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Air Dispersion Modeling Protocol for Morton Bay Geothermal Plant Cumulative Impact Analysis

Revision No: 0

Morton Bay Geothermal Plant
Berkshire Hathaway Energy Renewables, LLC
Salton Sea Geothermal Project Development

Document no: 230915112914_d0bb2ac1

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Acronyms and Abbreviations

AFC	Application for Certification
Applicant	Morton Bay Geothermal, LLC
BHER	BHE Renewables, LLC
BRGP	Black Rock Geothermal Project
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	*Code of Federal Regulations*
CO	carbon monoxide
ENGP	Elmore North Geothermal Project
EPA	U.S. Environmental Protection Agency
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
ICAPCD	Imperial County Air Pollution Control District
MBGP	Morton Bay Geothermal Project
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PM_{10}	particulate matter less than 10 micrometers in diameter
PSD	Prevention of Significant Deterioration
SIL	Significant Impact Levels
SO_2	sulfur dioxide
VOC	volatile organic compound

1. Project Overview

Morton Bay Geothermal, LLC (the Applicant), an indirect, wholly owned subsidiary of BHE Renewables, LLC (BHER), submitted an Application for Certification (AFC) to the California Energy Commission (CEC) on April 18, 2023[1]. In response to this AFC, the CEC issued *Data Request Set 1 for Morton Bay Geothermal Project* on August 31, 2023 (Docket Number 23-AFC-01; TN #252095). Specifically, data request number 12 states the following: "Please provide an update on the cumulative impacts analyses mentioned in the AFC". This document serves to provide a status update regarding the cumulative impact analyses for the Morton Bay Geothermal Project (MBGP) and a protocol establishing the methodology that will be used to conduct the cumulative impact analyses.

The goal of a cumulative impact analysis is to determine the potential ambient air concentrations through modeling that result from construction and operation of MBGP in addition to existing background concentrations, existing nearby sources of air pollution not represented in the background monitoring data, and future development. The cumulative impact analysis is used to determine the cumulative impacts and exposure that may be experienced in the area surrounding a specific project. This cumulative air quality impacts modeling protocol outlines the methodology that will be used to determine what sources of air pollution, other than MBGP, would need to be considered in the modeling analysis to capture cumulative impacts in the surrounding area. The methodology presented in this modeling protocol generally aligns with the specific models, data and approach specified in Section 5.1 of the AFC and serves as an addendum to that modeling analysis.

Other air quality and public health analyses which require modeling updates will be included in this proposed modeling analysis, as described in the Applicant response document to be filed prior to completion of this analysis. The modeling analysis will be updated based upon the latest design for MBGP, which may result in changes to the previously-modeled results and significant impact radii included in this protocol. These revisions are not expected to notably change the magnitude of results or significant impact radii.

[1] The CEC website for the project is: https://www.energy.ca.gov/powerplant/steam-turbine/morton-bay-geothermal-project-mbgp.

2. Area and Facility Classification

MBGP will be situated to the southeast of the Salton Sea, southwest from the town of Niland, located in Imperial County, California. Being located in California, the project would be subject to both the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS).

The primary North American Industrial Classification System for the facility is 221116. The MBGP is not expected to be a "major" source of air pollution because the facility would emit less than 100 tons per year of any regulated pollutant. Additionally, the facility is expected to be a minor source for hazardous air pollutants (HAPs) with total potential aggregate HAP emissions of less than 25 tons per year and emissions of any single HAP of less than 10 tons per year. MBGP is not a listed facility in 40 *Code of Federal Regulations* (CFR) Part 52 (100 tons per year threshold) and is not otherwise subject to Part 52 Prevention of Significant Deterioration (PSD) requirements due to potential emissions being less than 250 tons per year per criteria air pollutant for which the area is designated as attainment. MBGP emissions are also expected to be below the applicable Nonattainment New Source Review thresholds of 100 tons per year for moderate nonattainment particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) and 100 tons per year each for oxides of nitrogen (NO_X) and volatile organic compound (VOC) for the marginal nonattainment ozone designation as per 40 CFR Part 51.165.

Imperial County is designated as attainment for the carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2) NAAQS. The county is in moderate nonattainment for $PM_{2.5}$, and marginal nonattainment for the 8-hour ozone NAAQS. Particulate matter less than 10 micrometers in diameter (PM_{10}) was redesignated to attainment in September 2020.

At the state level, Imperial County is designated as attainment or unclassified for the $PM_{2.5}$, CO, NO_2, SO_2, sulfates, lead, hydrogen sulfide (H_2S), and visibility reducing particulates CAAQS. The county is designated as nonattainment for the ozone and PM_{10} CAAQS.

The closest and most representative ambient air monitoring data to the Project site are from the following monitoring stations, as shown in Figure 2-1:

- Niland-English Road (AQS ID: 60254004) [2.3 miles from Project]: 24-hour PM_{10} concentrations (2019-2021) and ozone concentrations (2019)
- Brawley-220 Main Street (AQS ID: 60250007) [15.7 miles from Project]: 24-hour $PM_{2.5}$ concentrations (2019-2021), and annual $PM_{2.5}$ concentrations (2019-2020)
- El Centro-9th Street (AQS ID: 60251003) [28.4 miles from Project]: annual $PM_{2.5}$ concentrations (2021), ozone concentrations (2020-2021), 1-hour NO_2 concentrations (2019-2021), and annual NO_2 concentrations (2020-2021)
- Calexico-Ethel Street (AQS ID: 60250005) [36.9 miles from Project]: annual NO_2 concentrations (2019), 1-hour SO_2 concentrations (2019-2021), 24-hour SO_2 concentrations (2019-2021), 1-hour CO concentrations (2019-2021), and 8-hour CO concentrations (2019-2021).

Table 2-1 provides a summary from the AFC of measured ambient air quality concentrations by year and site for the period 2019-2021, based on the above delineation. Data from these sites are a reasonable representation of background air quality for the Project area.

Figure 2-1
Nearby Ambient Air Monitoring Stations
Morton Bay Geothermal Project
Imperial County, California

Jacobs

Table 2-1. Measured Ambient Air Quality Concentrations by Year

Pollutant	Units	Averaging Time	Basis	Site	2019	2020	2021
Ozone	ppm	1-hour	CAAQS-1st High	Niland	0.06	0.054	0.065
		8-hour	CAAQS-1st High	Niland	0.055	0.046	0.055
			NAAQS-4th High	Niland (2019) and Calexico (2020-2021)	0.054	0.078	0.080
NO_2	ppb	1-hour	CAAQS-1st High	El Centro	37	45	56
			NAAQS-98th percentiles	El Centro	30	36	38
		Annual	CAAQS/NAAQS-AAM	El Centro (202-2021) and Calexico (2019)	9.26	7.93	6.73
CO	ppm	1-hour	CAAQS/NAAQS-2nd High	Calexico	4.30	4.60	3.80
		8-hour	CAAQS/NAAQS-2nd High	Calexico	3.10	2.70	2.90
SO_2	ppb	1-hour	CAAQS/NAAQS-1st High	Calexico	7.5	7.1	8.6
		24-hour	CAAQS/NAAQS-1st High	Calexico	1.6	1.9	2.7
		Annual	CAAQS/NAAQS-AAM	Calexico	0.31	0.4	0.42
PM_{10}	µg/m^3	24-hour	CAAQS-1st High	Niland	156.3	241.3	218.2
			NAAQS-2nd High	Niland	124	142	156
		Annual	CAAQS-AAM	Niland	32.7	35.9	39.8
$PM_{2.5}$	µg/m^3	24-hour	NAAQS-98th percentiles	Brawley	21.0	21.0	21.0
		Annual	CAAQS/NAAQS-AAM	Brawley (2019-2020) and El Centro (2021)	8.30	9.40	8.30

Notes:

µg/m^3 = microgram(s) per cubic meter

AAM = annual arithmetic mean

ppb = part(s) per billion

ppm = part(s) per million

The maximum representative background concentrations for the most recent 3-year period (2019-2021) are summarized in Table 2-2. These background values represent the highest values reported for the most representative air quality monitoring site during any single year of the most recent 3-year period for the

CAAQS assessments. These CAAQS maxima are conservatively used for some of the NAAQS modeling assessments (CO and SO_2). The appropriate values for the NAAQS, according to the format of the standard, are used for the remainder of the NAAQS modeling assessments (NO_2, PM_{10}, and PM_{25}), and also summarized in Table 2-2.

Table 2-2. Background Air Quality Data

Pollutant and Averaging Time	Background Value (µg/m^3) [a]
Ozone – 1-hour Maximum CAAQS	128
Ozone – 8-hour Maximum CAAQS/NAAQS	108
PM_{10} – 24-hour Maximum CAAQS	241.3
PM_{10} – 24-hour High, 2nd High NAAQS [b]	142
PM_{10} – Annual Maximum CAAQS	39.8
$PM_{2.5}$ – 3-Year Average of Annual 24-hour 98th Percentiles NAAQS	21.0
$PM_{2.5}$ – Annual Maximum CAAQS	9.40
$PM_{2.5}$ – 3-Year Average of Annual Values NAAQS	8.67
CO – 1-hour Maximum CAAQS/NAAQS	5,266
CO – 8-hour Maximum CAAQS/NAAQS	3,549
NO_2 – 1-hour Maximum CAAQS	105
NO_2 – 3-Year Average of Max Daily Annual 1-hour 98th Percentiles NAAQS	65.2
NO_2 – Annual Maximum CAAQS/NAAQS	17.4
SO_2 – 1-hour Maximum CAAQS/NAAQS	22.5
SO_2 – 3-hour Maximum NAAQS [c]	22.5
SO_2 – 24-hour Maximum CAAQS/NAAQS	7.10
SO_2 – Annual Maximum NAAQS	1.10

[a] Where applicable, monitored concentrations were converted from ppm/ppb to µg/m^3 using the standard molar volume of air at normal temperature and pressure conditions (NTP) of 24.45 liters per mole.

[b] 24-hour PM_{10} background value assumes one exceedance may occur per year on average. Over the 3-year period, two of the maximum three concentrations occur in 2021. Therefore, the design value is the high, 2nd high for 2020.

[c] The 3-hour SO_2 background value conservatively uses the 1-hour SO_2 background value.

3. Project Air Quality Impact Analysis Summary

The following sections present the results of the air quality impact analyses from the AFC for determining the changes to ambient air quality concentrations in the Project region as a result of Project construction and operation.

3.1 Project Operation

As can be seen in Table 3-1, MBGP operation impacts are less than the U.S. Environmental Protection Agency's (EPA) Significant Impact Levels (SILs) for all pollutants and averaging periods except $PM_{2.5}$. For pollutants and averaging periods with a predicted concentration that is not significant (that is, if they are less than the SIL), the modeling is complete for that pollutant and averaging period and compliance with the NAAQS/CAAQS is demonstrated by not causing or contributing to a violation. If impacts are above the SIL, a cumulative modeling analysis is required. Both 24-hour and annual $PM_{2.5}$ predicted concentrations exceed their respective SIL and will, therefore, require a cumulative modeling analysis.

Table 3-1. Operation Air Quality Impact Results – Significant Impact Levels

Pollutant	Averaging Period	Maximum Concentration (µg/m³)	Class II SIL (µg/m³)	Exceeds Class II SIL?
NO_2	5-year average of 1-hour yearly maxima (NAAQS)	1.59	7.55	No
	Annual maximum	0.04	1.00	No
Ozone	8-hour maximum	0.01	1.96	No
CO	1-hour maximum	1,668	2,000	No
	8-hour maximum	131	500	No
SO_2	1-hour maximum	<0.01	7.86	No
	3-hour maximum	<0.01	25.0	No
	24-hour maximum	<0.01	5.00	No
	Annual maximum	<0.01	1.00	No
PM_{10}	24-hour maximum	4.74	5.00	No
	Annual maximum	0.55	1.00	No
$PM_{2.5}$	5-year average of 24-hour yearly maxima (NAAQS)	2.29	1.20	Yes
	5-year average of annual concentrations (NAAQS)	0.32	0.20	Yes

3.2 Project Construction

As can be seen in Table 3-2, MBGP construction impacts are less than the EPA's SILs for all pollutants and averaging periods except 1-hour and annual NO_2, 24-hour and annual PM_{10}, and annual $PM_{2.5}$. For pollutants and averaging periods with a predicted concentration that is not significant (that is, if they are less than the SIL), the modeling is complete for that pollutant and averaging period and compliance with the NAAQS/CAAQS is demonstrated by not causing or contributing to a violation. If impacts are above the SIL, a cumulative modeling analysis is required. 1-hour and annual NO_2, 24-hour and annual PM_{10}, and annual $PM_{2.5}$ predicted concentrations exceed their respective SIL and will, therefore, require a cumulative modeling analysis.

Table 3-2. Construction Air Quality Impact Results – Significant Impact Levels

Pollutant	Averaging Period	Maximum Concentration (µg/m³)	Class II SIL (µg/m³)	Exceeds Class II SIL?
NO_2	5-year average of 1-hour yearly maxima (NAAQS)	55.7	7.55	Yes
	Annual maximum	10.2	1.00	Yes
Ozone	8-hour	0.03	1.96	No
CO	1-hour maximum	135	2,000	No
	8-hour maximum	108	500	No
SO_2	1-hour maximum	0.32	7.86	No
	3-hour maximum	0.29	25.0	No
	24-hour maximum	0.17	5.00	No
	Annual maximum	0.11	1.00	No
PM_{10}	24-hour maximum	7.37	5.00	Yes
	Annual maximum	1.35	1.00	Yes
$PM_{2.5}$	5-year average of 24-hour yearly maxima (NAAQS)	1.15	1.20	No
	5-year average of annual concentrations (NAAQS)	0.24	0.20	Yes

The modeled exceedances of the PM_{10} CAAQS are due to high background concentrations, which already exceed the CAAQS (like the majority of the state, the area is designated as a nonattainment area for the PM_{10} CAAQS). The Project is not below the SIL for the 24-hour and annual PM_{10} standards though the Project Owner will implement construction control measures as described in Section 5.1.7.2.2 of the AFC. These control measures would reduce particulate emissions to the extent required by the Imperial County Air Pollution Control District (ICAPCD), thus making the Project consistent with attainment plans for the PM_{10} standards. Additionally, the PM_{10} emissions associated with construction of the Project, as presented in Table 5.1-20 of the AFC, are below the ICAPCD significance threshold of 150 pounds per day. Therefore, the Project construction would likely result in less-than-significant impacts with respect to particulate emissions.

4. Cumulative Impact Analysis Methodology

4.1 Applicable Pollutants and Averaging Periods

4.1.1 Project Operation

MBGP operational emissions would result in modeled impacts that exceed the SILs for 24-hour and annual $PM_{2.5}$, as illustrated in Table 3-1, thus requiring a cumulative impact analysis based on the potential to cause or contribute to a violation of the NAAQS. The significant impact radius for each of these pollutant averaging periods are 0.3 kilometers (km) and 0.2 km, respectively. Appendix A includes the receptor locations with modeled impacts greater than the SIL for each of these two pollutant averaging periods.

Previously-modeled impacts for all other pollutant averaging periods included in Table 3-1 (1-hour and annual NO_2; 8-hour ozone; 1-hour and 8-hour CO; 24-hour and annual PM_{10}; and 1-hour, 3-hour, 24-hour, and annual SO_2) are below their respective SIL. Therefore, MBGP operations would not cause or contribute to a violation of the NAAQS for these pollutant averaging periods. It is similarly assumed that, with the impacts being less than the SIL, MBGP operations would not cause or contribute to a violation of the CAAQS. Therefore, a cumulative impact analysis is not proposed for these pollutant averaging periods.

4.1.2 Project Construction

MBGP construction emissions would result in modeled impacts that exceed the SILs for 1-hour and annual NO_2, annual $PM_{2.5}$, and 24-hour and annual PM_{10}, as illustrated in Table 3-1, thus requiring a cumulative impact analysis based on the potential to cause or contribute to a violation of the NAAQS. The significant impact radius for each of these pollutant averaging periods is presented in Table 4-1 below. Appendix B includes the receptor locations with modeled impacts greater than the SIL for each of these pollutant averaging periods.

Table 4-1. Construction Impacts – Significant Impact Radius

Pollutant	Averaging Period	Significant Impact Radius (km)
NO_2	1-hour	10
	Annual	1.9
$PM_{2.5}$	Annual	<0.1
PM_{10}	24-hour	<0.1
	Annual	<0.1

[a] Impacts greater than the SIL occur only along the fenceline.

The PM_{10} background concentrations already exceed the CAAQS (like the majority of the state, the area is designated as a nonattainment area for the PM_{10} CAAQS with fugitive windblown dust as the major contributor). Because the Project's construction impacts are not below the SIL for the 24-hour and annual PM_{10} standards, the Project Owner will implement construction control measures as described in AFC Section 5.1.7.2.2. These control measures would reduce particulate emissions to the extent required by ICAPCD, thus making the Project consistent with attainment plans for the PM_{10} standards. Additionally, the PM_{10} emissions associated with construction of the Project, as presented in AFC Table 5.1-20, are below the

ICAPCD significance threshold of 150 pounds per day. Therefore, a cumulative air quality impacts analysis will not be performed for 24-hour and annual PM_{10}.

Based on the above discussion, a cumulative air quality impacts analysis will only be prepared for 1-hour and annual NO_2 and annual $PM_{2.5}$.

Previously-modeled impacts for all other pollutant averaging periods included in Table 3-2 (8-hour ozone; 1-hour and 8-hour CO; 24-hour $PM_{2.5}$; and 1-hour, 3-hour, 24-hour, and annual SO_2) are below their respective SIL. Therefore, MBGP construction would not cause or contribute to a violation of the NAAQS. It is similarly assumed that, with the impacts being less than the SIL, MBGP construction would not cause or contribute to a violation of the CAAQS. Therefore, a cumulative impact analysis is not proposed for these pollutant averaging periods.

4.2 Analysis of Nearby Existing Sources

A review of existing and permitted sources of $PM_{2.5}$ and NO_2 air pollution surrounding MBGP yields multiple geothermal power plants, agricultural operations, and the Salton Sea as a source of naturally occurring air pollution.

As presented in Section 2, the associated $PM_{2.5}$ and NO_2 background monitoring data was obtained from the Brawley monitoring site approximately 15.7 miles to the South of MBGP and/or the El Centro monitoring site approximately 28.4 miles to the South of MBGP. Each of these monitoring sites are located in an urban area with nearby major vehicle-related emissions sources. Specifically, the Brawley monitor is located adjacent to Highway 86 (Main Street) and near South 1st Street, which represent major routes for vehicles within the area. Similarly, the El Centro monitor is located near multiple arterial streets, with Interstate 8 located approximately one mile to the South.

As per the California Air Resources Board's (CARB) Criteria Pollutant Emission Inventory Data[2], windblown dust is the major contributor to $PM_{2.5}$ emissions within Imperial County. Emissions from windblown dust would be generated in predominantly undeveloped areas and would result in regional impacts that are generally not localized. Therefore, these regional impacts would be expected to occur both around the town of Brawley and the Project area as both areas are surrounded by undeveloped land in most directions. The proposed Project site is also surrounded by the Salton Sea from the West to the North, which is not a source of fugitive $PM_{2.5}$ dust. Accordingly, background concentrations from the monitoring data represent conservative estimates of windblown $PM_{2.5}$ impacts at the Project site. As a result, no existing area or fugitive sources of pollution are proposed to be included in the cumulative impacts analysis.

Apart from windblown dust, onroad vehicles are a greater contributor of $PM_{2.5}$ emissions within Imperial County than electric utilities. With the background monitors being located near arterial streets, an interstate, and a highway, the background concentration reflects a potentially higher localized $PM_{2.5}$ loading than would likely occur from the stationary sources of emissions near MBGP. Therefore, the background concentrations from the monitoring data represent conservative estimates of ambient air concentrations and nearby stationary source $PM_{2.5}$ impacts at the Project site. As a result, no existing stationary sources of pollution are proposed to be included in the cumulative impacts analysis.

Emissions resulting from the combustion of vehicles represents a large regional source of NO_2. With the background monitors being located near arterial streets, an interstate, and a highway, the background concentration reflects a potentially higher regional NO_2 loading due to diesel traffic. Nearby sources of NO_2 would likely include emergency generators and agricultural equipment, both of which would operate

[2] CARB's emissions inventory data is available at: https://ww2.arb.ca.gov/applications/cepam2019v103-standard-emission-tool.

intermittently and in potentially varying locations. Therefore, the background concentrations likely represent a higher concentration of NO_2 than would be observed surrounding MBGP and should be considered representative of nearby operating sources. As a result, no existing sources of pollution are proposed to be included in the NO_2 cumulative impacts analysis.

4.3 Analysis of Nearby Proposed Sources

A review of other stationary emissions sources within a 6-mile radius that have received construction permits but are not yet operational or are in the permitting process (such as the New Source Review or California Environmental Quality Act [CEQA] permitting process) was performed. These stationary emissions sources were screened to only include new or modified sources (individual emission units) that would cause a net increase of 5 tons per year or more per modeled criteria pollutant. Therefore, VOC sources, equipment shutdowns, permit-exempt equipment registrations, rule compliance, permit renewals, and replacement/upgrading of existing systems will not be included in the cumulative impacts analysis. The facilities with sources identified for screening in the operational cumulative air quality impacts analysis are presented in Table 4-2.

Table 4-2. Cumulative Impacts Assessment – Facility List

CUP-0011	Project Name	Applicant	Area-Location	Phase	Greater than 5 TPY of $PM_{2.5}$ or NO_2 Emissions?	Include in Cumulative Analysis?
13-0031	Wilkinson Solar Farm	8 Minute Energy	Niland	Pending Construction	No	No
13-0032	Lindsey Solar Farm	8 Minute Energy	Niland	Pending Construction	No	No
17-0014	Midway Solar Farm IV	8 Minute Energy	Calipatria	Pending Construction	No	No
18-0040	Ormat Wister Solar	Omi 22 LLC/Ormat	Niland	Operational	No	No
21-0021	Hell's Kitchen Geothermal Exploration Project	Controlled Thermal Resources	Niland	Entitlement Process [a]	N/A	No
20-0008	Energy Source Mineral ALTiS	Energy Source Minerals	Imperial County	Pending Construction	No	No
--	Black Rock Geothermal Project (BRGP)	Black Rock Geothermal, LLC	Imperial County	AFC Under Review	Yes	Yes
--	Elmore North Geothermal Project (ENGP)	Elmore North Geothermal, LLC	Imperial County	AFC Under Review	Yes	Yes

[a] Hell’s Kitchen Geothermal Exploration Project is in the entitlement process, which occurs before any air emissions-related permitting and licensing.
Notes:
N/A = Not applicable
tpy = ton(s) per year

As presented in Table 4-2, only two proposed sources within 6 miles of MBGP were identified as having emissions greater than 5 tons per year of $PM_{2.5}$ or NO_2 and are in the permitting process. Because MBGP operations are not expected to overlap with construction of Black Rock Geothermal Project (BRGP) and Elmore North Geothermal Project (ENGP), only their operational emissions will be considered in the operations cumulative impacts analysis. Similarly, because MBGP construction is not expected to overlap with operation of BRGP and ENGP, only their construction emissions will be considered in the construction cumulative impacts analysis. Therefore, it is proposed that the BRGP and ENGP operations be included in the $PM_{2.5}$ cumulative air quality impacts analysis for MBGP operations and that the BRGP and ENGP construction be included in the NO_2 and $PM_{2.5}$ cumulative air quality impacts analysis for MBGP construction.

Appendix A
Operation Significant Impact Radius Figures

Figure A-1: Operation 24-Hour $PM_{2.5}$ Significant Impact Radius

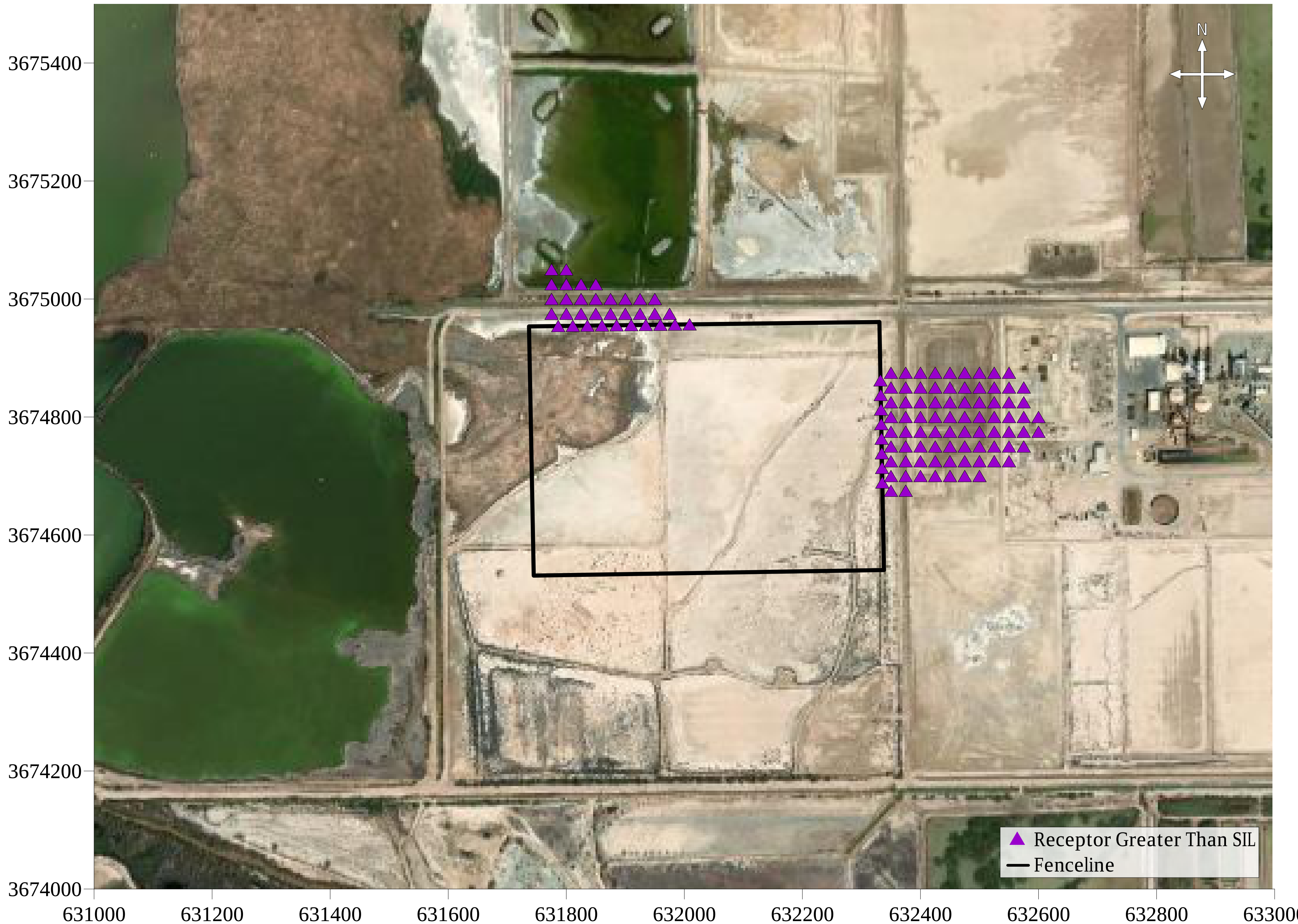
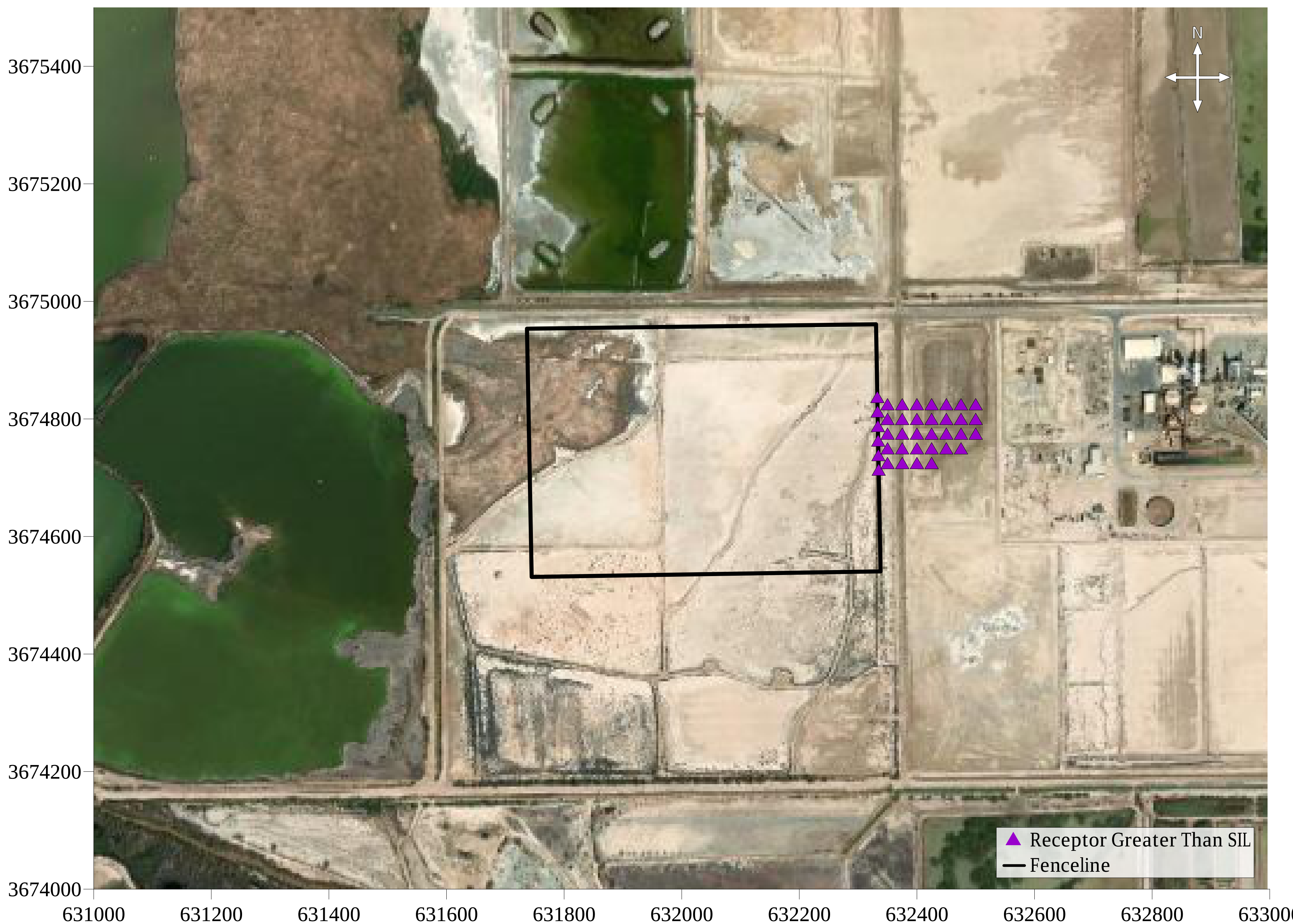


Figure A-2: Operation Annual $PM_{2.5}$ Significant Impact Radius



Appendix B
Construction Significant Impact Radius Figures

Figure B-1: Construction 1-Hour NO_2 Significant Impact Radius

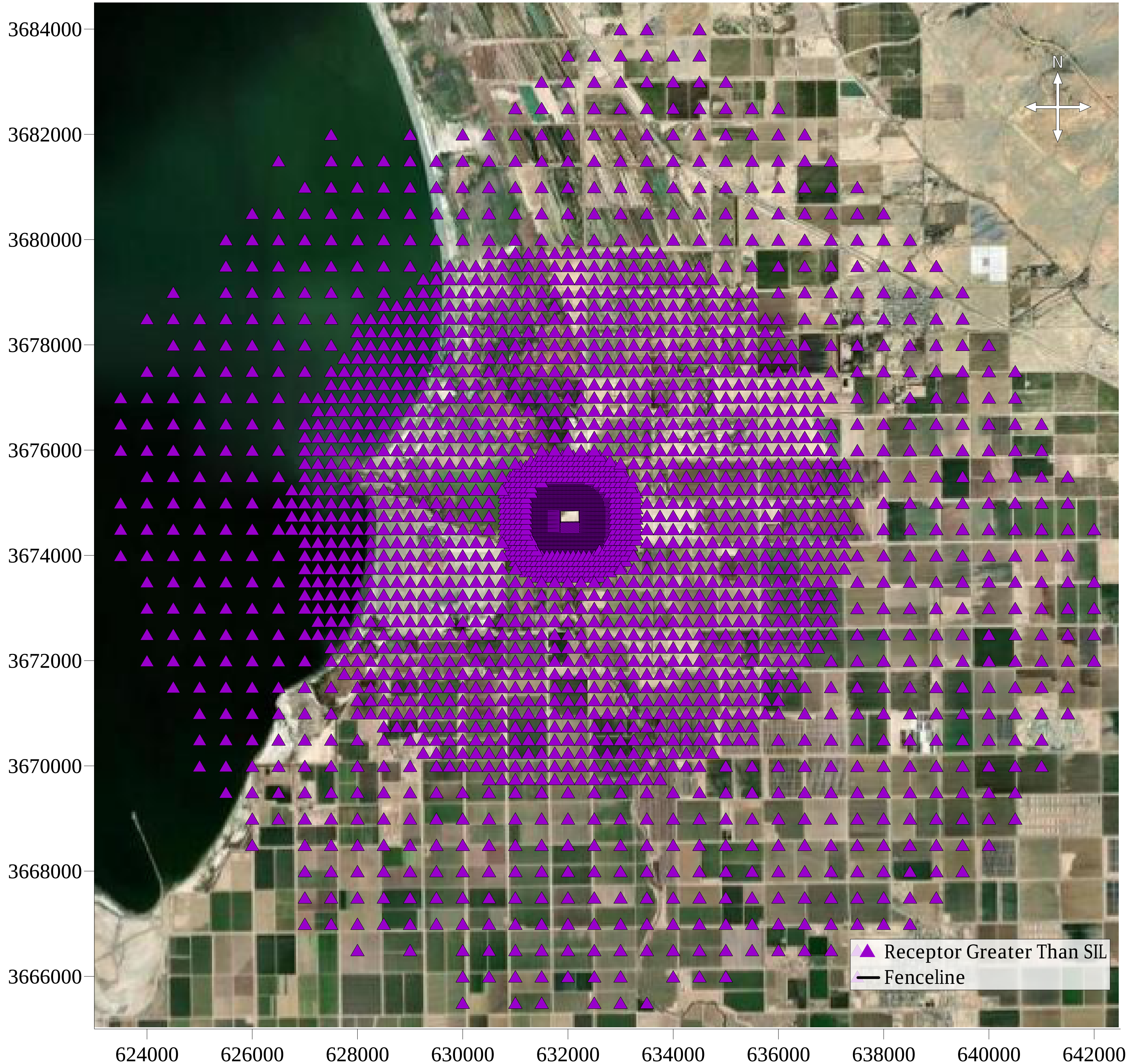


Figure B-2: Construction 24-Hour PM_{10} Significant Impact Radius

Figure B-3: Construction Annual NO_2 Significant Impact Radius

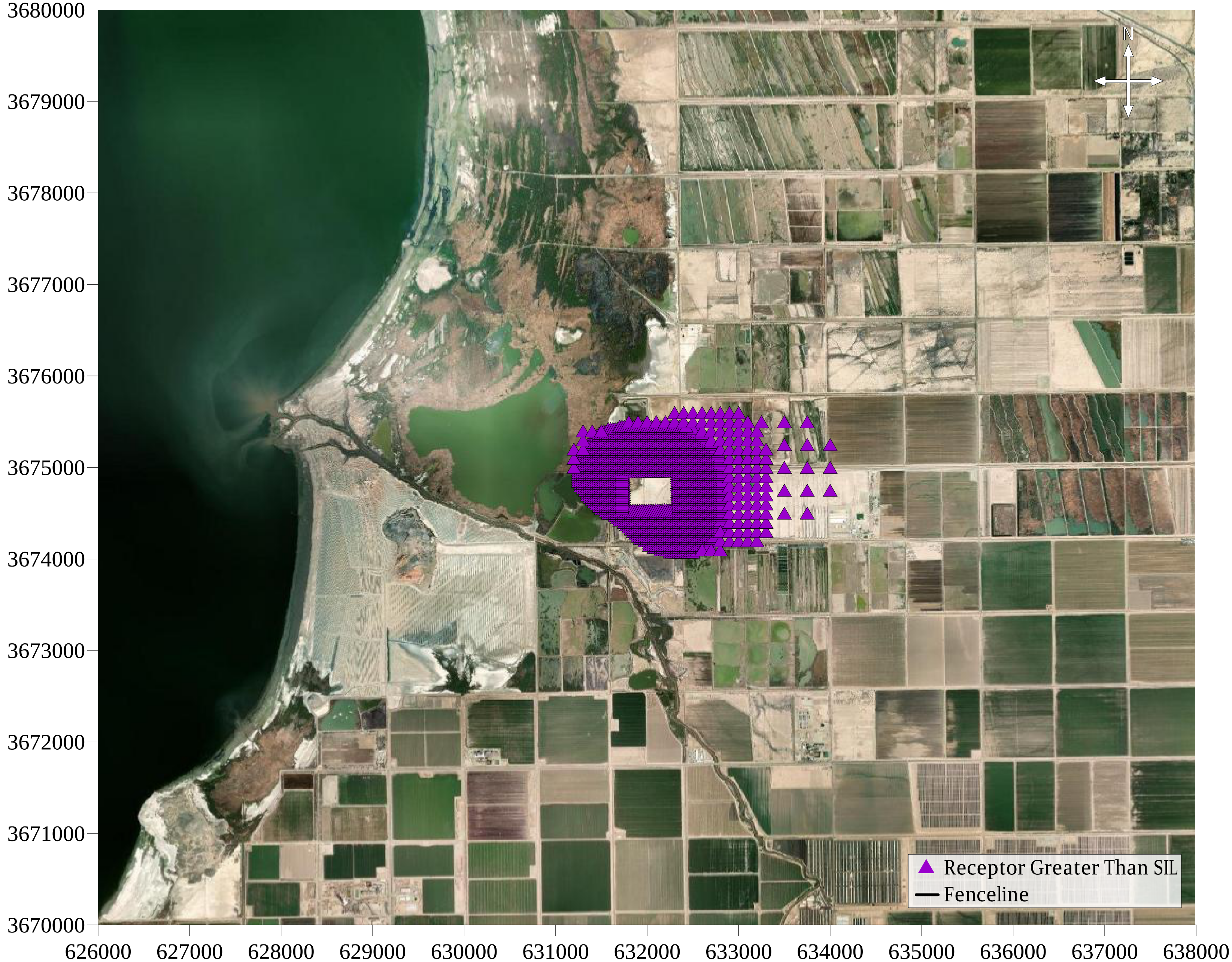


Figure B-4: Construction Annual PM_{10} Significant Impact Radius

Figure B-5: Construction Annual $PM_{2.5}$ Significant Impact Radius