

Appendix I

Noise Calculations

Acronyms and Abbreviations

ADT	Average Daily Traffic
Ave	Avenue
Blvd	Boulevard
B/t	Between
CALVENO	California Vehicle Noise
CNEL	Community Noise Equivalent Level
dB	decibel(s)
dB(A)	A-weighted decibel(s)
Dr	Drive
EIR	Environmental Impact Report
FHWA	Federal Highway Administration
ft	feet
FTA	Federal Transit Administration
Fwy	Freeway
in/sec	inch per second
L_{eq}	equivalent sound level, dBA
mph	mile(s) per hour
PPV	peak particle velocity
RD	Record of Decision
Rd	Road
rms	root-mean-square
St	Street
U.S.	United States
VdB	RMS vibration velocity level, decibels

Noise Measurement Data

Filename.....308062
Test Location.....Santa Susana - Ventura Co
Employee Name.....Courtney Casey
Employee Number.....
Department.....

Calibrator Type.....
Calibrator Cal. Date...

METROSONICS db-3080 V1.12 SERIAL # 3761
REPORT PRINTED ON 03/10/15 at 15:08:04

User ID: _____

Santa Susana
Short-term Measurements
Metrosonics db 3080/3761

LOGGING STARTED.....03/10/15 at 09:53:32
TOTAL LOGGING TIME...0 DAYS 00:30:00
LOGGING STOPPED.....03/10/15 at 10:23:32
TOTAL INTERVALS.....1
INTERVAL LENGTH.....00:30:00

AUTO STOP.....YES
CLOCK SYNCH.....YES
RESPONSE RATE.....SLOW
FILTER.....A WT.

PRE-TEST CALIBRATION TIME....03/10/15 AT 09:52:31
PRE-TEST CALIBRATION RANGE...39.1 TO 139.1 dB
POST-TEST CALIBRATION NOT DONE
CUTOFF USED FOR TIME HISTORY Lav...NONE

<<< SUMMARY REPORT FOR TEST NUMBER 1 OF 4 >>>

EXCHANGE RATE.....3dB
CUTOFFS..... 80dB 90dB
CEILING.....115dB
DOSE CRITERION LEVEL... 90dB
DOSE CRITERION LENGTH.. 8 HOURS

Lav..... 43.8dB
Lav (80)..... 39.1dB
Lav (90)..... 39.1dB
SEL..... 76.2dB

Noise Measurement Data

TWA..... 39.1dB
TWA (80)..... 39.1dB
TWA (90)..... 39.1dB

Lmax..... 58.6dB 03/10/15 at 10:00:28
Lpk.....UNDER RANGE
TIME OVER 115dB...00:00:00.00

DOSE (80)..... 0.00%
PROJ. DOSE (80).. 0.00%
DOSE (90)..... 0.00%
PROJ. DOSE (90).. 0.00%

<<< TIME HISTORY REPORT FOR TEST NUMBER 1 OF 4 >>>

TIME	Lav dBA	Lmax dBA	L(10.0) dBA	L(90.0) dBA
03/10/15 09:53:32	43.8	58.6	46.1	39.1

Noise Measurement Data

Filename.....308062
Test Location.....Santa Susana - Ventura Co
Employee Name.....Courtney Casey
Employee Number.....
Department.....

Calibrator Type.....
Calibrator Cal. Date...

METROSONICS db-3080 V1.12 SERIAL # 3761
REPORT PRINTED ON 03/10/15 at 15:11:19

User ID: _____

Santa Susana
Short-term Measurements
Metrosonics db 3080/3761

LOGGING STARTED.....03/10/15 at 10:48:06
TOTAL LOGGING TIME...0 DAYS 00:30:00
LOGGING STOPPED.....03/10/15 at 11:18:06
TOTAL INTERVALS.....1
INTERVAL LENGTH.....00:30:00

AUTO STOP.....YES
CLOCK SYNCH.....YES
RESPONSE RATE.....SLOW
FILTER.....A WT.

PRE-TEST CALIBRATION TIME....03/10/15 AT 09:52:31
PRE-TEST CALIBRATION RANGE...39.1 TO 139.1 dB
POST-TEST CALIBRATION NOT DONE
CUTOFF USED FOR TIME HISTORY Lav...NONE

<<< SUMMARY REPORT FOR TEST NUMBER 2 OF 4 >>>

EXCHANGE RATE.....3dB
CUTOFFS..... 80dB 90dB
CEILING.....115dB
DOSE CRITERION LEVEL... 90dB
DOSE CRITERION LENGTH.. 8 HOURS

Lav..... 45.7dB
Lav (80)..... 39.1dB
Lav (90)..... 39.1dB
SEL..... 78.1dB

Noise Measurement Data

TWA..... 39.1dB
TWA (80)..... 39.1dB
TWA (90)..... 39.1dB

Lmax..... 60.8dB 03/10/15 at 11:01:16
Lpk.....UNDER RANGE
TIME OVER 115dB...00:00:00.00

DOSE (80)..... 0.00%
PROJ. DOSE (80).. 0.00%
DOSE (90)..... 0.00%
PROJ. DOSE (90).. 0.00%

<<< TIME HISTORY REPORT FOR TEST NUMBER 2 OF 4 >>>

TIME	Lav dBA	Lmax dBA	L(10.0) dBA	L(90.0) dBA
03/10/15 10:48:06	45.7	60.8	47.1	39.1

Noise Measurement Data

Filename.....308062
Test Location.....Santa Susana - Ventura Co
Employee Name.....Courtney Casey
Employee Number.....
Department.....

Calibrator Type.....
Calibrator Cal. Date...

METROSONICS db-3080 V1.12 SERIAL # 3761
REPORT PRINTED ON 03/10/15 at 15:11:43

User ID: _____

Santa Susana
Short-term Measurements
Metrosonics db 3080/3761

LOGGING STARTED.....03/10/15 at 11:32:27
TOTAL LOGGING TIME...0 DAYS 00:30:00
LOGGING STOPPED.....03/10/15 at 12:02:27
TOTAL INTERVALS.....1
INTERVAL LENGTH.....00:30:00

AUTO STOP.....YES
CLOCK SYNCH.....YES
RESPONSE RATE.....SLOW
FILTER.....A WT.

PRE-TEST CALIBRATION TIME....03/10/15 AT 09:52:31
PRE-TEST CALIBRATION RANGE...39.1 TO 139.1 dB
POST-TEST CALIBRATION NOT DONE
CUTOFF USED FOR TIME HISTORY Lav...NONE

<<< SUMMARY REPORT FOR TEST NUMBER 3 OF 4 >>>

EXCHANGE RATE.....3dB
CUTOFFS..... 80dB 90dB
CEILING.....115dB
DOSE CRITERION LEVEL... 90dB
DOSE CRITERION LENGTH.. 8 HOURS

Lav..... 52.7dB
Lav (80)..... 39.1dB
Lav (90)..... 39.1dB
SEL..... 85.2dB

Noise Measurement Data

TWA..... 40.7dB
TWA (80)..... 39.1dB
TWA (90)..... 39.1dB

Lmax..... 73.7dB 03/10/15 at 11:42:00
Lpk.....UNDER RANGE
TIME OVER 115dB...00:00:00.00

DOSE (80)..... 0.00%
PROJ. DOSE (80).. 0.00%
DOSE (90)..... 0.00%
PROJ. DOSE (90).. 0.00%

<<< TIME HISTORY REPORT FOR TEST NUMBER 3 OF 4 >>>

TIME	Lav dBA	Lmax dBA	L(10.0) dBA	L(90.0) dBA
03/10/15				
11:32:27	52.7	73.7	50.1	40.1

Noise Measurement Data

Filename.....308062
Test Location.....Santa Susana - Ventura Co
Employee Name.....Courtney Casey
Employee Number.....
Department.....

Calibrator Type.....
Calibrator Cal. Date...

METROSONICS db-3080 V1.12 SERIAL # 3761
REPORT PRINTED ON 03/10/15 at 15:12:08

User ID: _____

Santa Susana
Short-term Measurements
Metrosonics db 3080/3761

LOGGING STARTED.....03/10/15 at 12:24:13
TOTAL LOGGING TIME...0 DAYS 00:30:00
LOGGING STOPPED.....03/10/15 at 12:54:13
TOTAL INTERVALS.....1
INTERVAL LENGTH.....00:30:00

AUTO STOP.....YES
CLOCK SYNCH.....YES
RESPONSE RATE.....SLOW
FILTER.....A WT.

PRE-TEST CALIBRATION TIME....03/10/15 AT 09:52:31
PRE-TEST CALIBRATION RANGE...39.1 TO 139.1 dB
POST-TEST CALIBRATION TIME...03/10/15 AT 12:55:05
POST-TEST CALIBRATION RANGE...39.1 TO 139.1
CUTOFF USED FOR TIME HISTORY Lav...NONE

<<< SUMMARY REPORT FOR TEST NUMBER 4 OF 4 >>>

EXCHANGE RATE.....3dB
CUTOFFS..... 80dB 90dB
CEILING.....115dB
DOSE CRITERION LEVEL... 90dB
DOSE CRITERION LENGTH.. 8 HOURS

Lav..... 56.6dB
Lav (80)..... 39.1dB
Lav (90)..... 39.1dB
SEL..... 89.0dB

Noise Measurement Data

TWA..... 44.6dB
TWA (80)..... 39.1dB
TWA (90)..... 39.1dB

Lmax..... 78.3dB 03/10/15 at 12:38:31
Lpk.....UNDER RANGE
TIME OVER 115dB...00:00:00.00

DOSE (80)..... 0.00%
PROJ. DOSE (80).. 0.00%
DOSE (90)..... 0.00%
PROJ. DOSE (90).. 0.00%

<<< TIME HISTORY REPORT FOR TEST NUMBER 4 OF 4 >>>

TIME	Lav dBA	Lmax dBA	L(10.0) dBA	L(90.0) dBA
03/10/15 12:24:13	56.6	78.3	53.1	39.1

OFF-SITE TRAFFIC NOISE LEVELS

Project Name: Santa Susana Field Laboratory EIR

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Analysis Scenario(s): Existing (2015) Traffic Noise Levels
 Source of Traffic Volumes: KOA Corporation, Traffic Study for Simi Valley Santa Susana Field Laboratory EIR, October 26, 2016. Caltrans 2015.
 Community Noise Descriptor: L_{dn}: _____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Traffic Noise Levels

Analysis Condition Roadway Name Roadway Segment	Lanes	Median Width	Peak		Design Speed (mph)	Dist. from Center to Receptor ¹	Alpha Factor	Barrier Attn. dB(A)	Vehicle Mix		Peak	24-Hour
			Hour Volume	ADT Volume					Medium Trucks	Heavy Trucks	Hour dB(A) L _{eq}	Hour dB(A) CNEL
Existing (2015) Traffic Conditions												
Box Canyon Road												
B/t Santa Susana Pass Rd. & Roberson Rd.	2	0	509	3,690	30	100	1	0	2.2%	0.8%	55.5	53.3
Santa Susana Pass Road												
B/t Rocky Peak Rd. & Box Canyon Rd.	2	0	365	3,324	30	100	1	0	2.2%	0.8%	54.1	52.9
Facility Road												
At Woolsey Canyon Road	2	0	254	2,417	30	1300	1	0	2.2%	0.8%	30.2	29.2
Valley Circle Boulevard												
B/t Box Canyon Rd. & Woolsey Canyon Rd.	2	0	1,164	8,786	20	100	1	0	2.2%	0.8%	55.6	53.5
B/t Plummer St. & Schumann Rd.	2	0	687	6,186	40	100	1	0	2.2%	0.8%	59.4	58.2
B/t Woolsey Canyon Rd. & Chatlake Dr.	2	0	1,247	9,487	35	100	1	0	2.2%	0.8%	60.6	58.6
B/t Vanowen St. & Victory Blvd.	4	11	2,179	21,010	45	100	0	0	2.2%	0.8%	68.9	68.0
B/t Burbank Blvd. & US-101 Fwy.	4	11	3,094	35,031	40	100	0	0	2.2%	0.8%	69.1	68.9
Plummer Street												
B/t Valley Circle Blvd. & Farralone Ave.	2	11	733	6,811	35	100	0	0	2.2%	0.8%	61.4	60.3
Roscoe Boulevard												
B/t Woodlake Ave. & Shoup Ave.	4	11	1,019	12,308	40	100	0	0	2.2%	0.8%	64.3	64.4
Shoup Ave. & Farralone Ave.	4	11	2,607	31,073	40	100	0	0	2.2%	0.8%	68.4	68.4
Topanga Canyon Boulevard												
North of Plummer Street	6	14	3,850	40,500	45	100	0	0	2.2%	1.0%	71.6	71.1
B/t Plummer St. & Roscoe Blvd.	4	14	4,250	46,000	45	100	0	0	2.2%	1.0%	71.9	71.5
South of Roscoe Blvd.	6	14	2,900	32,000	40	100	0	0	2.2%	1.0%	69.2	68.8

¹ Due to the varying distances of noise-sensitive uses to the roadway centerline, a reference distance of 100 feet is used for this analysis other than Facility Road.

OFF-SITE TRAFFIC NOISE LEVELS

Project Name: Santa Susana Field Laboratory EIR

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Analysis Scenario(s): Future (2032) Traffic Noise Levels without Project
 Source of Traffic Volumes: KOA Corporation, Traffic Study for Simi Valley Santa Susana Field Laboratory EIR, March, 2017. Caltrans 2015.
 Community Noise Descriptor: L_{dn} : _____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Traffic Noise Levels

Analysis Condition Roadway Name Roadway Segment	Lanes	Median Width	Peak	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor ¹	Alpha Factor	Barrier Attn. dB(A)	Vehicle Mix		Peak	24-Hour
			Hour Volume						Medium Trucks	Heavy Trucks	Hour dB(A) L_{eq}	CNEL
Existing (2015) Traffic Conditions												
Box Canyon Road												
B/t Santa Susana Pass Rd. & Roberson Rd.	2	0	603	4,370	30	100	1	0	2.2%	0.8%	56.2	54.1
Santa Susana Pass Road												
B/t Rocky Peak Rd. & Box Canyon Rd.	2	0	432	3,937	30	100	1	0	2.2%	0.8%	54.8	53.6
Facility Road												
At Woolsey Canyon Road	2	0	301	2,862	30	1300	1	0	2.2%	0.8%	30.9	29.9
Valley Circle Boulevard												
B/t Box Canyon Rd. & Woolsey Canyon Rd.	2	0	1,379	10,405	20	100	1	0	2.2%	0.8%	56.3	54.3
B/t Plummer St. & Schumann Rd.	2	0	814	7,326	40	100	1	0	2.2%	0.8%	60.1	58.9
B/t Woolsey Canyon Rd. & Chatlake Dr.	2	0	1,477	11,235	35	100	1	0	2.2%	0.8%	61.3	59.4
B/t Vanowen St. & Victory Blvd.	4	11	2,581	24,882	45	100	0	0	2.2%	0.8%	69.6	68.7
B/t Burbank Blvd. & US-101 Fwy.	4	11	3,664	41,487	40	100	0	0	2.2%	0.8%	69.9	69.6
Plummer Street												
B/t Valley Circle Blvd. & Farralone Ave.	2	11	868	8,066	35	100	0	0	2.2%	0.8%	62.1	61.0
Roscoe Boulevard												
B/t Woodlake Ave. & Shoup Ave.	4	11	1,207	14,576	40	100	0	0	2.2%	0.8%	65.0	65.1
Shoup Ave. & Farralone Ave.	4	11	3,087	36,800	40	100	0	0	2.2%	0.8%	69.1	69.1
Topanga Canyon Boulevard												
North of Plummer Street	6	14	4,399	49,474	45	100	0	0	2.2%	1.0%	72.2	72.0
B/t Plummer St. & Roscoe Blvd.	4	14	4,493	56,193	45	100	0	0	2.2%	1.0%	72.1	72.3
South of Roscoe Blvd.	6	14	3,748	39,091	40	100	0	0	2.2%	1.0%	70.3	69.7

¹ Due to the varying distances of noise-sensitive uses to the roadway centerline, a reference distance of 100 feet is used for this analysis other than Facility Road.

OFF-SITE TRAFFIC NOISE LEVELS

Project Name: Santa Susana Field Laboratory EIR

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
 Analysis Scenario(s): Future (2032) Traffic Noise Levels with Project
 Source of Traffic Volumes: KOA Corporation, Traffic Study for Simi Valley Santa Susana Field Laboratory EIR, March, 2017. Caltrans 2015.
 Community Noise Descriptor: L_{dn} : _____ CNEL: X

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Traffic Noise Levels

Analysis Condition Roadway Name Roadway Segment	Lanes	Median Width	Peak Hour Volume	ADT Volume	Design Speed (mph)	Dist. from Center to Receptor ¹	Alpha Factor	Barrier Attn. dB(A)	Vehicle Mix		Peak Hour dB(A) L_{eq}	24-Hour dB(A) CNEL
									Medium Trucks	Heavy Trucks		
Future (2038) Traffic Conditions with Project												
Box Canyon Road												
B/t Santa Susana Pass Rd. & Roberson Rd.	2	0	619	4,434	30	100	1	0	2.2%	0.8%	56.3	54.1
Santa Susana Pass Road												
B/t Rocky Peak Rd. & Box Canyon Rd.	2	0	448	4,001	30	100	1	0	2.2%	0.8%	54.9	53.7
Facility Road												
At Woolsey Canyon Road	2	0	486	3,842	30	1300	1	0	2.1%	3.3%	35.5	33.7
Valley Circle Boulevard												
B/t Box Canyon Rd. & Woolsey Canyon Rd.	2	0	1,444	10,691	20	100	1	0	2.2%	0.9%	56.7	54.6
B/t Plummer St. & Schumann Rd.	2	0	863	7,548	40	100	1	0	2.2%	1.0%	60.5	59.2
B/t Woolsey Canyon Rd. & Chatlake Dr.	2	0	1,597	11,929	35	100	1	0	2.1%	1.5%	62.2	60.1
B/t Vanowen St. & Victory Blvd.	4	11	2,633	25,142	45	100	0	0	2.2%	0.9%	69.7	68.8
B/t Burbank Blvd. & US-101 Fwy.	4	11	3,716	41,747	40	100	0	0	2.2%	0.9%	70.0	69.7
Plummer Street												
B/t Valley Circle Blvd. & Farralone Ave.	2	11	917	8,288	35	100	0	0	2.2%	1.0%	62.5	61.3
Roscoe Boulevard												
B/t Woodlake Ave. & Shoup Ave.	4	11	1,275	15,010	40	100	0	0	2.1%	1.4%	65.7	65.6
Shoup Ave. & Farralone Ave.	4	11	3,155	37,234	40	100	0	0	2.2%	1.1%	69.4	69.3
Topanga Canyon Boulevard												
North of Plummer Street	6	14	4,478	50,347	45	100	0	0	2.2%	1.0%	72.3	72.0
B/t Plummer St. & Roscoe Blvd.	4	14	4,529	56,640	45	100	0	0	2.2%	1.0%	72.2	72.4
South of Roscoe Blvd.	6	14	3,774	39,360	40	100	0	0	2.2%	1.0%	70.3	69.7

¹ Due to the varying distances of noise-sensitive uses to the roadway centerline, a reference distance of 100 feet is used for this analysis other than Facility Road.

NOISE ANALYSIS FOR ALTERNATIVE 3 (48) HAUL TRUCKS

Roadway Segment	Noise Levels in dBA L _{eq} (hourly) ^a				
	Baseline (2015) Traffic Volumes	Future (2032) With Project Traffic Volumes	Increase	Significance Threshold ^b	Exceeds Threshold?
Woolsey Canyon Road, between Valley Circle Boulevard and Knapp Ranch Road	54.7	60.1	5.4	5.0	Yes^d
Facility Road at Woolsey Canyon Road ^c	30.2	34.0 ^e	3.8	3.0	Yes

NOTES:

- ^a Values represent noise levels at 100 feet from the centerline of the roadway.
- ^b As discussed under Section 4.10.2, Thresholds of Significance, for the purpose of this analysis a substantial increase in traffic noise levels would occur if the project's haul truck and construction worker vehicle trips would contribute to a traffic noise level increase of 3 dBA or greater over existing ambient noise levels within the County of Ventura and 5 dBA or greater over existing ambient noise levels within the County of Los Angeles and the City of Los Angeles.
- ^c Noise levels for this roadway are based on the distance of 1,300 feet where actual noise sensitive receiver is located and traffic volumes are the same as Woolsey Canyon Road due to the lack of information.
- ^d Because the grade of Woolsey Canyon Road exceeds 5 percent, TNM was used to estimate noise levels, which were the average of 20 front row house locations at Summit Mobile Home Community.
- ^e The number of haul trucks was reduced to 48 trips per day from 96 per day. The data for 96 trucks per day is presented on Page 4 of this appendix.

SOURCE: KOA, 2017; ESA, 2017d (see Appendix I).

Project Cleanup Activity Noise Level Calculation

Assumptions:

Soft ground
 Source Height = 5 feet
 Receiver Height = 5 feet

$$H_{eff} = (5+5)/2 = 5$$

$$G = 0.75(1-(5/42)) = 0.661$$

Source: FTA, 2006. Chapter 6, Figure 6-5.

Receptor 1: American Jewish University campus

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	4200	40	-38.5	-12.7	-4.0	24.8
Scrapers	1	88	4200	55	-38.5	-12.7	-2.6	34.2
Tractor/Loader/Backhoe	1	85	4200	40	-38.5	-12.7	-4.0	29.8
Excavators	1	87	4200	40	-38.5	-12.7	-4.0	31.8
Haul Trucks	1	88	4200	40	-38.5	-12.7	-4.0	32.8
Overall noise level at receptor								38.6

Receptor 2: Sage Ranch Park

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	1100	40	-26.85	-8.87	-4.0	40.3
Scrapers	1	88	1100	55	-26.85	-8.87	-2.6	49.7
Tractor/Loader/Backhoe	1	85	1100	40	-26.85	-8.87	-4.0	45.3
Excavators	1	87	1100	40	-26.85	-8.87	-4.0	47.3
Haul Trucks	1	88	1100	40	-26.85	-8.87	-4.0	48.3
Overall noise level at receptor								54.1

Receptor 2: Sage Ranch Park MITIGATED

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	2000	40	-32.04	-10.59	-4.0	33.4
Scrapers	1	88	2000	55	-32.04	-10.59	-2.6	42.8
Tractor/Loader/Backhoe	1	85	2000	40	-32.04	-10.59	-4.0	38.4
Excavators	1	87	2000	40	-32.04	-10.59	-4.0	40.4
Haul Trucks	1	88	2000	40	-32.04	-10.59	-4.0	41.4
Overall noise level at receptor								47.2

Receptor 3: Summit Mobile Home Community

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	3200	40	-36.12	-11.94	-4.0	28.0
Scrapers	1	88	3200	55	-36.12	-11.94	-2.6	37.3
Tractor/Loader/Backhoe	1	85	3200	40	-36.12	-11.94	-4.0	33.0
Excavators	1	87	3200	40	-36.12	-11.94	-4.0	35.0
Haul Trucks	1	88	3200	40	-36.12	-11.94	-4.0	36.0

Overall noise level at receptor 41.8

Receptor 4: SFR in Bell Canyon along Wrangler Lane

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	4600	40	-39.28	-12.98	-4.0	23.8
Scrapers	1	88	4600	55	-39.28	-12.98	-2.6	33.1
Tractor/Loader/Backhoe	1	85	4600	40	-39.28	-12.98	-4.0	28.8
Excavators	1	87	4600	40	-39.28	-12.98	-4.0	30.8
Haul Trucks	1	88	4600	40	-39.28	-12.98	-4.0	31.8

Overall noise level at receptor 37.6

Receptor 5: SFR in Bell Canyon along N. Hacienda Road

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	2900	40	-35.27	-11.66	-4.0	29.1
Scrapers	1	88	2900	55	-35.27	-11.66	-2.6	38.5
Tractor/Loader/Backhoe	1	85	2900	40	-35.27	-11.66	-4.0	34.1
Excavators	1	87	2900	40	-35.27	-11.66	-4.0	36.1
Haul Trucks	1	88	2900	40	-35.27	-11.66	-4.0	37.1

Overall noise level at receptor 42.9

Receptor 6: SFR in Bell Canyon along Saddlebow Road

	# of Items	Item Leq @ 50 ft.	Distance to Receptor (feet)	Item Usage (%)	Distance Correction (dBA)	Ground Effect Adjustment (dBA)	Usage Adjustment (AdB)	Noise Level at Receptor (dBA)
Dozers	1	80	2000	40	-32.04	-10.59	-4.0	33.4
Scrapers	1	88	2000	55	-32.04	-10.59	-2.6	42.8
Tractor/Loader/Backhoe	1	85	2000	40	-32.04	-10.59	-4.0	38.4
Excavators	1	87	2000	40	-32.04	-10.59	-4.0	40.4
Haul Trucks	1	88	2000	40	-32.04	-10.59	-4.0	41.4

Overall noise level at receptor 47.2

Project Cleanup Activity Vibration Calculation Methodology

In order to calculate “Receptor Item PPV” and “Receptor Item VdB” on following pages, the methodology described in the Federal Transit Administration’s (FTA) Transit Noise and Vibration Assessment document was used. Following paragraphs briefly describe the source of data and equations used.

“Item PPV (in/sec) @ 25 ft.” and “Item VdB @ 25 ft.” are the referenced vibration levels based on Table 12-2 of FTA’s document.

Receptor Item PPV was calculated based on the following equation:

$$PPV_{\text{equip}} = PPV_{\text{ref}} \times (25/D)^{1.5}$$

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment adjusted for distance. This is the same as Receptor Item PPV in tables.

PPV_{ref} is the reference vibration level in in/sec at 25 feet from Table 12-2 of FTA’s document.

This is the same as Item PPV (in/sec) @ 25 ft. in tables.

D is the distance from the equipment to the receiver. This is the same as Distance to Receptor (feet) in tables.

Receptor Item VdB was calculated based on the following equation:

$$Lv(D) = Lv(25ft) - 30\text{LOG}(D/25)$$

where: $Lv(D)$ is the root mean square vibration velocity level at a receiver. This is the same as Receptor Item VdB in tables.

$Lv(25ft)$ is the root mean square vibration velocity level at 25 feet reference distance from Table 12-2 of FTA’s document. This is the same as Item VdB @ 25 ft. in tables.

D is the distance from the equipment to the receiver. This is the same as Distance to Receptor (feet) in tables.

Project Cleanup Activity Vibration Calculation

Receptor 1: American Jewish University campus

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	4200	0.089	87	0.00004	20.24
Loaded Truck	1	4200	0.076	86	0.00003	19.24
Jackhammer	1	4200	0.035	79	0.00002	12.24
Small bulldozer	1	4200	0.003	58	0.00000	0.00

Receptor 2: Sage Ranch Park

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	1100	0.089	87	0.00030	37.70
Loaded Truck	1	1100	0.076	86	0.00026	36.70
Jackhammer	1	1100	0.035	79	0.00012	29.70
Small bulldozer	1	1100	0.003	58	0.00001	8.70

Receptor 3: Summit Mobile Home Community

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	3200	0.089	87	0.00006	23.78
Loaded Truck	1	3200	0.076	86	0.00005	22.78
Jackhammer	1	3200	0.035	79	0.00002	15.78
Small bulldozer	1	3200	0.003	58	0.00000	0.00

Receptor 4: SFR in Bell Canyon along Wrangler Lane

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	4600	0.089	87	0.00004	19.06
Loaded Truck	1	4600	0.076	86	0.00003	18.06
Jackhammer	1	4600	0.035	79	0.00001	11.06
Small bulldozer	1	4600	0.003	58	0.00000	0.00

Receptor 5: SFR in Bell Canyon along N. Hacienda Road

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	2900	0.089	87	0.00007	25.07
Loaded Truck	1	2900	0.076	86	0.00006	24.07
Jackhammer	1	2900	0.035	79	0.00003	17.07
Small bulldozer	1	2900	0.003	58	0.00000	0.00

Receptor 6: SFR in Bell Canyon along Saddlebow Road

	# of Items	Distance to Receptor (feet)	Item PPV (in/sec) @ 25 ft.	Item VdB @ 25 ft.	Receptor Item PPV	Receptor Item VdB
Dozer/Hoe Ram/Caisson Drill	1	2000	0.089	87	0.00012	29.91
Loaded Truck	1	2000	0.076	86	0.00011	28.91
Jackhammer	1	2000	0.035	79	0.00005	21.91
Small bulldozer	1	2000	0.003	58	0.00000	0.91