survey of the project site to characterize habitats present within the site, including any potentially sensitive habitats, and to identify any special-status plant or wildlife species or suitable habitat for these species within the site, focused botanical surveys to identify presence or absence of special-status plant species within the site, and a tree inventory to document all trees within and directly adjacent to the site. Survey methods included walking the entire project site to identify these resources. The results of the tree inventory are documented in the *Arborist Report for the Marina High School Multi-Sports Field Project,* dated October 18, 2022. In support of the adjacent Del Monte Boulevard Extension Project (DMB Extension Project), DD&A biologists also conducted focused surveys for Monterey gilia within a portion of the project site in 2021. The dates of each of these surveys are outlined in **Table 1**. Data collected during these surveys were used to assess the environmental conditions of the project site and its surroundings, evaluate environmental constraints in the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts.

Table 1. Biological Surveys within the Project Site

Date	Survey	Project
April 2021	Focused Monterey gilia survey	DMB Extension Project
October 2022	Tree inventory	Proposed Project
November 2022	Reconnaissance-level wildlife and habitat survey	Proposed Project
November 2022	Focused botanical survey for perennial plants	Proposed Project
April 2023	Focused botanical survey for early spring-blooming plants	Proposed Project
June 2023	Focused botanical survey for spring-blooming plants	Proposed Project
July 2023	Focused botanical survey for summer-blooming plants	Proposed Project

In focused botanical surveys for the proposed project and the DMB Extension Project, the survey areas were surveyed for botanical resources following the applicable guidelines outlined in the U.S. Fish and Wildlife Service (Service) *Guidelines for Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (Service, 2000), the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2018), and California Native Plant Society (CNPS) *Botanical Survey Guidelines* (CNPS, 2001). Populations of five or fewer special-status plants were mapped as a point and the number of individual plants was documented, while populations of plants with more than five individuals were mapped as a polygon. Populations included all individuals within approximately three feet of another individual; individual plants further away than three feet were mapped as a separate polygon or point.

2.2 Data Sources

DD&A conducted a desktop literature review to determine the presence or potential presence of special-status species and other sensitive biological resources within the project site. Primary data sources include:

- Current agency status information from the Service and CDFW for species listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA), and those considered CDFW "species of special concern", including:
  - California Natural Diversity Database (CNDDB) occurrences reports from the U.S. Geological Survey (USGS) Marina, Monterey, Moss Landing, Prunedale, Salinas, Seaside, and Spreckels quadrangles (**Appendix A**; CDFW, 2022b), and
  - The Service's Information for Planning and Consultation (IPaC) Resource List for the project site (**Appendix B**; Service, 2022a);
- The California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2022);
- The National Wetlands Inventory Wetlands Mapper (Service, 2022b);
- The National Hydrographic Dataset (USGS, 2022);
- *Flora and Fauna Baseline Study of Fort Ord* (U.S. Army Corps of Engineers [ACOE], 1992);
- *Installation-Wide Multispecies Habitat Management Plan for Former Fort Ord* (HMP) (ACOE, 1997);
- *Del Monte Boulevard Extension Project Biological Resources Report* (DD&A, 2020); and
- *Arborist Report for the Marina High School Multi-Sports Field Project* (DD&A, 2022).

From these resources, a list of special-status plant and wildlife species known or with the potential to occur in the vicinity of the project site was created (**Appendix C**). This list presents these species along with their legal status, habitat requirements, and a brief statement of the likelihood to occur within the project site

2.2.1 Botany

The classification and characterization of the vegetation of the project site is based on field observations and the *Manual of California Vegetation* (Sawyer et.al., 2009). Vegetation types identified in the *Manual of California Vegetation* were utilized to determine if communities identified as sensitive on CDFW's *California Natural Communities List* (CDFW, 2022a) are present within the project site. Information regarding the distribution and habitats of local and state vascular plants was also reviewed (Howitt and Howell, 1964 and 1973; Munz and Keck, 1973; Baldwin et al., 2012; Matthews and Mitchell, 2015; Jepson Flora Project, 2022). All plants observed within the project site during the field observations were identified to species or intraspecific taxon necessary to eliminate them as being special-status species using keys and descriptions in *The Jepson Manual: Vascular Plants of California, Edition 2* (Baldwin et al., 2012) and *The Plants of Monterey County an Illustrated Field Key* (Matthews and Mitchell, 2015). Scientific nomenclature for plant species identified within this document follows Baldwin, et. Al, (2012); common names follow Matthews and Mitchell (2015). A full botanical inventory was not recorded for the project site but the dominant species within each habitat were noted. Dominant plant species are those which are more

numerous than their competitors in an ecological community or makes up more of the biomass; generally, the species that are most abundant. Most ecological communities are defined by their dominant species.

The California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC, 2022) was reviewed to determine if invasive plant species are present within the project site.

2.2.2 Wildlife

The presence or potential presence of special-status wildlife within the project site were determined using field observations of habitat and local occurrence data. The following literature and data sources were reviewed: CDFW reports on special-status wildlife (Remsen, 1978; Williams, 1986; Thelander, 1994); California Wildlife Habitat Relationships Program species-habitat models (CDFW, 2008; Zeiner et al., 1988 and 1990); *Flora and Fauna Baseline Study of Fort Ord* (ACOE, 1992); the HMP (ACOE, 1997); and general wildlife references (Stebbins, 1985).

2.3 Definitions

2.3.1 Sensitive Habitats

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted vegetation types. Vegetation types considered sensitive include those listed on CDFW's *California Natural Communities List* (i.e., those habitats that are rare or endangered within the borders of California) (CDFW, 2022a), those that are occupied by species listed under the ESA or are critical habitat in accordance with the ESA, and those that are defined as Environmentally Sensitive Habitat Areas under the California Coastal Act. Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act and Executive Order 11990 – Protection of Wetlands), state regulations (such as CEQA and the CDFW Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

2.3.2 Special-Status Species

Special-status species are those plants and animals that have been formally listed or proposed for listing as endangered or threatened or are candidates for such listing under ESA or CESA. Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of rare or endangered under the CEQA Guidelines Section 15380 are also considered special-status species. Animals on the CDFW's list of "species of special concern" (most of which are species whose breeding populations in California may face extirpation if current population trends continue) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA. CDFW also includes some animal species that are not assigned any of the other status designations in the CNDDB "Special Animals" list; however, these species have no legal or protection status and are not analyzed in this document.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or included in CNPS California Rare Plant Ranks (CRPR; formerly known as CNPS Lists) 1A, 1B, 2A, and 2B are also treated as special-status species as they meet the definitions of Sections 2062 and 2067 of the CESA and in

accordance with CEQA Guidelines Section 15380.[1] In general, the CDFW requires that plant species on CRPR 1A (plants presumed extirpated in California and either rare or extinct elsewhere), CRPR 1B (plants rare, threatened, or endangered in California and elsewhere), CRPR 2A (plants presumed extirpated in California, but more common elsewhere); and CRPR 2B (plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2021) be fully considered during the preparation of environmental documents relating to CEQA. CNPS CRPR 4 species (plants of limited distribution) may, but generally do not, meet the definitions of Sections 2062 and 2067 of CESA, and are not typically considered in environmental documents relating to CEQA. While other species (i.e., CRPR 3 or 4 species) are sometimes found in database searches or within the literature, these do not meet the definitions of Section 2062 and 2067 of CESA and are not analyzed in this document.

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under California Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto." In addition, protected species under Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline may also be considered special-status animal species in some cases, depending on project-specific analysis and relevant, localized conservation needs or precedence.

2.4 Regulatory Setting

The following discussion describes the major federal, state, and local laws regulating biological resources that may be applicable to the project.

2.4.1 Federal Regulations

Federal Endangered Species Act

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally listed threatened or endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by the Service or National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS). In general, NMFS is responsible for the protection of ESA-listed marine species and anadromous fish, whereas other listed species are under Service jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the fish or wildlife…including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through

[1] CNPS initially created five CRPR to categorize degrees of concern; however, to better define and categorize rarity in California's flora, the CNPS Rare Plant Program and Rare Plant Program Committee have developed the new CRPR 2A and CRPR 2B.

either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in permanent or temporary possession of a protected species constitute violations of the MBTA. The Service is responsible for overseeing compliance with the MBTA and implements Conventions (treaties) between the United States and four countries—Canada, Mexico, Japan, and Russia—for the protection of migratory birds. The Service maintains a list of migratory bird species that are protected under the MBTA.

Fort Ord Installation-Wide Multispecies Habitat Management Plan

The U.S. Army's decision to close and dispose of the Fort Ord military base was considered a major federal action that could affect listed species under the ESA. In 1993, the Service issued a Biological Opinion (BO) in accordance with Section 7 of the ESA on the disposal and reuse of former Fort Ord requiring that an HMP be developed and implemented to reduce the incidental take of listed species and loss of habitat that supports these species (Service, 1993, Service, 2017b). The *Fort Ord Installation-Wide Multispecies Habitat Management Plan* (Fort Ord HMP or HMP) was prepared to assess impacts on vegetation and wildlife resources and provide mitigation for their loss associated with the disposal and reuse of former Fort Ord (ACOE, 1997).

The HMP establishes guidelines for the conservation and management of species and habitats on former Fort Ord lands by identifying lands that are available for development, lands that have some restrictions with development, and habitat reserve areas. The intent of the plan is to establish large, contiguous habitat conservation areas and corridors to compensate for future development in other areas of the former base. The HMP identifies what type of activities can occur on each parcel at former Fort Ord; parcels are designated as "development with no restrictions," "habitat reserves with management requirements," or "habitat reserves with development restrictions." The HMP sets the standards to assure the long-term viability of former Fort Ord's biological resources in the context of base reuse so that no further mitigation should be necessary for impacts to species and habitats considered in the HMP. This plan has been approved by the Service; the HMP, deed restrictions, and Memoranda of Agreement between the Army and various land recipients provide the legal mechanism to assure HMP implementation. It is a legally binding document, and all recipients of former Fort Ord lands are required to abide by its management requirements and procedures.

The HMP anticipates some losses to special-status species and sensitive habitats as a result of redevelopment of the former Fort Ord. With the designated reserves and corridors and habitat management requirements in place, the losses of individuals of species and sensitive habitats considered in the HMP are not expected to jeopardize the long-term viability of those species, their populations, or sensitive habitats on former Fort Ord. Recipients of disposed land with restrictions or management guidelines designated by the HMP are obligated to implement those specific measures through the HMP and through deed covenants. However, the HMP does not provide specific authorization for incidental take of federal or state listed species to existing or future non-federal land recipients under the ESA or CESA. As such, impacts to

applicable federal and state listed species require incidental take authorization under Section 7 or Section 10 from the Service and/or a Section 2081 incidental take permit (ITP) from the CDFW.

The project site is located within a designated "development" parcel under the HMP. Parcels designated as "development" do not have management requirements relative to HMP species. However, the 2017 Programmatic BO and HMP require the identification of sensitive botanical resources within the development parcels that may be salvaged for use in restoration activities in reserve areas (Service, 2017b and ACOE, 1997). In addition, pursuant to HMP and deed covenants, the local land use jurisdictions that receive disposed land with restrictions or management guidelines identified in the HMP, including the City of Marina, are required to prepare their respective resource management plans (RMPs) within six (6) months of land transfer and acquisition. However, in 1997, instead of preparing RMPs, the local jurisdictions jointly initiated a base-wide incidental take permit application process with the Service that included the preparation of a habitat conservation plan, which effectively incorporated the requirements of the HMP. Thus, in coordination with the Service, over a period of over 20 years, the local jurisdictions prepared a Draft Fort Ord Habitat Conservation Plan (HCP). In June 2020, the local jurisdictions decided not to approve the Fort Ord HCP and not to collectively pursue base-wide incidental take permits. As a result, the Service has requested that the local jurisdictions initiate the steps necessary to comply with the HMP now that the Fort Ord HCP and base-wide incidental take permits are no longer proposed. The City of Marina is currently preparing their RMP and anticipate approval by the Service in Spring of 2024, which would comply with the requirements of the HMP. Therefore, if the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND, no additional mitigation measures for HMP species would be required for impacts within the project site. If the City of Marina is not in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND, additional mitigation measures would be required.

2.4.2 State Regulations

California Endangered Species Act

The CESA was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered endangered or threatened by the state. Section 2090 of CESA requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an endangered species or a threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." A Section 2081 Incidental Take Permit from the CDFW may be obtained to authorize "take" of any state listed species.

California Native Plant Protection Act

The CNPPA of 1977 directed CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and Endangered plants in the State." The CNPPA prohibits importing rare and Endangered plants into California, taking rare and Endangered plants, and selling rare and Endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA; however, these plants may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research.

California Fish and Game Code

Birds. Section 3503 of the Fish and Game Code states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal Migratory Bird Treaty Act (MBTA). Section 3800 prohibits take of nongame birds.

Fully Protected Species. The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research, relocation of the bird species for the protection of livestock, and for certain renewable energy and infrastructure projects.

Species of Special Concern. As noted above, the CDFW also maintains a list of wildlife "species of special concern." Although these species have no legal status, the CDFW recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as endangered in the future.

2.4.3 Local Regulations

Tree Preservation

Marina Municipal Code Chapter 17.62 (Tree Removal, Preservation, and Protection) requires a tree removal permit to remove, damage, or relocate, or cause to be removed, damaged, or relocated any living tree on any property within City limits, unless exempted by Sections 17.62.040 or 17.62.050. Section 17.62.030 also prohibits construction activities within the dripline of any tree, unless these activities are conducted in compliance with tree protection guidelines adopted by resolution of the planning commission.

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3. RESULTS

3.1 Natural Communities

Most of the project site is developed with landscaping, paved roads, and structures; however, two natural communities, ruderal/disturbed and planted Monterey pine forest, occur within the project site (**Figure 3**). The following discussion provides an overview of these communities and their distribution within the site.

3.1.1 Landscaped/Developed

- *A Manual of California Vegetation* classification: None
- *California Natural Communities List*: Not listed

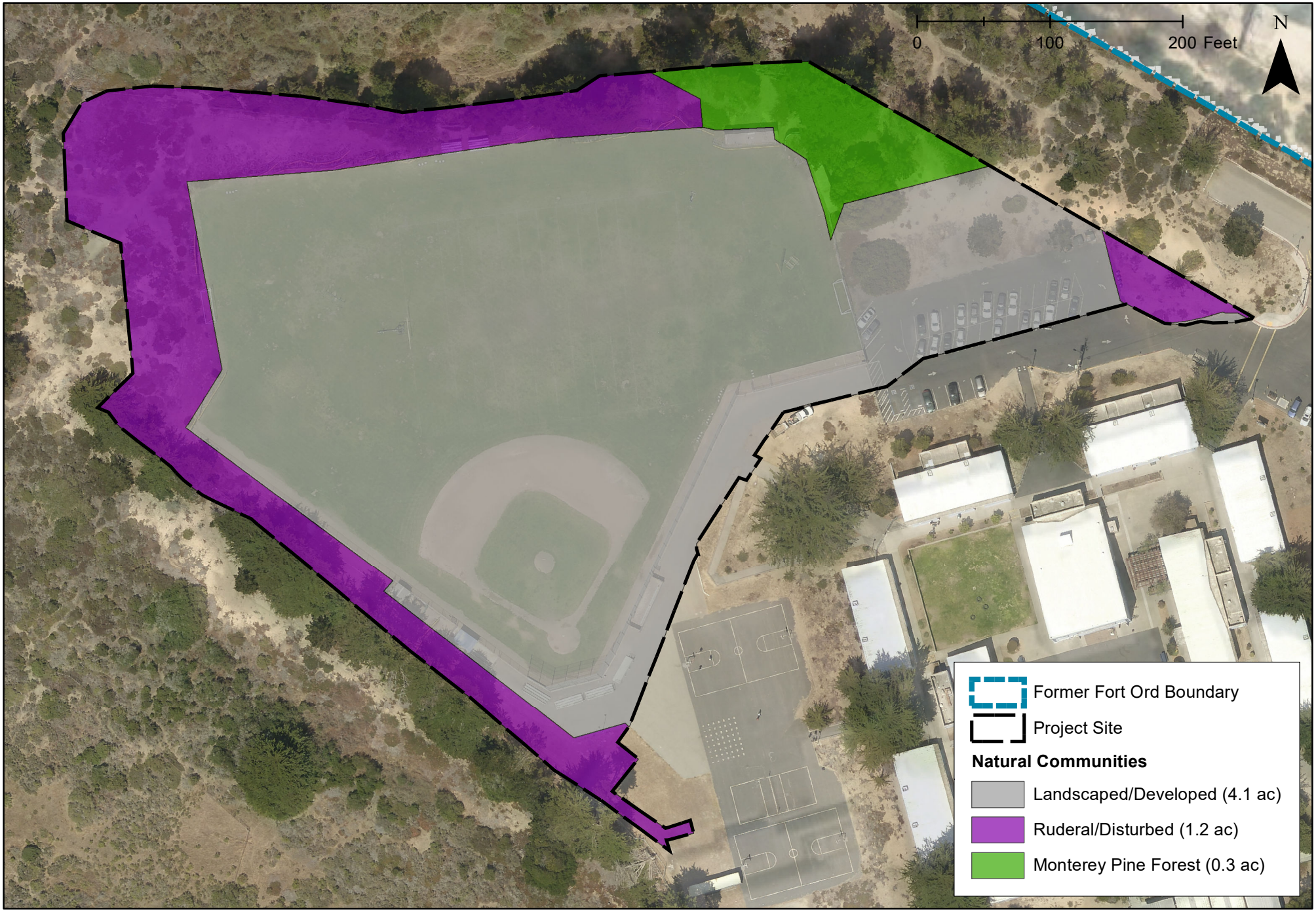
Most of the project site (approximately 4.1 acres) is landscaped or developed with a grassy, maintained sports field and paved roads and sidewalks (**Figure 3**). Very little natural vegetation is present within these areas, and they are considered to have little biological value. However, some common wildlife species that do well in urbanized areas, including American crow (*Corvus brachyrhynchos*), California ground squirrel (*Otospermophilus beecheyi*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), western scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), western fence lizard (*Sceloporus occidentalis*), and rock pigeon (*Columba livia*), may be found foraging within developed areas.

3.1.2 Ruderal/Disturbed

- *A Manual of California Vegetation* classification: Ice plant mats (*Mesembryanthemum* spp. – *Carpobrotus* spp. herbaceous semi-natural alliance)
- *California Natural Communities List*: Not sensitive

Ruderal areas are those areas which have been developed or have been subject to historic and ongoing disturbance by human activities and are devoid of vegetation or dominated by non-native and/or invasive weed species. Ruderal areas within the project site surround landscaped and developed areas and consist of areas denuded of vegetation or sandy areas dominated by ice plant (*Carpobrotus edulis*), deerweed (*Acmispon glaber*), rush-rose (*Crocanthemum scoparium*), cut-leaved plantain (*Plantago coronopus*), and long-beaked filaree (*Erodium botrys*). Species typical of coastal scrub, including silver bush lupine (*Lupinus albifrons*), mock heather (*Ericameria ericoides*), black sage (*Salvia mellifera*), California sagebrush (*Artemisia californica*), chamise (*Adenostoma fasciculatum*), and sandmat manzanita (*Arctostaphylos pumila*), are also present or common but are not dominant. The presence of these species suggests that ruderal areas may return to native coastal scrub if disturbances (e.g., non-native ice plant) are removed. Approximately 1.2 acres of ruderal habitat occurs within the project site (**Figure 3**).

Ruderal areas are considered to have low biological value as they are generally dominated by non-native plant species and consist of relatively low-quality habitat from a wildlife perspective. In this case, common wildlife species which may be found in coastal scrub (including California quail [*Callipepla californica*], blue-gray gnatcatcher [*Polioptila caerulea*], Anna's hummingbird [*Calypte anna*], northern pacific rattlesnake [*Crotalus oreganus*], gopher snake [*Pituophis catenifer*], brush rabbit [*Sylvilagus bachmani*], western fence lizard, and California ground squirrel) may also occur in ruderal areas.



Natural Communities

Date
12/18/2023

Scale
1 in = 90 ft

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Figure
3

Path: D:\GIS\GIS_Projects\2022-52 Marina High Stadium\Final Products\Bio Report\Fig 3 - Natural Communities.mxd

3.1.3 Monterey Pine Forest

- *A Manual of California Vegetation* classification: Monterey cypress – Monterey pine woodlands stand (*Hesperocyparis macrocarpa – Pinus radiata* forest and woodland semi-natural alliance)
- *California Natural Communities List*: Not sensitive

Monterey pine forest within the project site is a moderate-canopy natural community dominated by planted Monterey pine (*Pinus radiata*) and Monterey cypress (*Hesperocyparis macrocarpa*) trees. The understory is dominated by pine needles and iceplant. Other species observed include coast live oak (*Quercus agrifolia*) bushes, kikuyu grass (*Pennisetum clandestinum*), chamise, and sandmat manzanita. Approximately 0.3 acre of Monterey pine forest occurs within the project site (**Figure 3**).

Due to relatively short life span of closed-cone pines, dead trees and trunks are characteristic of Monterey pine forests. These attract a wide variety of common wildlife, including red-tailed hawk (*Buteo jamaicensis*), chestnut-backed chickadee (*Poecile rufescens*), mule deer (*Odocoileus hemionus*), American robin (*Turdus migratorius*), scrub jay, and raccoon.

3.2 Sensitive Habitats

No sensitive habitats (e.g., wetlands or other waters of the U.S. and/or state, riparian corridors, critical habitat for ESA-listed species, natural communities listed on CDFW's *California Sensitive Natural Communities List* [CDFW, 2022a]) occur within or directly adjacent to the project site. The Monterey pine forest vegetation alliance occurring within the site is a semi-natural alliance of horticultural origin and is not listed as sensitive by CDFW.

3.3 Special-Status Species

Published occurrence data within the project site and surrounding quadrangles were evaluated to compile a table of special-status species known to occur in the vicinity of the project site (see *Section 2, Methods*). Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the project site. The special-status species that are known to occur within the project site or that were determined to have a moderate or high potential to occur within the site are identified are discussed below. All other species are assumed unlikely to occur or have a low potential to occur based on the species-specific reasons presented in **Appendix C**, are therefore unlikely to be impacted by the project, and are not discussed further.

3.3.1 Special-Status Wildlife

Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is a CDFW species of special concern. The Townsend's big-eared bat is a year round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Townsend's big-eared bats typically roost during the day in caves and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. It hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is more prolonged in colder areas. This species arouses periodically and moves to alternative roosts and actively forages and drinks throughout the winter. A single young is born per year between May

and July. Females form maternity colonies of 35 to 200 individuals, while males roost individually. Townsend's big-eared bats feed primarily on small moths that are gleaned from vegetation.

The CNDDB reports one occurrence of Townsend's big-eared bat within the quadrangles reviewed, located approximately 4.3 miles east of the project site. This species may utilize any of the large trees within the project site for night roosts and may forage over all undeveloped areas of the site.

Monterey Dusky-Footed Woodrat

The Monterey dusky-footed woodrat (*Neotoma macrotis luciana*, MDFW) is a CDFW species of special concern. This is a subspecies of the dusky-footed woodrat *(Neotoma macrotis)*, which is common to oak woodlands and other forest types throughout California. Dusky-footed woodrats are frequently found in forest habitats with moderate canopy cover and a moderate to dense understory, including riparian forests; however, they may also be found in chaparral communities. Relatively large nests are constructed of grass, leaves, sticks, and feathers and are built in protected spots, such as rocky outcrops or dense brambles of blackberry and/or poison oak. Typical food sources for this species include leaves, flowers, nuts, berries, and truffles. Dusky-footed woodrats may be a significant food source for small- to medium-sized predators. Populations of this species may be limited by the availability of nest material. Within suitable habitat, nests are often found in close proximity to each other.

Suitable habitat for MDFW is present within the project site in the ruderal/disturbed and Monterey pine forest communities. The CNDDB reports only one occurrence of MDFW within the quadrangles reviewed; however, this species is known to occur throughout the former Fort Ord. Nests of this species were not observed within the project site during the November 2022 biological survey; however, MDFWs have the potential to move into undeveloped areas within the site prior to construction.

Northern California Legless Lizard

The Northern California legless lizard is a CDFW species of special concern, as well as an HMP species.[2] This fossorial (burrowing) species typically inhabits sandy or loose (friable) soils. Habitats known to support Northern California legless lizard include (but are not limited to) coastal dunes, valley and foothill grasslands, chaparral, and coastal scrub at elevations from near sea level to approximately 1,800 meters (6,000 feet). The Northern California legless lizard forages on invertebrates beneath the leaf litter or duff layer at the base of bushes and trees or under wood, rocks, and slash in appropriate habitats. The diet of this species likely overlaps to some extent with that of juvenile alligator lizards and perhaps some other salamanders. This species may be preyed upon by alligator lizards, snakes, birds, and small mammals. Little is known about the specific habitat requirements for courtship and breeding; however, the mating season

[2] The HMP identifies this species as black-legless lizard (*Anniella pulchra* ssp. *nigra*) to differentiate it from the previously identified silvery-legless lizard (*A. p.* ssp. *pulchra*). These subspecies are based primarily on phenotypic differences (black-legless lizard being much darker, having fewer scales on the back, and a relatively shorter tail) and very limited genetic work. Further, the range of the black-legless lizard has historically been classified as "restricted to coastal and interior dune sand other areas of sandy soils in the vicinity of Monterey Bay and the Monterey Peninsula" (Service, 1998), while the range of silvery-legless lizard has been classified as widespread throughout central California (Parham and Papenfuss, 2008). However, recent genetic studies have revealed five lineages of this species that correspond with different geographic areas of California (Parham and Papenfuss, 2008). These studies do not, however, identify the legless lizards occurring on the coast of Monterey Bay (i.e., the currently designated black-legless lizard) as a separate lineage. Currently, CDFW identifies both subspecies as the Northern California legless lizard and this document, therefore, follows the current regulatory identification.

for this species is believed to begin late spring or early summer, with one to four live young born between September and November.

Suitable habitat and soils for Northern California legless lizard is present in ruderal/disturbed areas of the project site where appropriate cover conditions occur. The CNDDB reports 56 occurrences of this species within the quadrangles reviewed, the nearest located less than one mile west of the project site within Fort Ord Dunes State Park (FODSP). Therefore, this species has a high potential to occur within the undeveloped areas of the project site.

Coast Horned Lizard

The coast horned lizard (*Phrynosoma blainvillii*) is a CDFW species of special concern. Horned lizards occur in valley-foothill hardwood, conifer, and riparian habitats, as well as in pine-cypress, juniper, chaparral, and annual grass habitats. This species generally inhabits open country, especially sandy areas, washes, flood plains, and wind-blown deposits in a wide variety of habitats. Coast horned lizards rely on camouflage for protection and will often lay motionless when approached. Horned lizards often bask in the early morning on the ground or on elevated objects such as low boulders or rocks. Predators and extreme heat are avoided by burrowing into loose soil. Periods of inactivity and winter hibernation are spent burrowed into the soil or under surface objects. Little is known about the habitat requirements for breeding and egg-laying of this species. Prey species include ants, beetles, wasps, grasshoppers, flies, and caterpillars.

Suitable habitat for coast horned lizard is present throughout all undeveloped areas of the project site. The CNDDB reports five occurrences of this species within the quadrangles reviewed, the nearest located approximately 1.2 miles north of the project site. In addition, DD&A biologists have observed this species throughout the former Fort Ord. Therefore, this species has a high potential to occur within the undeveloped areas of the project site.

Raptors and Other Protected Avian Species

Raptors, their nests, and other nesting birds are protected under California Fish and Game Code and the MBTA. While the life histories of these species vary, overlapping nesting and foraging similarities allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest habitats, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through September, with peak activity May through July. Prey for these species include small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges.

Various species of raptors and other nesting birds, such as red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus),* American kestrel (*Falco sparverius*), great horned owl (*Bubo virginianus*), and turkey vulture (*Cathartes aura*), have a potential to nest within any of the large trees present within and directly adjacent to the project site.

3.3.2 Special-Status Plants

Sandmat Manzanita

Sandmat manzanita (*Arctostaphylos pumila)* is a CNPS CRPR 1B and HMP species in the Ericaceae family. This evergreen shrub blooms from February through May and is associated with openings in chaparral, coastal scrub, closed cone coniferous forest, coastal dunes, and cismontane woodland habitats on sandy soils at elevations of three to 205 meters. A large and important portion of this species' range is found on the former Fort Ord (Army, 1992), where it grows near the similar Hooker's manzanita (*A. hookeri* ssp. *hookeri)*. Over twenty years of weed abatement within Fort Ord National Monument (FONM) have resulted in improved habitat quality for sandmat manzanita and other rare plants within the former Fort Ord; however, continued expansion of exotic species is also an on-going threat to this species.

Suitable habitat for sandmat manzanita is present within the project site in the ruderal/disturbed and Monterey pine forest communities. This species was observed within both communities during the November 2022 biological surveys; DD&A mapped eight individuals plus approximately 1,336 square feet of sandmat manzanita within the project site (**Figure 4**).

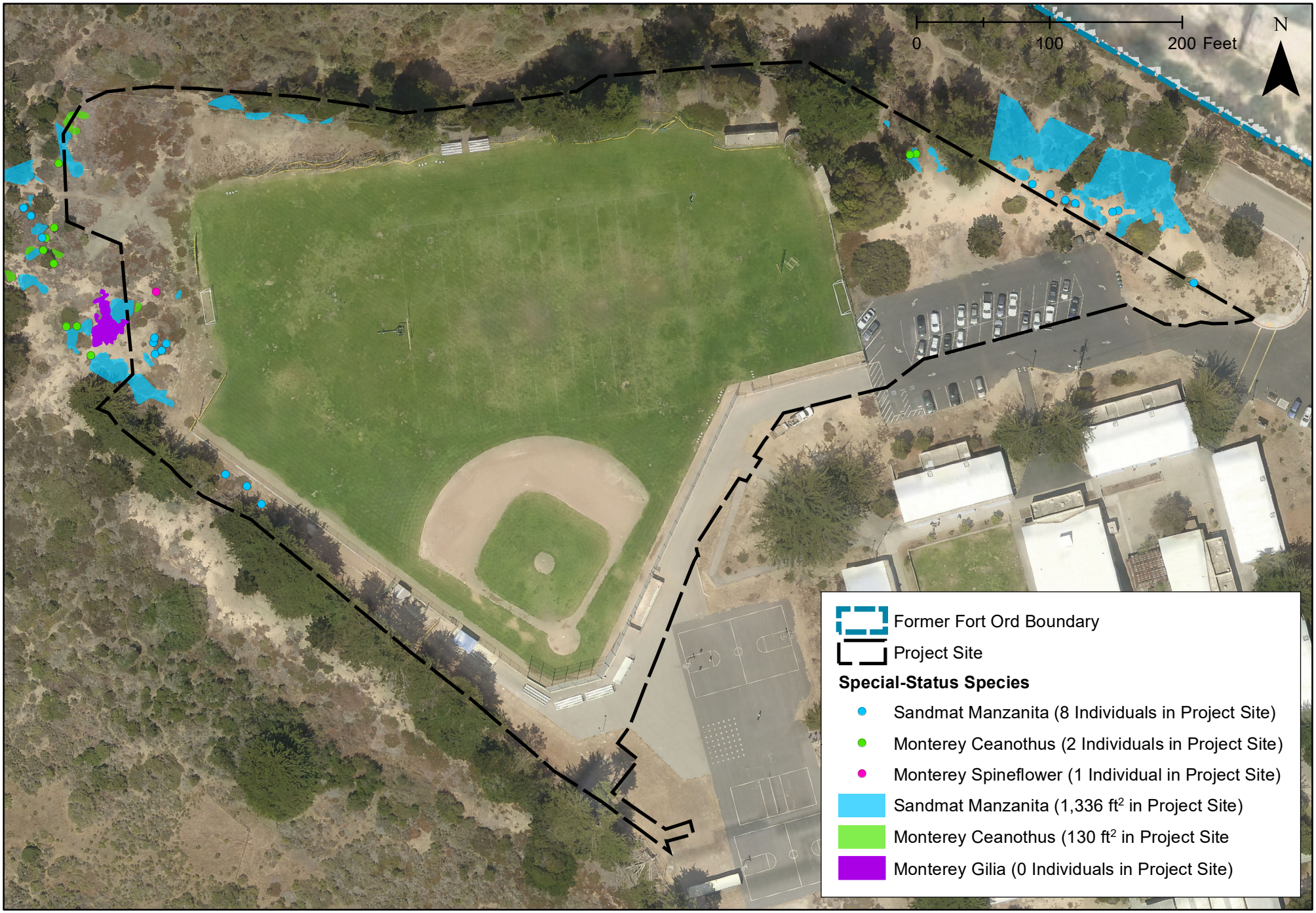
Monterey Ceanothus

Monterey ceanothus (*Ceanothus rigidus*) is a CNPS CRPR List 4 and HMP species in the Rhamnaceae family. This evergreen shrub blooms from February through April (sometimes through June) and is associated with closed-cone coniferous forests, chaparral, and coastal scrub on sandy soils at elevations of three to 550 meters. It is endemic to the central California coast in Monterey, San Luis Obispo, and Santa Cruz Counties; however, it is presumed extirpated from the latter (Elkhorn Slough CTP, 2007). The most abundant and probably the most vigorous population of Monterey ceanothus is found on the former Fort Ord (Army, 1992).

Suitable habitat for Monterey ceanothus is present within the project site in the ruderal/disturbed and Monterey pine forest communities. This species was observed within both communities during the November 2022 biological surveys; DD&A mapped 2 individuals plus approximately 130 square feet of Monterey ceanothus within the project site (**Figure 4**).

Monterey Spineflower

Monterey spineflower (*Chorizanthe pungens* var. *pungens*) is a federally threatened, CNPS CRPR 1B, and HMP species. It is a small, prostrate annual herb in the Polygonaceae family that blooms from April to June. The white to rose floral tube of Monterey spineflower distinguishes it from the more common, but closely related, diffuse spineflower (*Chorizanthe diffusa*), which has a lemon-yellow floral tube. Monterey spineflower is likely self-pollinated in addition to being insect pollinated. It produces small seeds that are dropped or shaken by wind from their capsule and may then be dispersed with blowing sand or by fur-bearing animals to which the spiny fruits may attach and be carried. It typically occurs on open sandy or gravelly soils on relic dunes in coastal dune, coastal scrub, and maritime chaparral habitats, though it can also be associated with cismontane woodlands and valley and foothill grasslands, at elevations of three to 450 meters. This species colonizes recently disturbed sandy soils. In chaparral, scrub, and oak woodland habitats, Monterey spineflower occurs in sandy openings between shrubs. In grasslands, it occurs along roadsides, in firebreaks, and other disturbance patches; it is crowded out of mature grassland vegetation.



Special-Status Plant Species Occurrences

Date
12/18/2023

Scale
1 in = 90 ft

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Figure
4

Path: D:\GIS\GIS_Projects\2022-52 Marina High Stadium\Final Products\Bio Report\Fig 4 - Special-Status Plants 12-18-23.mxd

In older stands that have avoided fire long enough to have dense, closed shrub or tree canopies, it is restricted to roadsides and firebreaks. In dune habitats at the former Fort Ord, Monterey spineflower prefers disturbed sites within otherwise stabilized dunes (Army, 1992).

Monterey spineflower occurs along the coast of southern Santa Cruz and northern Monterey Counties and inland to the coastal plain of the Salinas Valley. It is abundant within undeveloped areas of the former Fort Ord, which likely supports the largest known populations of the species. It has been identified on 12,978 acres of the former Fort Ord, located primarily within undeveloped areas of the western half of the base (Army, 1992). The highest densities are in the central portion of the firing range, where disturbance has historically been the most frequent. Although studies were not conducted on factors that determine the pattern of distribution and the densities of the plant in the former Fort Ord, a correlation exists between open conditions resulting from activities that disturb habitat and high densities of the plant (54 FR 5499). The introduction, and later invasion, of ice plant and European beach grass (*Ammophila arenaria***)** for dune stabilization has greatly reduced spineflower populations and suitable habitat for this species within the former Fort Ord. In addition, urban development in coastal cities, and to a lesser extent within the former Fort Ord, have resulted in loss of large portions of its range. Historic occurrences in the Salinas Valley have been extirpated, primarily due to conversion of natural habitat to agricultural land use (Army, 1992).

Suitable habitat for Monterey spineflower is present within ruderal/disturbed areas of the project site. This species was observed within this community during the June 2023 biological survey; DD&A mapped one individual Monterey spineflower within the project site (**Figure 4**).

Monterey Gilia

Monterey gilia (*Gilia tenuiflora* ssp. *arenaria*) is a federally endangered, state threatened, CNPS CRPR 1B, and HMP species endemic to the Monterey Bay area. This small, erect annual herb in the Polemoniaceae family typically germinates from December to February and blooms from April through June. It can self-pollinate as well as outcross, and fruit is set from the end of April to the end of May (ICF, 2019). It produces small seeds that are dropped or shaken from their capsules and are then dispersed, likely by gravity or wind. Monterey gilia is found in sandy openings of maritime chaparral, cismontane woodland, coastal dune, and coastal scrub habitats at elevations of zero to 45 meters. It occurs at scattered locations throughout most of the former Fort Ord, which constitutes a substantial portion (at least half) of its range (Army, 1992). Most populations are small and localized, occurring on roadsides, on the cut banks of sandy ephemeral drainages, in recently burned chaparral, and in other disturbed patches; however, large populations are known from the southern portion of Marina Municipal Airport. Although it often co-occurs with Monterey spineflower, it is much more restricted and differs in microhabitat requirements. It is also found with virgate eriastrum (*Eriastrum virgatum*), a species that appears to have similar ecological requirements.

Many of the populations of Monterey gilia found at Fort Ord support individuals with characteristics intermediate with the related subspecies slender-flowered gilia (*G. tenuiflora* ssp. *tenuiflora*), which is an inland species known to occur near Fort Ord in sandy washes of woodlands in the Salinas Valley (Army, 1992). It is possible that Fort Ord is a zone of intergradation between these two subspecies. Current research from the CSUMB Department of Applied Environmental Science suggests that *G. tenuiflora* ssp. *arenaria* plants within the former Fort Ord comprise two distinct, equally endangered sub-species of *G. tenuiflora*, with characteristics of *G. tenuiflora* ssp. *arenaria* found in more coastal

populations and those of *G. tenuiflora* ssp. *tenuiflora* found in more inland populations (pers. comm. Dr. Fred Watson, CSUMB).

Extremely limited in its range, Monterey gilia is critically endangered due to removal of its habitat for human development, degradation of its habitat from invasive, non-native plants, and trampling by recreational users (Service, 2020). Loss of populations and habitat have resulted from coastal urban development, sand mining operations, and golf course construction. Recreational users, such as off-road vehicle users, hikers, and equestrians, threaten populations and habitat. The introduction of the aggressive ice plant and European beach grass for dune stabilization has altered habitats to unsuitable conditions for sand gilia. Commercial and residential development in and near Marina, Seaside, Sand City, and the Monterey Peninsula threaten remaining gilia populations.

Suitable habitat for Monterey gilia is present within ruderal/disturbed areas of the project site. This species was observed directly abutting the project during the April 2023 biological survey; DD&A mapped 137 Monterey gilia plants adjacent to the project site (**Figure 4**).

3.4 Protected Trees

DD&A inventoried 78 trees within and adjacent to the project site in October 2022 (DD&A, 2022). Tree species identified include 36 Monterey cypresses, 21 Monterey pines, 18 coast live oaks, and three acacias (*Acacia* sp.). As described in *Section 2.4 Regulatory Setting*, the City of Marina regulates the removal, relocation, and damage of all living trees within City limits. If the project would result in impacts to trees, MPUSD would be required to obtain a tree removal permit from the City prior to ground-disturbing activities.

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4. IMPACTS AND MITIGATION

4.1 Approach to Analysis

The following section describes potential impacts that may result from the project. The project site is located within a parcel designated by the HMP as "development" and no uses beyond what is permissible by the HMP are proposed with the project. As described above, parcels designated as "development" do not have management requirements. However, MPUSD is required to identify sensitive biological resources within development parcels that may be salvaged for use in restoration activities in habitat reserve areas. Through implementation of the HMP, impacts to HMP species and habitats occurring within the designated development parcels were anticipated and mitigated off-site through the establishment of habitat reserves and corridors and the implementation of habitat management requirements within habitat reserve parcels on former Fort Ord.

The HMP resources which are known or have the potential to occur within the project site include Northern California legless lizard, sandmat manzanita, Monterey ceanothus, Monterey spineflower, and Monterey gilia. With the designated off-site habitat reserves and corridors and habitat management requirements of the HMP in place, the loss of these species associated with development in the Fort Ord area is not expected to jeopardize the long-term viability of these species and their populations on the former Fort Ord (Service, 1993). This is such because the recipients of disposed land with habitat management requirements and development restrictions designated by the HMP will be obligated to implement those specific measures through the HMP and deed covenants. Because the Project is: 1) only proposing development activities within designated development parcels; 2) required to comply with the HMP; and 3) would not result in any additional impacts to HMP species beyond those anticipated in the HMP, no additional mitigation measures for these HMP species are required.

The recipients of former Fort Ord lands, including the City of Marina, are required to implement HMP requirements in accordance with the deed covenants. Therefore, if the City of Marina is in compliance with the HMP and 2017 Programmatic BO, impacts to HMP special-status species and sensitive habitats are considered less-than-significant and no additional mitigation measures for these resources would be required for impacts within the project site. However, if the City of Marina is not in compliance with the HMP and 2017 Programmatic BO, then impacts to HMP species and habitats may be considered significant and additional mitigation measures may be required.

As described earlier in this report, the HMP does not exempt existing or future land recipients from the federal and state requirements of ESA and CESA. Monterey gilia, an HMP species which is known to occur within the project site, is a state listed species that may require take authorization from the CDFW under CESA if impacts cannot be avoided. Therefore, although Monterey gilia is an HMP species, the take of this species is prohibited under the CESA without authorization. Development resulting in take of this species would need to be authorized by the CDFW through the issuance of an incidental take permit from the CDFW to avoid violation of the CESA.

The HMP, as well as the BO, require the identification of sensitive biological resources within development parcels that may be salvaged for use in restoration activities in habitat reserve areas. MPUSD is required to implement HMP requirements in accordance with the deed covenants, which apply to all parcels within the

City boundaries. Therefore, this analysis assumes that salvage of HMP species will be conducted in accordance with this requirement.

4.2 Thresholds of Significance

For the purposes of this analysis, an impact is significant and requires mitigation if it would result in any of the following:

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 CDFW or the Service;
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or the 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 native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites;
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.3 Areas of No Impact

Criteria "b" and "c" are not evaluated for impacts to riparian habitat, state or federally protected wetlands or other waters, or any other sensitive habitat as none are present within or directly adjacent to the project site.

4.4 Impacts and Mitigation Measures

Impact BIO-1: 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 CDFW or the Service.

Impacts to Special-Status Wildlife

Three non-HMP special-status wildlife species (Townsend's big-eared bat, MDFW, and coast horned lizard) and one HMP wildlife species (Northern California legless lizard) have the potential to occur within and directly adjacent to the project site. In addition, raptors and other nesting birds have the potential to nest within any of the large trees present within and directly adjacent to the project site. If present within or directly adjacent to the site, construction activities could result in injury, nest abandonment, or mortality of individuals. This is a potentially significant impact.

Implementation of **Mitigation Measures BIO-1** through **BIO-3** and species-specific **Mitigation Measures BIO-4** through **BIO-6** would reduce potentially significant impacts to Townsend's big-eared bat, MDFW,

coast horned lizard, and raptors and other nesting birds to a less-than-significant level through a combination of education; implementation of protective measures during construction; monitoring; invasive species control; pre-construction surveys; and avoidance, preservation, and protection of active nests/roosts, if found during pre-construction surveys.

As described in the Approach to Analysis, impacts within development parcels to special-status species addressed in the HMP are considered less than significant if the recipients of former Fort Ord land are in compliance with the HMP and 2017 Programmatic BO. Therefore, if the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time the project is approved and IS/MND adopted, impacts to Northern California legless lizard would be less than significant. However, if the City of Marina is not in compliance with the HMP and 2017 Programmatic BO at the time the project is approved and IS/MND adopted, impacts to Northern California legless lizard would be potentially significant. The implementation of **Mitigation Measures BIO-1** through **BIO-3**, which reduce construction-related impacts through a combination of education, protective measures during construction, monitoring, and invasive species control, would reduce potentially significant impacts to this species a less-than-significant level.

Operation of the stadium lights component of the proposed project would result in new light pollution in the area. Research indicates that urban nighttime lighting can adversely affect birds. There is evidence to show that in some cases, lighting can impact bird species by drawing them toward development, where they may collide with structures; however, these studies largely relate to sources of light that are substantially prominent and intense in comparison to their surroundings, such as offshore oil platforms (Huppop et al., 2016) and the light beams that are part of the September 11 memorial in New York City (Furuya, 2017). The latter study found that the light installation "strongly concentrates and disorients migrants flying over a heavily urbanized area" (Furuya, 2017). Even if birds do not collide with structures, there is a concern that once a bird is within a light beam, they are reluctant to return to darker areas and will fly until exhaustion (Ogden, 1996). The lighting component of the proposed project would be directly focused on the field and would be designed to minimize light spillover. Stadium lighting would be limited to the months of August through March, outside of the peak bird nesting season (approximately May through July,) and would generally not be used past 8pm with the exception of six (6) football games per year and an occasional soccer and/or baseball game, where the lights could be used until 10:30 pm. In addition, the project site lies directly adjacent to existing residential and commercial uses, which are also sources of diffuse light. As a result, the project does not mimic the conditions in studies of avian deaths associated with light sources.

Foraging bats have the potential to occur within the project site. Nighttime lighting can adversely affect bats while foraging at night. For example, insects may be attracted to certain kinds of light, which would then attract bats and expose them to predators. Some bat species avoid LED lights, so they are unable to cross or feed at sites with artificial lighting. Nighttime lighting studies generally focus on overall urban lighting (e.g., Rowse et al., 2015), although at least one study has focused on sport stadiums and concluded that light pollution at stadiums may homogenize urban bat diversity by favoring select urban exploiter species (Schoeman, 2015). However, similar to lighting impacts to birds described above, lighting at the site would be directly focused on the field and would be designed to minimize light spillover into adjacent habitat, and the number of nighttime activities would be limited in quantity and duration. As a result, the project has been sufficiently designed such that nighttime lighting would not result in significant impact to

foraging bats or on bat diversity. Therefore, operational impacts to wildlife would be less than significant and no mitigation is required..

Mitigation Measure BIO-1: The following best management practices will be implemented during construction (i.e., pre-, during, and post-construction) to reduce impacts to special-status species:

- A qualified biologist will conduct an Employee Education Program for the construction crew prior to any construction activities. The qualified biologist will meet with the construction crew at the onset of construction at the project site to educate the construction crew on the following: 1) the appropriate access route(s) in and out of the construction area and review project boundaries; 2) how a biological monitor will examine the area and agree upon a method which will ensure the safety of the monitor during such activities, 3) the special-status species and sensitive habitats that are known or may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the Service and CDFW; and 6) the proper procedures if a special-status species is encountered within the project site.
- Trees and vegetation not planned for removal or trimming will be protected prior to and during construction to the maximum possible with exclusionary fencing, such as Environmentally Sensitive Area (ESA) fencing for herbaceous and shrubby vegetation or protective wood barriers for trees. Only certified weed-free straw will be used to avoid the introduction of non-native, invasive species. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact.
- Following construction, disturbed areas will be restored to pre-project contours to the maximum extent possible and will be revegetated using locally occurring native species and native erosion control seed mix, per the recommendations of a qualified biologist.
- Grading, excavating, and other activities that involve substantial soil disturbance will be planned and implemented in consultation with a qualified hydrologist, engineer, or erosion control specialist, and will utilize standard erosion control techniques to minimize erosion and sedimentation to native vegetation (pre-, during, and post-construction).
- No firearms will be allowed on the project site at any time.
- All food-related and other trash will be disposed of in closed containers and removed from the project site at least once a week during the construction period, or more often if trash is attracting avian or mammalian predators. Construction personnel will not feed or otherwise attract wildlife to the area.

Mitigation Measure BIO-2: MPUSD will retain a qualified biologist to monitor all ground disturbing construction activities (i.e., vegetation removal, grading, excavation, or similar activities) to protect any special-status species encountered. Any handling and relocation protocols of special-status wildlife species will be conducted by a qualified biologist with an appropriate scientific collection permit. After ground disturbing project activities are complete, the qualified biologist will train an individual from the construction crew to act as the on-site construction

biological monitor. The construction biological monitor will be the contact for any special-status wildlife species encounters, will conduct daily inspections of equipment and materials stored on site and any holes or trenches prior to the commencement of work, and will ensure that all installed fencing stays in place throughout the construction period. The qualified biologist will then conduct regular scheduled and unscheduled visits to ensure the construction biological monitor is satisfactorily implementing all appropriate mitigation protocols. The qualified biologist and the construction monitor shall complete a daily log summarizing activities and environmental compliance throughout the duration of the project. The log will also include any special-status wildlife species observed and relocated.

Mitigation Measure BIO-3: The following measures will be implemented to reduce the introduction and spread of non-native, invasive species:

- Any landscaping or replanting required for the project will not use species listed as noxious by the California Department of Food and Agriculture (CDFA) or invasive by the California Invasive Plant Council (Cal-IPC).
- Bare and disturbed soil will be landscaped with CDFA recommended seed mix or plantings from locally adopted species to preclude the invasion on noxious weeds in the project site.
- Construction equipment will be cleaned of mud or other debris that may contain invasive plants and/or seeds and inspected to reduce the potential of spreading noxious weeds, before mobilizing to arrive at the construction site and before leaving the construction site.
- All non-native, invasive plant species will be removed from disturbed areas prior to replanting.

Mitigation Measure BIO-4: To avoid and reduce impacts to Townsend's big-eared bat, any tree limbing or removal operations should occur between September 15 and November 1. If tree limbing or removal operations must occur outside the period of September 15 through November 1, MPUSD will retain a qualified biologist to conduct a survey for roosting bats, as follows:

- For any trees, snags, or buildings that could provide roosting space for cavity- or foliage-roosting bats, potential bat roost features shall be thoroughly evaluated to determine if bats are present. Visual inspection and/or acoustic surveys shall be utilized as initial techniques.
- If roosting bats are found, the biologist shall develop and implement acceptable passive exclusion methods in coordination with or based on CDFW recommendations. If feasible, exclusion shall take place during the appropriate windows (September 15 and November 1) to avoid harming bat maternity roosts and/or winter hibernacula. Authorization from CDFW is required to evict winter hibernacula for bats.
- If established maternity colonies are found, the biologist will coordinate with CDFW to establish a buffer around the colony that protects pre-volant young from construction disturbances until the young can fly or to implement other measures acceptable to CDFW.

- If a tree is determined not to be an active roost site for roosting bats, it may be immediately limbed or removed. If foliage- roosting bats are determined to be present, limbs shall be lowered, inspected for bats by a qualified biologist, and chipped immediately or moved to a dump site. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections shall be dropped on downed limbs or limb piles that have not been in place since the previous day.

Mitigation Measure BIO-5: Not more than thirty (30) days prior to the start of construction, a qualified biologist shall conduct a survey of suitable habitat within the project site to locate existing MDFW nests. Any MDFW nests identified within the project site shall be mapped and flagged for avoidance. Graphics depicting all MDFW nests shall be provided to the construction contractor. Any MDFW nests that cannot be avoided shall be relocated according to the following procedures:

- Each active nest shall be disturbed by the qualified biologist to the degree that the woodrats leave the nest and seek refuge elsewhere.
- Nests shall be dismantled during the non-breeding season (between October 1 and December 31), if possible.
- If a litter of young is found or suspected, nest material shall be replaced and the nest left alone for 2-3 weeks; after this time, the nest will be rechecked to verify that young are capable of independent survival before proceeding with nest dismantling.

Mitigation Measure BIO-6: Construction activities that may directly (e.g., vegetation removal) or indirectly (e.g., noise/ground disturbance) affect protected nesting avian species will be timed to avoid the breeding and nesting season. Specifically, vegetation and/or tree removal can be scheduled after September 15 and before February 1. Alternatively, a qualified biologist will be retained by the project applicant to conduct pre-construction surveys for nesting raptors and other protected avian species within 500 feet of proposed construction activities if construction occurs between February 1 and September 15. Pre-construction surveys will be conducted no more than 14 days prior to the start of construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through September). Because some bird species nest early in spring and others nest later in summer, and because some species breed multiple times in a season, surveys for nesting birds may be required to continue during construction to address new arrivals. The necessity and timing of these continued surveys will be determined by the qualified biologist based on review of the final construction plans.

If raptors or other protected avian species nests are identified during the pre-construction surveys, the qualified biologist will notify MPUSD and an appropriate no-disturbance buffer will be imposed within which no construction activities or disturbance should take place (generally 500 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

Impacts to Special-Status Plants

Three HMP plant species, sandmat manzanita, Monterey ceanothus, and Monterey spineflower, are known to occur within the project site; eight individuals plus approximately 1,336 square feet of sandmat manzanita, 2 individuals plus approximately 130 square feet of Monterey ceanothus, and one Monterey spineflower individual were observed within the project site during focused botanical surveys in 2022 and 2023. In addition, a population of 137 Monterey gilia plants was observed directly abutting the project site. These species are also known to occur directly adjacent to the project site in suitable habitat. Where present within or directly adjacent to the project site, construction activities could result in adverse impacts to these species, including loss of individuals, soil compaction, dust, loss of habitat, erosion, and introduction and spread of non-native, invasive species. The project could also result in impacts to special-status plant populations outside of the project site if construction activities occur outside of the proposed work limits. Impacts to Monterey gilia would be considered take of a state listed species. This is a potentially significant impact.

As described in the Approach to Analysis, impacts within development parcels to special-status species addressed in the HMP are considered less than significant if the former Fort Ord land recipients are compliance with the HMP and 2017 Programmatic BO. Therefore, if the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND, impacts to sandmat manzanita, Monterey ceanothus, Monterey spineflower, and Monterey gilia would be less than significant. However, the take of Monterey gilia would still be prohibited under the CESA without authorization from the CDFW and, therefore, MPUSD would be required to acquire an incidental take permit for impacts to this species prior to construction. The project has been designed to avoid impacts to Monterey gilia. Implementation of **Mitigation Measures BIO-1** through **BIO-3** and **BIO-7** and **BIO-8** would further avoid all potential project impacts to Monterey gilia and preclude the need for an ITP.

If the City of Marina is in compliance with the HMP and 2017 Programmatic BO at the time of project approval and adoption of the IS/MND, while not required to reduce a significant impact, **Mitigation Measures BIO-1** through **BIO-3** and **BIO-9** and **BIO-10** would be implemented to further reduce less-than-significant impacts to other special-status HMP plant species within the project site. **Mitigation Measure BIO-10** acknowledges that MPUSD will determine whether salvage of special-status HMP plant populations which would be impacted by the project is feasible and if so, seed and topsoil salvage would occur to support reseeding and restoration efforts on- or off-site. However, if the City of Marina is not in compliance with the HMP and 2017 Programmatic BO, implementation of **Mitigation Measures BIO-1** through **BIO-3** and **BIO-9** would reduce impacts to a less-than-significant level by requiring education; protective measures during construction; monitoring; invasive species control; avoidance; and, if avoidance if all individuals is not possible, replacement of any individuals impacted following construction.

> ***Mitigation Measure BIO-7****:* To avoid all impacts to the Monterey gilia population abutting the project site, the population shall be enclosed with temporary ESA fencing prior to vegetation removal and ground-disturbing activities. Fencing shall be installed under the supervision of a qualified biologist. A qualified biologist shall be onsite throughout all initial vegetation removal and ground-disturbing activities to ensure the Monterey gilia population is avoided. Following initial vegetation removal and ground-disturbing activities, a qualified biologist shall train a member of the construction crew to act as the daily on-site monitor, and the qualified biologist shall monitor protective fencing at least once per week throughout the duration of construction to ensure

that fencing remains intact and the Monterey gilia population remains undisturbed. Any damaged fencing shall be repaired immediately. The qualified biologist shall keep daily logs and shall prepare monthly reports documenting the status of protective fencing and the Monterey gilia population.

Mitigation Measure BIO-8*:* To prevent impacts to special-status plant populations outside of the project site, temporary ESA fencing shall be installed along the entire perimeter of the project site where it abuts natural (i.e., not developed or landscaped) habitat prior to construction. Construction activities, including access or staging, shall be prohibited beyond the fenceline. A qualified biologist shall monitor the installation of protective fencing and shall monitor fencing at least once per week throughout the duration of construction to ensure that fencing remains intact, and that adjacent habitat remains undisturbed. Any damaged fencing shall be repaired immediately. The qualified biologist shall prepare monthly reports documenting the status of protective fencing.

Mitigation Measure BIO-9*:* Sandmat manzanita, Monterey ceanothus, and Monterey spineflower shall be avoided to the greatest extent feasible. Individuals or populations within or adjacent to the project site which are not scheduled for removal shall be protected prior to and during construction to the maximum possible through the use of exclusionary fencing or flagging. A biological monitor will supervise the installation of protective fencing and monitor at least once per week until construction is complete to ensure that the protective fencing remains intact. If avoidance is not feasible, the impacted area for each species shall be quantified during final design and each species shall be replaced at a 1:1 success ratio for the acreage or individuals impacted (depending on species impacted) and a Restoration Plan shall be prepared by a qualified biologist and implemented. The plan shall include, but is not limited to:

- A description of the baseline conditions of the habitats within the work site, including the presence of any special-status species, their locations, and densities;
- Procedures to control and/or eliminate non-native invasive species within the work site;
- A detailed description of on-site and/or off-site restoration areas, salvage of seed and/or soil bank, plant salvage, seeding and planting specifications, which may include but is not limited to, an increased planting ratio to ensure the 1:1 success ratio; and
- A monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

Mitigation Measure BIO-10: Salvage efforts for HMP species that do not require take authorization from the Service or CDFW (i.e., sandmat manzanita, Monterey ceanothus, and Monterey spineflower) shall be evaluated by a qualified biologist in coordination with MPUSD to further reduce impacts per the requirements of the HMP and BO. Where salvage is determined feasible and proposed, seed collection should occur from plants within the project site and/or topsoil should be salvaged within occupied areas to be disturbed. Seeds shall be collected during the appropriate time of year for each species by qualified biologists. The collected seeds and topsoil shall be used to revegetate temporarily disturbed construction areas and reseeding and restoration efforts on- or off-site, as determined appropriate by the qualified biologist and MPUSD.

Impact BIO-2: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native nursery sites.

Wildlife movement corridors are pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or man-made factors, such as urbanization. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species, and therefore, adversely affect both genetic and species diversity. Corridors often partially or largely mitigate the adverse effects of fragmentation by 1) allowing animals to move between remaining habitats to replenish depleted populations and increase the gene pool available; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (e.g., fire and disease) will result in population or species extinction; and 3) serving as travel paths for individual animals moving throughout their home range in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

The 2010 Monterey County General Plan EIR identified a number of significant wildlife movement corridors and linkages within the vicinity of the former Fort Ord, including Linkage 308: Fort Ord – Ventana; Linkage 322: Highway 68 Western Crossing; Linkage 350: Sierra de Salinas – Toro Peak; Linkage 339: Salinas Valley Floor; and Linkage 378: Salinas River – Pinnacles National Monument (County, 2010). The HMP considered conservation area connectivity as an essential component of the design of the conservation areas and corridors within the former Fort Ord. The HMP created conservation areas and corridors with the purpose of linking the plant and animal populations in the northern portion of the former base at the Marina Municipal Airport to the populations in the south to the Fort Ord National Monument and the El Toro Creek undercrossing of Highway 68. The implementation of the HMP preserves over 18,500 acres of a variety of habitats supporting a variety of common and special-status plant species, and maintains a north-south wildlife corridor across the former Fort Ord lands to connect with the primary, significant wildlife linkages. The General Plan for the City of Marina does not specify important wildlife corridors.

The project site is not located within any of the significant wildlife movement corridors or linkages identified above. As discussed in the *Section 3, Results*, most of the project site is comprised of ruderal and/or developed areas. In addition, the project site lies adjacent to existing roads and residential uses, which in general isolates the project site from other undeveloped areas. As such, the project site provides little use as a corridor for wildlife movement. Therefore, the proposed project would not disconnect, fragment, or otherwise impeded wildlife movement in the area. This impact is less than significant, and no mitigation is required.

Impact BIO-3: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

DD&A identified 78 trees within and directly adjacent to the project site (DD&A, 2022). Construction of the proposed project could result in permanent impacts to trees within the project site; however, the number and type of trees proposed for removal have not been determined at the time of report preparation as design plans have not been finalized. As discussed in *Section 2, Methods*, the City of Marina requires a tree removal permit to remove, relocate, or damage a living tree within its limits. MPUSD will comply with Marina Code

and obtain a tree removal permit prior to construction. Therefore, this impact is less than significant, and no mitigation is required.

Impact BIO-4: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The project site is not located within an approved HCP or NCCP area. However, the site is located within the former Fort Ord and the plan area of the HMP. As described in the "Approach to Analysis", the proposed land use is consistent with the approved HMP as it is located within parcels designated for "development". The project will comply with the requirements of the HMP, as applicable. Therefore, this impact is less than significant. Additionally, while not required to reduce a significant impact, implementation of **Mitigation Measure BIO-10** (which acknowledges that MPUSD will determine whether salvage of special-status HMP plants is feasible and if so, seed and topsoil salvage would occur to support reseeding and restoration efforts on- or off-site) will further ensure compliance with the HMP.

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APPENDIX A

California Natural Diversity Database Report

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Marina (3612167) OR Monterey (3612158) OR Moss Landing (3612177) OR Prunedale (3612176) OR Salinas (3612166) OR Seaside (3612157) OR Spreckels (3612156))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes OR Fungi)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Agrostis lacuna-vernalis vernal pool bent grass	PMPOA041N0	None	None	G1	S1	1B.1
Allium hickmanii Hickman's onion	PMLIL02140	None	None	G2	S2	1B.2
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	AAAAA01082	Endangered	Endangered	G5T1T2	S1S2	FP
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Arctostaphylos hookeri ssp. hookeri Hooker's manzanita	PDERI040J1	None	None	G3T2	S2	1B.2
Arctostaphylos montereyensis Toro manzanita	PDERI040R0	None	None	G2?	S2?	1B.2
Arctostaphylos pajaroensis Pajaro manzanita	PDERI04100	None	None	G1	S1	1B.1
Arctostaphylos pumila sandmat manzanita	PDERI04180	None	None	G1	S1	1B.2
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Castilleja ambigua var. insalutata pink Johnny-nip	PDSCR0D403	None	None	G4T2	S2	1B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Chorizanthe minutiflora Fort Ord spineflower	PDPGN04100	None	None	G1	S1	1B.2
Chorizanthe pungens var. pungens Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Clarkia jolonensis Jolon clarkia	PDONA050L0	None	None	G2	S2	1B.2
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Cordylanthus rigidus ssp. littoralis seaside bird's-beak	PDSCR0J0P2	None	Endangered	G5T2	S2	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2	S2	
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Delphinium hutchinsoniae Hutchinson's larkspur	PDRAN0B0V0	None	None	G2	S2	1B.2
Delphinium umbraculorum umbrella larkspur	PDRAN0B1W0	None	None	G3	S3	1B.3
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ericameria fasciculata Eastwood's goldenbush	PDAST3L080	None	None	G2	S2	1B.1
Eriogonum nortonii Pinnacles buckwheat	PDPGN08470	None	None	G2	S2	1B.3
Erysimum ammophilum sand-loving wallflower	PDBRA16010	None	None	G2	S2	1B.2
Erysimum menziesii Menzies' wallflower	PDBRA160R0	Endangered	Endangered	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumetopias jubatus Steller sea lion	AMAJC03010	Delisted	None	G3	S2	
Euphilotes enoptes smithi Smith's blue butterfly	IILEPG2026	Endangered	None	G5T1T2	S2	
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia tenuiflora ssp. arenaria Monterey gilia	PDPLM041P2	Endangered	Threatened	G3G4T2	S2	1B.2
Hesperocyparis goveniana Gowen cypress	PGCUP04031	Threatened	None	G1	S1	1B.2
Hesperocyparis macrocarpa Monterey cypress	PGCUP04060	None	None	G1	S1	1B.2
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3T1	S1	FP
Lavinia exilicauda harengus Monterey hitch	AFCJB19013	None	None	G4T3	S3	SSC
Layia carnosa beach layia	PDAST5N010	Threatened	Endangered	G2	S2	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lupinus tidestromii Tidestrom's lupine	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
Malacothamnus palmeri var. involucratus Carmel Valley bush-mallow	PDMAL0Q0B1	None	None	G3T2Q	S2	1B.2
Malacothrix saxatilis var. arachnoidea Carmel Valley malacothrix	PDAST660C2	None	None	G5T2	S2	1B.2
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S2	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Monardella sinuata ssp. nigrescens northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Neotoma macrotis luciana Monterey dusky-footed woodrat	AMAFF08083	None	None	G5T3	S3	SSC
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S4	SSC
Pinus radiata Monterey pine	PGPIN040V0	None	None	G1	S1	1B.1
Piperia yadonii Yadon's rein orchid	PMORC1X070	Endangered	None	G1	S1	1B.1
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
Potentilla hickmanii Hickman's cinquefoil	PDROS1B370	Endangered	Endangered	G1	S1	1B.1
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
Ramalina thrausta angel's hair lichen	NLLEC3S340	None	None	G5?	S2S3	2B.1
Rana boylii pop. 6 foothill yellow-legged frog - south coast DPS	AAABH01056	Proposed Endangered	Endangered	G3T1	S1	
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Reithrodontomys megalotis distichlis Salinas harvest mouse	AMAFF02032	None	None	G5T1	S1	
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Rosa pinetorum pine rose	PDROS1J0W0	None	None	G2	S2	1B.2
Sidalcea malachroides maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
Sorex ornatus salarius Monterey shrew	AMABA01105	None	None	G5T1T2	S1S2	SSC
Spea hammondii western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Stebbinsoseris decipiens Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
Sulcaria spiralifera twisted horsehair lichen	NLT0042560	None	None	G3G4	S2	1B.2
Taricha torosa Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis hammondii two-striped gartersnake	ARADB36160	None	None	G4	S3S4	SSC
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Trifolium polyodon Pacific Grove clover	PDFAB402H0	None	Rare	G1	S1	1B.1
Trifolium trichocalyx Monterey clover	PDFAB402J0	Endangered	Endangered	G1	S1	1B.1
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	

Record Count: 97

APPENDIX B

IPaC Resource List

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IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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

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

NOT FOR CONSULTATION

Location

Monterey County, California



Local office

Ventura Fish And Wildlife Office

(805) 644-1766
(805) 644-3958
FW8VenturaSection7@FWS.Gov

2493 Portola Road, Suite B
Ventura, CA 93003-7726

NOT FOR CONSULTATION

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

NOT FOR CONSULTATION

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
California Least Tern Sterna antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo Vireo bellii pusillus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Marbled Murrelet Brachyramphus marmoratus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher Empidonax traillii extimus Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

NOT FOR CONSULTATION

Yellow-billed Cuckoo Coccyzus americanus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3911

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2891

California Tiger Salamander Ambystoma californiense — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/2076

Fishes

NAME	STATUS

Tidewater Goby Eucyclogobius newberryi — Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/57

Insects

NAME	STATUS

Smith's Blue Butterfly Euphilotes enoptes smithi — Endangered

Wherever found

There is **proposed** critical habitat for this species.
https://ecos.fws.gov/ecp/species/4418

Crustaceans

NAME	STATUS

NOT FOR CONSULTATION

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS

Contra Costa Goldfields Lasthenia conjugens — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/7058

Marsh Sandwort Arenaria paludicola — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2229

Monterey Gilia Gilia tenuiflora ssp. arenaria — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/856

Monterey Spineflower Chorizanthe pungens var. pungens — Threatened
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/396

Yadon's Piperia Piperia yadonii — Endangered
Wherever found
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/4205

Critical habitats

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

NOT FOR CONSULTATION

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

NOT FOR CONSULTATION

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Bald Eagle Haliaeetus leucocephalus — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

Belding's Savannah Sparrow Passerculus sandwichensis beldingi — Breeds Apr 1 to Aug 15
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8

Black Oystercatcher Haematopus bachmani — Breeds Apr 15 to Oct 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9591

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black Tern Chlidonias niger — Breeds May 15 to Aug 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3093

Black Turnstone Arenaria melanocephala — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Bullock's Oriole Icterus bullockii — Breeds Mar 21 to Jul 25
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

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California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Clark's Grebe Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

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Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Scripps's Murrelet Synthliboramphus scrippsi — Breeds Feb 20 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

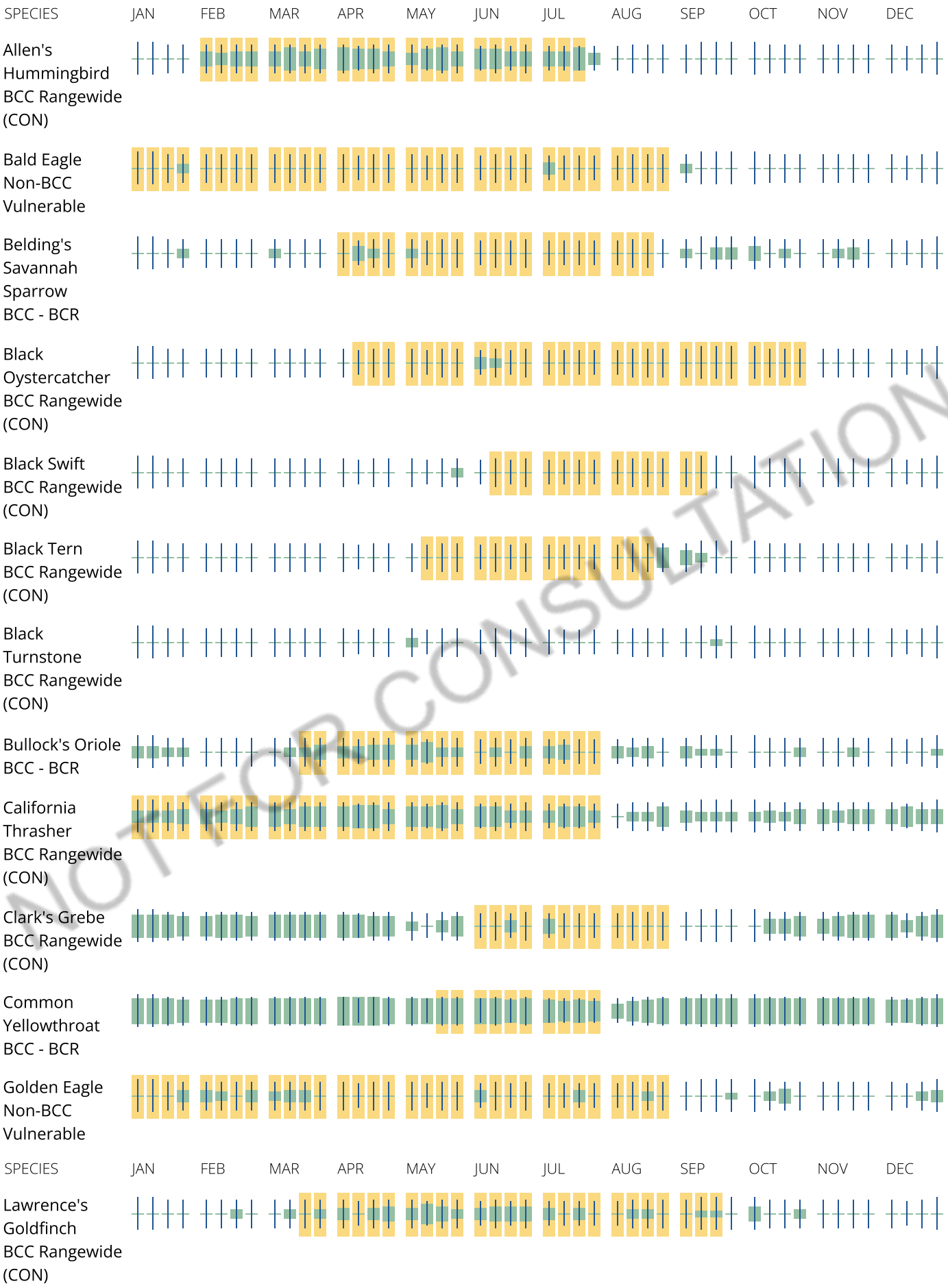
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

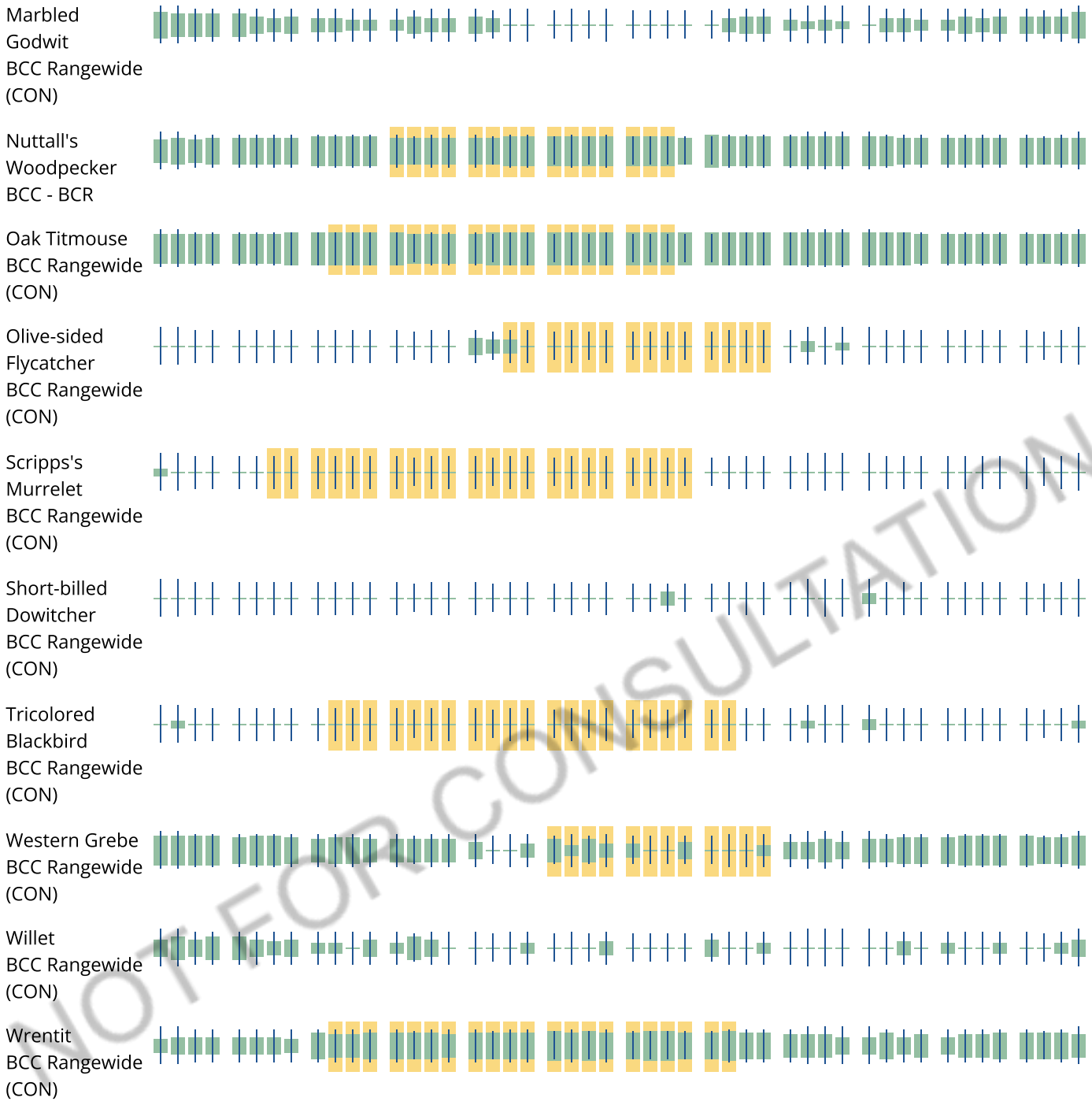
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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▪ probability of presence ▪ breeding season | survey effort – no data



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

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

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

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

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

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

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

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Coastal Barrier Resources System

Projects within the John H. Chafee Coastal Barrier Resources System (CBRS) may be subject to the restrictions on Federal expenditures and financial assistance and the consultation requirements of the Coastal Barrier Resources Act (CBRA) (16 U.S.C. 3501 et seq.). For more information, please contact the local Ecological Services Field Office or visit the CBRA Consultations website. The CBRA website provides tools such as a flow chart to help determine whether consultation is required and a template to facilitate the consultation process.

There are no known coastal barriers at this location.

Data limitations

The CBRS boundaries used in IPaC are representations of the controlling boundaries, which are depicted on the official CBRS maps. The boundaries depicted in this layer are not to be considered authoritative for in/out determinations close to a CBRS boundary (i.e., within the "CBRS Buffer Zone" that appears as a hatched area on either side of the boundary). For projects that are very close to a CBRS boundary but do not clearly intersect a unit, you may contact the Service for an official determination by following the instructions here: https://www.fws.gov/service/coastal-barrier-resources-system-property-documentation

Data exclusions

CBRS units extend seaward out to either the 20- or 30-foot bathymetric contour (depending on the location of the unit). The true seaward extent of the units is not shown in the CBRS data, therefore projects in the offshore areas of units (e.g., dredging, breakwaters, offshore wind energy or oil and gas projects) may be subject to CBRA even if they do not intersect the CBRS data. For additional information, please contact CBRA@fws.gov.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

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Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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APPENDIX C

Special-Status Species Table

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Special-Status Species Table

Marina, Monterey, Moss Landing, Prunedale, Salinas, Seaside, and Spreckels Quadrangles

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
MAMMALS			
Corynorhinus townsendii Townsend's big-eared bat	— / CSC / —	Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees.	**Moderate** Suitable foraging and night roost habitat present within the project site. No maternity roosting habitat is present within project site. The CNDDB reports one occurrence of this species within the quadrangles reviewed, located approximately 4.3 miles east of the project site.
Neotoma macrotis luciana Monterey dusky-footed woodrat	— / CSC / —	Forest and oak woodland habitats of moderate canopy with moderate to dense understory. Also occurs in chaparral habitats.	**Moderate** Suitable habitat is present within the project site. The CNDDB reports one occur of this species within the quadrangles reviewed, located approximately 7.8 miles east of the project site. However, this species is known to occur throughout the former Fort Ord. Nests of this species were not observed within the project site during the biological surveys; however, MDFWs have the potential to move into the site prior to construction.
Sorex ornatus salarius **Monterey ornate shrew**	— / CSC / —	Mostly moist or riparian woodland habitats and within chaparral, grassland, and emergent wetland habitats where there is a thick duff or downed logs.	**Unlikely** No suitable habitat is present within the project site.
Taxidea taxus American badger	— / CSC / —	Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds.	**Unlikely** No suitable habitat is present within the project site.
BIRDS			
Agelaius tricolor Tricolored blackbird (nesting colony)	— / SC+CSC / —	Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats.	**Unlikely** No suitable habitat is present within project site.
Asio flammeus Short-eared owl (nesting)	— / CSC / —	Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, meadows, dunes, irrigated lands, and saline and freshwater emergent marshes. Dense vegetation is required for roosting and nesting cover. This includes tall grasses, brush, ditches, and wetlands. Open, treeless areas containing elevated sites for perching, such as fence posts or small mounds, are also needed. Some individuals breed in northern California.	**Unlikely** No suitable habitat is present within project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Athene cunicularia Burrowing owl (burrow sites and some wintering sites)	— / CSC / —	Year-round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available.	**Unlikely** Marginal, very low-quality habitat is present within the existing landscaped field. A non-specific CNDDB occurrence overlaps the project site; however, this occurrence is associated with the Fort Ord Natural Reserve. In addition, only a few mammal burrows were observed within the field during the biological surveys and no owl signs (e.g., soil mounds, owl pellets, bones, footprints, etc.) were observed near burrows or within the project site. Burrowing owls would likely be deterred from utilizing the site due the presence of tree stands surrounding the field, which can attract raptor predators, and due to on-going human disturbance.
Brachyramphus marmoratus Marbled murrelet	FT / SE / —	Occur year-round in marine subtidal and pelagic habitats from the Oregon border to Point Sal. Partial to coastlines with stands of mature redwood and Douglas-fir. Requires dense mature forests of redwood and/or Douglas-fir for breeding and nesting.	**Unlikely** No suitable habitat is present within project site.
Charadrius alexandrinus nivosus Western snowy plover	FT / CSC / —	Sandy beaches on marine and estuarine shores, also salt pond levees and the shores of large alkali lakes. Requires sandy, gravelly or friable soil substrate for nesting.	**Unlikely** No suitable habitat is present within the project site.
Coturnicops noveboracensis Yellow rail	— / CSC / —	Wet meadows and coastal tidal marshes. Occurs year round in California, but in two primary seasonal roles: as a very local breeder in the northeastern interior and as a winter visitor (early Oct to mid-Apr) on the coast and in the Suisun Marsh region	**Unlikely** No suitable habitat is present within project site.
Cypseloides niger Black swift	— / CSC / —	Regularly nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	**Unlikely** No suitable habitat is present within project site.
Elanus leucurus White-tailed kite (nesting)	— / CFP / —	Open groves, river valleys, marshes, and grasslands. Prefer such area with low roosts (fences etc.). Nest in shrubs and trees adjacent to grasslands.	**Unlikely** No suitable habitat is present within project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Empidonax traillii extimus Southwestern willow flycatcher	FE / SE / —	Breeds in riparian habitat in areas ranging in elevation from sea level to over 2,600 meters. Builds nest in trees in densely vegetated areas. This species establishes nesting territories and builds, and forages in mosaics of relatively dense and expansive areas of trees and shrubs, near or adjacent to surface water or underlain by saturated soils. Not typically found nesting in areas without willows (*Salix sp*.), tamarisk (*Tamarix ramosissima*), or both.	**Unlikely** No suitable habitat is present within project site.
Falco peregrinus anatum American peregrine falcon (nesting)	— / CFP / —	Forages for other birds over a variety of habitats. Breeds primarily on rocky cliffs.	**Unlikely** No suitable habitat is present within project site.
Gymnogyps californianus California condor	FE / SE /—	Roosting sites in isolated rocky cliffs, rugged chaparral, and pine covered mountains 2000-6000 feet above sea level. Foraging area removed from nesting/roosting site (includes rangeland and coastal area - up to 19 mile commute one way). Nest sites in cliffs, crevices, potholes.	**Unlikely** No suitable habitat is present within project site.
Laterallus jamaicensis coturniculus California black rail	— / ST+CFP / —	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat.	**Unlikely** No suitable habitat is present within project site.
Pelecanus occidentalis californicus California brown pelican	— / CFP / —	Found in estuarine, marine subtidal, and marine pelagic waters along the California coast. Usually rests on water or inaccessible rocks, but also uses mudflats, sandy beaches, wharfs, and jetties.	**Unlikely** No suitable habitat is present within project site.
Rallus obsoletus obsoletus California Ridgway's rail	FE / SE+CFP / —	Salt and brackish marshes.	**Unlikely** No suitable habitat is present within project site.
Riparia riparia Bank swallow (nesting)	— / ST / —	Nest colonially in sand banks. Found near water; fields, marshes, streams, and lakes.	**Unlikely** No suitable habitat is present within project site.
Sterna antillarum browni California least tern	FE / SE / —	Prefers undisturbed nest sites on open, sandy/gravelly shores near shallow-water feeding areas in estuaries. Sea beaches, bays, large rivers, bars.	**Unlikely** No suitable habitat is present within project site.
Vireo bellii pusillus Least Bell's Vireo	FE / SE / —	Riparian areas and drainages. Breed in willow riparian forest supporting a dense, shrubby understory. Oak woodland with a willow riparian understory is also used in some areas, and individuals sometimes enter adjacent chaparral, coastal sage scrub, or desert scrub habitats to forage.	**Unlikely** No suitable habitat is present within project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
REPTILES AND AMPHIBIANS			
Ambystoma californiense **California tiger salamander**	FT / ST /—	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources.	**Unlikely** No suitable aquatic or upland habitat is present within project site. In addition, the project site is outside of the known dispersal range of any known breeding resources.
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	FE / SE+CFP /—	Preferred habitats include ponderosa pine, montane hardwood-conifer, mixed conifer, montane riparian, red fir and wet meadows. Occurs in a small number of localities in Santa Cruz and Monterey Counties. Adults spend the majority of the time in underground burrows and beneath objects. Larvae prefer shallow water with clumps of vegetation.	**Unlikely** No suitable habitat is present within project site. The project site is outside the currently known range of this species.
Anniella pulchra **Northern California legless lizard**	— / CSC / —	Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas.	**High** Suitable habitat is present within the project site. The CNDDB reports 56 occurrences of this species within the quadrangles reviewed, the nearest located less than one mile from the project site within Fort Ord Dunes State Park.
Emys marmorata Western pond turtle	— / CSC / —	Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks.	**Unlikely** No suitable habitat is present within project site.
Phrynosoma blainvillii Coast horned lizard	— / CSC / —	Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands.	**High** Suitable habitat is present within the project site. The CNDDB reports five occurrences of this species within the quadrangles reviewed, the nearest located approximately 1.2 miles north of the project site. In addition, DD&A biologists have observed this species throughout the former Fort Ord.
Rana boylii Foothill yellow-legged frog	— / SC+CSC / —	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including hardwood, pine, and riparian forests, scrub, chaparral, and wet meadows. Rarely encountered far from permanent water.	**Unlikely** No suitable habitat is present within project site. The project site is likely outside the currently known range of this species.
Rana draytonii **California red-legged frog**	FT / CSC / —	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows.	**Unlikely** No suitable aquatic or upland habitat is present within project site. In addition, the project site is outside of the known dispersal range of any known breeding resources.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Taricha torosa Coast Range newt	— / CSC / —	Occurs mainly in valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub, and mixed chaparral but is known to occur in grasslands and mixed conifer types. Seek cover under rocks and logs, in mammal burrows, rock fissures, or man-made structures such as wells. Breed in intermittent ponds, streams, lakes, and reservoirs.	**Unlikely** Suitable upland habitat is present within the project site; however, the project site is outside of the known dispersal range of any known breeding resources.
Thamnophis hammondii Two-striped garter snake	— / CSC / —	Associated with permanent or semi-permanent bodies of water bordered by dense vegetation in a variety of habitats from sea level to 2400m elevation.	**Unlikely** No suitable habitat is present within project site.
FISH			
Eucyclogobius newberryi Tidewater goby	FE / CSC / —	Brackish water habitats, found in shallow lagoons and lower stream reaches. Tidewater gobies appear to be naturally absent (now and historically) from three large stretches of coastline where lagoons or estuaries are absent and steep topography or swift currents may prevent tidewater gobies from dispersing between adjacent localities. The southernmost large, natural gap occurs between the Salinas River in Monterey County and Arroyo del Oso in San Luis Obispo County.	**Not Present** No suitable obligate habitat is present within project site.
Oncorhynchus mykiss irideus Steelhead (south-central California coast DPS)	FT / — / —	Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams.	**Not Present** No suitable obligate habitat is present within project site.
Spirinchus thaleichthys Longfin smelt	FC / ST+CSC / —	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 PPT, but can be found in completely freshwater to almost pure seawater.	**Not Present** No suitable obligate habitat is present within project site.
INVERTEBRATES			
Bombus crotchii Crotch bumble bee	— / SC / —	Occurs in open grassland and scrub at relatively warm and dry sites. Requires plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late October. Generally nests underground, often in abandoned mammal burrows. Within California, this species is known to occur in the Mediterranean, Pacific Coast, Western Desert, as well as Great Valley and adjacent foothill regions.	**Unlikely** No suitable habitat is present within project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Bombus occidentalis Western bumble bee	— / SC / —	Found in a range of habitats, including mixed woodlands, farmlands, urban parks and gardens, montane meadows, and prairie grasslands. Requires plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late November. Generally nests underground, often in abandoned mammal burrows. Populations are currently largely restricted to high elevation sites in the Sierra Nevada; however, the historic range includes the northern California coast.	**Unlikely** No suitable habitat is present within project site. The project site is outside the current range of this species.
Danaus plexippus Monarch butterfly	FC / — / —	Overwinters in coastal California using colonial roosts generally found in Eucalyptus, pine and acacia trees. Overwintering habitat for this species within the Coastal Zone represents ESHA. Local ordinances often protect this species as well.	**Unlikely** Suitable habitat is present within the project site; however, no overwintering occurrences are known within the project site.
Branchinecta lynchi Vernal pool fairy shrimp	FT / — / —	Require ephemeral pools with no flow. Associated with vernal pool/grasslands from near Red Bluff (Shasta County), through the central valley, and into the South Coast Mountains Region. Require ephemeral pools with no flow.	**Not Present** No suitable obligate habitat is present within project site.
Euphilotes enoptes smithi **Smith's blue butterfly**	FE / — / —	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz Counties. Plant hosts are *Eriogonum latifolium* and *E. parvifolium*.	**Not Present** Suitable habitat is present within the project site. The CNDDB reports 14 occurrences of this species within the quadrangles reviewed, the nearest located less than one mile from the project site within Fort Ord Dunes State Park. However, the obligate host plants were not identified within the project site during the biological surveys.
Linderiella occidentalis **California linderiella (fairy shrimp**)	— / — / —	Ephemeral ponds with no flow. Generally associated with hardpans.	**Not Present** No suitable obligate habitat is present within the project site.
PLANTS			
Agrostis lacuna-vernalis Vernal pool bent grass	— / — / 1B	Vernal pool Mima mounds at elevations of 115-145 meters. Annual herb in the Poaceae family; blooms April-May. Known only from Butterfly Valley and Machine Gun Flats of Ft. Ord National Monument.	**Not Present** Not observed within the project site during biological surveys. The project site is outside the known elevation range of this species.
Allium hickmanii Hickman's onion	— / — / 1B	Closed-cone coniferous forests, maritime chaparral, coastal prairie, coastal scrub, and valley and foothill grasslands at elevations of 5-200 meters. Bulbiferous perennial herb in the Alliaceae family; blooms March-May.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Arctostaphylos hookeri* ssp. *hookeri **Hooker's manzanita**	— / — / 1B	Closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub on sandy soils at elevations of 85-536 meters. Evergreen shrub in the Ericaceae family; blooms January-June.	**Not Present** Not observed within the project site during the biological surveys. The project site is outside the known elevation range of this species.
Arctostaphylos montereyensis **Toro manzanita**	— / — / 1B	Maritime chaparral, cismontane woodland, and coastal scrub on sandy soils at elevations of 30-730 meters. Evergreen shrub in the Ericaceae family; blooms February-March.	**Not Present** Not observed within the project site during the biological surveys.
Arctostaphylos pajaroensis Pajaro manzanita	— / — / 1B	Chaparral on sandy soils at elevations of 30-760 meters. Evergreen shrub in the Ericaceae family; blooms December-March.	**Not Present** Not observed within the project site during the biological surveys.
Arctostaphylos pumila **Sandmat manzanita**	— / — / 1B	Openings of closed-cone coniferous forests, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub on sandy soils at elevations of 3-205 meters. Evergreen shrub in the Ericaceae family; blooms February-May.	**Present** Suitable habitat is present within the project site. This species was observed within the project site during biological surveys.
Arenaria paludicola Marsh sandwort	FE / SE / 1B	Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Sandy openings of freshwater of brackish marshes and swamps at elevations of 3-170 meters. Stoloniferous perennial herb in the Caryophyllaceae family; blooms May-August.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site. The project site is outside of the currently known range for this species.
Astragalus tener var. *tener* Alkali milk-vetch	— / — / 1B	Playas, valley and foothill grassland on adobe clay, and vernal pools on alkaline soils at elevations of 1-60 meters. Annual herb in the Fabaceae family; blooms March-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Astragalus tener var. *titi* Coastal dunes milk-vetch	FE / SE / 1B	Sandy soils in coastal bluff scrub, coastal dunes, coastal prairie (mesic); elevation 3-164 feet. Annual herb in the Fabaceae family; blooms March-May.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Bryoria spiralifera Twisted horsehair lichen	— / — / 1B	California North Coast coniferous forest at elevations of 0–30 meters. Often found on conifers, including *Picea sitchensis*, *Pinus contorta* var. *contorta*, *Pseudotsuga menziesii*, *Abies grandis*, and *Tsuga heterophylla*. Fruticose lichen in the Parmeliaceae family.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Castilleja ambigua var. insalutata Pink Johnny-nip	— / — / 1B	Coastal prairie and coastal scrub at elevations of 0-100 meters. Annual herb in the Orobanchaceae family; blooms May-August.	**Not Present** Not observed within the project site during biological surveys.
Ceanothus rigidus **Monterey ceanothus**	— / — / —	Closed cone coniferous forest, chaparral, and coastal scrub on sandy soils at elevations of 3-550 meters. Evergreen shrub in the Rhamnaceae family, blooms February-June.	**Present** Suitable habitat is present within the project site. This species was observed within the project site during biological surveys.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Centromadia parryi ssp. *congdonii* Congdon's tarplant	— / — / 1B	Valley and foothill grassland on heavy clay, saline, or alkaline soils at elevations of 0-230 meters. Annual herb in the Asteraceae family; blooms May-November.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Chorizanthe minutiflora Fort Ord spineflower	— / — / 1B	Sandy openings of maritime chaparral and coastal scrub at elevations of 55-150 meters. Only known occurrences on Fort Ord National Monument. Annual herb in the Polygonaceae family; blooms April-July.	**Not Present** Not observed within the project site during biological surveys. The project site is marginally outside the known distribution range of this species.
Chorizanthe pungens* var. *pungens **Monterey spineflower**	FT / — / 1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy soils at elevations of 3-450 meters. Annual herb in the Polygonaceae family; blooms April-July.	**Present** Suitable habitat is present within the project site. This species was observed within the project site during biological surveys.
Chorizanthe robusta var. *robusta* Robust spineflower	FE / — / 1B	Openings in cismontane woodland, coastal dunes, maritime chaparral, and coastal scrub on sandy or gravelly soils at elevations of 3-300 meters. Annual herb in the Polygonaceae family; blooms April-September.	**Not Present** Not observed within the project site during biological surveys. The project site is outside of the known distribution range of this species.
Clarkia jolonensis Jolon clarkia	— / — / 1B	Cismontane woodland, chaparral, riparian woodland, and coastal scrub at elevations of 20-660 meters. Annual herb in the Onagraceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys. No occurrences of this species are known on the Former Fort Ord.
Collinsia multicolor San Francisco collinsia	— / — / 1B	Closed-cone coniferous forest and coastal scrub, sometimes on serpentinite soils, at elevations of 30-250 meters. Annual herb in the Plantaginaceae family; blooms March-May.	**Not Present** Not observed within the project site during biological surveys.
Cordylanthus rigidus* ssp. *littoralis **Seaside bird's-beak**	— / SE / 1B	Closed-cone coniferous forests, maritime chaparral, cismontane woodlands, coastal dunes, and coastal scrub on sandy soils, often on disturbed sites, at elevations of 0-425 meters. Annual hemi-parasitic herb in the Orobanchaceae family; blooms April-October.	**Not Present** Not observed within the project site during biological surveys.
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	— / — / 1B	Openings in chaparral, coastal scrub, and mesic areas of cismontane woodland at elevations of 230-1095 meters. Perennial herb in the Ranunculaceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys. The project site is outside the known elevation range of this species.
Delphinium hutchinsoniae Hutchinson's larkspur	— / — / 1B	Broadleaved upland forest, chaparral, coastal scrub, and coastal prairie at elevations of 0-427 meters. Perennial herb in the Ranunculaceae family; blooms March-June.	**Not Present** Not observed within the project site during biological surveys.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Delphinium umbraculorum Umbrella larkspur	— / — / 1B	Cismontane woodland at elevations of 400-1600 meters. Perennial herb in the Ranunculaceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site. The project site is outside the known elevation range of this species.
Ericameria fasciculata **Eastwood's goldenbush**	— / — / 1B	Openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 30-275 meters. Evergreen shrub in the Asteraceae family; blooms July-October.	**Not Present** Suitable habitat is present within the project site; however, this species was not observed within the project site during the biological surveys.
Eriogonum nortonii Pinnacles buckwheat	— / — / 1B	Chaparral and valley and foothill grassland on sandy soils, often on recent burns, at elevations of 300-975 meters. Annual herb in the Polygonaceae family; blooms May-September.	**Not Present** No suitable habitat is present within the project site. The project site is outside the known elevation range of this species. Not observed within the project site during the biological surveys.
Erysimum ammophilum **Coast wallflower**	— / — / 1B	Openings in maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 0-60 meters. Perennial herb in the Brassicaceae family; blooms February-June.	**Not Present** Not observed within the project site during biological surveys.
Erysimum menziesii Menzies' wallflower	FE / SE / 1B	Coastal dunes at elevations of 0-35 meters. Perennial herb in the Brassicaceae family; blooms March-September.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Fritillaria liliacea Fragrant fritillary	— / — / 1B	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often serpentinite, at elevations of 3-410 meters. Bulbiferous perennial herb in the Liliaceae family; blooms February-April.	**Not Present** Not observed within the project site during biological surveys.
Gilia tenuiflora **ssp. *arenaria*** **Monterey gilia**	FE / ST / 1B	Openings in maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub on sandy soils at elevations of 0-45 meters. Annual herb in the Polemoniaceae family; blooms April-June.	**Present Adjacent** Suitable habitat is present within the project site. This species was observed directly abutting the project site during biological surveys.
Hesperocyparis goveniana Gowen cypress	FT / — / 1B	Closed-cone coniferous forest and maritime chaparral at elevations of 30-300 meters. Evergreen tree in the Cupressaceae family. Natively occurring only at Point Lobos near Gibson Creek and the Huckleberry Hill Nature Preserve near Highway 68.	**Not Present** Not observed within the project site during the biological surveys. In addition, the project site is outside the native range of this species.
Hesperocyparis macrocarpa Monterey cypress	— / — / 1B	Closed-cone coniferous forest at elevations of 10-30 meters. Evergreen tree in the Cupressaceae family. Natively occurring only at Cypress Point in Pebble Beach and Point Lobos State Park; widely planted and naturalized elsewhere.	**Not Present** The project site is outside of the currently known native range of this species. Any Monterey cypress trees within the site are from planted stock and are therefore not considered special-status species.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Holocarpha macradenia Santa Cruz tarplant	FT / SE / 1B	Coastal prairies and valley foothill grasslands, often clay or sandy soils, at elevations of 10-220 meters. Annual herb in the Asteraceae family; blooms June-October.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Horkelia cuneata ssp. *sericea* Kellogg's horkelia	— / — / 1B	Openings of closed-cone coniferous forests, maritime chaparral, coastal dunes, and coastal scrub on sandy or gravelly soils at elevations of 10-200 meters. Perennial herb in the Rosaceae family; blooms April-September.	**Not Present** Low-quality habitat is present within the project site; however, this species was not observed within the project site during the biological surveys.
Horkelia marinensis Point Reyes horkelia	— / — / 1B	Coastal dunes, coastal prairie, and coastal scrub on sandy soils at elevations of 5-350 meters. Perennial herb in the Rosaceae family; blooms May-September.	**Not Present** Not observed within the project site during biological surveys.
Lasthenia conjugens Contra Costa goldfields	FE / — / 1B	Mesic areas of valley and foothill grassland, alkaline playas, cismontane woodland, and vernal pools at elevations of 0-470 meters. Annual herb in the Asteraceae family; blooms March-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Layia carnosa Beach layia	FE / SE / 1B	Coastal dunes and coastal scrub on sandy soils at elevations of 0-60 meters. Annual herb in the Asteraceae family; blooms March-July.	**Not Present** Not observed within the project site during biological surveys.
Legenere limosa Legenere	— / — / 1B	Vernal pools and wetlands at elevations of 1-880 meters. Annual herb in the Campanulaceae family; blooms April- June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Lupinus tidestromii Tidestrom's lupine	FE / SE / 1B	Coastal dunes at elevations of 0-100 meters. Perennial rhizomatous herb in the Fabaceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Malacothamnus palmeri var. *involucratus* Carmel Valley bush-mallow	— / — / 1B	Chaparral, cismontane woodland, and coastal scrub at elevations of 30-1100 meters. Perennial deciduous shrub in the Malvaceae family; blooms May-October.	**Not Present** Not observed within the project site during biological surveys.
Malacothrix saxatilis var. *arachnoidea* Carmel Valley malacothrix	— / — / 1B	Chaparral and coastal scrub on rocky soils at elevations of 25-1036 meters. Perennial rhizomatous herb in the Asteraceae family; blooms June-December.	**Not Present** Not observed within the project site during biological surveys.
Meconella oregana Oregon meconella	— / — / 1B	Coastal prairie and coastal scrub at elevations of 250-620 meters. Annual herb in the Papaveraceae Family; blooms March-April.	**Not Present** Not observed within the project site during biological surveys. The project site is outside the known elevation range of this species.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Microseris paludosa Marsh microseris	— / — / 1B	Grassy, often moist to wet, areas, usually on slopes; also in wooded areas and on the edge of brush. Rarely found in vernal pool or dune areas. Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations of 5-300 meters. Perennial herb in the Asteraceae family; blooms April-July.	**Not Present** Not observed within the project site during biological surveys.
Monardella sinuata ssp. *nigrescens* Northern curly-leaved monardella	— / — / 1B	Chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest (ponderosa pine sandhills) on sandy soils at elevations of 0-300 meters. Annual herb in the Lamiaceae family; blooms April-September.	**Not Present** Not observed within the project site during biological surveys.
Monolopia gracilens Woodland woollythreads	— / — / 1B	Openings of broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland on serpentinite soils at elevations of 100-1200 meters. Annual herb in the Asteraceae family; blooms February-July.	**Not Present** Not observed within the project site during biological surveys. The project site is outside the known elevation range of this species.
Pinus radiata Monterey pine	— / — / 1B	Closed-cone coniferous forest and cismontane woodland at elevations of 25-185 meters. Evergreen tree in the Pinaceae family. Only three native stands in CA at Ano Nuevo, Cambria, and the Monterey Peninsula; introduced in many areas.	**Not Present** The project site is outside of the currently known native range of this species. Any Monterey pine trees within the site are from planted stock and are therefore not considered special-status species.
Piperia yadonii **Yadon's rein orchid**	FE / — / 1B	Sandy soils in coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral at elevations of 10-510 meters. Annual herb in the Orchidaceae family; blooms February-August.	**Not Present** Not observed within the project site during biological surveys.
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	— / — / 1B	Mesic areas of chaparral, coastal prairie, and coastal scrub at elevations of 15-160 meters. Annual herb in the Boraginaceae family; blooms March-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site. In addition, this species is only known to occur within a few vernal pools on the Former Fort Ord.
Potentilla hickmanii Hickman's cinquefoil	FE / SE / 1B	Coastal bluff scrub, closed-cone coniferous forests, vernally mesic meadows and seeps, and freshwater marshes and swamps at elevations of 10-149 meters. Perennial herb in the Rosaceae family; blooms April-August.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence
Ramalina thrausta Angel's hair lichen	— / — / 2B	North coast coniferous forest on dead twigs and other lichens. Epiphytic fructose lichen in the Ramalinaceae family. In northern CA it is usually found on dead twigs, and has been found on *Alnus rubra*, *Calocedrus decurrens*, *Pseudotsuga menziesii*, *Quercus garryana*, and *Rubus spectabilis*. In Sonoma County it grows on and among dangling mats of *R. menziesii* and *Usnea* spp.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Rosa pinetorum Pine rose	— / — / 1B	Closed-cone coniferous forest at elevations of 2-300 meters. Perennial shrub in the Rosaceae family; blooms May-July. Possible hybrid of *R. spithamea*, *R. gymnocarpa*, or others; further study needed.	**Not Present** Suitable habitat is present within the project site; however, this species was not observed within the project site during the biological surveys.
Stebbinsoseris decipiens Santa Cruz microseris	— / — / 1B	Broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and openings in valley and foothill grassland, sometimes on serpentinite, at elevations of 10-500 meters. Annual herb in the Asteraceae family; blooms April-May.	**Not Present** Not observed within the project site during biological surveys.
Trifolium buckwestiorum Santa Cruz clover	— / — / 1B	Gravelly margins of broadleaved upland forest, cismontane woodland, and coastal prairie at elevations of 105-610 meters. Annual herb in the Fabaceae family; blooms April-October.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site. The project site is outside the known elevation range of this species.
Trifolium hydrophilum Saline clover	— / — / 1B	Marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools at elevations of 0-300 meters. Annual herb in the Fabaceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys. No suitable habitat is present within the project site.
Trifolium polyodon Pacific Grove clover	— / SR / 1B	Mesic areas of closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland at elevations of 5-120 meters. Annual herb in the Fabaceae family; blooms April-July.	**Not Present** Not observed within the project site during biological surveys.
Trifolium trichocalyx Monterey clover	FE / SE / 1B	Sandy openings and burned areas of closed-cone coniferous forest at elevations of 30-240 meters. Annual herb in the Fabaceae family; blooms April-June.	**Not Present** Not observed within the project site during biological surveys.

STATUS DEFINITIONS

Federal

FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
FC = Candidate for listing under the federal Endangered Species Act
— = no listing

State

SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
SC = Candidate for listing under California Endangered Species Act
SR = listed as Rare under the California Native Plant Protection Act
CFP = California Fully Protected Species
CSC = CDFW Species of Concern
— = no listing

California Native Plant Society

1B = California Rare Plant Rank 1B species; plants rare, threatened, or endangered in California and elsewhere
— = no listing

Former Fort Ord Habitat Management Plan

Bold = Former Fort Ord HMP Species

POTENTIAL TO OCCUR

Present = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
High = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of suitable habitat conditions
Moderate = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of marginal habitat conditions within the site
Low = species known to occur in the vicinity from the CNDDB or other documentation; lack of suitable habitat or poor quality
Unlikely = species not known to occur in the vicinity from the CNDDB or other documentation, no suitable habitat is present within the site
Not Present = species was not observed during surveys, or no suitable obligate habitat

Appendix C

Arborist Report

DENISE DUFFY & ASSOCIATES, INC.
PLANNING AND ENVIRONMENTAL CONSULTING

MEMORANDUM

Date: December 19, 2023

To: Ryan Altemeyer, Associate Superintendent of Business Services
Monterey Peninsula Unified School District

From: Patric Krabacher, ISA Certified Arborist 11759
Denise Duffy & Associates, Inc.

SUBJECT: **Arborist Report for the Marina High School Multi-Sports Field Project**

Denise Duffy & Associates, Inc. (DD&A) is contracted by the Monterey Peninsula Unified School District (MPUSD) to provide arborist services for the Marina High School Multi-Sports Field Project (project or proposed project), located in the City of Marina (City) in Monterey County, California. The project site consists of various improvements to the existing athletic fields and adjacent areas at Marina High School. Tree removal within the project site is regulated by Marina Municipal Code (MMC or City Code) Chapter 17.62 (Tree Removal, Preservation, and Protection). Removal of any living tree requires a tree removal permit from the City.

To inform the development of project design plans that preserve as many healthy, native trees as practicable, DD&A conducted a field inventory of trees within and directly adjacent the project site in October 2022. This report documents the trees which are recommended for removal to facilitate construction of the project, and the measures which are recommended to mitigate potential impacts to the trees and other sensitive biological resources in the area.

METHODS

Limitations

It is not the intent of this report to provide a monetary valuation of the trees or provide risk assessment for any tree on this parcel, as any tree can fail at any time. No clinical diagnosis was performed on any pest or pathogen that may or may not be present within the site. In addition to an inspection of the property, DD&A relied on information provided by the project proponent (such as survey data, property boundaries, and property ownership information) to prepare this report, and must reasonably rely on the accuracy of the information provided. DD&A shall not be responsible for another's means, methods, techniques, schedules, or procedures, or for contractor safety or any other related programs, or for another's failure to complete work in accordance with approved plans and specifications.

Regulatory Setting

City of Marina Municipal Code

MMC Section 17.62.030 requires a tree removal permit to remove, damage, or relocate, or cause to be removed, damaged, or relocated any tree on any property within City limits, unless exempted by MMC Sections 17.62.040 or 17.62.050. MMC Section 17.62.030 also prohibits construction activities within the dripline of any tree, unless these activities are conducted in compliance with tree protection guidelines adopted by resolution of the planning commission.

MMC defines "tree" as any living woody perennial plant having a single stem of six (6) inches or more diameter at breast height (DBH; measured at 4.5 feet above ground) or a multi-stemmed plant having an aggregate diameter of ten inches or more measured at DBH, and any living woody perennial plant which was planted in accordance with requirements of an approved compensation plan or was planted as part of a landscaping plan approved by the city. MMC defines a "Healthy tree" as a tree that is continuing to thrive and is not in decline as determined by a tree expert. MMC defines "Dripline" as the greater of the outermost edge of the tree's canopy, or fifteen times DBH measured from the center point of the tree. Saplings which do not meet the City's definition of a tree (i.e., are less than six [6] inches DBH), are not protected by City Code and may be removed, damaged, or relocated without any regulatory constraints.

California Fish and Game Code

In accordance with Section 3503 of the California Fish and Game Code, it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal Migratory Bird Treaty Act. Section 3800 prohibits take of nongame birds.

Survey Methods

DD&A biologists, led by certified arborist Patric Krabacher, conducted a tree inventory of the project site on October 14, 2022. Trees within and directly adjacent to the project site were inventoried in accordance with the following protocol, which incorporates the requirements of MMC Chapter 17.62:

- All trees were tagged with a GPS location and a numbered aluminum marker (on the most feasible/visible location possible). For trees which were previously tagged during previous surveys, the existing physical marker was recorded.
- Tree diameter was recorded at breast height (4.5 feet above ground) or (for multi-stemmed trees) at the most representable location.
- Multi-stemmed trees were recorded as one tree if the root crown (the point where the trunk meets natural grade) was contiguous. Multi-stemmed tree DBH was calculated by taking the square root of the squared sum of all stems measured (√[Stem 1 DHB2+ Stem 2 DBH2+ Stem 3 DBH2...]). This equation returns the diameter at the base of the tree (Chojnacky, 1999).
- Species, size, health class, and photographs were recorded for each tree. Tree health was recorded based on the following definitions:

- *Good.* Tree is healthy and vigorous, as indicated by foliage color and density, and has no apparent signs of insect, disease, structural defects, or mechanical injury. Tree has good form and structure.
- *Fair.* Tree is in average condition and vigor for the area, but may show minor insect, disease, or physiological problems. Trees in fair condition may be improved with correctional pruning.
- *Poor.* Tree is in a general state of decline. Tree may show severe structural or mechanical defects which may lead to failure, and may have insect or disease damage, but is not dead.

Tree health was evaluated by visually inspecting each tree from its root crown to its foliar canopy for signs of decay, disease, or insect infestations. In accordance with MMC's definition of a "tree," dead trees were not inventoried.

GPS data were collected using a Trimble® Geo 7 Series GPS and were then digitized using Trimble® GPS Pathfinder and ESRI® ArcGIS 10.4. GPS data were collected using geographic coordinate system Universal Transverse Mercator (UTM) Zone 10 North and the World Geodetic System 1984 (WGS84) datum.

RESULTS

DD&A inventoried 78 trees within and directly adjacent to the project site (see **Figure 1** and **Appendix A**). Tree species identified include 36 Monterey cypresses (*Hesperocyparis macrocarpa*), 21 Monterey pines (*Pinus radiata*), 18 coast live oaks (*Quercus agrifolia*), and three (3) acacias (*Acacia* sp.). Most trees are in fair condition (see **Appendix A**); they are in average vigor for the area and are showing small signs of decay, disease, or and/or insect infestations, including seiridium canker fungus, pine beetle and *Phytophthora* root and crown rot. However, 10 trees are in poor condition; they are showing signs of significant decline, including seiridium canker fungus, pine beetle and *Phytophthora* root and crown rot. No indicators or symptoms of sudden oak death were observed.

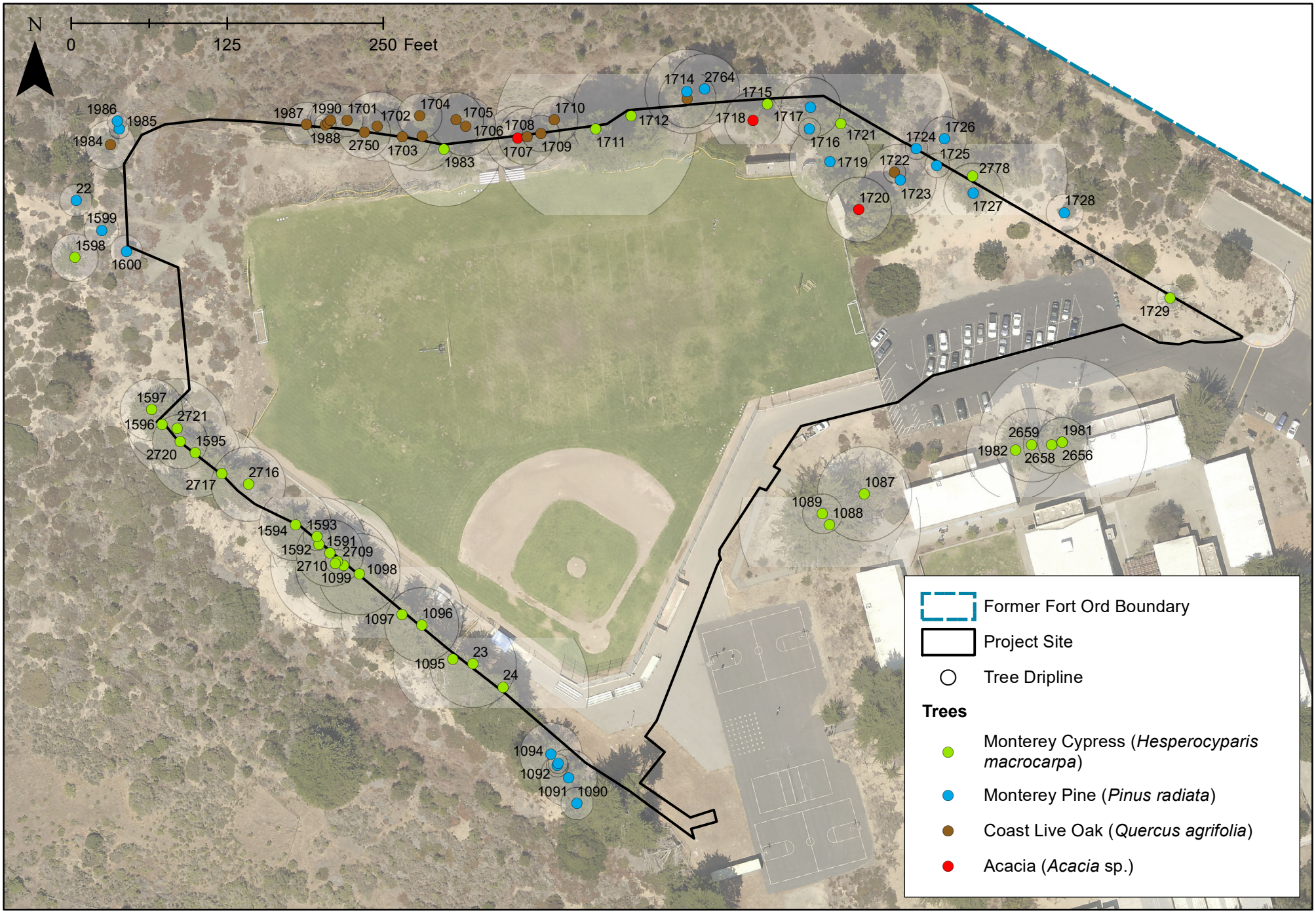
The following 31 trees lie within the currently proposed project site:

- 16 Monterey cypresses in fair condition and one (1) Monterey cypress in poor condition,
- Two (2) Monterey pines in fair condition and four (4) Monterey pines in poor condition,
- Four (4) coast live oaks in fair condition and one (1) coast live oak in poor condition, and
- Three (3) acacias in fair condition.

Although they are located outside the project site, the following 18 trees have a significant portion (more than 25 percent) of their driplines within the site:

- Nine (9) Monterey cypresses in good or fair condition,
- One (1) Monterey pine in fair condition, and one (1) Monterey pine in poor condition, and
- Seven (7) coast live oaks in fair condition.

The remaining 29 trees are located outside the currently proposed project site.



Tree Survey Results

Date
12/18/2023

Scale
1 in = 100 ft

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Figure
1

Path: D:\GIS\GIS_Projects\2022-52 Marina High Stadium\Final Products\Arborist\Fig 1 - Tree Survey Results.mxd

DISSCUSION

As described above, 31 trees lie within the proposed project site. Nine (9) of those trees are recommended for removal because they are in poor condition or are non-native (see **Appendix A**). It is recommended that the remaining 22 trees located within the project site are protected in place to the extent feasible in accordance with Best Management Practices (BMPs) described in **Appendix B**; however, these trees may need to be removed to facilitate construction of the project and, therefore, should be included in the tree removal permit as "potential removals." See **Figure 2** for the tree removal plan and **Appendix C** for a photo log of trees which are recommended for removal, or which may need to be removed to facilitate construction of the project.

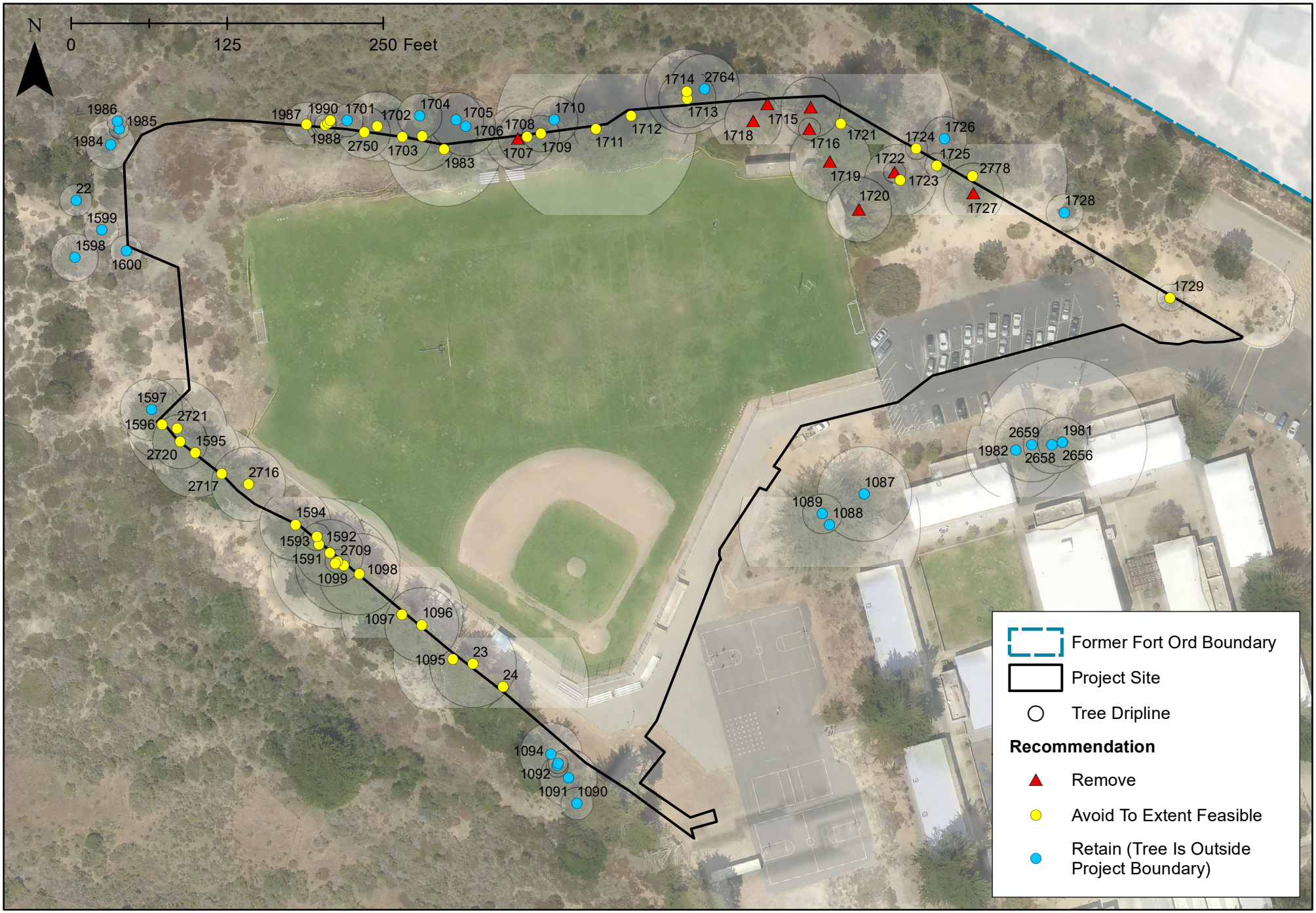
In accordance with MMC Section 17.62.030, MPUSD must obtain a tree removal permit from the City prior to removal of all living trees, including non-native trees or trees in poor condition. Tree removal must be accomplished in accordance with any conditions specified in the removal permit. In addition, the following mitigation measures are recommended to avoid or minimize impacts to adjacent trees and other sensitive biological resources during tree removal:

1. Tree removal can be timed to avoid the breeding and nesting season for raptors and other protected avian species. If tree removal must occur during the avian breeding and nesting season (February 1 through September 15), pre-construction surveys for nesting birds shall be conducted no more than 15 days prior to construction in all areas within 300 feet of the construction footprint that may provide suitable nesting habitat. If nesting birds are identified during pre-construction surveys, tree removal shall be postponed. No work shall proceed in the vicinity of an active nest until such time as all young are fledged or until after September 15, when young are assumed fledged.

2. Pursuant to Section 17.62.030 of MMC, MPUSD must comply with the City's Tree Protection Guidelines. To reduce impacts to trees not scheduled for removal, MPUSD and/or the project contractor shall implement the best managements practices for working near trees outlined in **Appendix B**. Trees which will be retained on site shall be allowed to develop their natural forms and shall not be trimmed as topiaries or other unnatural forms. All tree trimming shall conform to trimming standards identified in **Appendix B**.

3. Prior to ground-disturbing activities, MPUSD shall install protective fencing around trees directly adjacent to the work area which are not scheduled for removal. Protective fencing shall be maintained throughout the duration of construction. A qualified arborist, forester, or biological monitor shall conduct a site visit at least once per week throughout the duration of construction to ensure that protective fencing remains intact.

4. A qualified arborist, forester, or biological monitor shall be on-site during all initial ground-disturbing activities and vegetation removal. Following initial ground-disturbing activities, the qualified arborist, foresters, or biological monitor shall conduct a site visit at least once per week throughout the duration of construction to ensure that the tree protection measures identified in **Appendix B** are implemented.



Tree Removal Plan

Date
12/19/2023

Scale
1 in = 100 ft

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Figure
2

Path: D:\GIS\GIS_Projects\2022-52 Marina High Stadium\Final Products\Arborist\Fig 2 - Tree Removal Plan.mxd

As further described above, 18 additional trees directly adjacent to the project site have a significant portion of their driplines within the site; excavation activities in these areas could result in decline or mortality of these trees. It is recommended that MPUSD avoid significant impacts to the 17 healthy, native trees to the greatest extent feasible by limiting excavation beyond two (2) feet deep in least 25 percent of each tree's dripline, and/or applying BMPs provided in **Appendix B**. Implementation of **Mitigation Measures 2-4** above would ensure that impacts to trees outside the project footprint are avoided. It is recommended that one (1) Monterey pine in poor condition (see **Appendix B**) is removed because it is already in decline (**Figure 2**).

Per MMC 17.62.060, compensation (i.e., tree replacement) at a 2:1 ratio is only required for removal of healthy trees. Seven (7) native tree species in poor condition are proposed for removal due to the hazard they present, and proximity to high pedestrian traffic areas. In addition, the City considers *Acacia* species to be a pest; it is therefore recommended that no compensation be required for the removal of three (3) healthy acacia trees, only that the invasive plant material be hauled offsite. However, compensation requirements for healthy trees, including acacias, would be determined by the City in its tree removal permit.

If you have any comments or questions about this report, please contact Patric Krabacher at pkrabacher@ddaplanning.com or (831) 373-4341 ext. 29.

REFERENCES

David C. Chojnacky. 1999. Converting Tree Diameter Measured at Root Collar to Diameter at Beast Height.

APPENDIX A

Tree Table

Marina High School Multi-Sports Field Project
Tree Table

Tree ID	Scientific Name	Common Name	Individual Stem DBH (in)								Total DBH (in)	Dripline (ft)	Health	Recommendation
23	*Hesperocyparis macrocarpa*	Monterey Cypress	28								28	35	Fair	Avoid If Feasible
24	*Hesperocyparis macrocarpa*	Monterey Cypress	24	36	20	10	10	9	20	10	55	69	Fair	Avoid If Feasible
1096	*Hesperocyparis macrocarpa*	Monterey Cypress	18	10	12						24	30	Fair	Avoid If Feasible
1098	*Hesperocyparis macrocarpa*	Monterey Cypress	26								26	33	Fair	Avoid If Feasible
1593	*Hesperocyparis macrocarpa*	Monterey Cypress	9								9	11	Fair	Avoid If Feasible
1595	*Hesperocyparis macrocarpa*	Monterey Cypress	18	15	15	6					28	36	Fair	Avoid If Feasible
1596	*Hesperocyparis macrocarpa*	Monterey Cypress	22								22	28	Fair	Avoid If Feasible
1703	*Quercus agrifolia*	Coast Live Oak	18								18	23	Fair	Avoid If Feasible
1708	*Quercus agrifolia*	Coast Live Oak	13	13							18	23	Fair	Avoid If Feasible
1709	*Quercus agrifolia*	Coast Live Oak	12								12	15	Fair	Avoid If Feasible
1711	*Hesperocyparis macrocarpa*	Monterey Cypress	65								65	81	Fair	Avoid If Feasible
1712	*Hesperocyparis macrocarpa*	Monterey Cypress	38								38	48	Fair	Avoid If Feasible
1721	*Hesperocyparis macrocarpa*	Monterey Cypress	18	32	9	42	45				72	90	Fair	Avoid If Feasible
1723	*Pinus radiata*	Monterey Pine	23								23	29	Fair	Avoid If Feasible
1725	*Pinus radiata*	Monterey Pine	8								8	10	Fair	Avoid If Feasible
1729	*Hesperocyparis macrocarpa*	Monterey Cypress	9								9	11	Fair	Avoid If Feasible
1983	*Hesperocyparis macrocarpa*	Monterey Cypress	37								37	46	Fair	Avoid If Feasible
2716	*Hesperocyparis macrocarpa*	Monterey Cypress	13	13	16						24	30	Fair	Avoid If Feasible
2717	*Hesperocyparis macrocarpa*	Monterey Cypress	24	10	6	10					28	36	Fair	Avoid If Feasible
2720	*Hesperocyparis macrocarpa*	Monterey Cypress	10	10	9	6					18	22	Fair	Avoid If Feasible
2721	*Hesperocyparis macrocarpa*	Monterey Cypress	32								32	40	Fair	Avoid If Feasible
2750	*Quercus agrifolia*	Coast Live Oak	11	11	6						17	21	Fair	Avoid If Feasible
1095	*Hesperocyparis macrocarpa*	Monterey Cypress	38								38	48	Fair	Avoid Dripline If Feasible
1097	*Hesperocyparis macrocarpa*	Monterey Cypress	34	19							39	49	Fair	Avoid Dripline If Feasible
1099	*Hesperocyparis macrocarpa*	Monterey Cypress	31								31	39	Good	Avoid Dripline If Feasible
1591	*Hesperocyparis macrocarpa*	Monterey Cypress	18	12							22	27	Fair	Avoid Dripline If Feasible
1592	*Hesperocyparis macrocarpa*	Monterey Cypress	30								30	38	Fair	Avoid Dripline If Feasible
1594	*Hesperocyparis macrocarpa*	Monterey Cypress	23								23	29	Fair	Avoid Dripline If Feasible
1702	*Quercus agrifolia*	Coast Live Oak	12	16	10						22	28	Fair	Avoid Dripline If Feasible
1713	*Quercus agrifolia*	Coast Live Oak	18								18	23	Fair	Avoid Dripline If Feasible
1714	*Pinus radiata*	Monterey Pine	27								27	34	Fair	Avoid Dripline If Feasible
1724	*Pinus radiata*	Monterey Pine	7								7	9	Poor	Avoid Dripline If Feasible
1987	*Quercus agrifolia*	Coast Live Oak	14								14	18	Fair	Avoid Dripline If Feasible
1988	*Quercus agrifolia*	Coast Live Oak	7								7	9	Fair	Avoid Dripline If Feasible
1989	*Quercus agrifolia*	Coast Live Oak	10	9							13	17	Fair	Avoid Dripline If Feasible
1990	*Quercus agrifolia*	Coast Live Oak	13								13	16	Fair	Avoid Dripline If Feasible
2709	*Hesperocyparis macrocarpa*	Monterey Cypress	8								8	10	Fair	Avoid Dripline If Feasible
2710	*Hesperocyparis macrocarpa*	Monterey Cypress	38	8	12	10					42	52	Fair	Avoid Dripline If Feasible

Tree ID	Scientific Name	Common Name	Individual Stem DBH (in)				Total DBH (in)	Dripline (ft)	Health	Recommendation
2752	*Quercus agrifolia*	Coast Live Oak	22				22	28	Fair	Avoid Dripline If Feasible
2778	*Hesperocyparis macrocarpa*	Monterey Cypress	15	54	24		61	76	Fair	Avoid Dripline If Feasible
1707	*Acacia sp.*	Acacia	14	10	10	6	21	26	Fair	Remove
1715	*Hesperocyparis macrocarpa*	Monterey Cypress	24	32			40	50	Poor	Remove
1716	*Pinus radiata*	Monterey Pine	7				7	9	Poor	Remove
1717	*Pinus radiata*	Monterey Pine	19				19	24	Poor	Remove
1718	*Acacia sp.*	Acacia	18				18	23	Fair	Remove
1719	*Pinus radiata*	Monterey Pine	26				26	33	Poor	Remove
1720	*Acacia sp.*	Acacia	11	12	10	8	21	26	Fair	Remove
1722	*Quercus agrifolia*	Coast Live Oak	7				7	9	Poor	Remove
1727	*Pinus radiata*	Monterey Pine	19				19	24	Poor	Remove
22	*Pinus radiata*	Monterey Pine	10				10	13	Poor	Retain
1087	*Hesperocyparis macrocarpa*	Monterey Cypress	30				30	38	Fair	Retain
1088	*Hesperocyparis macrocarpa*	Monterey Cypress	41	37	19		58	73	Fair	Retain
1089	*Hesperocyparis macrocarpa*	Monterey Cypress	8	10			13	16	Fair	Retain
1090	*Pinus radiata*	Monterey Pine	10				10	13	Poor	Retain
1091	*Pinus radiata*	Monterey Pine	18				18	23	Fair	Retain
1092	*Pinus radiata*	Monterey Pine	7				7	9	Fair	Retain
1093	*Pinus radiata*	Monterey Pine	6				6	8	Fair	Retain
1094	*Pinus radiata*	Monterey Pine	20				20	25	Fair	Retain
1597	*Hesperocyparis macrocarpa*	Monterey Cypress	20				20	25	Fair	Retain
1598	*Hesperocyparis macrocarpa*	Monterey Cypress	11	10			15	19	Fair	Retain
1599	*Pinus radiata*	Monterey Pine	11				11	14	Fair	Retain
1600	*Pinus radiata*	Monterey Pine	10				10	13	Poor	Retain
1701	*Quercus agrifolia*	Coast Live Oak	10				10	13	Fair	Retain
1704	*Quercus agrifolia*	Coast Live Oak	14				14	18	Fair	Retain
1705	*Quercus agrifolia*	Coast Live Oak	16	7			17	22	Fair	Retain
1706	*Quercus agrifolia*	Coast Live Oak	19				19	24	Fair	Retain
1710	*Quercus agrifolia*	Coast Live Oak	15				15	19	Fair	Retain
1726	*Pinus radiata*	Monterey Pine	14				14	18	Fair	Retain
1728	*Pinus radiata*	Monterey Pine	12				12	15	Fair	Retain
1981	*Hesperocyparis macrocarpa*	Monterey Cypress	16				16	20	Fair	Retain
1982	*Hesperocyparis macrocarpa*	Monterey Cypress	32				32	40	Fair	Retain
1984	*Quercus agrifolia*	Coast Live Oak	16				16	20	Fair	Retain
1985	*Pinus radiata*	Monterey Pine	6				6	8	Fair	Retain
1986	*Pinus radiata*	Monterey Pine	6				6	8	Fair	Retain
2656	*Hesperocyparis macrocarpa*	Monterey Cypress	54				54	68	Fair	Retain
2658	*Hesperocyparis macrocarpa*	Monterey Cypress	18				18	23	Fair	Retain
2659	*Hesperocyparis macrocarpa*	Monterey Cypress	24				24	30	Fair	Retain
2764	*Pinus radiata*	Monterey Pine	22				22	28	Fair	Retain

APPENDIX B

Best Management Practices When Working Near Trees

Fencing and Barricades

All trees in the project area which are scheduled for preservation shall be temporarily fenced prior to all project-related activities. Fencing shall be installed at the edge of the root zone (the area located within 15 times the trunk diameter in all directions) or located at the edge of pavement furthest from the trunk (whichever comes first). Fencing shall consist of chain link or plastic link fence which is maintained at a minimum height of four feet above grade during all phases of construction.

Fenced areas shall not be used for material stockpile, storage, or vehicle parking. Dumping of materials, chemicals, or garbage shall be prohibited within fenced areas. Fenced areas shall be maintained in natural condition at natural or existing grade and shall not be compacted.

All approved construction within the root zone shall include construction barricades. Barricades shall be upright and be constructed from two-inch by four-inch planks standing a minimum of eight feet vertically, conforming to the tree, and shall be tied with wire or rope forming a maximum of one-inch space between the planks. If the tree's configuration or site conditions do not lend themselves to the installation of this type barricade, a certified arborist or City Forester shall designate alternate tree protection methods. Under certain conditions where soil compaction is probable, fences may also be required around a tree or grouping of trees. The use of recycled lumber, synthetic lumber, or similar materials approved by a certified arborist or City Forester is encouraged.

Tree Pruning

Tree pruning shall be minimal but, when necessary, shall be performed in accordance with American National Safety Institute (ANSI) A300 Pruning Standards. Pruning may include the larger canopied trees that have deadwood or are exhibiting some minor structural defect or minor disease that must be compensated. Should the health and vigor of any tree decline, it shall be treated as appropriately recommended by a certified arborist or qualified forester. In general, trees shall be assessed then pruned first for safety (e.g., broken and cracked limbs shall be removed in high-traffic areas of concern), next for health, and finally for aesthetics. No more than 25% of the overall tree crown shall be pruned in one season.

Tree pruning may include crown thinning, crown raising, crown reduction, or crown restoration, as described below.

Crown Thinning

Crown thinning is the cleaning out of or removal of dead, diseased, weakly attached, or low vigor branches from a tree crown. Crown thinning shall be conducted as follows:

- All trees shall be pre-assessed on how the tree will be pruned from the top down.
- Tree trimmers shall favor branches with strong, U-shaped angles of attachment and, where possible, remove branches with weak, V-shaped angles of attachment and/or included bark.
- Lateral branches shall be evenly spaced on the main stem of young trees and areas of fine pruning.
- Branches that rub or cross another branch shall be removed where possible.
- Lateral branches shall be no more than one-half to three-quarters of the diameter of the stem to discourage the development of co-dominant stems where feasible.
- In most cases, trimmers shall not remove more than one-quarter of the living crown of a tree at one time. If it is necessary to remove more, it shall be done over successive years.

Crown Raising

Crown raising removes the lower branches of a tree to provide clearance for buildings, vehicles, pedestrians, and vistas. Crown raising shall be conducted as follows:

- Live branches on at least two-thirds of a tree's total height shall be maintained wherever possible. The removal of too many lower branches would hinder the development of a strong stem.
- All basal sprouts and vigorous epicormic sprouts shall be removed where feasible.

Crown Reduction

Crown reduction is used to reduce the height and/or spread of trees and is used for maintaining the structural integrity and natural form of a tree. Crown reduction shall be conducted only when absolutely necessary, as follows:

- Pruning cuts shall be at a lateral branch that is at least one-third the diameter of the stem to be removed wherever possible.
- When it is necessary to remove more than half of the foliage from a branch, it may be necessary remove the entire branch.

Crown Restoration

Crown restoration is used to improve the structure and appearance of trees that have been topped or severely pruned using heading cuts. One of three sprouts on main branch stubs should be selected to reform a natural appearing crown. Selected vigorous sprouts may need to be thinned to ensure adequate attachment for the size of the sprout. Restoration may require several years of pruning.

Root Pruning

Where alternative routes are not available, any subsurface construction related activities for the project shall avoid cutting major roots with a diameter of greater than or equal to two inches, unless necessary. All approved construction within the root zone shall conform to the following construction practices:

- Hand trenching at point or line of grade cuts closest to the trunk to expose major roots two inches or more in diameter.
- In cases where rock or unusually dense soil prevents hand trenching, mechanical trenching may be permitted provided that work inside the dripline is closely supervised to prevent tearing or other damage to major roots (greater than or equal to two inches).
- Exposed major roots shall be cut with a saw to form a smooth surface and avoid tearing or jagged edges.
- Absorbent tarp or heavy cloth fabric shall be placed over grade cuts where roots are exposed and secured with stakes and two to four inches of compost or wood chips spread over the tarp to prevent moisture loss. Care shall be taken that moisture levels beneath tarped areas remain comparable to surrounding areas until backfilling occurs. Some watering of these areas may be necessary to maintain moisture levels, and such measures shall remain in effect through all phases of construction, including all delays and other periods of inactivity.

APPENDIX C

Photo Log of Trees Recommended for Removal



23.JPG



24.JPG



1095.JPG



1096.JPG



1097.JPG



1098.JPG



1099.JPG



1591.JPG



1592.JPG



1593.JPG



1594.JPG



1595.JPG



1596.JPG



1702.JPG



1703.JPG



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1708.JPG



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1713.JPG



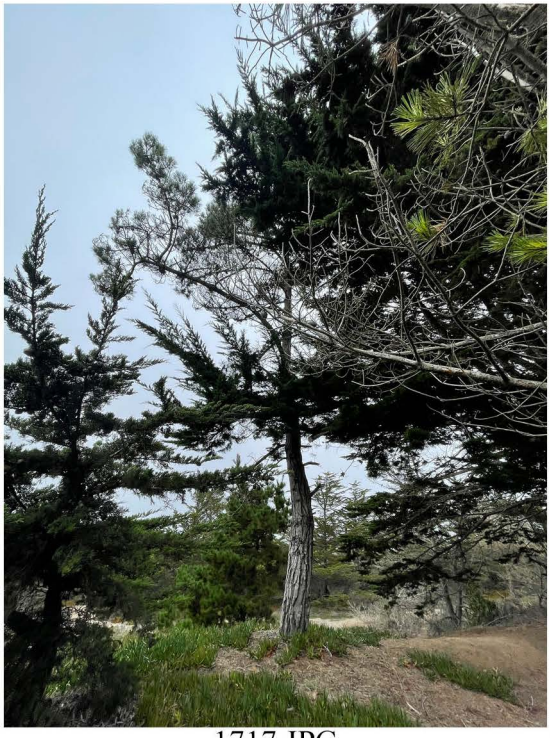
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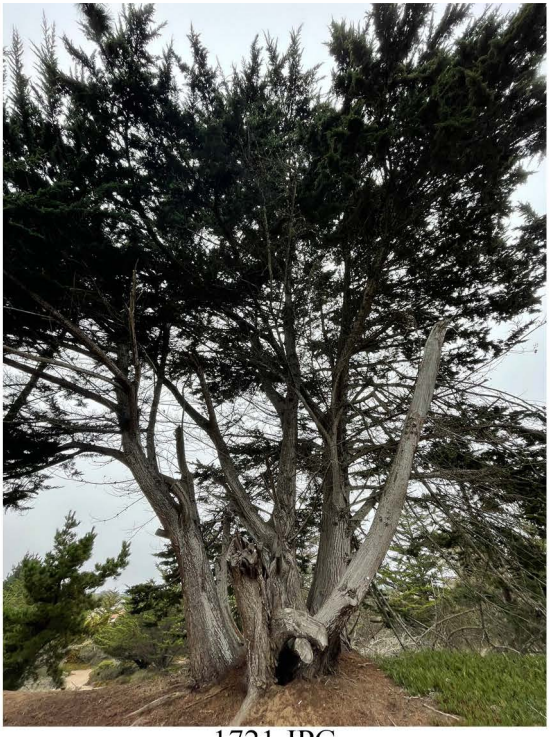
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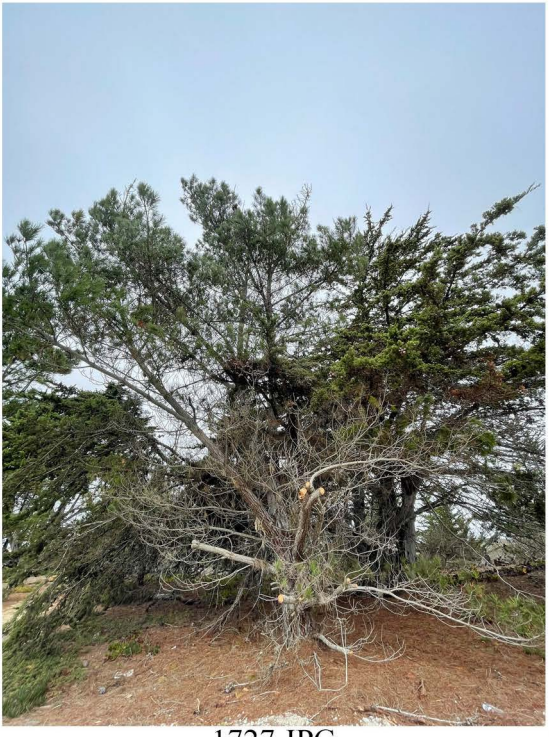
1723.JPG



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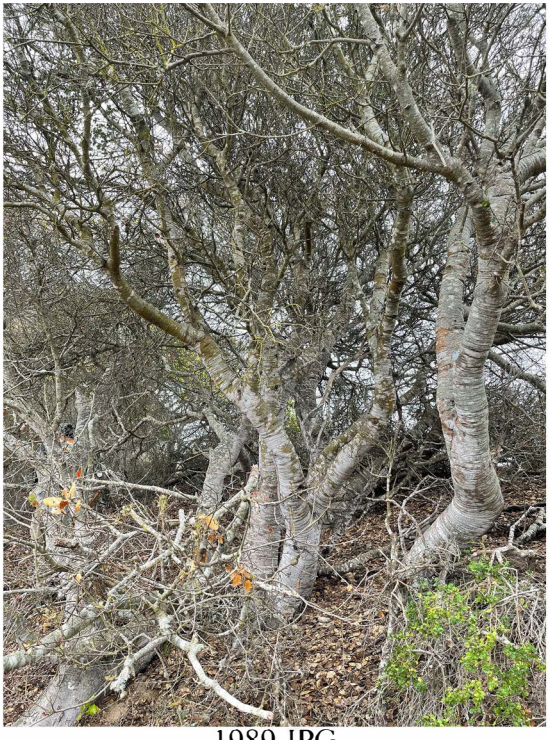
1983.JPG



1987.JPG



1988.JPG



1989.JPG



1990.JPG



2709.JPG



2710.JPG



2716.JPG



2717.JPG



2720.JPG



2721.JPG



2750.JPG



2752.JPG



2778.JPG

Appendix D

Geotechnical Investigation Report

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists
560 DIVISION STREET, CAMPBELL, CALIFORNIA 95008 (650) 948-0574

TRANSMITTAL

Date Sent:	November 23, 2022
To:	Monterey Peninsula Unified School District c/o RGM Kramer Inc.
Attn:	Mr. Ryan Altemeyer, Associate Superintendent of Business Services Mr. Rick Mickey, Senior Project Manager
From:	Grant Foster, G.E. 2662
Number of Pages Transmitted:	14
Project No.	1414.5/Ser. 7231
Re:	Preliminary Geotechnical Recommendations Multi-Use Sports Field Improvements Project Marina High School 298 Patton Parkway Marina, California

Message:

Our subsurface investigation for the planned Multi-Use Sports Field Improvements project at Marina High School in Marina, California consisted of 19 exploratory borings performed on September 20 through 22 and October 6, 2022. The results of percolation testing performed during our investigation were summarized on our October 20, 2022 letter. The following summary of our subsurface investigation findings provides preliminary geotechnical recommendations. Our firm has not been provided grading plans to review; therefore, the following preliminary recommendations are subject to change pending our review of the grading plans at the site.

Subsurface Conditions:

The exploratory borings generally encountered interbedded medium dense to very dense sand and silty sand layers to the maximum depth explored, 45 feet. Loose sand and silty sand layers were encountered in the upper two feet of Exploratory Boring 5 (EB-5), EB-10, and EB-11, and from approximately 17 to 22 feet below the ground surface in EB-18. Fill soil consisting of medium dense silty sand was encountered in the upper one and one-half (1½) feet of EB-8.

The near-surface soils encountered in the borings are considered to have a low expansion potential based on their plasticity characteristics (plasticity index of non-plastic) and the free swell test data (free swells of zero to 30 percent).

Groundwater:

Free groundwater was not encountered in the exploratory borings within the maximum depth explored, 45 feet below the ground surface. It should be noted that the borings were only open for a period of a few hours and this may not have been sufficiently long to establish the stabilized water table conditions. It should also be noted that fluctuations of localized perched groundwater and the regional groundwater level can occur due to such factors as variations in rainfall, temperature, runoff, pumping, groundwater recharge, and other factors not evident at the time our measurements were made and reported herein.

The State of California had not as of the date of this report prepared a seismic hazard zone report for the Marina Quadrangle and information typically provided in such a report on the historically high ground water table was therefore not available.

The California State Water Resources Control Board GeoTracker website, which performs a search for groundwater well records based on the site address and search radius input, did not provide relevant groundwater data in the vicinity of the project site.

Fault Offset Hazard:

Based on the preliminary findings of this investigation, including review of various relevant published geologic maps, we conclude that there are no known active or potentially active faults crossing or projecting towards the project site. The project site is not within a fault rupture hazard zone as mapped by the California Division of Mines and Geology (1974).

Liquefaction and Soil Densification:

The Monterey County Geologic Hazards Map indicates that the site is within an area of low liquefaction susceptibility. Our liquefaction hazard analysis will be forthcoming in our geotechnical and geologic hazard report.

Landsliding:

The Monterey County Geologic Hazards Map indicates that the site is within an area of low landslide susceptibility.

Flooding:

F.E.M.A. Flood Insurance Mapping (June 2017) indicates the site is within Flood Hazard Zone X, described as an area of "Minimal Flood Hazard."

Dam failure inundation mapping prepared by the Monterey County Water Resources Agency indicates that the project site is not located within the dam failure inundation zones for the reservoirs within Monterey and San Luis Obispo Counties, including San Antonio Dam (2017) and Nacimiento Dam (2018).

The site is outside of the runup zone resulting from a seismically generated tsunami (State of California Tsunami Inundation Map, 2021). The site is also not within the vicinity of any lakes or reservoirs, therefore there is not a hazard at the site from seiches.

Summary:

Based on the preliminary findings of our investigation, we judge that there are no geologic hazards or constraints which would preclude the construction of the planned Multi-Use Sports Field Improvements project at Marina High School. From a soil and foundation engineering standpoint, we also conclude that the improvements can be constructed as planned provided the recommendations of our final geotechnical and geologic hazard investigation report are incorporated into the design and construction of the project.

A cushion of Class 2 aggregate baserock should be provided under exterior concrete flatwork and asphalt pavements to provide suitable support and mitigate expansive soil movements.

Dugout, Trash Enclosure, Bleacher, and Modular Concession/Restroom Building Spread Footing Foundations:

The new dugouts, trash enclosures, bleachers, and modular concession/restroom building can be supported on conventional continuous and isolated spread footings bearing in undisturbed native soil

or properly compacted engineered fill. Any undocumented fill or loose soil encountered at the bottom of footing excavations should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing. Footings should bear at least 24 inches below lowest adjacent finished grade and be embedded at least 18 inches into supporting soil. Any footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Care should be taken to keep the footings moist by spraying lightly prior to the concrete pour.

At the above depths, footings can be designed for an allowable bearing pressure of 2000 psf due to dead loads with a one-third increase for dead plus live loads (2667 psf) and a 50 percent increase for total design loads (3000 psf) including wind and seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities. The steel reinforcement requirements should be determined by the structural engineer.

Lateral loads can be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, an equivalent fluid pressure of 300 pcf starting one-half foot below the ground surface can be taken against the sides of footings poured neat.

Soil conditions in the foundation excavations should be checked by our representative prior to placing reinforcing steel or concrete.

Post-construction settlements of the spread footing foundation under proposed loads are expected to be within tolerable limits.

Fabric Shade "Sail" Spread Footing Foundations:

The planned fabric shade "sails" can be supported on conventional isolated spread footings bearing in undisturbed native soils or properly compacted engineered fill. Loose soil, if encountered in the footing bottoms, should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing.

The isolated spread footings should be founded at least 18 inches below lowest adjacent finished grade, and have minimum dimensions of 24 inches square or greater as determined by the project structural engineer. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench.

At the above depths, footings can be designed for an allowable bearing pressure of 1500 psf for dead loads plus live loads and 2250 psf for total design loads including wind and seismic.

Lateral loads can be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, an equivalent fluid pressure of 300 pcf starting one-half foot below the ground surface can be taken against the sides of footings poured neat.

Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

Musco Light Pole, Scoreboard, Backstop, Foul Pole, Netting Pole, Goal Post and Fence Post Drilled Pier Foundations:

The new Musco sports light poles, planned to be 70 to 100 feet tall, scoreboards, backstops, foul poles, netting poles, goal posts and fence posts at the project site can be supported on cast-in-place, straight shaft friction piers.

The planned Musco sports light pole piers, should extend through any existing fill and loose soil to a depth of at least 30 feet below the ground surface, obtaining support in the underlying medium dense to very dense sand and silty sand, and have a minimum diameter of 36 inches. Scoreboard, backstop, foul pole, netting pole and goal post piers should extend to a depth of at least 15 feet below the ground surface and have a minimum diameter of 24 inches. Fence post piers should extend to a depth of at least six feet below the ground surface and have a minimum diameter of 12 inches. The actual pier diameters and depths for vertical and lateral support requirements should be determined by the project structural engineer.

The portion of the drilled piers within native soils can be designed on the basis of 300 psf skin friction for vertical loads with a 50 percent increase for wind and seismic conditions. Point bearing resistance should be neglected. For resistance to lateral loads, a uniform passive equivalent fluid pressure of 300 pcf up to 3000 psf maximum can be assumed to act over 1.5 times the projected area of the individual pier shaft. The skin friction and passive pressure can be assumed to start two feet below the ground surface. An allowable negative skin friction value of 225 psf within native soil can be used on the pier sidewall to resist uplift forces.

Groundwater was not encountered in the borings during our investigation; however, pockets of loose sandy soils, if encountered, may be susceptible to sloughing. Therefore, it is recommended that reinforcing steel and concrete be placed as soon as practical after drilling to minimize fall-in of the

sidewall soils and possible caving. Any loose soil or accumulated water in the pier holes should be removed prior to concrete placement. Casing of the piers may be required where zones of loose soil are encountered during drilling.

The bottom of the pier excavations should be free of loose soil or fall-in prior to installing reinforcing steel and placing concrete. Heavy-duty drilling equipment in good working condition should be used to drill the pier holes. This work should be performed under the observation of our representative.

Reinforcement of the piers should be provided for their full length as determined by the structural engineer's analysis.

Settlements under the anticipated loads are expected to be within tolerable limits for the proposed construction.

Retaining Walls:

We understand that retaining walls up to four feet in height are planned as part of this project. Retaining walls four feet or less in height can be supported on conventional spread footing foundations bearing in native undisturbed soil or properly compacted engineered fill. The footings can be designed for an allowable bearing pressure of 1000 psf due to dead loads, with a 50 percent increase for total design loads, including wind and seismic. Lateral loads may be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, a passive resistance equal to an equivalent fluid weighing 300 pounds per cubic foot may be used against the sides of footings poured neat. Spread footings should be founded at least 24 inches below lowest adjacent finished grade and have a minimum width of 18 inches. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 2:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Footings located adjacent to any cut/fill slope face should bear at a level which provides at least five feet of horizontal confinement. Any undocumented fill or loose soil encountered at the bottom of footing excavations should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing. The actual required extent of overexcavation and replacement of unsuitable fill materials in new retaining wall footing areas should be determined in the field by our representative.

All continuous footings should be provided with top and bottom reinforcement as specified by the structural engineer to provide structural continuity and to permit spanning of local irregularities. Soil conditions in the foundation excavations should be inspected by our representative prior to placing reinforcing steel and concrete.

Permanent retaining walls required for the project must be designed to resist lateral earth pressures and any additional lateral loads caused by surcharge loading.

We recommend that unrestrained walls with level or gently sloping backfill conditions be designed to resist an equivalent fluid pressure of 55 pcf and that restrained walls be designed to resist an equivalent fluid pressure of 55 pcf plus an additional uniform lateral pressure of eight H psf where H = height of backfill above wall foundation in feet. Wherever walls will be subjected to surcharge loads, they should be designed for an additional lateral pressure equal to one-third or one-half the anticipated surcharge load depending on whether the wall is unrestrained or restrained, respectively. A seismic component of lateral earth pressure of 10 H^2 pounds per lineal foot of wall acting 0.6 H up from the bottom of the wall can be used for retaining wall design.

The preceding pressures assume that sufficient drainage is provided behind the retaining walls to prevent the build-up of hydrostatic pressures from surface or subsurface water infiltration. Adequate drainage may be provided by means of clean, 3/4 inch drain rock material enclosed in a filter fabric, such as Mirafi 140, and a four-inch diameter perforated pipe (Schedule 40 or stronger) placed at the base of the wall. The perforated pipe should be tied into a closed pipe and carried to a suitable drainage system.

Backfill material placed behind retaining walls should be non-expansive and compacted to at least 90 percent relative compaction using lightweight compaction equipment. If heavy compaction equipment is used, the walls should be appropriately braced during the backfilling. A concrete lined v-ditch, which carries water runoff to a suitable discharge location, should be installed to control drainage behind the top of the new retaining walls.

Seismic Design Parameters:

The ASCE 7 Hazard Tool online application was used to determine ASCE 7-16 seismic design values. The application analyzed the project site using the site latitude and longitude (36.6758° N, 121.8030° W) and the site classification, which was determined using subsurface information obtained from the exploratory borings.

A site-specific ground motion hazard analysis is also required per ASCE 7-16 (Chapter 11.4.8) for the project site (S_1>0.2). The site-specific design parameters should be used for structural design; our site-specific ground motion hazard analysis is forthcoming and will be presented in our geotechnical and geologic hazard investigation report.

Based on the results of our investigation, CBC 2019 (Section 1613A), ASCE 7-16 (Chapter 11), and the ASCE 7 online application, the following seismic design parameters can be used in lateral force analyses at this site:

Site Class D - Stiff Soil Profile (SPT Values of 15 to 50 Blows/Foot)

ASCE 7-16 Values (OSHPD U.S. Seismic Design Maps):

Site Coefficient F_a = 1.0
Site Coefficient F_v = Null [1]
Mapped Spectral Acceleration Values; S_S = 1.434, S_1 = 0.519
Spectral Response Accelerations; SM_S = 1.434, SM_1 = Null [1]
Design Spectral Response Accelerations; SD_S = 0.956, SD_1 = Null [1]

[1] Values to be presented in forthcoming Site-Specific Ground Motion Hazard Analysis.

Multi-Use Synthetic Turf Athletic Field:

In order to provide uniform homogeneous athletic field support conditions, the upper 18 inches of soils underlying the new synthetic turf field footprint should be chemically treated with five (5) percent by dry weight of 50 percent Portland cement to a depth of 18 inches below the finished subgrade.

The performance of the chemically stabilized soil is highly dependent upon uniform mixing of the chemical additive into the soil and proper curing of the chemically treated soil mixture. Hence, this work should be performed by a specialty subcontractor using appropriately sized spreading and mixing equipment which will result in a uniform mixture throughout the recommend section to be treated.

It is anticipated that up to 18 inches of soil can be chemically treated in-place using heavy-duty compaction equipment, such as a Rex 3-70 or similar compactor. A maximum 12-inch lift thickness is recommended where materials are removed and replaced as chemically-treated soil.

After satisfactory soil mixing has been achieved and the moisture content has been brought to optimum moisture for compaction, the recommended section of chemically treated soil should be recompacted to at least 95 percent relative compaction. Compaction should be performed using heavy compaction equipment such as a sheepsfoot roller or segmented wheeled compactor. Field density tests should be performed in the chemically treated soil during the mixing and compaction process as a means of evaluating the contractor's compaction effort and compliance with the recommended minimum relative compaction.

The surface of the chemically treated subgrade should be kept moist for a minimum of four days after treatment and compaction is performed. Heavy vehicular loading should not be allowed on the treated subgrade surface during the four-day curing period.

We recommend the new synthetic turf be underlain by a minimum six-inch thick section of Class 2 aggregate baserock compacted to at least 95 percent relative compaction, or Class 2 permeable baserock designed to meet the minimum compaction, gradation, permeability and stability requirements of the synthetic turf manufacturer. The section should be placed in thin lifts in a manner to prevent segregation and should be densified with a smooth drum vibratory roller, making at least two passes over the rock surface in both directions. To improve stability and reduce infiltration of subgrade fines, the section should be underlain by a woven geotextile stabilization fabric, such as Mirafi 600x or equivalent.

Class 2 aggregate baserock placed over the chemically-stabilized subgrade should have an R-Value of at least 78 and conform to the requirements of Section 26-1.02A of the State of California, CALTRANS Standard Specifications, latest edition.

Positive surface gradients of at least two percent should be maintained on the finished playfield subgrade; the subgrade or baserock should be crowned at the center and drained toward both sides of the field in accordance with the designers' recommendations. In addition, the perimeter of the playfield should be drained by means of a minimum six-inch diameter perforated pipe (SDR-35) placed adjacent to the perimeter edging below the drainrock section. The perforated pipe should be tied into a closed pipe and carried to a suitable discharge facility. Additional "herring bone" drain laterals may be required by the designer.

Slabs-on-Grade:

Slab-on-grade construction will be used for new exterior flatwork. Just prior to final slab preparation, the slab subgrade should be checked to determine that the upper 12 inches of native soils are at approximately two percent above the optimum moisture content or above and proof-rolled to provide firm, uniform support.

Exterior concrete flatwork, sidewalks and curb and gutters should be underlain by at least six inches of Class 2 aggregate baserock placed on the prepared subgrade. Areas of vehicular slabs-on-grade, such as driveway approaches, should be underlain by at least 12 inches of Class 2 aggregate baserock placed on the prepared subgrade, or six inches of Class 2 aggregate baserock placed on 18 inches of properly compacted chemically-treated subgrade.

Reinforcement of slabs should be provided in accordance with their anticipated use and loading, but as a minimum, slabs should be reinforced with No. 3 bars at 18 inches on center, both ways, or No. 4 bars at 24 inches on center, both ways. Concrete slabs should be articulated with a maximum joint spacing of ten feet in both directions.

The baserock and upper 12 inches of underlying subgrade should be compacted to at least 90 percent relative compaction, or 95 percent in areas of vehicular traffic.

Prior to final construction of slabs, the baserock and subgrade surface should be proof rolled to provide a smooth, firm non-yielding surface. The moisture content of the compacted baserock and subgrade should be maintained at, or slightly above, optimum moisture prior to placing non-expansive fill materials.

Flexible Pavements:

The near-surface soils at the site were determined to have an untreated R-Value of 68 and a chemically treated R-Value of 81 based on the laboratory test results. The required thickness of the pavement section can be reduced by chemically treating the subgrade (minimum 18 inches deep) with five percent by dry weight Portland cement in new AC pavement areas. Chemical treatment will also mitigate pumping subgrade conditions, particularly if construction occurs during the wet season. Utilizing the above R-Values and Traffic Indices of 4.5 and 6.0 for automobile parking and fire truck lanes/driveways, respectively, and Procedure 301-F of the California Department of Transportation, we have developed the following alternative minimum flexible pavement sections for use on this project:

Recommended Alternative Flexible Pavement Sections

Traffic Condition	Asphaltic Concrete (inches)	Class 2 Aggregate Base (inches)	Chemical Subgrade Treatment (inches)	Total Thickness (inches)
Auto Parking (T.I. = 4.5)				
Untreated	**2.5**	**6.0**	**- -**	**8.5**
Chemically Treated	**2.5**	**4.0**	**18.0**	**24.5**
Fire Lanes, Driveways (T.I. = 6.0)				
Untreated	**4.0**	**6.0**	**- -**	**10.0**
Chemically Treated	**4.0**	**4.0**	**18.0**	**26.0**

New hardscape areas (anticipating only pedestrian traffic) required for the project should consist of two inches AC over six inches Class 2 aggregate baserock.

The upper 12 inches of new pavement area subgrade should be compacted to at least 95 percent relative compaction. Any fill required below the upper six inches of subgrade should be compacted to at least 90 percent.

The subgrade should be statically rolled with a heavy, smooth drum roller to provide a smooth firm surface. Any unstable or pumping subgrade areas should be chemically treated as described above, or subexcavated, plugged with baserock and overlain with a stabilizing fabric such as Mirafi 600X. Fabric installation should be performed in accordance with the manufacturer's recommendations. The method and extent of any required stabilization work should be evaluated by our representative.

Class 2 aggregate base should have an R-Value of at least 78 and conform to the requirements of Section 26, State of California "CALTRANS" Standard Specifications, latest edition. The aggregate base material should be placed in thin lifts in a manner to prevent segregation, and should be uniformly moisture conditioned and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

The asphaltic concrete should conform to and be placed in accordance with the requirements of Section 39 in the State of California CALTRANS Standard Specifications, latest edition.

Soil Corrosivity:

Laboratory resistivity, pH, chloride and sulfate testing was performed on a composite soil sample obtained from the upper three feet of the exploratory borings during our geotechnical investigation for this project. The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 13,130 Ohm-Cm, a pH of 7.0, a chloride content of 29 ppm, and water soluble sulfate content of 47 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of "low" corrosivity. However, based on the resistivity testing the soils are considered "progressively less corrosive."

The table below shows the general correlation between resistivity and corrosion potential.

Correlation Between Resistivity and Corrosion Potential (c)

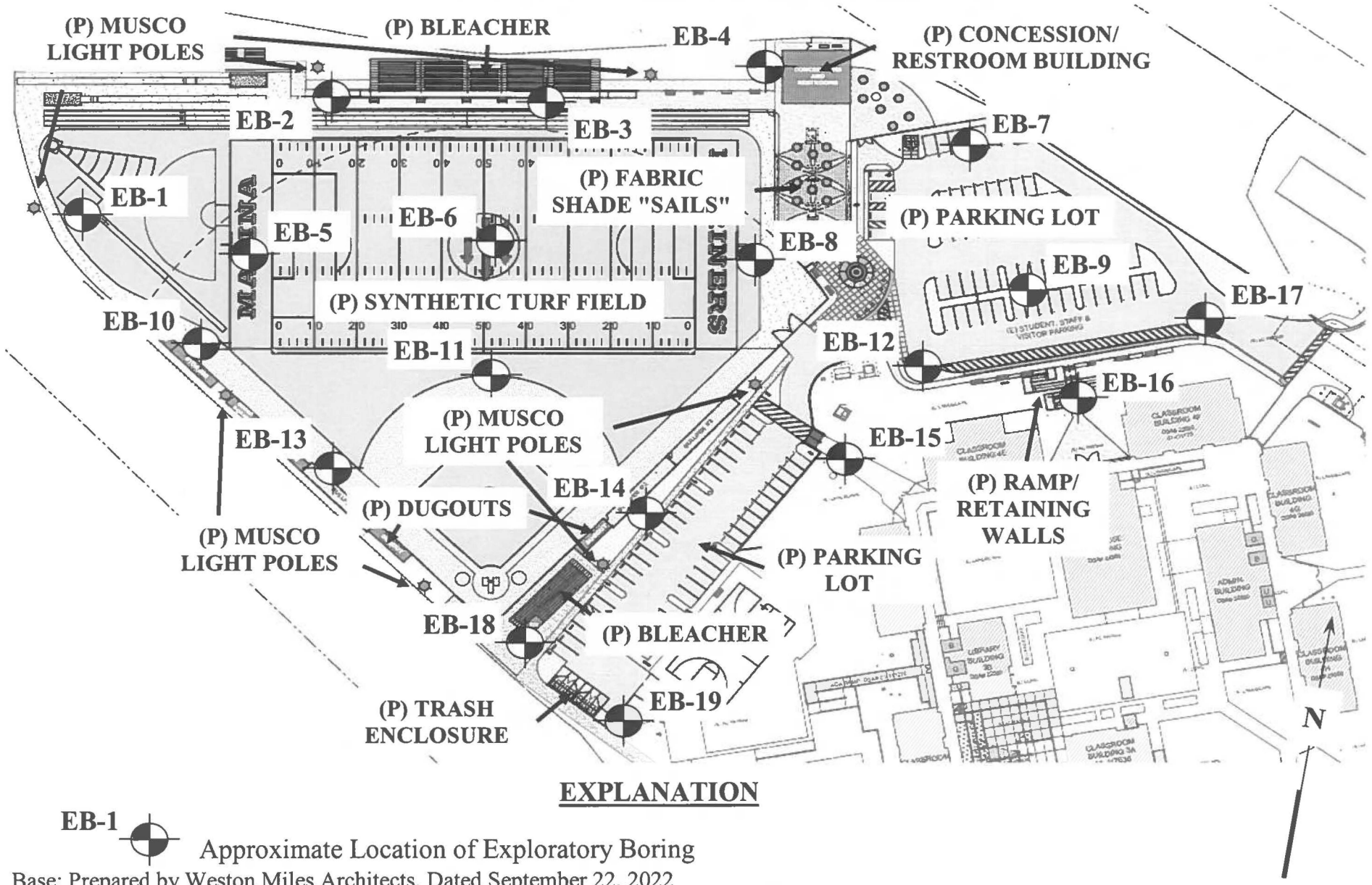
Soil Resistivity (ohm-cm)	Soil Classification
Below 500	Very Corrosive
500 to 1,000	Corrosive
1,000 to 2,000	Moderately Corrosive
2,000 to 10,000	Mildly Corrosive
Above 10,000	Progressively Less Corrosive

(c) National Association of Corrosion Engineers.

This condition combined with the neutral soil condition encountered at the site could result in reduced life span of buried steel piping and culverts for this project. Thicker gauge pipelines would have greater life spans. For example, the life spans for 18, 16 and 14-gauge steel culverts with a soil resistivity of 13,130 ohm-cm and a pH of 7.0 are estimated to be roughly 33, 43 and 52 years, respectively (California Division of Highways, 2019).

Based on the resistivity and sulfate testing, for the purposes of design of concrete in contact with the soil against acid and sulfate exposure conditions, there are no cementitious material or water content restrictions (Portland Cement Association, 2002).

Please call if you have any questions regarding this transmittal.
Attachments: Drawing 1 – Site Plan



EXPLANATION

EB-1 ⊕ Approximate Location of Exploratory Boring

Base: Prepared by Weston Miles Architects, Dated September 22, 2022

SITE PLAN

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

MULTI-USE SPORTS FIELD IMPROVEMENTS
Marina High School
Marina, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 100' ±	1414.5	November 2022	1

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

Christophe A. Ciechanowski, President, GE
Grant F. Foster, Vice-President, GE
J. Michael Cleary, Principal, CEG, GE

February 8, 2023
Project No. 1414.5
Ser. 7285

Mr. Ryan Altemeyer, Associate Superintendent of Business Services
Monterey Peninsula Unified School District
c/o RGM Kramer, Inc.
Attn: Rick Mickey, Sr. Project Manager
540 Canyon Del Rey Blvd., Suite #1
Monterey, CA 93940

RE: ENVIRONMENTAL SOIL SCREENING TEST RESULTS
NEW MULTI-SPORTS SYNTHETIC FIELD
MARINA HIGH SCHOOL
298 PATTON PARKWAY
MARINA, CALIFORNIA

Dear Mr. Altemeyer:

As requested, we are submitting environmental soil screening test results for the on-site soils located at the planned new multi-sports synthetic field at the Marina High School campus in Monterey, California. Our proposal for the environmental soil screening was submitted August 23, 2022.

A total of ten discrete samples within the upper six to 12 inches of in-situ soils were collected (see Drawing 1), based on the current DTSC sampling standards. The samples were collected on September 20, 2022 through September 22, 2022 during the drilling of geotechnical exploratory borings. The soil samples were stored in a cooler with ice and then picked up by a Eurofins TestAmerica environmental lab courier on September 23, 2022 for discrete sample testing.

Soils analysis for each sample included TPH EPA 8260B – Gas, TEPH EPA 8015C – Diesel and Motor Oil, EPA 8260B – VOC's, EPA 8270C – Semivolatiles, EPA 8081B – Pesticides, EPA 8082A – PCB's, EPA 6010B and 7471A – CAM 17 Metals and Mercury, EPA 7199 – Chromium VI, EPA 6010B – Arsenic and Chromium STLC, and CARB-435 – Asbestos. The above tests were performed and reported on a dry weight basis with the exception of the EPA 6010B STLC testing and results. These tests are generally standard requirements for unrestricted use sites and landfills. The results of the analyses dated October 7, 2022, are attached to this letter (Job ID: 320-92432-1).

The attached summary reports prepared by Eurofins TestAmerica detail the lab analysis results. These test results were compared to the most recent (July 2019 Rev. 2) San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for shallow soils and residential land use and the State (Title 22-TTLC, STLC) and Federal (RCRA-TCLP) hazardous waste criteria. The ESLs are typically used by landfills and trucking companies to determine the appropriate site/location for re-use or disposal of soil.

The test results were also compared to the most recent (November 2021) Environmental Protection Agency Regional Screening Levels (EPA RSL) for residential soils or the most recent (June 2020) Human Health Risk Assessment (HHRA) Note Number 3 - DTSC-modified Screening Levels (DTSC-SL) for residential soils in California. Both the EPA RSLs and the DTSC-SLs have been developed to provide guidance and a recommended approach to risk assessment at sites that may be deemed hazardous. Both agencies provide screening level concentrations of chemicals in soil below thresholds of concern for risks to human health. It should be noted that these screening levels do not address potential ecological risks.

Sample MHSSF-ENV-A@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 7, Job ID: 320-92432-1) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.7 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Sample MHSSF-ENV-B@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 7, Job ID: 320-92432-2) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.8 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg).

Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Sample MHSSF-ENV-C@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 7 and 8, Job ID: 320-92432-3) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.3 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Sample MHSSF-ENV-D@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 8, Job ID: 320-92432-4) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic, Cobalt, and Nickel. All other test results were non-detectable (ND).

Arsenic (2.2 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Cobalt (26 mg/kg result) is above the ESL (23 mg/kg), the EPA RSL (23 mg/kg), and the mean value for Cobalt in the soil at LBL (14.0 mg/kg). However, Cobalt is below the State TTLC criteria (8000 mg/kg).

Nickel (110 mg/kg result) is above the ESL (86 mg/kg), the mean value for Nickel in the soil at LBL (68 mg/kg), and the Santa Clara County Background levels (46.4 to 101 mg/kg). However, Nickel is below the EPA RSL (1500 mg/kg) and the State TTLC criteria (2000 mg/kg). Additional Nickel STLC results are ND (non-detect).

Sample MHSSF-ENV-E@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 8, Job ID: 320-92432-5) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.3 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Sample MHSSF-ENV-F@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 8 and 9, Job ID: 320-92432-6) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.6 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect).

Sample MHSSF-ENV-G@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 9, Job ID: 320-92432-7) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP with the exception of Arsenic. All other test results were non-detectable (ND).

Arsenic (1.3 mg/kg result) is above the ESL (0.067 mg/kg) and the DTSC-SL (0.11 mg/kg). Arsenic is below the State TTLC criteria (500 mg/kg). Additional Arsenic STLC test results are ND (non-detect). Additional Arsenic STLC results (0.43 mg/L) are ND (non-detect).

Sample MHSSF-ENV-H@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 9 and 10, Job ID: 320-92432-8) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or

STLC or the Federal TCLP, or are generally within the range of expected background metal concentrations. All other test results were non-detectable (ND).

Sample MHSSF-ENV-I@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 10, Job ID: 320-92432-9) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP. All other test results were non-detectable (ND).

Sample MHSSF-ENV-J@0.5'

The results indicate that the detected contaminants (see Detection Summary Page 10, Job ID: 320-92432-10) are all either below the ESLs, the EPA RSLs or DTSC-SLs, the State TTLC or STLC or the Federal TCLP. All other test results were non-detectable (ND).

Conclusions

The results of our environmental soil screening for the new multi-sports synthetic field at the Marina High School campus in Monterey, California indicate the presence of Arsenic, Cobalt and Nickel above the July 2019 Revision 2 ESLs.

Arsenic levels in MHSSF-ENV-A, MHSSF-ENV-B, MHSSF-ENV-C, MHSSF-ENV-D, MHSSF-ENV-E, MHSSF-ENV-F, and MHSSF-ENV-G are above the ESL.

Cobalt levels in sample MHSSF-ENV-D are above the ESL.

Nickel levels in sample MHSSF-ENV-D are above the ESL.

This screening was intended for preliminary analysis; additional sampling and discrete soil screening analysis may be required by landfills or trucking companies based on quantity of soil or site area prior to offhaul or disposal of excess materials.

Our services were performed in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

We appreciate the opportunity to provide our services to the District and its consultants. If you have any questions regarding this letter, please call.

Yours very truly,

CLEARY CONSULTANTS, INC.

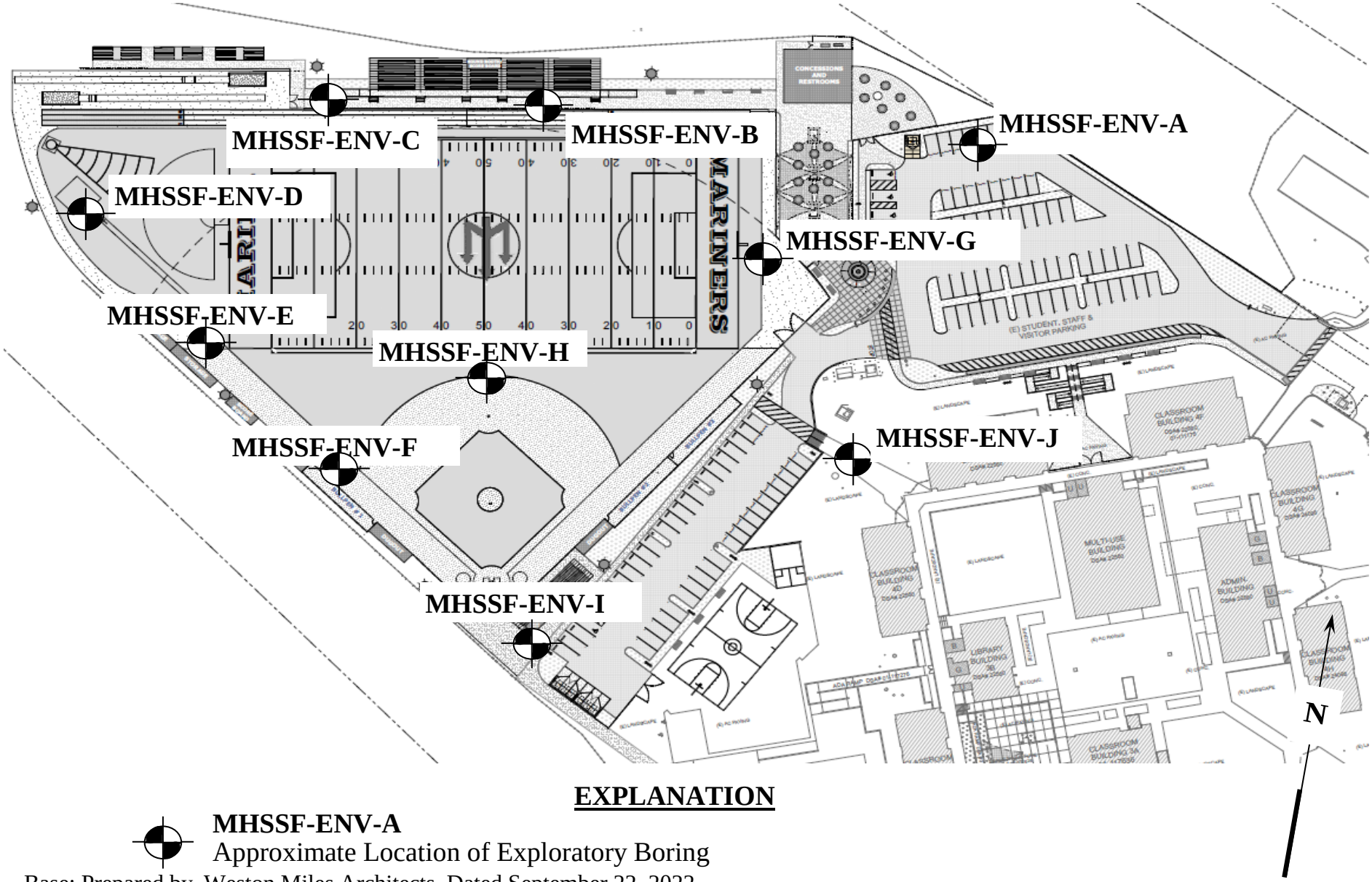
Annie Huynh
Staff Engineer

Grant Foster
Geotechnical Engineer 2662

AH/GF:ah

Copies: Addressee (email)

Attachments:
Drawing 1 – Environmental Soil Screening Sample Locations
Eurofins TestAmerica Results, Job ID 320-92432-1 (111 Pages) October 7, 2022



EXPLANATION

MHSSF-ENV-A
Approximate Location of Exploratory Boring

Base: Prepared by Weston Miles Architects, Dated September 22, 2022

SITE PLAN

CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

MULTI-USE SPORTS FIELD IMPROVEMENTS
Marina High School
Marina, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 100' ±	1414.5	February 2023	1

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-92432-1
Client Project/Site: Mzrina High School

For:
Cleary Consultants, Inc
560 Division Street
Campbell, California 95008

Attn: Grant Foster

Authorized for release by:
10/7/2022 6:09:09 PM

Afsaneh Salimpour, Senior Project Manager
(925)484-1919
Afsaneh.Salimpour@et.eurofinsus.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 320-92432-1

Laboratory: Eurofins Sacramento

Narrative

Job Narrative
320-92432-1

Comments
No additional comments.

Receipt
The samples were received on 9/23/2022 6:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.5º C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 8270C: The laboratory control sample (LCS) for preparation batch 320-620314 and analytical batch 320-620781 recovery outside control limits for the following analyte: 2,4-Dinitrophenol. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Method 8270C: The matrix spike / matrix spike duplicate (MS/MSD) precision for preparation batch 320-620314 and analytical batch 320-620781 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

Method 8270C: The following sample was diluted due to the nature of the sample matrix: MHSSF-ENV-D@0.5' (320-92432-4). Elevated reporting limits (RLs) are provided.

Method 8270C: The matrix spike duplicate (MSD) recovery for preparation batch 320-620314 and analytical batch 320-620781 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
Method 8015C: The following sample was diluted due to the nature of the sample matrix: MHSSF-ENV-D@0.5' (320-92432-4). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

Method 8015C: The method blank for preparation batch 320-620320 and analytical batch 320-620722 contained C10-C28 above the reporting limit (RL). Associated sample were not re-extracted or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8015C: The method blank for preparation batch 320-620320 and analytical batch 320-620722 contained C10-C28 above the reporting limit (RL). The samples associated with this method blank contained the target compound below the client's action level, therefore, the data has been flagged and reported.

Method 8015C: The Diesel Range Organics (DRO), C10-C28, concentration reported for the following samples is partially due to the presence of discrete peaks similar to the contamination peaks seen in the method blank : MHSSF-ENV-A@0.5' (320-92432-1), MHSSF-ENV-B@0.5' (320-92432-2), MHSSF-ENV-C@0.5' (320-92432-3), MHSSF-ENV-E@0.5' (320-92432-5), MHSSF-ENV-F@0.5' (320-92432-6), MHSSF-ENV-G@0.5' (320-92432-7), MHSSF-ENV-H@0.5' (320-92432-8), MHSSF-ENV-I@0.5' (320-92432-9) and MHSSF-ENV-J@0.5' (320-92432-10).

Method 8015C: Surrogate recovery for the following sample was outside control limits: MHSSF-ENV-F@0.5' (320-92432-6). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method 8015C: The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: MHSSF-ENV-D@0.5' (320-92432-4), MHSSF-ENV-I@0.5'

Job ID: 320-92432-1 (Continued)

Laboratory: Eurofins Sacramento (Continued)

(320-92432-9) and MHSSF-ENV-J@0.5' (320-92432-10).

Method 8081B: Due to a computer error, the instrument computer for GC75 has the incorrect time stamp and the injection times are off by 15 hours and 20 minutes (in the future). Samples affected include: MHSSF-ENV-A@0.5' (320-92432-1), (CCV 320-622637/4), (CCV 320-622637/5), (CCVRT 320-622637/3), (LCS 320-620354/3-A), (LCS 320-620354/4-A), (MB 320-620354/1-A) and (PEM 320-622637/2). MHSSF-ENV-A@0.5' (320-92432-1), (CCV 320-622637/4), (CCV 320-622637/5), (CCVRT 320-622637/3), (LCS 320-620354/3-A), (LCS 320-620354/4-A), (MB 320-620354/1-A) and (PEM 320-622637/2)

Method 8081B: The following sample was diluted due to the color of the sample matrix: MHSSF-ENV-D@0.5' (320-92432-4). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

Method 8081B: Surrogate recovery for the following sample was outside control limits: MHSSF-ENV-D@0.5' (320-92432-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8081B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 320-620354 and analytical batch 320-622837 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-A@0.5' — Lab Sample ID: 320-92432-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.4	B	1.0	0.50	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Chromium, hexavalent	0.21	J	0.41	0.20	mg/Kg	10	☼	7199	Total/NA
Antimony	4.7		2.0	0.95	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.7	J	2.0	1.3	mg/Kg	1	☼	6010B	Total/NA
Barium	8.1		1.0	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.10	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.046	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Chromium	8.1		0.51	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	1.2		0.51	0.25	mg/Kg	1	☼	6010B	Total/NA
Copper	2.2		1.5	0.22	mg/Kg	1	☼	6010B	Total/NA
Lead	1.5		1.0	0.26	mg/Kg	1	☼	6010B	Total/NA
Nickel	7.2		1.0	0.24	mg/Kg	1	☼	6010B	Total/NA
Vanadium	6.8		0.51	0.19	mg/Kg	1	☼	6010B	Total/NA
Zinc	5.6		2.0	0.19	mg/Kg	1	☼	6010B	Total/NA
Chromium	0.077	J B	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-B@0.5' — Lab Sample ID: 320-92432-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.1	B	1.0	0.51	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Antimony	5.3		2.0	0.94	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.8	J	2.0	1.3	mg/Kg	1	☼	6010B	Total/NA
Barium	11		1.0	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.12	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.032	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Chromium	11		0.50	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	1.3		0.50	0.25	mg/Kg	1	☼	6010B	Total/NA
Copper	2.4		1.5	0.22	mg/Kg	1	☼	6010B	Total/NA
Lead	1.7		1.0	0.26	mg/Kg	1	☼	6010B	Total/NA
Nickel	7.4		1.0	0.24	mg/Kg	1	☼	6010B	Total/NA
Vanadium	8.0		0.50	0.19	mg/Kg	1	☼	6010B	Total/NA
Zinc	7.3		2.0	0.19	mg/Kg	1	☼	6010B	Total/NA
Lead	0.052	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.072	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-C@0.5' — Lab Sample ID: 320-92432-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.1	B	1.0	0.50	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Antimony	3.2		2.0	0.95	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.3	J	2.0	1.3	mg/Kg	1	☼	6010B	Total/NA
Barium	9.7		1.0	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.10	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.059	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Chromium	6.7		0.50	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.96		0.50	0.25	mg/Kg	1	☼	6010B	Total/NA
Copper	2.0		1.5	0.22	mg/Kg	1	☼	6010B	Total/NA
Lead	2.2		1.0	0.26	mg/Kg	1	☼	6010B	Total/NA
Nickel	6.0		1.0	0.24	mg/Kg	1	☼	6010B	Total/NA
Vanadium	5.1		0.50	0.19	mg/Kg	1	☼	6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample ID: MHSSF-ENV-C@0.5' (Continued) — Lab Sample ID: 320-92432-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Zinc	5.3		2.0	0.19	mg/Kg	1	☼	6010B	Total/NA
Lead	0.081	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.037	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-D@0.5' — Lab Sample ID: 320-92432-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	170	B	110	53	mg/Kg	100	☼	8015C	Silica Gel Cleanup
Motor Oil Range Organics [C28-C40]	550		530	400	mg/Kg	100	☼	8015C	Silica Gel Cleanup
Antimony	3.7		2.0	0.94	mg/Kg	1	☼	6010B	Total/NA
Arsenic	2.2		2.0	1.3	mg/Kg	1	☼	6010B	Total/NA
Barium	14		1.0	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.075	J	0.20	0.030	mg/Kg	1	☼	6010B	Total/NA
Chromium	29		0.50	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	26		0.50	0.25	mg/Kg	1	☼	6010B	Total/NA
Copper	36		1.5	0.22	mg/Kg	1	☼	6010B	Total/NA
Lead	1.5		1.0	0.26	mg/Kg	1	☼	6010B	Total/NA
Nickel	110		1.0	0.24	mg/Kg	1	☼	6010B	Total/NA
Vanadium	13		0.50	0.19	mg/Kg	1	☼	6010B	Total/NA
Zinc	11		2.0	0.19	mg/Kg	1	☼	6010B	Total/NA
Lead	0.093	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.078	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate
Mercury	0.026	J	0.040	0.0080	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: MHSSF-ENV-E@0.5' — Lab Sample ID: 320-92432-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.3	B	1.1	0.53	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Antimony	2.9		2.1	0.96	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.3	J	2.1	1.3	mg/Kg	1	☼	6010B	Total/NA
Barium	10		1.0	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.084	J	0.21	0.031	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.047	J	0.21	0.031	mg/Kg	1	☼	6010B	Total/NA
Chromium	7.2		0.51	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.98		0.51	0.26	mg/Kg	1	☼	6010B	Total/NA
Copper	2.0		1.5	0.23	mg/Kg	1	☼	6010B	Total/NA
Lead	1.0		1.0	0.27	mg/Kg	1	☼	6010B	Total/NA
Nickel	5.9		1.0	0.25	mg/Kg	1	☼	6010B	Total/NA
Vanadium	5.2		0.51	0.19	mg/Kg	1	☼	6010B	Total/NA
Zinc	5.1		2.1	0.19	mg/Kg	1	☼	6010B	Total/NA
Lead	0.024	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.043	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-F@0.5' — Lab Sample ID: 320-92432-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.2	J B	1.3	0.65	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Antimony	5.2		1.3	0.61	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.6		1.3	0.84	mg/Kg	1	☼	6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MHSSF-ENV-F@0.5' (Continued) — Lab Sample ID: 320-92432-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	17		0.65	0.078	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.11	J	0.13	0.019	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.063	J	0.13	0.019	mg/Kg	1	☼	6010B	Total/NA
Chromium	11		0.32	0.090	mg/Kg	1	☼	6010B	Total/NA
Cobalt	1.7		0.32	0.16	mg/Kg	1	☼	6010B	Total/NA
Copper	4.8		0.97	0.14	mg/Kg	1	☼	6010B	Total/NA
Lead	2.1		0.65	0.17	mg/Kg	1	☼	6010B	Total/NA
Nickel	9.2		0.65	0.16	mg/Kg	1	☼	6010B	Total/NA
Vanadium	8.1		0.32	0.12	mg/Kg	1	☼	6010B	Total/NA
Zinc	10		1.3	0.12	mg/Kg	1	☼	6010B	Total/NA
Lead	0.038	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.040	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate
Mercury	0.012	J	0.049	0.0099	mg/Kg	1	☼	7471A	Total/NA

Client Sample ID: MHSSF-ENV-G@0.5' — Lab Sample ID: 320-92432-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.85	J B	1.2	0.62	mg/Kg	1	☼	8015C	Silica Gel Cleanup
4,4'-DDE	0.00037	J	0.0021	0.00026	mg/Kg	1	☼	8081B	Total/NA
Antimony	2.9		1.6	0.76	mg/Kg	1	☼	6010B	Total/NA
Arsenic	1.3	J	1.6	1.1	mg/Kg	1	☼	6010B	Total/NA
Barium	9.7		0.81	0.097	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.091	J	0.16	0.024	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.062	J	0.16	0.024	mg/Kg	1	☼	6010B	Total/NA
Chromium	6.6		0.41	0.11	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.90		0.41	0.20	mg/Kg	1	☼	6010B	Total/NA
Copper	1.7		1.2	0.18	mg/Kg	1	☼	6010B	Total/NA
Lead	1.2		0.81	0.21	mg/Kg	1	☼	6010B	Total/NA
Nickel	5.4		0.81	0.19	mg/Kg	1	☼	6010B	Total/NA
Vanadium	4.5		0.41	0.15	mg/Kg	1	☼	6010B	Total/NA
Zinc	5.2		1.6	0.15	mg/Kg	1	☼	6010B	Total/NA
Lead	0.18	B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.023	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-H@0.5' — Lab Sample ID: 320-92432-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	0.73	J B	1.1	0.54	mg/Kg	1	☼	8015C	Silica Gel Cleanup
4,4'-DDE	0.00029	J	0.0018	0.00022	mg/Kg	1	☼	8081B	Total/NA
Antimony	4.5		2.1	1.0	mg/Kg	1	☼	6010B	Total/NA
Barium	7.5		1.1	0.13	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.11	J	0.21	0.032	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.095	J	0.21	0.032	mg/Kg	1	☼	6010B	Total/NA
Chromium	9.3		0.53	0.15	mg/Kg	1	☼	6010B	Total/NA
Cobalt	1.2		0.53	0.27	mg/Kg	1	☼	6010B	Total/NA
Copper	2.1		1.6	0.23	mg/Kg	1	☼	6010B	Total/NA
Lead	1.6		1.1	0.28	mg/Kg	1	☼	6010B	Total/NA
Nickel	6.8		1.1	0.26	mg/Kg	1	☼	6010B	Total/NA
Vanadium	6.7		0.53	0.20	mg/Kg	1	☼	6010B	Total/NA
Zinc	5.3		2.1	0.20	mg/Kg	1	☼	6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MHSSF-ENV-H@0.5' (Continued) — Lab Sample ID: 320-92432-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.052	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.058	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-I@0.5' — Lab Sample ID: 320-92432-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.3	B	1.1	0.54	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Antimony	4.2		2.2	1.0	mg/Kg	1	☼	6010B	Total/NA
Barium	13		1.1	0.13	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.11	J	0.22	0.033	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.047	J	0.22	0.033	mg/Kg	1	☼	6010B	Total/NA
Chromium	8.6		0.54	0.15	mg/Kg	1	☼	6010B	Total/NA
Cobalt	1.2		0.54	0.27	mg/Kg	1	☼	6010B	Total/NA
Copper	2.7		1.6	0.24	mg/Kg	1	☼	6010B	Total/NA
Lead	1.2		1.1	0.28	mg/Kg	1	☼	6010B	Total/NA
Nickel	7.9		1.1	0.26	mg/Kg	1	☼	6010B	Total/NA
Vanadium	6.8		0.54	0.21	mg/Kg	1	☼	6010B	Total/NA
Zinc	5.6		2.2	0.21	mg/Kg	1	☼	6010B	Total/NA
Lead	0.048	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.037	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

Client Sample ID: MHSSF-ENV-J@0.5' — Lab Sample ID: 320-92432-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	1.8	B	1.0	0.50	mg/Kg	1	☼	8015C	Silica Gel Cleanup
Motor Oil Range Organics [C28-C40]	6.1		5.0	3.8	mg/Kg	1	☼	8015C	Silica Gel Cleanup
4,4'-DDE	0.00022	J	0.0016	0.00020	mg/Kg	1	☼	8081B	Total/NA
4,4'-DDT	0.00045	J	0.0016	0.00024	mg/Kg	1	☼	8081B	Total/NA
Dieldrin	0.00045	J	0.0016	0.00019	mg/Kg	1	☼	8081B	Total/NA
Antimony	3.8		1.9	0.91	mg/Kg	1	☼	6010B	Total/NA
Barium	9.9		0.97	0.12	mg/Kg	1	☼	6010B	Total/NA
Beryllium	0.096	J	0.19	0.029	mg/Kg	1	☼	6010B	Total/NA
Cadmium	0.037	J	0.19	0.029	mg/Kg	1	☼	6010B	Total/NA
Chromium	5.2		0.49	0.14	mg/Kg	1	☼	6010B	Total/NA
Cobalt	0.82		0.49	0.24	mg/Kg	1	☼	6010B	Total/NA
Copper	1.7		1.5	0.21	mg/Kg	1	☼	6010B	Total/NA
Lead	1.1		0.97	0.25	mg/Kg	1	☼	6010B	Total/NA
Nickel	4.8		0.97	0.23	mg/Kg	1	☼	6010B	Total/NA
Vanadium	4.3		0.49	0.18	mg/Kg	1	☼	6010B	Total/NA
Zinc	6.8		1.9	0.18	mg/Kg	1	☼	6010B	Total/NA
Lead	0.049	J B	0.10	0.012	mg/L	10		6010B	STLC Citrate
Chromium	0.034	J	0.10	0.0060	mg/L	10		6010B	STLC Citrate

This Detection Summary does not include radiochemical test results.

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-A@0.5'
Date Collected: 09/20/22 10:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-1
Matrix: Solid
Percent Solids: 97.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Acetone	ND		0.020	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Benzene	ND		0.0051	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Dichlorobromomethane	ND		0.0051	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Bromobenzene	ND		0.0051	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chlorobromomethane	ND		0.0051	0.00095	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Bromoform	ND		0.0051	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Bromomethane	ND		0.0051	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
2-Butanone (MEK)	ND		0.010	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
n-Butylbenzene	ND		0.0051	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
sec-Butylbenzene	ND		0.0051	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
tert-Butylbenzene	ND		0.0051	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Carbon disulfide	ND		0.010	0.00050	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Carbon tetrachloride	ND		0.0051	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chlorobenzene	ND		0.0051	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chloroethane	ND		0.0051	0.00046	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chloroform	ND		0.0051	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chloromethane	ND		0.0051	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
2-Chlorotoluene	ND		0.0051	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
4-Chlorotoluene	ND		0.0051	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Chlorodibromomethane	ND		0.0051	0.00021	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2-Dichlorobenzene	ND		0.0051	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,3-Dichlorobenzene	ND		0.0051	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,4-Dichlorobenzene	ND		0.0051	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,3-Dichloropropane	ND		0.0051	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1-Dichloropropene	ND		0.0051	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Ethylene Dibromide	ND		0.010	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Dibromomethane	ND		0.0051	0.00059	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Dichlorodifluoromethane	ND		0.0051	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1-Dichloroethane	ND		0.0051	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2-Dichloroethane	ND		0.0051	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1-Dichloroethene	ND		0.0051	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
cis-1,2-Dichloroethene	ND		0.0051	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
trans-1,2-Dichloroethene	ND		0.0051	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2-Dichloropropane	ND		0.0051	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
cis-1,3-Dichloropropene	ND		0.0051	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
trans-1,3-Dichloropropene	ND		0.0051	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Ethylbenzene	ND		0.0051	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Hexachlorobutadiene	ND		0.0051	0.00033	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
2-Hexanone	ND		0.010	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Isopropylbenzene	ND		0.0051	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
4-Isopropyltoluene	ND		0.0051	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Methylene Chloride	ND		0.010	0.00085	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Naphthalene	ND		0.0051	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
N-Propylbenzene	ND		0.0051	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Styrene	ND		0.0051	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1,1,2-Tetrachloroethane	ND		0.0051	0.00042	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-A@0.5'
Date Collected: 09/20/22 10:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-1
Matrix: Solid
Percent Solids: 97.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0051	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Tetrachloroethene	ND		0.0051	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Toluene	ND		0.0051	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2,3-Trichlorobenzene	ND		0.0051	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2,4-Trichlorobenzene	ND		0.0051	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1,1-Trichloroethane	ND		0.0051	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1,2-Trichloroethane	ND		0.0051	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Trichloroethene	ND		0.0051	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Trichlorofluoromethane	ND		0.0051	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2,3-Trichloropropane	ND		0.0051	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,2,4-Trimethylbenzene	ND		0.0051	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
1,3,5-Trimethylbenzene	ND		0.0051	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Vinyl acetate	ND		0.010	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Vinyl chloride	ND		0.0051	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Xylenes, Total	ND		0.0051	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
2,2-Dichloropropane	ND		0.0051	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 15:48	1
Gasoline Range Organics (C4-C12)	ND		510	51	ug/Kg	☼	09/26/22 11:12	09/28/22 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*63 - 143*	*09/26/22 11:12*	*09/28/22 15:48*	*1*
Dibromofluoromethane (Surr)	*95*		*55 - 129*	*09/26/22 11:12*	*09/28/22 15:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*32 - 156*	*09/26/22 11:12*	*09/28/22 15:48*	*1*
Toluene-d8 (Surr)	*108*		*63 - 138*	*09/26/22 11:12*	*09/28/22 15:48*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Bis(2-chloroethyl)ether	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Chlorophenol	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
1,3-Dichlorobenzene	ND		0.33	0.079	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
1,4-Dichlorobenzene	ND		0.33	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzyl alcohol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
1,2-Dichlorobenzene	ND		0.33	0.076	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Methylphenol	ND		0.33	0.058	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
N-Nitrosodi-n-propylamine	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Hexachloroethane	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Nitrobenzene	ND		0.33	0.077	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Isophorone	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Nitrophenol	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,4-Dimethylphenol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Bis(2-chloroethoxy)methane	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,4-Dichlorophenol	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
1,2,4-Trichlorobenzene	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Naphthalene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Chloroaniline	ND		0.33	0.058	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Hexachlorobutadiene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Chloro-3-methylphenol	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Methylnaphthalene	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Hexachlorocyclopentadiene	ND		1.6	0.062	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-A@0.5'
Date Collected: 09/20/22 10:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-1
Matrix: Solid
Percent Solids: 97.7

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,4,5-Trichlorophenol	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Chloronaphthalene	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Nitroaniline	ND		1.6	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Dimethyl phthalate	ND		0.33	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Acenaphthylene	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
3-Nitroaniline	ND		1.6	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
3-Methylphenol & 4-Methylphenol	ND		0.66	0.33	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Acenaphthene	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,4-Dinitrophenol	ND	*+ F2	1.6	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Nitrophenol	ND		1.6	0.28	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Dibenzofuran	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,4-Dinitrotoluene	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2,6-Dinitrotoluene	ND		0.33	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Diethyl phthalate	ND		0.33	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Chlorophenyl phenyl ether	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Fluorene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Nitroaniline	ND		1.6	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
2-Methyl-4,6-dinitrophenol	ND		1.6	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
N-Nitrosodiphenylamine	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
4-Bromophenyl phenyl ether	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Hexachlorobenzene	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Pentachlorophenol	ND		1.6	0.051	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Phenanthrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Anthracene	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Di-n-butyl phthalate	ND		0.33	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Fluoranthene	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Pyrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Butyl benzyl phthalate	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
3,3'-Dichlorobenzidine	ND		1.6	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzo[a]anthracene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Bis(2-ethylhexyl) phthalate	ND		0.33	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Chrysene	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Di-n-octyl phthalate	ND		0.33	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzo[b]fluoranthene	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzo[a]pyrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzo[k]fluoranthene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzo[g,h,i]perylene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Benzoic acid	ND	F1 F2	1.6	0.29	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Azobenzene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Dibenz(a,h)anthracene	ND		0.33	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1
Pyridine	ND		0.66	0.073	mg/Kg	☼	09/27/22 07:34	09/28/22 14:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*61*		*54 - 114*	*09/27/22 07:34*	*09/28/22 14:20*	*1*
Terphenyl-d14	*80*		*66 - 126*	*09/27/22 07:34*	*09/28/22 14:20*	*1*
2-Fluorophenol	*68*		*53 - 113*	*09/27/22 07:34*	*09/28/22 14:20*	*1*
Phenol-d5	*70*		*54 - 114*	*09/27/22 07:34*	*09/28/22 14:20*	*1*
2,4,6-Tribromophenol	*86*		*60 - 120*	*09/27/22 07:34*	*09/28/22 14:20*	*1*

Client Sample ID: MHSSF-ENV-A@0.5'

Date Collected: 09/20/22 10:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-1

Matrix: Solid
Percent Solids: 97.7

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.4	B	1.0	0.50	mg/Kg	☼	09/27/22 07:45	09/29/22 01:31	1
Motor Oil Range Organics [C28-C40]	ND		5.0	3.8	mg/Kg	☼	09/27/22 07:45	09/29/22 01:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*64*		*51 - 111*	*09/27/22 07:45*	*09/29/22 01:31*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0017	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
alpha-BHC	ND		0.0017	0.00016	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
beta-BHC	ND		0.0017	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
gamma-BHC (Lindane)	ND		0.0017	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
delta-BHC	ND		0.0017	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
cis-Chlordane	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
trans-Chlordane	ND		0.0017	0.00058	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Chlordane (technical)	ND		0.019	0.0091	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
4,4'-DDD	ND		0.0017	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
4,4'-DDE	ND		0.0017	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
4,4'-DDT	ND		0.0017	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Dieldrin	ND		0.0017	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endosulfan I	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endosulfan II	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endosulfan sulfate	ND		0.0017	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endrin	ND		0.0017	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endrin aldehyde	ND		0.0017	0.00055	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Endrin ketone	ND		0.0017	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Heptachlor	ND		0.0017	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Heptachlor epoxide	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Methoxychlor	ND		0.0033	0.00054	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1
Toxaphene	ND		0.065	0.022	mg/Kg	☼	09/27/22 10:07	10/06/22 09:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*46 - 109*	*09/27/22 10:07*	*10/06/22 09:59*	*1*
DCB Decachlorobiphenyl	*79*		*46 - 109*	*09/27/22 10:07*	*10/06/22 09:59*	*1*
Tetrachloro-m-xylene	*64*		*47 - 107*	*09/27/22 10:07*	*10/06/22 09:59*	*1*
Tetrachloro-m-xylene	*58*		*47 - 107*	*09/27/22 10:07*	*10/06/22 09:59*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		32	2.5	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1221	ND		32	3.5	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1232	ND		32	4.7	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1242	ND		32	5.7	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1248	ND		32	2.4	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1254	ND		32	3.7	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1
PCB-1260	ND		32	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 18:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*114*		*52 - 138*	*09/27/22 10:56*	*10/04/22 18:15*	*1*

Client Sample ID: MHSSF-ENV-A@0.5'

Lab Sample ID: 320-92432-1
Date Collected: 09/20/22 10:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 97.7

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	0.21	J	0.41	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 08:09	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	4.7		2.0	0.95	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Arsenic	1.7	J	2.0	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Barium	8.1		1.0	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Beryllium	0.10	J	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Cadmium	0.046	J	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Chromium	8.1		0.51	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Cobalt	1.2		0.51	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Copper	2.2		1.5	0.22	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Lead	1.5		1.0	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Molybdenum	ND		2.0	0.76	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Nickel	7.2		1.0	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Selenium	ND		2.0	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Silver	ND		0.51	0.091	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Thallium	ND		2.0	0.85	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Vanadium	6.8		0.51	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1
Zinc	5.6		2.0	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 13:59	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.10	0.012	mg/L			09/30/22 14:03	10
Arsenic	ND		0.20	0.12	mg/L			09/30/22 14:03	10
Chromium	0.077	J B	0.10	0.0060	mg/L			09/30/22 14:03	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.040	0.0081	mg/Kg	☼	09/29/22 12:49	09/29/22 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	2.3		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-B@0.5'

Lab Sample ID: 320-92432-2
Date Collected: 09/20/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Acetone	ND		0.021	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Benzene	ND		0.0051	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Dichlorobromomethane	ND		0.0051	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Bromobenzene	ND		0.0051	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chlorobromomethane	ND		0.0051	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Bromoform	ND		0.0051	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Bromomethane	ND		0.0051	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
2-Butanone (MEK)	ND		0.010	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
n-Butylbenzene	ND		0.0051	0.00068	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-B@0.5'
Date Collected: 09/20/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-2
Matrix: Solid
Percent Solids: 95.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		0.0051	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
tert-Butylbenzene	ND		0.0051	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Carbon disulfide	ND		0.010	0.00050	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Carbon tetrachloride	ND		0.0051	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chlorobenzene	ND		0.0051	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chloroethane	ND		0.0051	0.00046	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chloroform	ND		0.0051	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chloromethane	ND		0.0051	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
2-Chlorotoluene	ND		0.0051	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
4-Chlorotoluene	ND		0.0051	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Chlorodibromomethane	ND		0.0051	0.00022	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2-Dichlorobenzene	ND		0.0051	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,3-Dichlorobenzene	ND		0.0051	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,4-Dichlorobenzene	ND		0.0051	0.00080	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,3-Dichloropropane	ND		0.0051	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1-Dichloropropene	ND		0.0051	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Ethylene Dibromide	ND		0.010	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Dibromomethane	ND		0.0051	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Dichlorodifluoromethane	ND		0.0051	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1-Dichloroethane	ND		0.0051	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2-Dichloroethane	ND		0.0051	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1-Dichloroethene	ND		0.0051	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
cis-1,2-Dichloroethene	ND		0.0051	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
trans-1,2-Dichloroethene	ND		0.0051	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2-Dichloropropane	ND		0.0051	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
cis-1,3-Dichloropropene	ND		0.0051	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
trans-1,3-Dichloropropene	ND		0.0051	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Ethylbenzene	ND		0.0051	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Hexachlorobutadiene	ND		0.0051	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
2-Hexanone	ND		0.010	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Isopropylbenzene	ND		0.0051	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
4-Isopropyltoluene	ND		0.0051	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Methylene Chloride	ND		0.010	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00094	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Naphthalene	ND		0.0051	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
N-Propylbenzene	ND		0.0051	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Styrene	ND		0.0051	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1,1,2-Tetrachloroethane	ND		0.0051	0.00042	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1,2,2-Tetrachloroethane	ND		0.0051	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Tetrachloroethene	ND		0.0051	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Toluene	ND		0.0051	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2,3-Trichlorobenzene	ND		0.0051	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2,4-Trichlorobenzene	ND		0.0051	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1,1-Trichloroethane	ND		0.0051	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,1,2-Trichloroethane	ND		0.0051	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Trichloroethene	ND		0.0051	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Trichlorofluoromethane	ND		0.0051	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2,3-Trichloropropane	ND		0.0051	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-B@0.5'
Date Collected: 09/20/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-2
Matrix: Solid
Percent Solids: 95.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00085	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,2,4-Trimethylbenzene	ND		0.0051	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
1,3,5-Trimethylbenzene	ND		0.0051	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Vinyl acetate	ND		0.010	0.00071	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Vinyl chloride	ND		0.0051	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Xylenes, Total	ND		0.0051	0.00083	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
2,2-Dichloropropane	ND		0.0051	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 16:10	1
Gasoline Range Organics (C4-C12)	ND		510	51	ug/Kg	☼	09/26/22 11:12	09/28/22 16:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*63 - 143*	*09/26/22 11:12*	*09/28/22 16:10*	*1*
Dibromofluoromethane (Surr)	*93*		*55 - 129*	*09/26/22 11:12*	*09/28/22 16:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*32 - 156*	*09/26/22 11:12*	*09/28/22 16:10*	*1*
Toluene-d8 (Surr)	*106*		*63 - 138*	*09/26/22 11:12*	*09/28/22 16:10*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Bis(2-chloroethyl)ether	ND		0.34	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Chlorophenol	ND		0.34	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
1,3-Dichlorobenzene	ND		0.34	0.080	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
1,4-Dichlorobenzene	ND		0.34	0.079	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzyl alcohol	ND		0.34	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
1,2-Dichlorobenzene	ND		0.34	0.077	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Methylphenol	ND		0.34	0.059	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
N-Nitrosodi-n-propylamine	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Hexachloroethane	ND		0.34	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Nitrobenzene	ND		0.34	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Isophorone	ND		0.34	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Nitrophenol	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4-Dimethylphenol	ND		0.34	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Bis(2-chloroethoxy)methane	ND		0.34	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4-Dichlorophenol	ND		0.34	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
1,2,4-Trichlorobenzene	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Naphthalene	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
4-Chloroaniline	ND		0.34	0.059	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Hexachlorobutadiene	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
4-Chloro-3-methylphenol	ND		0.34	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Methylnaphthalene	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Hexachlorocyclopentadiene	ND		1.6	0.063	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4,6-Trichlorophenol	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4,5-Trichlorophenol	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Chloronaphthalene	ND		0.34	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Nitroaniline	ND		1.6	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Dimethyl phthalate	ND		0.34	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Acenaphthylene	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
3-Nitroaniline	ND		1.6	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
3-Methylphenol & 4-Methylphenol	ND		0.68	0.34	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Acenaphthene	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4-Dinitrophenol	ND	*+	1.6	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-B@0.5'
Date Collected: 09/20/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-2
Matrix: Solid
Percent Solids: 95.7

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		1.6	0.29	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Dibenzofuran	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,4-Dinitrotoluene	ND		0.34	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2,6-Dinitrotoluene	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Diethyl phthalate	ND		0.34	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
4-Chlorophenyl phenyl ether	ND		0.34	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Fluorene	ND		0.34	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
4-Nitroaniline	ND		1.6	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
2-Methyl-4,6-dinitrophenol	ND		1.6	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
N-Nitrosodiphenylamine	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
4-Bromophenyl phenyl ether	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Hexachlorobenzene	ND		0.34	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Pentachlorophenol	ND		1.6	0.052	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Phenanthrene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Anthracene	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Di-n-butyl phthalate	ND		0.34	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Fluoranthene	ND		0.34	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Pyrene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Butyl benzyl phthalate	ND		0.34	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
3,3'-Dichlorobenzidine	ND		1.6	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzo[a]anthracene	ND		0.34	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Bis(2-ethylhexyl) phthalate	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Chrysene	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Di-n-octyl phthalate	ND		0.34	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzo[b]fluoranthene	ND		0.34	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzo[a]pyrene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzo[k]fluoranthene	ND		0.34	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Indeno[1,2,3-cd]pyrene	ND		0.34	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzo[g,h,i]perylene	ND		0.34	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Benzoic acid	ND		1.6	0.30	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Azobenzene	ND		0.34	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Dibenz(a,h)anthracene	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1
Pyridine	ND		0.68	0.074	mg/Kg	☼	09/27/22 07:34	09/28/22 15:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*66*		*54 - 114*	*09/27/22 07:34*	*09/28/22 15:34*	*1*
Terphenyl-d14	*92*		*66 - 126*	*09/27/22 07:34*	*09/28/22 15:34*	*1*
2-Fluorophenol	*72*		*53 - 113*	*09/27/22 07:34*	*09/28/22 15:34*	*1*
Phenol-d5	*75*		*54 - 114*	*09/27/22 07:34*	*09/28/22 15:34*	*1*
2,4,6-Tribromophenol	*99*		*60 - 120*	*09/27/22 07:34*	*09/28/22 15:34*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.1	B	1.0	0.51	mg/Kg	☼	09/27/22 07:45	09/29/22 02:00	1
Motor Oil Range Organics [C28-C40]	ND		5.1	3.8	mg/Kg	☼	09/27/22 07:45	09/29/22 02:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*66*		*51 - 111*	*09/27/22 07:45*	*09/29/22 02:00*	*1*

Client Sample ID: MHSSF-ENV-B@0.5'

Date Collected: 09/20/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-2

Matrix: Solid
Percent Solids: 95.7

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0017	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
alpha-BHC	ND		0.0017	0.00016	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
beta-BHC	ND		0.0017	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
gamma-BHC (Lindane)	ND		0.0017	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
delta-BHC	ND		0.0017	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
cis-Chlordane	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
trans-Chlordane	ND		0.0017	0.00061	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Chlordane (technical)	ND		0.020	0.0096	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
4,4'-DDD	ND		0.0017	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
4,4'-DDE	ND		0.0017	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
4,4'-DDT	ND		0.0017	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Dieldrin	ND		0.0017	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endosulfan I	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endosulfan II	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endosulfan sulfate	ND		0.0017	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endrin	ND		0.0017	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endrin aldehyde	ND		0.0017	0.00058	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Endrin ketone	ND		0.0017	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Heptachlor	ND		0.0017	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Heptachlor epoxide	ND		0.0017	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Methoxychlor	ND		0.0035	0.00057	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1
Toxaphene	ND		0.068	0.023	mg/Kg	☼	09/27/22 10:07	10/06/22 17:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*69*		*46 - 109*	*09/27/22 10:07*	*10/06/22 17:43*	*1*
DCB Decachlorobiphenyl	*77*		*46 - 109*	*09/27/22 10:07*	*10/06/22 17:43*	*1*
Tetrachloro-m-xylene	*64*		*47 - 107*	*09/27/22 10:07*	*10/06/22 17:43*	*1*
Tetrachloro-m-xylene	*59*		*47 - 107*	*09/27/22 10:07*	*10/06/22 17:43*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		34	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1221	ND		34	3.7	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1232	ND		34	4.9	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1242	ND		34	6.0	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1248	ND		34	2.5	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1254	ND		34	3.9	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1
PCB-1260	ND		34	2.8	ug/Kg	☼	09/27/22 10:56	10/04/22 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*116*		*52 - 138*	*09/27/22 10:56*	*10/04/22 18:35*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.41	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 08:59	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**5.3**		2.0	0.94	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Arsenic	**1.8**	**J**	2.0	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Barium	**11**		1.0	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1

Client Sample ID: MHSSF-ENV-B@0.5'

Lab Sample ID: 320-92432-2
Date Collected: 09/20/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.7

Method: SW846 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.12	J	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Cadmium	0.032	J	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Chromium	11		0.50	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Cobalt	1.3		0.50	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Copper	2.4		1.5	0.22	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Lead	1.7		1.0	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Molybdenum	ND		2.0	0.75	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Nickel	7.4		1.0	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Selenium	ND		2.0	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Silver	ND		0.50	0.090	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Thallium	ND		2.0	0.84	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Vanadium	8.0		0.50	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1
Zinc	7.3		2.0	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:03	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.052	J B	0.10	0.012	mg/L			10/03/22 13:02	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:02	10
Chromium	0.072	J	0.10	0.0060	mg/L			10/03/22 13:02	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.042	0.0084	mg/Kg	☼	09/29/22 12:49	09/29/22 16:14	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	4.3		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-C@0.5'

Lab Sample ID: 320-92432-3
Date Collected: 09/20/22 15:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 98.4

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Acetone	ND		0.020	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Benzene	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Dichlorobromomethane	ND		0.0050	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Bromobenzene	ND		0.0050	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Chlorobromomethane	ND		0.0050	0.00094	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Bromoform	ND		0.0050	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Bromomethane	ND		0.0050	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
2-Butanone (MEK)	ND		0.010	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
n-Butylbenzene	ND		0.0050	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
sec-Butylbenzene	ND		0.0050	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
tert-Butylbenzene	ND		0.0050	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Carbon disulfide	ND		0.010	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Carbon tetrachloride	ND		0.0050	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Chlorobenzene	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Chloroethane	ND		0.0050	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Chloroform	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-C@0.5'
Date Collected: 09/20/22 15:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-3
Matrix: Solid
Percent Solids: 98.4

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.0050	0.00050	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
2-Chlorotoluene	ND		0.0050	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
4-Chlorotoluene	ND		0.0050	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Chlorodibromomethane	ND		0.0050	0.00021	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2-Dichlorobenzene	ND		0.0050	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,3-Dichlorobenzene	ND		0.0050	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,4-Dichlorobenzene	ND		0.0050	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,3-Dichloropropane	ND		0.0050	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1-Dichloropropene	ND		0.0050	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Ethylene Dibromide	ND		0.010	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Dibromomethane	ND		0.0050	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Dichlorodifluoromethane	ND		0.0050	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1-Dichloroethane	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2-Dichloroethane	ND		0.0050	0.00073	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1-Dichloroethene	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
cis-1,2-Dichloroethene	ND		0.0050	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
trans-1,2-Dichloroethene	ND		0.0050	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2-Dichloropropane	ND		0.0050	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
cis-1,3-Dichloropropene	ND		0.0050	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
trans-1,3-Dichloropropene	ND		0.0050	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Ethylbenzene	ND		0.0050	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Hexachlorobutadiene	ND		0.0050	0.00033	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
2-Hexanone	ND		0.010	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Isopropylbenzene	ND		0.0050	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
4-Isopropyltoluene	ND		0.0050	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Methylene Chloride	ND		0.010	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00092	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Naphthalene	ND		0.0050	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
N-Propylbenzene	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Styrene	ND		0.0050	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1,1,2-Tetrachloroethane	ND		0.0050	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.00068	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Tetrachloroethene	ND		0.0050	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Toluene	ND		0.0050	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2,3-Trichlorobenzene	ND		0.0050	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2,4-Trichlorobenzene	ND		0.0050	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1,1-Trichloroethane	ND		0.0050	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1,2-Trichloroethane	ND		0.0050	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Trichloroethene	ND		0.0050	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Trichlorofluoromethane	ND		0.0050	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2,3-Trichloropropane	ND		0.0050	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00083	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,2,4-Trimethylbenzene	ND		0.0050	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
1,3,5-Trimethylbenzene	ND		0.0050	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Vinyl acetate	ND		0.010	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Vinyl chloride	ND		0.0050	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
Xylenes, Total	ND		0.0050	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1
2,2-Dichloropropane	ND		0.0050	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 16:32	1

Client Sample ID: MHSSF-ENV-C@0.5'
Date Collected: 09/20/22 15:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-3
Matrix: Solid
Percent Solids: 98.4

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C4-C12)	ND		500	50	ug/Kg	☼	09/26/22 11:12	09/28/22 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*63 - 143*	*09/26/22 11:12*	*09/28/22 16:32*	*1*
Dibromofluoromethane (Surr)	*92*		*55 - 129*	*09/26/22 11:12*	*09/28/22 16:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*32 - 156*	*09/26/22 11:12*	*09/28/22 16:32*	*1*
Toluene-d8 (Surr)	*106*		*63 - 138*	*09/26/22 11:12*	*09/28/22 16:32*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Bis(2-chloroethyl)ether	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Chlorophenol	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
1,3-Dichlorobenzene	ND		0.33	0.079	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
1,4-Dichlorobenzene	ND		0.33	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzyl alcohol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
1,2-Dichlorobenzene	ND		0.33	0.076	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Methylphenol	ND		0.33	0.059	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
N-Nitrosodi-n-propylamine	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Hexachloroethane	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Nitrobenzene	ND		0.33	0.077	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Isophorone	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Nitrophenol	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4-Dimethylphenol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Bis(2-chloroethoxy)methane	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4-Dichlorophenol	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
1,2,4-Trichlorobenzene	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Naphthalene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
4-Chloroaniline	ND		0.33	0.059	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Hexachlorobutadiene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
4-Chloro-3-methylphenol	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Methylnaphthalene	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Hexachlorocyclopentadiene	ND		1.6	0.063	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4,6-Trichlorophenol	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4,5-Trichlorophenol	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Chloronaphthalene	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Nitroaniline	ND		1.6	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Dimethyl phthalate	ND		0.33	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Acenaphthylene	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
3-Nitroaniline	ND		1.6	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
3-Methylphenol & 4-Methylphenol	ND		0.67	0.33	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Acenaphthene	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4-Dinitrophenol	ND	*+	1.6	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
4-Nitrophenol	ND		1.6	0.28	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Dibenzofuran	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,4-Dinitrotoluene	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2,6-Dinitrotoluene	ND		0.33	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Diethyl phthalate	ND		0.33	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
4-Chlorophenyl phenyl ether	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Fluorene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1

Client Sample ID: MHSSF-ENV-C@0.5'
Date Collected: 09/20/22 15:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-3
Matrix: Solid
Percent Solids: 98.4

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	ND		1.6	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
2-Methyl-4,6-dinitrophenol	ND		1.6	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
N-Nitrosodiphenylamine	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
4-Bromophenyl phenyl ether	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Hexachlorobenzene	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Pentachlorophenol	ND		1.6	0.052	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Phenanthrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Anthracene	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Di-n-butyl phthalate	ND		0.33	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Fluoranthene	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Pyrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Butyl benzyl phthalate	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
3,3'-Dichlorobenzidine	ND		1.6	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzo[a]anthracene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Bis(2-ethylhexyl) phthalate	ND		0.33	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Chrysene	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Di-n-octyl phthalate	ND		0.33	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzo[b]fluoranthene	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzo[a]pyrene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzo[k]fluoranthene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzo[g,h,i]perylene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Benzoic acid	ND		1.6	0.29	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Azobenzene	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Dibenz(a,h)anthracene	ND		0.33	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1
Pyridine	ND		0.67	0.073	mg/Kg	☼	09/27/22 07:34	09/28/22 15:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*75*		*54 - 114*	*09/27/22 07:34*	*09/28/22 15:59*	*1*
Terphenyl-d14	*90*		*66 - 126*	*09/27/22 07:34*	*09/28/22 15:59*	*1*
2-Fluorophenol	*80*		*53 - 113*	*09/27/22 07:34*	*09/28/22 15:59*	*1*
Phenol-d5	*78*		*54 - 114*	*09/27/22 07:34*	*09/28/22 15:59*	*1*
2,4,6-Tribromophenol	*97*		*60 - 120*	*09/27/22 07:34*	*09/28/22 15:59*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.1	B	1.0	0.50	mg/Kg	☼	09/27/22 07:45	09/29/22 02:28	1
Motor Oil Range Organics [C28-C40]	ND		5.0	3.8	mg/Kg	☼	09/27/22 07:45	09/29/22 02:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*66*		*51 - 111*	*09/27/22 07:45*	*09/29/22 02:28*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0016	0.00013	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
alpha-BHC	ND		0.0016	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
beta-BHC	ND		0.0016	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
gamma-BHC (Lindane)	ND		0.0016	0.00013	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
delta-BHC	ND		0.0016	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
cis-Chlordane	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1

Client Sample ID: MHSSF-ENV-C@0.5'

Date Collected: 09/20/22 15:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-3

Matrix: Solid
Percent Solids: 98.4

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-Chlordane	ND		0.0016	0.00057	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Chlordane (technical)	ND		0.019	0.0090	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
4,4'-DDD	ND		0.0016	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
4,4'-DDE	ND		0.0016	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
4,4'-DDT	ND		0.0016	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Dieldrin	ND		0.0016	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endosulfan I	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endosulfan II	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endosulfan sulfate	ND		0.0016	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endrin	ND		0.0016	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endrin aldehyde	ND		0.0016	0.00055	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Endrin ketone	ND		0.0016	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Heptachlor	ND		0.0016	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Heptachlor epoxide	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Methoxychlor	ND		0.0033	0.00054	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1
Toxaphene	ND		0.064	0.021	mg/Kg	☼	09/27/22 10:07	10/06/22 18:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:02*	*1*
DCB Decachlorobiphenyl	*78*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:02*	*1*
Tetrachloro-m-xylene	*65*		*47 - 107*	*09/27/22 10:07*	*10/06/22 18:02*	*1*
Tetrachloro-m-xylene	*58*		*47 - 107*	*09/27/22 10:07*	*10/06/22 18:02*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		32	2.4	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1221	ND		32	3.5	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1232	ND		32	4.6	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1242	ND		32	5.7	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1248	ND		32	2.3	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1254	ND		32	3.6	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1
PCB-1260	ND		32	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 18:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*103*		*52 - 138*	*09/27/22 10:56*	*10/04/22 18:56*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.41	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 09:09	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**3.2**		2.0	0.95	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Arsenic	**1.3**	**J**	2.0	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Barium	**9.7**		1.0	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Beryllium	**0.10**	**J**	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Cadmium	**0.059**	**J**	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Chromium	**6.7**		0.50	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Cobalt	**0.96**		0.50	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Copper	**2.0**		1.5	0.22	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Lead	**2.2**		1.0	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1

Client Sample ID: MHSSF-ENV-C@0.5'

Lab Sample ID: 320-92432-3
Date Collected: 09/20/22 15:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 98.4

Method: SW846 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		2.0	0.75	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Nickel	**6.0**		1.0	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Selenium	ND		2.0	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Silver	ND		0.50	0.091	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Thallium	ND		2.0	0.84	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Vanadium	**5.1**		0.50	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1
Zinc	**5.3**		2.0	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:06	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.081**	**J B**	0.10	0.012	mg/L			10/03/22 13:06	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:06	10
Chromium	**0.037**	**J**	0.10	0.0060	mg/L			10/03/22 13:06	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.038	0.0076	mg/Kg	☼	09/29/22 12:49	09/29/22 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	**1.6**		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-D@0.5'

Lab Sample ID: 320-92432-4
Date Collected: 09/21/22 09:30
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.2

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Acetone	ND		0.021	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Benzene	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Dichlorobromomethane	ND		0.0052	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Bromobenzene	ND		0.0052	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chlorobromomethane	ND		0.0052	0.00098	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Bromoform	ND		0.0052	0.00042	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Bromomethane	ND		0.0052	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
2-Butanone (MEK)	ND		0.010	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
n-Butylbenzene	ND		0.0052	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
sec-Butylbenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
tert-Butylbenzene	ND		0.0052	0.00056	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Carbon disulfide	ND		0.010	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Carbon tetrachloride	ND		0.0052	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chlorobenzene	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chloroethane	ND		0.0052	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chloroform	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chloromethane	ND		0.0052	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
2-Chlorotoluene	ND		0.0052	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
4-Chlorotoluene	ND		0.0052	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Chlorodibromomethane	ND		0.0052	0.00022	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2-Dichlorobenzene	ND		0.0052	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,3-Dichlorobenzene	ND		0.0052	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-D@0.5'
Date Collected: 09/21/22 09:30
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-4
Matrix: Solid
Percent Solids: 95.2

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0052	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,3-Dichloropropane	ND		0.0052	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1-Dichloropropene	ND		0.0052	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00092	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Ethylene Dibromide	ND		0.010	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Dibromomethane	ND		0.0052	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Dichlorodifluoromethane	ND		0.0052	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1-Dichloroethane	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2-Dichloroethane	ND		0.0052	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1-Dichloroethene	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
cis-1,2-Dichloroethene	ND		0.0052	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
trans-1,2-Dichloroethene	ND		0.0052	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2-Dichloropropane	ND		0.0052	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
cis-1,3-Dichloropropene	ND		0.0052	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
trans-1,3-Dichloropropene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Ethylbenzene	ND		0.0052	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Hexachlorobutadiene	ND		0.0052	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
2-Hexanone	ND		0.010	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Isopropylbenzene	ND		0.0052	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
4-Isopropyltoluene	ND		0.0052	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Methylene Chloride	ND		0.010	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Naphthalene	ND		0.0052	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
N-Propylbenzene	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Styrene	ND		0.0052	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1,1,2-Tetrachloroethane	ND		0.0052	0.00043	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1,2,2-Tetrachloroethane	ND		0.0052	0.00071	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Tetrachloroethene	ND		0.0052	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Toluene	ND		0.0052	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2,3-Trichlorobenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2,4-Trichlorobenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1,1-Trichloroethane	ND		0.0052	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1,2-Trichloroethane	ND		0.0052	0.00046	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Trichloroethene	ND		0.0052	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Trichlorofluoromethane	ND		0.0052	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2,3-Trichloropropane	ND		0.0052	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,2,4-Trimethylbenzene	ND		0.0052	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
1,3,5-Trimethylbenzene	ND		0.0052	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Vinyl acetate	ND		0.010	0.00072	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Vinyl chloride	ND		0.0052	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Xylenes, Total	ND		0.0052	0.00085	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
2,2-Dichloropropane	ND		0.0052	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 16:54	1
Gasoline Range Organics (C4-C12)	ND		520	52	ug/Kg	☼	09/26/22 11:12	09/28/22 16:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*63 - 143*	*09/26/22 11:12*	*09/28/22 16:54*	*1*
Dibromofluoromethane (Surr)	*97*		*55 - 129*	*09/26/22 11:12*	*09/28/22 16:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*98*		*32 - 156*	*09/26/22 11:12*	*09/28/22 16:54*	*1*
Toluene-d8 (Surr)	*106*		*63 - 138*	*09/26/22 11:12*	*09/28/22 16:54*	*1*

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-D@0.5'
Date Collected: 09/21/22 09:30
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-4
Matrix: Solid
Percent Solids: 95.2

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Bis(2-chloroethyl)ether	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Chlorophenol	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
1,3-Dichlorobenzene	ND		6.7	1.6	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
1,4-Dichlorobenzene	ND		6.7	1.6	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzyl alcohol	ND		6.7	3.5	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
1,2-Dichlorobenzene	ND		6.7	1.5	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Methylphenol	ND		6.7	1.2	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
N-Nitrosodi-n-propylamine	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Hexachloroethane	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Nitrobenzene	ND		6.7	1.6	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Isophorone	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Nitrophenol	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4-Dimethylphenol	ND		6.7	3.4	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Bis(2-chloroethoxy)methane	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4-Dichlorophenol	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
1,2,4-Trichlorobenzene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Naphthalene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Chloroaniline	ND		6.7	1.2	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Hexachlorobutadiene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Chloro-3-methylphenol	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Methylnaphthalene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Hexachlorocyclopentadiene	ND		33	1.3	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4,6-Trichlorophenol	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4,5-Trichlorophenol	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Chloronaphthalene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Nitroaniline	ND		33	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Dimethyl phthalate	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Acenaphthylene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
3-Nitroaniline	ND		33	3.4	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
3-Methylphenol & 4-Methylphenol	ND		13	6.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Acenaphthene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4-Dinitrophenol	ND	*+	33	4.4	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Nitrophenol	ND		33	5.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Dibenzofuran	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,4-Dinitrotoluene	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2,6-Dinitrotoluene	ND		6.7	2.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Diethyl phthalate	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Chlorophenyl phenyl ether	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Fluorene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Nitroaniline	ND		33	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
2-Methyl-4,6-dinitrophenol	ND		33	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
N-Nitrosodiphenylamine	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
4-Bromophenyl phenyl ether	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Hexachlorobenzene	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Pentachlorophenol	ND		33	1.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Phenanthrene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Anthracene	ND		6.7	1.8	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Di-n-butyl phthalate	ND		6.7	2.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20

Client Sample ID: MHSSF-ENV-D@0.5'
Date Collected: 09/21/22 09:30
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-4
Matrix: Solid
Percent Solids: 95.2

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Pyrene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Butyl benzyl phthalate	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
3,3'-Dichlorobenzidine	ND		33	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzo[a]anthracene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Bis(2-ethylhexyl) phthalate	ND		6.7	2.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Chrysene	ND		6.7	1.7	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Di-n-octyl phthalate	ND		6.7	2.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzo[b]fluoranthene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzo[a]pyrene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzo[k]fluoranthene	ND		6.7	2.3	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Indeno[1,2,3-cd]pyrene	ND		6.7	2.0	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzo[g,h,i]perylene	ND		6.7	2.2	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Benzoic acid	ND		33	5.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Azobenzene	ND		6.7	1.9	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Dibenz(a,h)anthracene	ND		6.7	2.1	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20
Pyridine	ND		13	1.5	mg/Kg	☼	09/27/22 07:34	09/28/22 16:23	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*63*		*54 - 114*	*09/27/22 07:34*	*09/28/22 16:23*	*20*
Terphenyl-d14	*72*		*66 - 126*	*09/27/22 07:34*	*09/28/22 16:23*	*20*
2-Fluorophenol	*71*		*53 - 113*	*09/27/22 07:34*	*09/28/22 16:23*	*20*
Phenol-d5	*74*		*54 - 114*	*09/27/22 07:34*	*09/28/22 16:23*	*20*
2,4,6-Tribromophenol	*86*		*60 - 120*	*09/27/22 07:34*	*09/28/22 16:23*	*20*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**170**	**B**	110	53	mg/Kg	☼	09/27/22 07:45	09/29/22 02:57	100
Motor Oil Range Organics [C28-C40]	**550**		530	400	mg/Kg	☼	09/27/22 07:45	09/29/22 02:57	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*162*	*S1+*	*51 - 111*	*09/27/22 07:45*	*09/29/22 02:57*	*100*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0034	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
alpha-BHC	ND		0.0034	0.00032	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
beta-BHC	ND		0.0034	0.00045	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
gamma-BHC (Lindane)	ND		0.0034	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
delta-BHC	ND		0.0034	0.00071	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
cis-Chlordane	ND		0.0034	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
trans-Chlordane	ND		0.0034	0.0012	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Chlordane (technical)	ND		0.040	0.019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
4,4'-DDD	ND		0.0034	0.00047	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
4,4'-DDE	ND		0.0034	0.00043	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
4,4'-DDT	ND		0.0034	0.00051	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Dieldrin	ND		0.0034	0.00040	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Endosulfan I	ND		0.0034	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Endosulfan II	ND		0.0034	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Endosulfan sulfate	ND		0.0034	0.00071	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-D@0.5'
Date Collected: 09/21/22 09:30
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-4
Matrix: Solid
Percent Solids: 95.2

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin	ND		0.0034	0.00040	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Endrin aldehyde	ND		0.0034	0.0012	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Endrin ketone	ND		0.0034	0.00055	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Heptachlor	ND		0.0034	0.00030	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Heptachlor epoxide	ND		0.0034	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Methoxychlor	ND		0.0069	0.0011	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2
Toxaphene	ND		0.14	0.045	mg/Kg	☼	09/27/22 10:07	10/06/22 18:21	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*48*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:21*	*2*
DCB Decachlorobiphenyl	*49*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:21*	*2*
Tetrachloro-m-xylene	*35*	*p S1-*	*47 - 107*	*09/27/22 10:07*	*10/06/22 18:21*	*2*
Tetrachloro-m-xylene	*57*		*47 - 107*	*09/27/22 10:07*	*10/06/22 18:21*	*2*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		33	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1221	ND		33	3.7	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1232	ND		33	4.8	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1242	ND		33	6.0	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1248	ND		33	2.5	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1254	ND		33	3.9	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1
PCB-1260	ND		33	2.7	ug/Kg	☼	09/27/22 10:56	10/04/22 19:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*52 - 138*	*09/27/22 10:56*	*10/04/22 19:17*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.42	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 09:19	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**3.7**		2.0	0.94	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Arsenic	**2.2**		2.0	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Barium	**14**		1.0	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Beryllium	**0.075**	**J**	0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Cadmium	ND		0.20	0.030	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Chromium	**29**		0.50	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Cobalt	**26**		0.50	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Copper	**36**		1.5	0.22	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Lead	**1.5**		1.0	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Molybdenum	ND		2.0	0.75	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Nickel	**110**		1.0	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Selenium	ND		2.0	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Silver	ND		0.50	0.090	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Thallium	ND		2.0	0.84	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Vanadium	**13**		0.50	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1
Zinc	**11**		2.0	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:10	1

Client Sample ID: MHSSF-ENV-D@0.5'

Lab Sample ID: 320-92432-4
Date Collected: 09/21/22 09:30
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.2

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.093	J B	0.10	0.012	mg/L			10/03/22 13:10	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:10	10
Chromium	0.078	J	0.10	0.0060	mg/L			10/03/22 13:10	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.026	J	0.040	0.0080	mg/Kg	☼	09/29/22 12:49	09/29/22 16:17	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	4.8		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-E@0.5'

Lab Sample ID: 320-92432-5
Date Collected: 09/21/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 94.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Acetone	ND		0.021	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Benzene	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Dichlorobromomethane	ND		0.0052	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Bromobenzene	ND		0.0052	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chlorobromomethane	ND		0.0052	0.00098	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Bromoform	ND		0.0052	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Bromomethane	ND		0.0052	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
2-Butanone (MEK)	ND		0.010	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
n-Butylbenzene	ND		0.0052	0.00068	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
sec-Butylbenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
tert-Butylbenzene	ND		0.0052	0.00056	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Carbon disulfide	ND		0.010	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Carbon tetrachloride	ND		0.0052	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chlorobenzene	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chloroethane	ND		0.0052	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chloroform	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chloromethane	ND		0.0052	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
2-Chlorotoluene	ND		0.0052	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
4-Chlorotoluene	ND		0.0052	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Chlorodibromomethane	ND		0.0052	0.00022	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2-Dichlorobenzene	ND		0.0052	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,3-Dichlorobenzene	ND		0.0052	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,4-Dichlorobenzene	ND		0.0052	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,3-Dichloropropane	ND		0.0052	0.00059	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1-Dichloropropene	ND		0.0052	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Ethylene Dibromide	ND		0.010	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Dibromomethane	ND		0.0052	0.00060	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Dichlorodifluoromethane	ND		0.0052	0.00092	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1-Dichloroethane	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2-Dichloroethane	ND		0.0052	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1

Client Sample ID: MHSSF-ENV-E@0.5'
Date Collected: 09/21/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-5
Matrix: Solid
Percent Solids: 94.7

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.0052	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
cis-1,2-Dichloroethene	ND		0.0052	0.00092	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
trans-1,2-Dichloroethene	ND		0.0052	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2-Dichloropropane	ND		0.0052	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
cis-1,3-Dichloropropene	ND		0.0052	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
trans-1,3-Dichloropropene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Ethylbenzene	ND		0.0052	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Hexachlorobutadiene	ND		0.0052	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
2-Hexanone	ND		0.010	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Isopropylbenzene	ND		0.0052	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
4-Isopropyltoluene	ND		0.0052	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Methylene Chloride	ND		0.010	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00095	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Naphthalene	ND		0.0052	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
N-Propylbenzene	ND		0.0052	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Styrene	ND		0.0052	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1,1,2-Tetrachloroethane	ND		0.0052	0.00043	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1,2,2-Tetrachloroethane	ND		0.0052	0.00071	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Tetrachloroethene	ND		0.0052	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Toluene	ND		0.0052	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2,3-Trichlorobenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2,4-Trichlorobenzene	ND		0.0052	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1,1-Trichloroethane	ND		0.0052	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1,2-Trichloroethane	ND		0.0052	0.00046	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Trichloroethene	ND		0.0052	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Trichlorofluoromethane	ND		0.0052	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2,3-Trichloropropane	ND		0.0052	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,2,4-Trimethylbenzene	ND		0.0052	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
1,3,5-Trimethylbenzene	ND		0.0052	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Vinyl acetate	ND		0.010	0.00072	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Vinyl chloride	ND		0.0052	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Xylenes, Total	ND		0.0052	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
2,2-Dichloropropane	ND		0.0052	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 17:16	1
Gasoline Range Organics (C4-C12)	ND		520	52	ug/Kg	☼	09/26/22 11:12	09/28/22 17:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*63 - 143*	*09/26/22 11:12*	*09/28/22 17:16*	*1*
Dibromofluoromethane (Surr)	*95*		*55 - 129*	*09/26/22 11:12*	*09/28/22 17:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*32 - 156*	*09/26/22 11:12*	*09/28/22 17:16*	*1*
Toluene-d8 (Surr)	*105*		*63 - 138*	*09/26/22 11:12*	*09/28/22 17:16*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Bis(2-chloroethyl)ether	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Chlorophenol	ND		0.34	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
1,3-Dichlorobenzene	ND		0.34	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
1,4-Dichlorobenzene	ND		0.34	0.080	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzyl alcohol	ND		0.34	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-E@0.5'
Date Collected: 09/21/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-5
Matrix: Solid
Percent Solids: 94.7

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		0.34	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Methylphenol	ND		0.34	0.060	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
N-Nitrosodi-n-propylamine	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Hexachloroethane	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Nitrobenzene	ND		0.34	0.079	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Isophorone	ND		0.34	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Nitrophenol	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4-Dimethylphenol	ND		0.34	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Bis(2-chloroethoxy)methane	ND		0.34	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4-Dichlorophenol	ND		0.34	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
1,2,4-Trichlorobenzene	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Naphthalene	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Chloroaniline	ND		0.34	0.060	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Hexachlorobutadiene	ND		0.34	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Chloro-3-methylphenol	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Methylnaphthalene	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Hexachlorocyclopentadiene	ND		1.7	0.065	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4,6-Trichlorophenol	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4,5-Trichlorophenol	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Chloronaphthalene	ND		0.34	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Nitroaniline	ND		1.7	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Dimethyl phthalate	ND		0.34	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Acenaphthylene	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
3-Nitroaniline	ND		1.7	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
3-Methylphenol & 4-Methylphenol	ND		0.69	0.34	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Acenaphthene	ND		0.34	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4-Dinitrophenol	ND	*+	1.7	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Nitrophenol	ND		1.7	0.29	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Dibenzofuran	ND		0.34	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,4-Dinitrotoluene	ND		0.34	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2,6-Dinitrotoluene	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Diethyl phthalate	ND		0.34	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Chlorophenyl phenyl ether	ND		0.34	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Fluorene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Nitroaniline	ND		1.7	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
2-Methyl-4,6-dinitrophenol	ND		1.7	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
N-Nitrosodiphenylamine	ND		0.34	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
4-Bromophenyl phenyl ether	ND		0.34	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Hexachlorobenzene	ND		0.34	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Pentachlorophenol	ND		1.7	0.053	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Phenanthrene	ND		0.34	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Anthracene	ND		0.34	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Di-n-butyl phthalate	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Fluoranthene	ND		0.34	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Pyrene	ND		0.34	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Butyl benzyl phthalate	ND		0.34	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
3,3'-Dichlorobenzidine	ND		1.7	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzo[a]anthracene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Bis(2-ethylhexyl) phthalate	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1

Client Sample ID: MHSSF-ENV-E@0.5'
Date Collected: 09/21/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-5
Matrix: Solid
Percent Solids: 94.7

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		0.34	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Di-n-octyl phthalate	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzo[b]fluoranthene	ND		0.34	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzo[a]pyrene	ND		0.34	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzo[k]fluoranthene	ND		0.34	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Indeno[1,2,3-cd]pyrene	ND		0.34	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzo[g,h,i]perylene	ND		0.34	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Benzoic acid	ND		1.7	0.30	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Azobenzene	ND		0.34	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Dibenz(a,h)anthracene	ND		0.34	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1
Pyridine	ND		0.69	0.075	mg/Kg	☼	09/27/22 07:34	09/28/22 16:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*75*		*54 - 114*	*09/27/22 07:34*	*09/28/22 16:48*	*1*
Terphenyl-d14	*89*		*66 - 126*	*09/27/22 07:34*	*09/28/22 16:48*	*1*
2-Fluorophenol	*79*		*53 - 113*	*09/27/22 07:34*	*09/28/22 16:48*	*1*
Phenol-d5	*80*		*54 - 114*	*09/27/22 07:34*	*09/28/22 16:48*	*1*
2,4,6-Tribromophenol	*99*		*60 - 120*	*09/27/22 07:34*	*09/28/22 16:48*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.3	B	1.1	0.53	mg/Kg	☼	09/27/22 07:45	09/29/22 03:25	1
Motor Oil Range Organics [C28-C40]	ND		5.3	4.0	mg/Kg	☼	09/27/22 07:45	09/29/22 03:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*67*		*51 - 111*	*09/27/22 07:45*	*09/29/22 03:25*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0018	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
alpha-BHC	ND		0.0018	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
beta-BHC	ND		0.0018	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
gamma-BHC (Lindane)	ND		0.0018	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
delta-BHC	ND		0.0018	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
cis-Chlordane	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
trans-Chlordane	ND		0.0018	0.00062	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Chlordane (technical)	ND		0.021	0.0097	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
4,4'-DDD	ND		0.0018	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
4,4'-DDE	ND		0.0018	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
4,4'-DDT	ND		0.0018	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Dieldrin	ND		0.0018	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endosulfan I	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endosulfan II	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endosulfan sulfate	ND		0.0018	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endrin	ND		0.0018	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endrin aldehyde	ND		0.0018	0.00059	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Endrin ketone	ND		0.0018	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Heptachlor	ND		0.0018	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Heptachlor epoxide	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1
Methoxychlor	ND		0.0035	0.00058	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1

Client Sample ID: MHSSF-ENV-E@0.5'

Date Collected: 09/21/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-5

Matrix: Solid
Percent Solids: 94.7

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toxaphene	ND		0.069	0.023	mg/Kg	☼	09/27/22 10:07	10/06/22 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:40*	*1*
DCB Decachlorobiphenyl	*64*		*46 - 109*	*09/27/22 10:07*	*10/06/22 18:40*	*1*
Tetrachloro-m-xylene	*62*		*47 - 107*	*09/27/22 10:07*	*10/06/22 18:40*	*1*
Tetrachloro-m-xylene	*64*		*47 - 107*	*09/27/22 10:07*	*10/06/22 18:40*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		34	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1221	ND		34	3.7	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1232	ND		34	4.9	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1242	ND		34	6.1	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1248	ND		34	2.5	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1254	ND		34	3.9	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1
PCB-1260	ND		34	2.8	ug/Kg	☼	09/27/22 10:56	10/04/22 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*97*		*52 - 138*	*09/27/22 10:56*	*10/04/22 19:37*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.42	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 09:29	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**2.9**		2.1	0.96	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Arsenic	**1.3**	**J**	2.1	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Barium	**10**		1.0	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Beryllium	**0.084**	**J**	0.21	0.031	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Cadmium	**0.047**	**J**	0.21	0.031	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Chromium	**7.2**		0.51	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Cobalt	**0.98**		0.51	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Copper	**2.0**		1.5	0.23	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Lead	**1.0**		1.0	0.27	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Molybdenum	ND		2.1	0.77	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Nickel	**5.9**		1.0	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Selenium	ND		2.1	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Silver	ND		0.51	0.092	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Thallium	ND		2.1	0.86	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Vanadium	**5.2**		0.51	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1
Zinc	**5.1**		2.1	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:14	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.024**	**J B**	0.10	0.012	mg/L			10/03/22 13:22	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:22	10
Chromium	**0.043**	**J**	0.10	0.0060	mg/L			10/03/22 13:22	10

Client Sample ID: MHSSF-ENV-E@0.5'

Lab Sample ID: 320-92432-5
Date Collected: 09/21/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 94.7

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.043	0.0086	mg/Kg	☼	09/29/22 12:49	09/29/22 16:19	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	5.3		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-F@0.5'

Lab Sample ID: 320-92432-6
Date Collected: 09/21/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 75.8

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.013	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Acetone	ND		0.026	0.0018	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Benzene	ND		0.0065	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Dichlorobromomethane	ND		0.0065	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Bromobenzene	ND		0.0065	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chlorobromomethane	ND		0.0065	0.0012	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Bromoform	ND		0.0065	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Bromomethane	ND		0.0065	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
2-Butanone (MEK)	ND		0.013	0.0018	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
n-Butylbenzene	ND		0.0065	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
sec-Butylbenzene	ND		0.0065	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
tert-Butylbenzene	ND		0.0065	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Carbon disulfide	ND		0.013	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Carbon tetrachloride	ND		0.0065	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chlorobenzene	ND		0.0065	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chloroethane	ND		0.0065	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chloroform	ND		0.0065	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chloromethane	ND		0.0065	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
2-Chlorotoluene	ND		0.0065	0.00080	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
4-Chlorotoluene	ND		0.0065	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Chlorodibromomethane	ND		0.0065	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2-Dichlorobenzene	ND		0.0065	0.00083	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,3-Dichlorobenzene	ND		0.0065	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,4-Dichlorobenzene	ND		0.0065	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,3-Dichloropropane	ND		0.0065	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1-Dichloropropene	ND		0.0065	0.00048	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2-Dibromo-3-Chloropropane	ND		0.013	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Ethylene Dibromide	ND		0.013	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Dibromomethane	ND		0.0065	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Dichlorodifluoromethane	ND		0.0065	0.0012	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1-Dichloroethane	ND		0.0065	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2-Dichloroethane	ND		0.0065	0.00095	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1-Dichloroethene	ND		0.0065	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
cis-1,2-Dichloroethene	ND		0.0065	0.0012	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
trans-1,2-Dichloroethene	ND		0.0065	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2-Dichloropropane	ND		0.0065	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
cis-1,3-Dichloropropene	ND		0.0065	0.00083	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
trans-1,3-Dichloropropene	ND		0.0065	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1

Client Sample ID: MHSSF-ENV-F@0.5'
Date Collected: 09/21/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-6
Matrix: Solid
Percent Solids: 75.8

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		0.0065	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Hexachlorobutadiene	ND		0.0065	0.00043	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
2-Hexanone	ND		0.013	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Isopropylbenzene	ND		0.0065	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
4-Isopropyltoluene	ND		0.0065	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Methylene Chloride	ND		0.013	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
4-Methyl-2-pentanone (MIBK)	ND		0.013	0.0012	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Naphthalene	ND		0.0065	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
N-Propylbenzene	ND		0.0065	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Styrene	ND		0.0065	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1,1,2-Tetrachloroethane	ND		0.0065	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1,2,2-Tetrachloroethane	ND		0.0065	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Tetrachloroethene	ND		0.0065	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Toluene	ND		0.0065	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2,3-Trichlorobenzene	ND		0.0065	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2,4-Trichlorobenzene	ND		0.0065	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1,1-Trichloroethane	ND		0.0065	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1,2-Trichloroethane	ND		0.0065	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Trichloroethene	ND		0.0065	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Trichlorofluoromethane	ND		0.0065	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2,3-Trichloropropane	ND		0.0065	0.00099	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.013	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,2,4-Trimethylbenzene	ND		0.0065	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
1,3,5-Trimethylbenzene	ND		0.0065	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Vinyl acetate	ND		0.013	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Vinyl chloride	ND		0.0065	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Xylenes, Total	ND		0.0065	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
2,2-Dichloropropane	ND		0.0065	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 17:38	1
Gasoline Range Organics (C4-C12)	ND		650	65	ug/Kg	☼	09/26/22 11:12	09/28/22 17:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*63 - 143*	*09/26/22 11:12*	*09/28/22 17:38*	*1*
Dibromofluoromethane (Surr)	*92*		*55 - 129*	*09/26/22 11:12*	*09/28/22 17:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*32 - 156*	*09/26/22 11:12*	*09/28/22 17:38*	*1*
Toluene-d8 (Surr)	*104*		*63 - 138*	*09/26/22 11:12*	*09/28/22 17:38*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Bis(2-chloroethyl)ether	ND		0.43	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Chlorophenol	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
1,3-Dichlorobenzene	ND		0.43	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
1,4-Dichlorobenzene	ND		0.43	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzyl alcohol	ND		0.43	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
1,2-Dichlorobenzene	ND		0.43	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Methylphenol	ND		0.43	0.075	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
N-Nitrosodi-n-propylamine	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Hexachloroethane	ND		0.43	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Nitrobenzene	ND		0.43	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Isophorone	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-F@0.5'
Date Collected: 09/21/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-6
Matrix: Solid
Percent Solids: 75.8

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitrophenol	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4-Dimethylphenol	ND		0.43	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Bis(2-chloroethoxy)methane	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4-Dichlorophenol	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
1,2,4-Trichlorobenzene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Naphthalene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Chloroaniline	ND		0.43	0.075	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Hexachlorobutadiene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Chloro-3-methylphenol	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Methylnaphthalene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Hexachlorocyclopentadiene	ND		2.1	0.080	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4,6-Trichlorophenol	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4,5-Trichlorophenol	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Chloronaphthalene	ND		0.43	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Nitroaniline	ND		2.1	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Dimethyl phthalate	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Acenaphthylene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
3-Nitroaniline	ND		2.1	0.22	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
3-Methylphenol & 4-Methylphenol	ND		0.85	0.43	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Acenaphthene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4-Dinitrophenol	ND	*+	2.1	0.28	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Nitrophenol	ND		2.1	0.36	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Dibenzofuran	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,4-Dinitrotoluene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2,6-Dinitrotoluene	ND		0.43	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Diethyl phthalate	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Chlorophenyl phenyl ether	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Fluorene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Nitroaniline	ND		2.1	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
2-Methyl-4,6-dinitrophenol	ND		2.1	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
N-Nitrosodiphenylamine	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
4-Bromophenyl phenyl ether	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Hexachlorobenzene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Pentachlorophenol	ND		2.1	0.066	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Phenanthrene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Anthracene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Di-n-butyl phthalate	ND		0.43	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Fluoranthene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Pyrene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Butyl benzyl phthalate	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
3,3'-Dichlorobenzidine	ND		2.1	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzo[a]anthracene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Bis(2-ethylhexyl) phthalate	ND		0.43	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Chrysene	ND		0.43	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Di-n-octyl phthalate	ND		0.43	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzo[b]fluoranthene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzo[a]pyrene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzo[k]fluoranthene	ND		0.43	0.15	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Indeno[1,2,3-cd]pyrene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1

Client Sample ID: MHSSF-ENV-F@0.5'

Date Collected: 09/21/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-6

Matrix: Solid
Percent Solids: 75.8

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[g,h,i]perylene	ND		0.43	0.14	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Benzoic acid	ND		2.1	0.37	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Azobenzene	ND		0.43	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Dibenz(a,h)anthracene	ND		0.43	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1
Pyridine	ND		0.85	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*66*		*54 - 114*	*09/27/22 07:34*	*09/28/22 17:13*	*1*
Terphenyl-d14	*89*		*66 - 126*	*09/27/22 07:34*	*09/28/22 17:13*	*1*
2-Fluorophenol	*75*		*53 - 113*	*09/27/22 07:34*	*09/28/22 17:13*	*1*
Phenol-d5	*79*		*54 - 114*	*09/27/22 07:34*	*09/28/22 17:13*	*1*
2,4,6-Tribromophenol	*103*		*60 - 120*	*09/27/22 07:34*	*09/28/22 17:13*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1.2**	**J B**	1.3	0.65	mg/Kg	☼	09/27/22 07:45	09/29/22 03:54	1
Motor Oil Range Organics [C28-C40]	ND		6.5	4.9	mg/Kg	☼	09/27/22 07:45	09/29/22 03:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*48*	*S1-*	*51 - 111*	*09/27/22 07:45*	*09/29/22 03:54*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0022	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
alpha-BHC	ND		0.0022	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
beta-BHC	ND		0.0022	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
gamma-BHC (Lindane)	ND		0.0022	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
delta-BHC	ND		0.0022	0.00044	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
cis-Chlordane	ND		0.0022	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
trans-Chlordane	ND		0.0022	0.00076	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Chlordane (technical)	ND		0.025	0.012	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
4,4'-DDD	ND		0.0022	0.00029	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
4,4'-DDE	ND		0.0022	0.00027	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
4,4'-DDT	ND		0.0022	0.00032	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Dieldrin	ND		0.0022	0.00025	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endosulfan I	ND		0.0022	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endosulfan II	ND		0.0022	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endosulfan sulfate	ND		0.0022	0.00044	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endrin	ND		0.0022	0.00025	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endrin aldehyde	ND		0.0022	0.00072	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Endrin ketone	ND		0.0022	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Heptachlor	ND		0.0022	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Heptachlor epoxide	ND		0.0022	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Methoxychlor	ND		0.0043	0.00071	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1
Toxaphene	ND		0.085	0.028	mg/Kg	☼	09/27/22 10:07	10/06/22 19:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*71*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:18*	*1*
DCB Decachlorobiphenyl	*78*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:18*	*1*
Tetrachloro-m-xylene	*69*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:18*	*1*
Tetrachloro-m-xylene	*64*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:18*	*1*

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-F@0.5'

Date Collected: 09/21/22 13:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-6

Matrix: Solid
Percent Solids: 75.8

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		42	3.2	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1221	ND		42	4.6	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1232	ND		42	6.1	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1242	ND		42	7.5	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1248	ND		42	3.1	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1254	ND		42	4.8	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1
PCB-1260	ND		42	3.4	ug/Kg	☼	09/27/22 10:56	10/04/22 19:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*130*		*52 - 138*	*09/27/22 10:56*	*10/04/22 19:58*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.52	0.25	mg/Kg	☼	09/29/22 02:00	09/29/22 09:39	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**5.2**		1.3	0.61	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Arsenic	**1.6**		1.3	0.84	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Barium	**17**		0.65	0.078	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Beryllium	**0.11**	**J**	0.13	0.019	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Cadmium	**0.063**	**J**	0.13	0.019	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Chromium	**11**		0.32	0.090	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Cobalt	**1.7**		0.32	0.16	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Copper	**4.8**		0.97	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Lead	**2.1**		0.65	0.17	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Molybdenum	ND		1.3	0.48	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Nickel	**9.2**		0.65	0.16	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Selenium	ND		1.3	0.90	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Silver	ND		0.32	0.058	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Thallium	ND		1.3	0.54	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Vanadium	**8.1**		0.32	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1
Zinc	**10**		1.3	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:18	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.038**	**J B**	0.10	0.012	mg/L			10/03/22 13:26	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:26	10
Chromium	**0.040**	**J**	0.10	0.0060	mg/L			10/03/22 13:26	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.012**	**J**	0.049	0.0099	mg/Kg	☼	09/29/22 12:49	09/29/22 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	**24.2**		0.1	0.1	%			09/26/22 15:18	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-G@0.5'
Date Collected: 09/22/22 08:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-7
Matrix: Solid
Percent Solids: 79.6

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.012	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Acetone	ND		0.025	0.0017	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Benzene	ND		0.0062	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Dichlorobromomethane	ND		0.0062	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Bromobenzene	ND		0.0062	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chlorobromomethane	ND		0.0062	0.0012	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Bromoform	ND		0.0062	0.00050	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Bromomethane	ND		0.0062	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
2-Butanone (MEK)	ND		0.012	0.0017	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
n-Butylbenzene	ND		0.0062	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
sec-Butylbenzene	ND		0.0062	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
tert-Butylbenzene	ND		0.0062	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Carbon disulfide	ND		0.012	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Carbon tetrachloride	ND		0.0062	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chlorobenzene	ND		0.0062	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chloroethane	ND		0.0062	0.00056	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chloroform	ND		0.0062	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chloromethane	ND		0.0062	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
2-Chlorotoluene	ND		0.0062	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
4-Chlorotoluene	ND		0.0062	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Chlorodibromomethane	ND		0.0062	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2-Dichlorobenzene	ND		0.0062	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,3-Dichlorobenzene	ND		0.0062	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,4-Dichlorobenzene	ND		0.0062	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,3-Dichloropropane	ND		0.0062	0.00071	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1-Dichloropropene	ND		0.0062	0.00046	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2-Dibromo-3-Chloropropane	ND		0.012	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Ethylene Dibromide	ND		0.012	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Dibromomethane	ND		0.0062	0.00072	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Dichlorodifluoromethane	ND		0.0062	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1-Dichloroethane	ND		0.0062	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2-Dichloroethane	ND		0.0062	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1-Dichloroethene	ND		0.0062	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
cis-1,2-Dichloroethene	ND		0.0062	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
trans-1,2-Dichloroethene	ND		0.0062	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2-Dichloropropane	ND		0.0062	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
cis-1,3-Dichloropropene	ND		0.0062	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
trans-1,3-Dichloropropene	ND		0.0062	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Ethylbenzene	ND		0.0062	0.00042	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Hexachlorobutadiene	ND		0.0062	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
2-Hexanone	ND		0.012	0.00092	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Isopropylbenzene	ND		0.0062	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
4-Isopropyltoluene	ND		0.0062	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Methylene Chloride	ND		0.012	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
4-Methyl-2-pentanone (MIBK)	ND		0.012	0.0011	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Naphthalene	ND		0.0062	0.00078	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
N-Propylbenzene	ND		0.0062	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Styrene	ND		0.0062	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1,1,2-Tetrachloroethane	ND		0.0062	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-G@0.5'
Date Collected: 09/22/22 08:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-7
Matrix: Solid
Percent Solids: 79.6

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		0.0062	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Tetrachloroethene	ND		0.0062	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Toluene	ND		0.0062	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2,3-Trichlorobenzene	ND		0.0062	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2,4-Trichlorobenzene	ND		0.0062	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1,1-Trichloroethane	ND		0.0062	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1,2-Trichloroethane	ND		0.0062	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Trichloroethene	ND		0.0062	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Trichlorofluoromethane	ND		0.0062	0.00042	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2,3-Trichloropropane	ND		0.0062	0.00094	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.012	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,2,4-Trimethylbenzene	ND		0.0062	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
1,3,5-Trimethylbenzene	ND		0.0062	0.00043	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Vinyl acetate	ND		0.012	0.00086	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Vinyl chloride	ND		0.0062	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Xylenes, Total	ND		0.0062	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
2,2-Dichloropropane	ND		0.0062	0.00047	mg/Kg	☼	09/26/22 11:12	09/28/22 18:00	1
Gasoline Range Organics (C4-C12)	ND		620	62	ug/Kg	☼	09/26/22 11:12	09/28/22 18:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*63 - 143*	*09/26/22 11:12*	*09/28/22 18:00*	*1*
Dibromofluoromethane (Surr)	*96*		*55 - 129*	*09/26/22 11:12*	*09/28/22 18:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*91*		*32 - 156*	*09/26/22 11:12*	*09/28/22 18:00*	*1*
Toluene-d8 (Surr)	*105*		*63 - 138*	*09/26/22 11:12*	*09/28/22 18:00*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Bis(2-chloroethyl)ether	ND		0.40	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Chlorophenol	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
1,3-Dichlorobenzene	ND		0.40	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
1,4-Dichlorobenzene	ND		0.40	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzyl alcohol	ND		0.40	0.21	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
1,2-Dichlorobenzene	ND		0.40	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Methylphenol	ND		0.40	0.071	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
N-Nitrosodi-n-propylamine	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Hexachloroethane	ND		0.40	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Nitrobenzene	ND		0.40	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Isophorone	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Nitrophenol	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,4-Dimethylphenol	ND		0.40	0.20	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Bis(2-chloroethoxy)methane	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,4-Dichlorophenol	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
1,2,4-Trichlorobenzene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Naphthalene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Chloroaniline	ND		0.40	0.071	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Hexachlorobutadiene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Chloro-3-methylphenol	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Methylnaphthalene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Hexachlorocyclopentadiene	ND		2.0	0.076	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-G@0.5'
Date Collected: 09/22/22 08:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-7
Matrix: Solid
Percent Solids: 79.6

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,4,5-Trichlorophenol	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Chloronaphthalene	ND		0.40	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Nitroaniline	ND		2.0	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Dimethyl phthalate	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Acenaphthylene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
3-Nitroaniline	ND		2.0	0.20	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
3-Methylphenol & 4-Methylphenol	ND		0.81	0.40	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Acenaphthene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,4-Dinitrophenol	ND	*+	2.0	0.26	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Nitrophenol	ND		2.0	0.34	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Dibenzofuran	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,4-Dinitrotoluene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2,6-Dinitrotoluene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Diethyl phthalate	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Chlorophenyl phenyl ether	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Fluorene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Nitroaniline	ND		2.0	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
2-Methyl-4,6-dinitrophenol	ND		2.0	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
N-Nitrosodiphenylamine	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
4-Bromophenyl phenyl ether	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Hexachlorobenzene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Pentachlorophenol	ND		2.0	0.063	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Phenanthrene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Anthracene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Di-n-butyl phthalate	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Fluoranthene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Pyrene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Butyl benzyl phthalate	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
3,3'-Dichlorobenzidine	ND		2.0	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzo[a]anthracene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Bis(2-ethylhexyl) phthalate	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Chrysene	ND		0.40	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Di-n-octyl phthalate	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzo[b]fluoranthene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzo[a]pyrene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzo[k]fluoranthene	ND		0.40	0.14	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Indeno[1,2,3-cd]pyrene	ND		0.40	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzo[g,h,i]perylene	ND		0.40	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Benzoic acid	ND		2.0	0.35	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Azobenzene	ND		0.40	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Dibenz(a,h)anthracene	ND		0.40	0.13	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1
Pyridine	ND		0.81	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 17:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*71*		*54 - 114*	*09/27/22 07:34*	*09/28/22 17:38*	*1*
Terphenyl-d14	*87*		*66 - 126*	*09/27/22 07:34*	*09/28/22 17:38*	*1*
2-Fluorophenol	*76*		*53 - 113*	*09/27/22 07:34*	*09/28/22 17:38*	*1*
Phenol-d5	*76*		*54 - 114*	*09/27/22 07:34*	*09/28/22 17:38*	*1*
2,4,6-Tribromophenol	*94*		*60 - 120*	*09/27/22 07:34*	*09/28/22 17:38*	*1*

Client Sample ID: MHSSF-ENV-G@0.5'

Date Collected: 09/22/22 08:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-7

Matrix: Solid
Percent Solids: 79.6

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.85	J B	1.2	0.62	mg/Kg	☼	09/27/22 07:45	09/29/22 04:22	1
Motor Oil Range Organics [C28-C40]	ND		6.2	4.7	mg/Kg	☼	09/27/22 07:45	09/29/22 04:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*54*		*51 - 111*	*09/27/22 07:45*	*09/29/22 04:22*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0021	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
alpha-BHC	ND		0.0021	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
beta-BHC	ND		0.0021	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
gamma-BHC (Lindane)	ND		0.0021	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
delta-BHC	ND		0.0021	0.00044	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
cis-Chlordane	ND		0.0021	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
trans-Chlordane	ND		0.0021	0.00075	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Chlordane (technical)	ND		0.025	0.012	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
4,4'-DDD	ND		0.0021	0.00029	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
4,4'-DDE	0.00037	J	0.0021	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
4,4'-DDT	ND		0.0021	0.00031	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Dieldrin	ND		0.0021	0.00025	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endosulfan I	ND		0.0021	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endosulfan II	ND		0.0021	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endosulfan sulfate	ND		0.0021	0.00044	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endrin	ND		0.0021	0.00025	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endrin aldehyde	ND		0.0021	0.00071	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Endrin ketone	ND		0.0021	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Heptachlor	ND		0.0021	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Heptachlor epoxide	ND		0.0021	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Methoxychlor	ND		0.0043	0.00070	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1
Toxaphene	ND		0.084	0.028	mg/Kg	☼	09/27/22 10:07	10/06/22 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:37*	*1*
DCB Decachlorobiphenyl	*81*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:37*	*1*
Tetrachloro-m-xylene	*69*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:37*	*1*
Tetrachloro-m-xylene	*63*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:37*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		41	3.2	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1221	ND		41	4.5	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1232	ND		41	6.0	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1242	ND		41	7.4	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1248	ND		41	3.1	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1254	ND		41	4.8	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1
PCB-1260	ND		41	3.4	ug/Kg	☼	09/27/22 10:56	10/04/22 20:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*124*		*52 - 138*	*09/27/22 10:56*	*10/04/22 20:18*	*1*

Client Sample ID: MHSSF-ENV-G@0.5'

Lab Sample ID: 320-92432-7
Date Collected: 09/22/22 08:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 79.6

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.050	0.024	mg/Kg	☼	09/29/22 02:00	09/29/22 09:49	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	2.9		1.6	0.76	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Arsenic	1.3	J	1.6	1.1	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Barium	9.7		0.81	0.097	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Beryllium	0.091	J	0.16	0.024	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Cadmium	0.062	J	0.16	0.024	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Chromium	6.6		0.41	0.11	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Cobalt	0.90		0.41	0.20	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Copper	1.7		1.2	0.18	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Lead	1.2		0.81	0.21	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Molybdenum	ND		1.6	0.61	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Nickel	5.4		0.81	0.19	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Selenium	ND		1.6	1.1	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Silver	ND		0.41	0.073	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Thallium	ND		1.6	0.68	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Vanadium	4.5		0.41	0.15	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1
Zinc	5.2		1.6	0.15	mg/Kg	☼	09/26/22 16:00	09/27/22 14:29	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.18	B	0.10	0.012	mg/L			10/03/22 13:30	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:30	10
Chromium	0.023	J	0.10	0.0060	mg/L			10/03/22 13:30	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.047	0.0094	mg/Kg	☼	09/29/22 12:49	09/29/22 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	20.4		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-H@0.5'

Lab Sample ID: 320-92432-8
Date Collected: 09/22/22 09:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 92.0

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.011	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Acetone	ND		0.022	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Benzene	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Dichlorobromomethane	ND		0.0054	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Bromobenzene	ND		0.0054	0.00056	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chlorobromomethane	ND		0.0054	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Bromoform	ND		0.0054	0.00043	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Bromomethane	ND		0.0054	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
2-Butanone (MEK)	ND		0.011	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
n-Butylbenzene	ND		0.0054	0.00071	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-H@0.5'
Date Collected: 09/22/22 09:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-8
Matrix: Solid
Percent Solids: 92.0

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	ND		0.0054	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
tert-Butylbenzene	ND		0.0054	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Carbon disulfide	ND		0.011	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Carbon tetrachloride	ND		0.0054	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chlorobenzene	ND		0.0054	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chloroethane	ND		0.0054	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chloroform	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chloromethane	ND		0.0054	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
2-Chlorotoluene	ND		0.0054	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
4-Chlorotoluene	ND		0.0054	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Chlorodibromomethane	ND		0.0054	0.00023	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2-Dichlorobenzene	ND		0.0054	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,3-Dichlorobenzene	ND		0.0054	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,4-Dichlorobenzene	ND		0.0054	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,3-Dichloropropane	ND		0.0054	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1-Dichloropropene	ND		0.0054	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.00095	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Ethylene Dibromide	ND		0.011	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Dibromomethane	ND		0.0054	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Dichlorodifluoromethane	ND		0.0054	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1-Dichloroethane	ND		0.0054	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2-Dichloroethane	ND		0.0054	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1-Dichloroethene	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
cis-1,2-Dichloroethene	ND		0.0054	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
trans-1,2-Dichloroethene	ND		0.0054	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2-Dichloropropane	ND		0.0054	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
cis-1,3-Dichloropropene	ND		0.0054	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
trans-1,3-Dichloropropene	ND		0.0054	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Ethylbenzene	ND		0.0054	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Hexachlorobutadiene	ND		0.0054	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
2-Hexanone	ND		0.011	0.00080	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Isopropylbenzene	ND		0.0054	0.00056	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
4-Isopropyltoluene	ND		0.0054	0.00068	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Methylene Chloride	ND		0.011	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
4-Methyl-2-pentanone (MIBK)	ND		0.011	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Naphthalene	ND		0.0054	0.00068	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
N-Propylbenzene	ND		0.0054	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Styrene	ND		0.0054	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1,1,2-Tetrachloroethane	ND		0.0054	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1,2,2-Tetrachloroethane	ND		0.0054	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Tetrachloroethene	ND		0.0054	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Toluene	ND		0.0054	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2,3-Trichlorobenzene	ND		0.0054	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2,4-Trichlorobenzene	ND		0.0054	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1,1-Trichloroethane	ND		0.0054	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,1,2-Trichloroethane	ND		0.0054	0.00048	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Trichloroethene	ND		0.0054	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Trichlorofluoromethane	ND		0.0054	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2,3-Trichloropropane	ND		0.0054	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1

Client Sample ID: MHSSF-ENV-H@0.5'
Date Collected: 09/22/22 09:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-8
Matrix: Solid
Percent Solids: 92.0

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.011	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,2,4-Trimethylbenzene	ND		0.0054	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
1,3,5-Trimethylbenzene	ND		0.0054	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Vinyl acetate	ND		0.011	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Vinyl chloride	ND		0.0054	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Xylenes, Total	ND		0.0054	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
2,2-Dichloropropane	ND		0.0054	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 18:22	1
Gasoline Range Organics (C4-C12)	ND		540	54	ug/Kg	☼	09/26/22 11:12	09/28/22 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*63 - 143*	*09/26/22 11:12*	*09/28/22 18:22*	*1*
Dibromofluoromethane (Surr)	*96*		*55 - 129*	*09/26/22 11:12*	*09/28/22 18:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*32 - 156*	*09/26/22 11:12*	*09/28/22 18:22*	*1*
Toluene-d8 (Surr)	*108*		*63 - 138*	*09/26/22 11:12*	*09/28/22 18:22*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.35	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Bis(2-chloroethyl)ether	ND		0.35	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Chlorophenol	ND		0.35	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
1,3-Dichlorobenzene	ND		0.35	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
1,4-Dichlorobenzene	ND		0.35	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzyl alcohol	ND		0.35	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
1,2-Dichlorobenzene	ND		0.35	0.079	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Methylphenol	ND		0.35	0.061	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
N-Nitrosodi-n-propylamine	ND		0.35	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Hexachloroethane	ND		0.35	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Nitrobenzene	ND		0.35	0.080	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Isophorone	ND		0.35	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Nitrophenol	ND		0.35	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4-Dimethylphenol	ND		0.35	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Bis(2-chloroethoxy)methane	ND		0.35	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4-Dichlorophenol	ND		0.35	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
1,2,4-Trichlorobenzene	ND		0.35	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Naphthalene	ND		0.35	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
4-Chloroaniline	ND		0.35	0.061	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Hexachlorobutadiene	ND		0.35	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
4-Chloro-3-methylphenol	ND		0.35	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Methylnaphthalene	ND		0.35	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Hexachlorocyclopentadiene	ND		1.7	0.066	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4,6-Trichlorophenol	ND		0.35	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4,5-Trichlorophenol	ND		0.35	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Chloronaphthalene	ND		0.35	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Nitroaniline	ND		1.7	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Dimethyl phthalate	ND		0.35	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Acenaphthylene	ND		0.35	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
3-Nitroaniline	ND		1.7	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
3-Methylphenol & 4-Methylphenol	ND		0.70	0.35	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Acenaphthene	ND		0.35	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4-Dinitrophenol	ND	*+	1.7	0.23	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-H@0.5'
Date Collected: 09/22/22 09:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-8
Matrix: Solid
Percent Solids: 92.0

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		1.7	0.30	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Dibenzofuran	ND		0.35	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,4-Dinitrotoluene	ND		0.35	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2,6-Dinitrotoluene	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Diethyl phthalate	ND		0.35	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
4-Chlorophenyl phenyl ether	ND		0.35	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Fluorene	ND		0.35	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
4-Nitroaniline	ND		1.7	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
2-Methyl-4,6-dinitrophenol	ND		1.7	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
N-Nitrosodiphenylamine	ND		0.35	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
4-Bromophenyl phenyl ether	ND		0.35	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Hexachlorobenzene	ND		0.35	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Pentachlorophenol	ND		1.7	0.054	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Phenanthrene	ND		0.35	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Anthracene	ND		0.35	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Di-n-butyl phthalate	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Fluoranthene	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Pyrene	ND		0.35	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Butyl benzyl phthalate	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
3,3'-Dichlorobenzidine	ND		1.7	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzo[a]anthracene	ND		0.35	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Bis(2-ethylhexyl) phthalate	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Chrysene	ND		0.35	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Di-n-octyl phthalate	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzo[b]fluoranthene	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzo[a]pyrene	ND		0.35	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzo[k]fluoranthene	ND		0.35	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Indeno[1,2,3-cd]pyrene	ND		0.35	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzo[g,h,i]perylene	ND		0.35	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Benzoic acid	ND		1.7	0.31	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Azobenzene	ND		0.35	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Dibenz(a,h)anthracene	ND		0.35	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1
Pyridine	ND		0.70	0.076	mg/Kg	☼	09/27/22 07:34	09/28/22 18:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*73*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:03*	*1*
Terphenyl-d14	*90*		*66 - 126*	*09/27/22 07:34*	*09/28/22 18:03*	*1*
2-Fluorophenol	*79*		*53 - 113*	*09/27/22 07:34*	*09/28/22 18:03*	*1*
Phenol-d5	*78*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:03*	*1*
2,4,6-Tribromophenol	*99*		*60 - 120*	*09/27/22 07:34*	*09/28/22 18:03*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**0.73**	**J B**	1.1	0.54	mg/Kg	☼	09/27/22 07:45	09/29/22 04:51	1
Motor Oil Range Organics [C28-C40]	ND		5.4	4.1	mg/Kg	☼	09/27/22 07:45	09/29/22 04:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*62*		*51 - 111*	*09/27/22 07:45*	*09/29/22 04:51*	*1*

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-H@0.5'
Date Collected: 09/22/22 09:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-8
Matrix: Solid
Percent Solids: 92.0

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0018	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
alpha-BHC	ND		0.0018	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
beta-BHC	ND		0.0018	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
gamma-BHC (Lindane)	ND		0.0018	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
delta-BHC	ND		0.0018	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
cis-Chlordane	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
trans-Chlordane	ND		0.0018	0.00063	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Chlordane (technical)	ND		0.021	0.0098	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
4,4'-DDD	ND		0.0018	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
4,4'-DDE	**0.00029**	**J**	0.0018	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
4,4'-DDT	ND		0.0018	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Dieldrin	ND		0.0018	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endosulfan I	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endosulfan II	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endosulfan sulfate	ND		0.0018	0.00036	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endrin	ND		0.0018	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endrin aldehyde	ND		0.0018	0.00059	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Endrin ketone	ND		0.0018	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Heptachlor	ND		0.0018	0.00016	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Heptachlor epoxide	ND		0.0018	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Methoxychlor	ND		0.0035	0.00058	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1
Toxaphene	ND		0.070	0.023	mg/Kg	☼	09/27/22 10:07	10/06/22 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*65*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:56*	*1*
DCB Decachlorobiphenyl	*73*		*46 - 109*	*09/27/22 10:07*	*10/06/22 19:56*	*1*
Tetrachloro-m-xylene	*69*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:56*	*1*
Tetrachloro-m-xylene	*60*		*47 - 107*	*09/27/22 10:07*	*10/06/22 19:56*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		34	2.7	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1221	ND		34	3.8	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1232	ND		34	5.0	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1242	ND		34	6.2	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1248	ND		34	2.5	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1254	ND		34	4.0	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1
PCB-1260	ND		34	2.8	ug/Kg	☼	09/27/22 10:56	10/04/22 20:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*114*		*52 - 138*	*09/27/22 10:56*	*10/04/22 20:39*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.043	0.021	mg/Kg	☼	09/29/22 02:00	09/29/22 09:59	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**4.5**		2.1	1.0	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Arsenic	ND		2.1	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Barium	**7.5**		1.1	0.13	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1

Client Sample ID: MHSSF-ENV-H@0.5'

Lab Sample ID: 320-92432-8
Date Collected: 09/22/22 09:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 92.0

Method: SW846 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.11	J	0.21	0.032	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Cadmium	0.095	J	0.21	0.032	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Chromium	9.3		0.53	0.15	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Cobalt	1.2		0.53	0.27	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Copper	2.1		1.6	0.23	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Lead	1.6		1.1	0.28	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Molybdenum	ND		2.1	0.80	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Nickel	6.8		1.1	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Selenium	ND		2.1	1.5	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Silver	ND		0.53	0.096	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Thallium	ND		2.1	0.90	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Vanadium	6.7		0.53	0.20	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1
Zinc	5.3		2.1	0.20	mg/Kg	☼	09/26/22 16:00	09/27/22 14:33	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.052	J B	0.10	0.012	mg/L			10/03/22 13:34	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:34	10
Chromium	0.058	J	0.10	0.0060	mg/L			10/03/22 13:34	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.041	0.0082	mg/Kg	☼	09/29/22 12:49	09/29/22 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	8.0		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-I@0.5'

Lab Sample ID: 320-92432-9
Date Collected: 09/22/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 90.5

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.011	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Acetone	ND		0.022	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Benzene	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Dichlorobromomethane	ND		0.0054	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Bromobenzene	ND		0.0054	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Chlorobromomethane	ND		0.0054	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Bromoform	ND		0.0054	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Bromomethane	ND		0.0054	0.00094	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
2-Butanone (MEK)	ND		0.011	0.0015	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
n-Butylbenzene	ND		0.0054	0.00072	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
sec-Butylbenzene	ND		0.0054	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
tert-Butylbenzene	ND		0.0054	0.00059	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Carbon disulfide	ND		0.011	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Carbon tetrachloride	ND		0.0054	0.00058	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Chlorobenzene	ND		0.0054	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Chloroethane	ND		0.0054	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Chloroform	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-I@0.5'
Date Collected: 09/22/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-9
Matrix: Solid
Percent Solids: 90.5

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		0.0054	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
2-Chlorotoluene	ND		0.0054	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
4-Chlorotoluene	ND		0.0054	0.00094	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Chlorodibromomethane	ND		0.0054	0.00023	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2-Dichlorobenzene	ND		0.0054	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,3-Dichlorobenzene	ND		0.0054	0.00033	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,4-Dichlorobenzene	ND		0.0054	0.00085	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,3-Dichloropropane	ND		0.0054	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1-Dichloropropene	ND		0.0054	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2-Dibromo-3-Chloropropane	ND		0.011	0.00096	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Ethylene Dibromide	ND		0.011	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Dibromomethane	ND		0.0054	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Dichlorodifluoromethane	ND		0.0054	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1-Dichloroethane	ND		0.0054	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2-Dichloroethane	ND		0.0054	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1-Dichloroethene	ND		0.0054	0.00028	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
cis-1,2-Dichloroethene	ND		0.0054	0.00097	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
trans-1,2-Dichloroethene	ND		0.0054	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2-Dichloropropane	ND		0.0054	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
cis-1,3-Dichloropropene	ND		0.0054	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
trans-1,3-Dichloropropene	ND		0.0054	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Ethylbenzene	ND		0.0054	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Hexachlorobutadiene	ND		0.0054	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
2-Hexanone	ND		0.011	0.00081	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Isopropylbenzene	ND		0.0054	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
4-Isopropyltoluene	ND		0.0054	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Methylene Chloride	ND		0.011	0.00091	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
4-Methyl-2-pentanone (MIBK)	ND		0.011	0.0010	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Naphthalene	ND		0.0054	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
N-Propylbenzene	ND		0.0054	0.00032	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Styrene	ND		0.0054	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1,1,2-Tetrachloroethane	ND		0.0054	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1,2,2-Tetrachloroethane	ND		0.0054	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Tetrachloroethene	ND		0.0054	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Toluene	ND		0.0054	0.00066	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2,3-Trichlorobenzene	ND		0.0054	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2,4-Trichlorobenzene	ND		0.0054	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1,1-Trichloroethane	ND		0.0054	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1,2-Trichloroethane	ND		0.0054	0.00048	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Trichloroethene	ND		0.0054	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Trichlorofluoromethane	ND		0.0054	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2,3-Trichloropropane	ND		0.0054	0.00083	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.011	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,2,4-Trimethylbenzene	ND		0.0054	0.00055	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
1,3,5-Trimethylbenzene	ND		0.0054	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Vinyl acetate	ND		0.011	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Vinyl chloride	ND		0.0054	0.00039	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
Xylenes, Total	ND		0.0054	0.00088	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1
2,2-Dichloropropane	ND		0.0054	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 18:44	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-I@0.5'
Date Collected: 09/22/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-9
Matrix: Solid
Percent Solids: 90.5

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C4-C12)	ND		540	54	ug/Kg	☼	09/26/22 11:12	09/28/22 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*63 - 143*	*09/26/22 11:12*	*09/28/22 18:44*	*1*
Dibromofluoromethane (Surr)	*95*		*55 - 129*	*09/26/22 11:12*	*09/28/22 18:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*94*		*32 - 156*	*09/26/22 11:12*	*09/28/22 18:44*	*1*
Toluene-d8 (Surr)	*106*		*63 - 138*	*09/26/22 11:12*	*09/28/22 18:44*	*1*

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.36	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Bis(2-chloroethyl)ether	ND		0.36	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Chlorophenol	ND		0.36	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
1,3-Dichlorobenzene	ND		0.36	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
1,4-Dichlorobenzene	ND		0.36	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzyl alcohol	ND		0.36	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
1,2-Dichlorobenzene	ND		0.36	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Methylphenol	ND		0.36	0.063	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
N-Nitrosodi-n-propylamine	ND		0.36	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Hexachloroethane	ND		0.36	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Nitrobenzene	ND		0.36	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Isophorone	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Nitrophenol	ND		0.36	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4-Dimethylphenol	ND		0.36	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Bis(2-chloroethoxy)methane	ND		0.36	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4-Dichlorophenol	ND		0.36	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
1,2,4-Trichlorobenzene	ND		0.36	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Naphthalene	ND		0.36	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
4-Chloroaniline	ND		0.36	0.063	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Hexachlorobutadiene	ND		0.36	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
4-Chloro-3-methylphenol	ND		0.36	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Methylnaphthalene	ND		0.36	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Hexachlorocyclopentadiene	ND		1.7	0.067	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4,6-Trichlorophenol	ND		0.36	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4,5-Trichlorophenol	ND		0.36	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Chloronaphthalene	ND		0.36	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Nitroaniline	ND		1.7	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Dimethyl phthalate	ND		0.36	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Acenaphthylene	ND		0.36	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
3-Nitroaniline	ND		1.7	0.18	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
3-Methylphenol & 4-Methylphenol	ND		0.71	0.36	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Acenaphthene	ND		0.36	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4-Dinitrophenol	ND	*+	1.7	0.23	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
4-Nitrophenol	ND		1.7	0.30	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Dibenzofuran	ND		0.36	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,4-Dinitrotoluene	ND		0.36	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2,6-Dinitrotoluene	ND		0.36	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Diethyl phthalate	ND		0.36	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
4-Chlorophenyl phenyl ether	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Fluorene	ND		0.36	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1

Client Sample ID: MHSSF-ENV-I@0.5'
Date Collected: 09/22/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-9
Matrix: Solid
Percent Solids: 90.5

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	ND		1.7	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
2-Methyl-4,6-dinitrophenol	ND		1.7	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
N-Nitrosodiphenylamine	ND		0.36	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
4-Bromophenyl phenyl ether	ND		0.36	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Hexachlorobenzene	ND		0.36	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Pentachlorophenol	ND		1.7	0.055	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Phenanthrene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Anthracene	ND		0.36	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Di-n-butyl phthalate	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Fluoranthene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Pyrene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Butyl benzyl phthalate	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
3,3'-Dichlorobenzidine	ND		1.7	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzo[a]anthracene	ND		0.36	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Bis(2-ethylhexyl) phthalate	ND		0.36	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Chrysene	ND		0.36	0.091	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Di-n-octyl phthalate	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzo[b]fluoranthene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzo[a]pyrene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzo[k]fluoranthene	ND		0.36	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Indeno[1,2,3-cd]pyrene	ND		0.36	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzo[g,h,i]perylene	ND		0.36	0.12	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Benzoic acid	ND		1.7	0.31	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Azobenzene	ND		0.36	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Dibenz(a,h)anthracene	ND		0.36	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1
Pyridine	ND		0.71	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 18:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*72*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:27*	*1*
Terphenyl-d14	*92*		*66 - 126*	*09/27/22 07:34*	*09/28/22 18:27*	*1*
2-Fluorophenol	*75*		*53 - 113*	*09/27/22 07:34*	*09/28/22 18:27*	*1*
Phenol-d5	*77*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:27*	*1*
2,4,6-Tribromophenol	*100*		*60 - 120*	*09/27/22 07:34*	*09/28/22 18:27*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.3	B	1.1	0.54	mg/Kg	☼	09/27/22 07:45	09/29/22 05:19	1
Motor Oil Range Organics [C28-C40]	ND		5.4	4.1	mg/Kg	☼	09/27/22 07:45	09/29/22 05:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*57*		*51 - 111*	*09/27/22 07:45*	*09/29/22 05:19*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0019	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
alpha-BHC	ND		0.0019	0.00018	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
beta-BHC	ND		0.0019	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
gamma-BHC (Lindane)	ND		0.0019	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
delta-BHC	ND		0.0019	0.00039	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
cis-Chlordane	ND		0.0019	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1

Client Sample ID: MHSSF-ENV-I@0.5'

Date Collected: 09/22/22 11:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-9

Matrix: Solid
Percent Solids: 90.5

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-Chlordane	ND		0.0019	0.00066	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Chlordane (technical)	ND		0.022	0.010	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
4,4'-DDD	ND		0.0019	0.00025	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
4,4'-DDE	ND		0.0019	0.00023	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
4,4'-DDT	ND		0.0019	0.00028	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Dieldrin	ND		0.0019	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endosulfan I	ND		0.0019	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endosulfan II	ND		0.0019	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endosulfan sulfate	ND		0.0019	0.00039	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endrin	ND		0.0019	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endrin aldehyde	ND		0.0019	0.00063	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Endrin ketone	ND		0.0019	0.00030	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Heptachlor	ND		0.0019	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Heptachlor epoxide	ND		0.0019	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Methoxychlor	ND		0.0038	0.00062	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1
Toxaphene	ND		0.074	0.025	mg/Kg	☼	09/27/22 10:07	10/06/22 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*68*		*46 - 109*	*09/27/22 10:07*	*10/06/22 20:14*	*1*
DCB Decachlorobiphenyl	*75*		*46 - 109*	*09/27/22 10:07*	*10/06/22 20:14*	*1*
Tetrachloro-m-xylene	*67*		*47 - 107*	*09/27/22 10:07*	*10/06/22 20:14*	*1*
Tetrachloro-m-xylene	*62*		*47 - 107*	*09/27/22 10:07*	*10/06/22 20:14*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		36	2.8	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1221	ND		36	4.0	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1232	ND		36	5.3	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1242	ND		36	6.5	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1248	ND		36	2.7	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1254	ND		36	4.2	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1
PCB-1260	ND		36	3.0	ug/Kg	☼	09/27/22 10:56	10/04/22 21:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*106*		*52 - 138*	*09/27/22 10:56*	*10/04/22 21:00*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.45	0.21	mg/Kg	☼	09/29/22 02:00	09/29/22 10:08	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**4.2**		2.2	1.0	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Arsenic	ND		2.2	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Barium	**13**		1.1	0.13	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Beryllium	**0.11**	**J**	0.22	0.033	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Cadmium	**0.047**	**J**	0.22	0.033	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Chromium	**8.6**		0.54	0.15	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Cobalt	**1.2**		0.54	0.27	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Copper	**2.7**		1.6	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Lead	**1.2**		1.1	0.28	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1

Client Sample ID: MHSSF-ENV-I@0.5'

Lab Sample ID: 320-92432-9
Date Collected: 09/22/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 90.5

Method: SW846 6010B - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		2.2	0.81	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Nickel	7.9		1.1	0.26	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Selenium	ND		2.2	1.5	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Silver	ND		0.54	0.098	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Thallium	ND		2.2	0.91	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Vanadium	6.8		0.54	0.21	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1
Zinc	5.6		2.2	0.21	mg/Kg	☼	09/26/22 16:00	09/27/22 14:37	1

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.048	J B	0.10	0.012	mg/L			10/03/22 13:38	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:38	10
Chromium	0.037	J	0.10	0.0060	mg/L			10/03/22 13:38	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.046	0.0091	mg/Kg	☼	09/27/22 11:43	09/27/22 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	9.5		0.1	0.1	%			09/26/22 15:18	1

Client Sample ID: MHSSF-ENV-J@0.5'

Lab Sample ID: 320-92432-10
Date Collected: 09/22/22 12:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 98.2

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Acetone	ND		0.020	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Benzene	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Dichlorobromomethane	ND		0.0050	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Bromobenzene	ND		0.0050	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chlorobromomethane	ND		0.0050	0.00095	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Bromoform	ND		0.0050	0.00040	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Bromomethane	ND		0.0050	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
2-Butanone (MEK)	ND		0.010	0.0014	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
n-Butylbenzene	ND		0.0050	0.00067	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
sec-Butylbenzene	ND		0.0050	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
tert-Butylbenzene	ND		0.0050	0.00054	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Carbon disulfide	ND		0.010	0.00049	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Carbon tetrachloride	ND		0.0050	0.00053	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chlorobenzene	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chloroethane	ND		0.0050	0.00045	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chloroform	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chloromethane	ND		0.0050	0.00050	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
2-Chlorotoluene	ND		0.0050	0.00063	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
4-Chlorotoluene	ND		0.0050	0.00087	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Chlorodibromomethane	ND		0.0050	0.00021	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2-Dichlorobenzene	ND		0.0050	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,3-Dichlorobenzene	ND		0.0050	0.00030	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-J@0.5'
Date Collected: 09/22/22 12:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-10
Matrix: Solid
Percent Solids: 98.2

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.0050	0.00079	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,3-Dichloropropane	ND		0.0050	0.00057	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1-Dichloropropene	ND		0.0050	0.00037	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00089	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Ethylene Dibromide	ND		0.010	0.00027	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Dibromomethane	ND		0.0050	0.00059	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Dichlorodifluoromethane	ND		0.0050	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1-Dichloroethane	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2-Dichloroethane	ND		0.0050	0.00074	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1-Dichloroethene	ND		0.0050	0.00026	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
cis-1,2-Dichloroethene	ND		0.0050	0.00090	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
trans-1,2-Dichloroethene	ND		0.0050	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2-Dichloropropane	ND		0.0050	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
cis-1,3-Dichloropropene	ND		0.0050	0.00065	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
trans-1,3-Dichloropropene	ND		0.0050	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Ethylbenzene	ND		0.0050	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Hexachlorobutadiene	ND		0.0050	0.00033	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
2-Hexanone	ND		0.010	0.00075	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Isopropylbenzene	ND		0.0050	0.00052	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
4-Isopropyltoluene	ND		0.0050	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Methylene Chloride	ND		0.010	0.00085	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00093	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Naphthalene	ND		0.0050	0.00064	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
N-Propylbenzene	ND		0.0050	0.00029	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Styrene	ND		0.0050	0.00031	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1,1,2-Tetrachloroethane	ND		0.0050	0.00041	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.00069	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Tetrachloroethene	ND		0.0050	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Toluene	ND		0.0050	0.00062	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2,3-Trichlorobenzene	ND		0.0050	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2,4-Trichlorobenzene	ND		0.0050	0.00076	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1,1-Trichloroethane	ND		0.0050	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1,2-Trichloroethane	ND		0.0050	0.00044	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Trichloroethene	ND		0.0050	0.00061	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Trichlorofluoromethane	ND		0.0050	0.00034	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2,3-Trichloropropane	ND		0.0050	0.00077	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00084	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,2,4-Trimethylbenzene	ND		0.0050	0.00051	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
1,3,5-Trimethylbenzene	ND		0.0050	0.00035	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Vinyl acetate	ND		0.010	0.00070	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Vinyl chloride	ND		0.0050	0.00036	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Xylenes, Total	ND		0.0050	0.00082	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
2,2-Dichloropropane	ND		0.0050	0.00038	mg/Kg	☼	09/26/22 11:12	09/28/22 19:06	1
Gasoline Range Organics (C4-C12)	ND		500	50	ug/Kg	☼	09/26/22 11:12	09/28/22 19:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*63 - 143*	*09/26/22 11:12*	*09/28/22 19:06*	*1*
Dibromofluoromethane (Surr)	*94*		*55 - 129*	*09/26/22 11:12*	*09/28/22 19:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*32 - 156*	*09/26/22 11:12*	*09/28/22 19:06*	*1*
Toluene-d8 (Surr)	*103*		*63 - 138*	*09/26/22 11:12*	*09/28/22 19:06*	*1*

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-J@0.5'
Date Collected: 09/22/22 12:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-10
Matrix: Solid
Percent Solids: 98.2

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Bis(2-chloroethyl)ether	ND		0.33	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Chlorophenol	ND		0.33	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
1,3-Dichlorobenzene	ND		0.33	0.078	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
1,4-Dichlorobenzene	ND		0.33	0.077	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzyl alcohol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
1,2-Dichlorobenzene	ND		0.33	0.075	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Methylphenol	ND		0.33	0.058	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
N-Nitrosodi-n-propylamine	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Hexachloroethane	ND		0.33	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Nitrobenzene	ND		0.33	0.076	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Isophorone	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Nitrophenol	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4-Dimethylphenol	ND		0.33	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Bis(2-chloroethoxy)methane	ND		0.33	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4-Dichlorophenol	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
1,2,4-Trichlorobenzene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Naphthalene	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Chloroaniline	ND		0.33	0.058	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Hexachlorobutadiene	ND		0.33	0.082	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Chloro-3-methylphenol	ND		0.33	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Methylnaphthalene	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Hexachlorocyclopentadiene	ND		1.6	0.062	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4,6-Trichlorophenol	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4,5-Trichlorophenol	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Chloronaphthalene	ND		0.33	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Nitroaniline	ND		1.6	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Dimethyl phthalate	ND		0.33	0.087	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Acenaphthylene	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
3-Nitroaniline	ND		1.6	0.17	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
3-Methylphenol & 4-Methylphenol	ND		0.66	0.33	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Acenaphthene	ND		0.33	0.083	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4-Dinitrophenol	ND	*+	1.6	0.21	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Nitrophenol	ND		1.6	0.28	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Dibenzofuran	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,4-Dinitrotoluene	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2,6-Dinitrotoluene	ND		0.33	0.099	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Diethyl phthalate	ND		0.33	0.090	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Chlorophenyl phenyl ether	ND		0.33	0.093	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Fluorene	ND		0.33	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Nitroaniline	ND		1.6	0.088	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
2-Methyl-4,6-dinitrophenol	ND		1.6	0.081	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
N-Nitrosodiphenylamine	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
4-Bromophenyl phenyl ether	ND		0.33	0.085	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Hexachlorobenzene	ND		0.33	0.089	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Pentachlorophenol	ND		1.6	0.051	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Phenanthrene	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Anthracene	ND		0.33	0.086	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Di-n-butyl phthalate	ND		0.33	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1

Client Sample ID: MHSSF-ENV-J@0.5'
Date Collected: 09/22/22 12:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-10
Matrix: Solid
Percent Solids: 98.2

Method: SW846 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Pyrene	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Butyl benzyl phthalate	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
3,3'-Dichlorobenzidine	ND		1.6	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzo[a]anthracene	ND		0.33	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Bis(2-ethylhexyl) phthalate	ND		0.33	0.098	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Chrysene	ND		0.33	0.084	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Di-n-octyl phthalate	ND		0.33	0.097	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzo[b]fluoranthene	ND		0.33	0.095	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzo[a]pyrene	ND		0.33	0.094	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzo[k]fluoranthene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.096	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzo[g,h,i]perylene	ND		0.33	0.11	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Benzoic acid	ND		1.6	0.29	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Azobenzene	ND		0.33	0.092	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Dibenz(a,h)anthracene	ND		0.33	0.10	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1
Pyridine	ND		0.66	0.072	mg/Kg	☼	09/27/22 07:34	09/28/22 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*69*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:52*	*1*
Terphenyl-d14	*92*		*66 - 126*	*09/27/22 07:34*	*09/28/22 18:52*	*1*
2-Fluorophenol	*73*		*53 - 113*	*09/27/22 07:34*	*09/28/22 18:52*	*1*
Phenol-d5	*74*		*54 - 114*	*09/27/22 07:34*	*09/28/22 18:52*	*1*
2,4,6-Tribromophenol	*103*		*60 - 120*	*09/27/22 07:34*	*09/28/22 18:52*	*1*

Method: EPA 8015C - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1.8**	**B**	1.0	0.50	mg/Kg	☼	09/27/22 07:45	09/29/22 05:48	1
Motor Oil Range Organics [C28-C40]	**6.1**		5.0	3.8	mg/Kg	☼	09/27/22 07:45	09/29/22 05:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*66*		*51 - 111*	*09/27/22 07:45*	*09/29/22 05:48*	*1*

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0016	0.00013	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
alpha-BHC	ND		0.0016	0.00015	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
beta-BHC	ND		0.0016	0.00021	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
gamma-BHC (Lindane)	ND		0.0016	0.00013	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
delta-BHC	ND		0.0016	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
cis-Chlordane	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
trans-Chlordane	ND	F1	0.0016	0.00057	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Chlordane (technical)	ND		0.019	0.0090	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
4,4'-DDD	ND		0.0016	0.00022	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
4,4'-DDE	**0.00022**	**J**	0.0016	0.00020	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
4,4'-DDT	**0.00045**	**J**	0.0016	0.00024	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Dieldrin	**0.00045**	**J**	0.0016	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Endosulfan I	ND	F1	0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Endosulfan II	ND	F1	0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Endosulfan sulfate	ND		0.0016	0.00034	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-J@0.5'
Date Collected: 09/22/22 12:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-10
Matrix: Solid
Percent Solids: 98.2

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin	ND		0.0016	0.00019	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Endrin aldehyde	ND		0.0016	0.00055	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Endrin ketone	ND		0.0016	0.00026	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Heptachlor	ND		0.0016	0.00014	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Heptachlor epoxide	ND		0.0016	0.00017	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Methoxychlor	ND		0.0033	0.00054	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1
Toxaphene	ND		0.064	0.021	mg/Kg	☼	09/27/22 10:07	10/06/22 20:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*67*		*46 - 109*	*09/27/22 10:07*	*10/06/22 20:33*	*1*
DCB Decachlorobiphenyl	*75*		*46 - 109*	*09/27/22 10:07*	*10/06/22 20:33*	*1*
Tetrachloro-m-xylene	*67*		*47 - 107*	*09/27/22 10:07*	*10/06/22 20:33*	*1*
Tetrachloro-m-xylene	*63*		*47 - 107*	*09/27/22 10:07*	*10/06/22 20:33*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		32	2.4	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1221	ND		32	3.5	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1232	ND		32	4.6	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1242	ND		32	5.6	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1248	ND		32	2.3	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1254	ND		32	3.6	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1
PCB-1260	ND		32	2.6	ug/Kg	☼	09/27/22 10:56	10/04/22 21:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*110*		*52 - 138*	*09/27/22 10:56*	*10/04/22 21:20*	*1*

Method: SW846 7199 - Chromium, Hexavalent (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.41	0.20	mg/Kg	☼	09/29/22 02:00	09/29/22 10:18	10

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**3.8**		1.9	0.91	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Arsenic	ND		1.9	1.3	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Barium	**9.9**		0.97	0.12	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Beryllium	**0.096**	J	0.19	0.029	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Cadmium	**0.037**	J	0.19	0.029	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Chromium	**5.2**		0.49	0.14	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Cobalt	**0.82**		0.49	0.24	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Copper	**1.7**		1.5	0.21	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Lead	**1.1**		0.97	0.25	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Molybdenum	ND		1.9	0.73	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Nickel	**4.8**		0.97	0.23	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Selenium	ND		1.9	1.4	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Silver	ND		0.49	0.087	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Thallium	ND		1.9	0.82	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Vanadium	**4.3**		0.49	0.18	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1
Zinc	**6.8**		1.9	0.18	mg/Kg	☼	09/26/22 16:00	09/27/22 14:40	1

Client Sample Results

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-J@0.5'

Date Collected: 09/22/22 12:00
Date Received: 09/23/22 18:45

Lab Sample ID: 320-92432-10

Matrix: Solid
Percent Solids: 98.2

Method: SW846 6010B - Metals (ICP) - STLC Citrate

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.049**	**J B**	0.10	0.012	mg/L			10/03/22 13:42	10
Arsenic	ND		0.20	0.12	mg/L			10/03/22 13:42	10
Chromium	**0.034**	**J**	0.10	0.0060	mg/L			10/03/22 13:42	10

Method: SW846 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.039	0.0079	mg/Kg	☼	09/27/22 11:43	09/27/22 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (ASTM D 2216)	**1.8**		0.1	0.1	%			09/26/22 15:18	1

Surrogate Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(63-143)	(55-129)	(32-156)	(63-138)
320-92432-1	MHSSF-ENV-A@0.5'	106	95	95	108
320-92432-2	MHSSF-ENV-B@0.5'	103	93	96	106
320-92432-3	MHSSF-ENV-C@0.5'	104	92	92	106
320-92432-4	MHSSF-ENV-D@0.5'	106	97	98	106
320-92432-5	MHSSF-ENV-E@0.5'	106	95	94	105
320-92432-6	MHSSF-ENV-F@0.5'	101	92	89	104
320-92432-7	MHSSF-ENV-G@0.5'	103	96	91	105
320-92432-8	MHSSF-ENV-H@0.5'	106	96	94	108
320-92432-9	MHSSF-ENV-I@0.5'	104	95	94	106
320-92432-10	MHSSF-ENV-J@0.5'	104	94	93	103
LCS 320-620650/6	Lab Control Sample	103	96	92	104
LCS 320-620650/8	Lab Control Sample	106	97	91	107
LCSD 320-620650/7	Lab Control Sample Dup	102	96	90	103
LCSD 320-620650/9	Lab Control Sample Dup	105	96	92	105
MB 320-620650/11	Method Blank	108	96	92	104

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)				
		NBZ	TPHL	2FP	PHL	TBP
Lab Sample ID	Client Sample ID	(54-114)	(66-126)	(53-113)	(54-114)	(60-120)
320-92432-1	MHSSF-ENV-A@0.5'	61	80	68	70	86
320-92432-1 MS	MHSSF-ENV-A@0.5'	76	92	78	83	100
320-92432-1 MSD	MHSSF-ENV-A@0.5'	79	97	83	90	110
320-92432-2	MHSSF-ENV-B@0.5'	66	92	72	75	99
320-92432-3	MHSSF-ENV-C@0.5'	75	90	80	78	97
320-92432-4	MHSSF-ENV-D@0.5'	63	72	71	74	86
320-92432-5	MHSSF-ENV-E@0.5'	75	89	79	80	99
320-92432-6	MHSSF-ENV-F@0.5'	66	89	75	79	103
320-92432-7	MHSSF-ENV-G@0.5'	71	87	76	76	94
320-92432-8	MHSSF-ENV-H@0.5'	73	90	79	78	99
320-92432-9	MHSSF-ENV-I@0.5'	72	92	75	77	100
320-92432-10	MHSSF-ENV-J@0.5'	69	92	73	74	103
LCS 320-620314/2-A	Lab Control Sample	86	94	93	95	107
MB 320-620314/1-A	Method Blank	89	98	99	99	109

Surrogate Legend

NBZ = Nitrobenzene-d5
TPHL = Terphenyl-d14
2FP = 2-Fluorophenol
PHL = Phenol-d5
TBP = 2,4,6-Tribromophenol

Surrogate Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Method: 8015C - Diesel Range Organics (DRO) (GC)

Matrix: Solid — **Prep Type: Silica Gel Cleanup**

		Percent Surrogate Recovery (Acceptance Limits)						
		OTPH1						
Lab Sample ID	Client Sample ID	(51-111)						
320-92432-1	MHSSF-ENV-A@0.5'	64						
320-92432-2	MHSSF-ENV-B@0.5'	66						
320-92432-3	MHSSF-ENV-C@0.5'	66						
320-92432-4	MHSSF-ENV-D@0.5'	162 S1+						
320-92432-5	MHSSF-ENV-E@0.5'	67						
320-92432-6	MHSSF-ENV-F@0.5'	48 S1-						
320-92432-7	MHSSF-ENV-G@0.5'	54						
320-92432-8	MHSSF-ENV-H@0.5'	62						
320-92432-9	MHSSF-ENV-I@0.5'	57						
320-92432-10	MHSSF-ENV-J@0.5'	66						
320-92432-10 MS	MHSSF-ENV-J@0.5'	65						
320-92432-10 MSD	MHSSF-ENV-J@0.5'	67						
LCS 320-620320/2-A	Lab Control Sample	66						
MB 320-620320/1-A	Method Blank	67						

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		DCBP1	DCBP2	TCX1	TCX2			
Lab Sample ID	Client Sample ID	(46-109)	(46-109)	(47-107)	(47-107)			
320-92432-1	MHSSF-ENV-A@0.5'	74	79	64	58			
320-92432-2	MHSSF-ENV-B@0.5'	69	77	64	59			
320-92432-3	MHSSF-ENV-C@0.5'	70	78	65	58			
320-92432-4	MHSSF-ENV-D@0.5'	48	49	35 p S1-	57			
320-92432-5	MHSSF-ENV-E@0.5'	54	64	62	64			
320-92432-6	MHSSF-ENV-F@0.5'	71	78	69	64			
320-92432-7	MHSSF-ENV-G@0.5'	73	81	69	63			
320-92432-8	MHSSF-ENV-H@0.5'	65	73	69	60			
320-92432-9	MHSSF-ENV-I@0.5'	68	75	67	62			
320-92432-10	MHSSF-ENV-J@0.5'	67	75	67	63			
320-92432-10 MS	MHSSF-ENV-J@0.5'	61		63				
320-92432-10 MSD	MHSSF-ENV-J@0.5'	72		77				
LCS 320-620354/2-A	Lab Control Sample	89		94				
LCS 320-620354/3-A	Lab Control Sample	70		64				
LCS 320-620354/4-A	Lab Control Sample	68		61				
MB 320-620354/1-A	Method Blank	61	66	72	63			

Surrogate Legend

DCBP = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
		DCBP1						
Lab Sample ID	Client Sample ID	(52-138)						
320-92432-1	MHSSF-ENV-A@0.5'	114						

Surrogate Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	DCBP1 (52-138)						
320-92432-2	MHSSF-ENV-B@0.5'	116						
320-92432-3	MHSSF-ENV-C@0.5'	103						
320-92432-4	MHSSF-ENV-D@0.5'	61						
320-92432-5	MHSSF-ENV-E@0.5'	97						
320-92432-6	MHSSF-ENV-F@0.5'	130						
320-92432-7	MHSSF-ENV-G@0.5'	124						
320-92432-8	MHSSF-ENV-H@0.5'	114						
320-92432-9	MHSSF-ENV-I@0.5'	106						
320-92432-10	MHSSF-ENV-J@0.5'	110						
320-92432-10 MS	MHSSF-ENV-J@0.5'	117						
320-92432-10 MSD	MHSSF-ENV-J@0.5'	112						
LCS 320-620369/2-A	Lab Control Sample	123						
MB 320-620369/1-A	Method Blank	120						

Surrogate Legend

DCBP = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-620650/11
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.010	0.00060	mg/Kg			09/28/22 12:07	1
Acetone	ND		0.020	0.0014	mg/Kg			09/28/22 12:07	1
Benzene	ND		0.0050	0.00026	mg/Kg			09/28/22 12:07	1
Dichlorobromomethane	ND		0.0050	0.00053	mg/Kg			09/28/22 12:07	1
Bromobenzene	ND		0.0050	0.00052	mg/Kg			09/28/22 12:07	1
Chlorobromomethane	ND		0.0050	0.00094	mg/Kg			09/28/22 12:07	1
Bromoform	ND		0.0050	0.00040	mg/Kg			09/28/22 12:07	1
Bromomethane	ND		0.0050	0.00086	mg/Kg			09/28/22 12:07	1
2-Butanone (MEK)	ND		0.010	0.0014	mg/Kg			09/28/22 12:07	1
n-Butylbenzene	ND		0.0050	0.00066	mg/Kg			09/28/22 12:07	1
sec-Butylbenzene	ND		0.0050	0.00075	mg/Kg			09/28/22 12:07	1
tert-Butylbenzene	ND		0.0050	0.00054	mg/Kg			09/28/22 12:07	1
Carbon disulfide	ND		0.010	0.00049	mg/Kg			09/28/22 12:07	1
Carbon tetrachloride	ND		0.0050	0.00053	mg/Kg			09/28/22 12:07	1
Chlorobenzene	ND		0.0050	0.00029	mg/Kg			09/28/22 12:07	1
Chloroethane	ND		0.0050	0.00045	mg/Kg			09/28/22 12:07	1
Chloroform	ND		0.0050	0.00026	mg/Kg			09/28/22 12:07	1
Chloromethane	ND		0.0050	0.00050	mg/Kg			09/28/22 12:07	1
2-Chlorotoluene	ND		0.0050	0.00062	mg/Kg			09/28/22 12:07	1
4-Chlorotoluene	ND		0.0050	0.00086	mg/Kg			09/28/22 12:07	1
Chlorodibromomethane	ND		0.0050	0.00021	mg/Kg			09/28/22 12:07	1
1,2-Dichlorobenzene	ND		0.0050	0.00064	mg/Kg			09/28/22 12:07	1
1,3-Dichlorobenzene	ND		0.0050	0.00030	mg/Kg			09/28/22 12:07	1
1,4-Dichlorobenzene	ND		0.0050	0.00078	mg/Kg			09/28/22 12:07	1
1,3-Dichloropropane	ND		0.0050	0.00057	mg/Kg			09/28/22 12:07	1
1,1-Dichloropropene	ND		0.0050	0.00037	mg/Kg			09/28/22 12:07	1
1,2-Dibromo-3-Chloropropane	ND		0.010	0.00088	mg/Kg			09/28/22 12:07	1
Ethylene Dibromide	ND		0.010	0.00027	mg/Kg			09/28/22 12:07	1
Dibromomethane	ND		0.0050	0.00058	mg/Kg			09/28/22 12:07	1
Dichlorodifluoromethane	ND		0.0050	0.00089	mg/Kg			09/28/22 12:07	1
1,1-Dichloroethane	ND		0.0050	0.00029	mg/Kg			09/28/22 12:07	1
1,2-Dichloroethane	ND		0.0050	0.00073	mg/Kg			09/28/22 12:07	1
1,1-Dichloroethene	ND		0.0050	0.00026	mg/Kg			09/28/22 12:07	1
cis-1,2-Dichloroethene	ND		0.0050	0.00089	mg/Kg			09/28/22 12:07	1
trans-1,2-Dichloroethene	ND		0.0050	0.00038	mg/Kg			09/28/22 12:07	1
1,2-Dichloropropane	ND		0.0050	0.00060	mg/Kg			09/28/22 12:07	1
cis-1,3-Dichloropropene	ND		0.0050	0.00064	mg/Kg			09/28/22 12:07	1
trans-1,3-Dichloropropene	ND		0.0050	0.00075	mg/Kg			09/28/22 12:07	1
Ethylbenzene	ND		0.0050	0.00034	mg/Kg			09/28/22 12:07	1
Hexachlorobutadiene	ND		0.0050	0.00033	mg/Kg			09/28/22 12:07	1
2-Hexanone	ND		0.010	0.00074	mg/Kg			09/28/22 12:07	1
Isopropylbenzene	ND		0.0050	0.00052	mg/Kg			09/28/22 12:07	1
4-Isopropyltoluene	ND		0.0050	0.00063	mg/Kg			09/28/22 12:07	1
Methylene Chloride	ND		0.010	0.00084	mg/Kg			09/28/22 12:07	1
4-Methyl-2-pentanone (MIBK)	ND		0.010	0.00092	mg/Kg			09/28/22 12:07	1
Naphthalene	ND		0.0050	0.00063	mg/Kg			09/28/22 12:07	1
N-Propylbenzene	ND		0.0050	0.00029	mg/Kg			09/28/22 12:07	1
Styrene	ND		0.0050	0.00031	mg/Kg			09/28/22 12:07	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-620650/11
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.0050	0.00041	mg/Kg			09/28/22 12:07	1
1,1,2,2-Tetrachloroethane	ND		0.0050	0.00068	mg/Kg			09/28/22 12:07	1
Tetrachloroethene	ND		0.0050	0.00061	mg/Kg			09/28/22 12:07	1
Toluene	ND		0.0050	0.00061	mg/Kg			09/28/22 12:07	1
1,2,3-Trichlorobenzene	ND		0.0050	0.00075	mg/Kg			09/28/22 12:07	1
1,2,4-Trichlorobenzene	ND		0.0050	0.00075	mg/Kg			09/28/22 12:07	1
1,1,1-Trichloroethane	ND		0.0050	0.00036	mg/Kg			09/28/22 12:07	1
1,1,2-Trichloroethane	ND		0.0050	0.00044	mg/Kg			09/28/22 12:07	1
Trichloroethene	ND		0.0050	0.00060	mg/Kg			09/28/22 12:07	1
Trichlorofluoromethane	ND		0.0050	0.00034	mg/Kg			09/28/22 12:07	1
1,2,3-Trichloropropane	ND		0.0050	0.00076	mg/Kg			09/28/22 12:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.010	0.00083	mg/Kg			09/28/22 12:07	1
1,2,4-Trimethylbenzene	ND		0.0050	0.00051	mg/Kg			09/28/22 12:07	1
1,3,5-Trimethylbenzene	ND		0.0050	0.00035	mg/Kg			09/28/22 12:07	1
Vinyl acetate	ND		0.010	0.00069	mg/Kg			09/28/22 12:07	1
Vinyl chloride	ND		0.0050	0.00036	mg/Kg			09/28/22 12:07	1
Xylenes, Total	ND		0.0050	0.00081	mg/Kg			09/28/22 12:07	1
2,2-Dichloropropane	ND		0.0050	0.00038	mg/Kg			09/28/22 12:07	1
Gasoline Range Organics (C4-C12)	ND		500	50	ug/Kg			09/28/22 12:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*63 - 143*		*09/28/22 12:07*	*1*
Dibromofluoromethane (Surr)	*96*		*55 - 129*		*09/28/22 12:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*92*		*32 - 156*		*09/28/22 12:07*	*1*
Toluene-d8 (Surr)	*104*		*63 - 138*		*09/28/22 12:07*	*1*

Lab Sample ID: LCS 320-620650/6
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl tert-butyl ether	0.0500	0.0454		mg/Kg		91	66 - 146
Acetone	0.125	0.121		mg/Kg		96	64 - 128
Benzene	0.0500	0.0486		mg/Kg		97	78 - 128
Dichlorobromomethane	0.0500	0.0463		mg/Kg		93	80 - 137
Bromobenzene	0.0500	0.0480		mg/Kg		96	67 - 132
Chlorobromomethane	0.0500	0.0451		mg/Kg		90	80 - 127
Bromoform	0.0500	0.0461		mg/Kg		92	80 - 136
Bromomethane	0.0500	0.0492		mg/Kg		98	48 - 164
2-Butanone (MEK)	0.125	0.118		mg/Kg		94	71 - 142
n-Butylbenzene	0.0500	0.0462		mg/Kg		92	68 - 136
sec-Butylbenzene	0.0500	0.0460		mg/Kg		92	68 - 131
tert-Butylbenzene	0.0500	0.0450		mg/Kg		90	67 - 131
Carbon disulfide	0.0500	0.0514		mg/Kg		103	52 - 145
Carbon tetrachloride	0.0500	0.0514		mg/Kg		103	62 - 154
Chlorobenzene	0.0500	0.0484		mg/Kg		97	74 - 125
Chloroethane	0.0500	0.0505		mg/Kg		101	54 - 148
Chloroform	0.0500	0.0472		mg/Kg		94	78 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-620650/6
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	0.0500	0.0480		mg/Kg		96	60 - 141
2-Chlorotoluene	0.0500	0.0500		mg/Kg		100	64 - 127
4-Chlorotoluene	0.0500	0.0496		mg/Kg		99	67 - 128
Chlorodibromomethane	0.0500	0.0466		mg/Kg		93	80 - 133
1,2-Dichlorobenzene	0.0500	0.0484		mg/Kg		97	68 - 121
1,3-Dichlorobenzene	0.0500	0.0493		mg/Kg		99	64 - 126
1,4-Dichlorobenzene	0.0500	0.0488		mg/Kg		98	65 - 124
1,3-Dichloropropane	0.0500	0.0471		mg/Kg		94	80 - 123
1,1-Dichloropropene	0.0500	0.0520		mg/Kg		104	76 - 132
1,2-Dibromo-3-Chloropropane	0.0500	0.0485		mg/Kg		97	75 - 137
Ethylene Dibromide	0.0500	0.0467		mg/Kg		93	80 - 124
Dibromomethane	0.0500	0.0454		mg/Kg		91	80 - 129
Dichlorodifluoromethane	0.0500	0.0468		mg/Kg		94	60 - 130
1,1-Dichloroethane	0.0500	0.0484		mg/Kg		97	76 - 134
1,2-Dichloroethane	0.0500	0.0451		mg/Kg		90	66 - 150
1,1-Dichloroethene	0.0500	0.0519		mg/Kg		104	66 - 136
cis-1,2-Dichloroethene	0.0500	0.0475		mg/Kg		95	74 - 131
trans-1,2-Dichloroethene	0.0500	0.0507		mg/Kg		101	67 - 135
1,2-Dichloropropane	0.0500	0.0469		mg/Kg		94	80 - 129
cis-1,3-Dichloropropene	0.0500	0.0471		mg/Kg		94	80 - 134
trans-1,3-Dichloropropene	0.0500	0.0458		mg/Kg		92	80 - 148
Ethylbenzene	0.0500	0.0501		mg/Kg		100	72 - 125
Hexachlorobutadiene	0.0500	0.0458		mg/Kg		92	52 - 140
2-Hexanone	0.125	0.125		mg/Kg		100	78 - 143
Isopropylbenzene	0.0500	0.0511		mg/Kg		102	69 - 137
4-Isopropyltoluene	0.0500	0.0459		mg/Kg		92	64 - 137
Methylene Chloride	0.0500	0.0467		mg/Kg		93	77 - 125
4-Methyl-2-pentanone (MIBK)	0.125	0.126		mg/Kg		101	79 - 150
Naphthalene	0.0500	0.0473		mg/Kg		95	53 - 140
N-Propylbenzene	0.0500	0.0527		mg/Kg		105	63 - 128
Styrene	0.0500	0.0490		mg/Kg		98	79 - 128
1,1,1,2-Tetrachloroethane	0.0500	0.0472		mg/Kg		94	77 - 134
1,1,2,2-Tetrachloroethane	0.0500	0.0485		mg/Kg		97	71 - 134
Tetrachloroethene	0.0500	0.0488		mg/Kg		98	65 - 135
Toluene	0.0500	0.0494		mg/Kg		99	80 - 124
1,2,3-Trichlorobenzene	0.0500	0.0483		mg/Kg		97	54 - 140
1,2,4-Trichlorobenzene	0.0500	0.0435		mg/Kg		87	48 - 145
1,1,1-Trichloroethane	0.0500	0.0500		mg/Kg		100	67 - 150
1,1,2-Trichloroethane	0.0500	0.0455		mg/Kg		91	80 - 128
Trichloroethene	0.0500	0.0491		mg/Kg		98	80 - 126
Trichlorofluoromethane	0.0500	0.0494		mg/Kg		99	43 - 158
1,2,3-Trichloropropane	0.0500	0.0472		mg/Kg		94	71 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0500	0.0497		mg/Kg		99	62 - 138
1,2,4-Trimethylbenzene	0.0500	0.0513		mg/Kg		103	64 - 137
1,3,5-Trimethylbenzene	0.0500	0.0454		mg/Kg		91	66 - 135
Vinyl acetate	0.0500	0.0460		mg/Kg		92	39 - 160
Vinyl chloride	0.0500	0.0502		mg/Kg		100	67 - 127
m-Xylene & p-Xylene	0.0500	0.0506		mg/Kg		101	73 - 128

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-620650/6
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
o-Xylene			0.0500	0.0496		mg/Kg		99	76 - 127		
Xylenes, Total			0.100	0.100		mg/Kg		100	75 - 122		
2,2-Dichloropropane			0.0500	0.0514		mg/Kg		103	69 - 153		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*63 - 143*
Dibromofluoromethane (Surr)	*96*		*55 - 129*
1,2-Dichloroethane-d4 (Surr)	*92*		*32 - 156*
Toluene-d8 (Surr)	*104*		*63 - 138*

Lab Sample ID: LCS 320-620650/8
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C12)			1000	1190		ug/Kg		119	79 - 123		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*63 - 143*
Dibromofluoromethane (Surr)	*97*		*55 - 129*
1,2-Dichloroethane-d4 (Surr)	*91*		*32 - 156*
Toluene-d8 (Surr)	*107*		*63 - 138*

Lab Sample ID: LCSD 320-620650/7
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl tert-butyl ether			0.0500	0.0509		mg/Kg		102	66 - 146	11	45
Acetone			0.125	0.129		mg/Kg		103	64 - 128	7	36
Benzene			0.0500	0.0512		mg/Kg		102	78 - 128	5	37
Dichlorobromomethane			0.0500	0.0493		mg/Kg		99	80 - 137	6	37
Bromobenzene			0.0500	0.0510		mg/Kg		102	67 - 132	6	40
Chlorobromomethane			0.0500	0.0501		mg/Kg		100	80 - 127	10	36
Bromoform			0.0500	0.0487		mg/Kg		97	80 - 136	6	45
Bromomethane			0.0500	0.0544		mg/Kg		109	48 - 164	10	38
2-Butanone (MEK)			0.125	0.121		mg/Kg		97	71 - 142	3	44
n-Butylbenzene			0.0500	0.0515		mg/Kg		103	68 - 136	11	37
sec-Butylbenzene			0.0500	0.0511		mg/Kg		102	68 - 131	11	40
tert-Butylbenzene			0.0500	0.0491		mg/Kg		98	67 - 131	9	42
Carbon disulfide			0.0500	0.0545		mg/Kg		109	52 - 145	6	46
Carbon tetrachloride			0.0500	0.0541		mg/Kg		108	62 - 154	5	43
Chlorobenzene			0.0500	0.0515		mg/Kg		103	74 - 125	6	38
Chloroethane			0.0500	0.0543		mg/Kg		109	54 - 148	7	34
Chloroform			0.0500	0.0516		mg/Kg		103	78 - 135	9	23
Chloromethane			0.0500	0.0506		mg/Kg		101	60 - 141	5	36
2-Chlorotoluene			0.0500	0.0546		mg/Kg		109	64 - 127	9	41

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-620650/7
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4-Chlorotoluene	0.0500	0.0541		mg/Kg		108	67 - 128	9	40
Chlorodibromomethane	0.0500	0.0494		mg/Kg		99	80 - 133	6	24
1,2-Dichlorobenzene	0.0500	0.0538		mg/Kg		108	68 - 121	10	28
1,3-Dichlorobenzene	0.0500	0.0543		mg/Kg		109	64 - 126	10	41
1,4-Dichlorobenzene	0.0500	0.0528		mg/Kg		106	65 - 124	8	38
1,3-Dichloropropane	0.0500	0.0489		mg/Kg		98	80 - 123	4	39
1,1-Dichloropropene	0.0500	0.0541		mg/Kg		108	76 - 132	4	38
1,2-Dibromo-3-Chloropropane	0.0500	0.0513		mg/Kg		103	75 - 137	6	48
Ethylene Dibromide	0.0500	0.0488		mg/Kg		98	80 - 124	4	39
Dibromomethane	0.0500	0.0481		mg/Kg		96	80 - 129	6	37
Dichlorodifluoromethane	0.0500	0.0490		mg/Kg		98	60 - 130	5	46
1,1-Dichloroethane	0.0500	0.0526		mg/Kg		105	76 - 134	8	24
1,2-Dichloroethane	0.0500	0.0485		mg/Kg		97	66 - 150	7	36
1,1-Dichloroethene	0.0500	0.0547		mg/Kg		109	66 - 136	5	42
cis-1,2-Dichloroethene	0.0500	0.0515		mg/Kg		103	74 - 131	8	37
trans-1,2-Dichloroethene	0.0500	0.0544		mg/Kg		109	67 - 135	7	37
1,2-Dichloropropane	0.0500	0.0498		mg/Kg		100	80 - 129	6	38
cis-1,3-Dichloropropene	0.0500	0.0489		mg/Kg		98	80 - 134	4	39
trans-1,3-Dichloropropene	0.0500	0.0473		mg/Kg		95	80 - 148	3	42
Ethylbenzene	0.0500	0.0535		mg/Kg		107	72 - 125	6	41
Hexachlorobutadiene	0.0500	0.0531		mg/Kg		106	52 - 140	15	38
2-Hexanone	0.125	0.128		mg/Kg		103	78 - 143	3	73
Isopropylbenzene	0.0500	0.0559		mg/Kg		112	69 - 137	9	41
4-Isopropyltoluene	0.0500	0.0507		mg/Kg		101	64 - 137	10	40
Methylene Chloride	0.0500	0.0510		mg/Kg		102	77 - 125	9	25
4-Methyl-2-pentanone (MIBK)	0.125	0.130		mg/Kg		104	79 - 150	3	48
Naphthalene	0.0500	0.0541		mg/Kg		108	53 - 140	13	46
N-Propylbenzene	0.0500	0.0565		mg/Kg		113	63 - 128	7	42
Styrene	0.0500	0.0523		mg/Kg		105	79 - 128	7	40
1,1,1,2-Tetrachloroethane	0.0500	0.0518		mg/Kg		104	77 - 134	9	25
1,1,2,2-Tetrachloroethane	0.0500	0.0508		mg/Kg		102	71 - 134	5	31
Tetrachloroethene	0.0500	0.0505		mg/Kg		101	65 - 135	4	39
Toluene	0.0500	0.0516		mg/Kg		103	80 - 124	4	39
1,2,3-Trichlorobenzene	0.0500	0.0555		mg/Kg		111	54 - 140	14	42
1,2,4-Trichlorobenzene	0.0500	0.0502		mg/Kg		100	48 - 145	14	39
1,1,1-Trichloroethane	0.0500	0.0536		mg/Kg		107	67 - 150	7	43
1,1,2-Trichloroethane	0.0500	0.0478		mg/Kg		96	80 - 128	5	41
Trichloroethene	0.0500	0.0531		mg/Kg		106	80 - 126	8	40
Trichlorofluoromethane	0.0500	0.0521		mg/Kg		104	43 - 158	5	32
1,2,3-Trichloropropane	0.0500	0.0495		mg/Kg		99	71 - 132	5	41
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0500	0.0538		mg/Kg		108	62 - 138	8	22
1,2,4-Trimethylbenzene	0.0500	0.0561		mg/Kg		112	64 - 137	9	41
1,3,5-Trimethylbenzene	0.0500	0.0491		mg/Kg		98	66 - 135	8	42
Vinyl acetate	0.0500	0.0481		mg/Kg		96	39 - 160	4	50
Vinyl chloride	0.0500	0.0533		mg/Kg		107	67 - 127	6	37
m-Xylene & p-Xylene	0.0500	0.0541		mg/Kg		108	73 - 128	7	40
o-Xylene	0.0500	0.0538		mg/Kg		108	76 - 127	8	40
Xylenes, Total	0.100	0.108		mg/Kg		108	75 - 122	7	15

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 320-620650/7
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,2-Dichloropropane			0.0500	0.0545		mg/Kg		109	69 - 153	6	47

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*63 - 143*
Dibromofluoromethane (Surr)	*96*		*55 - 129*
1,2-Dichloroethane-d4 (Surr)	*90*		*32 - 156*
Toluene-d8 (Surr)	*103*		*63 - 138*

Lab Sample ID: LCSD 320-620650/9
Matrix: Solid
Analysis Batch: 620650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C12)			1000	1100		ug/Kg		110	79 - 123	7	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*63 - 143*
Dibromofluoromethane (Surr)	*96*		*55 - 129*
1,2-Dichloroethane-d4 (Surr)	*92*		*32 - 156*
Toluene-d8 (Surr)	*105*		*63 - 138*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 320-620314/1-A
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.33	0.083	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Bis(2-chloroethyl)ether	ND		0.33	0.081	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Chlorophenol	ND		0.33	0.088	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
1,3-Dichlorobenzene	ND		0.33	0.078	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
1,4-Dichlorobenzene	ND		0.33	0.077	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzyl alcohol	ND		0.33	0.17	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
1,2-Dichlorobenzene	ND		0.33	0.075	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Methylphenol	ND		0.33	0.058	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
N-Nitrosodi-n-propylamine	ND		0.33	0.084	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Hexachloroethane	ND		0.33	0.081	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Nitrobenzene	ND		0.33	0.076	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Isophorone	ND		0.33	0.093	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Nitrophenol	ND		0.33	0.082	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4-Dimethylphenol	ND		0.33	0.17	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Bis(2-chloroethoxy)methane	ND		0.33	0.088	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4-Dichlorophenol	ND		0.33	0.089	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
1,2,4-Trichlorobenzene	ND		0.33	0.083	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Naphthalene	ND		0.33	0.082	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
4-Chloroaniline	ND		0.33	0.058	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Hexachlorobutadiene	ND		0.33	0.082	mg/Kg		09/27/22 07:34	09/28/22 13:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-620314/1-A
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620314

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloro-3-methylphenol	ND		0.33	0.092	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Methylnaphthalene	ND		0.33	0.085	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Hexachlorocyclopentadiene	ND		1.6	0.062	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4,6-Trichlorophenol	ND		0.33	0.084	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4,5-Trichlorophenol	ND		0.33	0.083	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Chloronaphthalene	ND		0.33	0.081	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Nitroaniline	ND		1.6	0.084	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Dimethyl phthalate	ND		0.33	0.087	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Acenaphthylene	ND		0.33	0.085	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
3-Nitroaniline	ND		1.6	0.17	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
3-Methylphenol & 4-Methylphenol	ND		0.66	0.33	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Acenaphthene	ND		0.33	0.083	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4-Dinitrophenol	ND		1.6	0.21	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
4-Nitrophenol	ND		1.6	0.28	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Dibenzofuran	ND		0.33	0.086	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,4-Dinitrotoluene	ND		0.33	0.089	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2,6-Dinitrotoluene	ND		0.33	0.099	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Diethyl phthalate	ND		0.33	0.090	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
4-Chlorophenyl phenyl ether	ND		0.33	0.093	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Fluorene	ND		0.33	0.092	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
4-Nitroaniline	ND		1.6	0.088	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
2-Methyl-4,6-dinitrophenol	ND		1.6	0.081	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
N-Nitrosodiphenylamine	ND		0.33	0.086	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
4-Bromophenyl phenyl ether	ND		0.33	0.085	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Hexachlorobenzene	ND		0.33	0.089	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Pentachlorophenol	ND		1.6	0.051	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Phenanthrene	ND		0.33	0.094	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Anthracene	ND		0.33	0.086	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Di-n-butyl phthalate	ND		0.33	0.097	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Fluoranthene	ND		0.33	0.095	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Pyrene	ND		0.33	0.094	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Butyl benzyl phthalate	ND		0.33	0.095	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
3,3'-Dichlorobenzidine	ND		1.6	0.094	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzo[a]anthracene	ND		0.33	0.092	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Bis(2-ethylhexyl) phthalate	ND		0.33	0.098	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Chrysene	ND		0.33	0.084	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Di-n-octyl phthalate	ND		0.33	0.097	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzo[b]fluoranthene	ND		0.33	0.095	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzo[a]pyrene	ND		0.33	0.094	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzo[k]fluoranthene	ND		0.33	0.11	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Indeno[1,2,3-cd]pyrene	ND		0.33	0.096	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzo[g,h,i]perylene	ND		0.33	0.11	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Benzoic acid	ND		1.6	0.29	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Azobenzene	ND		0.33	0.092	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Dibenz(a,h)anthracene	ND		0.33	0.10	mg/Kg		09/27/22 07:34	09/28/22 13:30	1
Pyridine	ND		0.66	0.072	mg/Kg		09/27/22 07:34	09/28/22 13:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 320-620314/1-A
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620314

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	89		54 - 114	09/27/22 07:34	09/28/22 13:30	1
Terphenyl-d14	98		66 - 126	09/27/22 07:34	09/28/22 13:30	1
2-Fluorophenol	99		53 - 113	09/27/22 07:34	09/28/22 13:30	1
Phenol-d5	99		54 - 114	09/27/22 07:34	09/28/22 13:30	1
2,4,6-Tribromophenol	109		60 - 120	09/27/22 07:34	09/28/22 13:30	1

Lab Sample ID: LCS 320-620314/2-A
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phenol	3.33	3.08		mg/Kg		92	53 - 113
Bis(2-chloroethyl)ether	3.33	2.86		mg/Kg		86	47 - 107
2-Chlorophenol	3.33	3.07		mg/Kg		92	50 - 110
1,3-Dichlorobenzene	3.33	2.71		mg/Kg		81	42 - 102
1,4-Dichlorobenzene	3.33	2.74		mg/Kg		82	44 - 104
Benzyl alcohol	3.33	3.09		mg/Kg		93	53 - 113
1,2-Dichlorobenzene	3.33	2.79		mg/Kg		84	44 - 104
2-Methylphenol	3.33	3.17		mg/Kg		95	53 - 113
N-Nitrosodi-n-propylamine	3.33	3.02		mg/Kg		90	50 - 110
Hexachloroethane	3.33	2.71		mg/Kg		81	44 - 104
Nitrobenzene	3.33	2.90		mg/Kg		87	50 - 110
Isophorone	3.33	2.89		mg/Kg		87	50 - 110
2-Nitrophenol	3.33	3.14		mg/Kg		94	55 - 115
2,4-Dimethylphenol	3.33	3.11		mg/Kg		93	53 - 113
Bis(2-chloroethoxy)methane	3.33	2.97		mg/Kg		89	50 - 110
2,4-Dichlorophenol	3.33	3.16		mg/Kg		95	56 - 116
1,2,4-Trichlorobenzene	3.33	2.88		mg/Kg		86	45 - 105
Naphthalene	3.33	2.86		mg/Kg		86	44 - 104
4-Chloroaniline	3.33	2.57		mg/Kg		77	29 - 89
Hexachlorobutadiene	3.33	2.88		mg/Kg		86	46 - 106
4-Chloro-3-methylphenol	3.33	3.23		mg/Kg		97	61 - 121
2-Methylnaphthalene	3.33	2.80		mg/Kg		84	48 - 108
Hexachlorocyclopentadiene	3.33	2.52		mg/Kg		76	41 - 101
2,4,6-Trichlorophenol	3.33	3.32		mg/Kg		100	57 - 117
2,4,5-Trichlorophenol	3.33	3.39		mg/Kg		102	58 - 118
2-Chloronaphthalene	3.33	3.01		mg/Kg		90	47 - 107
2-Nitroaniline	3.33	3.21		mg/Kg		96	60 - 120
Dimethyl phthalate	3.33	3.14		mg/Kg		94	53 - 113
Acenaphthylene	3.33	3.04		mg/Kg		91	50 - 110
3-Nitroaniline	3.33	2.84		mg/Kg		85	38 - 98
3-Methylphenol & 4-Methylphenol	3.33	3.17		mg/Kg		95	53 - 113
Acenaphthene	3.33	3.07		mg/Kg		92	48 - 108
2,4-Dinitrophenol	6.67	6.70	*+	mg/Kg		101	10 - 100
4-Nitrophenol	6.67	6.61		mg/Kg		99	57 - 117
Dibenzofuran	3.33	3.10		mg/Kg		93	50 - 110
2,4-Dinitrotoluene	3.33	3.36		mg/Kg		101	61 - 121
2,6-Dinitrotoluene	3.33	3.30		mg/Kg		99	60 - 120

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 320-620314/2-A
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diethyl phthalate	3.33	3.17		mg/Kg		95	54 - 114
4-Chlorophenyl phenyl ether	3.33	3.17		mg/Kg		95	52 - 112
Fluorene	3.33	3.11		mg/Kg		93	51 - 111
4-Nitroaniline	3.33	3.26		mg/Kg		98	57 - 117
2-Methyl-4,6-dinitrophenol	6.67	6.87		mg/Kg		103	33 - 107
N-Nitrosodiphenylamine	3.33	3.08		mg/Kg		92	55 - 115
4-Bromophenyl phenyl ether	3.33	3.20		mg/Kg		96	57 - 117
Hexachlorobenzene	3.33	3.26		mg/Kg		98	60 - 120
Pentachlorophenol	6.67	7.10		mg/Kg		107	57 - 117
Phenanthrene	3.33	3.05		mg/Kg		91	53 - 113
Anthracene	3.33	3.10		mg/Kg		93	55 - 115
Di-n-butyl phthalate	3.33	3.11		mg/Kg		93	61 - 121
Fluoranthene	3.33	3.06		mg/Kg		92	57 - 117
Pyrene	3.33	3.20		mg/Kg		96	62 - 122
Butyl benzyl phthalate	3.33	3.17		mg/Kg		95	66 - 126
3,3'-Dichlorobenzidine	3.33	2.52		mg/Kg		76	33 - 93
Benzo[a]anthracene	3.33	3.10		mg/Kg		93	62 - 122
Bis(2-ethylhexyl) phthalate	3.33	3.08		mg/Kg		92	66 - 126
Chrysene	3.33	3.12		mg/Kg		94	59 - 119
Di-n-octyl phthalate	3.33	3.05		mg/Kg		92	66 - 126
Benzo[b]fluoranthene	3.33	3.16		mg/Kg		95	64 - 124
Benzo[a]pyrene	3.33	3.16		mg/Kg		95	67 - 127
Benzo[k]fluoranthene	3.33	3.17		mg/Kg		95	64 - 124
Indeno[1,2,3-cd]pyrene	3.33	3.32		mg/Kg		100	65 - 125
Benzo[g,h,i]perylene	3.33	3.15		mg/Kg		94	64 - 124
Benzoic acid	6.67	5.49		mg/Kg		82	10 - 121
Azobenzene	3.33	3.02		mg/Kg		91	54 - 114
Dibenz(a,h)anthracene	3.33	3.21		mg/Kg		96	64 - 124
Pyridine	6.67	4.14		mg/Kg		62	28 - 88

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5	*86*		*54 - 114*
Terphenyl-d14	*94*		*66 - 126*
2-Fluorophenol	*93*		*53 - 113*
Phenol-d5	*95*		*54 - 114*
2,4,6-Tribromophenol	*107*		*60 - 120*

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phenol	ND		3.39	2.75		mg/Kg	☼	81	53 - 113
Bis(2-chloroethyl)ether	ND		3.39	2.43		mg/Kg	☼	72	47 - 107
2-Chlorophenol	ND		3.39	2.71		mg/Kg	☼	80	50 - 110
1,3-Dichlorobenzene	ND		3.39	2.21		mg/Kg	☼	65	42 - 102
1,4-Dichlorobenzene	ND		3.39	2.24		mg/Kg	☼	66	44 - 104
Benzyl alcohol	ND		3.39	2.78		mg/Kg	☼	82	53 - 113

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	ND		3.39	2.31		mg/Kg	☼	68	44 - 104
2-Methylphenol	ND		3.39	2.88		mg/Kg	☼	85	53 - 113
N-Nitrosodi-n-propylamine	ND		3.39	2.70		mg/Kg	☼	80	50 - 110
Hexachloroethane	ND		3.39	2.22		mg/Kg	☼	66	44 - 104
Nitrobenzene	ND		3.39	2.60		mg/Kg	☼	77	50 - 110
Isophorone	ND		3.39	2.70		mg/Kg	☼	80	50 - 110
2-Nitrophenol	ND		3.39	2.83		mg/Kg	☼	83	55 - 115
2,4-Dimethylphenol	ND		3.39	2.94		mg/Kg	☼	87	53 - 113
Bis(2-chloroethoxy)methane	ND		3.39	2.72		mg/Kg	☼	80	50 - 110
2,4-Dichlorophenol	ND		3.39	3.00		mg/Kg	☼	89	56 - 116
1,2,4-Trichlorobenzene	ND		3.39	2.55		mg/Kg	☼	75	45 - 105
Naphthalene	ND		3.39	2.55		mg/Kg	☼	75	44 - 104
4-Chloroaniline	ND		3.39	2.33		mg/Kg	☼	69	29 - 89
Hexachlorobutadiene	ND		3.39	2.51		mg/Kg	☼	74	46 - 106
4-Chloro-3-methylphenol	ND		3.39	3.11		mg/Kg	☼	92	61 - 121
2-Methylnaphthalene	ND		3.39	2.57		mg/Kg	☼	76	48 - 108
Hexachlorocyclopentadiene	ND		3.39	2.31		mg/Kg	☼	68	41 - 101
2,4,6-Trichlorophenol	ND		3.39	3.08		mg/Kg	☼	91	57 - 117
2,4,5-Trichlorophenol	ND		3.39	3.18		mg/Kg	☼	94	58 - 118
2-Chloronaphthalene	ND		3.39	2.84		mg/Kg	☼	84	47 - 107
2-Nitroaniline	ND		3.39	3.08		mg/Kg	☼	91	60 - 120
Dimethyl phthalate	ND		3.39	3.00		mg/Kg	☼	88	53 - 113
Acenaphthylene	ND		3.39	2.88		mg/Kg	☼	85	50 - 110
3-Nitroaniline	ND		3.39	2.82		mg/Kg	☼	83	38 - 98
3-Methylphenol & 4-Methylphenol	ND		3.39	2.87		mg/Kg	☼	85	53 - 113
Acenaphthene	ND		3.39	2.86		mg/Kg	☼	84	48 - 108
2,4-Dinitrophenol	ND	*+ F2	6.78	3.17		mg/Kg	☼	47	10 - 100
4-Nitrophenol	ND		6.78	6.10		mg/Kg	☼	90	57 - 117
Dibenzofuran	ND		3.39	2.91		mg/Kg	☼	86	50 - 110
2,4-Dinitrotoluene	ND		3.39	3.22		mg/Kg	☼	95	61 - 121
2,6-Dinitrotoluene	ND		3.39	3.16		mg/Kg	☼	93	60 - 120
Diethyl phthalate	ND		3.39	3.02		mg/Kg	☼	89	54 - 114
4-Chlorophenyl phenyl ether	ND		3.39	3.05		mg/Kg	☼	90	52 - 112
Fluorene	ND		3.39	2.98		mg/Kg	☼	88	51 - 111
4-Nitroaniline	ND		3.39	3.10		mg/Kg	☼	91	57 - 117
2-Methyl-4,6-dinitrophenol	ND		6.78	5.42		mg/Kg	☼	80	33 - 107
N-Nitrosodiphenylamine	ND		3.39	2.99		mg/Kg	☼	88	55 - 115
4-Bromophenyl phenyl ether	ND		3.39	3.16		mg/Kg	☼	93	57 - 117
Hexachlorobenzene	ND		3.39	3.19		mg/Kg	☼	94	60 - 120
Pentachlorophenol	ND		6.78	5.02		mg/Kg	☼	74	57 - 117
Phenanthrene	ND		3.39	3.02		mg/Kg	☼	89	53 - 113
Anthracene	ND		3.39	3.04		mg/Kg	☼	90	55 - 115
Di-n-butyl phthalate	ND		3.39	3.14		mg/Kg	☼	93	61 - 121
Fluoranthene	ND		3.39	3.03		mg/Kg	☼	89	57 - 117
Pyrene	ND		3.39	3.14		mg/Kg	☼	93	62 - 122
Butyl benzyl phthalate	ND		3.39	3.18		mg/Kg	☼	94	66 - 126
3,3'-Dichlorobenzidine	ND		3.39	2.72		mg/Kg	☼	80	33 - 93
Benzo[a]anthracene	ND		3.39	3.07		mg/Kg	☼	90	62 - 122
Bis(2-ethylhexyl) phthalate	ND		3.39	3.17		mg/Kg	☼	93	66 - 126

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chrysene	ND		3.39	3.06		mg/Kg	☼	90	59 - 119
Di-n-octyl phthalate	ND		3.39	3.18		mg/Kg	☼	94	66 - 126
Benzo[b]fluoranthene	ND		3.39	3.09		mg/Kg	☼	91	64 - 124
Benzo[a]pyrene	ND		3.39	3.10		mg/Kg	☼	91	67 - 127
Benzo[k]fluoranthene	ND		3.39	3.07		mg/Kg	☼	91	64 - 124
Indeno[1,2,3-cd]pyrene	ND		3.39	3.26		mg/Kg	☼	96	65 - 125
Benzo[g,h,i]perylene	ND		3.39	3.06		mg/Kg	☼	90	64 - 124
Benzoic acid	ND	F1 F2	6.78	1.20	J	mg/Kg	☼	18	10 - 121
Azobenzene	ND		3.39	2.96		mg/Kg	☼	87	54 - 114
Dibenz(a,h)anthracene	ND		3.39	3.12		mg/Kg	☼	92	64 - 124
Pyridine	ND		6.78	3.03		mg/Kg	☼	45	28 - 88

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Nitrobenzene-d5	*76*		*54 - 114*
Terphenyl-d14	*92*		*66 - 126*
2-Fluorophenol	*78*		*53 - 113*
Phenol-d5	*83*		*54 - 114*
2,4,6-Tribromophenol	*100*		*60 - 120*

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenol	ND		3.40	2.96		mg/Kg	☼	87	53 - 113	7	30
Bis(2-chloroethyl)ether	ND		3.40	2.55		mg/Kg	☼	75	47 - 107	5	30
2-Chlorophenol	ND		3.40	2.81		mg/Kg	☼	83	50 - 110	4	30
1,3-Dichlorobenzene	ND		3.40	2.33		mg/Kg	☼	69	42 - 102	5	30
1,4-Dichlorobenzene	ND		3.40	2.38		mg/Kg	☼	70	44 - 104	6	30
Benzyl alcohol	ND		3.40	2.96		mg/Kg	☼	87	53 - 113	6	30
1,2-Dichlorobenzene	ND		3.40	2.43		mg/Kg	☼	72	44 - 104	5	30
2-Methylphenol	ND		3.40	3.06		mg/Kg	☼	90	53 - 113	6	30
N-Nitrosodi-n-propylamine	ND		3.40	2.80		mg/Kg	☼	82	50 - 110	4	30
Hexachloroethane	ND		3.40	2.33		mg/Kg	☼	69	44 - 104	5	30
Nitrobenzene	ND		3.40	2.73		mg/Kg	☼	80	50 - 110	5	30
Isophorone	ND		3.40	2.89		mg/Kg	☼	85	50 - 110	7	30
2-Nitrophenol	ND		3.40	3.01		mg/Kg	☼	88	55 - 115	6	30
2,4-Dimethylphenol	ND		3.40	3.17		mg/Kg	☼	93	53 - 113	8	30
Bis(2-chloroethoxy)methane	ND		3.40	2.80		mg/Kg	☼	82	50 - 110	3	30
2,4-Dichlorophenol	ND		3.40	3.16		mg/Kg	☼	93	56 - 116	5	30
1,2,4-Trichlorobenzene	ND		3.40	2.70		mg/Kg	☼	79	45 - 105	6	30
Naphthalene	ND		3.40	2.71		mg/Kg	☼	80	44 - 104	6	30
4-Chloroaniline	ND		3.40	2.57		mg/Kg	☼	76	29 - 89	10	30
Hexachlorobutadiene	ND		3.40	2.59		mg/Kg	☼	76	46 - 106	3	30
4-Chloro-3-methylphenol	ND		3.40	3.34		mg/Kg	☼	98	61 - 121	7	30
2-Methylnaphthalene	ND		3.40	2.75		mg/Kg	☼	81	48 - 108	7	30
Hexachlorocyclopentadiene	ND		3.40	2.33		mg/Kg	☼	69	41 - 101	1	30
2,4,6-Trichlorophenol	ND		3.40	3.34		mg/Kg	☼	98	57 - 117	8	30

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,4,5-Trichlorophenol	ND		3.40	3.38		mg/Kg	☼	100	58 - 118	6	30
2-Chloronaphthalene	ND		3.40	3.06		mg/Kg	☼	90	47 - 107	8	30
2-Nitroaniline	ND		3.40	3.36		mg/Kg	☼	99	60 - 120	9	30
Dimethyl phthalate	ND		3.40	3.23		mg/Kg	☼	95	53 - 113	8	30
Acenaphthylene	ND		3.40	3.11		mg/Kg	☼	91	50 - 110	8	30
3-Nitroaniline	ND		3.40	3.11		mg/Kg	☼	92	38 - 98	10	30
3-Methylphenol & 4-Methylphenol	ND		3.40	3.08		mg/Kg	☼	91	53 - 113	7	30
Acenaphthene	ND		3.40	3.11		mg/Kg	☼	91	48 - 108	8	30
2,4-Dinitrophenol	ND	*+ F2	6.80	2.07	F2	mg/Kg	☼	31	10 - 100	42	30
4-Nitrophenol	ND		6.80	6.32		mg/Kg	☼	93	57 - 117	4	30
Dibenzofuran	ND		3.40	3.16		mg/Kg	☼	93	50 - 110	8	30
2,4-Dinitrotoluene	ND		3.40	3.47		mg/Kg	☼	102	61 - 121	8	30
2,6-Dinitrotoluene	ND		3.40	3.43		mg/Kg	☼	101	60 - 120	8	30
Diethyl phthalate	ND		3.40	3.20		mg/Kg	☼	94	54 - 114	6	30
4-Chlorophenyl phenyl ether	ND		3.40	3.23		mg/Kg	☼	95	52 - 112	6	30
Fluorene	ND		3.40	3.19		mg/Kg	☼	94	51 - 111	7	30
4-Nitroaniline	ND		3.40	3.26		mg/Kg	☼	96	57 - 117	5	30
2-Methyl-4,6-dinitrophenol	ND		6.80	4.98		mg/Kg	☼	73	33 - 107	9	30
N-Nitrosodiphenylamine	ND		3.40	3.19		mg/Kg	☼	94	55 - 115	7	30
4-Bromophenyl phenyl ether	ND		3.40	3.33		mg/Kg	☼	98	57 - 117	5	30
Hexachlorobenzene	ND		3.40	3.31		mg/Kg	☼	97	60 - 120	4	30
Pentachlorophenol	ND		6.80	4.20		mg/Kg	☼	62	57 - 117	18	30
Phenanthrene	ND		3.40	3.18		mg/Kg	☼	93	53 - 113	5	30
Anthracene	ND		3.40	3.20		mg/Kg	☼	94	55 - 115	5	30
Di-n-butyl phthalate	ND		3.40	3.19		mg/Kg	☼	94	61 - 121	2	30
Fluoranthene	ND		3.40	3.14		mg/Kg	☼	93	57 - 117	4	30
Pyrene	ND		3.40	3.31		mg/Kg	☼	97	62 - 122	5	30
Butyl benzyl phthalate	ND		3.40	3.28		mg/Kg	☼	96	66 - 126	3	30
3,3'-Dichlorobenzidine	ND		3.40	2.95		mg/Kg	☼	87	33 - 93	8	30
Benzo[a]anthracene	ND		3.40	3.21		mg/Kg	☼	94	62 - 122	5	30
Bis(2-ethylhexyl) phthalate	ND		3.40	3.19		mg/Kg	☼	94	66 - 126	1	30
Chrysene	ND		3.40	3.22		mg/Kg	☼	95	59 - 119	5	30
Di-n-octyl phthalate	ND		3.40	3.18		mg/Kg	☼	94	66 - 126	0	30
Benzo[b]fluoranthene	ND		3.40	3.24		mg/Kg	☼	95	64 - 124	5	30
Benzo[a]pyrene	ND		3.40	3.27		mg/Kg	☼	96	67 - 127	5	30
Benzo[k]fluoranthene	ND		3.40	3.25		mg/Kg	☼	96	64 - 124	6	30
Indeno[1,2,3-cd]pyrene	ND		3.40	3.42		mg/Kg	☼	101	65 - 125	5	30
Benzo[g,h,i]perylene	ND		3.40	3.24		mg/Kg	☼	95	64 - 124	6	30
Benzoic acid	ND	F1 F2	6.80	0.510	J F1 F2	mg/Kg	☼	8	10 - 121	80	30
Azobenzene	ND		3.40	3.13		mg/Kg	☼	92	54 - 114	5	30
Dibenz(a,h)anthracene	ND		3.40	3.30		mg/Kg	☼	97	64 - 124	6	30
Pyridine	ND		6.80	3.05		mg/Kg	☼	45	28 - 88	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Nitrobenzene-d5	*79*		*54 - 114*
Terphenyl-d14	*97*		*66 - 126*
2-Fluorophenol	*83*		*53 - 113*
Phenol-d5	*90*		*54 - 114*

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 620781

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 620314

Surrogate	MSD %Recovery	MSD Qualifier	Limits
2,4,6-Tribromophenol	110		60 - 120

Method: 8015C - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 320-620320/1-A
Matrix: Solid
Analysis Batch: 620722

Client Sample ID: Method Blank
Prep Type: Silica Gel Cleanup
Prep Batch: 620320

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.53		1.0	0.50	mg/Kg		09/27/22 07:45	09/29/22 00:34	1
Motor Oil Range Organics [C28-C40]	ND		5.0	3.8	mg/Kg		09/27/22 07:45	09/29/22 00:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	67		51 - 111	09/27/22 07:45	09/29/22 00:34	1

Lab Sample ID: LCS 320-620320/2-A
Matrix: Solid
Analysis Batch: 620722

Client Sample ID: Lab Control Sample
Prep Type: Silica Gel Cleanup
Prep Batch: 620320

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	10.0	10.2		mg/Kg		102	57 - 132

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl (Surr)	66		51 - 111

Lab Sample ID: 320-92432-10 MS
Matrix: Solid
Analysis Batch: 620722

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Silica Gel Cleanup
Prep Batch: 620320

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel Range Organics [C10-C28]	1.8	B	10.1	10.7		mg/Kg	☼	88	57 - 132

Surrogate	MS %Recovery	MS Qualifier	Limits
o-Terphenyl (Surr)	65		51 - 111

Lab Sample ID: 320-92432-10 MSD
Matrix: Solid
Analysis Batch: 620722

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Silica Gel Cleanup
Prep Batch: 620320

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	1.8	B	10.1	12.3		mg/Kg	☼	103	57 - 132	13	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
o-Terphenyl (Surr)	67		51 - 111

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 320-620354/1-A
Matrix: Solid
Analysis Batch: 622637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620354

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.0017	0.00014	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
alpha-BHC	ND		0.0017	0.00016	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
beta-BHC	ND		0.0017	0.00022	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
gamma-BHC (Lindane)	ND		0.0017	0.00014	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
delta-BHC	ND		0.0017	0.00035	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
cis-Chlordane	ND		0.0017	0.00018	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
trans-Chlordane	ND		0.0017	0.00060	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Chlordane (technical)	ND		0.020	0.0094	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
4,4'-DDD	ND		0.0017	0.00023	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
4,4'-DDE	ND		0.0017	0.00021	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
4,4'-DDT	ND		0.0017	0.00025	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Dieldrin	ND		0.0017	0.00020	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endosulfan I	ND		0.0017	0.00018	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endosulfan II	ND		0.0017	0.00018	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endosulfan sulfate	ND		0.0017	0.00035	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endrin	ND		0.0017	0.00020	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endrin aldehyde	ND		0.0017	0.00057	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Endrin ketone	ND		0.0017	0.00027	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Heptachlor	ND		0.0017	0.00015	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Heptachlor epoxide	ND		0.0017	0.00018	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Methoxychlor	ND		0.0034	0.00056	mg/Kg		09/27/22 10:07	10/06/22 08:43	1
Toxaphene	ND		0.067	0.022	mg/Kg		09/27/22 10:07	10/06/22 08:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*61*		*46 - 109*	*09/27/22 10:07*	*10/06/22 08:43*	*1*
DCB Decachlorobiphenyl	*66*		*46 - 109*	*09/27/22 10:07*	*10/06/22 08:43*	*1*
Tetrachloro-m-xylene	*72*		*47 - 107*	*09/27/22 10:07*	*10/06/22 08:43*	*1*
Tetrachloro-m-xylene	*63*		*47 - 107*	*09/27/22 10:07*	*10/06/22 08:43*	*1*

Lab Sample ID: LCS 320-620354/2-A
Matrix: Solid
Analysis Batch: 622837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	0.0167	0.0155		mg/Kg		93	55 - 109
alpha-BHC	0.0167	0.0172		mg/Kg		103	54 - 111
beta-BHC	0.0167	0.0138		mg/Kg		83	53 - 115
gamma-BHC (Lindane)	0.0167	0.0167		mg/Kg		100	54 - 112
delta-BHC	0.0167	0.0165		mg/Kg		99	39 - 124
cis-Chlordane	0.0167	0.0159		mg/Kg		96	54 - 113
trans-Chlordane	0.0167	0.0162		mg/Kg		97	55 - 114
4,4'-DDD	0.0167	0.0159		mg/Kg		96	53 - 117
4,4'-DDE	0.0167	0.0159		mg/Kg		96	58 - 115
4,4'-DDT	0.0167	0.0170		mg/Kg		102	53 - 128
Dieldrin	0.0167	0.0154		mg/Kg		93	54 - 117
Endosulfan I	0.0167	0.0149		mg/Kg		89	42 - 118
Endosulfan II	0.0167	0.0147		mg/Kg		88	48 - 118
Endosulfan sulfate	0.0167	0.0146		mg/Kg		88	51 - 113

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 320-620354/2-A
Matrix: Solid
Analysis Batch: 622837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Endrin	0.0167	0.0154		mg/Kg		93	58 - 115
Endrin aldehyde	0.0167	0.0139		mg/Kg		83	40 - 100
Endrin ketone	0.0167	0.0145		mg/Kg		87	51 - 118
Heptachlor	0.0167	0.0161		mg/Kg		97	50 - 118
Heptachlor epoxide	0.0167	0.0157		mg/Kg		94	56 - 113
Methoxychlor	0.0167	0.0155		mg/Kg		93	52 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*89*		*46 - 109*
Tetrachloro-m-xylene	*94*		*47 - 107*

Lab Sample ID: LCS 320-620354/3-A
Matrix: Solid
Analysis Batch: 622637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Toxaphene	0.167	0.102		mg/Kg		61	43 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*70*		*46 - 109*
Tetrachloro-m-xylene	*64*		*47 - 107*

Lab Sample ID: LCS 320-620354/4-A
Matrix: Solid
Analysis Batch: 622637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlordane (technical)	0.0333	0.0213		mg/Kg		64	63 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*68*		*46 - 109*
Tetrachloro-m-xylene	*61*		*47 - 107*

Lab Sample ID: 320-92432-10 MS
Matrix: Solid
Analysis Batch: 622837

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aldrin	ND		0.0166	0.00907		mg/Kg	☼	55	55 - 109
alpha-BHC	ND		0.0166	0.0100		mg/Kg	☼	60	54 - 111
beta-BHC	ND		0.0166	0.00880		mg/Kg	☼	53	53 - 115
gamma-BHC (Lindane)	ND		0.0166	0.00951		mg/Kg	☼	57	54 - 112
delta-BHC	ND		0.0166	0.00858		mg/Kg	☼	52	39 - 124
cis-Chlordane	ND		0.0166	0.00934		mg/Kg	☼	56	54 - 113
trans-Chlordane	ND	F1	0.0166	0.00882	p F1	mg/Kg	☼	53	55 - 114
4,4'-DDD	ND		0.0166	0.00982		mg/Kg	☼	59	53 - 117
4,4'-DDE	0.00022	J	0.0166	0.00980		mg/Kg	☼	58	58 - 115
4,4'-DDT	0.00045	J	0.0166	0.0106		mg/Kg	☼	61	53 - 128

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 320-92432-10 MS
Matrix: Solid
Analysis Batch: 622837

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Dieldrin	0.00045	J	0.0166	0.0101		mg/Kg	☼	58	54 - 117
Endosulfan I	ND	F1	0.0166	0.00601	F1	mg/Kg	☼	36	42 - 118
Endosulfan II	ND	F1	0.0166	0.00758	F1	mg/Kg	☼	46	48 - 118
Endosulfan sulfate	ND		0.0166	0.0107		mg/Kg	☼	64	51 - 113
Endrin	ND		0.0166	0.00977		mg/Kg	☼	59	58 - 115
Endrin aldehyde	ND		0.0166	0.00680		mg/Kg	☼	41	40 - 100
Endrin ketone	ND		0.0166	0.00904		mg/Kg	☼	54	51 - 118
Heptachlor	ND		0.0166	0.00997		mg/Kg	☼	60	50 - 118
Heptachlor epoxide	ND		0.0166	0.00962		mg/Kg	☼	58	56 - 113
Methoxychlor	ND		0.0166	0.0103		mg/Kg	☼	62	52 - 123

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*61*		*46 - 109*
Tetrachloro-m-xylene	*63*		*47 - 107*

Lab Sample ID: 320-92432-10 MSD
Matrix: Solid
Analysis Batch: 622837

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Total/NA
Prep Batch: 620354

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aldrin	ND		0.0160	0.0105		mg/Kg	☼	66	55 - 109	15	30
alpha-BHC	ND		0.0160	0.0118		mg/Kg	☼	73	54 - 111	16	30
beta-BHC	ND		0.0160	0.0105		mg/Kg	☼	65	53 - 115	17	30
gamma-BHC (Lindane)	ND		0.0160	0.0111		mg/Kg	☼	69	54 - 112	16	30
delta-BHC	ND		0.0160	0.0102		mg/Kg	☼	64	39 - 124	17	30
cis-Chlordane	ND		0.0160	0.0106		mg/Kg	☼	66	54 - 113	12	30
trans-Chlordane	ND	F1	0.0160	0.0105	p	mg/Kg	☼	65	55 - 114	17	30
4,4'-DDD	ND		0.0160	0.0111		mg/Kg	☼	69	53 - 117	12	30
4,4'-DDE	0.00022	J	0.0160	0.0113		mg/Kg	☼	69	58 - 115	14	30
4,4'-DDT	0.00045	J	0.0160	0.0119		mg/Kg	☼	72	53 - 128	12	30
Dieldrin	0.00045	J	0.0160	0.0115		mg/Kg	☼	69	54 - 117	13	30
Endosulfan I	ND	F1	0.0160	0.00684		mg/Kg	☼	43	42 - 118	13	30
Endosulfan II	ND	F1	0.0160	0.00860		mg/Kg	☼	54	48 - 118	13	30
Endosulfan sulfate	ND		0.0160	0.0118		mg/Kg	☼	74	51 - 113	10	30
Endrin	ND		0.0160	0.0111		mg/Kg	☼	69	58 - 115	12	30
Endrin aldehyde	ND		0.0160	0.00751		mg/Kg	☼	47	40 - 100	10	30
Endrin ketone	ND		0.0160	0.0101		mg/Kg	☼	63	51 - 118	11	30
Heptachlor	ND		0.0160	0.0114		mg/Kg	☼	71	50 - 118	14	30
Heptachlor epoxide	ND		0.0160	0.0111		mg/Kg	☼	69	56 - 113	14	30
Methoxychlor	ND		0.0160	0.0114		mg/Kg	☼	71	52 - 123	10	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*72*		*46 - 109*
Tetrachloro-m-xylene	*77*		*47 - 107*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 320-620369/1-A
Matrix: Solid
Analysis Batch: 622170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620369

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		33	2.6	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1221	ND		33	3.6	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1232	ND		33	4.8	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1242	ND		33	5.9	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1248	ND		33	2.4	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1254	ND		33	3.8	ug/Kg		09/27/22 10:56	10/04/22 17:34	1
PCB-1260	ND		33	2.7	ug/Kg		09/27/22 10:56	10/04/22 17:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*120*		*52 - 138*	*09/27/22 10:56*	*10/04/22 17:34*	*1*

Lab Sample ID: LCS 320-620369/2-A
Matrix: Solid
Analysis Batch: 622170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620369

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			66.7	69.6		ug/Kg		104	58 - 124		
PCB-1260			66.7	80.4		ug/Kg		121	55 - 138		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*123*		*52 - 138*

Lab Sample ID: 320-92432-10 MS
Matrix: Solid
Analysis Batch: 622170

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Total/NA
Prep Batch: 620369

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016	ND		65.0	74.5		ug/Kg	☼	115	58 - 124		
PCB-1260	ND		65.0	81.1		ug/Kg	☼	125	55 - 138		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*117*		*52 - 138*

Lab Sample ID: 320-92432-10 MSD
Matrix: Solid
Analysis Batch: 622170

Client Sample ID: MHSSF-ENV-J@0.5'
Prep Type: Total/NA
Prep Batch: 620369

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016	ND		66.2	72.0		ug/Kg	☼	109	58 - 124	3	20
PCB-1260	ND		66.2	77.4		ug/Kg	☼	117	55 - 138	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*112*		*52 - 138*

Method: 7199 - Chromium, Hexavalent (IC)

Lab Sample ID: MB 570-268311/1-A
Matrix: Solid
Analysis Batch: 268308

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 268311

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, hexavalent	ND		0.40	0.19	mg/Kg		09/29/22 02:00	09/29/22 04:39	10

Lab Sample ID: LCS 570-268311/2-A
Matrix: Solid
Analysis Batch: 268308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 268311

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium, hexavalent			20.2	20.0		mg/Kg		99	80 - 120		

Lab Sample ID: LCSD 570-268311/3-A
Matrix: Solid
Analysis Batch: 268308

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 268311

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent			20.2	24.2		mg/Kg		120	80 - 120	19	20

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 268308

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 268311

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chromium, hexavalent	0.21	J	20.3	19.6		mg/Kg	☼	96	75 - 125		

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 268308

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 268311

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium, hexavalent	0.21	J	20.2	19.9		mg/Kg	☼	98	75 - 125	2	25

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 320-620158/1-A
Matrix: Solid
Analysis Batch: 620576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620158

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.94	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Arsenic	ND		2.0	1.3	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Barium	ND		1.0	0.12	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Beryllium	ND		0.20	0.030	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Cadmium	ND		0.20	0.030	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Chromium	ND		0.50	0.14	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Cobalt	ND		0.50	0.25	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Copper	ND		1.5	0.22	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Lead	ND		1.0	0.26	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Molybdenum	ND		2.0	0.75	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Nickel	ND		1.0	0.24	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Selenium	ND		2.0	1.4	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Silver	ND		0.50	0.090	mg/Kg		09/26/22 16:00	09/27/22 12:40	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 320-620158/1-A
Matrix: Solid
Analysis Batch: 620576

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620158

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		2.0	0.84	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Vanadium	ND		0.50	0.19	mg/Kg		09/26/22 16:00	09/27/22 12:40	1
Zinc	ND		2.0	0.19	mg/Kg		09/26/22 16:00	09/27/22 12:40	1

Lab Sample ID: LCS 320-620158/2-A
Matrix: Solid
Analysis Batch: 620576

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620158

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	50.1	47.3		mg/Kg		95	80 - 120
Arsenic	50.0	45.2		mg/Kg		90	80 - 120
Barium	50.0	47.6		mg/Kg		95	80 - 120
Beryllium	25.0	24.0		mg/Kg		96	80 - 120
Cadmium	25.0	23.9		mg/Kg		96	80 - 120
Chromium	25.0	23.5		mg/Kg		94	80 - 120
Cobalt	25.0	24.0		mg/Kg		96	80 - 120
Copper	25.0	23.0		mg/Kg		92	80 - 120
Lead	25.0	24.0		mg/Kg		96	80 - 120
Molybdenum	25.0	24.0		mg/Kg		96	80 - 120
Nickel	25.0	24.0		mg/Kg		96	80 - 120
Selenium	50.0	44.2		mg/Kg		88	80 - 120
Silver	5.05	4.52		mg/Kg		90	80 - 120
Thallium	50.0	47.8		mg/Kg		96	80 - 120
Vanadium	25.0	23.3		mg/Kg		93	80 - 120
Zinc	49.9	45.6		mg/Kg		91	80 - 120

Lab Sample ID: LB 320-620645/1-A ^10
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: Method Blank
Prep Type: STLC Citrate

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.12	mg/L			09/30/22 13:51	10
Chromium	0.0116	J	0.10	0.0060	mg/L			09/30/22 13:51	10
Lead	ND		0.10	0.012	mg/L			09/30/22 13:51	10

Lab Sample ID: LCS 320-620645/2-A ^10
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: Lab Control Sample
Prep Type: STLC Citrate

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.00	0.908		mg/L		91	75 - 125
Chromium	1.00	1.00		mg/L		100	75 - 125
Lead	1.00	0.929		mg/L		93	75 - 125

Lab Sample ID: LCSD 320-620645/3-A
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: Lab Control Sample Dup
Prep Type: STLC Citrate

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.00	0.919		mg/L		92	75 - 125	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 320-620645/3-A
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: Lab Control Sample Dup
Prep Type: STLC Citrate

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			1.00	0.999		mg/L		100	75 - 125	0	20
Lead			1.00	0.932		mg/L		93	75 - 125	0	20

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: STLC Citrate

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	ND		1.00	0.942		mg/L		94	75 - 125
Chromium	0.077	J B	1.00	1.06		mg/L		98	75 - 125
Lead	ND		1.00	0.965		mg/L		96	75 - 125

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 621393

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: STLC Citrate

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	ND		1.00	0.906		mg/L		91	75 - 125	4	20
Chromium	0.077	J B	1.00	1.05		mg/L		97	75 - 125	1	20
Lead	ND		1.00	0.984		mg/L		98	75 - 125	2	20

Lab Sample ID: LB 320-620645/1-A ^10
Matrix: Solid
Analysis Batch: 622045

Client Sample ID: Method Blank
Prep Type: STLC Citrate

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.12	mg/L			10/03/22 12:50	10
Chromium	ND		0.10	0.0060	mg/L			10/03/22 12:50	10
Lead	0.0227	J	0.10	0.012	mg/L			10/03/22 12:50	10

Lab Sample ID: LCS 320-620645/2-A ^10
Matrix: Solid
Analysis Batch: 622045

Client Sample ID: Lab Control Sample
Prep Type: STLC Citrate

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic			1.00	0.892		mg/L		89	75 - 125
Chromium			1.00	1.02		mg/L		102	75 - 125
Lead			1.00	1.03		mg/L		103	75 - 125

Lab Sample ID: LCSD 320-620645/3-A
Matrix: Solid
Analysis Batch: 622045

Client Sample ID: Lab Control Sample Dup
Prep Type: STLC Citrate

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			1.00	0.911		mg/L		91	75 - 125	2	20
Chromium			1.00	1.01		mg/L		101	75 - 125	1	20
Lead			1.00	0.991		mg/L		99	75 - 125	4	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 320-620230/11-A
Matrix: Solid
Analysis Batch: 620585

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 620230

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.040	0.0080	mg/Kg		09/27/22 11:43	09/27/22 14:24	1

Lab Sample ID: LCS 320-620230/12-A
Matrix: Solid
Analysis Batch: 620585

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 620230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.167	0.169		mg/Kg		101	86 - 114

Lab Sample ID: LCSD 320-620230/13-A
Matrix: Solid
Analysis Batch: 620585

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 620230

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.167	0.167		mg/Kg		100	86 - 114	1	17

Lab Sample ID: MB 320-621052/11-A
Matrix: Solid
Analysis Batch: 621184

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 621052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.040	0.0080	mg/Kg		09/29/22 12:49	09/29/22 15:48	1

Lab Sample ID: LCS 320-621052/12-A
Matrix: Solid
Analysis Batch: 621184

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 621052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.167	0.163		mg/Kg		98	86 - 114

Lab Sample ID: LCSD 320-621052/13-A
Matrix: Solid
Analysis Batch: 621184

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 621052

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.167	0.162		mg/Kg		97	86 - 114	1	17

Lab Sample ID: 320-92432-1 MS
Matrix: Solid
Analysis Batch: 621184

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 621052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND		0.165	0.167		mg/Kg	☼	101	86 - 114

Lab Sample ID: 320-92432-1 MSD
Matrix: Solid
Analysis Batch: 621184

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA
Prep Batch: 621052

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.173	0.171		mg/Kg	☼	98	86 - 114	2	17

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Method: D 2216 - Percent Moisture

Lab Sample ID: 320-92432-1 DU
Matrix: Solid
Analysis Batch: 620170

Client Sample ID: MHSSF-ENV-A@0.5'
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	2.3			1.9		%				17	20

GC/MS VOA

Prep Batch: 620031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	5030B	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	5030B	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	5030B	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	5030B	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	5030B	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	5030B	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	5030B	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	5030B	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	5030B	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	5030B	

Analysis Batch: 620650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	8260B	620031
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	8260B	620031
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	8260B	620031
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	8260B	620031
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	8260B	620031
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	8260B	620031
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	8260B	620031
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	8260B	620031
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	8260B	620031
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	8260B	620031
MB 320-620650/11	Method Blank	Total/NA	Solid	8260B	
LCS 320-620650/6	Lab Control Sample	Total/NA	Solid	8260B	
LCS 320-620650/8	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 320-620650/7	Lab Control Sample Dup	Total/NA	Solid	8260B	
LCSD 320-620650/9	Lab Control Sample Dup	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 620314

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	3550B	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	3550B	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	3550B	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	3550B	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	3550B	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	3550B	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	3550B	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	3550B	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	3550B	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	3550B	
MB 320-620314/1-A	Method Blank	Total/NA	Solid	3550B	
LCS 320-620314/2-A	Lab Control Sample	Total/NA	Solid	3550B	
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	3550B	
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	3550B	

Analysis Batch: 620781

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	8270C	620314

GC/MS Semi VOA (Continued)

Analysis Batch: 620781 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	8270C	620314
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	8270C	620314
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	8270C	620314
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	8270C	620314
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	8270C	620314
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	8270C	620314
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	8270C	620314
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	8270C	620314
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	8270C	620314
MB 320-620314/1-A	Method Blank	Total/NA	Solid	8270C	620314
LCS 320-620314/2-A	Lab Control Sample	Total/NA	Solid	8270C	620314
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	8270C	620314
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	8270C	620314

GC Semi VOA

Prep Batch: 620320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-2	MHSSF-ENV-B@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-3	MHSSF-ENV-C@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-4	MHSSF-ENV-D@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-5	MHSSF-ENV-E@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-6	MHSSF-ENV-F@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-7	MHSSF-ENV-G@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-8	MHSSF-ENV-H@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-9	MHSSF-ENV-I@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-10	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	3550B	
MB 320-620320/1-A	Method Blank	Silica Gel Cleanup	Solid	3550B	
LCS 320-620320/2-A	Lab Control Sample	Silica Gel Cleanup	Solid	3550B	
320-92432-10 MS	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	3550B	
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	3550B	

Prep Batch: 620354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	3546	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	3546	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	3546	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	3546	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	3546	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	3546	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	3546	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	3546	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	3546	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	
MB 320-620354/1-A	Method Blank	Total/NA	Solid	3546	
LCS 320-620354/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 320-620354/3-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 320-620354/4-A	Lab Control Sample	Total/NA	Solid	3546	
320-92432-10 MS	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	

GC Semi VOA

Prep Batch: 620369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	3546	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	3546	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	3546	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	3546	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	3546	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	3546	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	3546	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	3546	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	3546	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	
MB 320-620369/1-A	Method Blank	Total/NA	Solid	3546	
LCS 320-620369/2-A	Lab Control Sample	Total/NA	Solid	3546	
320-92432-10 MS	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Total/NA	Solid	3546	

Analysis Batch: 620722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-2	MHSSF-ENV-B@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-3	MHSSF-ENV-C@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-4	MHSSF-ENV-D@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-5	MHSSF-ENV-E@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-6	MHSSF-ENV-F@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-7	MHSSF-ENV-G@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-8	MHSSF-ENV-H@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-9	MHSSF-ENV-I@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-10	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	8015C	620320
MB 320-620320/1-A	Method Blank	Silica Gel Cleanup	Solid	8015C	620320
LCS 320-620320/2-A	Lab Control Sample	Silica Gel Cleanup	Solid	8015C	620320
320-92432-10 MS	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	8015C	620320
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Silica Gel Cleanup	Solid	8015C	620320

Analysis Batch: 622170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	8082A	620369
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	8082A	620369
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	8082A	620369
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	8082A	620369
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	8082A	620369
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	8082A	620369
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	8082A	620369
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	8082A	620369
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	8082A	620369
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	8082A	620369
MB 320-620369/1-A	Method Blank	Total/NA	Solid	8082A	620369
LCS 320-620369/2-A	Lab Control Sample	Total/NA	Solid	8082A	620369
320-92432-10 MS	MHSSF-ENV-J@0.5'	Total/NA	Solid	8082A	620369
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Total/NA	Solid	8082A	620369

GC Semi VOA

Analysis Batch: 622637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	8081B	620354
MB 320-620354/1-A	Method Blank	Total/NA	Solid	8081B	620354
LCS 320-620354/3-A	Lab Control Sample	Total/NA	Solid	8081B	620354
LCS 320-620354/4-A	Lab Control Sample	Total/NA	Solid	8081B	620354

Analysis Batch: 622837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	8081B	620354
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	8081B	620354
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	8081B	620354
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	8081B	620354
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	8081B	620354
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	8081B	620354
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	8081B	620354
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	8081B	620354
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	8081B	620354
LCS 320-620354/2-A	Lab Control Sample	Total/NA	Solid	8081B	620354
320-92432-10 MS	MHSSF-ENV-J@0.5'	Total/NA	Solid	8081B	620354
320-92432-10 MSD	MHSSF-ENV-J@0.5'	Total/NA	Solid	8081B	620354

HPLC/IC

Analysis Batch: 268308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	7199	268311
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	7199	268311
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	7199	268311
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	7199	268311
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	7199	268311
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	7199	268311
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	7199	268311
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	7199	268311
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	7199	268311
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	7199	268311
MB 570-268311/1-A	Method Blank	Total/NA	Solid	7199	268311
LCS 570-268311/2-A	Lab Control Sample	Total/NA	Solid	7199	268311
LCSD 570-268311/3-A	Lab Control Sample Dup	Total/NA	Solid	7199	268311
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	7199	268311
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	7199	268311

Prep Batch: 268311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	3060A	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	3060A	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	3060A	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	3060A	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	3060A	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	3060A	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	3060A	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	3060A	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	3060A	

HPLC/IC (Continued)

Prep Batch: 268311 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	3060A	
MB 570-268311/1-A	Method Blank	Total/NA	Solid	3060A	
LCS 570-268311/2-A	Lab Control Sample	Total/NA	Solid	3060A	
LCSD 570-268311/3-A	Lab Control Sample Dup	Total/NA	Solid	3060A	
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	3060A	
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	3060A	

Metals

Prep Batch: 620158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	3050B	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	3050B	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	3050B	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	3050B	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	3050B	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	3050B	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	3050B	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	3050B	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	3050B	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	3050B	
MB 320-620158/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 320-620158/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 620230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	7471A	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	7471A	
MB 320-620230/11-A	Method Blank	Total/NA	Solid	7471A	
LCS 320-620230/12-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 320-620230/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	

Analysis Batch: 620576

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	6010B	620158
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	6010B	620158
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	6010B	620158
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	6010B	620158
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	6010B	620158
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	6010B	620158
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	6010B	620158
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	6010B	620158
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	6010B	620158
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	6010B	620158
MB 320-620158/1-A	Method Blank	Total/NA	Solid	6010B	620158
LCS 320-620158/2-A	Lab Control Sample	Total/NA	Solid	6010B	620158

Analysis Batch: 620585

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	7471A	620230
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	7471A	620230

Metals (Continued)

Analysis Batch: 620585 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-620230/11-A	Method Blank	Total/NA	Solid	7471A	620230
LCS 320-620230/12-A	Lab Control Sample	Total/NA	Solid	7471A	620230
LCSD 320-620230/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	620230

Leach Batch: 620645

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-2	MHSSF-ENV-B@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-3	MHSSF-ENV-C@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-4	MHSSF-ENV-D@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-5	MHSSF-ENV-E@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-6	MHSSF-ENV-F@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-7	MHSSF-ENV-G@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-8	MHSSF-ENV-H@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-9	MHSSF-ENV-I@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-10	MHSSF-ENV-J@0.5'	STLC Citrate	Solid	CA WET Citrate	
LB 320-620645/1-A ^10	Method Blank	STLC Citrate	Solid	CA WET Citrate	
LCS 320-620645/2-A ^10	Lab Control Sample	STLC Citrate	Solid	CA WET Citrate	
LCSD 320-620645/3-A	Lab Control Sample Dup	STLC Citrate	Solid	CA WET Citrate	
320-92432-1 MS	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	CA WET Citrate	
320-92432-1 MSD	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	CA WET Citrate	

Prep Batch: 621052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	7471A	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	7471A	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	7471A	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	7471A	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	7471A	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	7471A	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	7471A	
MB 320-621052/11-A	Method Blank	Total/NA	Solid	7471A	
LCS 320-621052/12-A	Lab Control Sample	Total/NA	Solid	7471A	
LCSD 320-621052/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	

Analysis Batch: 621184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	621052
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	7471A	621052
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	7471A	621052
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	7471A	621052
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	7471A	621052
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	7471A	621052
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	7471A	621052
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	7471A	621052
MB 320-621052/11-A	Method Blank	Total/NA	Solid	7471A	621052
LCS 320-621052/12-A	Lab Control Sample	Total/NA	Solid	7471A	621052
LCSD 320-621052/13-A	Lab Control Sample Dup	Total/NA	Solid	7471A	621052

Metals (Continued)

Analysis Batch: 621184 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1 MS	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	621052
320-92432-1 MSD	MHSSF-ENV-A@0.5'	Total/NA	Solid	7471A	621052

Analysis Batch: 621393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	6010B	620645
LB 320-620645/1-A ^10	Method Blank	STLC Citrate	Solid	6010B	620645
LCS 320-620645/2-A ^10	Lab Control Sample	STLC Citrate	Solid	6010B	620645
LCSD 320-620645/3-A	Lab Control Sample Dup	STLC Citrate	Solid	6010B	620645
320-92432-1 MS	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-1 MSD	MHSSF-ENV-A@0.5'	STLC Citrate	Solid	6010B	620645

Analysis Batch: 622045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-2	MHSSF-ENV-B@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-3	MHSSF-ENV-C@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-4	MHSSF-ENV-D@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-5	MHSSF-ENV-E@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-6	MHSSF-ENV-F@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-7	MHSSF-ENV-G@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-8	MHSSF-ENV-H@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-9	MHSSF-ENV-I@0.5'	STLC Citrate	Solid	6010B	620645
320-92432-10	MHSSF-ENV-J@0.5'	STLC Citrate	Solid	6010B	620645
LB 320-620645/1-A ^10	Method Blank	STLC Citrate	Solid	6010B	620645
LCS 320-620645/2-A ^10	Lab Control Sample	STLC Citrate	Solid	6010B	620645
LCSD 320-620645/3-A	Lab Control Sample Dup	STLC Citrate	Solid	6010B	620645

General Chemistry

Analysis Batch: 620170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-92432-1	MHSSF-ENV-A@0.5'	Total/NA	Solid	D 2216	
320-92432-2	MHSSF-ENV-B@0.5'	Total/NA	Solid	D 2216	
320-92432-3	MHSSF-ENV-C@0.5'	Total/NA	Solid	D 2216	
320-92432-4	MHSSF-ENV-D@0.5'	Total/NA	Solid	D 2216	
320-92432-5	MHSSF-ENV-E@0.5'	Total/NA	Solid	D 2216	
320-92432-6	MHSSF-ENV-F@0.5'	Total/NA	Solid	D 2216	
320-92432-7	MHSSF-ENV-G@0.5'	Total/NA	Solid	D 2216	
320-92432-8	MHSSF-ENV-H@0.5'	Total/NA	Solid	D 2216	
320-92432-9	MHSSF-ENV-I@0.5'	Total/NA	Solid	D 2216	
320-92432-10	MHSSF-ENV-J@0.5'	Total/NA	Solid	D 2216	
320-92432-1 DU	MHSSF-ENV-A@0.5'	Total/NA	Solid	D 2216	

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-A@0.5'

Lab Sample ID: 320-92432-1
Date Collected: 09/20/22 10:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.04 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			621393	09/30/22 14:03	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-A@0.5'

Lab Sample ID: 320-92432-1
Date Collected: 09/20/22 10:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 97.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.05 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 15:48	BAJ	EET SAC
Total/NA	Prep	3550B			30.47 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 14:20	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.70 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 01:31	K1D	EET SAC
Total/NA	Prep	3546			15.78 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622637	10/06/22 09:59	K1D	EET SAC
Total/NA	Prep	3546			15.78 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 18:15	K1D	EET SAC
Total/NA	Prep	3060A			2.51 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 08:09	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.01 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 13:59	SP	EET SAC
Total/NA	Prep	7471A			0.61 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:04	JAP	EET SAC

Client Sample ID: MHSSF-ENV-B@0.5'

Lab Sample ID: 320-92432-2
Date Collected: 09/20/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			49.99 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:02	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-B@0.5'

Lab Sample ID: 320-92432-2
Date Collected: 09/20/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.09 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 16:10	BAJ	EET SAC
Total/NA	Prep	3550B			30.64 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 15:34	Y1S	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-B@0.5'

Lab Sample ID: 320-92432-2
Date Collected: 09/20/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Silica Gel Cleanup	Prep	3550B			30.71 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 02:00	K1D	EET SAC
Total/NA	Prep	3546			15.35 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 17:43	K1D	EET SAC
Total/NA	Prep	3546			15.35 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 18:35	K1D	EET SAC
Total/NA	Prep	3060A			2.52 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 08:59	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.04 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:03	SP	EET SAC
Total/NA	Prep	7471A			0.60 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:14	JAP	EET SAC

Client Sample ID: MHSSF-ENV-C@0.5'

Lab Sample ID: 320-92432-3
Date Collected: 09/20/22 15:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.01 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:06	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-C@0.5'

Lab Sample ID: 320-92432-3
Date Collected: 09/20/22 15:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 98.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.09 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 16:32	BAJ	EET SAC
Total/NA	Prep	3550B			30.09 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 15:59	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.19 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 02:28	K1D	EET SAC
Total/NA	Prep	3546			15.91 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 18:02	K1D	EET SAC
Total/NA	Prep	3546			15.91 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 18:56	K1D	EET SAC
Total/NA	Prep	3060A			2.49 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 09:09	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.01 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:06	SP	EET SAC
Total/NA	Prep	7471A			0.64 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:16	JAP	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-D@0.5'

Lab Sample ID: 320-92432-4
Date Collected: 09/21/22 09:30
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.05 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:10	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-D@0.5'

Lab Sample ID: 320-92432-4
Date Collected: 09/21/22 09:30
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 95.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.03 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 16:54	BAJ	EET SAC
Total/NA	Prep	3550B			30.85 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		20	1 mL	1 mL	620781	09/28/22 16:23	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.02 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		100	1 mL	1 mL	620722	09/29/22 02:57	K1D	EET SAC
Total/NA	Prep	3546			15.57 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		2	1 mL	1 mL	622837	10/06/22 18:21	K1D	EET SAC
Total/NA	Prep	3546			15.57 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 19:17	K1D	EET SAC
Total/NA	Prep	3060A			2.48 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 09:19	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.05 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:10	SP	EET SAC
Total/NA	Prep	7471A			0.63 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:17	JAP	EET SAC

Client Sample ID: MHSSF-ENV-E@0.5'

Lab Sample ID: 320-92432-5
Date Collected: 09/21/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.01 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:22	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-E@0.5'

Lab Sample ID: 320-92432-5
Date Collected: 09/21/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.09 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 17:16	BAJ	EET SAC
Total/NA	Prep	3550B			30.44 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 16:48	Y1S	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-E@0.5'

Lab Sample ID: 320-92432-5
Date Collected: 09/21/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 94.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Silica Gel Cleanup	Prep	3550B			30.03 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 03:25	K1D	EET SAC
Total/NA	Prep	3546			15.35 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 18:40	K1D	EET SAC
Total/NA	Prep	3546			15.35 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 19:37	K1D	EET SAC
Total/NA	Prep	3060A			2.49 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 09:29	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.03 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:14	SP	EET SAC
Total/NA	Prep	7471A			0.59 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:19	JAP	EET SAC

Client Sample ID: MHSSF-ENV-F@0.5'

Lab Sample ID: 320-92432-6
Date Collected: 09/21/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.03 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:26	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-F@0.5'

Lab Sample ID: 320-92432-6
Date Collected: 09/21/22 13:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.08 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 17:38	BAJ	EET SAC
Total/NA	Prep	3550B			30.57 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 17:13	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.23 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 03:54	K1D	EET SAC
Total/NA	Prep	3546			15.57 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 19:18	K1D	EET SAC
Total/NA	Prep	3546			15.57 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 19:58	K1D	EET SAC
Total/NA	Prep	3060A			2.53 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 09:39	YO8L	EET CAL 4
Total/NA	Prep	3050B			2.04 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:18	SP	EET SAC
Total/NA	Prep	7471A			0.64 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:21	JAP	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-G@0.5'

Lab Sample ID: 320-92432-7
Date Collected: 09/22/22 08:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			49.98 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:30	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-G@0.5'

Lab Sample ID: 320-92432-7
Date Collected: 09/22/22 08:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 79.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.06 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 18:00	BAJ	EET SAC
Total/NA	Prep	3550B			30.74 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 17:38	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.43 g	3. mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 04:22	K1D	EET SAC
Total/NA	Prep	3546			15.06 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 19:37	K1D	EET SAC
Total/NA	Prep	3546			15.06 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 20:18	K1D	EET SAC
Total/NA	Prep	3060A			2.52 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		1	4 mL	4 mL	268308	09/29/22 09:49	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.55 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:29	SP	EET SAC
Total/NA	Prep	7471A			0.64 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:23	JAP	EET SAC

Client Sample ID: MHSSF-ENV-H@0.5'

Lab Sample ID: 320-92432-8
Date Collected: 09/22/22 09:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			49.98 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:34	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-H@0.5'

Lab Sample ID: 320-92432-8
Date Collected: 09/22/22 09:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 92.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.02 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 18:22	BAJ	EET SAC
Total/NA	Prep	3550B			30.86 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 18:03	Y1S	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-H@0.5'

Lab Sample ID: 320-92432-8
Date Collected: 09/22/22 09:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 92.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Silica Gel Cleanup	Prep	3550B			30.04 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 04:51	K1D	EET SAC
Total/NA	Prep	3546			15.64 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 19:56	K1D	EET SAC
Total/NA	Prep	3546			15.64 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 20:39	K1D	EET SAC
Total/NA	Prep	3060A			2.52 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		1	4 mL	4 mL	268308	09/29/22 09:59	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.02 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:33	SP	EET SAC
Total/NA	Prep	7471A			0.64 g	50 mL	621052	09/29/22 12:49	JAP	EET SAC
Total/NA	Analysis	7471A		1			621184	09/29/22 16:24	JAP	EET SAC

Client Sample ID: MHSSF-ENV-I@0.5'

Lab Sample ID: 320-92432-9
Date Collected: 09/22/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.02 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:38	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-I@0.5'

Lab Sample ID: 320-92432-9
Date Collected: 09/22/22 11:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 90.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.08 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 18:44	BAJ	EET SAC
Total/NA	Prep	3550B			30.77 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 18:27	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.61 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 05:19	K1D	EET SAC
Total/NA	Prep	3546			15.02 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 20:14	K1D	EET SAC
Total/NA	Prep	3546			15.02 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 21:00	K1D	EET SAC
Total/NA	Prep	3060A			2.48 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 10:08	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.02 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:37	SP	EET SAC
Total/NA	Prep	7471A			0.58 g	50 mL	620230	09/27/22 11:43	JAP	EET SAC
Total/NA	Analysis	7471A		1			620585	09/27/22 15:15	JAP	EET SAC

Lab Chronicle

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Client Sample ID: MHSSF-ENV-J@0.5'

Lab Sample ID: 320-92432-10
Date Collected: 09/22/22 12:00
Matrix: Solid
Date Received: 09/23/22 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
STLC Citrate	Leach	CA WET Citrate			50.05 g	500 mL	620645	09/28/22 10:45	GSH	EET SAC
STLC Citrate	Analysis	6010B		10			622045	10/03/22 13:42	SP	EET SAC
Total/NA	Analysis	D 2216		1			620170	09/26/22 15:18	TCS	EET SAC

Client Sample ID: MHSSF-ENV-J@0.5'

Lab Sample ID: 320-92432-10
Date Collected: 09/22/22 12:00
Matrix: Solid
Date Received: 09/23/22 18:45
Percent Solids: 98.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			00005.05 g	5 mL	620031	09/26/22 11:12	AZ1	EET SAC
Total/NA	Analysis	8260B		1	5 mL	5 mL	620650	09/28/22 19:06	BAJ	EET SAC
Total/NA	Prep	3550B			30.52 g	1 mL	620314	09/27/22 07:34	NGK	EET SAC
Total/NA	Analysis	8270C		1	1 mL	1 mL	620781	09/28/22 18:52	Y1S	EET SAC
Silica Gel Cleanup	Prep	3550B			30.29 g	3 mL	620320	09/27/22 07:45	NGK	EET SAC
Silica Gel Cleanup	Analysis	8015C		1	1 mL	1 mL	620722	09/29/22 05:48	K1D	EET SAC
Total/NA	Prep	3546			15.96 g	5 mL	620354	09/27/22 10:07	SJ	EET SAC
Total/NA	Analysis	8081B		1	1 mL	1 mL	622837	10/06/22 20:33	K1D	EET SAC
Total/NA	Prep	3546			15.96 g	5 mL	620369	09/27/22 10:56	SJ	EET SAC
Total/NA	Analysis	8082A		1	1 mL	1 mL	622170	10/04/22 21:20	K1D	EET SAC
Total/NA	Prep	3060A			2.49 g	100 mL	268311	09/29/22 02:00		EET CAL 4
Total/NA	Analysis	7199		10	4 mL	4 mL	268308	09/29/22 10:18	YO8L	EET CAL 4
Total/NA	Prep	3050B			1.05 g	100 mL	620158	09/26/22 16:00	JP	EET SAC
Total/NA	Analysis	6010B		1			620576	09/27/22 14:40	SP	EET SAC
Total/NA	Prep	7471A			0.62 g	50 mL	620230	09/27/22 11:43	JAP	EET SAC
Total/NA	Analysis	7471A		1			620585	09/27/22 15:20	JAP	EET SAC

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Laboratory: Eurofins Sacramento

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8081B	3546	Solid	cis-Chlordane
8081B	3546	Solid	trans-Chlordane
8260B	5030B	Solid	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B	5030B	Solid	1,1-Dichloropropene
8260B	5030B	Solid	1,2,3-Trichlorobenzene
8260B	5030B	Solid	1,2,4-Trimethylbenzene
8260B	5030B	Solid	1,2-Dibromo-3-Chloropropane
8260B	5030B	Solid	1,3,5-Trimethylbenzene
8260B	5030B	Solid	1,3-Dichloropropane
8260B	5030B	Solid	2,2-Dichloropropane
8260B	5030B	Solid	2-Butanone (MEK)
8260B	5030B	Solid	2-Chlorotoluene
8260B	5030B	Solid	2-Hexanone
8260B	5030B	Solid	4-Isopropyltoluene
8260B	5030B	Solid	Acetone
8260B	5030B	Solid	Isopropylbenzene
8260B	5030B	Solid	Vinyl acetate
8260B	5030B	Solid	Xylenes, Total
8270C	3550B	Solid	1,2,4-Trichlorobenzene
8270C	3550B	Solid	2,4,5-Trichlorophenol
8270C	3550B	Solid	2,4,6-Trichlorophenol
8270C	3550B	Solid	2-Methyl-4,6-dinitrophenol
8270C	3550B	Solid	2-Methylphenol
8270C	3550B	Solid	3-Methylphenol & 4-Methylphenol
8270C	3550B	Solid	Azobenzene
8270C	3550B	Solid	Hexachlorobenzene
8270C	3550B	Solid	Hexachlorobutadiene
8270C	3550B	Solid	Hexachlorocyclopentadiene
8270C	3550B	Solid	Hexachloroethane
8270C	3550B	Solid	Phenanthrene
8270C	3550B	Solid	Phenol
8270C	3550B	Solid	Pyrene
8270C	3550B	Solid	Pyridine
D 2216		Solid	Percent Moisture

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

Method Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET SAC
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	EET SAC
8015C	Diesel Range Organics (DRO) (GC)	EPA	EET SAC
8081B	Organochlorine Pesticides (GC)	SW846	EET SAC
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET SAC
7199	Chromium, Hexavalent (IC)	SW846	EET CAL 4
6010B	Metals (ICP)	SW846	EET SAC
7471A	Mercury (CVAA)	SW846	EET SAC
D 2216	Percent Moisture	ASTM	EET SAC
3050B	Preparation, Metals	SW846	EET SAC
3060A	Alkaline Digestion (Chromium, Hexavalent)	SW846	EET CAL 4
3546	Microwave Extraction	SW846	EET SAC
3550B	Ultrasonic Extraction	SW846	EET SAC
5030B	Purge and Trap	SW846	EET SAC
7471A	Preparation, Mercury	SW846	EET SAC
CA WET Citrate	California - Waste Extraction Test with Citrate Leach	CA-WET	EET SAC

Protocol References:

ASTM = ASTM International
CA-WET = California Waste Extraction Test, from Title 22
EPA = US Environmental Protection Agency
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Cleary Consultants, Inc
Project/Site: Mzrina High School

Job ID: 320-92432-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-92432-1	MHSSF-ENV-A@0.5'	Solid	09/20/22 10:00	09/23/22 18:45
320-92432-2	MHSSF-ENV-B@0.5'	Solid	09/20/22 13:00	09/23/22 18:45
320-92432-3	MHSSF-ENV-C@0.5'	Solid	09/20/22 15:00	09/23/22 18:45
320-92432-4	MHSSF-ENV-D@0.5'	Solid	09/21/22 09:30	09/23/22 18:45
320-92432-5	MHSSF-ENV-E@0.5'	Solid	09/21/22 11:00	09/23/22 18:45
320-92432-6	MHSSF-ENV-F@0.5'	Solid	09/21/22 13:00	09/23/22 18:45
320-92432-7	MHSSF-ENV-G@0.5'	Solid	09/22/22 08:00	09/23/22 18:45
320-92432-8	MHSSF-ENV-H@0.5'	Solid	09/22/22 09:00	09/23/22 18:45
320-92432-9	MHSSF-ENV-I@0.5'	Solid	09/22/22 11:00	09/23/22 18:45
320-92432-10	MHSSF-ENV-J@0.5'	Solid	09/22/22 12:00	09/23/22 18:45

#203424

320-92432 Chain of Custody

TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: _____

Date 9/22/2022 Page 1 of 2

Report To

Attn: Grant Foster
Company: Cleary Consultants, Inc.
Address: 560 Division Street, Campbell, CA 95008
Phone: 650-948-0574 Email: grant.foster@clearyconsultantsinc.com
Bill To: Cleary Consultants
Sampled By: Dustin Lettenberger
Attn: Accounts Payable
Phone: 948-0574

Analysis Request

Sample ID	Date	Time	Matrix	Pres.	TPH EPA - ☐ 8015/8021 ☒ 8260B ☒ Gas w/ ☒ BTEX ☒ MTBE	Purgeable Aromatics BTEX EPA - ☐ 8021 ☐ 8260B	TEPH EPA 8015M* ☒ Silica Gel ☒ Diesel ☒ Motor Oil ☐ Other ___	Fuel Tests EPA 8260B: ☐ Gas ☐ BTEX ☐ Five Oxyenates ☐ DCA, EDB ☐ Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☒ EPA 8260B ☐ 624	Semivolatiles GC/MS ☒ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	Pesticides ☒ EPA 8081 ☐ 608 PCBs ☒ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☒ Other: Chromium VI	Low Level Metals by EPA 200.8/6020 (ICP-MS): EPA 7199	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	STLC Extractable Hold (All Others)	Asbestos CARB 435A Arsenic and Chromium - STLC	Run as Composite	Number of Containers
MHSSF-ENV-A@0.5'	9/20/22	10:00 am	Soil	Ice	X		X			X	X		X		X	X							X	X		3
MHSSF-ENV-B@0.5'	↓	1:00 pm	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-C@0.5'	↓	3:00 pm	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-D@0.5'	9/21/22	9:30 am	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-E@0.5'	↓	11:00 am	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-F@0.5'	↓	1:00 pm	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-G@0.5'	9/22/22	8:00 am	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3
MHSSF-ENV-H@0.5'	↓	9:00 am	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓		3

PLEASE RUN ALL SAMPLES ON A DRY WEIGHT BASIS

Project Info.

Project Name: **
Project#: 1414.4
PO#: See Project #
Credit Card#:

TAT: (5 Day) 72h 48h 24h

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF

Special Instructions / Comments: ☐ Global ID _____

**MARINA HIGH SCHOOL - MULTI-SPORTS SYNTHETIC TURF FIELD

See Terms and Conditions on reverse
*TestAmerica SF reports 8015M from C_8-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

Sample Receipt

of Containers: 30
Head Space:
Temp:
Conforms to record:
Other:

1) Relinquished by: Dustin Lettenberger 10:27 AM
Signature Time
Dustin Lettenberger 9/23/22
Printed Name Date
Cleary Consultants, Inc.
Company

1) Received by: 10:27
Signature Time
Jesse Reeves
Printed Name Date
SJ. 9/23/22
Company

2) Relinquished by: A. Fish 18:45
Signature Time
A. Fish 9/23/22
Printed Name Date
SS
Company

2) Received by: 18:45
Signature Time
Nicholas Cahill 9-23-22
Printed Name Date
EETSAC
Company
1.5C

3) Relinquished by:
Signature Time
Printed Name Date
Company

3) Received by:
Signature Time
Printed Name Date
Company

Rev02/09

1.4C°

#203424

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TESTAMERICA San Francisco Chain of Custody
1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

Reference #: _____

Date 9/22/2022 Page 2 of 2

Report To

Attn: Grant Foster
Company: Cleary Consultants, Inc.
Address: 560 Division Street, Campbell, CA 95008
Phone: 650-948-0574 Email: grant foster@clearyconsultantsinc.com
Bill To: Cleary Consultants Sampled By: Dustin Lettenberger
Attn: Accounts Payable Phone: 948-0574

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH EPA - ☐ 8015/8021 ☒ 8260B ☒ Gas w/ ☒ BTEX ☒ MTBE	Purgeable Aromatics BTEX EPA - ☐ 8021 ☐ 8260B	TEPH EPA 8015M* ☒ Silica Gel ☒ Diesel ☒ Motor Oil ☐ Other ___	Fuel Tests EPA 8260B: ☐ Gas ☐ BTEX ☐ Five Oxyenates ☐ DCA, EDB ☐ Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☒ EPA 8260B ☐ 624	Semivolatiles GC/MS ☒ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	Pesticides ☒ EPA 8081 ☐ 608 PCBs ☒ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☒ Other: Chromium VI	Low Level Metals by EPA 200.8/6020 (ICP-MS): EPA 7199	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	STLC Extractable Hold (All Others)	Asbestos CARB 435A Arsenic and Chromium - STLC	Run as Composite	Number of Containers
MHSSF-ENV-I@0.5'	9/22/22	11:00 am	Soil	Ice	X		X			X	X		X		X	X							X	X	X		3
MHSSF-ENV-J@0.5'	↓	12:00 pm	↓	↓	↓		↓			↓	↓		↓		↓	↓							↓	↓	↓		3

PLEASE RUN ALL SAMPLES ON A DRY WEIGHT BASIS

Project Info.

Project Name: **
Project#: 1414.4
PO#: See Project #
Credit Card#:

TAT: (5 Day) 72h 48h 24h Other:

Report: ☐ Routine ☐ Level 3 ☐ Level 4 ☐ EDD ☐ State Tank Fund EDF

Special Instructions / Comments: ☐ Global ID _____

**MARINA HIGH SCHOOL - MULTI-SPORTS SYNTHETIC TURF FIELD

See Terms and Conditions on reverse

*TestAmerica SF reports 8015M from C_8-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

Sample Receipt

of Containers: 30
Head Space:
Temp:
Conforms to record:

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [illegible] Time: 10:27 Am	Signature: G. Fisher Time: 18:45	Signature: Time:
Printed Name: Dustin Lettenberger Date: 9/23/22	Printed Name: A. Fisher Date: 9/23/22	Printed Name: Date:
Company: Cleary Consultants, Inc.	Company: SC	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: [illegible] Time: 10:27	Signature: [illegible] Time: 18:45	Signature: Time:
Printed Name: SJ Date: 9/23/22	Printed Name: Nicholas Cahill Date: 9-23-22	Printed Name: Date:
Company: SJ	Company: EETSAC 1.5c	Company:

1.4c°

Rev02/09

EUROFINS TESTAMERICA W SACRAMENTO
880 RIVERSIDE PARKWAY

WEST SACRAMENTO, CA 95605
UNITED STATES US

CAD: 852262/CAFE3616

BILL SENDER

TO EUROFINS ENV. TESTING SOUTHWEST
SAMPLE RECEIVING
2841 DOW AVE
SUITE 100
TUSTIN CA 92780

(949) 261-1022
DEPT SUB WORK

REF: SEND OUTS

FedE
Expre

2 of 2
MPS# 0263 4895 5418 9875
Mstr# 4895 5418 9864

0261

TUE - 27 SEP 10:3(
PRIORITY OVERNIGH

92 DTHA

9278
CA-US SN

1505364

Custody Seal

DATE

SIGNATURE

9-26-2
MH

eurofins | Environment Testing | TestAmerica

320-92432 Waybill

EUROFINS TESTAMERICA W SACRAMENTO
880 RIVERSIDE PARKWAY
WEST SACRAMENTO, CA 95605
UNITED STATES US

CAD: 852262/CAFE3616
BILL SENDER

TO EUROFINS ENV. TESTING SOUTHWEST
SAMPLE RECEIVING
2841 DOW AVE
SUITE 100
TUSTIN CA 92780
(949) 261-1022
DEPT SUB WORK

REF: SEND OUTS

FedE
Expre

2 of 2
MPS# 0263 4895 5418 9875
Mstr# 4895 5418 9864

TUE - 27 SEP 10:3(
PRIORITY OVERNIGH

0201

92 DTHA

9278
CA-US SN

1505364

Custody Seal 9-26-2
DATE
SIGNATURE

eurofins | Environment Testing TestAmerica

320-92432 Waybill

Eurofins Sacramento
880 Riverside Parkway
West Sacramento CA 95605
Phone 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Salimpour Afsaneh F	Carrier Tracking No(s):	COC No: 320-285306 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Afsaneh Salimpour@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: Eurofins Environment Testing Southwest,		Accreditations Required (See note): State - California, State Program - California		Job #: 320-92432-1
Address: 2841 Dow Avenue Suite 100	Due Date Requested: 9/26/2022			
City: Tustin	TAT Requested (days):			
State, Zip: CA 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: Mzrina High School	Project #: 32016777			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K - EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q - Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7199_ORGFM/3060A_IC Hexavalent Chromium	Total Number of containers	Special Instructions/Note
			Preservation Code:						
MHSSF-ENV-A@0 5' (320-92432-1)	9/20/22	10 00 Pacific		Solid			X	2	
MHSSF-ENV-B@0 5' (320-92432-2)	9/20/22	13 00 Pacific		Solid			X	2	
MHSSF-ENV-C@0 5' (320-92432-3)	9/20/22	15:00 Pacific		Solid			X	2	
MHSSF-ENV-D@0 5' (320-92432-4)	9/21/22	09 30 Pacific		Solid			X	2	
MHSSF-ENV-E@0 5' (320-92432-5)	9/21/22	11 00 Pacific		Solid			X	2	
MHSSF-ENV-F@0 5' (320-92432-6)	9/21/22	13 00 Pacific		Solid			X	2	
MHSSF-ENV-G@0 5' (320-92432-7)	9/22/22	08 00 Pacific		Solid			X	2	
MHSSF-ENV-H@0 5' (320-92432-8)	9/22/22	09:00 Pacific		Solid			X	2	
MHSSF-ENV-I@0 5' (320-92432-9)	9/22/22	11 00 Pacific		Solid			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northern California LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing Northern California LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing Northern California LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northern California LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9-26-22/16:30	EETSA	[signature]	9/27/22 0745	
Relinquished by:	Date/Time.	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 2.4/2.6 SG2

Ver: 06/08/2021

Eurofins Sacramento
880 Riverside Parkway
West Sacramento CA 95605
Phone 916-373-5600 Fax. 916-372-1059

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Salimpour Afsaneh F	Carrier Tracking No(s)	COC No: 320-285306 2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Afsaneh.Salimpour@et.eurofinsus com	State of Origin: California	Page: Page 2 of 2
Company: Eurofins Environment Testing Southwest,		Accreditations Required (See note): State - California State Program - California		Job #: 320-92432-1
Address: 2841 Dow Avenue Suite 100	Due Date Requested: 9/26/2022			
City: Tustin	TAT Requested (days):			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email	WO #:			
Project Name: Mzrina High School	Project #: 32016777			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

A HCL, B NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L - EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7199_ORGFM/3060A_IC Hexavalent Chromium	Total Number of containers	Special Instructions/Note
			Preservation Code:						
MHSSF-ENV-J@0 5' (320-92432-10)	9/22/22	12 00 Pacific		Solid			X	2	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing Northern California LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing Northern California LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing Northern California LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northern California LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9-28-22/16:30	EETSAC	[signature]	9/23/22 0945	ET
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks. 2-6/2-6 SW

Ver: 06/08/2021

Eurofins Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Phone 916-373-5600 Fax. 916-372-1059

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Salimpour Afsaneh F	Carrier Tracking No(s)	COC No: 320-285306 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Afsaneh Salimpour@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: Eurofins Environment Testing Southwest,		Accreditations Required (See note): State - California State Program - California		Job #: 320-92432-1
Address: 2841 Dow Avenue Suite 100	Due Date Requested: 9/26/2022			
City: Tustin	TAT Requested (days)			
State, Zip: CA, 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: Mzrina High School	Project #: 32016777			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F - MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K - EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7199_ORGFM/3060A_IC Hexavalent Chromium	Total Number of containers	Special Instructions/Note
			Preservation Code:						
MHSSF-ENV-A@0 5' (320-92432-1)	9/20/22	10 00 Pacific		Solid			X	2	
MHSSF-ENV-B@0.5' (320-92432-2)	9/20/22	13 00 Pacific		Solid			X	2	
MHSSF-ENV-C@0.5' (320-92432-3)	9/20/22	15 00 Pacific		Solid			X	2	
MHSSF-ENV-D@0 5' (320-92432-4)	9/21/22	09.30 Pacific		Solid			X	2	
MHSSF-ENV-E@0 5' (320-92432-5)	9/21/22	11 00 Pacific		Solid			X	2	
MHSSF-ENV-F@0 5' (320-92432-6)	9/21/22	13 00 Pacific		Solid			X	2	
MHSSF-ENV-G@0 5' (320-92432-7)	9/22/22	08 00 Pacific		Solid			X	2	
MHSSF-ENV-H@0 5' (320-92432-8)	9/22/22	09 00 Pacific		Solid			X	2	
MHSSF-ENV-I@0 5 (320-92432-9)	9/22/22	11 00 Pacific		Solid			X	2	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing Northern California, LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing Northern California LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing Northern California LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northern California LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	9-26-22/16:30	EETSA	[signature]	9/27/22 0945	CR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 2.4/2.6 SG2

Ver: 06/08/2021

Eurofins Sacramento
880 Riverside Parkway
West Sacramento; CA 95605
Phone 916-373-5600 Fax: 916-372-1059

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Salimpour Afsaneh F	Carrier Tracking No(s):	COC No: 320-285306 2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Afsaneh Salimpour@et.eurofinsus com	State of Origin: California	Page: Page 2 of 2
Company: Eurofins Environment Testing Southwest,		Accreditations Required (See note): State - California State Program - California		Job #: 320-92432-1
Address: 2841 Dow Avenue Suite 100, ,	Due Date Requested: 9/26/2022			
City: Tustin	TAT Requested (days):			
State, Zip: CA 92780				
Phone: 714-895-5494(Tel)	PO #:			
Email:	WO #:			
Project Name: Mzrina High School	Project #: 32016777			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	7199_ORGFM/3060A_IC Hexavalent Chromium	Total Number of containers	Special Instructions/Note
			Preservation Code:						
MHSSF-ENV-J@0 5' (320-92432-10)	9/22/22	12 00 Pacific		Solid			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Northern California LLC places the ownership of method analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing Northern California LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing Northern California LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Northern California LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	9-26-22 / 16:30	EETSAC	[signature]	9/23/22 0945	ET
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: 2-6/2-6 SCR

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Cleary Consultants, Inc

Job Number: 320-92432-1

Login Number: 92432
List Number: 1
Creator: Cahill, Nicholas P

List Source: Eurofins Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Refer to Job Narrative for details.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Cleary Consultants, Inc

Job Number: 320-92432-1

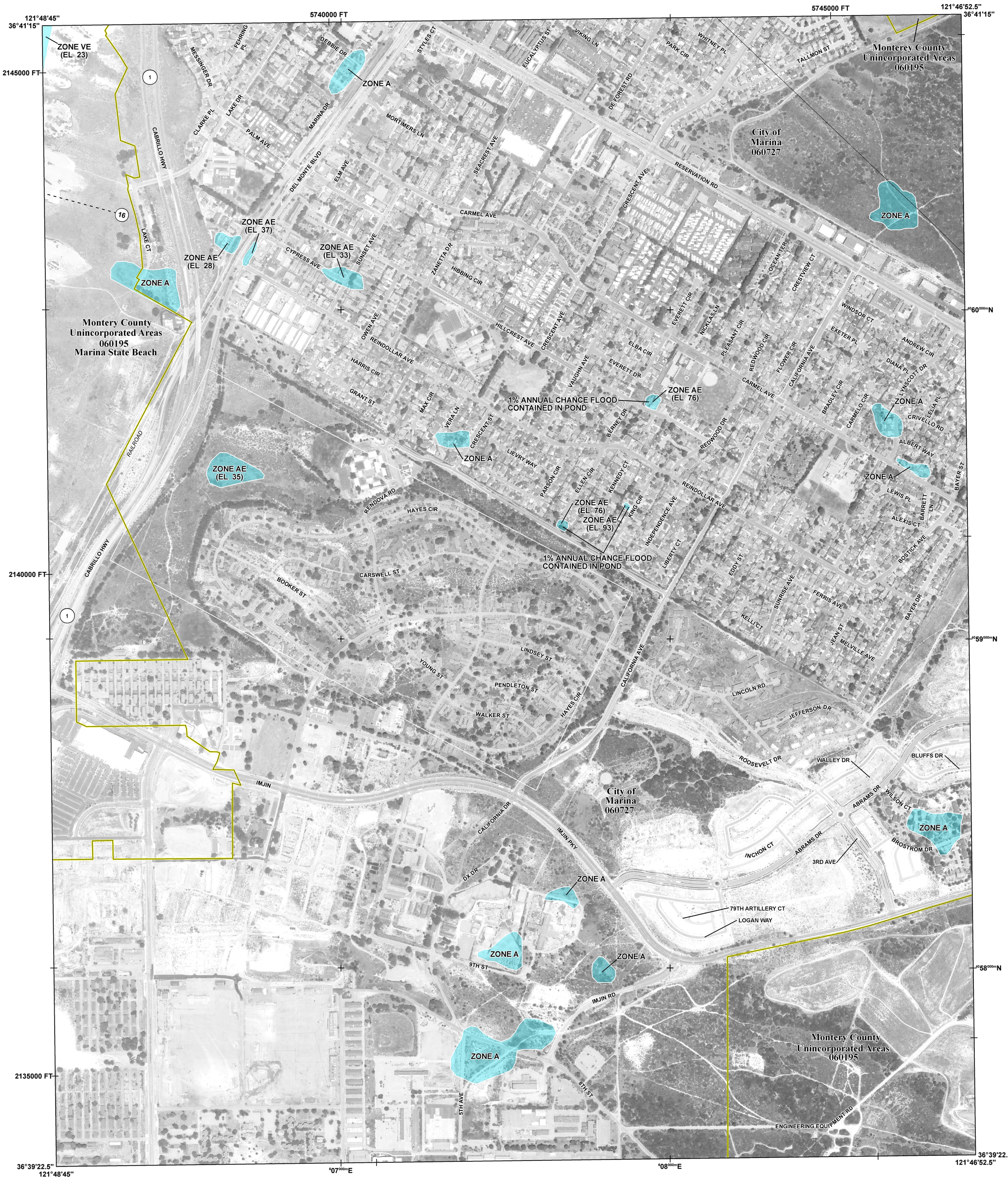
Login Number: 92432
List Number: 2
Creator: Ornelas, Olga

List Source: Eurofins Calscience
List Creation: 09/27/22 02:45 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix E

FEMA Flood Map



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall

OTHER FEATURES

- 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from Coastal California LiDAR and Digital Imagery dated 2011. USDA NAIP 2010 imagery is used in areas not covered by the Coastal California digital imagery.

SCALE

N

Map Projection:

Universal Transverse Mercator Zone 10N; North American Datum 1983; North American Vertical Datum of 1988

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR





NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

MONTEREY COUNTY, CALIFORNIA

and Incorporated Areas

PANEL 191 OF 2050

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
MARINA, CITY OF	060727	0191	H
MONTEREY COUNTY	060195	0191	H

VERSION NUMBER
2.3.2.1

MAP NUMBER
06053C0191H

MAP REVISED
June 21, 2017

Appendix F

Assembly Bill 52 Consultation

DocuSign Envelope ID: B4EE21F7-C547-4A4A-9695-45C4DC7ACED5

Monterey Peninsula Unified School District

P.O. Box 1031
700 Pacific Street
Monterey, CA 93942-1031

(831) 645-1269
(831) 392-3446 FAX

February 24, 2023

Amah Mutsun Tribal Band
Attn: Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743-5833

Subject: **Notification of Proposed Project Under AB 52 Amendment to CEQA for the Marina High School Multi-Use Field Project (proposed project)**

Dear Chairperson Lopez,

The Monterey Peninsula Unified School District (MPUSD) is the lead agency for the Marina High School Multi-Use Field Project (proposed project). The proposed project consists of various improvements to the existing athletic fields at the campus of Marina High School. The Area of Potential Effect (APE) is an approximately 5.7-acre area in Marina, California. A map showing the proposed project area is attached. The proposed project includes:

- New field lighting made up of four (4) 80-foot high lighting poles, two (2) 100-foot high lighting poles, and one (1) 70-foot high lighting pole, located at the north, southeast, and southwest of the existing athletic fields;
- New 686-seat bleachers at the north edge of existing athletic fields and 213-seat bleachers at the southeastern corner of the existing athletic fields. The two sets of bleachers would each have a dedicated sound booth for athletic events;
- New scoreboards, one (1) above the soundbooth on the northern bleachers for football and soccer, and one (1) at the southeast side of the site for baseball;
- New concessions stand, restrooms, and sun sails located at the northeastern corner of the existing athletic fields;
- Installation of moveable field goals for football and goal posts for soccer, as well as rubber track surfacing along the north and west boundaries of the athletic fields (including four (4) lanes for the 100 yard dash);
- Improvements to the existing baseball field, including new olive core in-field, installation of artificial turf, moveable outfield fencing, batting cage, and reconfigured dugouts, bullpens, and storage areas;
- Dedicated storage units for track and field, lacrosse/field hockey, football, and soccer at the north side of the site, as well as a dedicated storage unit for baseball on the southwestern side of the site;
- New bio-retention and stormwater treatment facilities;

- New marquee sign at the entrance to the fields;
- Removal of 10 trees and planting of 63 trees; and
- New plaza to the east of the existing athletic fields, complete with flag pole, wrap around bench, and decorative inlaid lettering.

The Native American Heritage Commission (NAHC) has provided the Amah Mutsun Tribal Band in a consultation list of tribes that are traditionally and culturally affiliated within the geographic area of the above listed proposed project. The result of the NAHC Sacred Lands File check was negative. MPUSD is interested in obtaining additional information regarding the presence of cultural resources within or adjacent to proposed project locations and in learning of any concerns you or other tribal members may have regarding this proposed project. Please provide your comments and if you feel that other groups or individuals should be contacted, please let me know at:

Monterey Peninsula Unified School District
Attention: Ryan Altemeyer, Associate Superintendent of Business Services
700 Pacific Street, Monterey, CA 93942
(831) 645-1269
raltemeyer@mpusd.k12.ca.us

Please consider this letter and preliminary project information as the notification of a proposed project as required under the California Environmental Quality Act, specifically Public Resources Code (PRC) 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC 21080.3.1 (d) if you would like to consult on this proposed project. Additionally, with your response, please provide a designated contact person.

Very Respectfully,

DocuSigned by:
7526B470DC3941C...

Ryan Altemeyer, Associate Superintendent of Business Services, MPUSD

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

February 19, 2023

Ryan Altemeyer
Monterey Peninsula Unified School District

Via Email to: raltemeyer@mpusd.k12.ca.us

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Marina High School Multi-Use Field Project, Monterey County

To Whom It May Concern:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Monterey County
2/19/2023

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272
Galt, CA, 95632
Phone: (916) 743 - 5833
vlopez@amahmutsun.org

Costanoan
Northern Valley Yokut

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street
Pomona, CA, 91766
Phone: (909) 629 - 6081
Fax: (909) 524-8041
rumsen@aol.com

Costanoan

Esselen Tribe of Monterey County
Tom Little Bear Nason, Chairman
P. O. Box 95
Carmel Valley, CA, 93924
Phone: (831) 659 - 2153
Fax: (831) 659-0111
TribalChairman@EsselenTribe.org

Costanoan
Esselen

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyon.org

Costanoan

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Costanoan

Ohlone/Costanoan-Esselen Nation
Louise Miranda-Ramirez, Chairperson
P.O. Box 1301
Monterey, CA, 93942
Phone: (408) 629 - 5189
ramirez.louise@yahoo.com

Costanoan
Esselen

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906
Phone: (831) 443 - 9702
kwood8934@aol.com

Foothill Yokut
Mono

Rumsen Am:a Tur:ataj Ohlone
Dee Dee Ybarra, Chairperson
14671 Farmington Street
Hesperia, CA, 92345
Phone: (760) 403 - 1756
rumsenama@gmail.com

Costanoan

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Marina High School Multi-Use Field Project, Monterey County.

Appendix G

MUSCO Light Spillage Maps

Marina High School Sports Fields

Marina,CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1	80'	80'	7	TLC-LED-900	6.23 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
A2	80'	80'	7	TLC-LED-900	6.23 kW	A
		16'	1	TLC-BT-575	0.58 kW	A
		60'	1	TLC-LED-400	0.40 kW	C
B1	100'	100'	5	TLC-LED-1500	7.15 kW	B
		100'	1	TLC-LED-600	0.58 kW	B
		100'	7	TLC-LED-900	6.23 kW	B
		16'	3	TLC-BT-575	1.73 kW	B
B2	100'	100'	5	TLC-LED-1500	7.15 kW	B
		100'	1	TLC-LED-400	0.40 kW	B
		100'	7	TLC-LED-900	6.23 kW	B
		16'	3	TLC-BT-575	1.73 kW	B
C1	70'	70'	4	TLC-LED-900	3.56 kW	A
		16'	2	TLC-BT-575	1.15 kW	A
D1	80'	80'	3	TLC-LED-1500	4.29 kW	B
		80'	6	TLC-LED-900	5.34 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
		60'	1	TLC-LED-400	0.40 kW	D
D2	80'	80'	3	TLC-LED-1500	4.29 kW	B
		80'	6	TLC-LED-900	5.34 kW	B
		16'	2	TLC-BT-575	1.15 kW	B
		60'	1	TLC-LED-400	0.40 kW	D
		60'	1	TLC-LED-900	0.89 kW	D
7			***80***		***73.16 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Baseball	18.32 kW	22
B	BB/FB	52.75 kW	54
C	BB Egress	0.4 kW	1
D	FB Egress	1.69 kW	3

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	16
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	4
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	45
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	1
TLC-BT-575	LED 5700K - 75 CRI	575W	52,000	>120,000	>120,000	>120,000	14

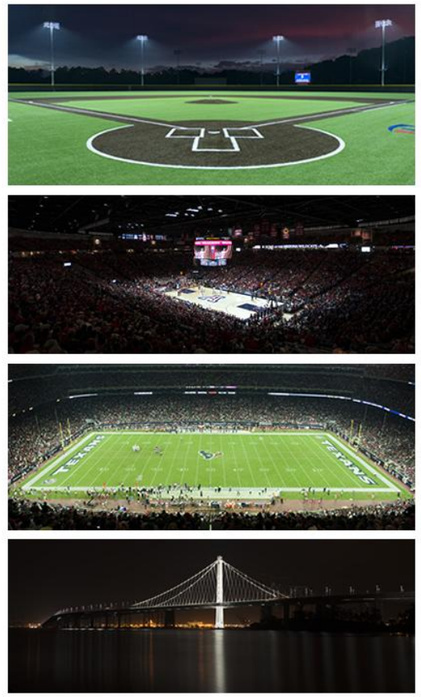
Light Level Summary

Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
BB Path of Egress	Horizontal	1.98	0	13	103316.30		C	1
Baseball Bleacher	Horizontal	8.42	4	12	3.23	2.11	C	1
Baseball Spill	Horizontal Illuminance	0	0	0.01	65.65		A,B,C,D	80
Baseball Spill	Max Candela Metric	392	39.6	712	17.96	9.90	A,B,C,D	80
Baseball Spill	Max Vertical Illuminance Metric	0.01	0	0.03	52.51		A,B,C,D	80
Baseball (Infield)	Horizontal Illuminance	50.8	39	58	1.47	1.30	A,B	76
Baseball (Outfield)	Horizontal Illuminance	41.6	25	53	2.15	1.66	A,B	76
Bullpen	Horizontal	21	20	22	1.14	1.05	A,B	76
FB Bleacher	Horizontal	5.99	4	9	2.24	1.50	D	3
FB Path of Egress	Horizontal	2.31	0	19	16372.90		D	3
Football	Horizontal Illuminance	42	32	50	1.57	1.31	B	54
Soccer	Horizontal Illuminance	43.1	33	50	1.49	1.31	B	54
Track	Horizontal	26.9	20	36	1.77	1.34	A,B	76

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From Hometown to Professional

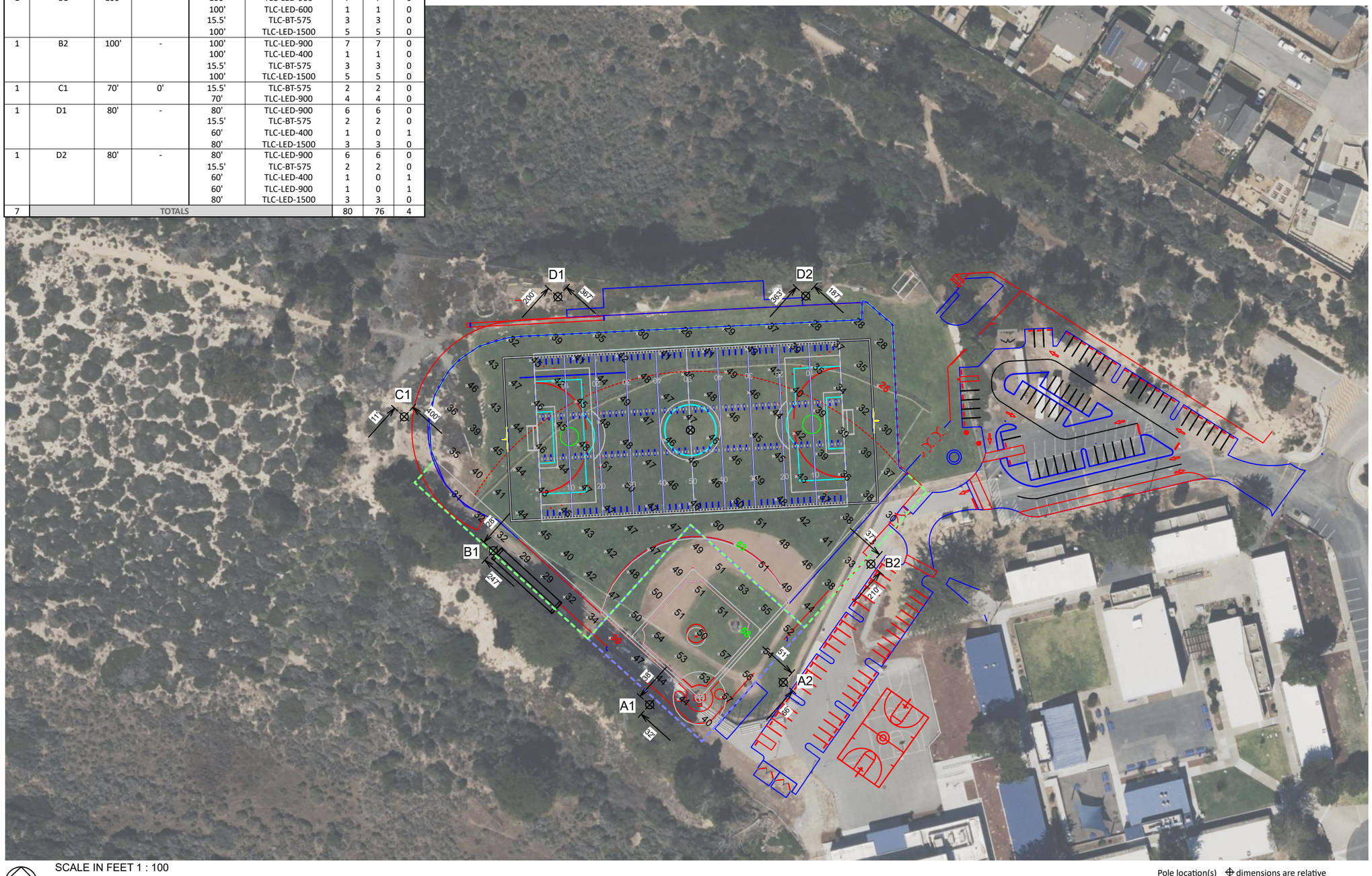


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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	80'	-	15.5'	TLC-BT-575	1	1	0
				80'	TLC-LED-900	7	7	0
1	A2	80'	-	15.5'	TLC-BT-575	1	1	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	7	7	0
1	B1	100'	-	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-600	1	1	0
				15.5'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	B2	100'	-	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-400	1	1	0
				15.5'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	C1	70'	0'	15.5'	TLC-BT-575	2	2	0
				70'	TLC-LED-900	4	4	0
1	D1	80'	-	80'	TLC-LED-900	6	6	0
				15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-1500	3	3	0
1	D2	80'	-	80'	TLC-LED-900	6	6	0
				15.5'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				60'	TLC-LED-900	1	0	1
				80'	TLC-LED-1500	3	3	0
7	TOTALS					80	76	4



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: Bryce Miles · File #222034C · 28-Nov-22

Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**Baseball**
Size:	Irregular 349' / 363' / 300'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	50.79	41.61
Maximum:	58	53
Minimum:	39	25
Avg / Min:	1.30	1.68
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.47	2.15
UG (adjacent pts):	1.43	1.59
CU:	0.76	
No. of Points:	25	122

LUMINAIRE INFORMATION

Applied Circuits:	A, B
No. of Luminaires:	**76**
Total Load:	71.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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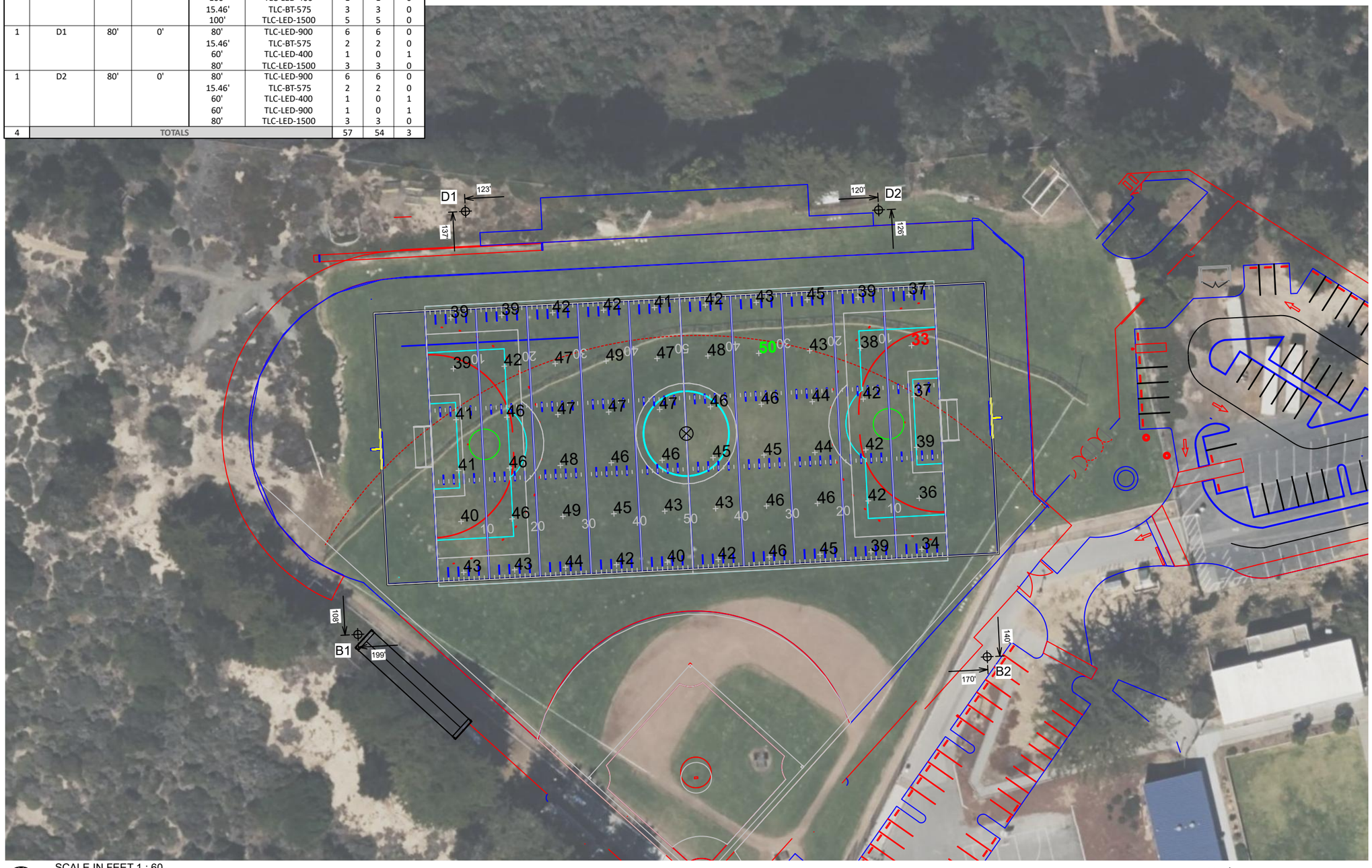
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Marina High School Sports Fields

Marina,CA

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B1	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-600	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	B2	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-400	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	D1	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-1500	3	3	0
1	D2	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				60'	TLC-LED-900	1	0	1
				80'	TLC-LED-1500	3	3	0
4	TOTALS					57	54	3



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Soccer**
Size:	300' x 165'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**40**
Scan Average:	43.09
Maximum:	50
Minimum:	33
Avg / Min:	1.29
Guaranteed Max / Min:	**2**
Max / Min:	1.49
UG (adjacent pts):	1.18
CU:	0.41
No. of Points:	60

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**54**
Total Load:	52.75 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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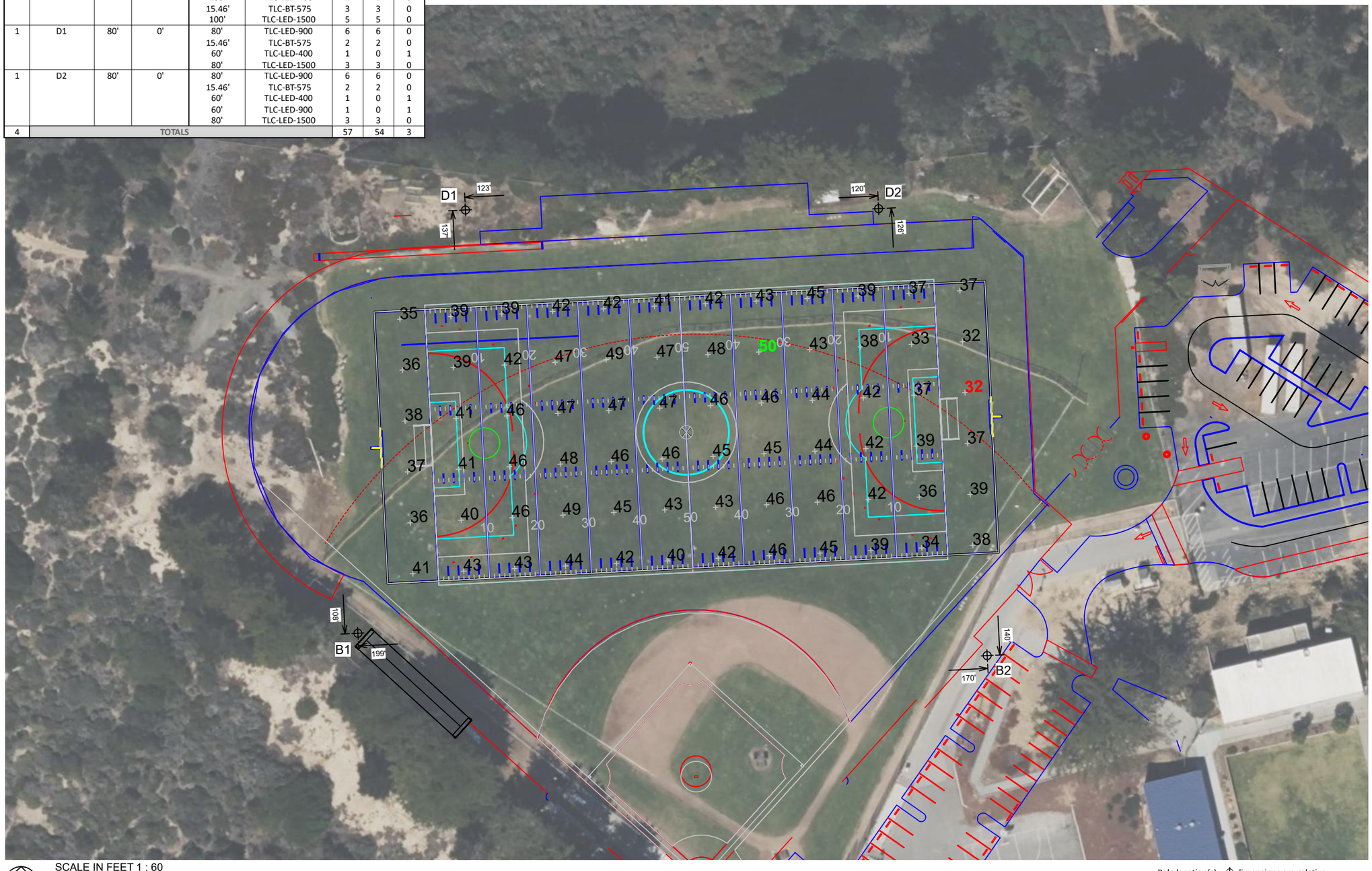
ENGINEERED DESIGN By: Bryce Miles · File #222034C · 28-Nov-22

Marina High School Sports Fields

Marina,CA

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	B1	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-600	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	B2	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-400	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	D1	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-1500	3	3	0
1	D2	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				60'	TLC-LED-900	1	0	1
				80'	TLC-LED-1500	3	3	0
4	TOTALS					57	54	3



SCALE IN FEET 1 : 60

0' 60' 120'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Football**
Size:	360' x 160'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**40**
Scan Average:	41.98
Maximum:	50
Minimum:	32
Avg / Min:	1.32
Guaranteed Max / Min:	**2**
Max / Min:	1.57
UG (adjacent pts):	1.18
CU:	0.48
No. of Points:	72

LUMINAIRE INFORMATION

Applied Circuits:	B
No. of Luminaires:	**54**
Total Load:	52.75 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Marina High School Sports Fields

Marina,CA

EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A2	80'	0'	15.46'	TLC-BT-575	1	0	1
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-900	7	0	7
1	TOTALS					9	1	8



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Baseball Bleacher**
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**8.42**
Maximum:	12
Minimum:	4
Avg / Min:	2.21
Max / Min:	**3.23**
UG (adjacent pts):	1.78
CU:	0.23
No. of Points:	12

LUMINAIRE INFORMATION

Applied Circuits:	C
No. of Luminaires:	**1**
Total Load:	0.4 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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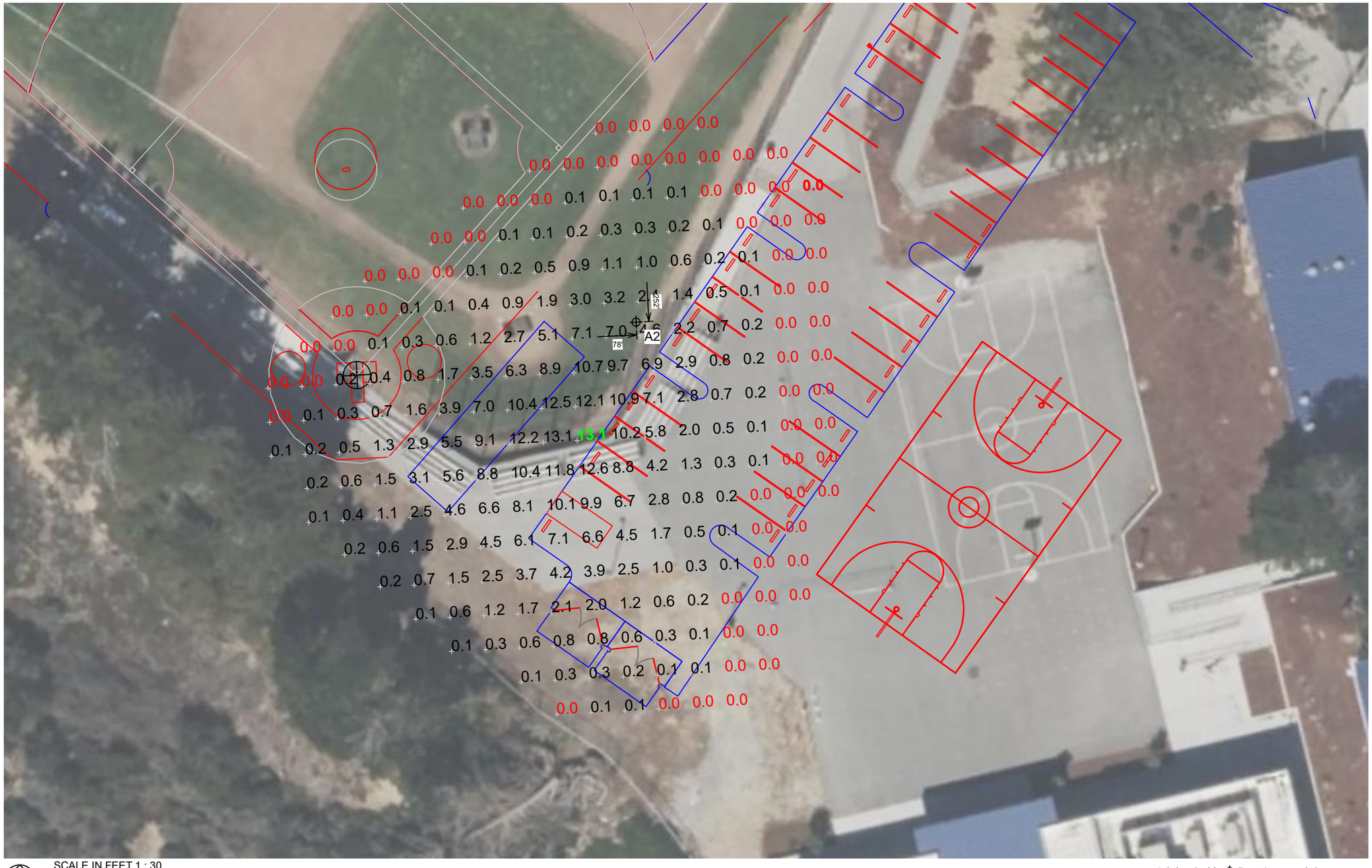
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A2	80'	0'	15.46'	TLC-BT-575	1	0	1
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-900	7	0	7
1	TOTALS					9	1	8



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**BB Path of Egress**
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**1.98**
Maximum:	13
Minimum:	0
Avg / Min:	15640.05
Max / Min:	**103316.25**
UG (adjacent pts):	36.20
CU:	1.00
No. of Points:	226

LUMINAIRE INFORMATION

Applied Circuits:	C
No. of Luminaires:	**1**
Total Load:	0.4 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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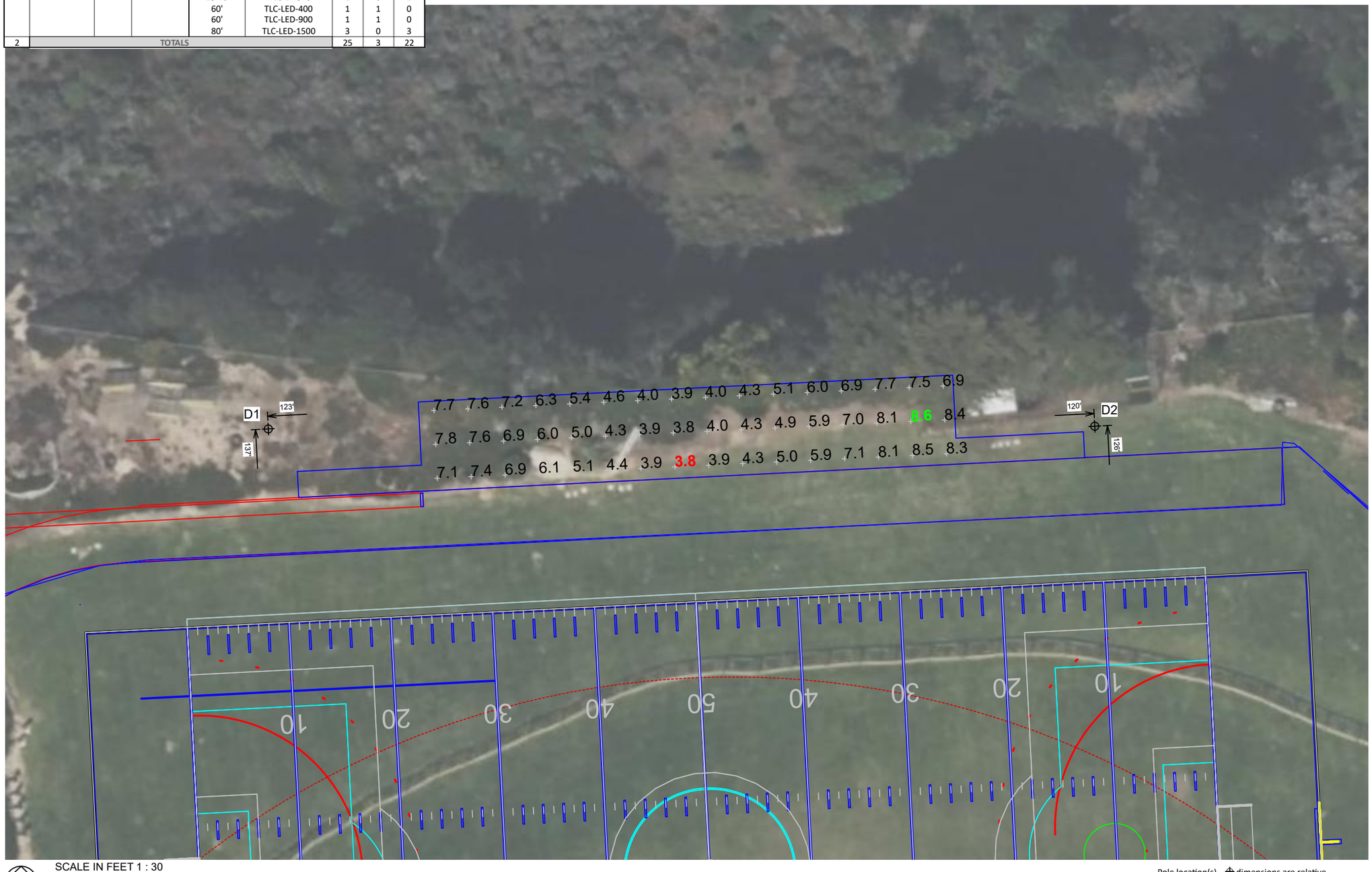
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	D1	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-1500	3	0	3
1	D2	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				60'	TLC-LED-900	1	1	0
				80'	TLC-LED-1500	3	0	3
2	TOTALS					25	3	22



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**FB Bleacher**
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**5.99**
Maximum:	9
Minimum:	4
Avg / Min:	1.57
Max / Min:	**2.24**
UG (adjacent pts):	1.21
CU:	0.15
No. of Points:	48

LUMINAIRE INFORMATION

Applied Circuits:	D
No. of Luminaires:	**3**
Total Load:	1.69 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

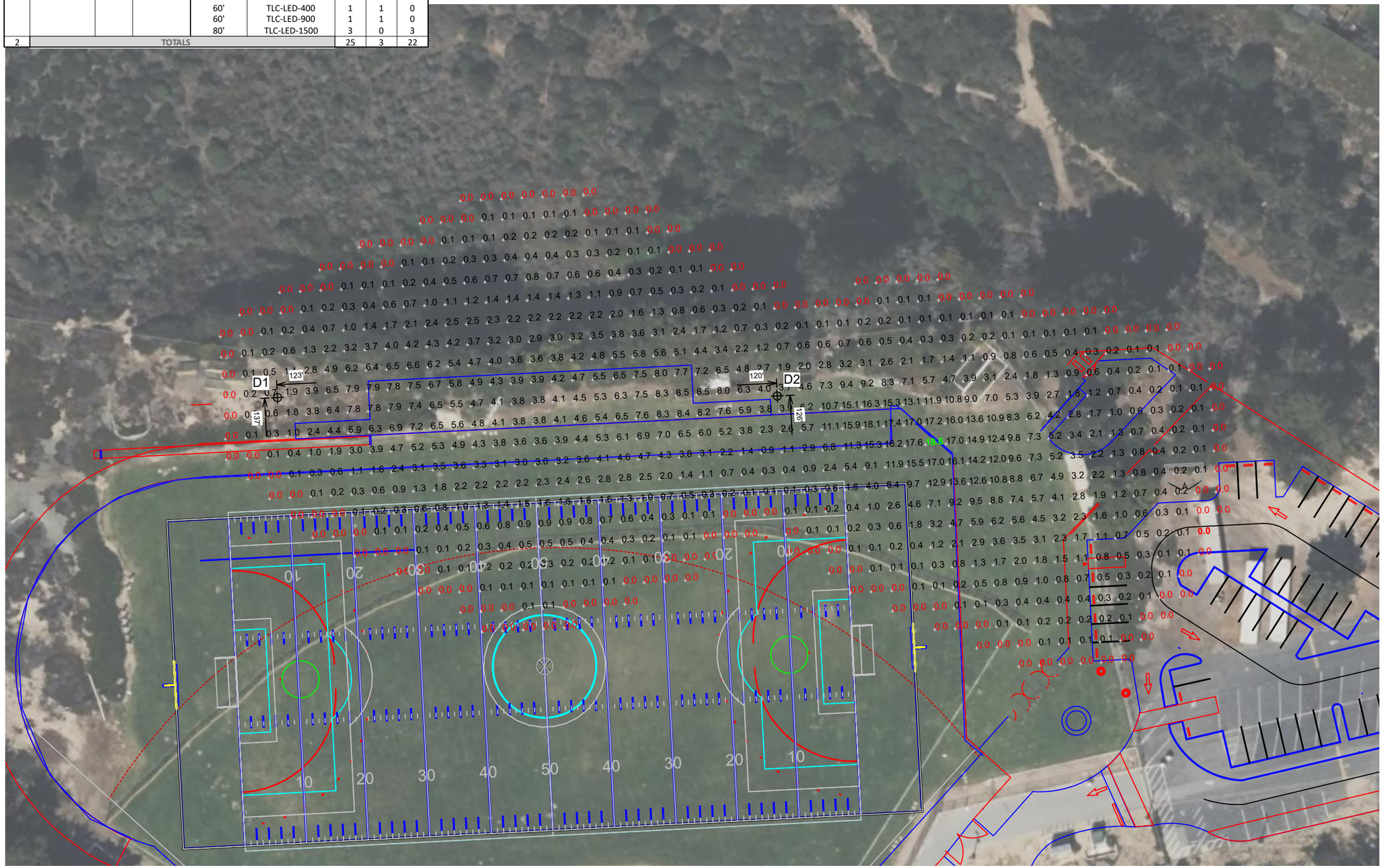
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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	D1	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				80'	TLC-LED-1500	3	0	3
1	D2	80'	0'	80'	TLC-LED-900	6	0	6
				15.46'	TLC-BT-575	2	0	2
				60'	TLC-LED-400	1	1	0
				60'	TLC-LED-900	1	1	0
				80'	TLC-LED-1500	3	0	3
2	TOTALS					25	3	22



SCALE IN FEET 1 : 50

0' 50' 100'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**FB Path of Egress**
Size:	360' x 160'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**2.31**
Maximum:	19
Minimum:	0
Avg / Min:	2036.12
Max / Min:	**16372.90**
UG (adjacent pts):	73.90
CU:	1.00
No. of Points:	807

LUMINAIRE INFORMATION

Applied Circuits:	D
No. of Luminaires:	**3**
Total Load:	1.69 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

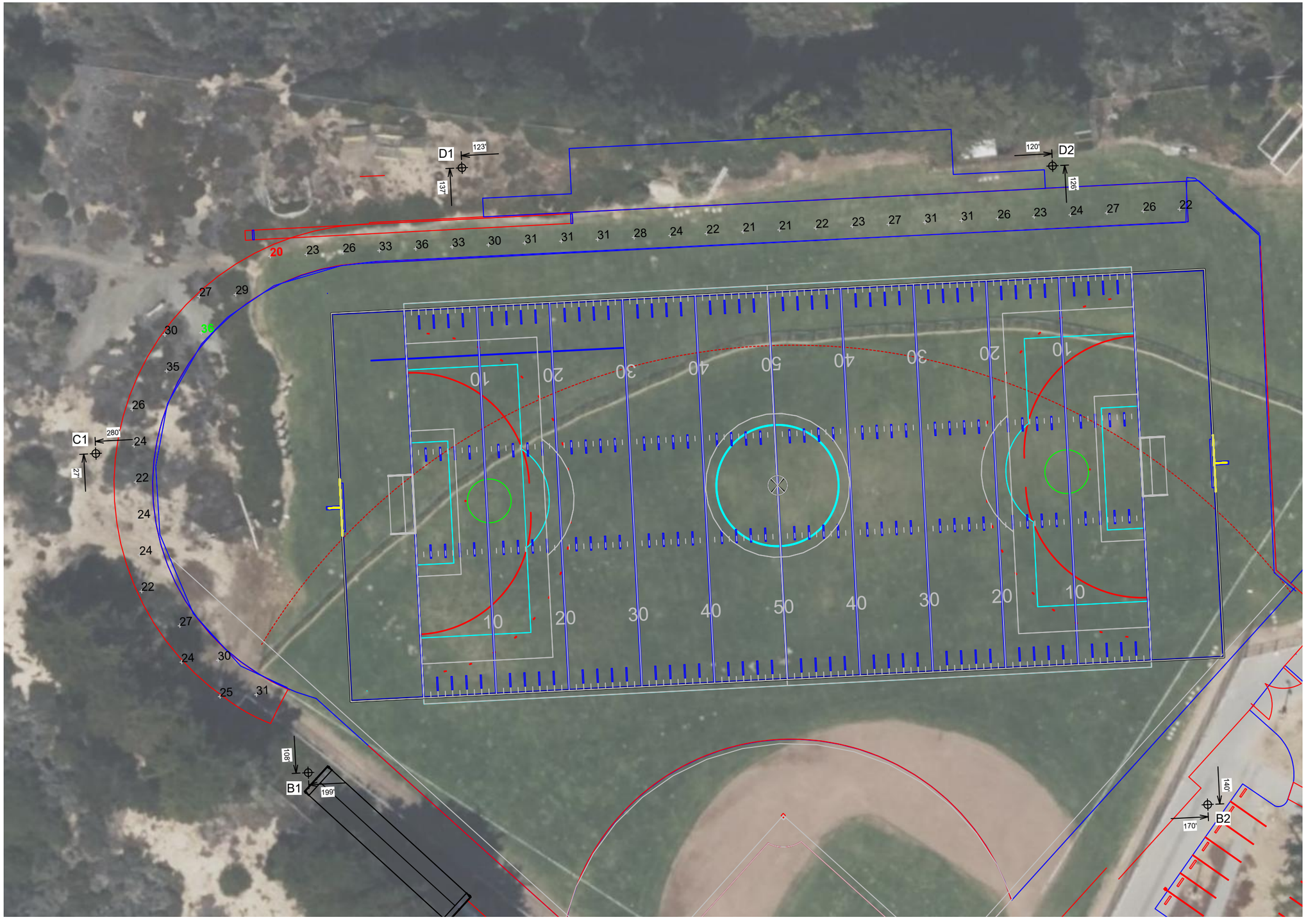
Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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SCALE IN FEET 1 : 40

0' 40' 80'

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Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**Track**
Size:	360' x 160'
Spacing:	15.0' x 15.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**26.85**
Maximum:	36
Minimum:	20
Avg / Min:	1.31
Max / Min:	**1.77**
UG (adjacent pts):	1.32
CU:	0.05
No. of Points:	42

LUMINAIRE INFORMATION

Applied Circuits:	A, B
No. of Luminaires:	**76**
Total Load:	71.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Marina High School Sports Fields

Marina,CA

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	80'	0'	15.46'	TLC-BT-575	1	1	0
				80'	TLC-LED-900	7	7	0
1	A2	80'	0'	15.46'	TLC-BT-575	1	1	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-900	7	7	0
1	B1	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-600	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	B2	100'	0'	100'	TLC-LED-900	7	7	0
				100'	TLC-LED-400	1	1	0
				15.46'	TLC-BT-575	3	3	0
				100'	TLC-LED-1500	5	5	0
1	C1	70'	0'	15.46'	TLC-BT-575	2	2	0
				70'	TLC-LED-900	4	4	0
1	D1	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				80'	TLC-LED-1500	3	3	0
1	D2	80'	0'	80'	TLC-LED-900	6	6	0
				15.46'	TLC-BT-575	2	2	0
				60'	TLC-LED-400	1	0	1
				60'	TLC-LED-900	1	0	1
				80'	TLC-LED-1500	3	3	0
7	TOTALS					80	76	4



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

GRID SUMMARY

Name:	**Bullpen**
Size:	360' x 160'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**20.98**
Maximum:	22
Minimum:	20
Avg / Min:	1.06
Max / Min:	**1.14**
UG (adjacent pts):	1.14
CU:	0.00
No. of Points:	4

LUMINAIRE INFORMATION

Applied Circuits:	A, B
No. of Luminaires:	**76**
Total Load:	71.07 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**Baseball Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	0.0046
Maximum:	0.01
Minimum:	0.00
No. of Points:	77

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D
No. of Luminaires:	**80**
Total Load:	73.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**Baseball Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	0.0114
Maximum:	0.03
Minimum:	0.00
No. of Points:	77

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D
No. of Luminaires:	**80**
Total Load:	73.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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ILLUMINATION SUMMARY



Marina High School Sports Fields

Marina,CA

GRID SUMMARY

Name:	**Baseball Spill**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	392.1303
Maximum:	711.80
Minimum:	39.62
No. of Points:	77

LUMINAIRE INFORMATION

Applied Circuits:	A, B, C, D
No. of Luminaires:	**80**
Total Load:	73.16 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Marina High School Sports Fields

Marina,CA

EQUIPMENT LAYOUT

INCLUDES:
- Baseball
- Football
- Soccer

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

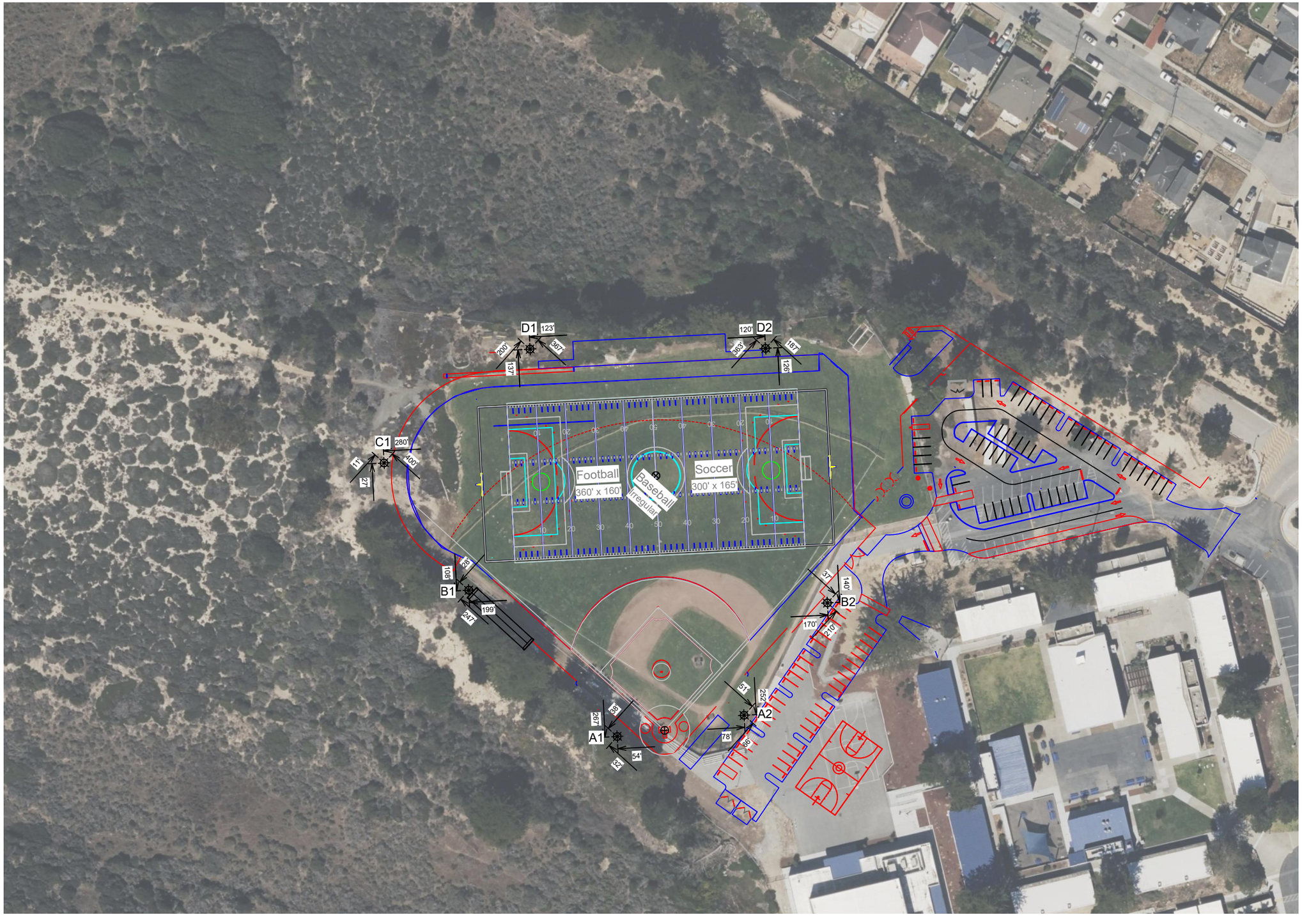
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	80'	-	15.5'	TLC-BT-575	1
				80'	TLC-LED-900	7
1	A2	80'	-	15.5'	TLC-BT-575	1
				60'	TLC-LED-400	1
				80'	TLC-LED-900	7
1	B1	100'	-	100'	TLC-LED-900	7
				100'	TLC-LED-600	1
				15.5'	TLC-BT-575	3
				100'	TLC-LED-1500	5
1	B2	100'	-	100'	TLC-LED-900	7
				100'	TLC-LED-400	1
				15.5'	TLC-BT-575	3
				100'	TLC-LED-1500	5
1	C1	70'	0'	15.5'	TLC-BT-575	2
				70'	TLC-LED-900	4
1	D1	80'	-	80'	TLC-LED-900	6
				15.5'	TLC-BT-575	2
				60'	TLC-LED-400	1
				80'	TLC-LED-1500	3
1	D2	80'	-	80'	TLC-LED-900	6
				15.5'	TLC-BT-575	2
				60'	TLC-LED-400	1
				60'	TLC-LED-900	1
				80'	TLC-LED-1500	3
7	TOTALS					80

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-BT-575	3.4	3.2	2.9	2.5	2.0	1.8	1.5



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

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Appendix H

IDSA Phase 1 Certification Letter

DarkSky International
5049 E. Broadway Blvd. #105, Tucson, AZ 85711
USA
tel +1.520.293.3198

To: Project Lead

October 26, 2023

Congratulations! The lighting design for the Marina High School Multi-Sport Fields, located in Marina CA, have been reviewed and found to be in compliance with the DarkSky International Outdoor Sports Lighting (OSL) program. This letter confirms compliance with Phase I (design compliance) and allows you to apply for Phase II (installation certification).

We are excited to have you join the community of outdoor sports lighting facilities working to reduce light pollution and improve the night time environment. By adhering to the DarkSky International Outdoor Sports Lighting criteria, your project will:

- Minimize neighborhood nuisance light by greatly reducing spill light and glare in the local area.
- Manage high angle light, thus dramatically decreasing offsite light trespass and sky glow.
- Mitigate neighborhood light pollution and sky glow, which will benefit the environment, the astronomy community, and others impacted by poorly designed outdoor sports facilities.
- Minimize light output, thereby reducing energy consumption and avoiding over lighting.

Sincerely,

James Brigagliano LC, MIES, LEED Green Assoc.

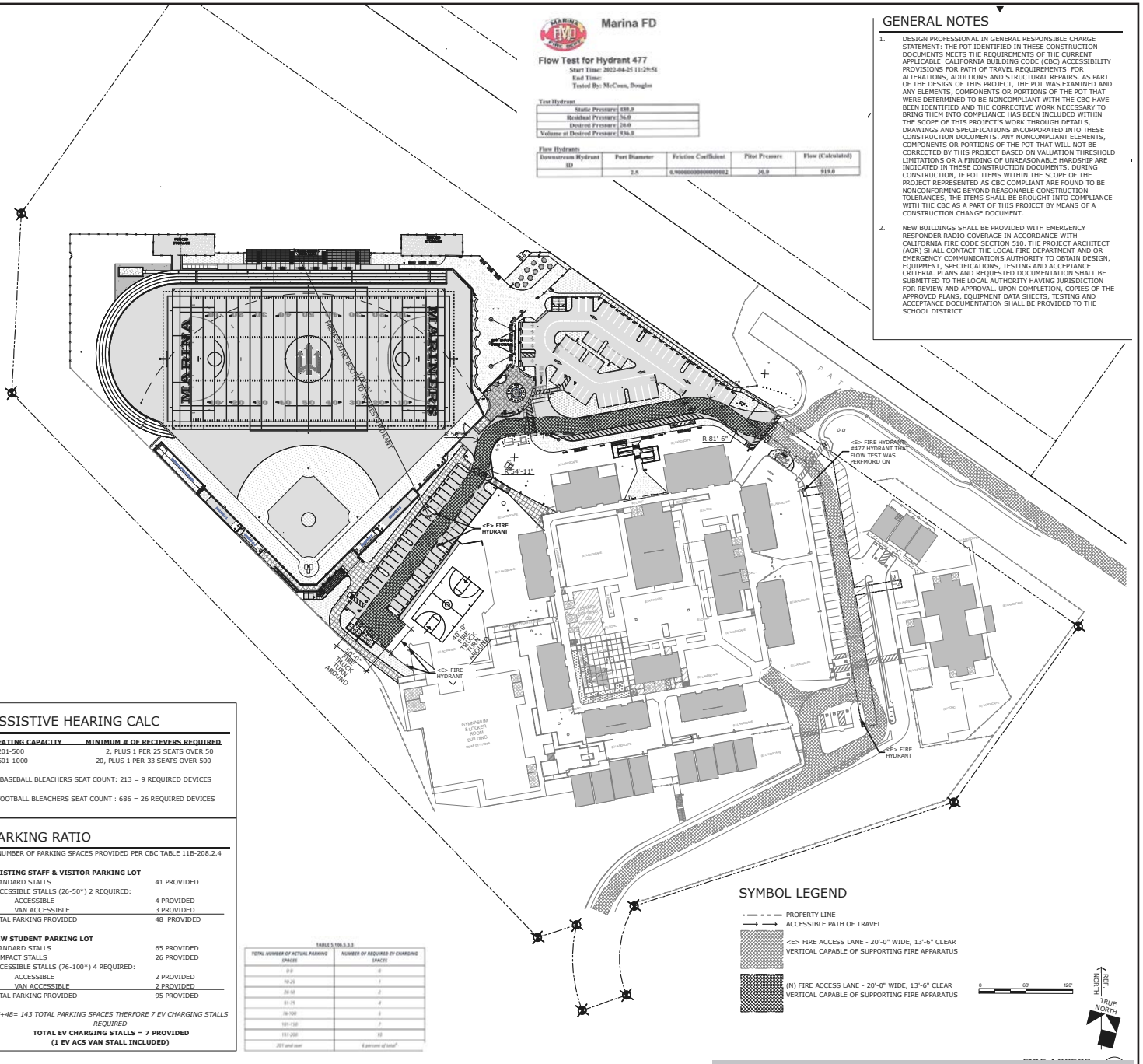
Lighting Program Manager
james.brigagliano@darksky.org

Executive Director: Ruskin Hartley
Emeritus Director: David L. Crawford, Ph.D.

Attachment D

Revised Figures from the Draft IS/MND

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ASSISTIVE HEARING CALC

SEATING CAPACITY	MINIMUM # OF RECIEVERS REQUIRED
201-500	2, PLUS 1 PER 25 SEATS OVER 50
501-1000	20, PLUS 1 PER 33 SEATS OVER 500

BASEBALL BLEACHERS SEAT COUNT: 213 = 9 REQUIRED DEVICES

FOOTBALL BLEACHERS SEAT COUNT : 686 = 26 REQUIRED DEVICES

PARKING RATIO

* NUMBER OF PARKING SPACES PROVIDED PER CBC TABLE 11B-208.2.4

EXISTING STAFF & VISITOR PARKING LOT	
STANDARD STALLS	41 PROVIDED
ACCESSIBLE STALLS (26-50*) 2 REQUIRED:	
ACCESSIBLE	4 PROVIDED
VAN ACCESSIBLE	3 PROVIDED
TOTAL PARKING PROVIDED	48 PROVIDED
NEW STUDENT PARKING LOT	
STANDARD STALLS	65 PROVIDED
COMPACT STALLS	26 PROVIDED
ACCESSIBLE STALLS (76-100*) 4 REQUIRED:	
ACCESSIBLE	2 PROVIDED
VAN ACCESSIBLE	2 PROVIDED
TOTAL PARKING PROVIDED	95 PROVIDED

95+48= 143 TOTAL PARKING SPACES THERFORE 7 EV CHARGING STALLS REQUIRED

TOTAL EV CHARGING STALLS = 7 PROVIDED
(1 EV ACS VAN STALL INCLUDED)

TABLE 5.106.5.3.3

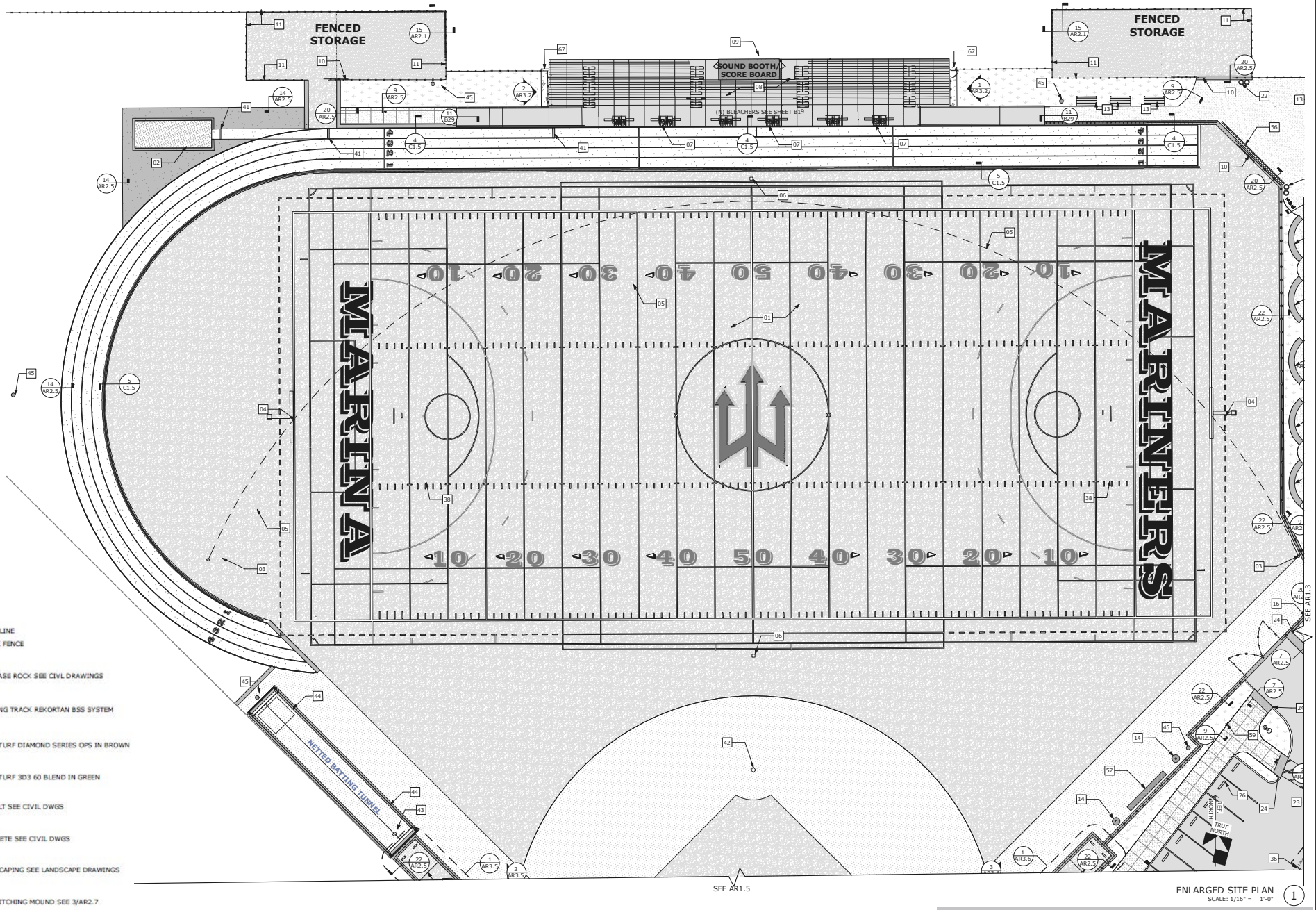
TOTAL NUMBER OF ACTUAL PARKING SPACES	NUMBER OF REQUIRED EV CHARGING SPACES
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

Source: Weston Miles Architects, December 2022

Site Plan - Overall

Marina High School Multi-Use Field Project
Initial Study

Figure
5a

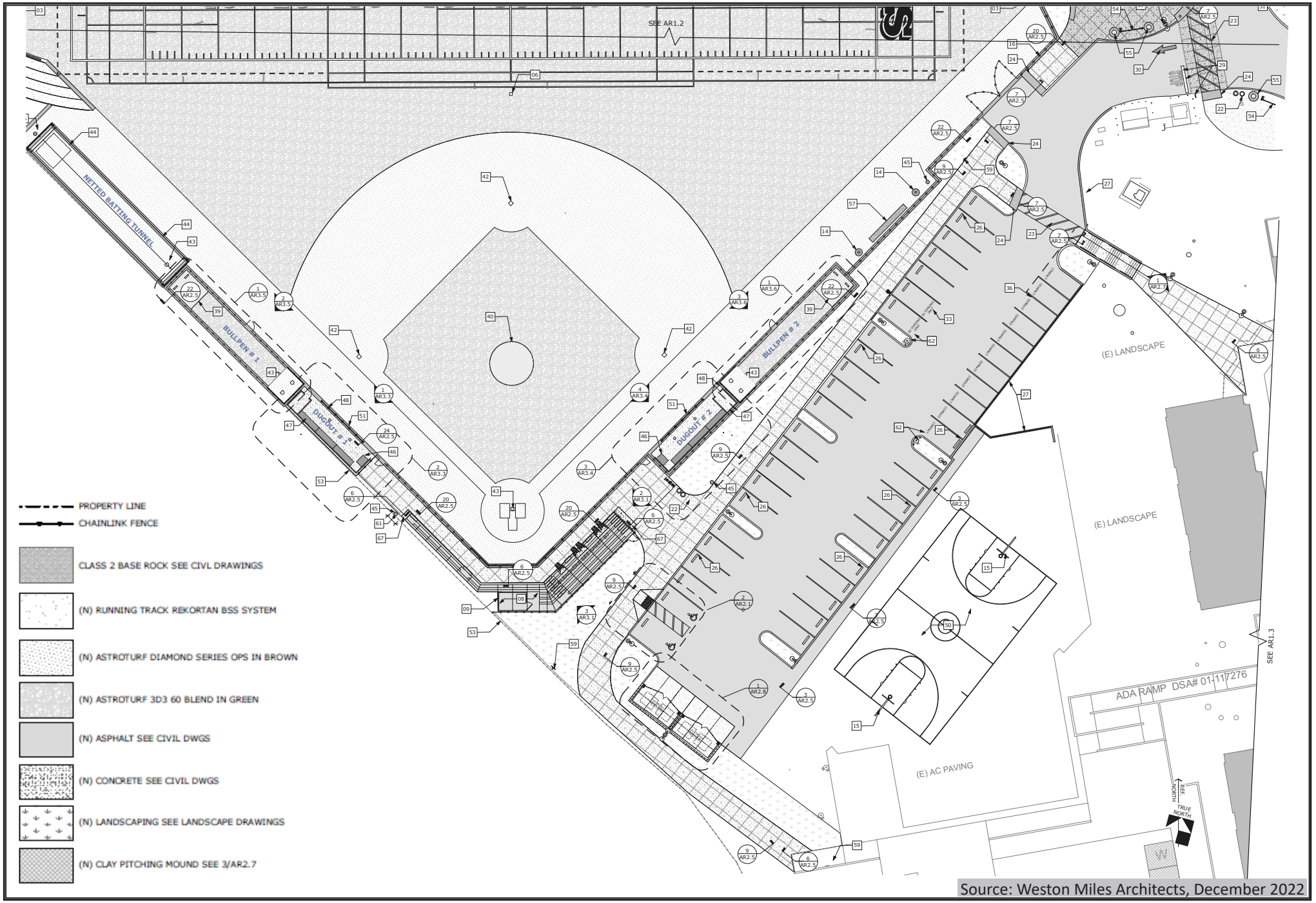


Source: Weston Miles Architects, December 2022

Site Plan - Football Field

Figure 5b

Marina High School Multi-Use Field Project
Initial Study

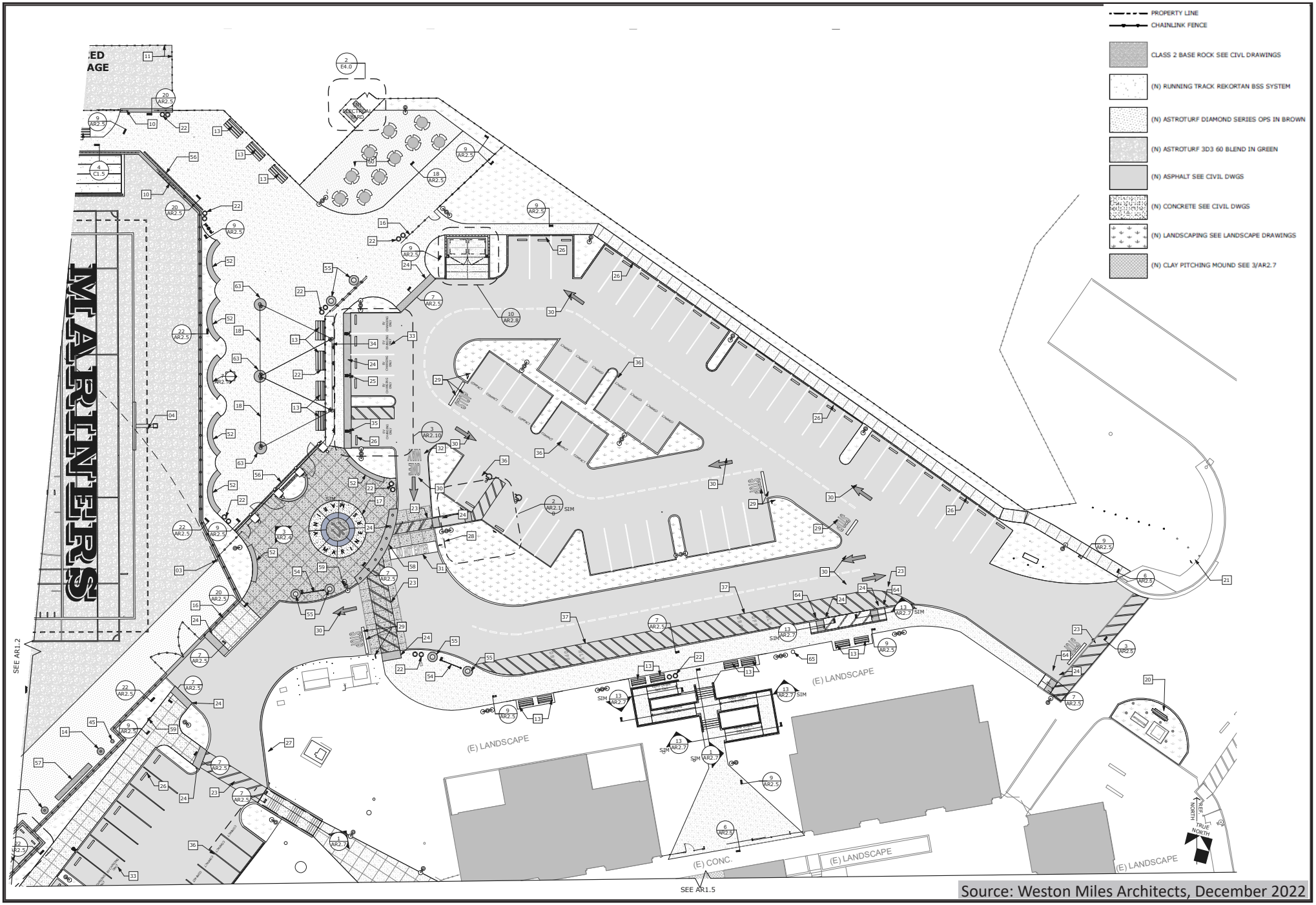


Source: Weston Miles Architects, December 2022

Site Plan - Baseball Field & Lower Parking Lot

Marina High School Multi-Use Field Project
Initial Study

Figure
5c



Source: Weston Miles Architects, December 2022

Site Plan - Upper Parking Lot & Entry

Figure 5d

Marina High School Multi-Use Field Project
Initial Study