Appendix J

Noise

Appendix J-1

Noise Measurement Site Data Logs and Equipment Calibration Records

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 Red **Job #** 28067571.40211

SITE IDENTIFICATION: LT-1 **OBSERVER(s):** RA & RM
START DATE & TIME: 3/2/09 10:56:00 3/3 11:58 AM **END DATE & TIME:** 11:15 AM 3/3A
ADDRESS: Ackerman (Just East)
GPS coordinates: 35° 20' 18.8 N 119° 23' 32.4 W

[Meter Time = GPS Time + 11]

ID

TEMP: 70 °F HUMIDITY: 56 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: / MPH DIR: N NE E SE S SW W NW STEADY GUSTY ~ MPH Sine Anemometer 95022
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Weather

INSTRUMENT: LD 820 **TYPE:** 1 2 **SERIAL #:** 1528 Red
CALIBRATOR: CAL 200 **SERIAL #:** 2794

CALIBRATION CHECK: **PRE-TEST** 93.7 **dBA SPL** **POST-TEST** 93.6 **dBA SPL** **WINDSCREEN** ✓

SETTINGS: **A-WEIGHTED** **SLOW** **FAST** **FRONTAL** **RANDOM** **ANSI** **OTHER:**

Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
3/2 1	6:58 PM	10:15 AM							
3/3 2	11:58 AM								

COMMENTS:

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC** **AIRCRAFT** **RAIL** **INDUSTRIAL** **AMBIENT** **OTHER** Birds
ROADWAY TYPE: Hard Sfc Asphalt ADOHR Rd.

COUNT DURATION: ____ -MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

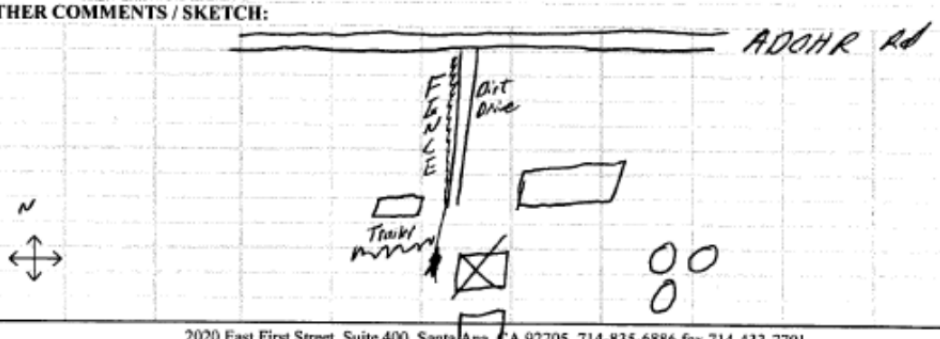
SPEED ESTIMATED BY: **RADAR** / **DRIVING** / **OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**

OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD** **SOFT** **MIXED** **FLAT** **OTHER:**
PHOTOS: ✓
OTHER COMMENTS / SKETCH:



Description / Sketch

meslform3.xls

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 **Job #** 28067571.40211

SITE IDENTIFICATION: ~~ST~~ NT-1 (ST-1) **OBSERVER(s):** RA + RM
START DATE & TIME: 3/3 + 3/4 **END DATE & TIME:** 3/3 + 3/4
ADDRESS:

GPS coordinates: N 35° 20' 23.7" W 119° 23' 28.4"

ID

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: **CALM LIGHT MODERATE VARIABLE**
WINDSPEED:_____MPH DIR: **N NE E SE S SW W NW** **STEADY GUSTY**_____MPH
SKY: **CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN** Other: _____

Weather

INSTRUMENT: B + K 2250 **TYPE:** 1 2 **SERIAL #:** 2672021
CALIBRATOR: CAL 200 **SERIAL #:** 2799

CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓

SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:**_____

	Rec #	Start Time	End Time								
Heca 2029	1	21:10	21:20	3/3: L_{eq} 45.8	L_{max} 61.4	L_{min} 37.2	L_{90} 40.5	L_{50} 44.2	L_{10} 49.0		
Heca 2030	2	21:21	21:31	3/3: L_{eq} 46.5	L_{max} 57.4	L_{min} 38.4	L_{90} 42.0	L_{50} 44.9	L_{10} 49.2		
	___	___	___	: L_{eq} ___	L_{max} ___	L_{min} ___	L_{90} ___	L_{50} ___	L_{10} ___		
	___	___	___	: L_{eq} ___	L_{max} ___	L_{min} ___	L_{90} ___	L_{50} ___	L_{10} ___		

COMMENTS: (1) windy (19 mph) w/ gusts up to 15 mph, sheep

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER**
ROADWAY TYPE:

COUNT DURATION:_____**-MINUTE**

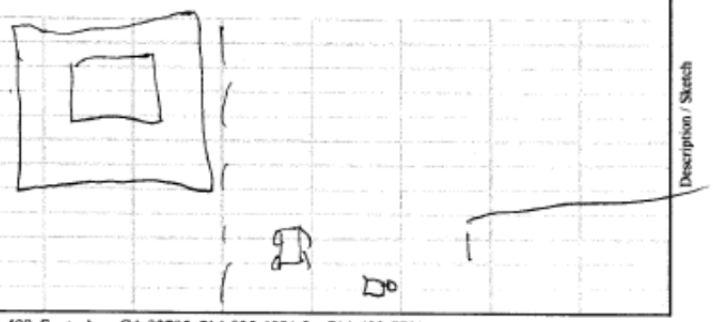
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES:	___ / ___	___ / ___	___ / ___	___ / ___

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS**
distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: NT-1/ST-1 OBSERVER(s): Ron + Ryan
START DATE & TIME: 3/4 on 3/2 9:40 on 3/3 END DATE & TIME:
ADDRESS:

GPS coordinates: ST-1 N 35° 20' 17.9" W 119° 23' 33.9"
NT-1 N 35° 20' 23.7" W 119° 23' 28.4"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: B+K 2250 TYPE: 1 2 SERIAL #: 2672021
CALIBRATOR: CAL 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓
SETTINGS: A WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:

	Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
Heca2003	1	23:01 / 23:11	29.8	~~[illegible]~~ 48.8	25.4	27.1	28.5	31.3
Heca2004	2	23:12 / 23:22	34.5	52.2	26.4	29.2	32.1	36.3
Heca2009	3	12:04 / 12:14	43.8	57.3	34.3	38.2	41.3	46.2
Heca2010	4	12:15 / 12:25	42.4	52.7	31.0	36.6	41.3	45.4

COMMENTS: (1) sheep (2) distant traffic from Stockdale highway (3) birds; industrial (tractor, distant car (near) twice; dog barking, airplane overhead

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER birds
ROADWAY TYPE:
COUNT DURATION:_____-MINUTE

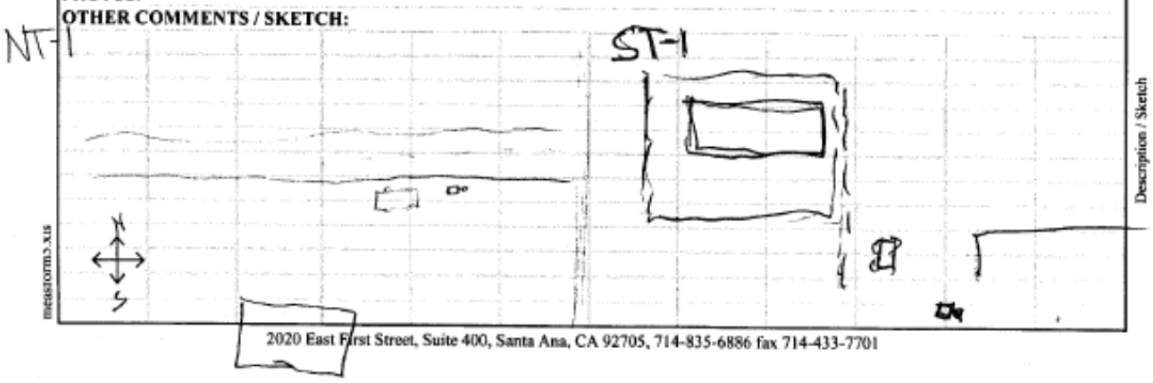
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



measstorm3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: LT-2 OBSERVER(s): RR + RM
START DATE & TIME: 3/2/09 17:30 END DATE & TIME: 3/3/09 12:35 Meter= GPS+30
ADDRESS: Adams (Tule House)
GPS coordinates: 36°19'58.7"N 119°22'21.0"

Weather

TEMP: 70 °F HUMIDITY: 66 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 1 MPH DIR: N NE E SE S SW (W) NW STEADY GUSTY ____ MPH
SKY: CLEAR SUNNY DARK (PARTLY CLOUDY) OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: LD 820 TYPE: (1) 2 SERIAL #: 1597 Mic 2491 Green
CALIBRATOR: CAL 200 SERIAL #: 2794 101267
CALIBRATION CHECK: PRE-TEST 93.8 dBA SPL POST-TEST 93.8 dBA SPL WINDSCREEN ✓
SETTINGS (A-WEIGHTED) (SLOW) FAST FRONTAL (RANDOM) ANSI OTHER: _____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
1	3/2 17:30 3/3 12:35							
2	3/3 13:08							

COMMENTS:

Source Info and Traffic Counts

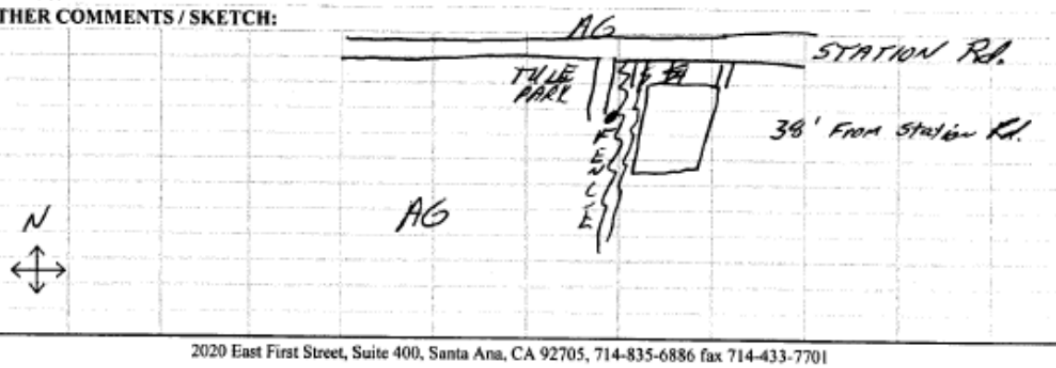
PRIMARY NOISE(S): (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL (AMBIENT) OTHER
ROADWAY TYPE: Hard Surface Asphalt [I-5 barely audible when quiet]
COUNT DURATION: ____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:				
MED. TRUCKS:				
HVY TRUCKS:				
BUSES:				
MOTORCYCLES:				

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER
OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / (distant BARKING DOGS) Occasional / (BIRDS)
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT (MIXED) FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ST-2 / NT-2 OBSERVER(s): Ron + Ryan
START DATE & TIME: 3/3 13:14, 1331 END DATE & TIME: 3/3 13:24, 13:41
ADDRESS: Tule House

GPS coordinates: N 35° 19' 58.4" W 119° 22' 20.7"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: B+K 2250 TYPE: 1 2 SERIAL #: 2672071
CALIBRATOR: CAL 200 SERIAL #: 2794

CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓

SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

	Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
			ST-2							
heca2011	1	13:14	13:24	51.4	72.4	24.8	26.6	29.2	44.0	
Heca2012	2	13:31	13:41	48.0	75.2	24.2	25.9	28.7	36.6	
			NT-2							

COMMENTS: (1) cars, birds, distant highway

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

COUNT DURATION:_____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:				
MED. TRUCKS:				
HVY TRUCKS:				
BUSES:				
MOTORCYCLES:				

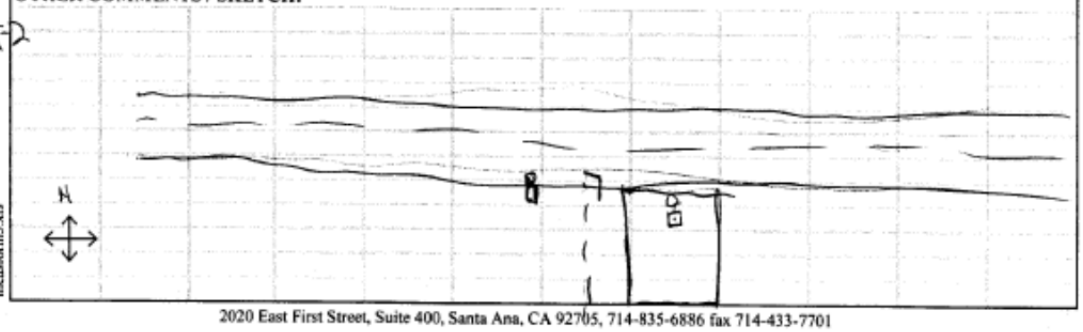
SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:

ST-2



FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 **Job #** 28067571.40211

SITE IDENTIFICATION: ST-2 **OBSERVER(s):** Ron + Ryan
START DATE & TIME: 3/3 below **END DATE & TIME:** 3/3 below
ADDRESS: Tule House
GPS coordinates: N 35° 19' 59.2" W 119° 22' 17.0"

ID

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 11 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 15 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Weather

INSTRUMENT: B+K 2250 **TYPE:** 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2799

CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓

SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:**

	Rec #	Start Time	End Time								
Heca 2007	1	0:00	0:10	L_{eq} 42.4	L_{max} 61.5	L_{min} 32.2	L_{90} 34.0	L_{50} 35.3	L_{10} 37.1		
Heca 2008	2	0:11	0:21	L_{eq} 52.5	L_{max} 71.4	L_{min} 31.9	L_{90} 33.9	L_{50} 35.7	L_{10} 39.4		
Heca 2025	3	20:12	20:22	L_{eq} 53.4	L_{max} 75.1	L_{min} 38.5	L_{90} 43.0	L_{50} 48.3	L_{10} 55.8		
Heca 2026	4	20:23	20:33	L_{eq} 52.5	L_{max} 73.5	L_{min} 33.7	L_{90} 38.9	L_{50} 44.4	L_{10} 52.8		

NT-2

COMMENTS: (1) + (2) low freq industrial distant (3) winds up to 11 mph gusting to 15 (4) same winds

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER**
ROADWAY TYPE:

COUNT DURATION:_____-MINUTE

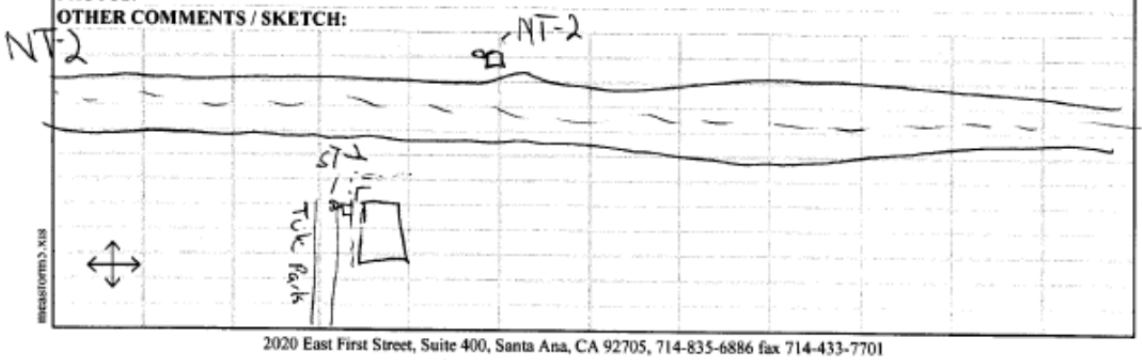
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measforms3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

SITE IDENTIFICATION: LT-3 **OBSERVER(s):** RR & RM
START DATE & TIME: 3/2/09 14:15 **END DATE & TIME:**
ADDRESS: Along Stockdale Rd Telephone Poles Time = GPS + 30
GPS coordinates: 35° 21' 17.2" N 119° 22' 24.5" W.

ID

TEMP: 65 °F HUMIDITY: 53 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: / MPH DIR: N NE E SE S SW W NW STEADY GUSTY ____ MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Weather

INSTRUMENT: LD 820 **TYPE:** 2 **SERIAL #:** 1470
CALIBRATOR: CAL 200 **SERIAL #:** 2794
CALIBRATION CHECK: **PRE-TEST** 93.8 **dBA SPL** **POST-TEST** 93.8 **dBA SPL** **WINDSCREEN** ✓
SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:** _____

Rec #	Start Time / End Time							
1	15:15 / ≈14:30	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
2	≈14:30 /	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
/	/	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
/	/	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	

COMMENTS:

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER**
ROADWAY TYPE: Hard Surface Asphalt
COUNT DURATION: _____ **-MINUTE** **SPEED (mph)** 35 **#2 COUNT:** **SPEED (mph)**

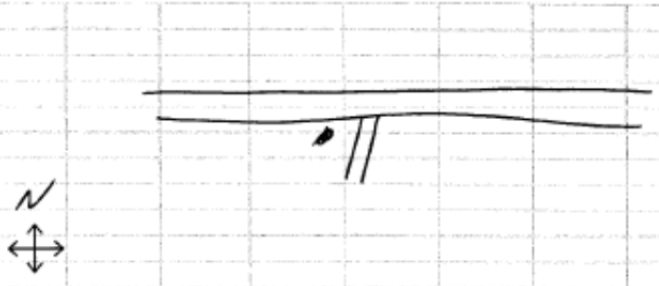
	NB / EB / SB / WB	NB EB / SB WB	NB / EB / SB / WB	NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

(HECA2001)

SITE IDENTIFICATION: ~~ST3~~ NT-3 (ST-3) **OBSERVER(s):** Ron and Ryan
START DATE & TIME: **END DATE & TIME:**
ADDRESS: Stockdale Highway
GPS coordinates: N 35° 21' 17.2 W 119° 22' 23.7'

ID

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Weather

INSTRUMENT: B+K 2250 **TYPE:** 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2791
CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓
SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:**_____

	Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
Heca 2001	1	22:27	22:33	55.5	80.7	27.6	29.8	31.4	47.8	
Heca 2002	2	22:39	22:49	63.3	88.7	27.5	30.4	34.8	54.2	

COMMENTS: (1) car at 22:27 ; (2) car @ 22:41

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER**
ROADWAY TYPE:

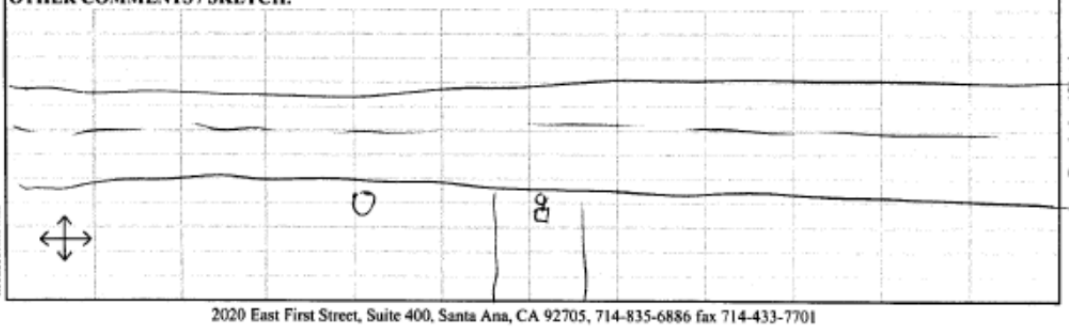
COUNT DURATION:_____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ST-3 OBSERVER(s): RR + RM
START DATE & TIME: 3/3 19:02, 19:18 END DATE & TIME: 3/3 19:12, 19:25
ADDRESS: Stockdale 3/4 / 3/4
GPS coordinates: N 35° 21' 17.2" W 119° 22' 23.7

Weather

Evening 3/3

TEMP: 66 °F HUMIDITY: 38 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 0 MPH DIR: N NE E SE S SW W NW STEADY GUSTY ____ MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: B+K 2250 TYPE: 1 2 SERIAL #: 2672071
CALIBRATOR: CAL 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER: _____

Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
1 (Heca 2021)	19:02	19:12	52.5	76.2	24.0	25.3	28.6	45.5
2 (Heca 2022)	19:18	19:25	58.5	79.8	23.2	24.9	29.2	54.9

COMMENTS: (1) some traffic, motorcycle/moped

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

COUNT DURATION: ____-MINUTE

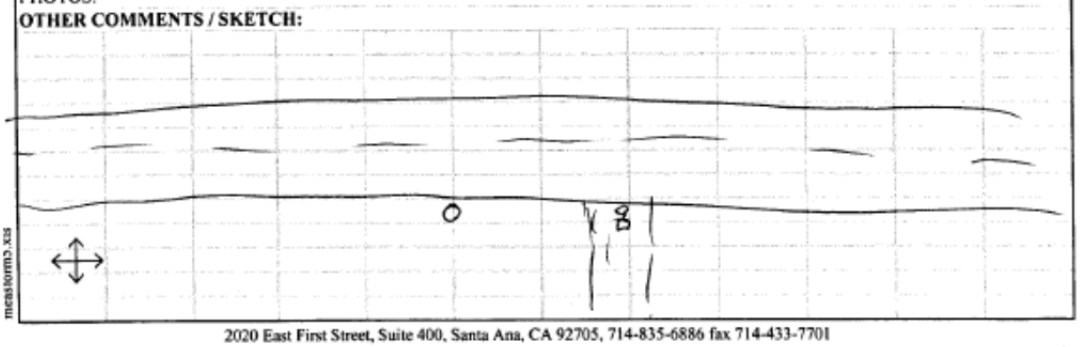
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



measforms.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 **Job #** 28067571.40211

SITE IDENTIFICATION: ST-3 **OBSERVER(s):** KM + RA
START DATE & TIME: **END DATE & TIME:**
ADDRESS: Stockdale Highway
GPS coordinates: N 35° 21 ' 17.2" W 119° 22 ' 23.7"

ID

Day time 3/3

TEMP: 72 °F HUMIDITY: 40 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 2.5 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 5 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Weather

INSTRUMENT: B+K 2250 **TYPE:** 1 / 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2794
CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓
SETTINGS: **A-WEIGHTED** **SLOW** **FAST** **FRONTAL** **RANDOM** **ANSI** **OTHER:**

	Rec #	Start Time	End Time		L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
Heca 2015	1	14:35	14:45	3/3	65.9	85.9	32.8	34.7	40.0	65.1	
Heca 2016	2	14:48	14:58	3/3	64.4	82.8	32.3	34.7	38.6	61.6	
	Evening on another sheet										

COMMENTS: birds, traffic,

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC** **AIRCRAFT** **RAIL** **INDUSTRIAL** **AMBIENT** **OTHER**
ROADWAY TYPE:

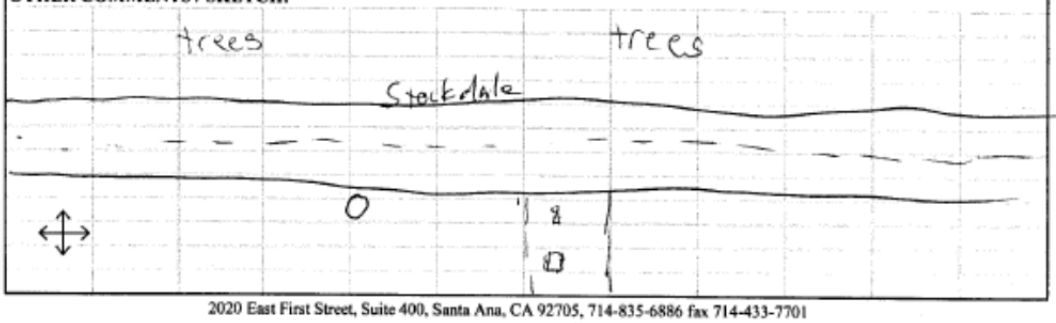
COUNT DURATION: ____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR** / **DRIVING** / **OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD** **SOFT** **MIXED** **FLAT** **OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS **Project Name:** HECA 2 **Job #** 28067571.40211

ID

SITE IDENTIFICATION: ST-~~0~~4 **OBSERVER(s):** RA + GD
START DATE & TIME: 12:45 4/28 **END DATE & TIME:** 2:00 AM 4/28
ADDRESS: ~~Topaz South~~ Tule Reserve
GPS coordinates: ~~N 35° 19' 09.8"~~ ~~W 119° 21' 36.6"~~ N 35°20'00.3" W 119°21'55.0"

Weather

TEMP: 50 °F HUMIDITY: 50 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 2 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 3 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: Yellow 820 GD **TYPE:** 2 **SERIAL #:** 1470
CALIBRATOR: CAL 200 **SERIAL #:** 2794
CALIBRATION CHECK: **PRE-TEST** 93.7 **dBA SPL** **POST-TEST** 93.7 **dBA SPL** **WINDSCREEN** ✓
SETTINGS: **A-WEIGHTED** **SLOW** **FAST** **FRONTAL** **RANDOM** **ANSI** **OTHER:** _____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
1	12:45 / 2:00	41.1	56.2	33.6	36.9	39.9	43.4	L_{25} 41.7
	/							L_2 45.5
	/							
	/							

COMMENTS: freeway, frogs, distant barking, generator

Source Info and Traffic Counts

PRIMARY NOISE(S): **TRAFFIC** **AIRCRAFT** **RAIL** **INDUSTRIAL** **AMBIENT** **OTHER**
ROADWAY TYPE: _____

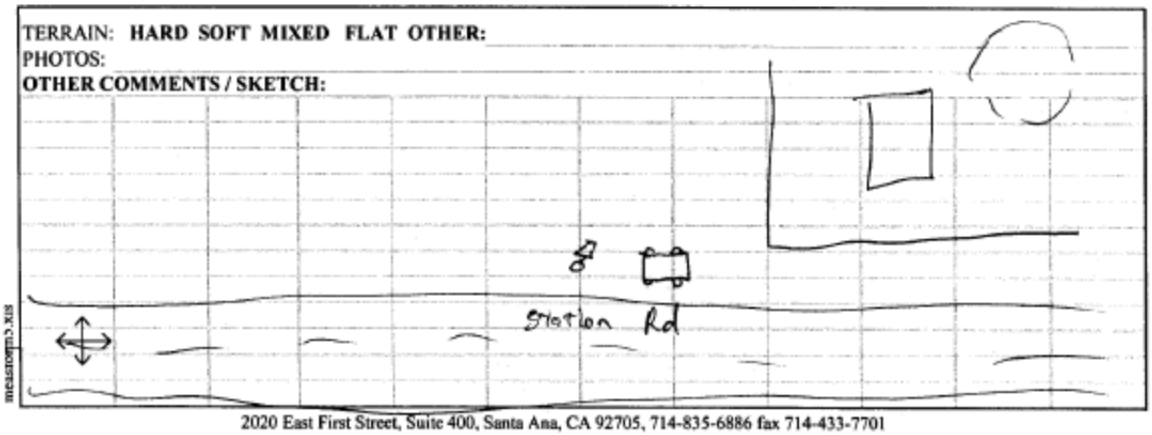
COUNT DURATION: ____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR** / **DRIVING** / **OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS** distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER: _____

Description / Sketch

TERRAIN: **HARD** **SOFT** **MIXED** **FLAT** **OTHER:** _____
PHOTOS:
OTHER COMMENTS / SKETCH:



measforms.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 **Job #** 28067571.40211

SITE IDENTIFICATION: ST-4 / NT-4 (Tule Reserve) **OBSERVER(s):** Ron + Ryan
START DATE & TIME: 23:33 (3/2) 13:49 (3/3) **END DATE & TIME:** 23:43 (3/2) 13:59 (3/3)
ADDRESS: Tule Elk Reserve
GPS coordinates: N 35° 20' 00.3" W 119° 21' 55.0"

ID

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Weather

INSTRUMENT: B+K 2250 **TYPE:** 1 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2794
CALIBRATION CHECK: PRE-TEST 93.9 **dBA SPL POST-TEST** 93.9 **dBA SPL WINDSCREEN** ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

	Rec #	Start Time	End Time		L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
HECA 2005	1	23:33	23:43	3/2	36.9	50.2	32.5	34.6	36.1	38.7	
HECA 2006	2	23:45	23:55	3/2	37.2	49.2	33.6	35.3	37.0	38.7	
HECA 2013	3	13:49	13:59	3/3	51.4	73.8	27.3	29.2	31.4	38.7	
HECA 2014	4	14:01	14:11	3/3	51.3	75.9	26.5	28.4	29.8	34.1	

Acoustic Measurements

COMMENTS: (1)+(2) crickets ; low freq industrial, distant
(3) birds, cars, distant traffic, overhead aircraft (distant), wind interacting w/ fence

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER crickets
ROADWAY TYPE:
COUNT DURATION:_____-MINUTE

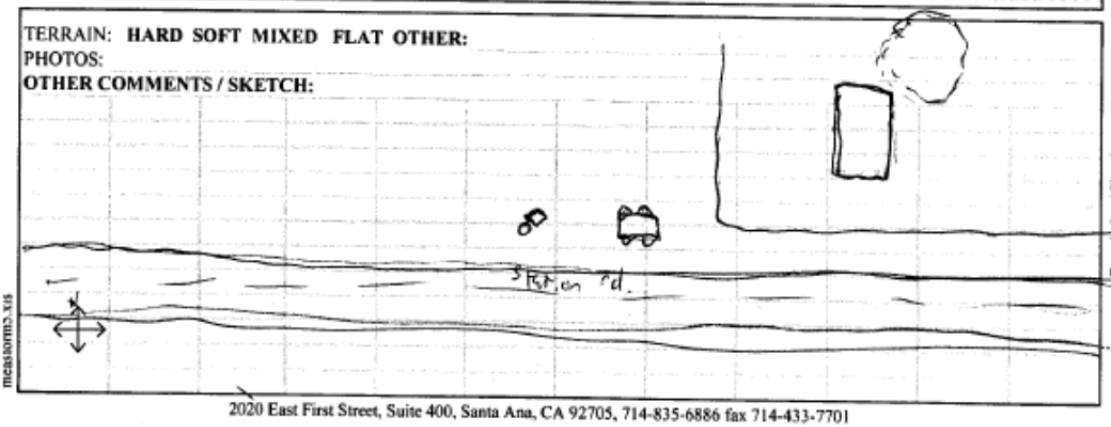
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	____/____	____/____	____/____	____/____
MED. TRUCKS:	____/____	____/____	____/____	____/____
HVY TRUCKS:	____/____	____/____	____/____	____/____
BUSES:	____/____	____/____	____/____	____/____
MOTORCYCLES:	____/____	____/____	____/____	____/____

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT / overhead AIRCRAFT / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Source Info and Traffic Counts

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measforms.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

evening / night (2)

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 **Job #** 28067571.40211

SITE IDENTIFICATION: ST-4 **OBSERVER(s):** RR + RM
START DATE & TIME: 3/3 19:39 , 19:53 **END DATE & TIME:** 19:49 20:03
ADDRESS: Tule Elk Reserve 3/4 / 3/4
GPS coordinates: N 35° 20' 00.3" W 119° 21' 55.0"

ID

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Weather

INSTRUMENT: B+K 2250 **TYPE:** 1 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2799
CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓
SETTINGS: **A-WEIGHTED** **SLOW** **FAST** **FRONTAL** **RANDOM** **ANSI** **OTHER:**_____

	Rec #	Start Time	End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
Hec2023	1	19:39	19:49	33.4	55.4	23.4	27.4	31.3	35.7	
Hec2024	2	19:53	20:03	48	71.2	29.6	32.7	36.0	44.1	

COMMENTS: (1) crickets, fence (interacting w/ wind or electric?)

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC** **AIRCRAFT** **RAIL** **INDUSTRIAL** **AMBIENT** **OTHER**
ROADWAY TYPE:

COUNT DURATION:_____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR** / **DRIVING** / **OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS**
distant **CHILDREN PLAYING** distant **TRAFFIC** distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD** **SOFT** **MIXED** **FLAT** **OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:

Description / Sketch

measform3.xls

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ST-5 OBSERVER(s): RM + GD
START DATE & TIME: 12:45 AM 4/28 END DATE & TIME: 2:00 AM 4/28
ADDRESS: [redacted] Tupman South
GPS coordinates: ~~N 35°20'00.3"~~ ~~W 119°21'55.5"~~ N 35° 19' 09.8" W 119° 22' 36.6"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: 820 red LD TYPE: 1 2 SERIAL #: 1528
CALIBRATOR: CAL 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
1	12:45 / 2:00	61.7	93.1	29.5	33.0	36.6	43.3	L_{25}
	/ / :							L_2 55.2
	/ / :							
	/ / :							

COMMENTS: distant traffic, truck, 2 4-wheelers, frogs, distant generator, barking

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

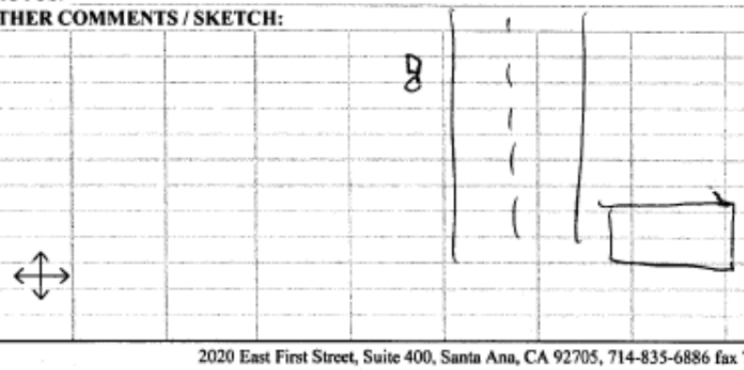
COUNT DURATION:_____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



meastorm3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ST-5 OBSERVER(s): RR + RM
START DATE & TIME: 3/3 15:19 END DATE & TIME: 3/3 15:24
ADDRESS: Tupman (South)
GPS coordinates: N 35° 19' 09.8" W 119° 22' 36.6"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:_____

Acoustic Measurements

INSTRUMENT: BtK 2250 TYPE: (1) 2 SERIAL #: 2672071
CALIBRATOR: CAL 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

	Rec #	Start Time	End Time		L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
Heca2017	1	15:19	15:24	3/3	57.3	82.4	21.2	23.5	27.7	47.9
Heca2018	2	15:25	15:35	3/3	62.8	83.1	21.0	24.5	38.9	59.0
Heca2027	3	20:39	20:49	3/3	55.0	79.8	29.5	34.2	38.9	49.0
Heca2028	4	20:50	21:00	3/3	38.5	52.0	27.2	31.9	36.2	41.9

COMMENTS: (1) traffic, occasional bird (2) tractor, traffic, birds (3) Wind 11 mph, gusts up to 15 mph, dog barking in distance (4) distant aircraft, wind

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

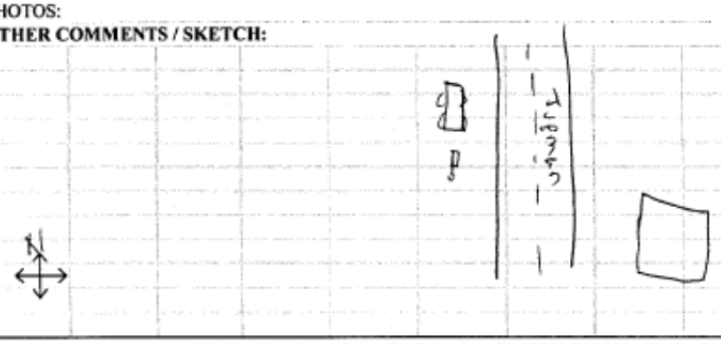
COUNT DURATION:_____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



measform3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS

Night

Project Name: HECA 2 **Job #** 28067571.40211

ID

SITE IDENTIFICATION: NT-5 / ST-5 **OBSERVER(s):** RR + RM
START DATE & TIME: 3/3 **END DATE & TIME:** 3/3
ADDRESS: Tupman (South)
GPS coordinates: N 35°19' 09.8" W 119° 22' 36.6"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: **CALM LIGHT MODERATE VARIABLE**
WINDSPEED:_____MPH DIR: **N NE E SE S SW W NW** **STEADY GUSTY**_____MPH
SKY: **CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN** Other: _____

Acoustic Measurements

INSTRUMENT: B+K 2250 **TYPE:** 1 / 2 **SERIAL #:** 2672071
CALIBRATOR: CAL 200 **SERIAL #:** 2794

CALIBRATION CHECK: **PRE-TEST** 93.9 **dBA SPL** **POST-TEST** 93.9 **dBA SPL** **WINDSCREEN** ✓

SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:**_____

	Rec #	Start Time / End Time								
teca2031	~~1~~	~~22:06 / 22:16~~	~~L_{eq} 66.7, L_{max} 102.6, L_{min} 34.3, L_{90} 38.9, L_{50} 45.7, L_{10} 52.7,~~							- meter fell
teca2032	2	22:17 / 22:27	L_{eq} 52.6,	L_{max} 79.4,	L_{min} 32.6,	L_{90} 37.9,	L_{50} 43.9,	L_{10} 51.2,		
	____	____/____/____	L_{eq}____,	L_{max}____,	L_{min}____,	L_{90}____,	L_{50}____,	L_{10}____,		
	____	____/____/____	L_{eq}____,	L_{max}____,	L_{min}____,	L_{90}____,	L_{50}____,	L_{10}____,		

COMMENTS:

Source Info and Traffic Counts

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER**
ROADWAY TYPE:

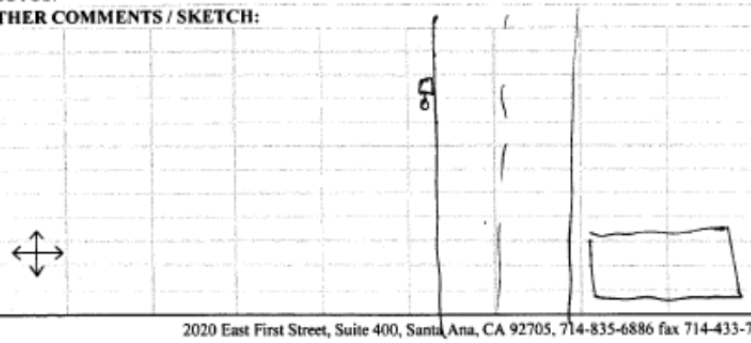
COUNT DURATION:_____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	_____ / _____	____/____	_____ / _____	____/____
MED. TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
HVY TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
BUSES:	_____ / _____	____/____	_____ / _____	____/____
MOTORCYCLES:	_____ / _____	____/____	_____ / _____	____/____

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS**
distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Description / Sketch

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



meastxt013.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ST-6 OBSERVER(s): RR + RM
START DATE & TIME: 3/3 15:50, 16:02 END DATE & TIME: 16:00 , 16:12
ADDRESS: Freeman

GPS coordinates: N 35° 20' 36.3" W 119° 25' 44.8"

Weather

TEMP:_____ °F HUMIDITY:_____ % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: B+K 2250 TYPE: 1 2 SERIAL #: 2672071
CALIBRATOR: CAL 200 SERIAL #: 2794

CALIBRATION CHECK: PRE-TEST 93.9 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓

SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

	Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
Heca 2019	1	15:50 / 16:00	35.2	51.2	24.7	30.0	30.9	39.1	
Heca 2020	2	16:02 / 16:12	[illegible]	46.7	22.5	24.9	28.3	33.3	
	___	___ / ___	30.1	___	___	___	___	___	
	___	___ / ___	___	___	___	___	___	___	

COMMENTS: helicopter constant (distant)

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

COUNT DURATION:_____-MINUTE

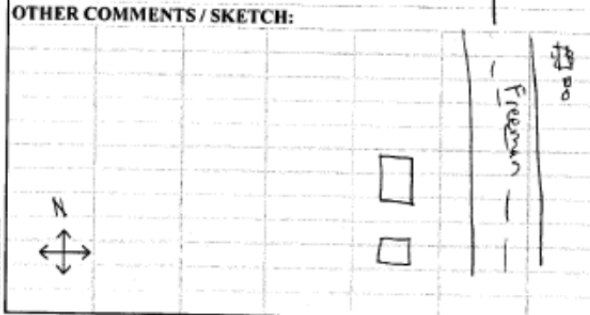
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES:	___ / ___	___ / ___	___ / ___	___ / ___

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:



meastorm3.xls

2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-433-7701

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA Job # 28068052.31203

ID

SITE IDENTIFICATION: LT-1 (LT-7 for report) OBSERVER(s): TL & BV
START DATE & TIME: 2-28-12 16:46 END DATE & TIME: 2-29-12 18:47
ADDRESS: 22592 McKITTRICK Hwy

GPS coordinates: N 35° 23.863' W 119° 24.123'

Weather

TEMP: 57 °F HUMIDITY: 43 % R.H. WIND: (CALM) LIGHT MODERATE VARIABLE
WINDSPEED: 0-1 MPH DIR: N NE E SE S SW W NW STEADY GUSTY ____ MPH
SKY (CLEAR) (SUNNY) DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: LDL 820 TYPE: (1) 2 SERIAL #: 1528 - RED
CALIBRATOR: LDL CAL 200 SERIAL #:
CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST _____ dBA SPL WINDSCREEN X
SETTINGS: (A-WEIGHTED) (SLOW) FAST FRONTAL RANDOM ANSI OTHER: _____

Rec #	Start Time / End Time	
	/ / :	L_{eq} ___, L_{max} ___, L_{min} ___, L_{90} ___, L_{50} ___, L_{10} ___, ___
HECA 3	00:09 / 00:14 :	L_{eq} ___, L_{max} ___, L_{min} ___, L_{90} ___, L_{50} ___, L_{10} ___, ___
4	00:16 / 00:19 :	L_{eq} ___, L_{max} ___, L_{min} ___, L_{90} ___, L_{50} ___, L_{10} ___, ___
	/ / :	L_{eq} ___, L_{max} ___, L_{min} ___, L_{90} ___, L_{50} ___, L_{10} ___, ___

COMMENTS: 21:00 main noise source I-5. Traffic on I-5, Traffic on Hwy 58

Source Info and Traffic Counts

PRIMARY NOISE(S): (TRAFFIC) AIRCRAFT (RAIL) INDUSTRIAL AMBIENT OTHER _____
ROADWAY TYPE: I-5 FREEWAY, Hwy 58
COUNT DURATION: _____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: _____

Description / Sketch

TERRAIN: HARD (SOFT) MIXED FLAT OTHER: _____
PHOTOS: _____
OTHER COMMENTS / SKETCH:

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA (LT-8 for report) **Job #** 28068052.31203

ID

SITE IDENTIFICATION: LT-2 **OBSERVER(s):** BV & TL
START DATE & TIME: 2-28-12 17:07 **END DATE & TIME:** 2-29-12 19:03
ADDRESS: 6300 BRITE ROAD
GPS coordinates: N 35° 22.182' W 119° 24.961'

Weather

TEMP:_____° F HUMIDITY:_____% R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY_____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: LDL 820 TYPE: 1 2 SERIAL #: 1768 - BLUE
CALIBRATOR: LDL CAL 200 SERIAL #:
CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST_____dBA SPL WINDSCREEN X
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:_____

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
	/ 17:07 /							
	/ /							
HECA 2	/ 23:31 / 23:35							22560
	/ /							

COMMENTS: 20:54 passed residence, no cars main noise source coming from north, 23:38 AIRCRAFT, TRAFFIC ON I-5, 23:41 - coyote, By SITE @ 23:56

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER _____
ROADWAY TYPE:

COUNT DURATION:_____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER:

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS:
OTHER COMMENTS / SKETCH:

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA (LT-9 for report) Job # 28068052.31203

ID

SITE IDENTIFICATION: LT-3 OBSERVER(s): BV & TL
START DATE & TIME: 2-28-12 17:26 END DATE & TIME: 2-29-12 19:03 19:09
ADDRESS: 36400 STOCKDALE HWY

GPS coordinates: N 35° 21.296 W 119° 24.302'

Weather

TEMP:_____° F HUMIDITY:_____% R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED:_____MPH DIR: N NE E SE S SW W NW STEADY GUSTY____MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: _____

Acoustic Measurements

INSTRUMENT: LDL 820 TYPE: (1) 2 SERIAL #: 1470 - YELLOW
CALIBRATOR: LDL CAL 200 SERIAL #:

CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST_____dBA SPL WINDSCREEN X

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

Rec #	Start Time / End Time							
___/	17:26 / ___	L_{eq} ___,	L_{max} ___,	L_{min} ___,	L_{90} ___,	L_{50} ___,	L_{10} ___,	___
___/	___ / ___	L_{eq} ___,	L_{max} ___,	L_{min} ___,	L_{90} ___,	L_{50} ___,	L_{10} ___,	___
Hex /	23:13 / 23:18	L_{eq} ___,	L_{max} ___,	L_{min} ___,	L_{90} ___,	L_{50} ___,	L_{10} ___,	22.50
___/	___ / ___	L_{eq} ___,	L_{max} ___,	L_{min} ___,	L_{90} ___,	L_{50} ___,	L_{10} ___,	___

COMMENTS: 20:13 passed residence. no other cars. noise source from the north possibly Hwy 58\I-5 GA AIRCRAFT
22.58 - PASSED BY SITE, 23:08 CAR. AMBIENT: I-5, DOG, 19:22 TRAIN, 19:25 TRUCK

Source Info and Traffic Counts

PRIMARY NOISE(S): (TRAFFIC) AIRCRAFT RAIL INDUSTRIAL (AMBIENT) OTHER _____
ROADWAY TYPE: _____

COUNT DURATION:_____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES:	___ / ___	___ / ___	___ / ___	___ / ___

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: _____

Description / Sketch

TERRAIN: HARD (SOFT) MIXED FLAT OTHER: _____
PHOTOS: _____
OTHER COMMENTS / SKETCH:

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2011-151007

Instrument Model CAL200, Serial Number 2794, was calibrated on 02NOV2011. The instrument meets factory specifications per Procedure D0001.8190.

Instrument found to be in calibration as received: YES
Date Calibrated: 02NOV2011
Calibration due: 02NOV2013

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	2559	2504	12 Months	29NOV2011	17865-1
PCB	1502B02FJ15PSIA	1342	12 Months	06DEC2011	3374488329
Larson Davis	2900	0661	12 Months	05APR2012	2011-141857
Hewlett Packard	34401A	3146A10352	12 Months	21AUG2012	5335364
Larson Davis	PRM915	0112	12 Months	09SEP2012	2011-148845
Larson Davis	PRM902	0480	12 Months	09SEP2012	2011-148846
Larson Davis	MTS1000/2201	0111	12 Months	09SEP2012	SM090911

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Environmental test conditions as shown on calibration report.

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

Before: 114.06 dB, 94.05 dB, 1000.1 Hz @ sea level.
After: Refer to Certificate of Measured Output.

Signed: Scott Montgomery
Technician: Scott Montgomery

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

CERTIFICATE OF CALIBRATION
18884-1
FOR BRÜEL & KJÆR
HANDHELD ANALYZER

Model **2250**

Serial No. **2672071**
ID No. **N/A**

With Microphone **4189**
Serial No. **2662748**

With Preamplifier **ZC0032**
ID# **10617**

Customer: **URS Corporation**
Santa Ana, CA 92705

P.O. # **01158213.000001242012**

was tested and met factory specifications at the points tested.
Complies to: ANSI S1.4 1983 Type 1:
IEC 651-1979 Type 1
IEC-61672-3 :2002 Class1

on **01 FEB 2012**

BY HAROLD LYNCH
Service Manager

As received condition: Within Specification.
Re-calibration due on: **01 FEB 2014**

Certified References*

Mfg.	Type	Serial No.	Date Due
B&K	1049	1314996	16 JUN 2012
B&K	2636	1423390	03 JAN 2013
B&K	4226	2141942	01 DEC 2012
B&K	4231	1770857	01 SEP 2012
HP	34401A	MY45023668	17 NOV 2012
HP	3458A	2823A07179	06 JUL 2012

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" conditions.

Reference Test Procedure: **ACCT Procedure 2250 Light 2270 Ver. 2.3.2**
Brüel & Kjær Factory Service Instructions: **2250**

Temperature	Relative Humidity	Barometric Pressure
23°C	**31 %**	**994.31** hPa

Note: This calibration report shall not be reproduced, except in full, without written consent by Odin Metrology, Inc..

Signed:

ODIN METROLOGY, INC.
CALIBRATION OF BRÜEL & KJÆR INSTRUMENTS
3533 OLD CONEJO ROAD; SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2011-151300

Instrument Model 820, Serial Number 1768, was calibrated on 08NOV2011. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 08NOV2011
Calibration due: 08NOV2013

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0099 / 0104	12 Months	18JAN2012	2011-138645

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 25 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.
Tested with PRM828-2751

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2010-131816

Instrument Model 820, Serial Number 1597, was calibrated on 16JUL2010. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 16JUL2010
Calibration due: 16JUL2012

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0277 / 0109	12 Months	24MAR2011	2010-127832

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 33 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As Received" data is the same as shipped data.
Tested with 828-2491

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2000 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2012-153626

Instrument Model 820, Serial Number 1528, was calibrated on 11JAN2012. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: NO
Date Calibrated: 11JAN2012
Calibration due: 11JAN2014

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0277 / 0109	12 Months	21MAR2012	2011-141059

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 27 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data unavailable due to unit failure.
Tested with PRM828-2437

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2008 Certified

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2010-131844

Instrument Model 820, Serial Number 1470, was calibrated on 19JUL2010. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: YES
Date Calibrated: 19JUL2010
Calibration due: 19JUL2012

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2239	0099 / 0104	12 Months	20JAN2011	2010-125871

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 24 ° Centigrade

Relative Humidity: 34 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"AS RECEIVED" data same as shipped data.
Tested with 828-917

Signed: Ron Harris
Technician: Ron Harris

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2000 Certified

Appendix J-2

Noise Information

Area	Item	Octave Band Sound Power Levels, PWL								Overall PWL(A)	
		63	125	250	500	1k	2k	4k	8k		
AGR	CO_2 Compressor	72	68	73	75	78	80	76	69	*84.3*	[1]
	CO_2 Recycle Compressor	82	86	86	85	84	81	77	74	*88.6*	[1]
	Refrigerant Compressor A	87	78	73	70	69	68	67	66	*75.6*	[1]
	Flash Gas Recycle Comp	82	86	86	85	84	81	77	74	*88.6*	[1]
	Loaded Methanol Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	Lean Methanol Pump	107	98	93	90	89	88	87	86	*95.6*	[1]
	Reflux Pump Methanol/Water Separation	86	87	90	90	88	85	81	79	*92.8*	
	Syngas Turbo Expander	102	93	88	85	84	83	82	81	*90.6*	[1]
ASU	Main Air Compressor Motor	87	83	88	90	93	95	91	84	*99.3*	
	Main Air Compressor (MAC)	87	83	88	90	93	95	91	84	*99.3*	
	Booster Air Compressor Motor	84	88	87	91	93	93	90	85	*98.3*	
	Booster Air Compressor (BAC)	84	88	87	91	93	93	90	85	*98.3*	
	Med Pressure Nitrogen Compressor Motor	87	83	88	90	93	95	91	84	*99.3*	[1]
	Med Pressure Nitrogen Compressor	87	83	88	90	93	95	91	84	*99.3*	[1]
	Expander	102	93	88	85	84	83	82	81	*90.6*	[1]
	Dense Fluid Expander	79	81	82	82	82	79	76	73	*86.3*	[1]
	Liquid Oxygen Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	ASU Cooling Water Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	ASU CCW Pump	84	85	90	89	88	85	80	77	*92.4*	[1]
	Auxiliary Cooling Water Pump	84	85	90	89	88	85	80	77	*92.4*	[1]
	ASU Cooling Tower, 4 cells	114	112	104	98	93	94	97	95	*103.8*	[1]
Common Cooling	Gasification Cooling Water Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	Power Block Cooling Water Pump	107	98	93	90	89	88	87	86	*95.6*	[1]
	Power Block Clsd Cooling Water Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	Aux Cooling Water Pump	84	85	90	89	88	85	80	77	*92.4*	[1]
	Gasification Clsd Cooling Water Pump	84	85	90	89	88	85	80	77	*92.4*	[1]
	HRSG FWH Recirculation Pumps	76	77	80	80	78	75	71	69	*82.8*	[1]
	Condensate Transfer Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Hotwell Pump	84	86	87	87	87	84	81	78	*91.3*	[1]

Area	Item	Octave Band Sound Power Levels, PWL								Overall PWL(A)	
		63	125	250	500	1k	2k	4k	8k		
	Low-Pressure Boiler Feed Water Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	Process Intrmd Press Boiler Fee Water Pumps	84	86	87	87	87	84	81	78	*91.3*	[1]
	High Pressure Boiler Feed Water Pump	107	98	93	90	89	88	87	86	*95.6*	[1]
	Process High Press Boiler Fee Water Pumps	107	98	93	90	89	88	87	86	*95.6*	[1]
	Power Block Cooling Tower	114	112	104	98	93	94	97	95	*103.8*	[1]
	Gasification Cooling Tower	114	112	104	98	93	94	97	95	*103.8*	[1]
Flaring	Thermal Oxidizer	100	97	95	93	92	89	84	78	*96.6*	
	Rectisol Flare Stack	94	90	82	74	71	74	78	78	*83.8*	
	Gasification Flare Stack	94	90	82	74	71	74	78	78	*83.8*	
	SRU Flare Stack	94	90	82	74	71	74	78	78	*83.8*	
Shift/ LTGC	Hot Process Condensate Pumps	84	86	87	87	87	84	81	78	*91.3*	[1]
	Contact Condenser Air Cooler	98	95	85	78	72	63	56	48	*82.7*	
	Regen Overhead Air Cooler	98	95	85	78	72	63	56	48	*82.7*	
SRU	SRU Furnaces	96	93	91	89	88	85	82	74	*92.7*	
	HP Flare Knock-out Drum Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
TGTU	TGTU Treated Gas Compressor	75	77	76	78	81	85	79	73	*88.4*	[1]
	Lean Amine Air Cooler	98	95	85	78	72	63	56	48	*82.7*	
Gasification	Injector Cooling Water Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Filter Feed Pumps	76	77	80	80	78	75	71	69	*82.8*	[1]
	Mill Discharge Tank Pumps	76	77	80	80	78	75	71	69	*82.8*	[1]
	Slurry Booster Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Slurry Charge Pumps	84	86	87	87	87	84	81	78	*91.3*	[1]
	Quench Water Pumps	84	86	87	87	87	84	81	78	*91.3*	[1]
	Settler Bottom Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Settler Feed Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Grey Water Pumps	107	98	93	90	89	88	87	86	*95.6*	[1]
	Grinding Water Tank Pumps	76	77	80	80	78	75	71	69	*82.8*	[1]
	Deaerator Bottoms Pumps	79	81	82	82	81	78	75	72	*85.6*	[1]

Area	Item	Octave Band Sound Power Levels, PWL								Overall PWL(A)	
		63	125	250	500	1k	2k	4k	8k		
	Mill Discharge Tank Agitator	76	77	80	80	78	75	71	69	*82.8*	1
	Slurry Tank Agitators	84	86	87	87	87	84	81	78	*91.3*	1
	Settler Rake	76	77	80	80	78	75	71	69	*82.8*	1
	Filtration Skid	84	86	87	87	87	84	81	78	*91.3*	1
	Vacuum Pump Package	76	77	80	80	78	75	71	69	*82.8*	1
	Slurry Prep Building	114	104	94	87	80	71	69	73	*92.9*	
	Gasifiers (two of three running)	102	95	90	85	82	81	81	82	*90.0*	1
Material Handling	Pneumatic Conveyor Blower	98	91	86	81	78	77	77	78	*86.0*	1
	Impact Crusher	100	100	98	96	95	93	87	80	*99.8*	1
	Belt Conveyors	93	93	91	89	88	86	80	73	*92.8*	1
	Crusher Building	114	104	94	88	80	71	69	73	*93.0*	1
	Feedstock Silo walls	109	99	89	83	75	66	64	68	*88.0*	1
	Feedstock Unloading Shed	95	95	93	91	90	88	82	75	*94.8*	1
	Feedstock Transfer Towers	98	98	96	94	93	91	85	78	*97.8*	1
	Crushed Feedstock Transfer Towers	98	98	96	94	93	91	85	78	*97.8*	1
	Mat'l Handling Dust Collectors	79	81	82	82	81	78	75	72	*85.6*	1
Power Block	GTG Transformer	99	101	96	96	90	85	80	73	*96.4*	
	GTG Air Inlet	104	93	84	71	57	47	69	73	*82.5*	1
	GTG Inlet Plenum	89	86	88	87	88	97	87	76	*99.2*	1
	GTG Generator	102	101	98	100	99	98	93	84	*104.0*	1
	GTG Main Body	110	104	103	100	98	103	99	94	*107.2*	1
	GTG Load Compartment	105	105	100	95	93	96	93	86	*101.4*	1
	GTG Accessory Bay	106	99	97	96	95	98	92	86	*102.2*	1
	GTG Exhaust Diffuser	109	103	97	92	85	83	79	74	*94.5*	1
	HRSG Transition	115	111	107	102	101	99	95	57	*106.6*	1
	HRSG Main Body	111	108	104	99	96	94	90	64	*102.5*	1
	HRSG Stack Wall-low	90	91	89	86	84	78	62	25	*88.3*	1
	HRSG Stack Exhaust	107	109	109	102	91	77	62	57	*103.4*	1
	STG Main Body	114	112	107	103	99	96	88	82	*105.4*	1
	STG Generator	107	114	105	94	95	92	96	99	*104.5*	1

Area	Item	Octave Band Sound Power Levels, PWL								Overall PWL(A)	
		63	125	250	500	1k	2k	4k	8k		
	STG Transformer	99	101	96	96	90	85	80	73	*96.4*	
	STG Condenser	99	101	96	96	90	85	80	73	*96.4*	[1]
	LMS100® Air Inlet [2]	112	111	100	88	94	80	80	85	*99.1*	[1]
	LMS100® Main Body [2]	116	113	103	99	93	91	91	89	*102.6*	
	LMS100® Generator [2]	106	113	104	93	94	91	95	98	*103.5*	
	LMS100® SCR Body [2]	118	115	108	96	90	83	66	48	*103.3*	[1]
	LMS100® Stack Exhaust [2]	128	122	108	96	91	83	79	71	*108.2*	[1]
	LMS100® Transformer [2]	103	107	100	101	98	87	82	75	*102.0*	
	LMS100® Fuel Gas Compressor [2]	80	82	81	83	86	90	84	78	*93.4*	[1]
Water Treat	Demin Water Pump	84	86	87	87	87	84	81	78	*91.3*	[1]
	Storm Water Sump Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Sump Pump	76	77	80	80	78	75	71	69	*82.8*	[1]
	Water Treat Pumps	87	88	91	91	89	86	82	80	*93.8*	[1]
	R/O Feed Pump-1stg	107	98	93	90	89	88	87	86	*95.6*	[1]
	R/O Feed Pump-2stg	84	86	87	87	87	84	81	78	*91.3*	[1]
Proc. ZLD	Vapor Compressor	79	81	82	82	82	79	76	73	*86.3*	[1]
	Exhaust Fan	76	77	80	80	78	75	71	69	*82.8*	[1]
	ZLD pumps	88	89	92	92	90	87	83	81	*94.8*	[1]
	Dryer	86	87	90	90	88	85	81	79	*92.8*	
Waste Water ZLD	Vapor Compressor	79	81	82	82	82	79	76	73	*86.3*	[1]
	Exhaust Fan	76	77	80	80	78	75	71	69	*82.8*	[1]
	ZLD pumps	88	89	92	92	90	87	83	81	*94.8*	[1]
	Dryer	86	87	90	90	88	85	81	79	*92.8*	
Misc	Aux Transformers	87	89	84	84	78	73	68	61	*84.4*	
	Various Atmospheric Vents	95	88	83	78	75	74	74	75	*83.0*	[1]
									Total Project PWL(A)[3] =	**118.9**	[1]

Area	Item	Octave Band Sound Power Levels, PWL								Overall PWL(A)	
		63	125	250	500	1k	2k	4k	8k		

Source: HECA Project, 2012.

Notes:

ASU = Air Separation Unit
Power Block = (includes both Main 7F-class and LMS100® trains)
Shift/LTGC = Sour Shift + Low-Temp Gas Cooling + Mercury Removal
SRU = Sulfur Recovery Unit
TGTU = Tail Gas Treating Unit
Water Treat = Water Treatment Area
ZLD = Zero Liquid Discharge Area