

Rule 1200 Health Risk Assessment

Facility Name: Lockheed Martin
Facility ID: APCD2021-SITE-03766
Application: APCD2023-APP-008026
Project Engineer: John Lee
Modeler: Bill Reeve
Toxics Risk Analyst: Stephen Amberg
Date Submitted to Toxics: 3/6/2023
Date Completed by Toxics: 3/26/2024
HRA Tools Used: Lakes-AERMOD (Version 23132)/ HARP2 (v22118)

The following estimated risks are valid only for the input data provided by the Project Engineer.

Estimated worker risk does not exceed the residential risk. Therefore, only Residential risk is presented in the following results.

Estimated Risk Levels:

Maximum Individual Cancer Risk (Resident)	8.51 in one million
Chronic Noncancer Health Hazard Index (Resident)	= 2.34E-06
8-Hour Noncancer Health Hazard Index (Worker)	= NA*
Acute Health Hazard Index (*PMI)	= 0.0157

*Point of Maximum Impact

Input Data Provided by Project Engineer:

Type of Source: Adhesive Material Application Operation
 Controls Description: None.

Worst-Case TAC Emissions Increase:

Each Unit

Toxic Air Contaminant	Hourly Emission Rate (lb/hr)	Annual Emission Rate (lb/yr)
PCBTF	6.7	535.0
IPA	0.3	21.0

Release Parameters:

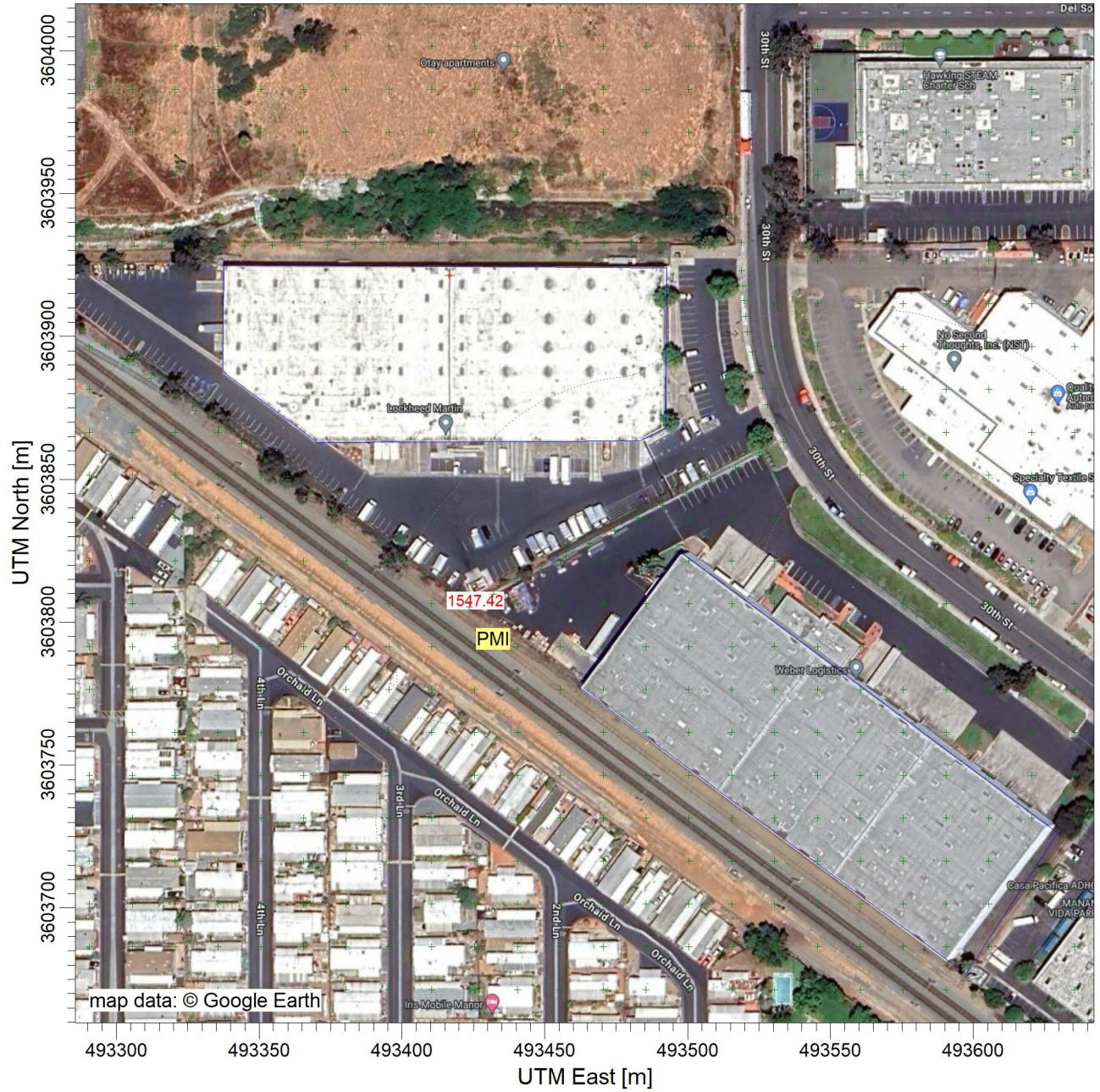
Stack Height (ft)	31
Stack Diameter (ft)	1.067
Temperature deg F	ambient
Exhaust Flow Rate (acfm)	16800

Discussion

The HRA was conducted in accordance with EPA and OEHHA guidance and District standard procedures. A point source was modeled with refined air dispersion modeling using EPA’s AERMOD model, AERMET (Version 22112) processed Chula Vista 2010-2012 sigma theta updated meteorology data, AERMAP terrain processing, and urban dispersion coefficients. Building downwash effects were calculated using the EPA BPIP-Prime model. The receptor grid was sufficiently dense to identify maximum impacts.

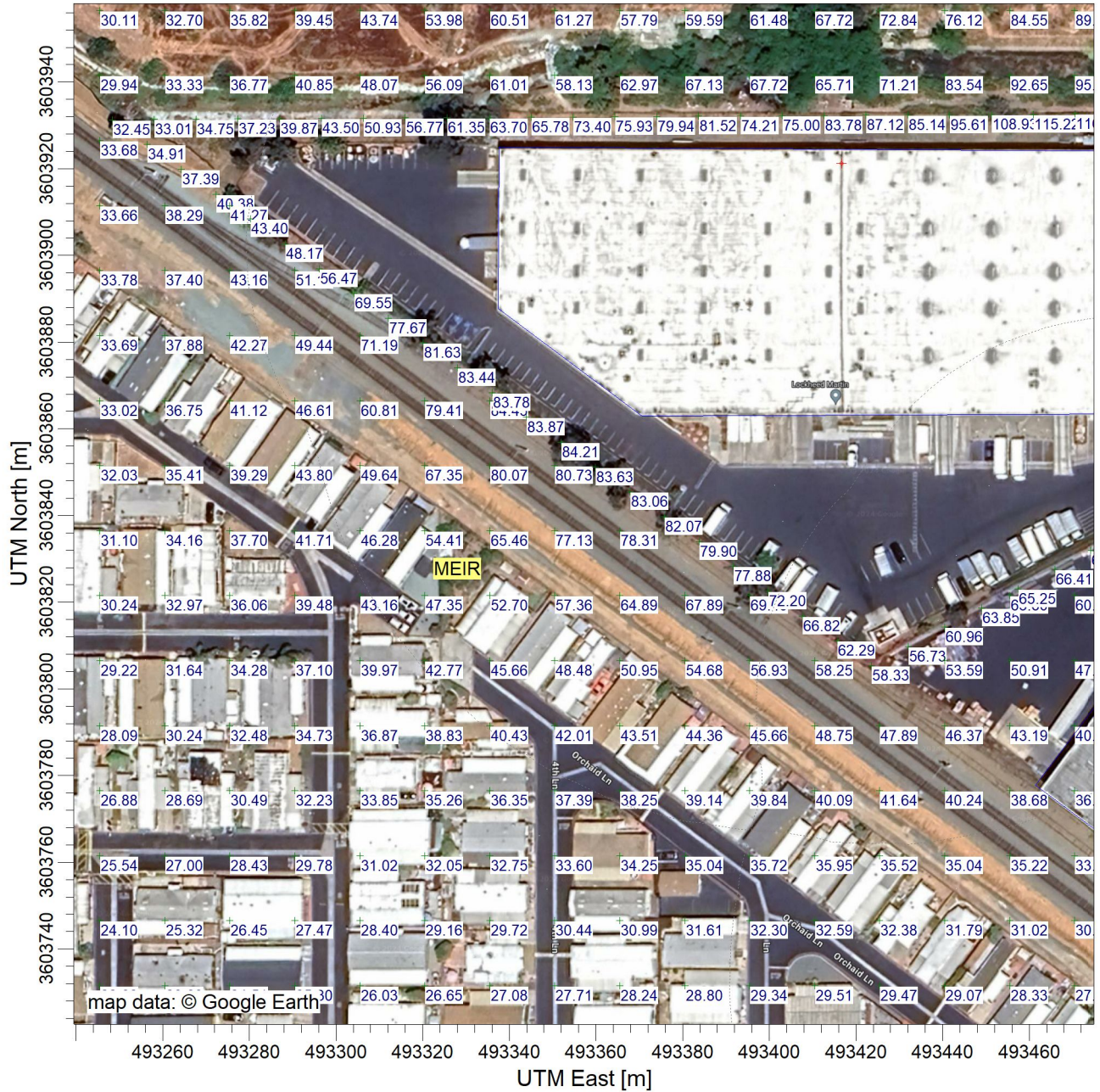
These risk results are based on the risk scenario calculations and health data at the time of the review, and should not be scaled with revised emissions rates without consulting with the Toxics Section.

APP008026 Lockheed
hourly x/q



COMMENTS:	SOURCES:		
		1	
	RECEPTORS:		
		17933	
	OUTPUT TYPE:	SCALE:	1:2,243
	Concentration	0 0.05 km	
	MAX:		PROJECT NO.:
	1547 ug/m^3		

APP008026 Lockheed
annual x/q



COMMENTS:

SOURCES:

1

RECEPTORS:

17933

OUTPUT TYPE:

Concentration

MAX:

118 ug/m³

SCALE:

1:1,481

0  0.05 km

PROJECT NO.:

ANNUAL DISPERSION FACTOR ($\mu\text{g}/\text{m}^3$)/(g/s): 54.41 Maximum Resident Receptor
 ANNUAL DISPERSION FACTOR ($\mu\text{g}/\text{m}^3$)/(g/s): Maximum Worker Receptor
 HOURLY DISPERSION FACTOR ($\mu\text{g}/\text{m}^3$)/(g/s): 1547.42 Maximum Acute Receptor

Pollutant Name	CAS	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual
		(lb/hr)	(lb/yr)	(g/s)	(g/s)	GLC	GLC	GLC	GLC
PCBTF	98566	6.69E+00	5.35E+02	8.44E-01	7.70E-03	1.31E+03	4.19E-01	0.00E+00	0.00E+00
IPA	67630	2.58E-01	2.10E+01	3.25E-02	3.02E-04	5.03E+01	1.64E-02	0.00E+00	0.00E+00

HARP2 - HRACalc (dated 22118) 3/25/2024 11:40:58 AM - Output Log

GLCs loaded successfully

Pollutants loaded successfully

RISK SCENARIO SETTINGS

Receptor Type: Resident

Scenario: All

Calculation Method: Derived

EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25

Total Exposure Duration: 30

Exposure Duration Bin Distribution

3rd Trimester Bin: 0.25

0<2 Years Bin: 2

2<9 Years Bin: 0

2<16 Years Bin: 14

16<30 Years Bin: 14

16 to 70 Years Bin: 0

PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True

Soil: True

Dermal: True

Mother's milk: True

Water: False

Fish: False

Homegrown crops: False

Beef: False

Dairy: False

Pig: False

Chicken: False

Egg: False

INHALATION

Daily breathing rate: RMP

Worker Adjustment Factors

Worker adjustment factors enabled: NO

Fraction at time at home

3rd Trimester to 16 years: OFF

16 years to 70 years: ON

SOIL & DERMAL PATHWAY SETTINGS

Deposition rate (m/s): 0.02

Soil mixing depth (m): 0.01

Dermal climate: Warm

TIER 2 SETTINGS

Tier2 not used.

Calculating cancer risk

Cancer risk saved to: D:\1200\8026_Lockheed\RAST\Resident_CancerRisk.csv

Calculating chronic risk

Chronic risk saved to: D:\1200\8026_Lockheed\RAST\Resident_NCChronicRisk.csv

Calculating acute risk

Acute risk saved to: D:\1200\8026_Lockheed\RAST\Resident_NCAcuteRisk.csv

HRA ran successfully

* CCVR_Sub - Meteorological data includes CCVR substitutions
* TEMP_Sub - Meteorological data includes TEMP substitutions
* Model Assumes No FLAGPOLE Receptor Heights.
* The User Specified a Pollutant Type of: OTHER

**Model Calculates 1 Short Term Average(s) of: 1-HR
and Calculates PERIOD Averages

**This Run Includes: 1 Source(s); 1 Source Group(s); and 17933 Receptor(s)

with: 1 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 0 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 RLINE/RLINEXT source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with a total of 0 line(s)
and: 0 SWPOINT source(s)

**Model Set To Continue RUNNING After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 22112

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) = 53.00 ; Decay Coef. = 0.000 ; Rot. Angle = 0.0
Emission Units = GRAMS/SEC ; Emission Rate Unit Factor = 0.10000E+07
Output Units = MICROGRAMS/M**3

**Approximate Storage Requirements of Model = 5.5 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

**Detailed Error/Message File: 8026_Lockheed.err
**File for Summary of Results: 8026_Lockheed.sum

▲ *** AERMOD - VERSION 23132 *** C:\Users\breeve\OneDrive - County of San Diego\HDrive\Modeling Proje ***
*** AERMET - VERSION 22112 *** ***

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1
1 1 1 1 1 1 1 1 1 1	1 1 1 1 1			

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\..\Meteorology Documents\AERMET Files\AERMET 22112 PROJECTS\CVA\CVA_2010_2 Met Version: 22112
 Profile file: ..\..\..\Meteorology Documents\AERMET Files\AERMET 22112 PROJECTS\CVA\CVA_2010_2
 Surface format: FREE
 Profile format: FREE
 Surface station no.: 23188 Upper air station no.: 3190
 Name: SAN_DIEGO/LINDBERGH_FIELD Name: UNKNOWN
 Year: 2010 Year: 2010

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O	LEN	Z0	BOWEN	ALBEDO	REF	WS	WD	HT	REF	TA	HT
10	01	01	1	01	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	48.	10.0	283.1	10.0			
10	01	01	1	02	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	62.	10.0	283.1	10.0			
10	01	01	1	03	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	45.	10.0	282.5	10.0			
10	01	01	1	04	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	79.	10.0	281.9	10.0			
10	01	01	1	05	-0.2	0.015	-9.000	-9.000	-999.	4.	1.3	0.03	0.98	1.00	0.44	356.	10.0	280.8	10.0			
10	01	01	1	06	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	45.	10.0	280.8	10.0			
10	01	01	1	07	-0.8	0.031	-9.000	-9.000	-999.	13.	3.3	0.03	0.98	1.00	0.89	47.	10.0	281.9	10.0			
10	01	01	1	08	-0.6	0.030	-9.000	-9.000	-999.	13.	4.3	0.03	0.98	0.49	0.89	78.	10.0	282.5	10.0			
10	01	01	1	09	19.1	0.086	0.293	0.014	47.	61.	-3.1	0.03	0.98	0.30	0.89	24.	10.0	286.4	10.0			
10	01	01	1	10	60.3	0.098	0.561	0.010	106.	73.	-1.4	0.03	0.98	0.23	0.89	351.	10.0	288.1	10.0			
10	01	01	1	11	59.0	0.158	0.715	0.009	224.	150.	-6.0	0.03	0.98	0.21	1.78	311.	10.0	290.8	10.0			
10	01	01	1	12	67.1	0.189	0.858	0.008	341.	197.	-9.1	0.03	0.98	0.20	2.23	313.	10.0	292.5	10.0			
10	01	01	1	13	66.4	0.159	0.922	0.008	427.	153.	-5.5	0.03	0.98	0.20	1.78	305.	10.0	293.6	10.0			
10	01	01	1	14	57.3	0.187	0.919	0.008	490.	193.	-10.2	0.03	0.98	0.21	2.23	278.	10.0	294.8	10.0			
10	01	01	1	15	38.8	0.237	0.827	0.008	526.	277.	-31.0	0.03	0.98	0.24	3.12	289.	10.0	293.1	10.0			
10	01	01	1	16	20.7	0.173	0.678	0.008	543.	174.	-22.7	0.03	0.98	0.33	2.23	296.	10.0	291.4	10.0			
10	01	01	1	17	-1.5	0.046	-9.000	-9.000	-999.	46.	5.7	0.03	0.98	0.60	1.34	337.	10.0	291.4	10.0			
10	01	01	1	18	-1.6	0.046	-9.000	-9.000	-999.	23.	5.4	0.03	0.98	1.00	1.34	337.	10.0	290.3	10.0			
10	01	01	1	19	-0.2	0.015	-9.000	-9.000	-999.	5.	1.8	0.03	0.98	1.00	0.44	252.	10.0	288.6	10.0			
10	01	01	1	20	-0.2	0.015	-9.000	-9.000	-999.	4.	1.8	0.03	0.98	1.00	0.44	113.	10.0	287.5	10.0			
10	01	01	1	21	-0.8	0.030	-9.000	-9.000	-999.	13.	3.3	0.03	0.98	1.00	0.89	122.	10.0	286.9	10.0			
10	01	01	1	22	-2.1	0.046	-9.000	-9.000	-999.	23.	4.0	0.03	0.98	1.00	1.34	99.	10.0	286.4	10.0			
10	01	01	1	23	-1.0	0.030	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	331.	10.0	285.3	10.0			
10	01	01	1	24	-1.0	0.031	-9.000	-9.000	-999.	13.	2.6	0.03	0.98	1.00	0.89	40.	10.0	285.3	10.0			

First hour of profile data

YR MO DY HR HEIGHT F WDIR WSPD AMB_TMP sigmaA sigmaW sigmaV

10 01 01 01 10.0 1 48. 0.89 283.2 30.0 -99.00 0.41

F indicates top of profile (=1) or below (=0)

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*** AERMET - VERSION 22112 *** ***

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF MAXIMUM PERIOD (26304 HRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS 118.46139	AT (493499.60, 3603932.80,	18.91, 20.42, 0.00)	DC
	2ND HIGHEST VALUE IS 116.66122	AT (493489.94, 3603932.74,	18.83, 20.51, 0.00)	DC
	3RD HIGHEST VALUE IS 116.50930	AT (493470.62, 3603932.63,	18.77, 20.51, 0.00)	DC
	4TH HIGHEST VALUE IS 115.22423	AT (493460.96, 3603932.57,	18.71, 20.33, 0.00)	DC
	5TH HIGHEST VALUE IS 115.04554	AT (493480.28, 3603932.68,	18.77, 20.51, 0.00)	DC
	6TH HIGHEST VALUE IS 114.74008	AT (493522.70, 3603894.57,	19.47, 19.47, 0.00)	DC
	7TH HIGHEST VALUE IS 113.49460	AT (493520.92, 3603901.52,	19.23, 19.23, 0.00)	DC
	8TH HIGHEST VALUE IS 113.25378	AT (493520.32, 3603907.08,	19.12, 19.12, 0.00)	DC
	9TH HIGHEST VALUE IS 113.23837	AT (493519.72, 3603912.65,	19.07, 19.07, 0.00)	DC
	10TH HIGHEST VALUE IS 112.49425	AT (493509.27, 3603932.85,	19.00, 19.00, 0.00)	DC

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

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*** MODELOPTs: RegDFAULT CONC ELEV URBAN SigA Data

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH	1ST HIGH VALUE IS	1547.41965 ON 12111802: AT (493415.62, 3603811.10, 21.28, 21.28, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** AERMOD - VERSION 23132 *** C:\Users\breeve\OneDrive - County of San Diego\HDrive\Modeling Proje *** 03/21/24
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*** MODELOPTs: RegDEFAULT CONC ELEV URBAN SigA Data

*** Message Summary : AERMOD Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 456 Informational Message(s)

A Total of 26304 Hours Were Processed

A Total of 161 Calm Hours Identified

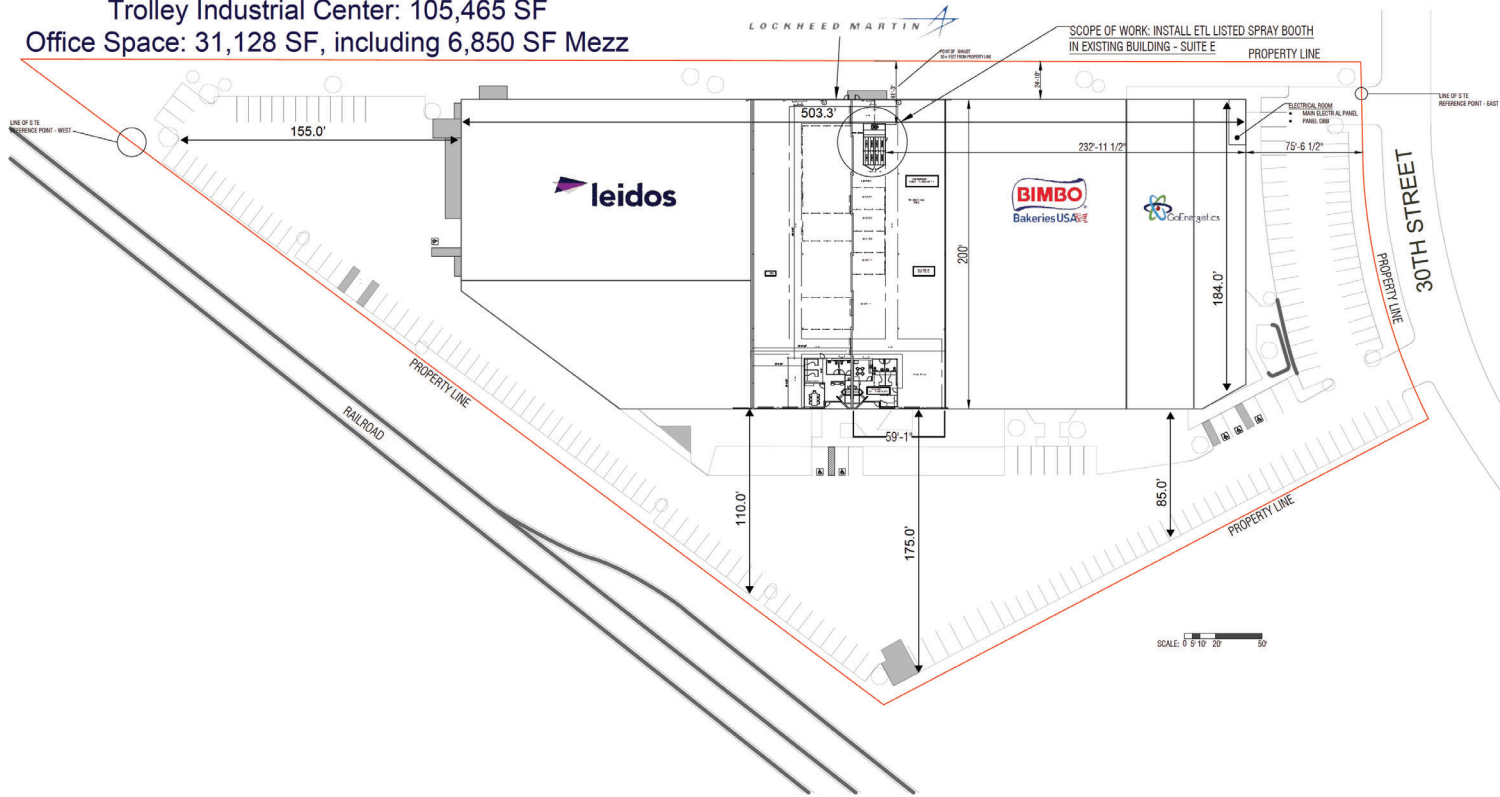
A Total of 295 Missing Hours Identified (1.12 Percent)

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****

MX W403 101 PFLCNV: Turbulence data is being used w/o ADJ_U* option SigA Data

Trolley Industrial Center: 105,465 SF
Office Space: 31,128 SF, including 6,850 SF Mezz




- NOTES:
- SCOPE OF WORK: INSTALL (1) PREFABRICATED SPRAY BOOTH
 - POINT OF EXHAUST OF SPRAY BOOTHS TO BE MORE THAN 30' FROM PROPERTY LINE.
 - SPRAY BOOTH TO BE INSTALLED IN EXISTING WAREHOUSE - F1 OCCUPANCY.
 - SPRAY BOOTHS TO BE INSTALLED ON CEMENT FLOOR.
 - SPRAY BOOTHS ARE ETL LISTED
 - SPRAY BOOTH TO BE SPRINKLERED. SPRINKLER PERMITS TO BE PULLED ON SEPARATE PERMIT BY OTHERS.
 - PATH OF TRAVEL IS SHOWN.
 - FACILITY COMPLIES WITH ALL ADA REQUIREMENTS.
 - SPRAY BOOTH POINT OF EXHAUST TO BE 30' FROM PROPERTY LINE.
 - SPRAY BOOTH TO BE INSTALLED WITH 3' CLEARANCE AROUND THE BOOTH.

APPROVAL SIGNATURE	REVISION	DATE:	8/14/2023
	DRAWN BY: MDB	SCALE	D
	DTS	DWG NO.	LOCKHEED MARTIN BOOTH PLANS
TITLE SITE PLAN			
CUSTOMER NAME LOCKHEED MARTIN RMS			
ADDRESS: 1330 30TH ST, STE E SAN DIEGO, CA 92154			
ENGINEER STAMP			
 8356 BELLA VISTA ALTA LOMA, CA 91701 LIC #727866, TYPE B & C10, EXP. 9-30-2024			
SHEET A-2.0			

Amberg, Stephen

From: Reeve, Bill
Sent: Thursday, March 21, 2024 4:42 PM
To: Amberg, Stephen; Bernabe, Andrew; Canter, Adam; DiFulvio, Jaime; Galvez, Maria; Nguyen, Tony; Ossowski, Peter; Swaney, Jim; Wong, Benjamin
Cc: Lee, John
Subject: FW: HRA request: APCD2023-APP-008026
Attachments: APCD2023-APP-008026_exhaustType_flapper.pdf; APCD2023-APP-008026_propBoundary.pdf; APCD2023-APP-008026_Rule1200_generictoxics_112023 (1).xlsx; APCD2023-APP-008026_toxicsForm.pdf; APCD2023-APP-008026_exhaustFlow.pdf

I have completed the modeling for Lockheed. The zipped modeling files are in  [8026 Lockheed](#)

-Bill

Bill Reeve
Associate Meteorologist
San Diego County Air Pollution Control District
Bill.Reeve@sdapcd.org
O 858-586-2773 M 858-945-3732
<http://www.sdapcd.org>
10124 Old Grove Rd, San Diego CA, 92131

From: Lee, John <John.Lee@sdapcd.org>
Sent: Wednesday, March 6, 2024 4:45 PM
To: Reeve, Bill <Bill.Reeve@sdapcd.org>; Nguyen, Tony <Tony.Nguyen2@sdapcd.org>
Cc: Canter, Adam <Adam.Canter@sdapcd.org>; DiFulvio, Jaime <Jaime.DiFulvio@sdapcd.org>; Swaney, Jim <Jim.Swaney@sdapcd.org>
Subject: HRA request: APCD2023-APP-008026

Hello Bill and Tony,

Here is an HRA request. Please have the modeler post the results in [Engineering - 8026 Lockheed - All Documents \(sharepoint.com\)](#)

Let me know if you need more information.

Thank you,

John L.