

Califia Farms' Juicing Facility

On December 23, 2010, the District was requested to conduct a Health Risk Assessment (HRA) and an ambient air quality analysis (AAQA) for the construction of a new fruit juicing operation located East of the City of Shafter, CA on Lerdo Hwy. Modeling was conducted for three scenarios 1) Support of District ATC [Stationary source only], 2) New Juicing Facility [All Sources], and 3) Sun Pacific [Increase in truck traffic].

The District modeled the three scenarios using EPA's AERMOD dispersion model with five years of meteorological data from the Bakersfield Meadows Field Airport from 2005-2009.

When establishing modeling parameters for both the Sun Pacific and the Califia Farms' juicing facilities the District made conservative assumptions on the truck routes to ensure a worst case scenario was evaluated.

Support of District ATC

Modeling was conducted to determine the impact from the operation of a 12.6 MMBTU/Hr natural gas fired boiler. Emissions of toxic pollutants were evaluated to determine the maximum impact offsite. Emissions from criteria pollutants were evaluated to determine if the operation would contribute to or cause an exceedance of a federal or state ambient air quality standard. Emissions from this scenario are provided in the appendix entitled "Emissions Data".

Based on the AERMOD modeling result and the HARP run, the permitted operation at the juicing facility has a less than significant impact from toxic emissions. The result from the AAQA indicates that the facility would not contribute to or cause an exceedance of a federal or state ambient air quality standard.

New Juicing Facility (All Sources)

Modeling was conducted to determine the maximum impact from the operation of the new juicing facility (onsite stationary and mobile sources). Emissions of toxic pollutants were evaluated to determine the maximum impact offsite. Emissions from criteria pollutants were evaluated to determine if the operation would contribute to or cause an exceedance of a federal or state ambient air quality standard. Emissions from this scenario are provided in the appendix entitled "Emissions Data".

Based on the AERMOD modeling result and the HARP run, the stationary and mobile sources at the facility have a less than significant impact from toxic emissions. The modeling run does indicate that a significant impact may occur on the Sun Pacific facility if an onsite sensitive receptor was present; see the figure titled "Juicing Facility in the appendix entitled "HRA Summary". Currently there are no onsite sensitive receptors. The risk to onsite site receptors (workers) is ~35% that of a sensitive receptors.

Therefore, the risk to workers is also less than significant. The result from the AAQA indicates that the facility would not contribute to or cause an exceedance of a federal or state ambient air quality standard.

Sun Pacific (Increase in Truck Traffic)

Modeling was conducted to determine the maximum impact from the increase of mobile sources at the facility. Emissions of Toxic pollutants were evaluated to determine the maximum impact offsite. Emissions from criteria pollutants were evaluated to determine if the increase in trucks would contribute to or cause an exceedance of a federal or state ambient air quality standard. Emissions from this scenario are provided in the attached appendix.

Based on the AERMOD modeling result and the HARP run, the increase in trucks at Sun Pacific has a less than significant impact from toxic emissions. The result from the AAQA indicates that the increase in trucks would not contribute to or cause an exceedance of a federal or state ambient air quality standard.

Conclusion

Based on the modeling runs conducted, the operation of the new juicing facility will not cause a significant impact or cause/contribute to an exceedance of a federal or state ambient air quality standard.

A summary of results from the HRA is included in the appendix entitled "HRA Summary". The AAQA results are summarized in the appendix entitled "AAQA summary". The electronic inputs and outputs are included on the attached CD.

Facility Layout

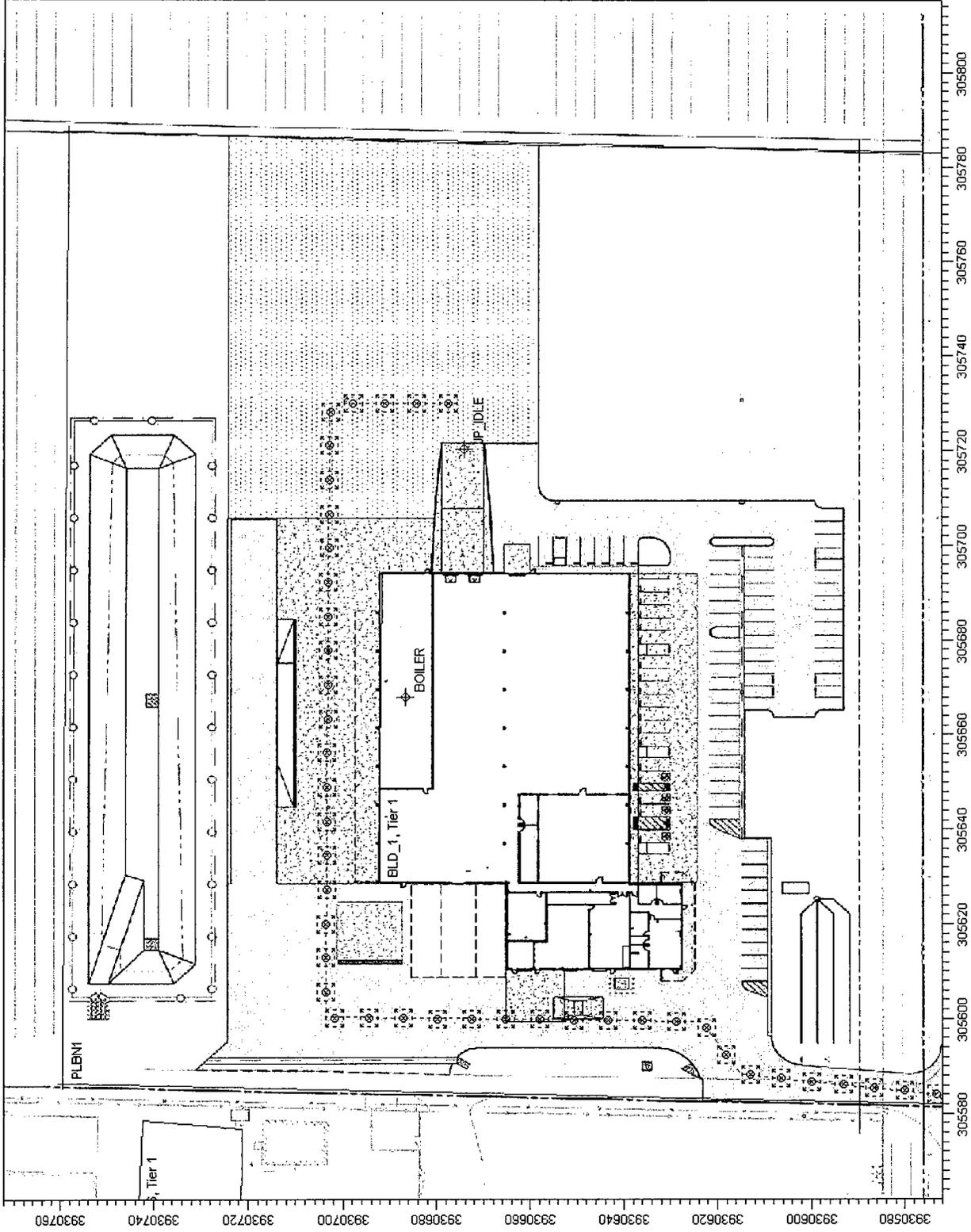
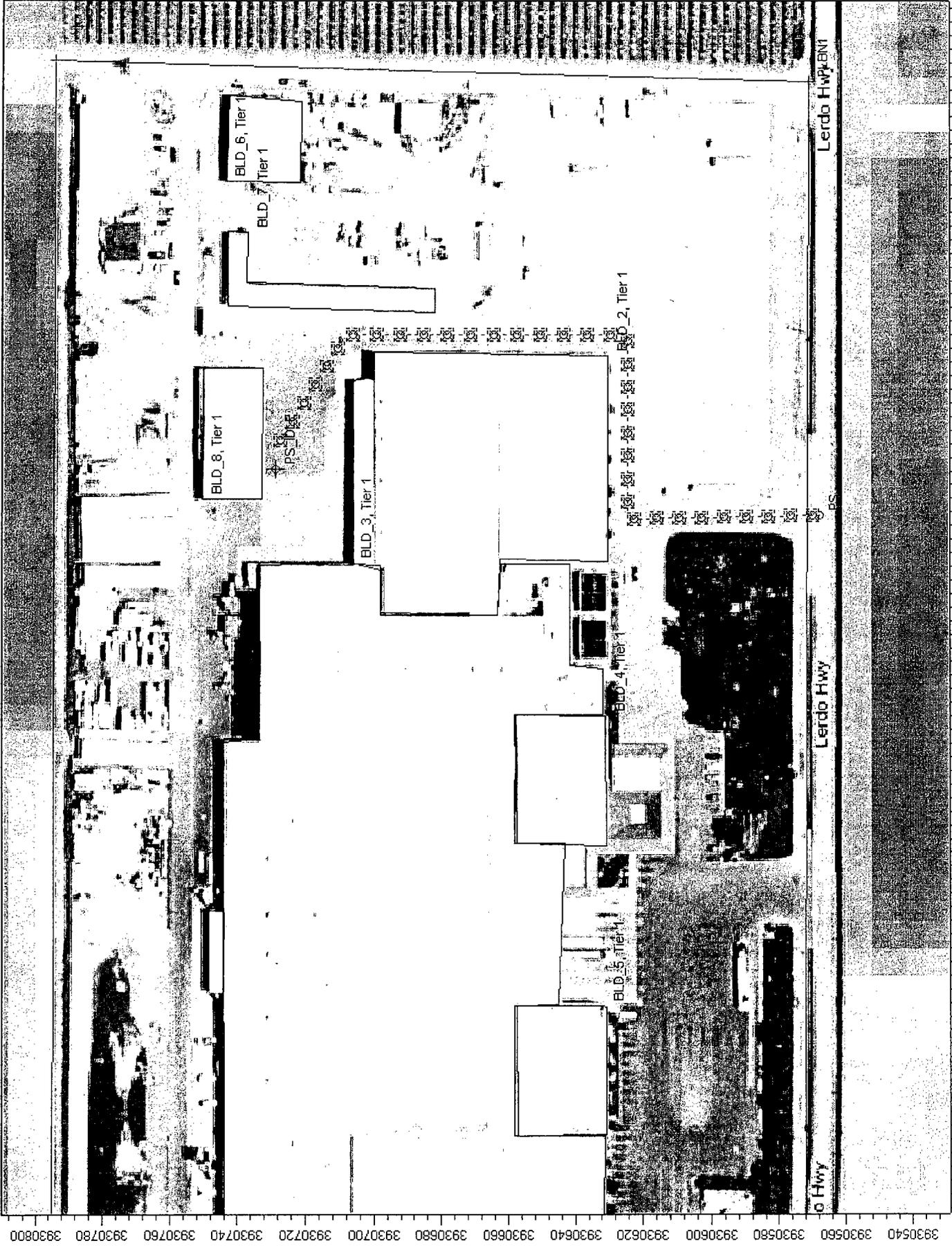


Figure 1 – Juice Operation Facility Layout



3930540
3930560
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305560
305580

to Hwy

Lerdo Hwy

Lerdo Hwy BNI

BLD_8, Tier 1

BLD_3, Tier 1

BLD_4, Tier 1

BLD_5, Tier 1

BLD_6, Tier 1

BLD_7, Tier 1

BLD_2, Tier 1

PS-Disc

Emissions Data

Table 1 – Boiler Toxic Emissions

CAS	Pollutant Name	Lbs / Yr	Lbs / Hr
1151	PAHs-w/o	1.10E-02	1.26E-06
1210	Xylenes	2.17E+00	2.48E-04
9901	DieselExhPM	0.00E+00	0.00E+00
50000	Formaldehyde	1.36E+00	1.55E-04
71432	Benzene	6.40E-01	7.31E-05
75070	Acetaldehyde	3.42E-01	3.91E-05
91203	Naphthalene	3.31E-02	3.78E-06
100414	Ethyl Benzene	7.62E-01	8.69E-05
107028	Acrolein	2.98E-01	3.40E-05
108883	Toluene	2.92E+00	3.34E-04
110543	Hexane	5.08E-01	5.80E-05
115071	Propylene	5.85E+01	6.68E-03

Table 2 – Boiler Criteria Emissions

Pollutant	Lbs / Yr	Lbs / Hr
NOx	883	0.104
Sox	315	0.038
PM10	839	0.096
CO	4084	1.083

Juice Products Truckloads

Total Truck/day	12.25	12.55	14.05	13.03	13.41	9.50	6.37	6.11	6.38	5.68	15.04	16.13
Days/Mo.	31	28	31	30	31	30	31	31	30	31	30	31
Total trucks/ Mo.	379.75	351.54	435.66	390.99	415.80	285.04	197.36	189.28	191.33	176.02	451.27	500.06

NOx

Travel													Totals (Yr)
Ems (g/Mo.)	3752.05	3473.30	4304.44	3863.12	4108.26	2816.30	1949.98	1870.19	1890.42	1739.16	4458.64	4940.73	39166.59
Ems (lb/Mo.)	8.27	7.66	9.49	8.52	9.06	6.21	4.30	4.12	4.17	3.83	9.83	10.89	86.35

Idling

Ems (g/Mo.)	10580.99	9794.89	12138.76	10894.19	11585.51	7942.10	5499.05	5274.03	5331.09	4904.51	12573.61	13933.12	110451.86
Ems (lb/Mo.)	23.33	21.59	26.76	24.02	25.54	17.51	12.12	11.63	11.75	10.81	27.72	30.72	243.50

PM

Travel													Totals (Yr)
Ems (g/Mo.)	198.51	183.76	227.74	204.39	217.36	149.00	103.17	98.95	100.02	92.01	235.90	261.40	2072.20
Ems (lb/Mo.)	0.44	0.41	0.50	0.45	0.48	0.33	0.23	0.22	0.22	0.20	0.52	0.58	4.57

Idling

Ems (g/Mo.)	154.46	142.99	177.20	159.04	169.13	115.94	80.28	76.99	77.82	71.60	183.55	203.40	1612.40
Ems (lb/Mo.)	0.34	0.32	0.39	0.35	0.37	0.26	0.18	0.17	0.17	0.16	0.40	0.45	3.55

AAQA Summary

AAQA for 1104037 - Califa Farms / Sun Pacific (S7855)

All Values are in ug/m^3

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
BOILER	4.655E+00	2.866E-01	4.841E+01	2.755E+01	1.676E+00	1.448E+00	5.028E-01	1.022E-01	1.285E+00	2.723E-01
Background	104.66 8.609E+04	2.296E+01	3.845E+03	2.563E+03	1.598E+02	1.332E+02	7.193E+01	2.664E+01	2.670E+02	8.300E+01
Facility Totals	9.075E+01 104.66	2.325E+01	3.893E+03	2.591E+03	1.615E+02	1.346E+02	7.243E+01	2.674E+01	2.683E+02	8.327E+01
AAQS	188.68	56	23000	10000	195	1300	105	80	50	30
	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail

EPA's Significance Level (ug/m^3)

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
	0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

0.502

Pass

0.17885

Pass

0.4765

Pass

Boiler Only

AAQA Emission (g/sec)

Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
BOILER	1.31E-02	1.27E-02	1.36E-01	1.36E-01	4.72E-03	4.72E-03	4.72E-03	4.53E-03	1.21E-02	1.21E-02

AAQA for 1104037 - Califia Farms-CEQA (Stationary/Truck) (S7855-CEQA-JP)

All Values are in ug/m^3

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
BOILER	4.442E+00	1.403E-01	4.825E+01	2.746E+01	1.674E+00	1.447E+00	5.024E-01	1.022E-01	1.288E+00	2.731E-01
JP_IDLE	2.255E+00	2.993E-02	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.436E-03	1.603E-03
SP	2.492E+01	7.132E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.397E-02	4.614E-03
Background	1.77E+02 132.23 188.68	2.296E+01	4.078E+03	2.563E+03	1.598E+02	1.332E+02	7.193E+01	2.664E+01	2.560E+02	6.500E+01
Facility Totals	1.77E+02 132.23 188.68	2.384E+01 41.72 ads	4.126E+03	2.590E+03	1.615E+02	1.346E+02	7.243E+01	2.674E+01	2.574E+02	6.528E+01
AAQS	188.68	56	23000	10000	195	1300	105	80	50	30

Pass
Fail
0.279317

EPA's Significance Level (ug/m^3)

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
	0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

1.39 0.489 ads.

Pass
Pass

Twice facility
All emissions

AAQA Emission (g/sec)

Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
BOILER	1.31E-02	1.27E-02	1.36E-01	1.36E-01	4.72E-03	4.72E-03	4.72E-03	4.53E-03	1.21E-02	1.21E-02
JP_IDLE	3.50E-03	3.50E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.11E-05	5.11E-05
SP	1.24E-03	1.24E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.57E-05	6.57E-05

AAQA for 1104037 - Calafia Farms-CEQA (Stationary/Truck) (S7855-CEQA-SP)
 All Values are in ug/m^3

	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
PS	1.271E+01	4.015E-01	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.066E-01	2.125E-02
PS_IDLE	1.093E-01	8.395E-04	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.535E-04	1.227E-05
Background	1.006E+02	2.296E+01	4.078E+03	2.563E+03	1.598E+02	1.332E+02	7.193E+01	2.664E+01	2.560E+02	6.500E+01
Facility Totals	1.134E+02	2.336E+01	4.078E+03	2.563E+03	1.598E+02	1.332E+02	7.193E+01	2.664E+01	2.561E+02	6.502E+01
AAQS	188.68	56	23000	10000	195	1300	105	80	50	30
	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Fail

0.02126227

EPA's Significance Level (ug/m^3)

NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
0.0	1.0	2000.0	500.0	0.0	25.0	5.0	1.0	5.0	1.0

0.107 PASS
 0.0372 nds PASS

Son Pacific
 Increase in Trucks

AAQA Emission (g/sec)

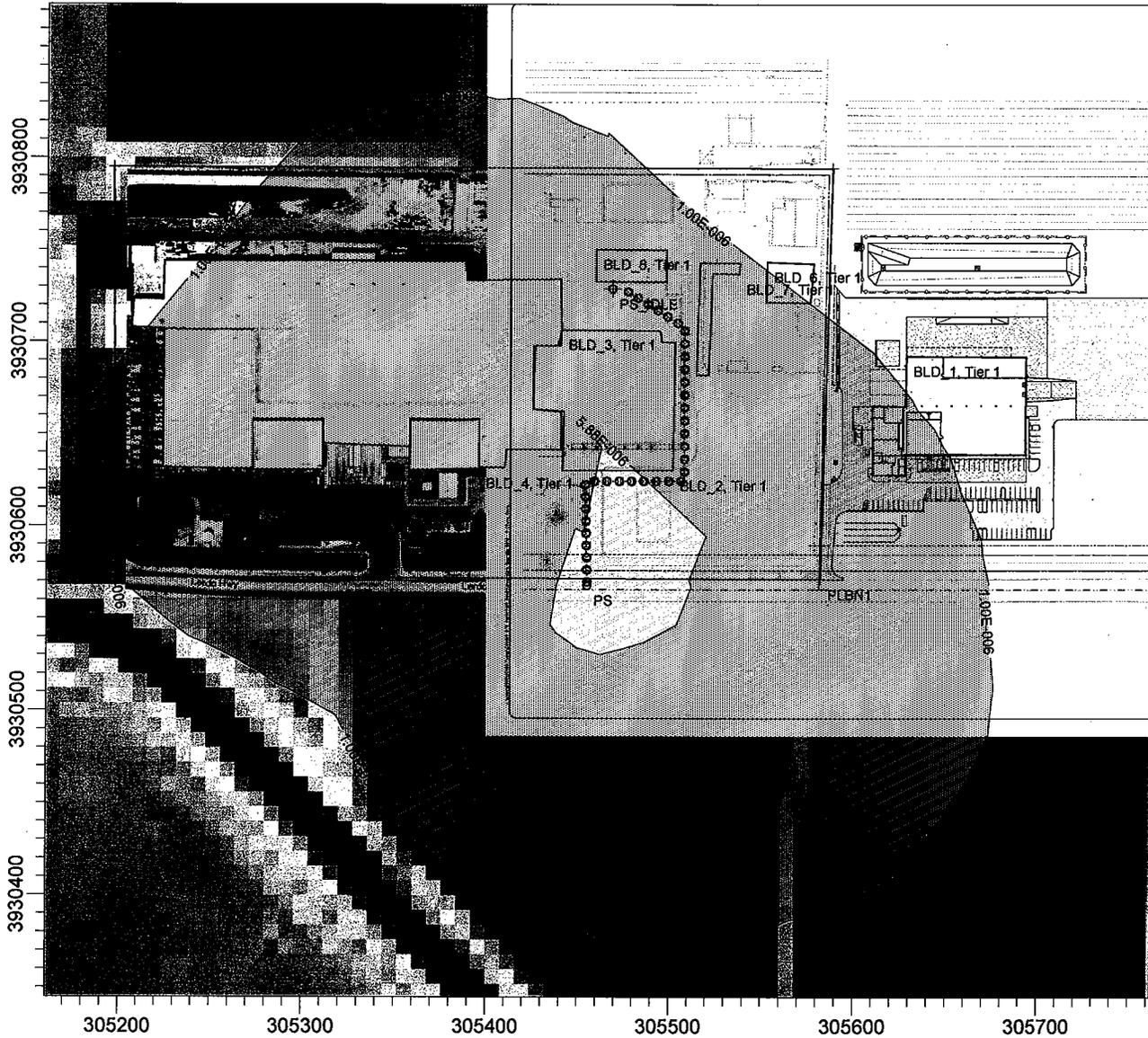
Device	NOx 1 Hour	NOx Annual	CO 1 Hour	CO 8 Hour	SOx 1 Hour	SOx 3 Hour	SOx 24 Hour	SOx Annual	PM 24 Hour	PM Annual
PS	1.06E-03	1.06E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.62E-05	5.62E-05
PS_IDLE	4.20E-03	4.20E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.14E-05	6.14E-05

HRA Summary

Son Pacific

PROJECT TITLE:

C:\RMR\IS7855 (1104037) 12-29-10\SP.isc



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: CANCER

1E-06



1.000E-006

5.881E-006

8.820E-006

COMMENTS:

SOURCES:

COMPANY NAME:

2

RECEPTORS:

MODELER:

1372

OUTPUT TYPE:

SCALE:

1:3,672

Concentration



MAX:

DATE:

PROJECT NO.:

8.82E-6 1E-06

1/12/2011

EXCEPTION REPORT

(there have been no changes or exceptions)

RECEPTORS WITH HIGHEST CANCER RISK

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
695	GRID	8.82E-06	4.25E-03	0.00E+00	305462	3930546	11
694	GRID	7.01E-06	3.38E-03	0.00E+00	305486	3930546	11
696	GRID	6.30E-06	3.04E-03	0.00E+00	305438	3930547	11
693	GRID	5.47E-06	2.64E-03	0.00E+00	305510	3930546	11
712	GRID	4.52E-06	2.18E-03	0.00E+00	305462	3930521	11
711	GRID	4.48E-06	2.16E-03	0.00E+00	305486	3930521	11
692	GRID	4.16E-06	2.01E-03	0.00E+00	305534	3930546	11
697	GRID	4.04E-06	1.95E-03	0.00E+00	305414	3930547	11
710	GRID	4.02E-06	1.94E-03	0.00E+00	305510	3930521	11
713	GRID	3.80E-06	1.84E-03	0.00E+00	305438	3930522	11

RECEPTORS WITH HIGHEST CHRONIC HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
695	GRID	8.82E-06	4.25E-03	0.00E+00	305462	3930546	11
694	GRID	7.01E-06	3.38E-03	0.00E+00	305486	3930546	11
696	GRID	6.30E-06	3.04E-03	0.00E+00	305438	3930547	11
693	GRID	5.47E-06	2.64E-03	0.00E+00	305510	3930546	11
712	GRID	4.52E-06	2.18E-03	0.00E+00	305462	3930521	11
711	GRID	4.48E-06	2.16E-03	0.00E+00	305486	3930521	11
692	GRID	4.16E-06	2.01E-03	0.00E+00	305534	3930546	11
697	GRID	4.04E-06	1.95E-03	0.00E+00	305414	3930547	11
710	GRID	4.02E-06	1.94E-03	0.00E+00	305510	3930521	11
713	GRID	3.80E-06	1.84E-03	0.00E+00	305438	3930522	11

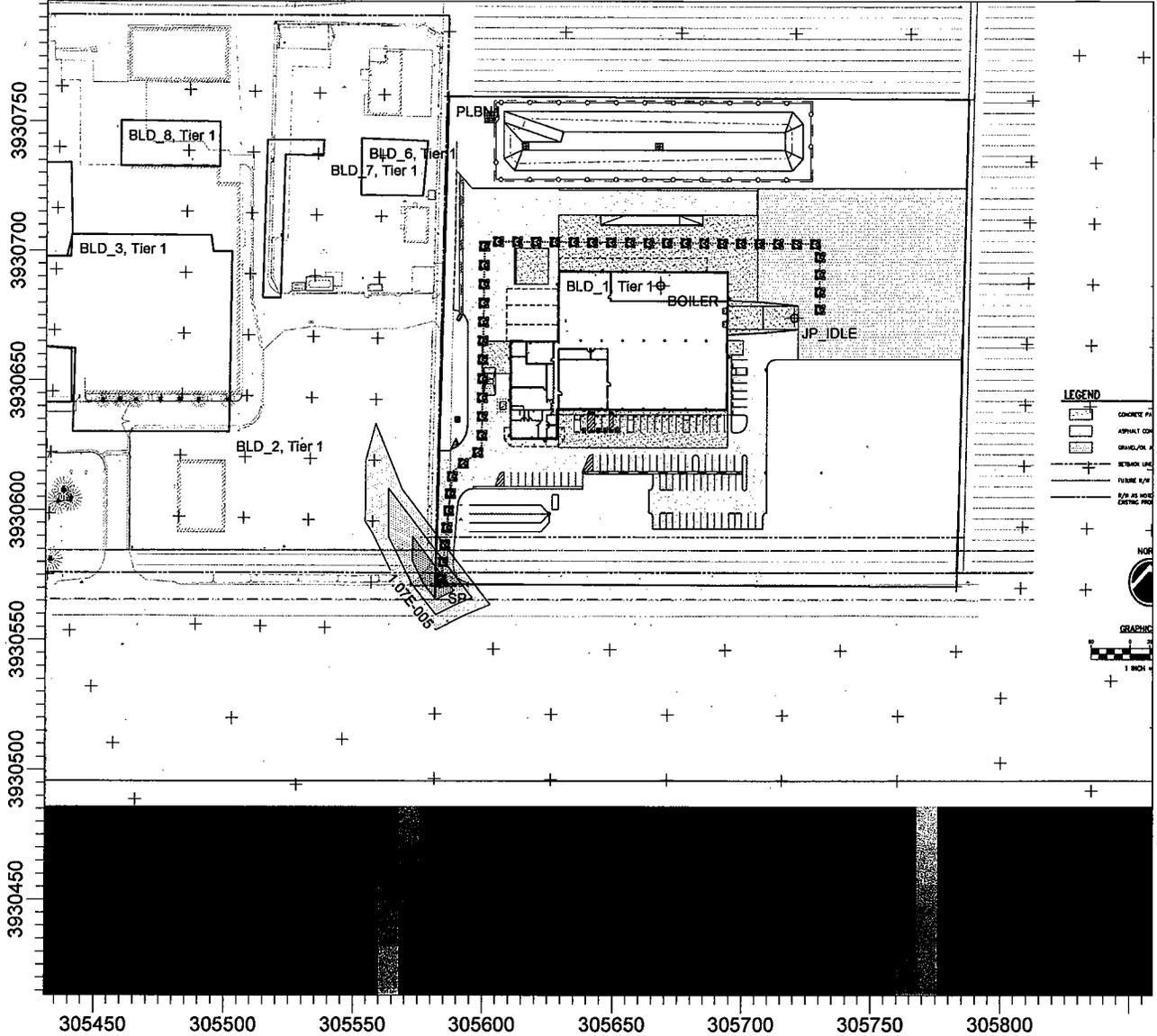
RECEPTORS WITH HIGHEST ACUTE HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
695	GRID	8.82E-06	4.25E-03	0.00E+00	305462	3930546	11
694	GRID	7.01E-06	3.38E-03	0.00E+00	305486	3930546	11
696	GRID	6.30E-06	3.04E-03	0.00E+00	305438	3930547	11
693	GRID	5.47E-06	2.64E-03	0.00E+00	305510	3930546	11
712	GRID	4.52E-06	2.18E-03	0.00E+00	305462	3930521	11
711	GRID	4.48E-06	2.16E-03	0.00E+00	305486	3930521	11
692	GRID	4.16E-06	2.01E-03	0.00E+00	305534	3930546	11
697	GRID	4.04E-06	1.95E-03	0.00E+00	305414	3930547	11
710	GRID	4.02E-06	1.94E-03	0.00E+00	305510	3930521	11
713	GRID	3.80E-06	1.84E-03	0.00E+00	305438	3930522	11

Juice facility

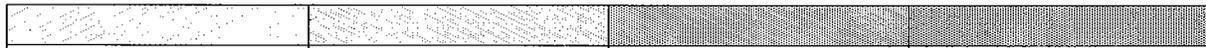
PROJECT TITLE:

C:\RMRIS7855 (1104037) 12-29-10\JP.isc



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: CANCER

1E-06



1.067E-005

1.245E-005

1.422E-005

1.600E-005

COMMENTS:

SOURCES:

COMPANY NAME:

3

RECEPTORS:

MODELER:

1953

OUTPUT TYPE:

SCALE:

1:2,612

Concentration

0 0.05 km

MAX:

DATE:

PROJECT NO.:

1.6E-5 1E-06

1/12/2011

EXCEPTION REPORT

(there have been no changes or exceptions)

RECEPTORS WITH HIGHEST CANCER RISK

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
1953	GRID	1.60E-05	7.80E-03	7.05E-04	305582	3930571	11
982	GRID	1.14E-05	5.61E-03	6.96E-04	305558	3930619	11
981	GRID	1.13E-05	5.52E-03	6.80E-04	305558	3930596	11
985	GRID	1.05E-05	5.24E-03	6.57E-04	305560	3930690	11
983	GRID	1.02E-05	5.07E-03	7.12E-04	305559	3930643	11
984	GRID	1.01E-05	5.06E-03	6.98E-04	305559	3930666	11
986	GRID	8.36E-06	4.20E-03	6.49E-04	305561	3930713	11
980	GRID	8.14E-06	4.01E-03	6.63E-04	305557	3930572	11
636	GRID	7.21E-06	3.59E-03	7.05E-04	305604	3930546	11
993	GRID	6.98E-06	3.51E-03	6.53E-04	305534	3930667	11

RECEPTORS WITH HIGHEST CHRONIC HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
1953	GRID	1.60E-05	7.80E-03	7.05E-04	305582	3930571	11
982	GRID	1.14E-05	5.61E-03	6.96E-04	305558	3930619	11
981	GRID	1.13E-05	5.52E-03	6.80E-04	305558	3930596	11
985	GRID	1.05E-05	5.24E-03	6.57E-04	305560	3930690	11
983	GRID	1.02E-05	5.07E-03	7.12E-04	305559	3930643	11
984	GRID	1.01E-05	5.06E-03	6.98E-04	305559	3930666	11
986	GRID	8.36E-06	4.20E-03	6.49E-04	305561	3930713	11
980	GRID	8.14E-06	4.01E-03	6.63E-04	305557	3930572	11
636	GRID	7.21E-06	3.59E-03	7.05E-04	305604	3930546	11
993	GRID	6.98E-06	3.51E-03	6.53E-04	305534	3930667	11

RECEPTORS WITH HIGHEST ACUTE HI

REC	TYPE	CANCER	CHRONIC	ACUTE	UTME	UTMN	ZONE
635	GRID	4.48E-06	2.33E-03	7.38E-04	305649	3930546	11
640	GRID	3.18E-06	1.69E-03	7.14E-04	305671	3930521	11
634	GRID	3.37E-06	1.83E-03	7.14E-04	305694	3930546	11
983	GRID	1.02E-05	5.07E-03	7.12E-04	305559	3930643	11
1953	GRID	1.60E-05	7.80E-03	7.05E-04	305582	3930571	11
636	GRID	7.21E-06	3.59E-03	7.05E-04	305604	3930546	11
984	GRID	1.01E-05	5.06E-03	6.98E-04	305559	3930666	11
982	GRID	1.14E-05	5.61E-03	6.96E-04	305558	3930619	11
641	GRID	3.97E-06	2.03E-03	6.88E-04	305626	3930521	11
647	GRID	2.64E-06	1.41E-03	6.83E-04	305671	3930496	11

Sun Pacific/Califia Farms – HRA Information

Project Description

Sun Pacific grows table grapes and oranges, which are processed and shipped at the existing site. The company plans to expand in order to provide an additional facility to process the fruits into juices. In order to expand the facility, table grapes, irrigation equipment, and vineyard equipment were removed from the company owned, 6.8 acre site to the east of the existing facility, and this site has been graded for construction.

Sun Pacific intends to construct a 40,000 square foot processing and packaging facility, and a 5,700 square foot maintenance/mechanical and 2,600 office space structure on the adjacent 6.8 acre site. The warehouse-type structure, which will house the processing and packaging facility, will be constructed of cement, tilt up walls with metal framing for the roof structure. The smaller, maintenance/mechanical and office structure will be an engineered, prefabricated metal building. The total square footage of the expanded facilities will be 48,300. The site will also include an on-site retention basin, paved parking for 88 vehicles, concrete paving, and a large gravel pad (Figure 2-3).

The new facility will include a 300 HP steam boiler, which is required for the new juice process. It is anticipated that the new steam boiler will operate on a full time basis (24 hours a day). Construction will include equipment to meet Best Performance Standards (BPS) for water and air quality. The equipment is described as a 300 HP Hurst 4-pass boiler, equipped with a non-FGR, Power Flame NVC7-G-30 (12.6 MMBTU/Hr) Ultra Low Nox Burner. This burner will produce 7 ppm NOx emissions and sub 50 ppm CO emissions (corrected to 3 percent O₂), which is below emission limits established pursuant to State air quality Rule 4320. The standard boiler package will satisfy an 84 percent minimum efficiency standard. It is Sun Pacific's plan to equip the Hurst Boiler Package with first stage and second stage Stack Economizer to satisfy the BPS requirements. All motors associated with the Boiler/Burner/Feedwater System will be equipped with NEMA Rated, Premium Efficiency motors and variable speed drives. As required by the State Air Resources Board (CARB) Rules 4305 and 4306, NOx, CO, and O₂ concentrations will be monitored.

The Project will add approximately 32 new employees to the operation (over 3 shifts). The Project will also result in an average of 25 additional round trip truck trips per day. However, the Project will also result in fewer overall miles traveled, as the proposed facility will serve the existing adjacent facility which currently ships fruit to Visalia for processing. The proposed facility will also receive fruit from packing houses in closer proximity than the Visalia facility, thereby reducing total miles traveled.

The construction and operation of the new facility is on land zoned for agricultural use. The new facility will be located approximately 1,800 feet from the nearest residence and approximately 1,200 from the nearest business. The Friant-Kern Canal is located to the south of the Project site, as well as the Lerdo Highway and several rows of agricultural fields. No other resources are known to exist within or adjacent to the Project area that would be impacted by the proposed Project.

Mobile Sources

- ❖ Heavy-Heavy Duty Trucks
-25 truck trips per day.

Proximity to Nearest Receptor

- ❖ Nearest Residence: Approximately 1,800 feet
- ❖ Nearest Business: Approximately 1,200 feet

**It was verified with the Engineer, the District is only permitting the Steam Boiler.

