APPENDIX E

Noise

APPENDIX E-1

Field Noise Data Sheets

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT LADWP DE SOTO STORAGE TANKS PROJECT # 10649-27
SITE ID
SITE ADDRESS 11200 DE SOTO AVE, CHATSWORTH, CA OBSERVER(S) PETE VITAR
START DATE 5/9/18 END DATE 5/9/18
START TIME 10:30 AM END TIME 12:15 PM

METEOROLOGICAL CONDITIONS

TEMP 72 F HUMIDITY ____ % R.H. WIND (CALM) LIGHT MODERATE
WINDSPD ____ MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SLM-P3 TYPE 1 (2) SERIAL # 130927046
CALIBRATOR B&SWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST ____ dBA SPL POST-TEST ____ dBA SPL WINDSCRN YES

SETTINGS A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER: ____

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
1-2 (ST-1)	10:49	11:04	57.6	68.5	53.1				

COMMENTS
READING TAKEN AT NORTHWEST CORNER OF SIERRA CANYON SCHOOL CAMPUS (SOUTH SIDE OF PROJECT SITE FENCE); PRIMARY NOISE SOURCE = TRAFFIC ON DE SOTO AVE.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER: DE SOTO
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APX 230' TO CURB EDGE

TRAFFIC COUNT DURATION: ____ MIN SPEED ____ MIN SPEED

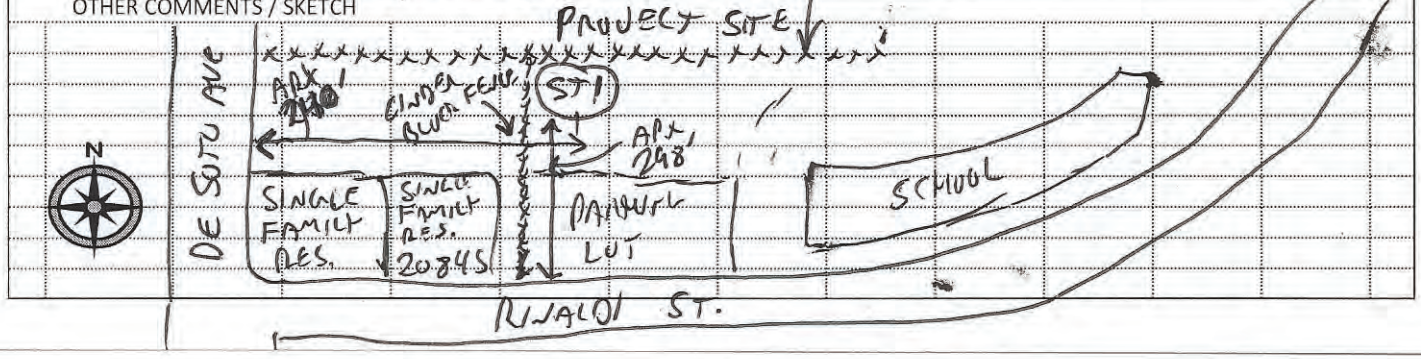
COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ____	COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS										
MED TRKS										
HVY TRKS										
BUSES										
MOTRCLS										

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: ____

DESCRIPTION / SKETCH

TERRAIN HARD (SOFT) MIXED FLAT OTHER:
PHOTOS 1265; 1266; 1267; 1268
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT LADWP DE SOTO STORAGE TANKS PROJECT # 10649-27
SITE ID
SITE ADDRESS 11200 DE SOTO AVE, CHATSWORTH, CA OBSERVER(S) PETE VITAR
START DATE 5/9/18 END DATE 5/9/18
START TIME 10:30 AM END TIME 12:15 PM

METEOROLOGICAL CONDITIONS
TEMP 72 F HUMIDITY ____ % R.H. WIND (CALM) LIGHT MODERATE
WINDSPD ____ MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY
SKY (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-P3 TYPE 1 (2) SERIAL # 130927046
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST ____ dBA SPL POST-TEST ____ dBA SPL WINDSCRN YES

SETTINGS A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER: ____

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
3-4 (ST2)	11:08	11:23	58.2	78.9	53.1				

COMMENTS
READING TAKEN AT WEST END OF SIENNA CANYON SCHOOL CAMPUS, IN PARKING LOT NEXT TO 20845 RINALDI ST (SINGLE FAMILY RESIDENCE). A CINDER BLOCK FENCE SEPARATES RESIDENCE FROM SCHOOL. READING TAKEN ON SCHOOL SIDE OF FENCE. PRIMARY NOISE SOURCE = TRAFFIC ON DE SOTO AVE.

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER: ____
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APX 230' TO DE SOTO CURB EDGE

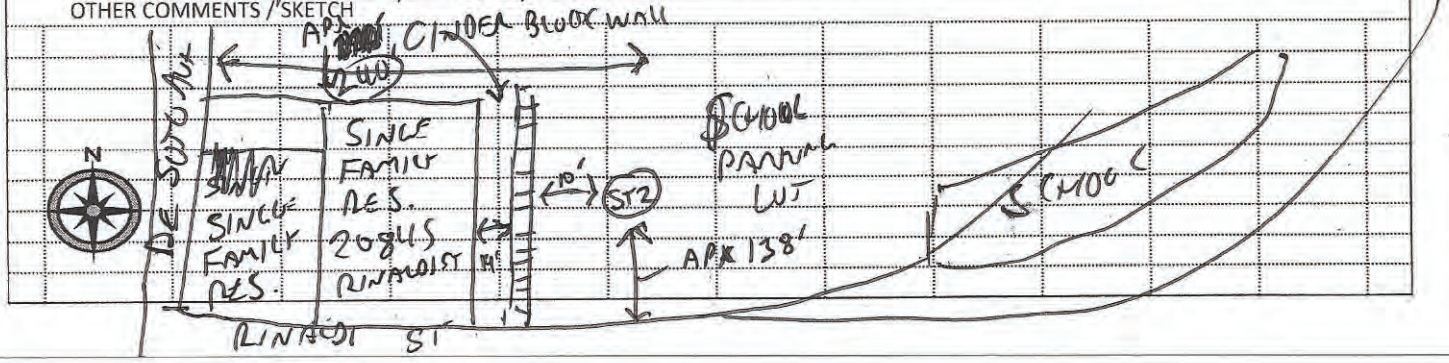
TRAFFIC COUNT DURATION: ___ MIN SPEED ___ MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ___	COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS										
MED TRKS										
HVY TRKS										
BUSES										
MOTRCLS										

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: ____

DESCRIPTION / SKETCH
TERRAIN (HARD) SOFT MIXED FLAT OTHER: ____
PHOTOS 1274; 1275; 1276; 1277
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: LADWP DE SOTO STORAGE TANKS — PROJECT #: 10649-27
SITE ID:
SITE ADDRESS: 11200 DE SOTO AVE, CHATSWORTH, CA — OBSERVER(S): PETE VITAR
START DATE: 5/9/18 — END DATE: 5/9/18
START TIME: 10:30 AM — END TIME: 12:15 PM

METEOROLOGICAL CONDITIONS

TEMP: 72 F — HUMIDITY: ____ % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: ____ MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-P3 — TYPE 1 (2) — SERIAL # 130927046
CALIBRATOR: BSWA CA 114 — SERIAL # 480151
CALIBRATION CHECK — PRE-TEST ____ dBA SPL — POST-TEST ____ dBA SPL — WINDSCRN YES

SETTINGS: A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER: ____

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
S-6 (ST3)	11:36	11:51	58.7	68.5	53.9				

COMMENTS: READING TAKE ON NORTH END OF ~~PROPERTY~~ SIERRA CANYON SCHOOL CAMPUS, AT ~~FENCE~~ CHAIN LINK FENCE WITH PROJECT SITE.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL (OTHER: STUDENTS PASSING)
ROADWAY TYPE: ASPHALT — DIST. TO RDWY C/L OR EOP: ____

TRAFFIC COUNT DURATION: ____ MIN

COUNT 1 (OR RDWY 1)	SPEED NB/EB	SPEED SB/WB	COUNT 2 (OR RDWY 2)	SPEED NB/EB	SPEED SB/WB
AUTOS					
MED TRKS					
HVY TRKS					
BUSES					
MOTRCLS					

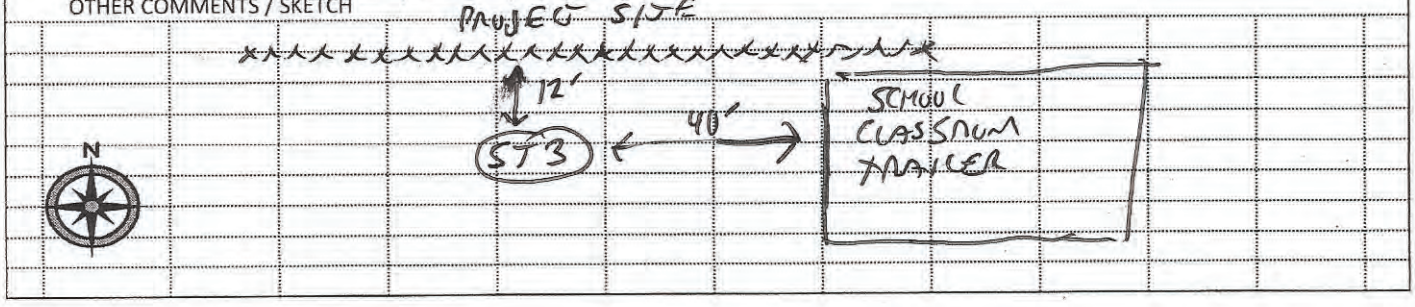
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ____

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: TRAFFIC ON DE SOTO AVE AND ON RINALDI ST.

DESCRIPTION / SKETCH

TERRAIN: HARD (SOFT) MIXED FLAT OTHER:
PHOTOS: 1278; 1279; 1280; 1281
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: LADWP DE SOTO STORAGE TANKS — PROJECT #: 10649-27
SITE ID:
SITE ADDRESS: 11200 DE SOTO AVE, CHATSWORTH, CA — OBSERVER(S): PETE VITAR
START DATE: 5/9/18 — END DATE: 5/9/18
START TIME: 10:36 AM — END TIME: 12:15 PM

METEOROLOGICAL CONDITIONS

TEMP: 72 F — HUMIDITY: ____ % R.H. — WIND: (CALM) LIGHT MODERATE
WINDSPD: ____ MPH — DIR. N NE S SE S SW W NW — VARIABLE STEADY GUSTY
SKY: (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-P3 — TYPE 1 (2) — SERIAL # 130927046
CALIBRATOR: BSWA CA 114 — SERIAL # 480151
CALIBRATION CHECK — PRE-TEST ____ dBA SPL — POST-TEST ____ dBA SPL — WINDSCRN YES

SETTINGS: A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER: ____

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
7-8 (ST4)	11:56	12:11	59.3	74.3	55.2				

COMMENTS: READING TAKE ON WEST SIDE OF SIERRA CANYON SCHOOL ATHLETIC BUILDING, ON CAMPUS.

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL (OTHER: STUDENTS PASSING)
ROADWAY TYPE: — DIST. TO RDWY C/L OR EOP:

TRAFFIC COUNT DURATION: ____ MIN

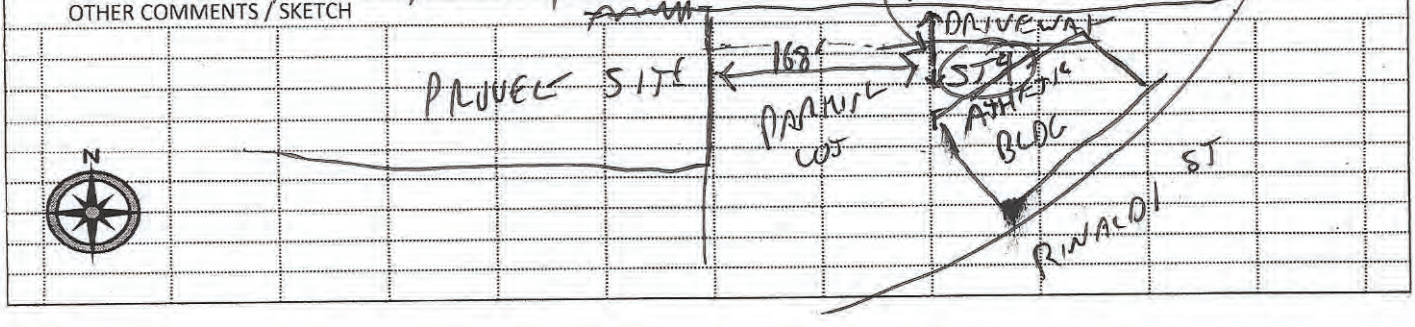
COUNT 1 (OR RDWY 1)	SPEED NB/EB	SPEED SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ____	COUNT 2 (OR RDWY 2)	SPEED NB/EB	SPEED SB/WB
AUTOS						
MED TRKS						
HVY TRKS						
BUSES						
MOTRCLS						

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING (DIST. TRAFFIC (LIST RDWYS BELOW)) DISTD GARDENERS/LANDSCAPING NOISE
OTHER: TRAFFIC ON RINALDI ST.; OCCASIONAL CAR PASSING THROUGH PARKING LOT; SOME AUDIBLE NOISE FROM ATHLETIC BLDG. HVAC UNITS

DESCRIPTION / SKETCH

TERRAIN (HARD) SOFT MIXED FLAT OTHER:
PHOTOS 1282; 1283; 1284; 1285
OTHER COMMENTS / SKETCH



DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT: LADWP DE SOTO STORAGE TANKS
PROJECT #: 10649.27
SITE ID:
OBSERVER(S): PETE VITAR
SITE ADDRESS:
START DATE: 2/12/19 END DATE: 2/12/19
START TIME: END TIME:

METEOROLOGICAL CONDITIONS

TEMP: 53 F HUMIDITY: 35 % R.H. WIND: (CALM) LIGHT MODERATE VARIABLE STEADY GUSTY
WINDSPD: MPH DIR. N NE S SE S SW W NW
SKY: CLEAR OVRCAST (PRTLY CLDY) FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT: PICCOLO SLM-3 TYPE 1 (2) SERIAL # 14031700 41
CALIBRATOR: BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK: PRE-TEST ____ dBA SPL POST-TEST ____ dBA SPL WINDSCRN: YES

SETTINGS: A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

	REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
ST-5	1-2	9:31	9:46	57.3	65.9	51.7				

COMMENTS

READING TAKEN AT BACK PROPERTY LINE OF 11100 LURLINE AVE. (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON RINALDI ST.; SECONDARY IS TRAFFIC ON 118 FREEWAY

SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE: (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY (EOP): APX. 75' FROM RINALDI EOP
TRAFFIC COUNT DURATION: — MIN SPEED MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE: ✓

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS (BIRDS) DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH

TERRAIN: (HARD) SOFT MIXED FLAT OTHER:
PHOTOS: 3697; 3698; 3699; 3700
OTHER COMMENTS / SKETCH:

N

DUDEK

FIELD NOISE MEASUREMENT DATA

PROJECT LADWP DE SOTO STORAGE TANKS PROJECT # 10649.27
SITE ID
SITE ADDRESS OBSERVER(S) PETE VITAR
START DATE 2/12/19 END DATE 2/12/19
START TIME END TIME

METEOROLOGICAL CONDITIONS
TEMP 57 F HUMIDITY 28 % R.H. WIND (CALM) LIGHT MODERATE
WINDSPD MPH DIR. N NE E SE S SW W NW VARIABLE STEADY GUSTY
SKY SUNNY CLEAR OVRCAST (PRTLY CLDY) FOG RAIN

ACOUSTIC MEASUREMENTS
MEAS. INSTRUMENT PICCOLO SLM-3 TYPE 1 (2) SERIAL # 1403170041
CALIBRATOR BSWA CA 114 SERIAL # 480151
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS A-WTD (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC
ST-6 3-4	10:00	16:15	71.6	85.7	54.9				

COMMENTS
READING TAKEN ACCROSS STREET (~~FROM~~ EAST SIDE OF DE SOTO AVE) FROM 10925 DE SOTO AVE (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON DE SOTO AVE

SOURCE INFO AND TRAFFIC COUNTS
PRIMARY NOISE SOURCE (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL OTHER:
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: 1'
TRAFFIC COUNT DURATION: 15 MIN SPEED

COUNT 1 (OR RDWY 1) DIRECTION	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ✓

COUNT 2 (OR RDWY 2)	NB/EB	SB/WB	NB/EB SPEED	SB/WB SPEED

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE
POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE
OTHER:

DESCRIPTION / SKETCH
TERRAIN (HARD) SOFT MIXED FLAT OTHER:
PHOTOS 3702; 3703; 3704; 3705
OTHER COMMENTS / SKETCH

APPENDIX E-2

Construction Noise Modeling Input and Output

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Demolition

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nearest Source - Receiver 200'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	200	0
Concrete Saw	No	20		89.6	200	0
Crane	No	16		80.6	250	0
All Other Equipment > 5 HP	No	50	85		250	0
Man Lift	No	20		74.7	300	0
Generator	No	50		80.6	350	0
Dozer	No	40		81.7	300	0
Front End Loader	No	40		79.1	400	0
Tractor	No	40	84		300	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)	65.6	61.6	N/A	N/A	N/A	N/A
Concrete Saw	77.5	70.5	N/A	N/A	N/A	N/A
Crane	66.6	58.6	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	71	68	N/A	N/A	N/A	N/A
Man Lift	59.1	52.1	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A
Dozer	66.1	62.1	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Tractor	68.4	64.5	N/A	N/A	N/A	N/A
Total	77.5	74.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Typical Source - Receiver 300'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	300	0
Concrete Saw	No	20		89.6	300	0
Crane	No	16		80.6	300	0
All Other Equipment > 5 HP	No	50	85		300	0
Man Lift	No	20		74.7	300	0
Generator	No	50		80.6	300	0
Dozer	No	40		81.7	300	0
Front End Loader	No	40		79.1	300	0
Tractor	No	40	84		300	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		62.1	58.1	N/A	N/A	N/A	N/A
Concrete Saw		74	67	N/A	N/A	N/A	N/A
Crane		65	57	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		69.4	66.4	N/A	N/A	N/A	N/A
Man Lift		59.1	52.1	N/A	N/A	N/A	N/A
Generator		65.1	62.1	N/A	N/A	N/A	N/A
Dozer		66.1	62.1	N/A	N/A	N/A	N/A
Front End Loader		63.5	59.6	N/A	N/A	N/A	N/A
Tractor		68.4	64.5	N/A	N/A	N/A	N/A
	Total	74	73	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	120	0
Concrete Saw	No	20		89.6	150	0
Crane	No	16		80.6	150	0
All Other Equipment > 5 HP	No	50	85		120	0
Man Lift	No	20		74.7	120	0
Generator	No	50		80.6	200	0
Dozer	No	40		81.7	150	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		150	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		70.1	66.1	N/A	N/A	N/A	N/A
Concrete Saw		80	73	N/A	N/A	N/A	N/A
Crane		71	63	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		77.4	74.4	N/A	N/A	N/A	N/A
Man Lift		67.1	60.1	N/A	N/A	N/A	N/A
Generator		68.6	65.6	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A
Front End Loader		69.6	65.6	N/A	N/A	N/A	N/A
Tractor		74.5	70.5	N/A	N/A	N/A	N/A
	Total	80	79.6	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	260	0
Concrete Saw	No	20		89.6	260	0

Crane	No	16		80.6	260	0
All Other Equipment > 5 HP	No	50	85		260	0
Man Lift	No	20		74.7	260	0
Generator	No	50		80.6	260	0
Dozer	No	40		81.7	260	0
Front End Loader	No	40		79.1	260	0
Tractor	No	40	84		260	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	63.3	59.4	N/A	N/A	N/A	N/A
Concrete Saw	75.3	68.3	N/A	N/A	N/A	N/A
Crane	66.2	58.3	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	70.7	67.7	N/A	N/A	N/A	N/A
Man Lift	60.4	53.4	N/A	N/A	N/A	N/A
Generator	66.3	63.3	N/A	N/A	N/A	N/A
Dozer	67.3	63.4	N/A	N/A	N/A	N/A
Front End Loader	64.8	60.8	N/A	N/A	N/A	N/A
Tractor	69.7	65.7	N/A	N/A	N/A	N/A
Total	75.3	74.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Excavation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - Residence 300'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	300	0
Concrete Mixer Truck	No	40		78.8	300	0
Crane	No	16		80.6	350	0
Excavator	No	40		80.7	400	0
Generator	No	50		80.6	350	0
All Other Equipment > 5 HP	No	50	85		400	0
Pumps	No	50		80.9	500	0
Pumps	No	50		80.9	350	0
Dozer	No	40		81.7	300	0
Front End Loader	No	40		79.1	350	0
Front End Loader	No	40		79.1	300	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	68.8	61.8	N/A	N/A	N/A	N/A
Concrete Mixer Truck	63.2	59.3	N/A	N/A	N/A	N/A
Crane	63.6	55.7	N/A	N/A	N/A	N/A
Excavator	62.6	58.7	N/A	N/A	N/A	N/A

Generator		63.7	60.7	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		66.9	63.9	N/A	N/A	N/A	N/A
Pumps		60.9	57.9	N/A	N/A	N/A	N/A
Pumps		64	61	N/A	N/A	N/A	N/A
Dozer		66.1	62.1	N/A	N/A	N/A	N/A
Front End Loader		62.2	58.2	N/A	N/A	N/A	N/A
Front End Loader		63.5	59.6	N/A	N/A	N/A	N/A
	Total	68.8	70.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - Residence 500'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	500	0
Concrete Mixer Truck	No	40		78.8	500	0
Crane	No	16		80.6	550	0
Excavator	No	40		80.7	600	0
Generator	No	50		80.6	550	0
All Other Equipment > 5 HP	No	50	85		600	0
Pumps	No	50		80.9	600	0
Pumps	No	50		80.9	550	0
Dozer	No	40		81.7	500	0
Front End Loader	No	40		79.1	550	0
Front End Loader	No	40		79.1	500	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig		64.4	57.4	N/A	N/A	N/A	N/A
Concrete Mixer Truck		58.8	54.8	N/A	N/A	N/A	N/A
Crane		59.7	51.8	N/A	N/A	N/A	N/A
Excavator		59.1	55.1	N/A	N/A	N/A	N/A
Generator		59.8	56.8	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		63.4	60.4	N/A	N/A	N/A	N/A
Pumps		59.4	56.3	N/A	N/A	N/A	N/A
Pumps		60.1	57.1	N/A	N/A	N/A	N/A
Dozer		61.7	57.7	N/A	N/A	N/A	N/A
Front End Loader		58.3	54.3	N/A	N/A	N/A	N/A
Front End Loader		54	50	N/A	N/A	N/A	N/A
	Total	64.4	67	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	100	0
Concrete Mixer Truck	No	40		78.8	150	0
Crane	No	16		80.6	150	0

Excavator	No	40		80.7	100	0
Generator	No	50		80.6	200	0
All Other Equipment > 5 HP	No	50	85		150	0
Pumps	No	50		80.9	200	0
Pumps	No	50		80.9	250	0
Dozer	No	40		81.7	200	0
Front End Loader	No	40		79.1	300	0
Front End Loader	No	40		79.1	150	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	78.3	71.3	N/A	N/A	N/A	N/A
Concrete Mixer Truck	69.3	65.3	N/A	N/A	N/A	N/A
Crane	71	63	N/A	N/A	N/A	N/A
Excavator	74.7	70.7	N/A	N/A	N/A	N/A
Generator	68.6	65.6	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	75.5	72.4	N/A	N/A	N/A	N/A
Pumps	68.9	65.9	N/A	N/A	N/A	N/A
Pumps	67	64	N/A	N/A	N/A	N/A
Dozer	69.6	65.6	N/A	N/A	N/A	N/A
Front End Loader	63.5	59.6	N/A	N/A	N/A	N/A
Front End Loader	64.5	60.5	N/A	N/A	N/A	N/A
Total	78.3	78.1	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Auger Drill Rig	No	20		84.4	260	0
Concrete Mixer Truck	No	40		78.8	260	0
Crane	No	16		80.6	260	0
Excavator	No	40		80.7	260	0
Generator	No	50		80.6	260	0
All Other Equipment > 5 HP	No	50	85		260	0
Pumps	No	50		80.9	260	0
Pumps	No	50		80.9	260	0
Dozer	No	40		81.7	260	0
Front End Loader	No	40		79.1	260	0
Front End Loader	No	40		79.1	260	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Auger Drill Rig	70	63.1	N/A	N/A	N/A	N/A
Concrete Mixer Truck	64.5	60.5	N/A	N/A	N/A	N/A
Crane	66.2	58.3	N/A	N/A	N/A	N/A
Excavator	66.4	62.4	N/A	N/A	N/A	N/A
Generator	66.3	63.3	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	70.7	67.7	N/A	N/A	N/A	N/A
Pumps	66.6	63.6	N/A	N/A	N/A	N/A
Pumps	66.6	63.6	N/A	N/A	N/A	N/A
Dozer	67.3	63.4	N/A	N/A	N/A	N/A

Front End Loader		64.8	60.8	N/A	N/A	N/A	N/A
Front End Loader		59.7	55.7	N/A	N/A	N/A	N/A
	Total	70.7	73.6	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Storage Tank Construction

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Nearest Source - Residence 300'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	300	0
Concrete Mixer Truck	No	40		78.8	300	0
Crane	No	16		80.6	400	0
Man Lift	No	20		74.7	400	0
Generator	No	50		80.6	500	0
Grader	No	40	85		350	0
Compactor (ground)	No	20		83.2	300	0
Pumps	No	50		80.9	400	0
Pumps	No	50		80.9	350	0
Pumps	No	50		80.9	300	0
Roller	No	20		80	350	0
Dozer	No	40		81.7	400	0
Front End Loader	No	40		79.1	400	0
Backhoe	No	40		77.6	350	0
All Other Equipment > 5 HP	No	50	85		300	0
Welder / Torch	No	40		74	350	0

	Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	62.1	58.1	N/A	N/A	N/A	N/A
Concrete Mixer Truck	63.2	59.3	N/A	N/A	N/A	N/A
Crane	62.5	54.5	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A
Generator	60.6	57.6	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A
Compactor (ground)	67.7	60.7	N/A	N/A	N/A	N/A
Pumps	62.9	59.9	N/A	N/A	N/A	N/A
Pumps	64	61	N/A	N/A	N/A	N/A
Pumps	65.4	62.4	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	69.4	66.4	N/A	N/A	N/A	N/A
Welder / Torch	57.1	53.1	N/A	N/A	N/A	N/A
Total	69.4	72.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Typical Source - Residence 500'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	500	0
Concrete Mixer Truck	No	40		78.8	500	0
Crane	No	16		80.6	600	0
Man Lift	No	20		74.7	600	0
Generator	No	50		80.6	600	0
Grader	No	40	85		550	0
Compactor (ground)	No	20		83.2	500	0
Pumps	No	50		80.9	600	0
Pumps	No	50		80.9	550	0
Pumps	No	50		80.9	500	0
Roller	No	20		80	600	0
Dozer	No	40		81.7	550	0
Front End Loader	No	40		79.1	600	0
Backhoe	No	40		77.6	550	0
All Other Equipment > 5 HP	No	50	85		600	0
Welder / Torch	No	40		74	550	0

Results

Equipment	Calculated (dBA) *Lmax	Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq
Compressor (air)	57.7	53.7	N/A	N/A	N/A	N/A
Concrete Mixer Truck	58.8	54.8	N/A	N/A	N/A	N/A
Crane	59	51	N/A	N/A	N/A	N/A
Man Lift	53.1	46.1	N/A	N/A	N/A	N/A
Generator	59	56	N/A	N/A	N/A	N/A
Grader	64.2	60.2	N/A	N/A	N/A	N/A
Compactor (ground)	63.2	56.2	N/A	N/A	N/A	N/A
Pumps	59.4	56.3	N/A	N/A	N/A	N/A
Pumps	60.1	57.1	N/A	N/A	N/A	N/A
Pumps	60.9	57.9	N/A	N/A	N/A	N/A
Roller	58.4	51.4	N/A	N/A	N/A	N/A
Dozer	60.8	56.9	N/A	N/A	N/A	N/A
Front End Loader	57.5	53.5	N/A	N/A	N/A	N/A
Backhoe	56.7	52.8	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	63.4	60.4	N/A	N/A	N/A	N/A
Welder / Torch	53.2	49.2	N/A	N/A	N/A	N/A
Total	64.2	68	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	300	0
Concrete Mixer Truck	No	40		78.8	300	0
Crane	No	16		80.6	325	0

Man Lift	No	20		74.7	350	0
Generator	No	50		80.6	500	0
Grader	No	40	85		375	0
Compactor (ground)	No	20		83.2	500	0
Pumps	No	50		80.9	400	0
Pumps	No	50		80.9	500	0
Pumps	No	50		80.9	600	0
Roller	No	20		80	400	0
Dozer	No	40		81.7	350	0
Front End Loader	No	40		79.1	500	0
Backhoe	No	40		77.6	400	0
All Other Equipment > 5 HP	No	50	85		350	0
Welder / Torch	No	40		74	500	0

				Results			
		Calculated (dBA)			Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		62.1	58.1	N/A	N/A	N/A	N/A
Concrete Mixer Truck		63.2	59.3	N/A	N/A	N/A	N/A
Crane		64.3	56.3	N/A	N/A	N/A	N/A
Man Lift		57.8	50.8	N/A	N/A	N/A	N/A
Generator		60.6	57.6	N/A	N/A	N/A	N/A
Grader		67.5	63.5	N/A	N/A	N/A	N/A
Compactor (ground)		63.2	56.2	N/A	N/A	N/A	N/A
Pumps		62.9	59.9	N/A	N/A	N/A	N/A
Pumps		60.9	57.9	N/A	N/A	N/A	N/A
Pumps		59.4	56.3	N/A	N/A	N/A	N/A
Roller		61.9	54.9	N/A	N/A	N/A	N/A
Dozer		64.8	60.8	N/A	N/A	N/A	N/A
Front End Loader		59.1	55.1	N/A	N/A	N/A	N/A
Backhoe		59.5	55.5	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		68.1	65.1	N/A	N/A	N/A	N/A
Welder / Torch		54	50	N/A	N/A	N/A	N/A
	Total	68.1	71.1	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

				---- Receptor #4 ----
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	460	0
Concrete Mixer Truck	No	40		78.8	460	0
Crane	No	16		80.6	460	0
Man Lift	No	20		74.7	460	0
Generator	No	50		80.6	460	0
Grader	No	40	85		460	0
Compactor (ground)	No	20		83.2	460	0
Pumps	No	50		80.9	460	0
Pumps	No	50		80.9	460	0
Pumps	No	50		80.9	460	0
Roller	No	20		80	460	0
Dozer	No	40		81.7	460	0
Front End Loader	No	40		79.1	460	0
Backhoe	No	40		77.6	460	0
All Other Equipment > 5 HP	No	50	85		460	0

Welder / Torch	No	40		74	460	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	58.4	54.4	N/A	N/A	N/A	N/A
Concrete Mixer Truck	59.5	55.5	N/A	N/A	N/A	N/A
Crane	61.3	53.3	N/A	N/A	N/A	N/A
Man Lift	55.4	48.4	N/A	N/A	N/A	N/A
Generator	61.4	58.3	N/A	N/A	N/A	N/A
Grader	65.7	61.7	N/A	N/A	N/A	N/A
Compactor (ground)	64	57	N/A	N/A	N/A	N/A
Pumps	61.7	58.7	N/A	N/A	N/A	N/A
Pumps	61.7	58.7	N/A	N/A	N/A	N/A
Pumps	61.7	58.7	N/A	N/A	N/A	N/A
Roller	60.7	53.7	N/A	N/A	N/A	N/A
Dozer	62.4	58.4	N/A	N/A	N/A	N/A
Front End Loader	59.8	55.9	N/A	N/A	N/A	N/A
Backhoe	58.3	54.3	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65.7	62.7	N/A	N/A	N/A	N/A
Welder / Torch	54.7	50.7	N/A	N/A	N/A	N/A
Total	65.7	69.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Pump Station Construction

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - Residence 300'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	400	0
Grader	No	40	85		350	0
Paver	No	50		77.2	400	0
Compactor (ground)	No	20		83.2	300	0
Roller	No	20		80	350	0
Dozer	No	40		81.7	400	0
Front End Loader	No	40		79.1	400	0
Backhoe	No	40		77.6	350	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.5	54.5	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Compactor (ground)	67.7	60.7	N/A	N/A	N/A	N/A
Roller	63.1	56.1	N/A	N/A	N/A	N/A
Dozer	63.6	59.6	N/A	N/A	N/A	N/A

Front End Loader		61	57.1	N/A	N/A	N/A	N/A
Backhoe		60.7	56.7	N/A	N/A	N/A	N/A
	Total	68.1	68.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - Residence 500'	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	600	0
Grader	No	40	85		550	0
Paver	No	50		77.2	600	0
Compactor (ground)	No	20		83.2	500	0
Roller	No	20		80	600	0
Dozer	No	40		81.7	550	0
Front End Loader	No	40		79.1	600	0
Backhoe	No	40		77.6	550	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		59	51	N/A	N/A	N/A	N/A
Grader		64.2	60.2	N/A	N/A	N/A	N/A
Paver		55.6	52.6	N/A	N/A	N/A	N/A
Compactor (ground)		63.2	56.2	N/A	N/A	N/A	N/A
Roller		58.4	51.4	N/A	N/A	N/A	N/A
Dozer		60.8	56.9	N/A	N/A	N/A	N/A
Front End Loader		57.5	53.5	N/A	N/A	N/A	N/A
Backhoe		56.7	52.8	N/A	N/A	N/A	N/A
	Total	64.2	64.5	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	100	0
Grader	No	40	85		125	0
Paver	No	50		77.2	125	0
Compactor (ground)	No	20		83.2	150	0
Roller	No	20		80	125	0
Dozer	No	40		81.7	150	0
Front End Loader	No	40		79.1	125	0
Backhoe	No	40		77.6	125	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		74.5	66.6	N/A	N/A	N/A	N/A

Grader		77	73.1	N/A	N/A	N/A	N/A
Paver		69.3	66.3	N/A	N/A	N/A	N/A
Compactor (ground)		73.7	66.7	N/A	N/A	N/A	N/A
Roller		72	65.1	N/A	N/A	N/A	N/A
Dozer		72.1	68.1	N/A	N/A	N/A	N/A
Front End Loader		71.2	67.2	N/A	N/A	N/A	N/A
Backhoe		69.6	65.6	N/A	N/A	N/A	N/A
	Total	77	77.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

			Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Impact Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	260	0
Grader	No	40	85		260	0
Paver	No	50		77.2	260	0
Compactor (ground)	No	20		83.2	260	0
Roller	No	20		80	260	0
Dozer	No	40		81.7	260	0
Front End Loader	No	40		79.1	260	0
Backhoe	No	40		77.6	260	0

	Results					
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	66.2	58.3	N/A	N/A	N/A	N/A
Grader	70.7	66.7	N/A	N/A	N/A	N/A
Paver	62.9	59.9	N/A	N/A	N/A	N/A
Compactor (ground)	68.9	61.9	N/A	N/A	N/A	N/A
Roller	65.7	58.7	N/A	N/A	N/A	N/A
Dozer	67.3	63.4	N/A	N/A	N/A	N/A
Front End Loader	64.8	60.8	N/A	N/A	N/A	N/A
Backhoe	63.2	59.3	N/A	N/A	N/A	N/A
Total	70.7	71.1	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/4/2019
Case Description: De Soto Tanks EIR - Pipe Installation

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source -Receiver 30'	Residential	65	60	55

			Equipment Spec Lmax	Actual Lmax	Receptor Distance	Estimated Shielding
Description	Impact Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	30	0

Drill Rig Truck	No	20		79.1	40	0
Crane	No	16		80.6	50	0
Excavator	No	40		80.7	75	0
Man Lift	No	20		74.7	85	0
Generator	No	50		80.6	100	0
Pumps	No	50		80.9	125	0
Front End Loader	No	40		79.1	75	0
Backhoe	No	40		77.6	50	0
Welder / Torch	No	40		74	100	0
All Other Equipment > 5 HP	No	50	85		150	0
Concrete Saw	No	20		89.6	125	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	82.1	78.1	N/A	N/A	N/A	N/A
Drill Rig Truck	81.1	74.1	N/A	N/A	N/A	N/A
Crane	80.6	72.6	N/A	N/A	N/A	N/A
Excavator	77.2	73.2	N/A	N/A	N/A	N/A
Man Lift	70.1	63.1	N/A	N/A	N/A	N/A
Generator	74.6	71.6	N/A	N/A	N/A	N/A
Pumps	73	70	N/A	N/A	N/A	N/A
Front End Loader	75.6	71.6	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A
Welder / Torch	68	64	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	75.5	72.4	N/A	N/A	N/A	N/A
Concrete Saw	81.6	74.6	N/A	N/A	N/A	N/A
Total	82.1	83.8	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - Receiver 200'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	200	0
Drill Rig Truck	No	20		79.1	200	0
Crane	No	16		80.6	200	0
Excavator	No	40		80.7	200	0
Man Lift	No	20		74.7	200	0
Generator	No	50		80.6	200	0
Pumps	No	50		80.9	200	0
Front End Loader	No	40		79.1	200	0
Backhoe	No	40		77.6	200	0
Welder / Torch	No	40		74	200	0
All Other Equipment > 5 HP	No	50	85		200	0
Concrete Saw	No	20		89.6	200	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	65.6	61.6	N/A	N/A	N/A	N/A
Drill Rig Truck	67.1	60.1	N/A	N/A	N/A	N/A
Crane	68.5	60.6	N/A	N/A	N/A	N/A
Excavator	68.7	64.7	N/A	N/A	N/A	N/A

Man Lift		62.7	55.7	N/A	N/A	N/A	N/A
Generator		68.6	65.6	N/A	N/A	N/A	N/A
Pumps		68.9	65.9	N/A	N/A	N/A	N/A
Front End Loader		67.1	63.1	N/A	N/A	N/A	N/A
Backhoe		65.5	61.5	N/A	N/A	N/A	N/A
Welder / Torch		62	58	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		73	69.9	N/A	N/A	N/A	N/A
Concrete Saw		77.5	70.5	N/A	N/A	N/A	N/A
	Total	77.5	76	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	100	0
Drill Rig Truck	No	20		79.1	150	0
Crane	No	16		80.6	125	0
Excavator	No	40		80.7	150	0
Man Lift	No	20		74.7	125	0
Generator	No	50		80.6	150	0
Pumps	No	50		80.9	150	0
Front End Loader	No	40		79.1	200	0
Backhoe	No	40		77.6	150	0
Welder / Torch	No	40		74	150	0
All Other Equipment > 5 HP	No	50	85		200	0
Concrete Saw	No	20		89.6	175	0

	Results					
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	71.6	67.7	N/A	N/A	N/A	N/A
Drill Rig Truck	69.6	62.6	N/A	N/A	N/A	N/A
Crane	72.6	64.6	N/A	N/A	N/A	N/A
Excavator	71.2	67.2	N/A	N/A	N/A	N/A
Man Lift	66.7	59.8	N/A	N/A	N/A	N/A
Generator	71.1	68.1	N/A	N/A	N/A	N/A
Pumps	71.4	68.4	N/A	N/A	N/A	N/A
Front End Loader	67.1	63.1	N/A	N/A	N/A	N/A
Backhoe	68	64	N/A	N/A	N/A	N/A
Welder / Torch	64.5	60.5	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	73	69.9	N/A	N/A	N/A	N/A
Concrete Saw	78.7	71.7	N/A	N/A	N/A	N/A
Total	78.7	77.8	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)

Compressor (air)	No	40		77.7	300	0
Drill Rig Truck	No	20		79.1	300	0
Crane	No	16		80.6	300	0
Excavator	No	40		80.7	300	0
Man Lift	No	20		74.7	300	0
Generator	No	50		80.6	300	0
Pumps	No	50		80.9	300	0
Front End Loader	No	40		79.1	300	0
Backhoe	No	40		77.6	300	0
Welder / Torch	No	40		74	300	0
All Other Equipment > 5 HP	No	50	85		300	0
Concrete Saw	No	20		89.6	300	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	62.1	58.1	N/A	N/A	N/A	N/A
Drill Rig Truck	63.6	56.6	N/A	N/A	N/A	N/A
Crane	65	57	N/A	N/A	N/A	N/A
Excavator	65.1	61.2	N/A	N/A	N/A	N/A
Man Lift	59.1	52.1	N/A	N/A	N/A	N/A
Generator	65.1	62.1	N/A	N/A	N/A	N/A
Pumps	65.4	62.4	N/A	N/A	N/A	N/A
Front End Loader	63.5	59.6	N/A	N/A	N/A	N/A
Backhoe	62	58	N/A	N/A	N/A	N/A
Welder / Torch	58.4	54.5	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	69.4	66.4	N/A	N/A	N/A	N/A
Concrete Saw	74	67	N/A	N/A	N/A	N/A
Total	74	72.5	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Flow Control Station

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Nearest Source - Residence 300'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	400	0
Pumps	No	50		80.9	350	0
Pumps	No	50		80.9	400	0
All Other Equipment > 5 HP	No	50	85		300	0
Welder / Torch	No	40		74	350	0
Man Lift	No	20		74.7	400	0
Excavator	No	40		80.7	350	0
Backhoe	No	40		77.6	400	0
Roller	No	20		80	400	0
Generator	No	50		80.6	350	0
Compactor (ground)	No	20		83.2	400	0
Front End Loader	No	40		79.1	400	0

Tractor	No	40	84	350	0	

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.5	54.5	N/A	N/A	N/A	N/A
Pumps	64	61	N/A	N/A	N/A	N/A
Pumps	62.9	59.9	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	69.4	66.4	N/A	N/A	N/A	N/A
Welder / Torch	57.1	53.1	N/A	N/A	N/A	N/A
Man Lift	56.6	49.6	N/A	N/A	N/A	N/A
Excavator	63.8	59.8	N/A	N/A	N/A	N/A
Backhoe	59.5	55.5	N/A	N/A	N/A	N/A
Roller	61.9	54.9	N/A	N/A	N/A	N/A
Generator	63.7	60.7	N/A	N/A	N/A	N/A
Compactor (ground)	65.2	58.2	N/A	N/A	N/A	N/A
Front End Loader	61	57.1	N/A	N/A	N/A	N/A
Tractor	67.1	63.1	N/A	N/A	N/A	N/A
Total	69.4	71.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - Residence 500'	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	600	0
Pumps	No	50		80.9	550	0
Pumps	No	50		80.9	600	0
All Other Equipment > 5 HP	No	50	85		500	0
Welder / Torch	No	40		74	600	0
Man Lift	No	20		74.7	550	0
Excavator	No	40		80.7	600	0
Backhoe	No	40		77.6	500	0
Roller	No	20		80	600	0
Generator	No	50		80.6	500	0
Compactor (ground)	No	20		83.2	600	0
Front End Loader	No	40		79.1	550	0
Tractor	No	40	84		600	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	59	51	N/A	N/A	N/A	N/A
Pumps	60.1	57.1	N/A	N/A	N/A	N/A
Pumps	59.4	56.3	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	65	62	N/A	N/A	N/A	N/A
Welder / Torch	52.4	48.4	N/A	N/A	N/A	N/A
Man Lift	53.9	46.9	N/A	N/A	N/A	N/A
Excavator	59.1	55.1	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A
Roller	58.4	51.4	N/A	N/A	N/A	N/A
Generator	60.6	57.6	N/A	N/A	N/A	N/A
Compactor (ground)	61.6	54.7	N/A	N/A	N/A	N/A
Front End Loader	58.3	54.3	N/A	N/A	N/A	N/A

Tractor		62.4	58.4	N/A	N/A	N/A	N/A
	Total	65	67.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	100	0
Pumps	No	50		80.9	125	0
Pumps	No	50		80.9	150	0
All Other Equipment > 5 HP	No	50	85		150	0
Welder / Torch	No	40		74	125	0
Man Lift	No	20		74.7	150	0
Excavator	No	40		80.7	125	0
Backhoe	No	40		77.6	125	0
Roller	No	20		80	120	0
Generator	No	50		80.6	175	0
Compactor (ground)	No	20		83.2	150	0
Front End Loader	No	40		79.1	150	0
Tractor	No	40	84		175	0

		Calculated (dBA)		Results Noise Limits (dBA) Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		74.5	66.6	N/A	N/A	N/A	N/A
Pumps		73	70	N/A	N/A	N/A	N/A
Pumps		71.4	68.4	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP		75.5	72.4	N/A	N/A	N/A	N/A
Welder / Torch		66	62.1	N/A	N/A	N/A	N/A
Man Lift		65.2	58.2	N/A	N/A	N/A	N/A
Excavator		72.8	68.8	N/A	N/A	N/A	N/A
Backhoe		69.6	65.6	N/A	N/A	N/A	N/A
Roller		72.4	65.4	N/A	N/A	N/A	N/A
Generator		69.7	66.7	N/A	N/A	N/A	N/A
Compactor (ground)		73.7	66.7	N/A	N/A	N/A	N/A
Front End Loader		69.6	65.6	N/A	N/A	N/A	N/A
Tractor		73.1	69.1	N/A	N/A	N/A	N/A
	Total	75.5	78.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	260	0
Pumps	No	50		80.9	260	0
Pumps	No	50		80.9	260	0
All Other Equipment > 5 HP	No	50	85		260	0
Welder / Torch	No	40		74	260	0

Man Lift	No	20		74.7	260	0
Excavator	No	40		80.7	260	0
Backhoe	No	40		77.6	260	0
Roller	No	20		80	260	0
Generator	No	50		80.6	260	0
Compactor (ground)	No	20		83.2	260	0
Front End Loader	No	40		79.1	260	0
Tractor	No	40	84		260	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	66.2	58.3	N/A	N/A	N/A	N/A
Pumps	66.6	63.6	N/A	N/A	N/A	N/A
Pumps	66.6	63.6	N/A	N/A	N/A	N/A
All Other Equipment > 5 HP	70.7	67.7	N/A	N/A	N/A	N/A
Welder / Torch	59.7	55.7	N/A	N/A	N/A	N/A
Man Lift	60.4	53.4	N/A	N/A	N/A	N/A
Excavator	66.4	62.4	N/A	N/A	N/A	N/A
Backhoe	63.2	59.3	N/A	N/A	N/A	N/A
Roller	65.7	58.7	N/A	N/A	N/A	N/A
Generator	66.3	63.3	N/A	N/A	N/A	N/A
Compactor (ground)	68.9	61.9	N/A	N/A	N/A	N/A
Front End Loader	64.8	60.8	N/A	N/A	N/A	N/A
Tractor	69.7	65.7	N/A	N/A	N/A	N/A
Total	70.7	73.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 10/2/2019
Case Description: De Soto Tanks EIR - Finish Grading / Site Improvements

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - Residence 300'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	400	0
Grader	No	40	85		350	0
Paver	No	50		77.2	400	0
Compactor (ground)	No	20		83.2	300	0
Roller	No	20		80	350	0
Dozer	No	40		81.7	400	0
Front End Loader	No	40		79.1	350	0
Backhoe	No	40		77.6	400	0

Results

	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	62.5	54.5	N/A	N/A	N/A	N/A
Grader	68.1	64.1	N/A	N/A	N/A	N/A

Paver		59.2	56.1	N/A	N/A	N/A	N/A
Compactor (ground)		67.7	60.7	N/A	N/A	N/A	N/A
Roller		63.1	56.1	N/A	N/A	N/A	N/A
Dozer		63.6	59.6	N/A	N/A	N/A	N/A
Front End Loader		62.2	58.2	N/A	N/A	N/A	N/A
Backhoe		59.5	55.5	N/A	N/A	N/A	N/A
	Total	68.1	68.3	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - Residence 500'	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	600	0
Grader	No	40	85		550	0
Paver	No	50		77.2	600	0
Compactor (ground)	No	20		83.2	500	0
Roller	No	20		80	600	0
Dozer	No	40		81.7	550	0
Front End Loader	No	40		79.1	600	0
Backhoe	No	40		77.6	500	0

			Results			
	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	59	51	N/A	N/A	N/A	N/A
Grader	60.1	57.1	N/A	N/A	N/A	N/A
Paver	59.4	56.3	N/A	N/A	N/A	N/A
Compactor (ground)	65	62	N/A	N/A	N/A	N/A
Roller	52.4	48.4	N/A	N/A	N/A	N/A
Dozer	53.9	46.9	N/A	N/A	N/A	N/A
Front End Loader	59.1	55.1	N/A	N/A	N/A	N/A
Backhoe	57.6	53.6	N/A	N/A	N/A	N/A
Total	65	67.2	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Nearest Source - School	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	100	0
Grader	No	40	85		125	0
Paver	No	50		77.2	150	0
Compactor (ground)	No	20		83.2	150	0
Roller	No	20		80	125	0
Dozer	No	40		81.7	150	0
Front End Loader	No	40		79.1	125	0
Backhoe	No	40		77.6	125	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		74.5	66.6	N/A	N/A	N/A	N/A
Grader		73	70	N/A	N/A	N/A	N/A
Paver		71.4	68.4	N/A	N/A	N/A	N/A
Compactor (ground)		75.5	72.4	N/A	N/A	N/A	N/A
Roller		66	62.1	N/A	N/A	N/A	N/A
Dozer		65.2	58.2	N/A	N/A	N/A	N/A
Front End Loader		72.8	68.8	N/A	N/A	N/A	N/A
Backhoe		69.6	65.6	N/A	N/A	N/A	N/A
	Total	75.5	78.9	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Typical Source - School	Residential	65	60	55

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Crane	No	16		80.6	260	0
Grader	No	40	85		260	0
Paver	No	50		77.2	260	0
Compactor (ground)	No	20		83.2	260	0
Roller	No	20		80	260	0
Dozer	No	40		81.7	260	0
Front End Loader	No	40		79.1	260	0
Backhoe	No	40		77.6	260	0

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		66.2	58.3	N/A	N/A	N/A	N/A
Grader		66.6	63.6	N/A	N/A	N/A	N/A
Paver		66.6	63.6	N/A	N/A	N/A	N/A
Compactor (ground)		70.7	67.7	N/A	N/A	N/A	N/A
Roller		59.7	55.7	N/A	N/A	N/A	N/A
Dozer		60.4	53.4	N/A	N/A	N/A	N/A
Front End Loader		66.4	62.4	N/A	N/A	N/A	N/A
Backhoe		63.2	59.3	N/A	N/A	N/A	N/A
	Total	70.7	73.7	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

APPENDIX E-3

Operational Noise Calculations

LADWP De Soto Tanks EIR

Operational Noise - Pump Station (Daytime)

Based on e-mails from Applicant, 1 to 3 of 4 pumps would be operational at any one time to meet demand.

Pumps would be enclosed within a masonry building, fitted with vents and with an HVAC system. Assume that building would provide a minimum of 30 dB noise reduction.

Assumed pump noise source level:	99	dBA at 3.28 feet
Assumed HVAC noise source level:	83	dBA at 3.28 feet
Distance to nearest NSLU (School to the south)	100	feet
Distance to the nearest residence:	400	feet

At the school to the south:

Estimated pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

	44.1	dBA Pumps
	53.3	dBA HVAC
	53.8	**dBA Total**

Ambient noise level at the school (from noise measurements):

59.3 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

60.4 dBA L_{eq}

Resulting increase: **1.1 dBA**

At the nearest residence, to the southeast:

Estimated pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

	32.0	dBA Pumps
	41.3	dBA HVAC
	41.8	**dBA Total**

Ambient noise level at the residences (from noise measurements):

57.3 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

57.4 dBA L_{eq}

Resulting increase: **0.1 dBA**

Operational Noise - Pump Station (Nighttime)

Based on e-mails from Applicant, 1 to 3 of 4 pumps would be operational at any one time to meet demand.

Pumps would be enclosed within a masonry building, fitted with vents and with an HVAC system. Assume that building would provide a minimum of 30 dB noise reduction

Assumed pump noise source level:	99	dBA at 3.28 feet	(Interior)
Assumed HVAC noise source level:	83	dBA at 3.28 feet	(Exterior

Distance to the nearest residence: 400 feet

At the nearest residence, to the southeast:

Estimated pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

32.0 dBA Pumps
41.3 dBA HVAC
41.8 dBA Total

Ambient nighttime noise level at the residences (estimated):

46.7 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

47.9 dBA L_{eq}

Resulting increase: **1.2 dBA**

Distance to nearest NSLU (School to the south) 100 feet

At the school to the south:

Estimated pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

44.1 dBA Pumps
53.3 dBA HVAC
53.8 dBA Total

Ambient nighttime noise level at the school (estimated):

48.5 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

54.9 dBA L_{eq}

Resulting increase: **6 dBA**

BUT, this is N/A because the school would not be operational during nighttime hours, typically.

Operational Noise - Generator (Daytime Only)

Emergency Generator (30 minutes per month)

Based upon provided spec's, generator would be housed within an enclosure alongside the pump station building and fitted with a silencer

Assumed generator noise source level: 65.8 dBA at 23 feet (with silencer and enclosure)

Distance to nearest NSLU (School to the south) 100 feet
Distance to the nearest residence: 400 feet

At the school to the south:

Estimated generator noise plus pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

53.0 dBA Generator

53.8 dBA Pumps and HVAC

56.4 dBA Total

Ambient noise level at the school (from noise measurements):

59.3 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

61.1 dBA L_{eq}

Resulting increase: **1.8 dBA**

At the nearest residence, to the southeast:

Estimated generator noise plus pump noise level with building, assuming 3 pumps operating and HVAC exterior to building

41.0 dBA Generator

41.8 dBA Pumps and HVAC

44.4 dBA Total

Ambient noise level at the residences (from noise measurements):

57.3 dBA L_{eq}

Combined noise levels (ambient plus mechanical):

57.5 dBA L_{eq}

Resulting increase: **0.2 dBA**

Engine Silencer Performance Summary

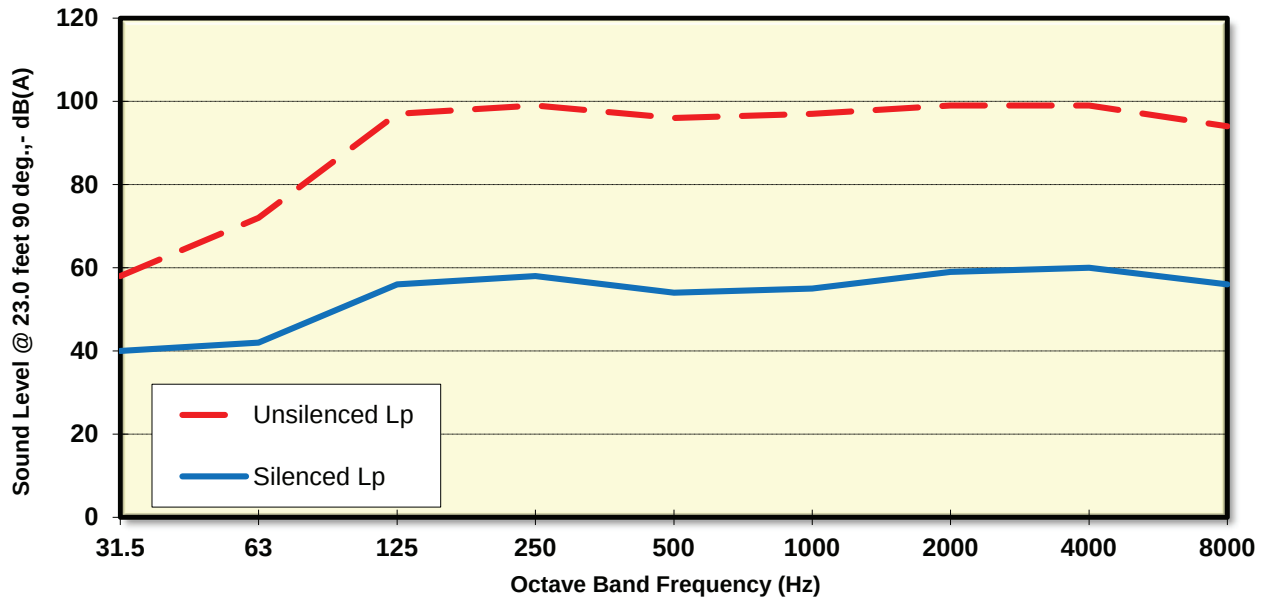
Customer	Rypos	**Date:**	2-Apr-18
Project Name	CAT 3516C extended length ADPF7	**By:**	R. Evans

Engine Details			**Piping Details**	
Engine Make	CAT		Pipe Diameter	
Engine Type	3516C		Straight Pipe Length	
Exhaust Flow Rate	18,805	cfm	Number of Sawcut Elbows	0
Exhaust Temperature	850.0	°F	Number of 90 deg. Long Radius Elbows	0
Max Allowable Backpressure	10	inch WG	Number of 90 deg. Short Radius Elbows	0

Silencer Performance			**Silencer Details for Part Number: 0**		
Silencer Backpressure	5.10	inch WG	No. of Silencers per Engine	1	
Total Backpressure	5.10	inch WG	Inlet Size/Outlet size (NB)	22	inches
Calculated Exhaust Gas Velocity	7129.9	ft/min	Silencer Type & Silencing Grade	Hospital	
Required Sound Level- Lp	70.0	dB(A)	Inlet-Outlet Configuration	Bottom In/Top Out	
Required Lp at:	23.0 feet	90 deg	Silencer Shape	Box	
Predicted Insertion Loss	40.2	dB	Silencer Material	Mild Steel	
Predicted Sound Level	65.8	dB(A)	Silencer Finish	Hi-Temp Gray Paint	

Predicted Silencer Performance Curve- Sound Level @ 23.0 feet 90 deg.,- dB(A)

Frequency Hz	Total	31.5	63	125	250	500	1000	2000	4000	8000
Unsilenced Lp	106.1	58	72	97	99	96	97	99	99	94
Silenced Lp	65.8	40	42	56	58	54	55	59	60	56



Comments:
Extended length ADPF7 with 22" DIA outlet
Backpressure estimates do not include DPF elements, catalyst elements, transfer tubes or external piping.