APPENDIX 8.5C

Power Plant Predictive Noise Modeling and Analysis

Noise Appendix 8.5c

Power Plant Predictive Noise Modeling and Analyses

Introduction

To analyze the proposed project and the possible noise mitigation options, a PC-based noise prediction program was used to simulate and model the noise propagation from both the existing SBPP and the proposed South Bay Replacement Project (SBRP). This model uses industry-accepted propagation algorithms based on standards written by CONCAWE[1]. The calculations account for classical sound wave divergence (spherical spreading loss with adjustments for source directivity from point sources) plus attenuation factors due to air absorption[2], basic ground effects, and barrier/shielding. This model has been validated over the years via noise measurements at several operating plants that had been previously modeled during the engineering design phases.

Existing SBPP Noise Environment Analysis

To assess the SBPP plant noise contributions, field measurement data was used to generate a SBPP-only noise profile. This synthesized SBPP noise profile was compared to the predicted noise profile for the new SBRP facility to get a sense of the changes to the noise environment due to the SBRP Project replacing the SBPP.

The heart of the synthesis process was establishing representative noise sources within the geometrical envelope of the existing SBPP structure and inputting these virtual sources into a computerized noise modeling program. By making iterative adjustments to the model, the predictive analysis was calibrated to match the measured noise levels at the closest survey locations (which were noted to be dominated by SBPP noise emissions)[3].

Representative noise sources were assigned to each of the existing units (1 through 4) on the south side of the facility and similar sources were allocated on the north side in an effort to better recreate the measured results[4]. These representative source locations and elevations were translated into x, y, z input coordinates for the noise modeling program, along with a barrier running east-west along the major axis of the power plant structure (to help isolate sources from equal propagation in all directions). Also, and for a more direct comparison to SBRP modeling results, the same barrier definitions for the commercial buildings on the east side of Bay Boulevard were also included in the SBPP synthesis model. The details of the SBPP modeling input definitions are given in Table 8.5c-1.

This modeling re-creation was then used to extrapolate the hypothetical SBPP-only noise contributions to the pertinent off-site receptor locations (for comparison to predicted, future noise contributions from the SBRP Project). This synthesized noise profile for the SBPP facilitated mathematical analyses of the community noise environment with the SBPP contributions subtracted out and the SBRP contributions added in to better understand the predicted future situation associated with the SBRP Project.

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[1] CONCAWE is the oil companies' European organization for environment, health, and safety; headquartered in Brussels, Belgium. The noise propagation standard was originally published in 1981 under the title "The propagation of noise from petroleum and petrochemical complexes to neighboring communities". Parts of this method are also included in the ISO 9613, ISO 1913 (Part 1), ANSI 12.6, or ISO 3891 standards.

[2] Atmospheric absorption assumed "standard-day" conditions of 59° F and 70 percent relative humidity. More advanced effects due to wind, inversion, and gradient conditions are discussed later in this section.

[3] The primary locations used for the synthesis were AFC locations AFC-7, -8, -9, and -10, measured during the December 2005 ambient survey; given the long-term and stable noise level history for this data set.

[4] Unit #4 was given slightly higher assumed noise emissions levels to account for the real-world conditions wherein it is somewhat noisier than the other three units at SBPP.

TABLE 8.5c-1 Computer Modeling Input Summary for SBPP Synthesis Analysis

input file name: SBPP03x
units: metric

RECEPTORS

Name	X	Y	Z
AFC-7	-329	448	1.5
AFC-8	-25	528	1.5
AFC-9	79	849	1.5
AFC-10	-248	860	1.5
AFC-5	265	-591	1.5
AFC-6	231	98	1.5
AFC-11	-421	1265	1.5
North-a	-887	1093	1.5

SOURCES

						Octave Band Sound Power Levels, dB re 1 picoWatt							
Number		**Name**	**Dir'y**	**X**	**Y**	**Z**	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
	1	Unit 1	3	-286	643	15	118	119	111	108	106	111	102	88
	2	Unit 2	3	-261	630	15	118	119	111	108	106	111	102	88
	3	Unit 3	3	-233	615	15	118	119	111	108	106	111	102	88
	4	Unit 4	3	-209	600	15	122	123	115	112	110	115	106	92
	5	Gen'r 1	3	-239	668	15	124	117	110	107	106	106	99	88
	6	Gen'r 2	3	-207	653	15	128	121	124	111	110	110	103	92

COMMENTS/NOTES:

Assumed 4 sources on the south side (Units 1 - 4) and two on the north side ("generators") with a central spine barrier along the longitudinal axis to try to fine-tune north vs south receptors

Using main SBPP structure as a single, 200'-high barrier

Includ'g barriers from Bay Blvd Comm'l bldg (direct comp to SBRP runs)

Neglecting barrier effects from berms and tanks

Source: Alliance Acoustical Consultants, Inc., 2006

The measured noise levels that were used to calibrate this model were taken during the early daytime record for Friday, December 16th (approximately 07:00 to around 09:00) at which time Units 1, 2, and 4 were all at approximately 50% capacity and ramping up to a late-morning/early afternoon plateau of ~70% output for Units 1 and 2 and ~60% output for Unit 4. Unit 3 was off for this 12/16/05 morning period (see Appendix 8.5a for the record of SBPP operations during the ambient survey, including this part of the survey record). The noise levels during these hours were the highest recorded during the December 2005 ambient survey, so this timeframe was chosen as a demonstrated worst-case situation.

The results of this SBPP synthesizing effort are shown in Figure 8.5c-1 that depicts the synthesized SBPP-only noise level contours at the 115-acre industrial site and into the adjoining community. In this figure, the AFC ambient measurement locations are given in red, while the planning zones for the BFMP Program are outlined in green.

The figure shows that the synthesized noise level contribution from the SBPP, in and of itself in the absence of any other noise sources, is calculated to be approximately 60 dBA at the eastern site boundary, 55 dBA around the intersection of Industrial Boulevard and J Street (near measurement location AFC-1), and 50 dBA well into commercial and residential areas east of Industrial Boulevard. Bear in mind, however, that actual ambient survey field notations indicated that the SBPP was inaudible at all locations east of the I-5 at all times of the day, evening, and night. Thus, even with the highest measured daytime noise emissions, the SBPP is not a contributor to the noise environment on the east side of the I-5 freeway.

The comparison of measured noise levels, as acquired during the December 2005 ambient survey, to the synthesized noise contributions from the SBPP is given in Table 8.5c-2, along with an assessment of how much the SBPP is influencing these measured levels.

In short, although the projected noise level contours for only the SBPP noise contributions appear to cover a large area (with respect to the City of Chula Vista ordinance nighttime limits of 50 and 45 dBA for multi-family and single-family residential zones, respectively), the existing plant actually has little or no influence on the observed ambient conditions in Chula Vista; particularly on the east side of the I-5 freeway. This result is primarily due to the significant traffic-related noise sources in and around the area (including the I-5 freeway, Bay Boulevard, Industrial Boulevard, Palomar Street, and L Street).

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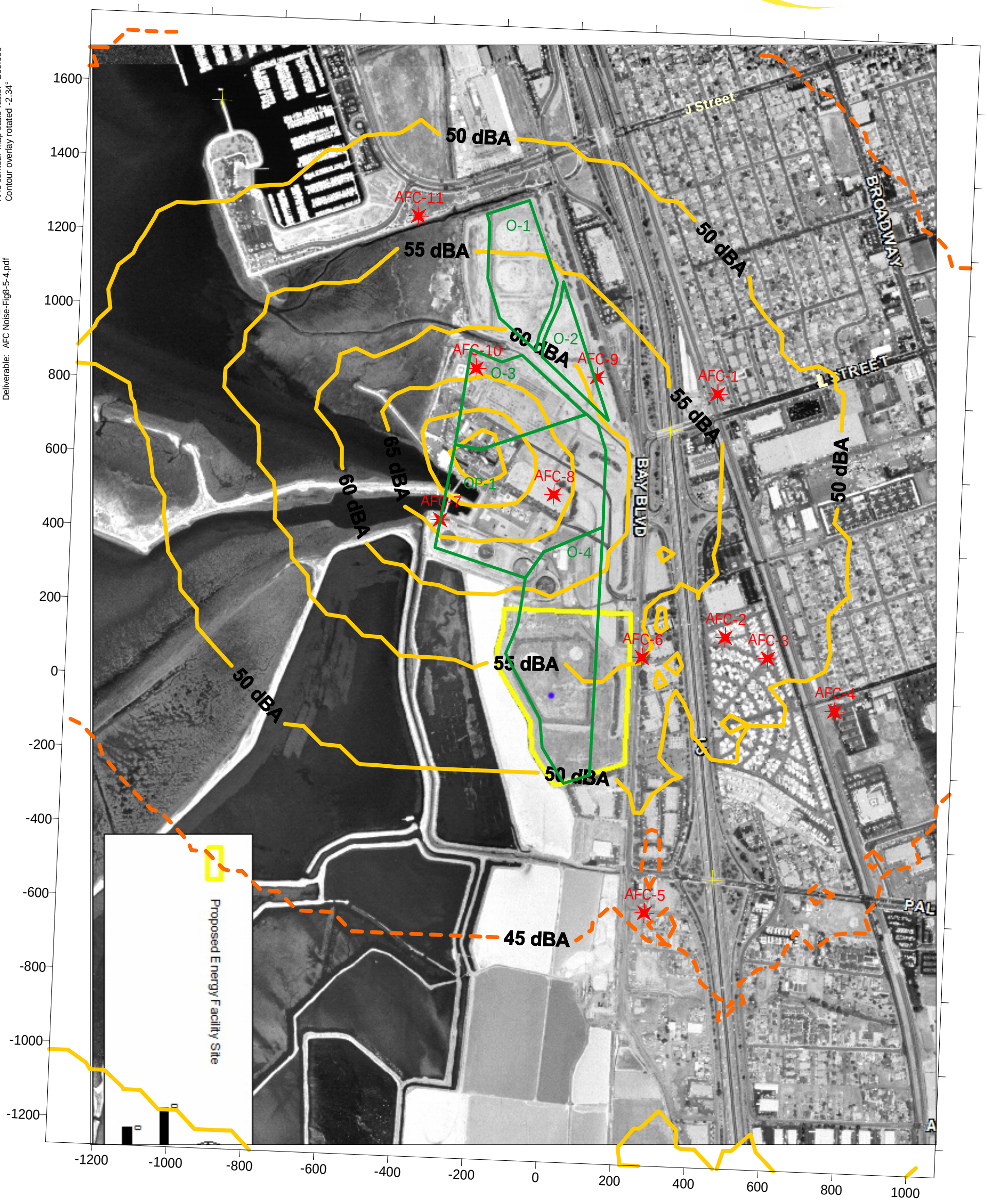
CH2M-Hill/AAC base map scale factor=86.666
AAC contour map scale factor=266.666
Contour overlay rotated -2.34°

Input File: SBPP03a.*
Output File: SBPP03a_AFC3.*
Deliverable: AFC Noise-Fig8-5-4.pdf



Community Locations
- *AFC-1: West end of 890 Colorado Street apartments, by Unit D*
- *AFC-2: West side of Brentwood Park Mobile Home Park (by Unit F-8)*
- *AFC-3: East side of Brentwood Park Mobile Home Park (by Unit I-17)*
- *AFC-4: West property line of Harborside Elementary School*
- *AFC-5: 889 Stella Street, NW corner of front yard*
- *AFC-6: 1021 Bay Blvd. commercial park, near SW corner of lot (by sign)*
- *AFC-7: SBPP tank farm access road (at top of entrance berm)*
- *AFC-8: SBPP truck wash-off area (east of SBPP end)*
- *AFC-9: SBPP across Telegraph Creek (near future condo lots)*
- *AFC-10 SBPP storage yard, west of large switchyard*
- *AFC-11: Chula Vista Marina Park, near west end parking lot*

LSP South Bay, LLC
South Bay Power Plant (SBPP)

Synthesized Model of Existing Conditions

Re-created Noise Level Contours, SPL in dBA

- *Using measured noise levels from Dec '05 AFC Ambient Survey*
- *Using cropped basemap from CH2M-Hill aerial (AACzoom2)*
- *Scales are matched per B&V modeling grid system (metric)*
- *PoSD land use planning zones to north of site (in green) is from Att 2 of CVBFMP EIR NoP document, dated 08/12/05*
- *Metric scale of approximately 1mm = 10.55m*

Alliance Acoustical Consultants, Inc.

Figure 8.5c-1

Table 8.5c-2
Comparison of Synthesized SBPP Noise Contributions to Measured Ambient Noise Environments

Location	Brief Description	Total Measured Existing Noise Environment, dBA[a]	Synthesized SBPP Contributions, dBA[b]	Calculated contributions of all other sources, dBA (subtract column 4 from column 3)	Judgment of SBPP's influence
Community Measurement Locations					
AFC-1	Colorado Street Apts	65 – 67	53	65 – 67	SBPP is negligible
AFC-2	Brentwood Trailer Park, I-5 side	63 – 65	53	63 – 65	SBPP is negligible
AFC-3	Brentwood Trailer Park, Industrial Blvd side	54 – 59	52	50 – 58	(SBPP is negligible)[c]
AFC-4	Harborside Elem. School	56 – 60	49	55 – 60	SBPP is negligible
AFC-5	Stella Street	59 – 65	45	59 – 65	SBPP is negligible
AFC-6	1021 Bay Blvd	64 – 67	55	63 – 67	SBPP is negligible
AFC-11	Marina View Park	55 - 59	54	48 – 57	SBPP is roughly comparable to other sources
On-site measurement Locations (used to calibrate synthesis SBPP-only model)					
AFC-7	*SBPP site; south of plant*	*65*	*66*	*<56*	*SBPP dominates*
AFC-8	*SBPP site; east of plant*	*66 – 67*	*67*	*<57*	*SBPP dominates*
AFC-9	*SBPP site; NE of plant*	*61 – 64*	*59*	*59*	*SBPP is roughly comparable to other sources*
AFC-10	*SBPP site; north of plant*	*62 – 65*	*64*	*<54*	*SBPP dominates*

Source: Alliance Acoustical Consultants, Inc., 2006

Notes: a. Approximate range of 15-minute L_{eq} values.
b. These levels are possible at any time of the day or night, depending on which SBPP units are running and to what power loading.
c. although the levels are roughly comparable, judgment of being negligible is based on large swings in measured and on field observations of not being able to discern power plant noise at any time.

Future SBRP Noise Environment Analysis

The modeling study for the proposed SBRP used plant layout configurations and equipment information as supplied by Black and Veatch, an Engineering and Construction company. All continuous-operation equipment items that were deemed to be significant noise sources at the proposed SBRP were included in the noise model. Specifically, the study focused on the potential noise generated by the proposed two trains of Gas-Fired Combustion Turbines (General Electric Frame 7FA's), two Heat Recovery Steam Generators (HRSG's), one Steam Turbine Generator (STG) train with a steam condenser, large water pumps, and three main power transformers. Items that were considered as insignificant sources, such as pumps less than 20 horsepower, were excluded from the analysis. The pertinent Black and Veatch (B&V) project drawings[5] were used to establish the overall noise analysis area and the position of the noise sources, respectively.

[5] "South Bay Replacement Generation Facility, Site Arrangement, Final Layout" Black & Veatch drawing number 136469-DS-0006E, rev. G, of 5/5/06.

The plant was assumed to operate 24 hours per day at maximum loads, which means its noise output would be constant, regardless of time-of-day. This scenario is conservative because electricity demand normally ramps downward at night when commercial activities decline and when residential usage decreases (as people turn off lights, televisions, and appliances before going to sleep). The modeling was nevertheless performed assuming 24 hours of maximum loads to assure that even under this unusual condition, SBRP will comply with CEC noise control requirements and Chula Vista city noise ordinance requirements at all hours of the day and night.

The new combined-cycle SBRP power plant was modeled as a partially-enclosed facility. That is, the gas turbines and steam turbine are currently planned to be inside buildings. These buildings are to serve as aesthetic features for the plant, but they will also provide acoustical benefits in substantially-containing the turbine, generator, and related equipment noise. This combined turbine building was modeled as having both noise sources (noise radiation from the walls and HVAC-related openings and equipment) and as being a set of barriers. Other major Project buildings, including the Administration Building and the Warehouse Building were also included as sound barriers. The Project also currently includes localized barrier walls around all three main transformers to limit their noise emission into the community. Lastly, barrier effects were included for the commercial buildings across Bay Boulevard and to the south of the Project site. To be conservative, however, partial shielding from other intervening buildings and barriers (such as the elevation changes around the freeway) throughout the city was not used. In addition, for conservatism, attenuation due to vegetation (e.g. trees and ground cover, both existing and future) was not considered. Lastly, as is standard practice in the description of environmental noise, stable atmospheric conditions were assumed (suitable for reproducible measurements and that are favorable for noise to travel greater distances). These inherent conservative factors and assumptions result in a noise model that tends be biased to higher predicted values than would be expected in the actual environment around the SBRP.

The source and receptor locations/elevations were translated into x, y, z input coordinates for the noise modeling program. Calculations in the model are performed using octave band sound power levels (abbreviated PWL or Lw) as inputs from each noise source. Rather than use estimated source inputs levels that can be calculated from accepted industry references[6], the modeling inputs used noise emission values that were obtained from equipment vendors on several recent design efforts on similar Frame 7FA-based plant configurations. This use of vendor-supplied noise level information for the specific equipment that is planned for the SBRP means that the modeling has a higher level of accuracy, as compared to modeling done with generic type and size information for the power plant equipment.

The computer outputs are in terms of octave band and overall A-weighted sound pressure levels (abbreviated SPL or Lp) at specific receptor positions or at grid map nodes (in preparation for computing a contour map). The output listing is ranked by relative noise contribution from each noise source, as is calculated at each receptor location. The modeling effort used the same receptors for the future conditions analysis as were used during the December 2005 ambient survey.

Many modeling runs were made over the course of the project's development, in response to changes in layout, planned equipment, and operations conditions. For each modeling scenario, the ranked listing of noise contributors at each receptor location was studied to evaluate which set of equipment should have noise control options applied. This iterative analysis approach enabled the use of a balanced and reasonable set of noise control treatments could be employed to achieve compliance with both the City's and the Commission's significant impact thresholds.

[6] Such as the Edison Electric Institute Technical Report, "Electric Power Plant Environmental Noise Guide"

The compliant noise levels were achieved using the following extensive array of design features:

- Selecting an effective plant layout for noise control concerns
- Low-noise Main Transformers, along with localized sound barrier walls
- Extensive Baffles on the HRSG Exhaust Ducts
- A Shroud Enclosure around the transition between the GTG Exhaust Duct and the HRSG Inlet
- Noise control wall plate design on the HRSG Casing Walls
- Low-noise design on both the main air-cooled condenser (ACC) and the secondary, fan-cooled heat exchanger systems
- Low-noise Steam System Vents, Tanks, and Piping on the HRSG penthouse
- Low-noise Boiler Feedwater Pump Trains (low-noise motors and noise control blanketing on the pumps)
- Enclosing as much noisy equipment as practical within the Turbine Buildings
- Acoustical properties on all GTG and STG Turbine Building elements (above and beyond a typical industrial building for this climate zone), including acoustical wall panel construction, ventilation silencers, noise control doors, and quiet HVAC equipment.

The input details of the compliance case noise model are provided in Table 8.5c-3, while Table 8.5c-4 shows the output results for this final configuration. Note that this AFC configuration includes the full build-out of the SDG&E substation to the south of the SBRP site. This was done to depict the situation that will eventually come to pass as a result of the proposed SBRP Project and can be viewed as the worst-case configuration. Lastly, Figure 8.5c-2 shows this compliant SBRP noise model graphically on a noise level contour map of the project site and the surrounding community. In this figure, the AFC ambient measurement locations are given in red, while the planning zones for the BFMP Program are outlined in green.

The figure shows that the noise level contribution from the proposed SBRP, in and of itself in the absence of any other noise sources, is calculated to be approximately 55 dBA at the closest commercial receptors to the east, generally at or below 45 dBA between the extension of L Street (to the north) and the extension of Palomar Street (to the south). The evaporation salt ponds to the west of the SBRP site are predicted to have project-generated noise levels in the range of 40 to 60 dBA. The nearest residential areas to the northeast and southeast of the site are predicted to have contributions right around 40 dBA (well below their existing ambient noise environments), while the closest residential area to the east (Brentwood Trailer Park) can experience noise levels from just the SBRP at or below 46 to 47 dBA (again, well below the current noise situation there as a result of traffic on the I-5 freeway).

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TABLE 8.5c-3 Computer Modeling Input Summary for SBRP Predictive Analysis

input file name: SBEF10x **units:** metric

RECEPTORS

Name	X	Y	Z
AFC-1	406	817	1.5
AFC-2	453	161	1.5
AFC-3	570	109	1.5
AFC-4	756	-27	1.5
AFC-5	265	-591	1.5
AFC-6	231	98	1.5
AFC-7	-329	448	1.5
AFC-8	-25	528	1.5
AFC-9	79	849	1.5
AFC-10	-248	860	1.5
AFC-11	-421	1265	1.5
Site_a	-146	217	1.5
Site_N(b)	17	217	1.5
Site_c	169	127	1.5
Site_d	162	72	1.5
Site_E(e)	192	0	1.5
Site_f	191	-100	1.5
Site_g	191	-190	1.5
Site_S(h)	100	-224	1.5
Site_i	18	-254	1.5
Site_j	-61	-162	1.5
Site_k	-69	-87	1.5
Site_W(l)	-122	0	1.5
Site_m	-158	57	1.5
Site_n	-151	164	1.5

SOURCES

						Octave Band Sound Power Levels, dB re 1 picoWatt							
Number	**Name**	**Dir'y**	**X**	**Y**	**Z**	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**8k**
1	GTG1AirInl	3	-63	90	16	104	103	93	92	89	89	82	77
2	GTG2AirInl	3	-22	90	16	104	103	93	92	89	89	82	77
3	GTG1_MnXfr	3	-73	67	5	99	101	93	92	81	73	66	58
4	GTG2_MnXfr	3	-32	67	5	99	101	93	92	81	73	66	58
5	STG1_MnXfr	3	8	62	5	99	101	93	92	81	73	66	58
6	HRSG1TranW	3	-67	136	6	106	103	96	85	79	72	55	38
7	HRSG1TranE	3	-59	136	6	106	103	96	85	79	72	55	38
8	HRSG1_BlrW	3	-71	159	18	106	103	96	84	78	71	54	36
9	HRSG1_BlrE	3	-57	159	18	106	103	96	84	78	71	54	36
10	HRSG1StkWl	3	-63	188	18	102	100	92	80	73	52	30	11
11	HRSG1StkEx	0	-63	184	46	115	109	95	83	78	70	66	58
12	HRSG2TranW	3	-26	136	6	106	103	96	85	79	72	55	38
13	HRSG2TranE	3	-18	136	6	106	103	96	85	79	72	55	38
14	HRSG2_BlrW	3	-29	159	18	106	103	96	84	78	71	54	36
15	HRSG2_BlrE	3	-16	159	18	106	103	96	84	78	71	54	36
16	HRSG2StkWl	3	-22	188	18	102	100	92	80	73	52	30	11
17	HRSG2StkEx	0	-22	184	46	115	109	95	83	78	70	66	58
18	N ACC_pt1	0	54	147	27	105	101	95	96	94	90	83	70
19	N ACC_pt2	0	71	147	27	105	101	95	96	94	90	83	70
20	N ACC_pt3	0	54	127	27	105	101	95	96	94	90	83	70
21	N ACC_pt4	0	71	127	27	105	101	95	96	94	90	83	70
22	S ACC_pt1	0	54	82	27	105	101	95	96	94	90	83	70
23	S ACC_pt2	0	71	82	27	105	101	95	96	94	90	83	70
24	S ACC_pt3	0	54	63	27	105	101	95	96	94	90	83	70
25	S ACC_pt4	0	71	63	27	105	101	95	96	94	90	83	70
26	AirCooler1	0	-117	104	8	109	105	99	100	98	94	87	74
27	AirCooler2	0	-109	104	8	109	105	99	100	98	94	87	74
28	AirCooler3	0	-117	90	8	109	105	99	100	98	94	87	74
29	AirCooler4	0	-109	90	8	109	105	99	100	98	94	87	74
30	HP_BFWPM1	3	-51	167	2	97	101	101	100	99	96	92	89
31	HP_BFWPM2	3	-10	167	2	97	101	101	100	99	96	92	89
32	FuelGasCom	3	56	24	3	100	94	94	88	82	78	73	68
33	GasMtrgStn	3	85	25	3	94	88	88	80	76	72	67	62
34	GTGinlFnN1	3	-73	128	7	96	100	98	98	93	90	86	83
35	GTGinlFnN2	3	-41	128	7	96	100	98	98	93	90	86	83
36	GTGinlFnN3	3	-12	128	7	96	100	98	98	93	90	86	83
37	GTGinlFnS1	3	-60	91	7	96	100	98	98	93	90	86	83
38	GTGinlFnS2	3	-41	91	7	96	100	98	98	93	90	86	83
39	GTGinlFnS3	3	-14	91	7	96	100	98	98	93	90	86	83
40	GTGexLvrN1	3	-73	128	20	95	89	81	79	77	72	74	77
41	GTGexLvrN2	3	-41	128	20	95	89	81	79	77	72	74	77
42	GTGexLvrN3	3	-12	128	20	95	89	81	79	77	72	74	77
43	GTGexLvrS1	3	-59	91	20	95	89	81	79	77	72	74	77
44	GTGexLvrS2	3	-40	91	20	95	89	81	79	77	72	74	77
45	GTGexLvrS3	3	-14	91	20	95	89	81	79	77	72	74	77
46	STGinlFnN1	3	8	128	7	96	100	98	98	93	90	86	83
47	STGinlFnN2	3	15	128	7	96	100	98	98	93	90	86	83
48	STGinlFnN3	3	22	128	7	96	100	98	98	93	90	86	83
49	STGinlFnS1	3	9	79	7	96	100	98	98	93	90	86	83
50	STGinlFnS2	3	16	79	7	96	100	98	98	93	90	86	83
51	STGinlFnS3	3	24	79	7	96	100	98	98	93	90	86	83
52	STGexLvrN1	3	8	128	20	96	90	82	80	78	73	75	78
53	STGexLvrN2	3	15	128	20	96	90	82	80	78	73	75	78
54	STGexLvrN3	3	22	128	20	96	90	82	80	78	73	75	78
55	STGexLvrS1	3	10	79	20	96	90	82	80	78	73	75	78

56	STGexLvrS2	3	16	79	20	96	90	82	80	78	73	75	78
57	STGexLvrS3	3	24	79	20	96	90	82	80	78	73	75	78
58	GTG1TrbFns	3	-68	128	20	86	87	80	72	69	82	88	84
59	GTG2TrbFns	3	-16	128	20	86	87	80	72	69	82	88	84
60	GTG1LodFns	3	-67	91	16	96	93	84	77	70	76	70	70
61	GTG2LodFns	3	-17	91	16	96	93	84	77	70	76	70	70
62	230/69Xfr1	3	-5	-75	4	99	101	96	96	90	85	80	73
63	230/69Xfr2	3	38	-75	4	99	101	96	96	90	85	80	73
64	230/138Xfr	3	80	-75	4	100	102	97	97	91	86	81	74
65	138/69Xfr1	3	19	-144	4	98	100	95	95	89	84	79	72
66	138/69Xfr2	3	63	-144	4	98	100	95	95	89	84	79	72

COMMENTS/NOTES:

This is the Draft AFC Submittal case (AFC filing <6/30/06); for NORMAL OPERATIONS at Full Load Condtions
This is the Project-std Dry-cooled ACC Layout of May 8 2006

Started with input list from 4/11/05 B&V Memo
Calculated interior of Gas/Steam Turbine Bldg to have diffuse sound field of 90 dBA SPL due in aggregate interior PWL set
Normalized HRSG sources and Fuel Gas Compressor Bldg source to match B&V results
Used ACC noise inputs with latest Marley info of Dec '05 (see ACC_BV1.doc)

Using HRSG bodies, Turbine Bldg walls, Control Bldg walls, Warehous/Maint. Bldg. walls as barriers
Includ'g barriers from Bay Blvd Comm'l bldg (direct comp to SBPP runs)
Neglecting barrier effects from berms and tanks

Includes new SDG&E substation (final config'n) transformers

2 x 230/69 kv	300 MVA at NEMA 86 (per B&V e-mail of 5/16/06)
1 x 230/138 kv	350 MVA at NEMA 87 (per B&V e-mail of 5/16/06)
2 x 138/69 kv	250 MVA at NEMA 85 (per B&V e-mail of 5/16/06)

Source: Alliance Acoustical Consultants, Inc., 2006

TABLE 8.5c-4
Summary of Predicted Noise Levels from SBRP during On-Going, Full-Load Operations

Receptor Label	Receptor Description	City of Chula Vista Land Use Type (current)	Predicted SBRP Operations Noise Contributions, dBA
AFC-1	Colorado Apts	SFR	41
AFC-2	Brentwood, I-5	SFR	46
AFC-3	Brentwood, Ind. Blvd	SFR	43
AFC-4	Harborside Elem.	School	39
AFC-5	Stella Street	SFR	40
AFC-6	1021 Bay Blvd	Comm'l	53
AFC-7	SBPP site; south of plant	Industrial	46
AFC-8	SBPP site; east of plant	Industrial	49
AFC-9	SBPP site; NE of plant	Industrial	43
AFC-10	SBPP site; north of plant	Industrial	42
AFC-11	Marina View Park	Recreational	37

Source: Alliance Acoustical Consultants, Inc., 2006

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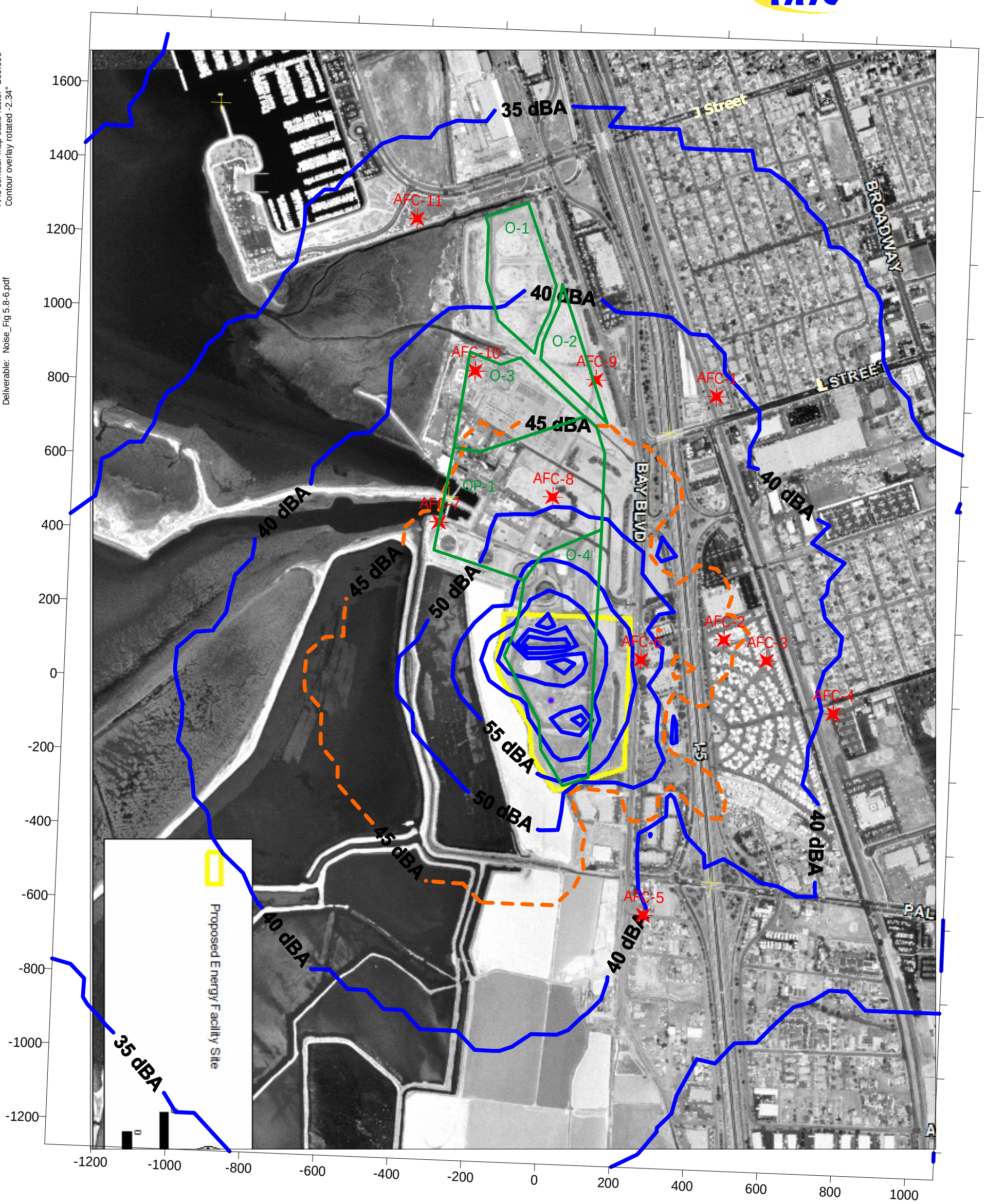
CH2M-Hill/AAC base map scale factor=86.666
AAC contour map scale factor=266.666
Contour overlay rotated -2.34°

Input File: SBEF10a.*
Output File: SBEF10a_AFC3.*
Deliverable: Noise_Fig 5.8-6.pdf



LSP South Bay, LLC
South Bay Replacement Project (SBRP)

Full Load Operations,
Final Substation Configuration

Predicted Noise Level Contours (blue lines), SPL in dBA

- *Using B&V Plant Layout per 136469-DS-0006E, Rev. G of 5 May 2006*
- *Using B&V Noise Emissions per Summary Update Memo of 08/15/05 and Marley ACC information of Dec 2, 20, & 21 2005; with updates*
- *Using cropped basemap from CH2M-Hill aerial (AACzoom2)*
- *Scales are matched per B&V modeling grid system (metric)*
- *PoSD land use planning zones to north of site (in green) is from Att 2 of CVBFMP EIR NoP document, dated 08/12/05*
- *Metric scale of approximately 1mm = 10.55m*

Community Locations
- *AFC-1: West end of 890 Colorado Street apartments, by Unit D*
- *AFC-2: West side of Brentwood Park Mobile Home Park (by Unit F-8)*
- *AFC-3: East side of Brentwood Park Mobile Home Park (by Unit I-17)*
- *AFC-4: West property line of Harborside Elementary School*
- *AFC-5: 889 Stella Street, NW corner of front yard*
- *AFC-6: 1021 Bay Blvd. commercial park, near SW corner of lot (by sign)*
- *AFC-7: SBPP tank farm access road (at top of entrance berm)*
- *AFC-8: SBPP truck wash-off area (east of SBPP end)*
- *AFC-9: SBPP across Telegraph Creek (near future condo lots)*
- *AFC-10 SBPP storage yard, west of large switchyard*
- *AFC-11: Chula Vista Marina Park, near west end parking lot*

Alliance Acoustical Consultants, Inc.

Figure 8.5c-2

Comparison of SBPP-only Noise Levels to SBRP-only Noise Levels

The new SBRP, as a modern power plant facility, will be much quieter than the existing SBPP. This will yield daytime noise levels that are the same or lower at all locations around the City of Chula Vista; even taking into account the different locations of the two facilities. For example, even though the SBRP is closer to location AFC-6 than the existing SBPP, the quieter total plant noise emissions from the SBRP are expected to be comparable to the current noise emissions from the farther-away SBPP.

To try to illustrate these before-and-after conditions, the results of the individual plant noise emissions analyses were used to generate a graphical comparison between the two. That is, the contour grid files were used to subtract one set of spatial results from the other to arrive at a noise level difference grid. This difference grid was then used to plot a difference contour map of the area around the industrial site. This comparison between the noise contributions from the existing SBPP and the proposed SBRP is illustrated in Figure 8.5c-3, which depicts the noise level positive differences (i.e. benefits) between the synthesized SBPP contours and the predicted SBRP contours. That is, in the absence of all other sources, this figure shows the SBRP noise contributions subtracted from the SBPP noise contributions. Since the SBPP makes more noise than the proposed SBRP, all positive numbers indicate is a quieter, predicted situation resulting from the Project.

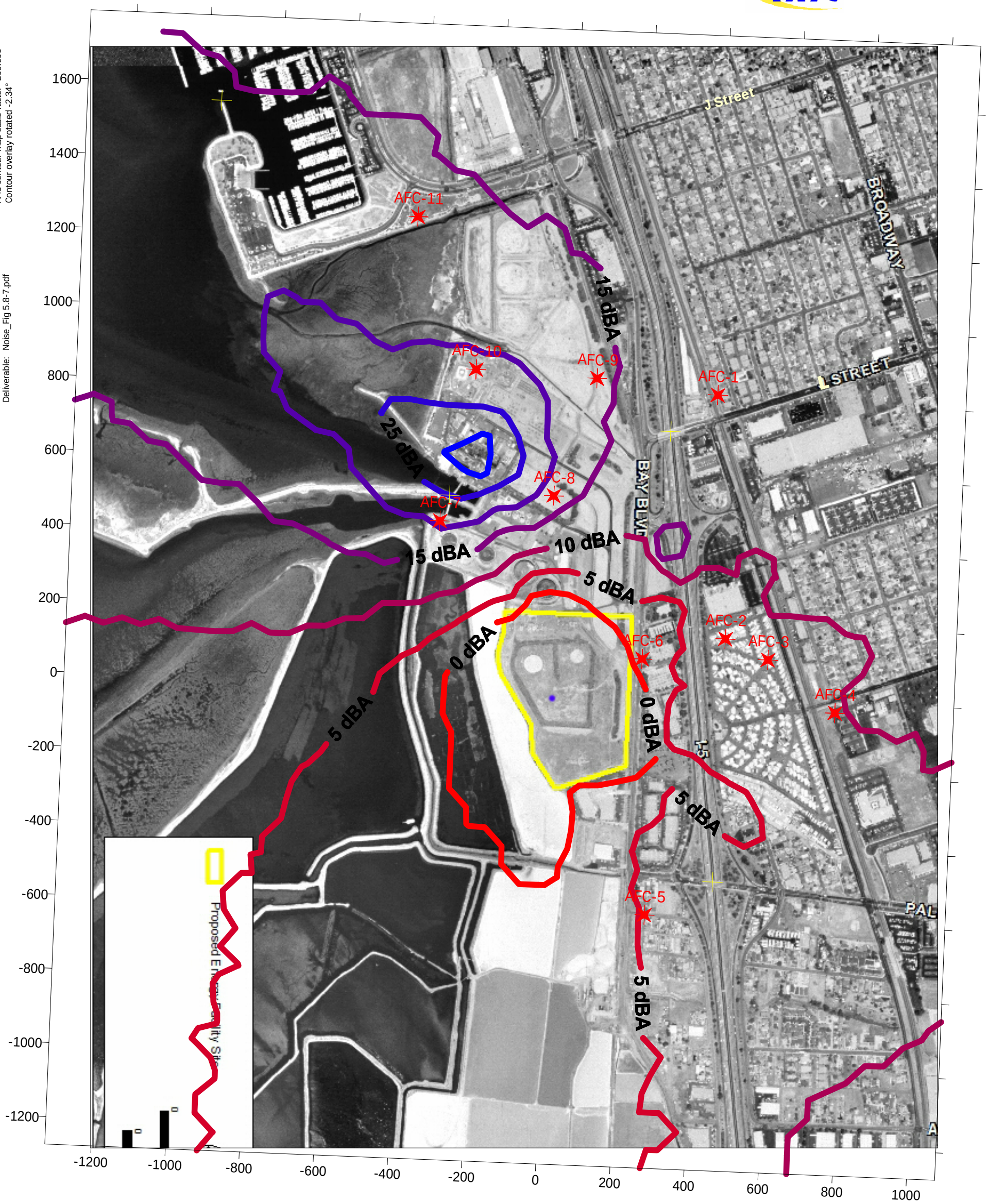
In looking at particular areas on the figure, it can be seen that near the existing plant, future noise levels are analyzed to be 20 to 25 dB quieter than current conditions (as the SBPP will no longer be making noise). Likewise, areas to the north (such as in and around the Marina View Park) and to the west (such as along the accessway and in the wildlife habitat area), are predicted to have noise levels that are 15 dB or more quieter in the future during SBRP operations, as compared to current SBPP operations. The threshold between future benefits (i.e. the zero dB line) is predicted to be approximately along the SBRP site boundary to the north, east, and south, while this line is shown to run through the salt evaporation ponds to the west.

In this analysis, inhabited areas to the east of the I-5 freeway are predicted to experience theoretical benefits of 5 to 10 dB or more. In light of the additional, real-world sources (freeway, roadway, railway sources), however, then the proposed SBRP noise contributions can be expected to be less audible by that 5 to 10 dB margin than the existing SBPP, which was demonstrated to be indiscernible at all hours of the day and night.

Another way to view these results is to compare the ground area within a given sound level contour 'circle'. From the results for the SBPP alone for the SBRP alone), the area predicted to be within the 55 dBA sound level contour on each figure was calculated. For the SBPP, the 55 dBA contour was found to encapsulate approximately 284 acres, while the area within the same noise level contour for the SBRP project was only approximately 50 acres.

CH2M-Hill/AAC base map scale factor=86.666
AAC contour map scale factor=266.666
Contour overlay rotated -2.34°

Input File: SBPP-SBEF1.*
Output File: SBPP-SBEF3.*
Deliverable: Noise_Fig 5.8-7.pdf



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LSP South Bay, LLC
South Bay Industrial Site
Noise DIFFERENCE Map, SBPP Noise minus SBRP Noise

Noise Benefit from Replacement Project, SPL difference in dB

- *Blue and purple lines are reduced noise levels....red lines are the same*
- *Using noise contour results of SBPP modeling and SBRP predictions*
- *Using cropped basemap from CH2M-Hill aerial (AACzoom2)*
- *Scales are matched per B&V modeling grid system (metric)*
- *PoSD land use planning zones to north of site (in green) is from Att 2 of CVBFMP EIR NoP document, dated 08/12/05*
- *Metric scale of approximately 1mm = 10.55m*

Alliance Acoustical Consultants, Inc.

Figure 8.5c-3