

4.1 AIR QUALITY

This section provides information on ambient air quality conditions in the vicinity of the Project site and identifies potential impacts to air quality as a result of the construction and operation of the Project. Information contained in this section is from the air quality modeling output prepared for the Project in the *Air Quality Assessment Hudson Ranch Mineral Recovery, County of Imperial*, dated June 17, 2021, prepared by Ldn Consulting, Inc. (Appendix B of this EIR).

4.1.1 Existing Environmental Setting

Regional Climate

The Project site is located within the central portion of Imperial County, which is part of the Salton Sea Air Basin (Air Basin). The Air Basin comprises the central portion of Riverside County and all of Imperial County. The Riverside County portion of the Air Basin is regulated by the South Coast Air Quality Management District (SCAQMD), and the Imperial County portion of the Air Basin is regulated by the Imperial County Air Pollution Control District (ICAPCD).

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographical features. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with physical features of the landscape to determine their movement and dispersal and, consequently, their effect on air quality. The combination of topography and inversion layers generally prevents dispersion of air pollutants in the Air Basin. The following description of climate of Imperial County was obtained from *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter less than 10 Microns in Diameter*, prepared by ICAPCD, October 23, 2018.

The climate of Imperial County is governed by the large-scale sinking and warming of air in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in the winter, when it is weakest and located farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal areas. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The sun shines, on the average, more in Imperial County than anywhere else in the United States.

Winters are mild and dry with daily average temperatures ranging between 65 and 75 degrees Fahrenheit (°F). During winter months it is not uncommon to record maximum temperatures of up to 80 °F. Summers are extremely hot with daily average temperatures ranging between 104 and 115 °F. It is not uncommon to record maximum temperatures of 120 °F during summer months.

The flat terrain of the valley and the strong temperature differentials created by intense solar heating, produce moderate winds and deep thermal convection. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation. Rainfall is highly variable, with precipitation from a single heavy storm able to exceed the entire annual total during a later drought condition. The average annual rainfall is just over 3 inches, with most of it occurring in late summer or mid-winter.

Humidity is low throughout the year, ranging from an average of 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day.

The wind in Imperial County follows two general patterns. Wind statistics indicate prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles per hour (mph), and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than half of the observed wind measurements.

Air Pollutants of Concern

Criteria Air Pollutants

Federal and State laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as “criteria air pollutants” and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and most fine particulate matter (PM₁₀, PM_{2.5}) including lead (Pb) and fugitive dust are primary air pollutants. Of these CO, SO₂, PM₁₀, and PM_{2.5} are criteria pollutants. VOC and NO_x are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and nitrogen dioxide (NO₂) are the principal secondary pollutants.

Toxic Air Contaminants

The public’s exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 U.S. Code [U.S.C.] Sec. 7412[b]) is a toxic air contaminant. Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Cancer Risk

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no “safe” level of exposure to carcinogens, that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people, or 250,000 in a million, will contract cancer over their lifetime from all causes, including diet, genetic factors, and lifestyle choices.

Noncancerous Health Risks

Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The CalEPA and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancerous health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

Other Effects on Air Pollution

Just as humans are affected by air pollution, so too are plants and animals. Animals must breathe the same air and are subject to the same types of negative health effects. Certain plants and trees may absorb air pollutants that can stunt their development or cause premature death.

Air pollution also results in numerous impacts to the human economy, including lost workdays due to illness, a desire on the part of business to locate in areas with a healthy environment, and increased expenses from medical costs. Pollutants may also lower visibility and cause damage to property. Certain air pollutants are responsible for discoloring painted surfaces, eating away at stones used in buildings, dissolving the mortar that holds bricks together, and cracking tires and other items made from rubber.

4.1.2 Regulatory Setting

The Proposed Project site lies within the County of Imperial, which is managed by the ICAPCD. National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone, sulfur dioxide (SO₂), nitrogen dioxide (NO₂), inhalable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Areas are classified under the federal Clean Air Act as either “attainment” or “nonattainment” areas for each criteria pollutant, based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the CARB. The Air Basin has been designated by the U.S. Environmental Protection Agency (USEPA) as a nonattainment area for ozone, PM₁₀, and PM_{2.5}. Currently, the Air Basin is in attainment with the NAAQS for CO, SO₂, and NO₂. **Error! Reference source not found.** presents the designations and classifications applicable to the proposed Project area.

Table 4.1-1: Designations/Classifications for the Project Area

Pollutant	National Classification	California Standards ²
Ozone (O ₃) - 2008 Standard	Nonattainment (Moderate)	Nonattainment
Inhalable Particulate Matter (PM ₁₀)	Nonattainment (Serious)	Nonattainment
Fine Particulate Matter (PM _{2.5})	Nonattainment (Moderate)	Attainment
Carbon monoxide (CO)	Attainment	Attainment
Nitrogen dioxide (NO ₂)	Attainment	Attainment
Sulfur dioxide (SO ₂)	Attainment	Attainment

Sources: <https://ww3.arb.ca.gov/desig/adm/adm.htm>; and <https://ww3.arb.ca.gov/planning/sip/planarea/imperial/staffreport121318.pdf>

The ICAPCD has addressed each of three nonattainment pollutants in separate State Implementation Plans (SIPs). For ozone the most current SIP is the *Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard* (2017 Ozone SIP), prepared by ICAPCD, September 2017, which was prepared to detail measures to reduce ozone precursors (i.e., reactive organic gases [ROGs] and NOx) within the County in order to meet the 2008 NAAQS for 8-hour ozone standard of 0.075 parts per million (ppm) by July 20, 2018. Although the Ozone 2017 SIP demonstrates that the County met the 8-hour ozone standard of 0.075 ppm by the July 20, 2018, requirement, it should be noted that in 2015 the USEPA further strengthened its 8-hour ozone standard to 0.070 ppm, which will require an updated SIP for the County to meet the new ozone standard.

Since PM₁₀ in the County has met the 24-hour NAAQS other than for exceptional events that include storms as well as from substantial PM₁₀ concentrations blowing into the County from Mexico, the most current PM₁₀ plan is the *Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter less than 10 Microns in Diameter* (2018 PM₁₀ Plan), prepared by ICAPCD, October 23, 2018. The 2018 PM₁₀ Plan shows that the monitoring of PM₁₀ in the County found that other than exceptional events, no violation of the 24-hour PM₁₀ NAAQS of 150 micrograms per cubic meter (µg/m³) occurred over the 2014 to 2016 time period. As such, the ICAPCD has requested the USEPA to redesignate the Air Basin to maintenance. The redesignation was anticipated to occur sometime in the year 2020.

For PM_{2.5} the most current SIP is the *Imperial County 2018 Annual Particulate Matter less than 2.5 Microns in Diameter State Implementation Plan* (2018 PM_{2.5} SIP), prepared by ICAPCD, April 2018, which was prepared to detail measures to meet the 2012 NAAQS for annual PM_{2.5} standard of 12 µg/m³ by the end of 2021 for the portion of Imperial County (approximately from Brawley to Mexico border) that is designated nonattainment. The PM_{2.5} Plan found that the only monitoring station in the County that has recorded an exceedance of PM_{2.5} is the Calexico Monitoring Station and that the exceedance is likely caused by the transport of PM_{2.5} across the border from Mexico. It is anticipated that the ICAPCD will submit a redesignation request for PM_{2.5} in the near future.

Monitored Air Quality

The air quality at any site is dependent on the regional air quality and local pollutant sources. The air quality at any location in the Air Basin is determined by the release of pollutants throughout the Air Basin as well as from air pollutants that travel from the coastal areas and Mexico to the Air Basin. The ICAPCD operates a network of monitoring stations throughout the County that continuously monitor ambient levels of criteria pollutants in compliance with federal monitoring regulations.

Since not all air monitoring stations measure all of the tracked pollutants, the data from the following two monitoring stations, listed in the order of proximity to the Project site, have been used: Niland – English Road Monitoring Station (Niland Station) and Brawley-220 Main Street Monitoring Station (Brawley Station).

The Niland Station is located approximately 3.5 miles northeast of the Project site at 7711 English Road, Niland; and the Brawley Station is located approximately 16 miles south of the Project site at 220 Main Street, Brawley. It should be noted that due to the air monitoring stations' distances from the Proposed Project site, recorded air pollution levels at the air monitoring stations reflect with varying degrees of accuracy local air quality conditions at the Proposed Project site.

Table 4.1-2 presents the composite of gaseous pollutants monitored from 2017 through 2019.

Table 4.1-2: Ambient Air Quality Monitoring Summary

Air Pollutant	2017	2018	2019
Ozone (O₃)¹			
Max 1 Hour (ppm)	0.072	0.060	0.060
Days > CAAQS (0.09 ppm)	0	0	0
Max 8 Hour (ppm)	0.061	0.055	0.054
Days > NAAQS (0.070 ppm)	0	0	0
Days > CAAQS (0.070 ppm)	0	0	0
Nitrogen Dioxide (NO₂)²			
Max 1 Hour (ppb)	50.9	48.8	34.1
Days > NAAQS (100 ppb)	0	0	0
Days > CAAQS (180 ppb)	0	0	0
Particulate Matter (PM₁₀)¹			
Max Daily California Measurement	345.8	331.5	155.7
Days > NAAQS (150 µg/m ³)	4	10	1
Days > CAAQS (50 µg/m ³)	32	7	49
State Average (20 µg/m ³)	36.4	47.5	32.1
Particulate Matter (PM_{2.5})²			
Max Daily National Measurement	46.1	55.1	28.9
Days > NAAQS (35 µg/m ³)	1	2	0
National Average (12 µg/m ³)	9.4	10.4	8.3
State Average (12 µg/m ³)	9.4	10.4	8.3

Abbreviations:

> = exceed ppm = parts per million ppb = parts per billion µg/m³ = micrograms per cubic meter

CAAQS = California Ambient Air Quality Standard NAAQS = National Ambient Air Quality

ND = Insufficient or No Data

Bold = exceedance

¹ Measurement taken from Niland Mesa Station

² Measurement taken from Brawley Station

Source: <http://www.arb.ca.gov/adam/>

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. As detailed in ICAPCD Regulation VIII, sensitive receptors include, but are not limited to, residential areas, schools, day care facilities, churches, hospitals, nursing facilities, and commercial and/or retail uses. Based on the above definition, the nearest sensitive receptor to the Project site is a single-family home that is located on the north side of Pound Road just over a mile north of the Project site.

4.1.3 Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have an air quality impact if it would:

- Threshold a) Conflict with or obstruct implementation of the applicable air quality plan?**
- Threshold b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?**
- Threshold c) Expose sensitive receptors to substantial pollutant concentrations?**
- Threshold d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Please refer to **Section 6.1: Effects Found Not to Be Significant** for an evaluation of those topics that were determined to be less than significant or have no impact and do not require further analysis in the EIR.

4.1.4 Methodology

The air quality impacts related to construction and daily operations were calculated through use of the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 and the operational TAC impacts were calculated through entering the TAC emissions calculated by the CalEEMod model into the USEPA AERMOD air dispersion Model, in order to calculate the TAC concentrations at the nearest sensitive receptors. The air quality modeling and air model printouts are provided in the Air Quality Analysis (Appendix B).

4.1.5 Project Impact Analysis

- Threshold a) Conflict with or obstruct implementation of the applicable air quality plan?**

The Proposed Project would not conflict with the applicable air quality plans, which include the 2017 Ozone SIP, 2018 PM₁₀ Plan, and 2018 PM_{2.5} SIP that are described above in the air quality regulatory setting. The *CEQA Air Quality Handbook* (ICAPCD Handbook), prepared by ICAPCD, December 12, 2017, details that for any project that emits less than the screening thresholds provided in Table 4.1-3 for construction and operations, the project is compliant with the most current ozone and PM₁₀ attainment plans and no further demonstration of compliance with these plans is required.

Table 4.1-3: ICAPCD Thresholds of Significance

	Pollutant Emissions (Pounds/Day)					
	ROG	NOx	CO	SO ₂	PM ₁₀	PM _{2.5}
Construction	75	100	550	--	150	150
Operation	55	55	550	150	150	150

Source: ICAPCD, <http://www.co.imperial.ca.us/AirPollution/PlanningDocs/CEQAHandbk.pdf>

The Proposed Project’s construction and operational air emissions have been calculated in the Air Quality Analysis (Appendix B). Table 4.1-4 shows the maximum daily emissions for each year of construction activities for the Proposed Project with implementation of the Project Design Features shown above in Section 2.5 of the Project Description. Table 4.1-4 shows that construction activities for the Proposed Project will not exceed the ICAPCD thresholds of significance.

Table 4.1-4: Construction-Related Criteria Pollutant Emissions

Construction Year	Pollutant Emissions in pounds/day								
	ROG	NO _x	CO	PM ₁₀ (Dust)	PM ₁₀ (Exhaust)	PM ₁₀ (Total)	PM _{2.5} (Dust)	PM _{2.5} (Exhaust)	PM _{2.5} (Total)
2021	10.71	55.46	272.30	14.10	0.79	14.88	4.99	0.78	5.77
2022	30.31	42.61	182.21	6.99	0.46	7.45	1.90	0.46	2.36
2023	29.86	36.68	178.72	6.99	0.43	7.42	1.90	0.42	2.33
Significance Thresholds	75	100	550	--	150	--	--	--	150
Exceed Thresholds?	No	No	No		No				No

Source: CalEEMod Version 2016.3.2.

The operational daily criteria pollutant emissions for the Proposed Project have been calculated with implementation of the Project Design Features shown in Section 2.5 of the Project Description, and the results are shown in Table 4.1-5 for the summer emissions and Table 4.1-6 for winter emissions.

Table 4.1-5: Operational-Related Summer Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in pounds/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Summer Scenario						
Area Source Emissions	3.03	0.00	0.01	0.00	0.00	0.00
Energy Source Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Operational Vehicle Emissions	0.51	3.95	7.03	0.03	1.37	0.37
Off-Road Equipment	0.24	1.42	1.79	0.00	0.07	0.07
Stationary Equipment	2.17	6.17	5.76	0.01	0.35	0.35
Total Summer Emissions	5.96	11.54	14.60	0.04	1.79	0.79
ICAPCD Significance Thresholds	55	55	550	150	150	55
Exceed Thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2.

Table 4.1-6: Operational-Related Winter Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in pounds/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Winter Scenario						
Area Source Emissions	3.03	0.00	0.01	0.00	0.00	0.00
Energy Source Emissions	0.00	0.00	0.00	0.00	0.00	0.00
Operational Vehicle Emissions	0.38	3.94	5.25	0.02	1.37	0.37
Off-Road Equipment	0.24	1.42	1.79	0.00	0.07	0.07

Table 4.1-6: Operational-Related Winter Criteria Pollutant Emissions

Emissions Sources	Pollutant Emissions in pounds/day					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Stationary Equipment	2.17	6.17	5.76	0.01	0.35	0.35
Total Summer Emissions	5.83	11.54	12.82	0.04	1.79	0.79
ICAPCD Significance Thresholds	55	55	550	150	150	55
Exceed Thresholds?	No	No	No	No	No	No

Source: CalEEMod Version 2016.3.2.

As shown above, both construction and operational emissions created from the Proposed Project would be within their respective ICAPCD thresholds. According to the ICAPCD Handbook, projects that are within the ICAPCD thresholds are consistent with the regional air quality plans. Furthermore, the standard mitigation measures provided in the ICAPCD Handbook have been incorporated into the Project Description for the Proposed Project as Project Design Features (see Section 2.5), and the Proposed Project will be required to implement all of the ICAPCD Regulation VIII, fugitive dust control measures during construction and operation of the Proposed Project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and operate stationary sources. Therefore, the Proposed Project would not conflict with or obstruct implementation of the applicable air quality plans and impacts would be less than significant.

Threshold b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard?

The Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in nonattainment under an applicable federal or State ambient air quality standard.

The ICAPCD Handbook provides project emissions limits that are provided in Table 4.1-3 for both construction and operation of projects within the County. The ICAPCD Handbook details that if the air emissions created from a project are below the air emissions thresholds shown in Table 4.1-3, then the Proposed Project’s air emissions would result in a less than significant impact, provided that all standard mitigation measures listed in the ICAPCD Handbook are implemented as well as all applicable ICAPCD rules controlling emissions are adhered to.

As shown in Table 4.1-4, construction activities for the Proposed Project will not exceed the ICAPCD thresholds of significance for construction. Also, as shown in Table 4.1-5 and Table 4.1-6, daily operations of the Proposed Project will not exceed the ICAPCD thresholds of significance for operations. In addition, the Air Quality Analysis (Appendix B) analyzed the project TAC emissions impacts at the nearest sensitive receptor (a single-family home located over a mile north of the Project site), which found that the TAC emissions created from the Proposed Project would create a cancer risk of 0.55 per million persons, which is well below the 10 per million persons significance threshold.

The standard mitigation measures from the ICAPCD Handbook for both construction and operations have been incorporated into the Project Description as Project Design Features (see Section 2.5 of the Project Description). Furthermore, the Proposed Project would be required to implement all of the ICAPCD Regulation VIII, fugitive dust control measures during construction and operation of the Proposed Project. Furthermore, any stationary sources of emissions operated on site will be required to adhere to ICAPCD Rule 207, New and Modified Stationary Source Review and Rule 201 that require permits to construct and operate stationary sources. Therefore, the Proposed Project would result in a less than significant cumulatively considerable net increase of any criteria pollutant.

4.1.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines Section 15355). Stated in another way, “a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts” (CEQA Guidelines Section 15130 [a][1]).

Cumulative impacts would exist when either direct air quality impacts or multiple construction projects occur within the same area simultaneously. To illustrate this, if a project were to produce air quality emissions simultaneously to a nearby construction project, the addition of both project emissions to the environment could exceed significance thresholds. For this Project, the construction emissions were found to be less than significant as shown above in Table 4.1-4. If a nearby project was to be under construction at the same time, that project would need to produce an additive amount of emissions close to the Project site such that emissions would exceed thresholds. Based on discussions with the Project Applicant, no cumulatively considerable construction projects are within at least 1 mile of the site. Given this, a less than significant cumulative air quality impact would be expected during construction.

The Proposed Project site is zoned industrial, and the Project has been designed to be consistent with this zoning designation. The Project would generate less than significant direct and cumulative air quality impacts. Given this, since the Proposed Project would not have any significant direct impacts and would not have any significant cumulative impacts, the Project would not conflict with either the County’s Air Quality Management Plan or SIP.

4.1.7 Mitigation Measures

No mitigation measures are required, as all Project impacts regarding air quality are less than significant.

4.1.8 Level of Significance After Mitigation

No mitigation measures are required; impacts related to air quality would remain less than significant.