DOCKETED	
Docket Number:	08-AFC-08A
Project Title:	Hydrogen Energy Center Application for Certification Amendment
TN #:	233603-10
Document Title:	Continuation of Amended AFC Volume III - HECA 10
Description:	*** These documents supersedes TN 65049 which was just the cover letter due to the fact the Amended AFC was too large to docket at the time. *** - Document was on proceeding webpage and is now moved over to the docket log.
Filer:	Raquel Rodriguez
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	6/22/2020 12:59:32 PM
Docketed Date:	6/22/2020

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

(HECA2009) ST-3/

SITE IDENTIFICATION: ~~ST-3~~ NT-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 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							
Heca 2001	1	22:27 / 22:33	L_{eq} 55.5	L_{max} 80.7	L_{min} 27.6	L_{90} 29.8	L_{50} 31.4	L_{10} 47.8	
Heca 2002	2	22:39 / 22:44	L_{eq} 63.3	L_{max} 88.7	L_{min} 27.5	L_{90} 30.4	L_{50} 34.8	L_{10} 54.2	
	___/___/___	:	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) 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

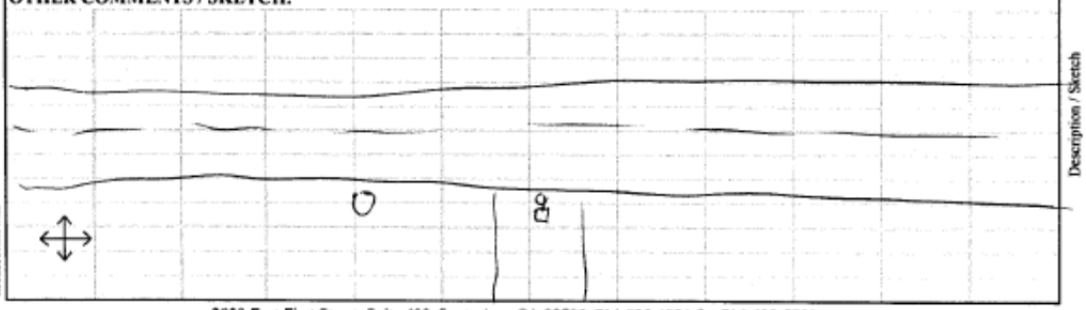
OTHER:

Source Info and Traffic Counts

TERRAIN: HARD SOFT MIXED FLAT OTHER:

PHOTOS:

OTHER COMMENTS / SKETCH:



Description / Sketch

measforms.xls

FIELD MEASUREMENT DATA SHEET

URS Project Name: HECA 2 Job # 28067571.40211

ID

SITE IDENTIFICATION: ~~ST-1~~ ST-3 OBSERVER(s): RR + RM
START DATE & TIME: 3/3 19:02, 19:18 END DATE & TIME: 3/3 19:12, 19:28
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							
Heca 2021 1	1902 / 19:12	L_{eq} 52.5	L_{max} 76.2	L_{min} 24.0	L_{90} 25.3	L_{50} 28.6	L_{10} 45.5	
Heca 2022 2	19:18 / 19:28	L_{eq} 58.5	L_{max} 79.8	L_{min} 23.2	L_{90} 24.9	L_{50} 29.2	L_{10} 54.9	
____/____/____		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) some traffic, motorcycle/moped

Source Info and Traffic Counts

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

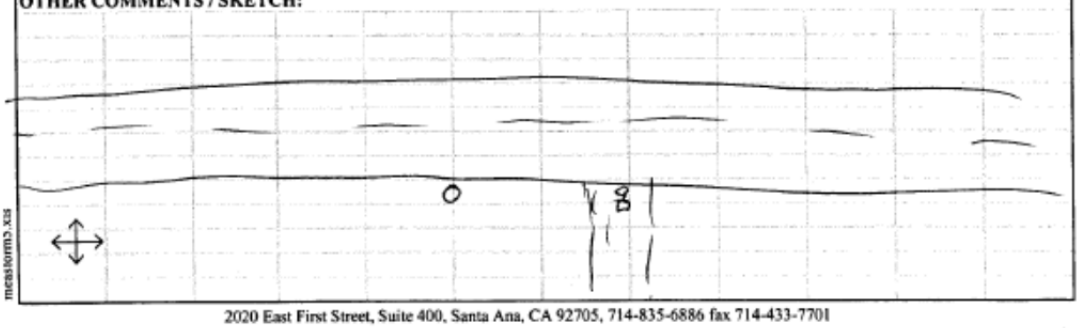
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	____ / ____	____ / ____	____ / ____	____ / ____
MED. TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
HVY TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
BUSES:	____ / ____	____ / ____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

FIELD MEASUREMENT DATA SHEET

URS

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

SITE IDENTIFICATION: ST-3 **OBSERVER(s):** KM + RR

START DATE & TIME: **END DATE & TIME:**

ADDRESS: Stockdale Highway

GPS coordinates: N 35° 21 ' 17.2" W 119° 22 ' 23.7"

ID

Dawn 7:12 373

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

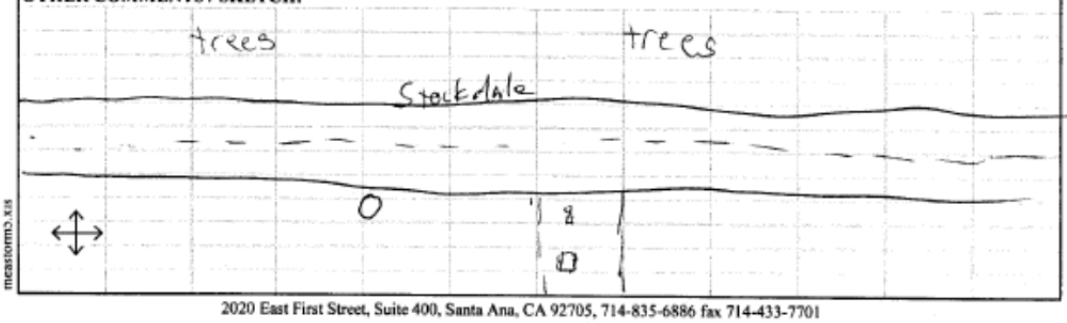
OTHER:

Source Info and Traffic Counts

TERRAIN: HARD SOFT MIXED FLAT OTHER:

PHOTOS:

OTHER COMMENTS / SKETCH:



Descriptions / 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-04 **OBSERVER(s):** RA + GD
START DATE & TIME: 1245 4/28 **END DATE & TIME:** 2:00 PM 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"

ID

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 5 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Weather

INSTRUMENT: Yellow 820 LD **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}	L_{25}
1	1245 / 2:00	41.1	56.2	33.6	36.9	39.9	43.4	41.7
	/ /							45.5
	/ /							
	/ /							

COMMENTS: freeway, frogs, distant barking, generator

Acoustic Measurements

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

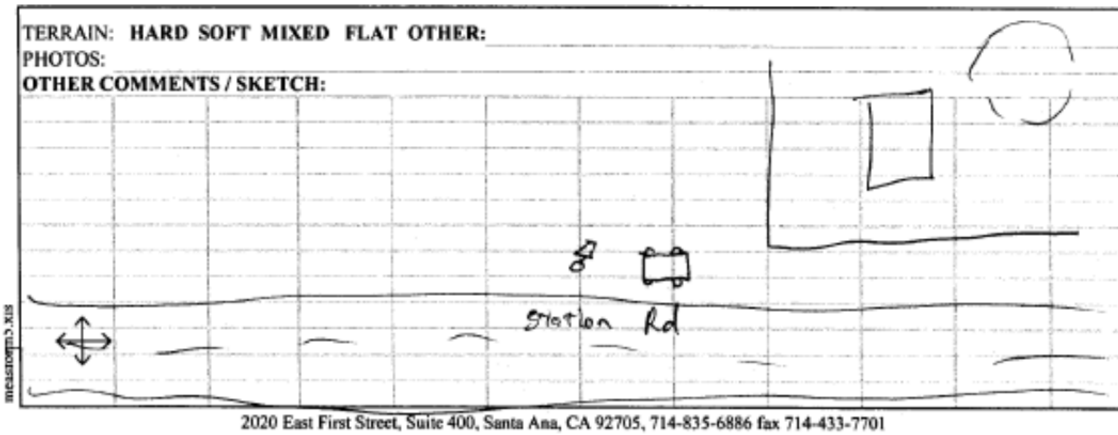
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	____ / ____	____ / ____	____ / ____	____ / ____
MED. TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
HVY TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
BUSES:	____ / ____	____ / ____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

measrepts.xls

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA 2 Job # 28067571.40211

ID

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"

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

Heca 2005
Heca 2006
Heca 2013
Heca 2014

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

Source Info and Traffic Counts

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

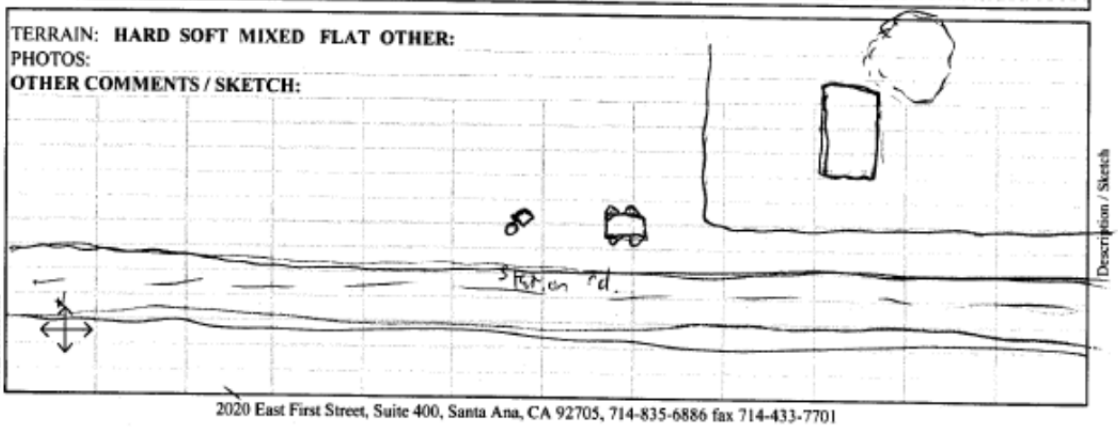
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	____ / ____	____ / ____	____ / ____	____ / ____
MED. TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
HVY TRUCKS:	____ / ____	____ / ____	____ / ____	____ / ____
BUSES:	____ / ____	____ / ____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

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

OTHER NOISE SOURCES: distant AIRCRAFT overhead / 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

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:** 3/3 19:49 20:03 / 3/4
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 #:** 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	
Hec2023	1	19:39 / 19:49	L_{eq} 33.4, L_{max} 55.4, L_{min} 23.4, L_{90} 27.4, L_{50} 31.3, L_{10} 35.7,
Hec2024	2	19:53 / 20:03	L_{eq} 48, L_{max} 71.2, L_{min} 29.6, L_{90} 32.7, L_{50} 36.0, L_{10} 44.1,
	___	___ / ___	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) crickets, fence (interacting w/ wind or electric?)

Acoustic Measurements

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

COUNT DURATION:_____-MINUTE

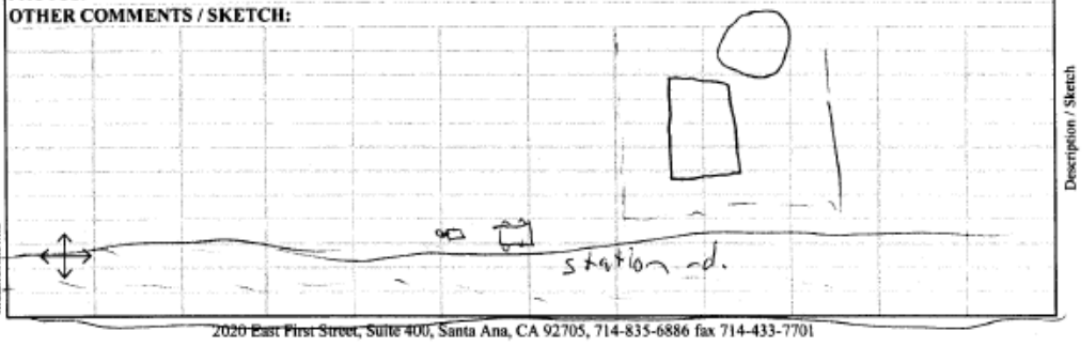
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES: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

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

measform.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 PM 4/28 END DATE & TIME: 2:00 PM 4/28
ADDRESS: [redacted] Tejon 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							
1	12:45 / 2:00	L_{eq} 61.7	L_{max} 93.1	L_{min} 29.5	L_{90} 33.0	L_{50} 36.6	L_{10} 43.3	L_{25}
___	___/___/___:	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	L_2 55.2
___	___/___/___:	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: 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

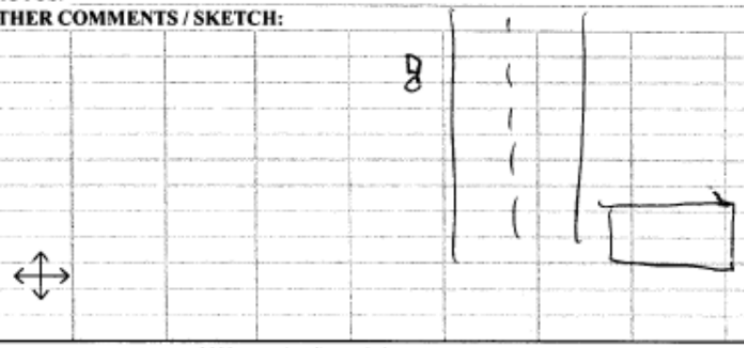
	SPEED (mph) NB / EB / SB / WB	NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	_____ / _____	____/____	_____ / _____	____/____
MED. TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
HVY TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
BUSES:	_____ / _____	____/____	_____ / _____	____/____
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: 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		
heca2017	1	15:19 / 15:24	3/3	L_{eq} 57.3, L_{max} 82.4, L_{min} 21.2, L_{90} 23.5, L_{50} 27.7, L_{10} 47.9,
heca2018	2	15:25 / 15:35	3/3	L_{eq} 62.8, L_{max} 83.1, L_{min} 21.0, L_{90} 24.5, L_{50} 38.9, L_{10} 59.0,
Heca2027	3	20:39 / 20:49	3/3	L_{eq} 55.0, L_{max} 79.8, L_{min} 29.5, L_{90} 34.2, L_{50} 38.9, L_{10} 49.0,
Heca2028	4	20:50 / 21:00	3/3	L_{eq} 38.5, L_{max} 52.0, L_{min} 27.2, L_{90} 31.9, L_{50} 36.2, L_{10} 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

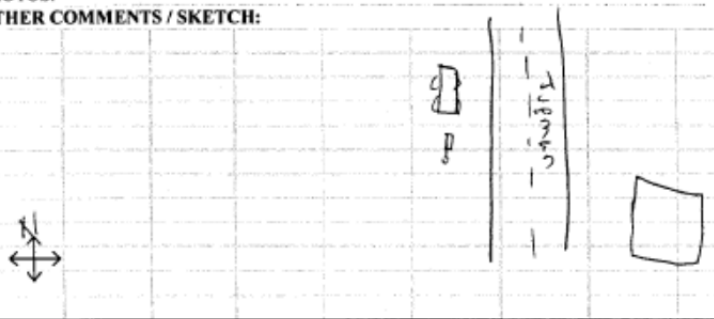
	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	____ / ____	____ / ____	____ / ____
MED. TRUCKS:	____ / ____	____ / ____	____ / ____
HVY TRUCKS:	____ / ____	____ / ____	____ / ____
BUSES:	____ / ____	____ / ____	____ / ____
MOTORCYCLES:	____ / ____	____ / ____	____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

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:



missions3.xls

FIELD MEASUREMENT DATA SHEET

URS Night

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

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" W119°22'36.6"

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							
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:

Acoustic Measurements

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

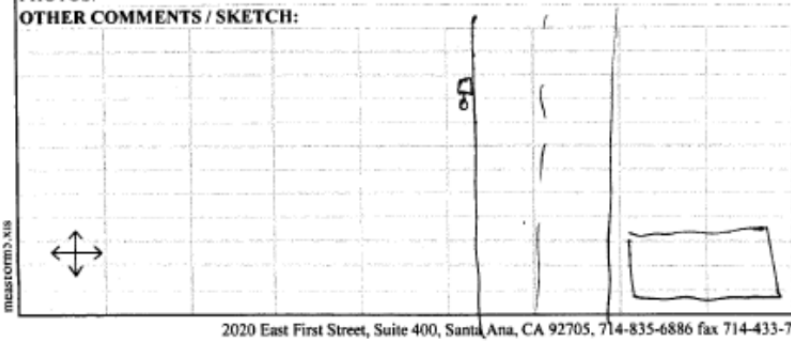
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	_____ / _____	____/____	_____ / _____	____/____
MED. TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
HVY TRUCKS:	_____ / _____	____/____	_____ / _____	____/____
BUSES:	_____ / _____	____/____	_____ / _____	____/____
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-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							
Heca 2019	1	15:50 / 16:00	L_{eq} 35.2	L_{max} 51.2	L_{min} 24.7	L_{90} 28.0	L_{50} 30.9	L_{10} 39.1	
Heca 2020	2	16:02 / 16:12	L_{eq} 35.7	L_{max} 46.7	L_{min} 22.5	L_{90} 24.9	L_{50} 28.3	L_{10} 33.3	
	___	___ / ___	L_{eq} 30.1	L_{max} ___	L_{min} ___	L_{90} ___	L_{50} ___	L_{10} ___	
	___	___ / ___	L_{eq} ___	L_{max} ___	L_{min} ___	L_{90} ___	L_{50} ___	L_{10} ___	

COMMENTS: helicopter constant (distant)

Source Info and Traffic Counts

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

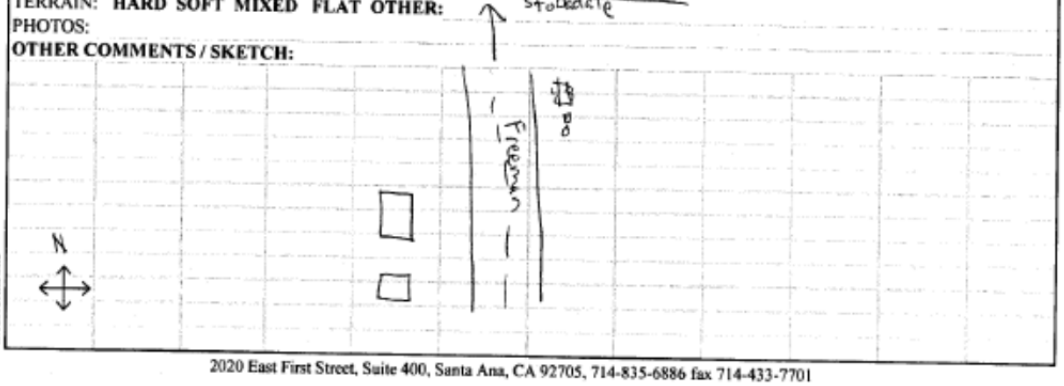
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	___ / ___	___ / ___	___ / ___	___ / ___
MED. TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
HVY TRUCKS:	___ / ___	___ / ___	___ / ___	___ / ___
BUSES:	___ / ___	___ / ___	___ / ___	___ / ___
MOTORCYCLES: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

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead AIRCRAFT / 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

FIELD MEASUREMENT DATA SHEET

URS

Project Name: HECA (LT-7 for report) Job # 28068052.31203

ID

SITE IDENTIFICATION: LT-1 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

	#1 COUNT: 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							
___	/ 17:07 / _____	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
___	/ _____ / _____	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
HEC 2	/ 23:31 / 23:35	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	2250
___	/ _____ / _____	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	

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

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 (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 94.2 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}_____, _____
Max	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 TRUCK, 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** P.O. # **01158213.000001242012**
Santa Ana, CA 92705

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

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

Appendix K
Hazardous Materials Technical Analysis

APPENDIX K
HAZARDOUS MATERIALS TECHNICAL ANALYSIS
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APPENDIX K
HAZARDOUS MATERIALS TECHNICAL ANALYSIS

1.0 INTRODUCTION

Hazardous materials are often a necessary part of industrial operations. Hazardous materials present potential risks based upon their specific chemical properties and characteristics. A hazard risk analysis evaluates a system or unit using hazardous chemicals by examining the process, the hazardous properties of substances involved with the process, the potential deviations that may affect the process, the potential consequences of a worst-case release scenario, and the appropriate controls and mitigations. Accordingly, this analysis was performed for the Project to address such potential risks.

Various hazardous materials will be used in connection with operation of the Project. This appendix addresses anhydrous ammonia (ammonia), hydrogen, acid gas (45 percent hydrogen sulfide, 55 percent carbon dioxide [CO_2]), methanol, and synthesis gas [syngas] (which contains water, carbon monoxide, CO_2, hydrogen, hydrogen sulfide, nitrogen, argon, and trace amounts of ammonia and carbonyl sulfide).

2.0 APPLICABLE REGULATORY REQUIREMENTS

The Project will comply with applicable laws, ordinances, regulations, and standards (LORS) pertaining to the storage and use of hazardous materials. The hazardous materials evaluated in this appendix (ammonia, hydrogen, acid gas [hydrogen sulfide] and syngas) are regulated hazardous materials under the California Accidental Release Prevention (CalARP) program, the federal Clean Air Act (CAA) Risk Management Program (RMP), and the Occupational Safety and Health Administration (OSHA) Process Safety Management (PSM). Additionally, although methanol is not regulated under CalARP, RMP, and PSM, it is regulated as a hazardous material under various federal and state regulations, and is therefore evaluated here.

The CalARP, RMP, and PSM programs set regulatory thresholds for the aforementioned hazardous materials, with the exception of methanol. The use or storage of any of these substances in excess of their specific regulatory thresholds triggers specific CalARP, RMP, and PSM program requirements. The specific threshold requirements and regulatory program applicability for the hazardous materials analyzed are provided in Table K-1, Regulatory Program Applicability.

The following sections provide the analysis that was performed for each of these five hazardous materials.

3.0 OFF-SITE CONSEQUENCE ANALYSIS

Off-site consequence analysis (OCA) modeling was performed to address the potential off-site impacts from a worst-case release scenario for each substance. The OCA modeling was used to determine if an accidental chemical release would remain within the Project Site or the Controlled Area, or extend off-site.

Table K-1
Regulatory Program Applicability

Hazardous Chemical	Federal RMP Threshold (pounds)	State CalARP Threshold (pounds)	Federal PSM Threshold (pounds)	Regulatory Program Applicability
Anhydrous Ammonia	10,000[(1)]	500	10,000	Project will store 3.8 million gallons of anhydrous ammonia (approximately 10,733 short tons of ammonia) for turbine emissions control (Selective Catalytic Reduction), production of a urea and ammonium nitrate (UAN) solution used as a fertilizer, and for wholesale to commercial users. The ammonia will be subject to state CalARP program requirements and federal RMP program requirements. The ammonia will also be subject to federal PSM program requirements.
Hydrogen	10,000	10,000		The Project will store 30,000 scf (approximately 150.8 pounds) of hydrogen for electrical generator cooling. The hydrogen will not be subject to either state CalARP or federal RMP program enforcement because it does not exceed the minimum threshold levels. Hydrogen is not listed in the PSM regulations.
Syngas (Hydrogen, Hydrogen Sulfide, Methane, Carbon Monoxide, CO_2, Ammonia)	Hydrogen 10,000 Hydrogen Sulfide 10,000 Methane 20,000 Ammonia 10,000 Carbon Monoxide N/A CO_2 N/A	Hydrogen 10,000 Hydrogen Sulfide 500 Methane 10,000 Ammonia 500 Carbon Monoxide N/A CO_2 N/A	Hydrogen Sulfide 1,500 Anhydrous Ammonia 10,000	The Project will generate syngas in the gasification block of the facility. The syngas will not be subject to either state CalARP, federal RMP, or federal PSM program requirements (*see Note*[(2)]).
Acid Gas (Hydrogen Sulfide, CO_2)	Hydrogen Sulfide 10,000 CO_2 N/A	Hydrogen Sulfide 500 CO_2 N/A	Hydrogen Sulfide 1,500	The Project will generate acid gas from the Acid Gas Removal unit of the facility. The quantities of acid gas (hydrogen sulfide) do not trigger regulatory requirements under the state CalARP, federal RMP, or federal PSM program requirements (*see Note*[(3)]).
Methanol	N/A	N/A		The Project Site will have approximately 300,000 gallons of methanol on site for use in the Acid Gas Removal unit. Methanol will be stored within a large aboveground storage tank. Another approximately 250,000 gallons will be contained within process equipment and piping. Methanol is not regulated under the state CalARP, federal RMP, or federal PSM program enforcement. However, methanol is regulated under 29 CFR § 1910, 40 CFR §§ 116, 117, 355, 372, 302.

Table K-1
Regulatory Program Applicability

Hazardous Chemical	Federal RMP Threshold (pounds)	State CalARP Threshold (pounds)	Federal PSM Threshold (pounds)	Regulatory Program Applicability
Nitric Acid	15,000 (conc. 80% or greater)	1,000	500 (94.5% by weight or greater)	The Project will store a maximum of 120 tons of nitric acid (60% by weight) in a storage tank. Since the concentration of nitric acid is under the concentration specified by the federal RMP and federal PSM thresholds, the nitric acid will not be subject to federal RMP and PSM program enforcement. However, since CalARP regulations do not specify a minimum concentration, nitric acid will be subject to CalARP RMP program enforcement.

Notes:
(1) Federal RMP requirements apply only to aqueous ammonia solutions that are of a concentration of 20 percent or greater by weight.
(2) Only hydrogen, hydrogen sulfide, ammonia, and methane in the syngas mixture are regulated chemicals under federal RMP or state CalARP regulations. Carbon monoxide is a hazardous substance, but is not regulated by either the federal RMP or state CalARP regulations. CO_2 is not a regulated hazardous substance. The quantities of regulated substances in syngas do not trigger regulatory requirements for the following two reasons: 1) syngas is not stored on site but consumed within the operation as it is produced, and therefore is not a stationary source; and 2) quantities are below regulatory thresholds.
(3) Acid gas is composed of approximately 55 percent CO_2 and 45 percent hydrogen sulfide. CO_2 is not a regulated hazardous substance. Hydrogen sulfide is a regulated substance under federal RMP or state CalARP regulations; however, the Project will not be subject to these regulations for the two following reasons: a) hydrogen sulfide is not stored on site but converted to elemental sulfur within the operation as it is produced, and therefore is not a stationary source; and b) quantities are below regulatory thresholds.

CalARP = California Accidental Release Prevention
CFR = Code of Federal Regulations
lbs. = pounds
N/A = not applicable
RMP = Risk Management Plan
scf = standard cubic foot

The Project Site consists of the 453-acre area directly used for the IGCC electrical generation, low-carbon nitrogen-based products manufacture. The Controlled Area consists of an additional 653 acres of land, which surround the Project Site on the south, west, and north. Both the Project Site and Controlled Area are lands that will be owned by HECA. Therefore, HECA has control of all activities and development that may occur in either land. Territory extending beyond both the Project Site and Controlled Area boundaries is considered to be off site in this analysis.

The OCA models provide an examination of separate hazards: (1) the dispersion of the substances in the form of a vapor cloud; (2) the ignition of the released substance; and/or (3) pool fire. The modeling assumptions for a worst-case release scenario are that the total contents from the largest inventory (e.g., tank or pipe) are accidentally vented.

For dispersion modeling, the calculations also assumed the worst-case atmospheric conditions during such a release, when applicable. These conditions provide conservative results, because these extreme and unlikely climatic conditions maximize the vaporization to create the vapor cloud and minimize its dispersion. The specific atmospheric parameters under which a worst-case release scenario is examined are provided by the California Code of Regulations (CCR) Title 19 § 2750.2, and consist of the following:

- Temperature – The highest temperature—115 degrees Fahrenheit (°F)—is recorded for the area in the past 3 years. High temperatures are used because increased temperatures accelerate the vaporization rate of substances upon release.

- Average Humidity – 50 percent atmospheric humidity is used when performing the worst-case scenario evaluation. An average humidity of 50 percent is found during months providing the highest temperatures for the area. This level of humidity provides low interference for chemical dispersion, but is still taken into consideration to provide conservative results.

- Wind Speed – A 1.5-meter-per-second (m/s) wind speed is used when performing the worst-case scenario evaluation (equivalent to 4.92 feet per second [ft/s]). A low wind speed prevents the quick dispersion of vapor clouds.

- Atmospheric Stability – An atmospheric stability level of F is applied for the worst-case scenario OCA.[1] The Level F atmospheric stability provides the most stable atmospheric environment where the tendency of the atmosphere is to resist or enhance vertical motion and/or turbulence—this also contributes to minimum dissipation of the vapor cloud.

The U.S. Environmental Agency (USEPA) approved ALOHA® software version 5.4.1 for use in examining the impacts from a hypothetical accidental spill. ALOHA® is a Gaussian plume model that incorporates continuous source and meteorological parameters.

For vapor cloud explosion calculations, USEPA's RMP OCA guidance was used. The Endpoint selected by the USEPA as a significance criterion is an overpressure of 1.0 pound per square inch (psi) for vapor cloud explosion. An overpressure of 1.0 psi may cause partial demolition of houses and shattering of glass windows. Blast impacts are also of concern wherever flammable materials and ignition sources are present, or where processes operate under high temperatures and pressures.

The potential impact distance from a worst-case release scenario for a vapor cloud explosion was determined through the following equation:

$$X = 0.0081 \left(0.1\ W_f \frac{H_{Cf}}{H_{CTNT}}\right)^{1/3}$$ **(Equation K-1)**

where:

X = distance to overpressure of 1 psi (miles)
W_f = weight of flammable substance (pounds)
H_{Cf} = heat of combustion of flammable substance (kilojoules/kilogram [kJ/kg])
H_{CTNT} = heat of combustion of trinitrotoluene (4,680 kJ/kg)

[1] Level F atmospheric stability: provides the most stable atmospheric environment where the tendency of the atmosphere is to resist or enhance vertical motion and/or turbulence—this also contributes to minimum dissipation of the vapor cloud.

In some cases (e.g., hydrogen), the RMP*Comp software developed by the USEPA and the National Oceanic and Atmospheric Administration (NOAA) was used as an additional tool to determine the 1 psi overpressure impact distance.

For pool fire scenarios, the analysis was conducted in accordance with the appropriate regulatory guidance as follows: the modeling basis for a pool fire estimates the distance from the center of a pool fire to the heat radiation Endpoint (defined as 5 kilowatts per square meter [kW/m^2]). The worst-case release that is assumed for the model is as follows: the entire contents of the vessel are released, forming a pool of fire of approximately 1 inch in liquid thickness.

The following equation was used to estimate the possible impact distance from the pool fire:

$$X = H_c \sqrt{\frac{0.0001\,A}{5000\,\pi\,(H_v + C_p\,(T_B - T_A))}} \qquad \textbf{(Equation K-2)}$$

where:

X	=	distance to the 5-kilowatt-per-square-meter Endpoint (meters)
H_C	=	heat of combustion of the flammable liquid (joules/kg)
H_V	=	heat of vaporization of the flammable liquid (joules/kg)
A	=	pool area (meters squared [m^2])
C_P	=	liquid heat capacity (joules/kg -ºKelvin [K])
T_B	=	boiling temperature of the liquid (ºK)
T_A	=	ambient temperature (ºK)

Models considering the ignition of a material (such as hydrogen, syngas, methanol, and acid gas) examine the impact from a vapor cloud explosion of the flammable material, or the heat or radiation derived from the ignition of the material. As stated above, the OCA for these scenarios uses the maximum quantity of the materials and the specific combustion characteristics of the material to conservatively assess the potential impact distance from either an explosion or a pool of fire.

The following sections provide the specific modeling criteria, programs, and procedures applied for each of the materials.

3.1 Modeling Parameters

3.1.1 Anhydrous Ammonia

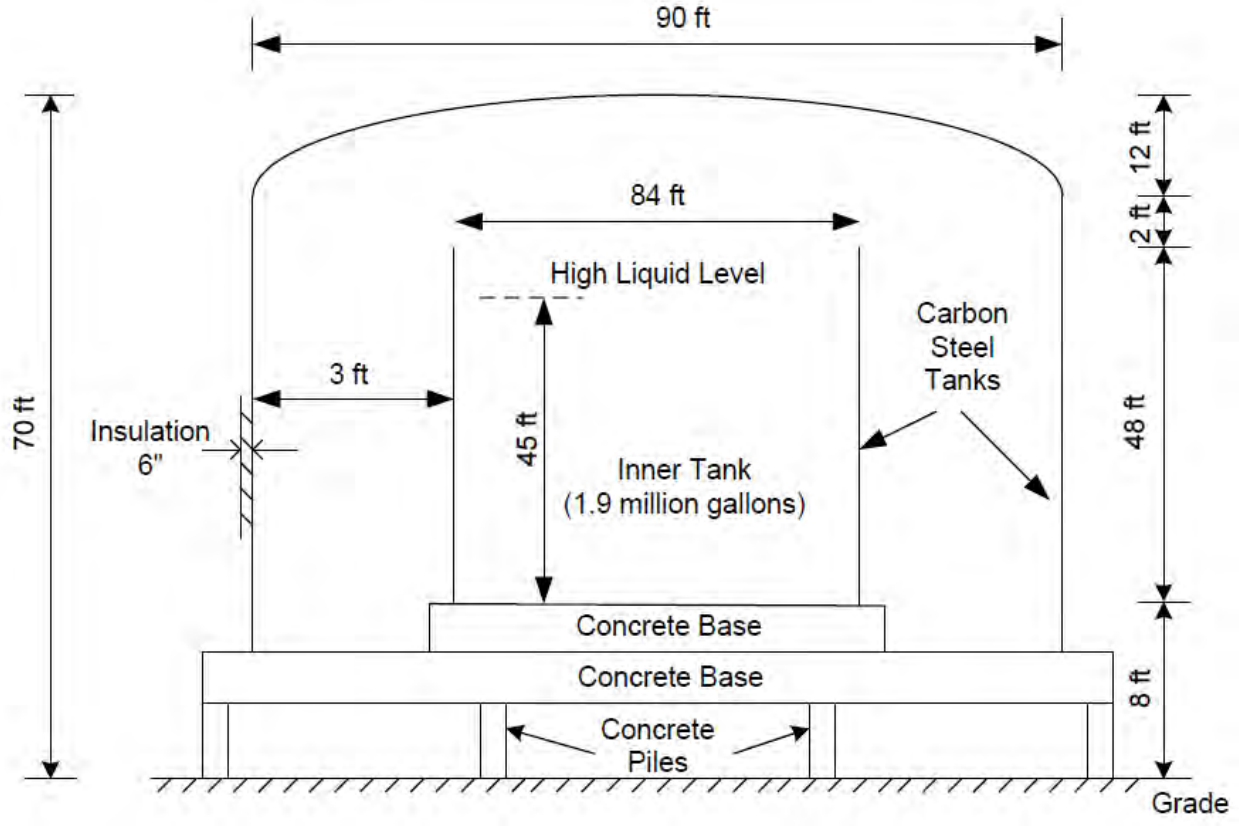
The Project will store approximately 3.8 million gallons of anhydrous ammonia (approximately 10,733 short tons). The design for the anhydrous ammonia storage system is state-of-the art and provides maximum protection against the accidental release of ammonia. The storage system uses two vertical cylindrical steel tanks each housed in its own unique second vessel with double integrity, elevated above ground on a concrete pedestal, and each having a storage capacity of

5,367 tons, which is equivalent to 1.9 million gallons. The storage system incorporates an inner tank approximately 84 feet in diameter, containing refrigerated liquid ammonia with a 3-foot interstitial space between the inner tank and outer sidewall. The inner tank will be constructed out of steel, in accordance with API 620 (Appendix R). The outer sidewall will also be constructed out of steel and will contain insulation and aluminum cladding. Sensors will be installed in the interstitial space to detect liquid ammonia leaks. The top of the tank will be a dome with a suspended deck insulated by mineral wool. Between the suspended deck and the top roof, the presence of ammonia vapor acts as an insulating media. The tanks will be elevated on a concrete pedestal with a concrete base. Siporex (light-weight concrete with high thermal insulation) blocks, foam glass, and layers of sand will serve as insulating layers between the pedestal and the vessel. The concrete pedestal prevents ice formation in the ground under the foundation. The ammonia storage system will be surrounded on all sides by a 4-foot-high reinforced-concrete barrier wall. A worst-case release of ammonia will be contained in the secondary housing, and released only through the pressure-relief valves. A scenario that assumes the simultaneous failure of both the primary tank and the secondary housing is not likely. The ammonia storage system is shown on Figures A and B.

The most likely scenario using a gun fired from the perimeter of the facility will, at the most, impact the outer tank. Based on the "Army Ammunition Data Sheets Small Caliber Ammunition FSC 1305," a 0.30-Caliber armor piercing (AP) M2 round with a muzzle velocity of 2,715 feet per second will have a penetration when "fired at 7/8-inch thick homogenous armor plate at 100 yards, will be not less than 0.42 inch." The closest distance from the ammonia system centerline to the earthen berm is approximately 1,599 feet. The closest distance from the centerline to the fence line is approximately 2,253 feet, with apparent obstructions to line of sight. Such a round fired from the fence line at the ammonia system will lose significant muzzle velocity and will have subsequently less penetration, and is unlikely to puncture the secondary housing. An armor piercing M2 round is also not commonly used for hunting, and is relatively expensive, so it is unlikely a rifle will be chambered with such a round.

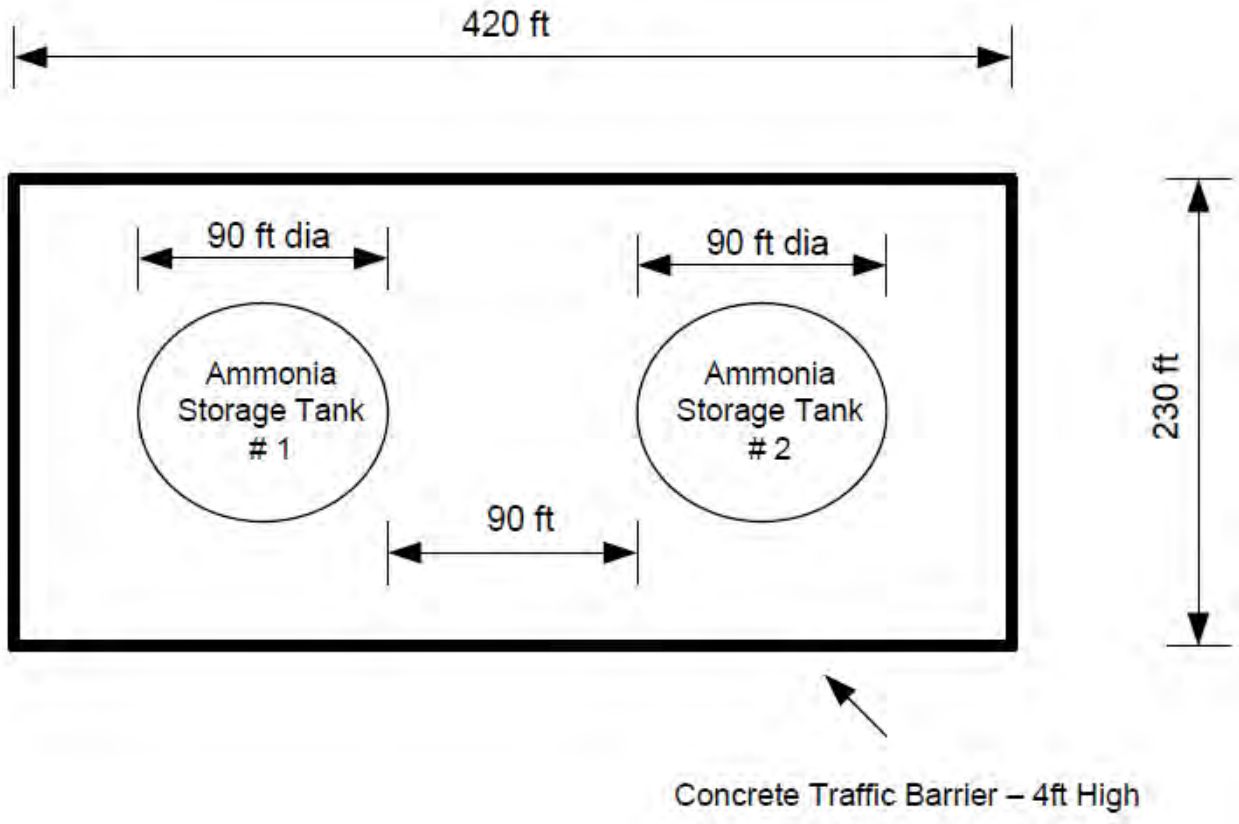
Figure A

Ammonia Storage Tank Estimated Dimensions



A

Figure B
Ammonia Storage System Tank Layout



Ammonia will be used as a reducing agent used for control of nitrogen dioxide (NO_2) emissions from the combustion turbine generators (CTGs), used as a component in manufacturing of fertilizer, and will also be sold off site. Ammonia is a potentially toxic chemical that will vaporize upon release into a vapor cloud.

Due to its hazardous characteristics, ammonia is regulated by state and federal regulations. As presented in Section 5.12, Hazardous Materials Handling, of this Application for Certification (AFC) Amendment, the use and/or storage of ammonia is regulated by the federal CAA RMP, federal PSM, and the CalARP program. The regulations are found in the Code of Federal Regulations (CFR) Title 40 Part 68, CFR Title 29 Part 1910, California Health and Safety Code §§ 25531 to 25543.3, and CCR Title 19, §§ 2735.1 to 2785.1. The aforementioned regulations governing the use and storage of ammonia require facilities using the substance in quantities exceeding the imposed threshold to develop and implement an RMP and a PSM. As indicated in Section 5.12 of the AFC Amendment, a CalARP RMP is required and will be submitted to the Kern County Environmental Health and Safety Department.

A component of the RMP involves the evaluation of potential off-site consequences derived from the accidental worst-case release of ammonia. Following the regulatory guidance for OCAs, an OCA was conducted for a worst-case accidental release under worst-case atmospheric conditions for the Project Site. Under the scenario, all 3.8 million gallons of ammonia are assumed to flow instantaneously into the interstitial space between the inner tank and outer sidewall. Because the outer sidewall is exposed to the environment, it will be nearer to ambient temperature. Due to the temperature gradient between the liquid ammonia and outer sidewall, heat will transfer to the ammonia and the liquid ammonia will begin to vaporize until temperature differences approach thermal equilibrium. The vaporization of ammonia will cause an increase in pressure which will be released through a relief valve located at the top of the vessel. Ammonia will be at atmospheric pressure, with the relief valve set at approximately 2 psig. The design of the tank provides the maximum safety against the release of ammonia. When in a worst-case release scenario, the amount of ammonia vented will be limited. The model examines the results of the subsequent dispersion over a 1-hour period. In order to determine the total rate of ammonia venting, the following cases were considered:

- **Case 1: Heat Ingress** – The transfer of heat from hot ambient air (external to the tank) to cold, saturated, stored ammonia leading to ammonia vaporization proportional to the heat flow.
    - The ambient air temperature is based on the extreme high case of 115°F.
    - Liquid ammonia is stored at 0.44 psig and -28°F.
    - The vapor ammonia in the tank annular region will be well mixed by natural convection, and therefore the bulk vapor temperature will be the same as the saturated liquid (-28°F). The heat transfer calculation then considers the heat ingress by the following path: bulk air -> insulation -> steel tank wall -> bulk vapor ammonia.

- The heat flow was calculated using both convective (film) and conductive (bulk) heat transfer resistances in the steady-state heat transfer equation, leading to an ammonia vaporization rate of *3.0 lb/min per tank***.** In the case of the refrigeration package failing, both storage tanks will vent simultaneously.

- The maximum vaporization of ammonia for Case 1 is **6.0 lb/min.**

- **Case 2: Fill Rate Displacement** – the rate of ammonia vapor displaced by the inflow of the liquid ammonia at design rate produced in the Ammonia Synthesis Plant.

  - Normal out-breathing is a result of the maximum inflow of liquid into the tank and subsequent vapor displacement caused by such inflow. The maximum inflow is based on the design rate of ammonia production in the Ammonia Synthesis Plant, 2,087 STPD.

  - The calculated volume of ammonia vapor displaced for Case 2 is **3.6 lb/min.**

- **Case 3: Non-Release For Inner Tank Rupture Calculation** – Built-up pressure from ammonia release does not exceed the ammonia storage tank design pressure of 2.5 psig.

  - Stored liquid ammonia is contained within the inner walls of the storage tank, and maintains a constant temperature with the vapor space ammonia. The heat flow was calculated using the overall heat transfer equation. Subsequently, intermediate temperatures were calculated along the temperature gradient from the bulk air to the bulk ammonia vapor. The resulting temperature inside of the outer wall of the storage tank is -17.2°F.

  - Assuming the inner wall of the storage tank ruptured, resulting in the liquid volume being contained within the outer wall of the storage tank, the heat released into the ammonia liquid by cooling the steel wall from -17.2°F to -28°F is calculated. The resulting vaporized ammonia leads to a molar flow rate increase of approximately 30 lb-mol.

  - The resulting pressure is approximately 2 psig, which is contained within the 2.5 psig designed storage tank. Therefore, no ammonia is released for Case 3.

- **Case 4: Secondary Cooling** – The rate of ammonia vaporized from the cooling of the steel wall driven by the heat flux tangential to the vessel wall (from the top of the dome to the bottom of the tank wall and into the bulk liquid).

  - The storage wall below the liquid is assumed to have cooled instantly to -28°F.

  - Using the conductive heat transfer equation, the heat flow calculated results in an ammonia vaporization rate of *1 lb/hr***.**

After analyzing all cases, the total maximum simultaneous ammonia venting rate is *9.6 lb/min*.

The analysis also assumes the worst-case climate conditions consisting of an ambient temperature of 115°F (the highest average temperature within the Project area), a 50 percent average humidity, a 1.5 m/s wind speed (i.e., 4.9 ft/s), and a level F atmospheric stability.

During the hypothetical worst-case release scenario, the ammonia is assumed to evaporate in the form of gas via laminar mass transfer. The ALOHA® model examined the effects of the designated wind speed and atmospheric turbulence force that move the released molecules as gas through the air. The examination of the affecting atmospheric parameters allow for an evaluation of the total area impacted.

Three levels of concern were used to evaluate the potential impacts associated with the hypothetical worst-case aqueous ammonia release:

- CEC Significance Level – The CEC Significance Level is 75 ppmv and constitutes the odor threshold of ammonia.

- Emergency Response Planning Guideline Level 2 (ERPG-2) – The ERPG-2 Level, developed by the American Industrial Hygiene Association (AIHA) is 150 ppmv. It is the maximum concentration in air where a 1-hour exposure will not result in irreversible or other serious health effects.

- USEPA/CalARP Toxic Endpoint (the "Endpoint") – The CalARP for ammonia concentration, based on USEPA 40 CFR 68, is 200 ppmv (0.14 milligrams per liter [mg/L]) averaged over 1 hour. The Endpoint concentration is the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action.

The anhydrous ammonia modeling results are presented in Section 3.2 of this appendix, titled Results of Modeling.

3.1.2 Hydrogen

The unique properties of hydrogen—low density, high specific heat, and thermal conductivity—make it an ideal coolant for electricity generators. Hydrogen is also now being widely used as a coolant for power plants. In a hydrogen-cooled generator, the hydrogen gas is circulated in a closed loop within the generator to remove heat from its active parts; then it is cooled by gas-to-water heat exchangers that are part of the stator frame. The Project will use a hydrogen-cooled generator and store 30,000 standard cubic feet (scf) of compressed hydrogen gas in a pressurized multi-tube trailer as make-up for the loss within the generator.

Although hydrogen gas is not toxic, it is a highly flammable material. The potential risks posed by a hydrogen leak are mainly fire and explosion. Due to its low ignition energy, the potential impact of a hydrogen-oxygen fire is usually localized. A hydrogen release may also pose an explosion risk, which is generally localized with small-source volumes.

To determine the behavior of hydrogen under a worst-case release scenario, we have examined its properties, along with the historical data, to evaluate the potential impacts in this section. Although the storage amount of hydrogen at the Project Site is far below the federal or state regulatory threshold, a worst-case OCA evaluation was performed in order to assess the potential consequences of a worst-case release scenario, and the need for appropriate controls and mitigations. The examination was performed following instruction from USEPA's RMP OCA guidance (April 1999) document (USEPA RMP OCA guidance). In addition, the USEPA-approved RMP*Comp software for hazardous chemical release modeling was also used to confirm the results. These results are presented in Section 3.3, Modeling Outputs.

The purpose of the modeling was to estimate the consequences from potential releases of hydrogen gas from the storage vessel. Due to the chemical properties of hydrogen (i.e., ignitability and reactivity) and historical data (obtained from public databases of hydrogen incidents throughout a variety of industries), the hazard caused by explosion is considered to be the most significant potential impact for an accidental hydrogen release. The USEPA vapor cloud explosion method was used for the evaluation (see Equation K-1 in Section 3.0).

The OCA modeling performed for the worst-case release scenario was based on USEPA's RMP criteria as follows:

The contents of the entire hydrogen tube trailer (30,000 scf) are accidentally vented. For vapor cloud explosions, the total quantity of hydrogen is assumed to form a vapor cloud. (Note: vapor cloud explosions generally are considered unlikely events). The entire cloud is assumed to be within the flammability limits, and the cloud is assumed to explode. Ten percent of the flammable vapor in the cloud is assumed to participate in the explosion. The impact is measured as the distance to the 1 psi overpressure level. This is determined using Equation K-1 (from USEPA's RMP OCA guidance). According to USEPA's RMP OCA guidance Exhibit C-1, H_c for hydrogen is 119,950 kJ/kg. Other input parameters used in Equation K-1 are provided in Table K-2, Hydrogen Modeling Input Parameters.

Table K-2
Hydrogen Modeling Input Parameters

Chemical	Storage Type	Volume (scf)	Weight (lbs)	Hc (kJ/kg)	Density (lb/ft^3)
Hydrogen	Compressed gas	30,000	159	119,950	0.0053

Notes:
scf = standard cubic foot (volume is measured under standard condition 59°F, 1 atm)
kJ/kg = kilojoules per kilogram
lbs/ft^3 = pounds per cubic feet

The weight of the flammable substances, in this case hydrogen, is calculated using the equation below:

$$W_h = V\rho \qquad \textbf{(Equation K-3)}$$

where:

W_h = weight of hydrogen (lbs)
V = volume of hydrogen (ft^3)
ρ = density of hydrogen gas (lb/ft^3)

Because the amount of hydrogen to be stored on site is 30,000 scf, and the density of hydrogen gas at 60°F, 1 atmosphere (atm) is 0.0053 lb/ft^3,

$$W_h = 30{,}000\ ft^3 \times 0.0053\ lb/ft^3 = 159\ lbs$$

The hydrogen modeling results are presented in Section 3.2 of this appendix.

3.1.3 Acid Gas (45 percent Hydrogen Sulfide)

The Rectisol® process will remove acid gas to significantly reduce sulfur dioxide emissions. Acid gas is removed from shifted syngas to produce low-sulfur hydrogen-rich fuel for low-carbon electrical generation. The acid gas will consist of an approximately 45 percent hydrogen sulfide and 55 percent CO_2 mixture. Of the two substances, hydrogen sulfide presents a greater potential hazard due to its toxic and flammable characteristics.

Hydrogen sulfide is classified as a regulated hazardous substance by federal CAA § 112(r) RMP regulations and by CalARP regulations. The regulatory threshold for hydrogen sulfide is 10,000 pounds under CAA RMP regulations, and 500 pounds under CalARP regulations. The toxicity concentration level set by the CAA RMP/CalARP for hydrogen sulfide is 32 parts per million (ppm) (0.042 mg/L). However, the quantities of hydrogen sulfide do not trigger regulatory requirements under CalARP and the federal CAA RMP for worst-case modeling because (1) hydrogen sulfide is not stored on site, but converted to elemental sulfur within the operation as it is produced—thus, there is no stationary source; and (2) quantities are below regulatory thresholds. Nonetheless, the Project performed an OCA for the worst-case release scenario to investigate the potential impact from the explosion and toxicity of a hydrogen sulfide vapor cloud.

The worst-case release scenario for hydrogen sulfide was studied using the USEPA-approved ALOHA® 5.4.1 air dispersion modeling program and with worst-case atmospheric and environmental conditions as provided by CalARP regulations. Worst-case atmospheric conditions under which the hypothetical release was examined were set as follows: wind speed of 1.5 meters per second; an F atmospheric stability level (most stable); atmospheric temperature of 115°F; and atmospheric humidity of 50 percent. These conditions are default settings on the RMP*Comp modeling program per regulatory protocols established by CalARP.

The ALOHA® 5.4.1 model requires calculation of the weight of the regulated chemical. The model assumes the total quantity of hydrogen sulfide released is identical to the volume of hydrogen sulfide found within the piping system. In order to obtain the weight of the hydrogen sulfide found in the acid gas mixture, the ideal gas law was applied for the hydrogen sulfide component of the total acid gas within the transfer piping system (i.e., 45 percent of total pipe volume). The HECA acid gas handling system was analyzed to determine the maximum

potential volume of hydrogen sulfide within the acid gas. The maximum volume of hydrogen sulfide within this system is equivalent to 305 cubic feet. It is on this basis that the total mass of the system was calculated.

The ideal gas law was used to determine the total amount of moles found for hydrogen sulfide in the acid gas piping system (see equation that follows).

$$PV = nRT$$

$$n = PV/RT$$

$$\text{Weight of Gas} = n \times \text{Molecular Weight of } H_2S \text{ (34 lb/lb-mol)}$$

A process pressure of 30 pounds per square inch absolute (psia) and process temperature of 120°F were selected for the equation based on operational conditions that will be found at the Project. Additionally, the Ideal Gas Constant (R), which is equivalent to 10.73 cubic feet·psia/lb-mol°R, was also applied to the equation. After calculating the moles of hydrogen sulfide, the weight of hydrogen sulfide in the piping system (50 pounds) was calculated by multiplying the molecular weight of hydrogen sulfide with the moles. The total weight for the hydrogen sulfide gas for the acid gas piping system is shown below:

System Capacity (actual cubic feet)	H_2S Volume (actual cubic feet)	Moles of H_2S (lb-mol)	Weight of H_2S (lbs)
677	305	1.47	50

The quantities shown in the table above correspond to a maximum pipe length of 864 feet, which was used in the ALOHA® 5.4.1 modeling program, under worst-case scenario conditions, to determine the distance to the Endpoint from the complete release of the pipe contents. ALOHA® 5.4.1 was used to determine the distance to the Endpoint concentration of 32 ppm (0.042 mg/L), as required by CAA § 112 (r) RMP and CalARP regulations. A 10-minute time of release was also selected for the scenario, following CAA § 112 (r) RMP and CalARP regulatory requirements.

Although not regulated as a flammable substance, hydrogen sulfide may present a hazard of producing a flammable vapor cloud upon an accidental release. In order to determine the most significant potential impact that could be developed from a worst-case release scenario for a flammable hydrogen sulfide vapor cloud, USEPA's RMP OCA guidance document was used for determining the distance to 1 psi overpressure for vapor cloud explosions. The pipeline diameter was the key input parameter for the vapor cloud explosion analysis.

Equation K-1 was then used to calculate the potential impact distance as a result of the worst-case vapor cloud explosion. Results of the hydrogen sulfide modeling are presented in Section 3.2 of this appendix.

3.1.4 Syngas

The feedstock will be gasified to produce syngas, which will be processed and purified to produce a hydrogen-rich fuel. This hydrogen-rich fuel will be used to fuel the combustion turbine for low-carbon baseload power generation.

Wet-syngas consists primarily of water, carbon monoxide, CO_2, hydrogen, hydrogen sulfide, nitrogen, and argon, with trace amounts of ammonia and carbonyl sulfide. The approximate quantity of the relevant hazardous compounds for the syngas stream is presented in the Table K-3.

Table K-3
Relevant Hazardous Compounds

Component	Quantity in Wet-Syngas (lbs) [3]
H_2[1]	216
CO[2]	4,185
CH_4[1]	1
H_2S[1]	181
NH_3[1]	15

Note:
1. H_2, CH_4, H2S, and NH_3 are all regulated chemicals. However, the mass proportion of each chemical within the syngas is such that the chemicals fall below regulated quantities. Regulated quantity for H_2 > 10,000 pounds, CH_4 >10,000 lbs, H2S > 500 pounds, and NH_3 > 500 pounds, based on CalARP regulations. Because the quantity of the syngas is below the regulated levels, syngas is not considered a regulated substance.
2. Carbon monoxide is a hazardous substance with both toxic and ignitable characteristics.
3. The quantity (by weight) of each component is based on the weight found within the Gasifier System.
4. Additional syngas components have not been included in the table.

Carbon monoxide, hydrogen, hydrogen sulfide, ammonia, and methane are considered to be hazardous substances found in syngas. Of these substances, only hydrogen, hydrogen sulfide, ammonia, and methane are regulated chemicals under federal and state regulations. Hydrogen and methane are regulated as flammable substances; ammonia and hydrogen sulfide are regulated for toxicity (see 40 CFR 68.130 and 19 CCR 2770.5). However, the quantities of these constituents in the syngas do not trigger regulatory requirements under CalARP and the federal CAA RMP for worst-case modeling because (1) syngas is not stored on site, but consumed within the operation as it is produced; thus, there is not considered to be a stationary source; and (2) quantities are below regulatory thresholds.

Nonetheless, the Project performed an OCA for the worst-case release scenario to investigate the potential impact from the explosion, combustion, and toxicity levels of a syngas vapor cloud.

The Project considered the release from a source point that would provide a worst-case release scenario. The worst-case syngas release source can be attributed to the gasification section of the Project, because it is this zone that will potentially store the highest concentrations of hazardous materials in syngas at any given time. The gasification section includes the gasifier vessel quenched zone, syngas scrubber vessel, and the connecting pipeline for all of the equipment (the largest quantity that can be released is from the Gasifier System).

In order to evaluate the worst-case release scenario for a syngas vapor cloud explosion, a catastrophic release of the syngas from equipment and process piping at the site was assumed based on the volume of the gasifier and downstream equipment up to the closest isolation valve, and the maximum concentrations of each flammable component found in the syngas mixture. Flammable substances including hydrogen, carbon monoxide, and hydrogen sulfide were considered in the modeling calculations. Methane and ammonia were excluded from the calculations, because syngas contains trace amounts of these substances that would not provide a significant contributing factor to trace the vapor cloud explosion impact.

The syngas vapor cloud explosion evaluation was conducted following USEPA's RMP OCA guidance document (see Equation K-1 in Section 3.0). The purpose of the modeling was to estimate the consequences from a hypothetical worst-case release of syngas at the Project Site. To calculate the heat of combustion of the syngas, the following equation was used:

$$H_{Syngas} = \frac{W_{H_2}}{W_{CO+H_2+H_2S}} \times HC_{H_2} + \frac{W_{CO}}{W_{CO+H_2+H_2S}} \times HC_{CO} + \frac{W_{H_2S}}{W_{CO+H_2+H_2S}} \times HC_{H_2S} \qquad \textbf{(Equation K-4)}$$

where:

W_{H_2} = weight of H_2 (lbs)
W_{CO} = weight of CO (lbs)
W_{H_2H} = weight of H_2S (lbs)
H_{H_2} = heat of combustion of H_2 (joules/kg)
H_{CO} = heat of combustion of CO (joules/kg)
H_{H_2S} = heat of combustion of H_2S (joules/kg)
H_{syngas} = heat of combustion of syngas (joules/kg)

Results provided from the vapor cloud explosion analysis performed tend to be conservative, because they exclusively account for the hydrogen, carbon monoxide, and hydrogen sulfide in the syngas. These three compounds only account for approximately one-third of the syngas components. The remaining syngas components are mainly composed of non-flammable substances (e.g., H_2O), which may reduce the potential for combustion of the syngas. However, in order to assess the worst-case scenario, non-flammable substances were excluded from the modeling. Results derived from the application of Equation K-1, for the potential impact distance as a result of the worst-case vapor cloud explosion, are presented in Section 3.2 of this appendix.

In order to the evaluate the potential impact from a toxic vapor cloud generated from the release of the syngas, the distance to the Endpoint for ammonia, hydrogen sulfide, and CO_2 was

evaluated. Each hazardous substance was evaluated individually based on the specific quantity found in the syngas.

Ammonia and hydrogen sulfide are regulated hazardous substances. Each substance composes only a small portion of the syngas. However, because both compounds are considered hazardous regulated materials and have been classified as toxic, the impact distance generated from the release of these materials was evaluated through the ALOHA® modeling program. The concentrations of concern modeled for ammonia and hydrogen sulfide were set at 0.14 mg/L and 0.042 mg/L, respectively, as provided by CalARP and federal CAA § 112(r) RMP regulations.

Unlike ammonia and hydrogen sulfide, carbon monoxide is not classified as a regulated hazardous substance by federal CAA § 112(r) RMP regulations or by CalARP regulations. However, carbon monoxide is a hazardous material with toxic characteristics. In order to evaluate the potential health hazards that could be attributed to the carbon monoxide component of the syngas, an OCA was conducted. Table K-4 below provides some regulatory concentration level thresholds that have been established for carbon monoxide.

Table K-4
Regulatory Concentration Level Thresholds

Regulatory Enforcement	Concentrations
NIOSH REL (ceiling @ 10 minutes)	35 ppm
OSHA PEL (ceiling)	35 ppm
OSHA PEL (maximum peak @ 10 minutes)	50 ppm
ACGIH TLV TWA	25 ppm
IDLH	1,200 ppm
LCLO (human @ 30 minutes)	4,000 ppm

Notes:

[1] NIOSH REL (ceiling @ 10 minutes)	National Institute for Occupational Safety and Health Recommended Exposure Limit.
[2] OSHA PEL (ceiling)	Occupational Safety and Health Administration Permissible Exposure Limit
[3] OSHA PEL (maximum peak @ 10 minutes)	Occupational Safety and Health Administration Permissible Exposure Limit
[4] ACGIH TLV TWA	American Conference of Governmental Industrial Hygienists Threshold Limit Value Time-Weighted Average
[5] IDLH	Immediately Dangerous to Life and Health
[6] LCLO (human @ 30 minutes)	Lethal Concentration Low

The vapor cloud dispersion that may occur from the accidental worst-case release scenario for syngas was examined using the USEPA-approved ALOHA® 5.4.1 air dispersion modeling program. The concentrations of IDLH and the Lethal Concentration Law (LCLO) were used as Endpoints to estimate the potential maximum impact that could occur. The program was used to examine hypothetical scenarios under which the entire volume of the pipe would be vented under worst-case scenario conditions as provided by CalARP regulations. Worst-case climate conditions were assumed as follows: wind speed of 1.5 meters per second (i.e., 4.9 ft/s), an F atmospheric stability level (most stable), an atmospheric temperature 115°F, and an atmospheric humidity of 50 percent, per regulatory protocols established by CalARP.

3.1.5 Methanol

The Project will use methanol in the process unit, which will be stored in a single 300,000-gallon AST with secondary containment. An additional 250,000 gallons of methanol will also be contained in process vessels, equipment, and piping of the of AGR unit. This process inventory is geographically remote from the 300,000-gallon AST, and a pump and isolation valve are placed on the piping between the storage tank and the AGR unit isolating the AST and AGR unit. The 300,000-gallon AST is considered as the major hazardous source because it contains the largest amount of methanol at the Project Site, and is normally isolated from the process inventory of 250,000 gallons.

Methanol is considered to be a hazardous substance due to its flammable and moderately toxic chemical properties. Methanol is listed in the following federal regulations:

- 29 CFR 1910.1200 (OSHA)
- 40 CFR 116 and 40 CFR 117 (USEPA)
- 40 CFR 355, Appendices A and B (USEPA)
- 40 CFR 372 (Superfund Amendments and Reauthorization Act [SARA] Title III)
- 40 CFR 302 (Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA])

Although it is a listed hazardous substance, federal regulations do not require an OCA for the storage of methanol. Additionally, methanol is not regulated under applicable state regulations. Nonetheless, an OCA was conducted to evaluate the potential impact area associated with a worst-case methanol release at the Project Site. Because methanol is a flammable substance, the most severe potential consequence from an accidental worst-case release could be a vapor cloud explosion. The second potential consequence from an accidental worst-case release of methanol would be a pool fire. These two potential worst-case release scenarios were evaluated for the methanol as described in the following paragraphs.

The first worst-case scenario modeled was the formation of a methanol vapor cloud. The hypothetical release assumes a situation where the entire contents of the methanol storage tank (300,000 gallons) are vented. In accordance with regulatory guidance, the methanol was assumed to be released over a 10-minute period, and to form a vapor cloud where 10 percent of the flammable vapor explodes. An analysis was undertaken using Equation K-1 to determine the potential impact distance of a pressure wave for a vapor cloud explosion. For Equation K-1, the weight of methanol, W_f, was calculated to be approximately 1,980,000 pounds and the heat of combustion, H_{Cf}, was identified to be 22,700,000 joules/kg.

The second worst-case scenario analyzed was a methanol pool fire, in accordance with the appropriate regulatory guidance. The modeling basis for a pool fire estimates the distance from the center of a pool fire to the heat radiation Endpoint as 5 kilowatts per square meter (kW/m^2). The worst-case release assumed for the model is as follows: the entire content of one methanol storage tank (300,000 gallons) is released, forming a pool of fire of approximately 1 inch in liquid thickness.

Equation K-2 in Section 3.0 was used to estimate the possible impact distance from the pool fire. The input parameters for Equation K-2 in the methanol pool fire case are as follows:

H_C	=	heat of combustion of methanol (joules/kg) = 22,700,000 joules/kg
H_V	=	heat of vaporization of methanol (joules/kg) = 1,100,000 joules/kg
A	=	pool area (m^2) = 44,592 m^2 = 479,984 square feet
C_P	=	liquid heat capacity (joules/kg -ºK) = 2,482 joules/kg -ºK
T_B	=	boiling temperature of the liquid (ºK) = 337.8 ºK
T_A	=	ambient temperature (ºK) = 320 ºK

Neither of the scenarios described above account for the safety systems that will be present at the Project Site, including: nitrogen blanketing of the tanks' vapor space, automatic fire detection and fire suppressant foam system in the storage tank and surrounding berm area, and fire water system for the Project Site. These safety systems will significantly reduce the likelihood of this event and the possibility of ignition. However, the results of the model presented in Section 3.2 do not take into account any of these safety measures.

Nitric Acid

Nitric Acid will be used at the Project in a maximum quantity of 120 tons at a 60 percent concentration. The nitric acid will be stored in an above-ground tank in the process equipment in the unit. Nitric acid is an intermediate product used to produce UAN solution.

3.2 Results of Modeling

The following sections provide modeling outputs, calculations, and results of the OCAs conducted for the aqueous ammonia, hydrogen, acid gas, syngas, and methanol at the Project Site.

3.2.1 Anhydrous Ammonia

The dispersion analysis does not account for prevailing wind direction, and therefore assumes that there is an equal probability of the ammonia vapor cloud dispersing in any direction. Thus, the model results in Figure L-1, Aqueous Ammonia Area of Potential Impact from Worst-Case Scenario, show a circle of equal predicted ammonia concentration around the source for the greatest area of impact. The radius of the circle represents the distance to the 200 ppm (0.14 mg/L) Endpoint concentration threshold provided by CalARP regulations.

The distance from the storage equipment to the nearest Project Site boundary is approximately 0.1 mile. The predicted Endpoint is well within the Project Site boundaries. The CEC Significance Level of 75 ppm, the CalARP regulatory threshold concentrations of 200 ppm (0.14 mg/L) and the ERPG-2 200 ppm concentrations reached a distance of zero miles. Ground-level concentrations of ammonia do not exceed any levels of concern at any time during a worst-case release scenario. No off-site impact is expected to occur from a worst-case release scenario.

As additional protection measures for ammonia spills, the Project has also equipped the ammonia AST with automated controls and an alarm system with an emergency beacon and horn. The

Project will provide employee training, enforce safe operation procedures, enforce the separate storage of incompatible chemicals, and provide scheduled inspection of equipment. Materials will be handled in accordance with all applicable LORS. Based on the above, the potential impacts of the use and storage of ammonia at the Project Site are less than significant.

3.2.2 Hydrogen

USEPA's RMP*Comp model results (presented in Section 3.3, Modeling Outputs) show that the approximate distance reached by a 1 psi overpressure wave resulting from a worst-case release scenario would be 317 feet (0.06 mile). The potential impact from the vapor cloud explosion resulting from a worst-case 30,000 scf release of hydrogen does not extend outside of the Project Site boundaries.

As an added examination measure, an analysis of the vapor cloud explosion area of impact was also performed following instruction from USEPA's RMP OCA guidance document. Equation K-1 was applied to determine the approximate distance that would be reached by a hydrogen vapor cloud explosion. The equation was applied in the manner below (equation provided by the USEPA RMP OCA guidance):

$$X = 0.0081\left(0.1 \times 159\,\text{lbs} \times \frac{119{,}950\ \text{kJ/kg}}{4{,}680\ \text{kJ/kg}}\right)^{1/3} = 0.06\,\text{mile} \approx 317\,\text{feet}$$

Results from vapor cloud explosion computations reflected those obtained through the RMP*Comp modeling program. Both modeling practices showed a total distance of impact of 317 feet (0.06 mile).

The OCA analysis result shows that even for the worst-case release scenario for hydrogen, the potential impact will be restricted within an area of a 317-foot-radius (0.06 mile) from the center of the storage tube trailer, which will remain within the Project Site boundary. The hydrogen multi-tube trailer is approximately 1,200 feet (0.23 mile) from the Project Site boundary. Any explosion or combustion of a worst-case release scenario for hydrogen at the Project Site would not have any negative impacts off site and would be contained within the Project Site boundaries. Based on the above, the potential impacts of the use and storage of hydrogen at the Project Site are less than significant.

3.2.3 Acid Gas (45 percent Hydrogen Sulfide)

An OCA for the worst-case release of acid gas from the process pipeline between the AGR and SRU was examined. The process pipeline is located approximately 1,050 feet (0.2 mile) from the Project Site boundary, and approximately 2,100 feet (0.4 mile) from the Controlled Area boundary. The acid gas system volume is approximately 677 actual cubic feet, which is equivalent to 864 feet of 12-inch-diameter pipe.

The ideal gas law (PV = nRT) was used to determine the total amount of moles found in the hydrogen sulfide in the acid gas process system. The results were then used to determine the

approximate weight of the hydrogen sulfide gas in the process pipeline. The total weight for the hydrogen sulfide gas from the pipeline is shown below:

System Capacity (cubic feet)	H_2S Volume (cubic feet)	Moles of H_2S (lb-mol)	Weight of H_2S (pounds)
677	305	1.47	50

The weight shown above was input into the ALOHA® 5.4.1 modeling program, under worst-case climate conditions to determine the distance to the Endpoint from the complete release of the pipe contents. The Endpoint concentration for hydrogen sulfide is equivalent to a concentration of 32 ppm (0.042 mg/L), as required by CAA §112 (r) RMP and CalARP regulations. A 10-minute time of release was also selected for the scenario, following CAA § 112 (r) RMP and CalARP regulatory requirements. The distance to the Endpoint generated by an accidental release of hydrogen sulfide from the acid gas is shown below:

Distance to Endpoint (miles)
0.37

Results from the ALOHA® 5.4.1 modeling program presented a distance to the Endpoint of 1,974 feet (0.37 mile). The potential impacts from a vapor cloud under the worst-case release scenario will remain within the Controlled Area.

As previously mentioned, in addition to conducting a vapor cloud OCA, the acid gas was also examined for the impacts from a vapor cloud explosion. The same volumetric amount was taken into consideration, and the same weight of hydrogen sulfide. By applying weight and heat of combustion parameters to Equation K-1, the 1 psi overpressure wave impact derived from the acid gas was determined to reach a distance of 108 feet.

Equation K-1 was applied in the manner shown below (equation provided by the USEPA RMP OCA guidance):

$$X = 0.0081\left(0.1 \times 50 \text{ lbs} \times \frac{15{,}240 \text{ kJ/kg}}{4{,}680 \text{ kJ/kg}}\right)^{1/3} = 0.02 \text{ mile} \approx 108 \text{ feet}$$

The 108-foot distance reached by the vapor cloud explosion from the acid gas worst-case scenario will remain well within the Project Site boundary. As such, the use of acid gas at the Project Site will not have any impacts to the surrounding community and will not present a significant hazard by the Project. Based on the above, the potential impacts from the use of acid gas at the Project Site are less than significant.

3.2.4 Syngas

Equations K-1 and K-4 (provided by the USEPA RMP OCA guidance) were applied to determine the approximate distance that would be reached by a syngas vapor cloud explosion. As an initial step, Equation K-4 was applied to determine the combined heat of combustion of

flammable syngas components. These flammable materials and their respective heats of combustion are provided in Table K-5.

Table K-5
Flammable Materials

Target Syngas Composition	Total Mass (pounds)	Heat of Combustion (kJ/kg)
Hydrogen (H_2)	216	119,950
Carbon monoxide (CO)	4,185	10,111
Hydrogen sulfide (H_2S)	181	15,240

The total heat of combustion for syngas was determined in the manner shown below.

$$H_{syngas} = \frac{216\text{lbs}}{4{,}582\text{lbs}} \times 119{,}950 \text{ kJ/kg} + \frac{4{,}185\text{lbs}}{4{,}582\text{lbs}} \times 10{,}111 \text{ kJ/kg} + \frac{181\text{lbs}}{4{,}582\text{lbs}} \times 15{,}240 \text{ kJ/kg} = 15{,}492 \text{ kJ/kg}$$

Following the determination of heat of combustion for syngas, Equation K-1 was used to estimate the approximate distance that would be reached by a syngas vapor cloud explosion.

$$X = 0.0081\left(0.1 \times 4{,}582\,\text{lbs} \times \frac{15{,}492\,\text{kJ/kg}}{4{,}680\,\text{kJ/kg}}\right)^{1/3} = 0.09\,\text{mile} \approx 491\,\text{feet}$$

The maximum potential impact distance was calculated to be 0.09 mile. The Project Site boundary is approximately 0.23 mile from the Gasifier System (i.e., potential source of syngas release). Based on the above calculations, the syngas would not present an off-site hazard from a vapor cloud explosion. In addition, the impact area may be further reduced by the large concentration of water and CO_2 (>50 percent by weight) present within the syngas.

The ALOHA® 5.4.1 model was applied to estimate the potential impact of the toxic chemical components of the syngas from a worst-case scenario release of a syngas vapor cloud. The distance to the Endpoints was examined for ammonia and hydrogen sulfide using the RMP/ CalARP criteria. Concentrations examined for carbon monoxide were based on IDLH and LCLO because RMP and CalARP do not regulate carbon monoxide.

The worst-case release scenario also modeled the specific characteristics of the source, including the minimum release height of 70 feet above grade. The height of the equipment was also considered to determine the potential impact at ground level. Input parameters and results obtained from the modeling are provided in Table K-6.

Table K-6
Input Parameters and Results

Syngas Component	Concentration of Concern	Basis of Concentration	Elevation of Release Source	Distance to Concentration of Concern
Ammonia	200 ppm (0.14 mg/L)	CalARP/RMP	70 feet	Not Exceeded
Hydrogen Sulfide	32 ppm (0.042 mg/L)	CalARP/RMP	70 feet	Not Exceeded
Carbon Monoxide	1200 ppm	IDLH	70 feet	Not Exceeded
	4000 ppm	LCLO	70 feet	Not Exceeded

Based on the modeling results shown in Table K-6, the concentration of concern will not be reached or exceeded at ground level. Therefore, according to the worst-case scenario modeling, potential impacts from the generation and use of syngas at the site will be less than significant.

3.2.5 Methanol

The methanol storage area is approximately 0.11 mile from the Project Site boundary and 0.4 mile from the Controlled Area boundary. As discussed in the Section 3.1, Modeling Parameters, two worst-case scenarios were modeled for methanol: (1) pool fire; and (2) vapor cloud explosion. Modeling indicated that a potential methanol pool fire resulting from the worst-case complete release of a single tank may reach a distance of 1,215 feet (0.23 mile) from the center of the methanol pool. The modeling showed that the potential impact distance from a worst-case methanol vapor cloud explosion after a complete release may reach a distance of approximately 4,224 feet (0.8 mile) from the location of the tank.

Results from the worst-case release scenario modeling demonstrated that impact from the methanol pool fire scenario will be maintained within the boundary of the Controlled Area, and the potential impact from the methanol vapor cloud explosion may extend just beyond the Controlled Area. The immediate vicinity surrounding the Project Site and the Controlled Area is composed of rural, agriculturally developed land and undeveloped native terrain. As such, the potential off-site impact modeled for a worst-case methanol vapor cloud explosion will not affect sensitive receptors. Therefore, potential impacts from the use and storage of methanol at the Project Site will be less than significant.

As discussed in Section 3.1, the modeling assumes a highly unlikely event and worst-case conditions. These assumptions do not take into account any safety measures that will be employed for the Project. For example, safety measures in the Project Site will include nitrogen blanketing of the tank vapor space, automatic fire detection, a fire suppressant foam system surrounding the methanol storage tank and within the berm area, and a fire water system. The implementation of these safety measures will significantly reduce the likelihood of a pool fire and/or vapor cloud explosion. The potential impacts from the use and storage of methanol on the Project Site will be less than significant.

3.3 Modeling Outputs

3.3.1 Anhydrous Ammonia

Outputs from the ALOHA® 5.4.1 dispersion model obtained from the evaluation of the worst-case release scenario for anhydrous ammonia are provided below.

Text Summary
ALOHA® 5.4.1

SITE DATA:
Location: BAKERSFIELD, CALIFORNIA
Building Air Exchanges Per Hour: 0.60 (unsheltered single storied)

Time: April 9, 2012 1502 hours PDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: AMMONIA Molecular Weight: 17.03 g/mol
AEGL-1 (60 min): 30 ppm AEGL-2 (60 min): 160 ppm AEGL-3 (60 min): 1100 ppm
IDLH: 300 ppm LEL: 150000 ppm UEL: 280000 ppm
Ambient Boiling Point: -28.7° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/second from ESE at 3 meters
Ground Roughness: open country Cloud Cover: 5 tenths
Air Temperature: 115° F
Stability Class: F (user override)
No Inversion Height Relative Humidity: 50%

SOURCE STRENGTH:
Direct Source: 9.6 pounds/min Source Height: 60 feet
Release Duration: 60 minutes
Release Rate: 9.6 pounds/min
Total Amount Released: 576 pounds
Note: This chemical may flash boil and/or result in two phase flow.
Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
Model Run: Gaussian

Red: LOC is not exceeded— (75 ppm)
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Orange: LOC is not exceeded— (150 ppm = ERPG-2)
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

Yellow: LOC is not exceeded—(200 ppm)

Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

3.3.2 Hydrogen

Given the same hydrogen amount, a potential impact distance calculated by USEPA RMP*Comp software is also shown below (the result below is directly imported the USEPA RMP*Comp software):

RMP Modeling Result

RMP*Comp Ver. 1.07
Results of Consequence Analysis
Chemical: Hydrogen
CAS #: 1333-74-0
Category: Flammable Gas
Scenario: Worst-case
Quantity Released: 153.7 pounds
Release Type: Vapor Cloud Explosion
Estimated Distance to 1 psi overpressure: .06 mile (.10 kilometer)

--------Assumptions About This Scenario---------
Wind Speed: 1.5 meters/second (3.4 miles/hour)
Stability Class: F
Air Temperature: 77 degrees F (25 degrees C)

3.3.3 Acid Gas (45 percent Hydrogen Sulfide)

Outputs from the ALOHA® 5.4.1 dispersion model obtained from the evaluation of the worst-case release scenario for acid gas are provided below.

Text Summary
ALOHA® 5.4.1

SITE DATA:
Location: HECA Project Site, California
Building Air Exchanges Per Hour: 0.60 (unsheltered single storied)
Time: April 14, 2009 1021 hours PDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN SULFIDE
Molecular Weight: 34.08 g/mol
ERPG-1: 0.1 ppm
ERPG-2: 30 ppm
ERPG-3: 100 ppm
IDLH: 100 ppm
LEL: 43,000 ppm
UEL: 455000 ppm
Ambient Boiling Point: -76.8° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0 percent

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/second from east at 3 meters

Ground Roughness: open country
Cloud Cover: 0 tenths
Air Temperature: 115° F
Stability Class: F (user override)
No Inversion Height
Relative Humidity: 50 percent

SOURCE STRENGTH:
Direct Source: 5 pounds/min
Source Height: 0
Release Duration: 10 minutes
Release Rate: 5 pounds/min
Total Amount Released: 50.0 pounds
Note: This chemical may flash boil and/or result in two phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red: 658 yards — (0.042 mg/liter)

3.3.4 Syngas

Outputs from the ALOHA® 5.4.1 dispersion model obtained from the evaluation of the worst-case release scenario for syngas are provided below.

Text Summary
ALOHA® 5.4.1

3.3.4.1 *Carbon Monoxide*

SITE DATA:
Location: HECA Project Site, California
Building Air Exchanges Per Hour: 0.60 (unsheltered single storied)
Time: March 26, 2009 0848 hours PDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: CARBON MONOXIDE
Molecular Weight: 28.01 g/mol
ERPG-1: 200 ppm
ERPG-2: 350 ppm
ERPG-3: 500 ppm
IDLH: 1,200 ppm
LEL: 125,000 ppm
UEL: 740,000 ppm
Ambient Boiling Point: -313.0° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0 percent

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/second from east at 3 meters
Ground Roughness: open country
Cloud Cover: 5 tenths
Air Temperature: 115° F
Stability Class: F (user override)
No Inversion Height
Relative Humidity: 50 percent

SOURCE STRENGTH:
Direct Source: 4,185 pounds
Source Height: 70 feet
Release Duration: 1 minute
Release Rate: 69.7 pounds/sec
Total Amount Released: 4,185 pounds
Note: This chemical may flash boil and/or result in two-phase flow.
Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
Model Run: Gaussian
Red: LOC is not exceeded — (1,200 ppm = IDLH)
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.
Orange: LOC is not exceeded — (4,000 ppm)
Note: Threat zone was not drawn because the ground level concentrations never exceed the LOC.

3.3.4.2 *Ammonia*

SITE DATA:
Location: HECA Project Site, California
Building Air Exchanges Per Hour: 0.60 (unsheltered single storied)
Time: March 26, 2009 0848 hours PDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: AMMONIA
Molecular Weight: 17.03 g/mol
ERPG-1: 25 ppm
ERPG-2: 150 ppm
ERPG-3: 750 ppm
IDLH: 300 ppm
LEL: 160,000 ppm
UEL: 250,000 ppm
Ambient Boiling Point: -28.7° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0 percent

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/second from east at 3 meters

Ground Roughness: open country
Cloud Cover: 5 tenths
Air Temperature: 115° F
Stability Class: F (user override)
No Inversion Height
Relative Humidity: 50 percent

SOURCE STRENGTH:
Direct Source: 15 pounds
Source Height: 70 feet
Release Duration: 1 minute
Release Rate: 0.25 pound/sec
Total Amount Released: 15.0 pounds
Note: This chemical may flash boil and/or result in two-phase flow.
Use both dispersion modules to investigate its potential behavior.

THREAT ZONE:
Model Run: Gaussian
Red: LOC is not exceeded — (0.14 mg/liter)
Note: Threat zone was not drawn because the ground-level concentrations never exceed the LOC.
Orange: LOC is not exceeded — (300 ppm = IDLH)
Note: Threat zone was not drawn because the ground-level concentrations never exceed the LOC.
Yellow: LOC is not exceeded — (2,000 ppm)
Note: Threat zone was not drawn because the ground-level concentrations never exceed the LOC.

3.3.4.3 *Hydrogen Sulfide*

SITE DATA:
Location: HECA Project Site, California
Building Air Exchanges Per Hour: 0.60 (unsheltered single storied)
Time: March 26, 2009 0848 hours PDT (using computer's clock)

CHEMICAL DATA:
Chemical Name: HYDROGEN SULFIDE
Molecular Weight: 34.08 g/mol
ERPG-1: 0.1 ppm
ERPG-2: 30 ppm
ERPG-3: 100 ppm
IDLH: 100 ppm
LEL: 43,000 ppm
UEL: 455,000 ppm
Ambient Boiling Point: -77.0° F
Vapor Pressure at Ambient Temperature: greater than 1 atm
Ambient Saturation Concentration: 1,000,000 ppm or 100.0 percent

ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)
Wind: 1.5 meters/second from east at 3 meters

Ground Roughness: open country
Cloud Cover: 5 tenths
Air Temperature: 115° F
Stability Class: F (user override)
No Inversion Height
Relative Humidity: 50 percent

SOURCE STRENGTH:
Direct Source: 181 pounds
Source Height: 70 feet
Release Duration: 1 minute
Release Rate: 3.02 pounds/sec
Total Amount Released: 181 pounds
Note: This chemical may flash boil and/or result in two-phase flow.

THREAT ZONE: (GAUSSIAN SELECTED)
Model Run: Gaussian
Red: LOC is not exceeded — (0.042 mg/liter)
Note: Threat zone was not drawn because the ground-level concentrations never exceed the LOC.

Appendix L

Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Hydrogen Energy California (HECA) Project Site

Kern County, California

Prepared for

Hydrogen Energy California LLC

April 2012

1 Montgomery Street, Suite 900
San Francisco, California 94104

28068052

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ACRONYMS

AOCs	Areas of Concern
API	American Petroleum Institute
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
CalARP	California Accidental Release Prevention Program
Cal-EPA	California Environmental Protection Agency
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CHHSL	California Human Health Screening Level
CORRACTS	Corrective Action RCRA TSDFs
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
ESA	Environmental Site Assessment
ESL	Environmental Screening Level
U.S. EPA	United States Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Subject Property Assessment
FEMA	Federal Emergency Management Agency
FINDS	Facility Index System
HECA	Hydrogen Energy California
HECA LLC	Hydrogen Energy California LLC
HEI LLC	Hydrogen Energy International, LLC
HIST	historical
HMBP	Hazardous Materials Business Plan
KCEHSD	Kern County Environmental Health Services Department
KCFD	Kern County Fire Department
LUST	leaking underground storage tank
mg/kg	milligrams per kilogram
NOVs	Notices of Violations
NPL	National Priority List

ACRONYMS

PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
TPH	total petroleum hydrocarbons
TSDF	treatment, storage, and disposal facility
URS	URS Corporation
UST	underground storage tank
VOCs	volatile organic compounds

1.1 PURPOSE

The purpose of this Phase I Environmental Site Assessment (ESA) is to provide a professional opinion on the potential presence of current recognized environmental conditions (RECs) at the Subject Property, which is more fully defined in Section 2.1, Location and Property Description. The Subject Property is defined as the Hydrogen Energy California (HECA) Project Site, or Project Site, and consists of approximately 453 acres.

Figure 1, Subject Property Location Map, and Figure 2, Site Plan, illustrate the location and features of the Subject Property. The parcels comprising the Subject Property are listed in Table 2-1, Subject Property Parcels.

REC, as defined by American Society for Testing and Materials (ASTM) Designation E 1527-05, means "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* are not recognized environmental conditions."

This ESA was performed according to the recommended guidelines established by ASTM Designation E 1527-05, "Standard Practice for Environmental Subject Property Assessments: Phase I Environmental Subject Property Assessment Process." Because there are multiple federal and state definitions of hazardous materials, for the purpose of this report, hazardous substances and petroleum products are jointly referred to as "hazardous materials."

1.2 DETAILED SCOPE-OF-SERVICES

URS Corporation (URS) was retained by Hydrogen Energy California LLC (HECA LLC) to conduct a Phase I ESA for the Subject Property. URS performed the following work:

1. Reviewed available geologic maps and literature for information on the physical and hydrogeologic settings of the Subject Property.
2. Contracted with Environmental Data Resources, Inc. (EDR), to conduct a regulatory database search of known aboveground storage tanks (ASTs); underground storage tanks (USTs); landfills; hazardous waste generation or treatment, storage, and disposal facilities (TSDFs); and subsurface contamination in the surrounding area up to within 1 mile of the Subject Property (see Appendix D). Based on ASTM Practice, the following search distances from the Subject Property boundaries were used to assess potential environmental impacts:
    - 0.75-mile radius for registered ASTs, underground storage tanks (USTs), Resource Conservation and Recovery Act (RCRA) waste generators, and mines.

- 1-mile radius for leaking underground storage tanks (LUSTs); landfills; Non-Corrective Action RCRA TSDFs; and Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) sites.
- 1.5-mile radius for Corrective Action RCRA TSDFs (CORRACTS), state sites with potential or confirmed hazardous substance releases, and United States Environmental Protection Agency (U.S. EPA) Superfund sites.

3. Researched the history of the Subject Property by reviewing a chronological series of historical aerial photographs and a chronological series of historic topographic maps for the Subject Property and surrounding properties. Copies of these documents are presented in Appendix B.
4. Performed a reconnaissance of the Subject Property and publicly accessible adjacent areas on February 8, 2012, for obvious evidence of potential contamination sources such as current hazardous materials storage or use; unusually stained soils, slabs, and pavements; drains, sumps, drums, tanks, and electrical transformers; stressed vegetation; and discarded hazardous materials containers. Photographs taken during Subject Property reconnaissance are included in Appendix B of this report.
5. Interviewed Mr. John Cauzza III and Mr. Sam Ackerman regarding their former respective properties.
6. Interviewed Mr. Dane Peacock of BP as representative of the current property owner (Hydrogen Energy International [HEI], LLC).
7. Reviewed records available from HEI LLC, HECA LLC, and Mr. John Cauzza III.
8. Requested supplemental records for information regarding the Subject Property from the Kern County Environmental Health Services Department (KCEHSD), the Kern County Fire Department (KCFD), the California Environmental Protection Agency (Cal-EPA), the Regional Water Quality Control Board (RWQCB), and the U.S. EPA.
9. Evaluated the information collected to prepare this report.
10. Prepared this report.

1.3 LIMITATIONS AND EXCEPTIONS

This report and the associated work have been provided in accordance with the principles and practices generally employed by the local environmental consulting profession. This is in lieu of all warranties, expressed or implied.

No evaluation for the presence of asbestos-containing building materials, urea-formaldehyde foam insulation, or other hazardous building materials; mold; methane; radon gas; lead in drinking water; wetlands; industrial hygiene and health and safety; ecological resources and endangered species; indoor air quality; or high-voltage power lines is included in this assessment.

These findings and opinions are based on information available from public sources on specific dates (historical photographs, maps, and regulatory agency files, lists, and databases), more

specifically set forth in Appendix A and Appendix B. Although this information is updated continually, it can be incomplete. Information obtained from interviews or provided to URS by Mr. John Cauzza III, Mr. Sam Ackerman, Mr. Dane Peacock, or HEI LLC is assumed to be correct and complete. URS does not assume any liability for information obtained that has been misrepresented, or for items not visible, accessible, or present on the Subject Property at the time of the field reconnaissance. All areas of the Subject Property were accessible during the February 8, 2012, site visit; however, respect for the crops precluded close-up inspection of the drainage ditches and selected agricultural fields which were observed from roads and other accessible areas.

There is no investigation that is thorough enough to preclude the presence of materials on the Subject Property that currently, or in the future, may be considered hazardous. URS cannot warrant or guarantee that not finding indicators of hazardous materials means that hazardous materials do not exist on the Subject Property.

Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

1.4 USER RELIANCE

This report has been prepared for the sole use of HECA LLC. This report shall not be relied upon by any other party without written authorization from HECA LLC and URS Corporation (URS).

2.1 LOCATION AND PROPERTY DESCRIPTION

The Subject Property is situated in the western-central portion of Kern County, in Section 10 of Township 30 South, Range 24 East, as shown on Figure 1. The Subject Property is west of Tupman Road and south of Adohr Road. The street address of the Project Site is 7361 Adohr Road.

The Subject Property is approximately 1.5 miles northwest of the unincorporated community of Tupman, California; approximately 1 mile south of Stockdale Highway; and approximately 2 miles southwest of Interstate 5 (which extends generally from the southeast to northwest, east of the Subject Property). The Tule Elk State Reserve is approximately 0.25 mile east of the Subject Property, east of Tupman Road.

The Subject Property consists of agricultural fields bisected by irrigation and drainage canals. Figures 1 and 2 show the Subject Property location and layout. The Subject Property is bounded by the following:

- North: Agricultural fields, a Farm Operations Area, two occupied residences, the Ackerman Property, with Adohr Road beyond (see Photos 1 and 2 in Appendix B).
- South: Agricultural fields and an irrigation canal.
- East: Tupman Road, with agricultural fields beyond.
- West: A dirt farm road (herein referred to as Dairy Road right-of-way) (see Photo 3).

For purposes of clarification, and because of recent changes to property ownership, the following parcels north of the Subject Property are referred to as follows:

- The 4.72-acre parcel containing a residence located northwest of the Subject Property is herein referred to as the Ackerman Property. For the purposes of the HECA Project, this is within the area referred to as the Controlled Area, which consists of property adjacent to the Project Site that will be owned and controlled by HECA LLC.

- The approximately 30-acre area containing storage barns, a maintenance shop, a disused rice elevator, and a residence is referred to as the Farm Operations Area. This area is also within the Controlled Area.

The Subject Property includes portions of three parcels listed in Table 2-1. The majority of the Subject Property is currently comprised of agricultural land as shown in Figure 2 and Photos 4 through 7 in Appendix B).

According to Mr. John Cauzza III and Mr. Sam Ackerman, the Subject Property parcels were purchased from Palm Farms, Inc., in 1995 and subsequently sold to HECA LLC in February 2011. According to Mr. Dane Peacock of BP, ownership of the parcels was transferred from HECA LLC to HEI LLC in September 2011.

Table 2-1
Subject Property Parcels

APN	Current Owner	Approximate Size (acres)
Part of 159-040-02	HEI LLC	75
Part of 159 040-16	HEI LLC	376.5
Part of 159-040-18	HEI LLC	1.5
Total		**453**

2.2 SITE CHARACTERISTICS

The Subject Property is approximately 453 acres, with the majority currently comprised of agricultural land, including cultivation of cotton, alfalfa, and onions. There are no buildings on the Subject Property.

The Subject Property includes portions of irrigation and drainage canals, which generally extend from north to south.

The West Side Canal (and the Outlet Canal), Kern River Flood Control Channel, and the California Aqueduct (State Water Project) are approximately 500, 700, and 1,900 feet south of the Project Site, respectively.

2.3 CURRENT AND HISTORICAL USES OF THE SITE

According to historical aerial photographs and topographic maps, the Subject Property has historically been and currently remains primarily in agricultural use. According to Mr. John Cauzza III, the Subject Property was purchased in 1995. Under the previous owners, Palm Farms, Inc., the Subject Property was used for agricultural production.

HEI LLC purchased the Subject Property in 2011 and leased it back to Cauzza Farms for agricultural use.

2.4 LOCAL GEOLOGY AND HYDROGEOLOGY

The elevation of the Subject Property is approximately 288 feet above mean sea level. The Subject Property is located in the San Joaquin Valley. The San Joaquin Valley is California's leading agricultural producing region, and five of its counties (Fresno, Kern, Tulare, Merced, and Stanislaus) rank among the state's top 10 counties in farm production value. Oil and gas is also an important industry in the San Joaquin region. The deepest wells and about half of the largest oil fields are found in Kern County, as is the Elk Hills Oil Field (formerly named the Elk Hills Naval Petroleum Reserve). The Subject Property is generally flat, and the topographic gradient generally slopes to the west.

2.4.1 Geology

The San Joaquin Valley is bordered to the east by the Sierra Nevada Mountain Range or batholith. The Sierra Nevada batholith is composed of granitic rocks variously described as granite, quartz-monzonite, granodiorite, and quartz diorite. The Coastal Ranges border the San Joaquin Valley to the west. The Coastal Ranges were formed in the Late Pliocene age, and major deformation of the ranges and adjacent parts of the San Joaquin Valley occurred. Surface anticlines such as Elk Hills, Kettleman Hills, and Wheeler Ridge quickly became major surface features rising from the valley floor. This deformation and uplift continues today and is measured at places such as Buena Vista Hills.

The valley that formed between the Sierras to the east and the Coastal Ranges to the west is an asymmetrical synclinal trough with an axis centered to the west. The elongate lowland known as the Great Valley is in size 400 miles long and 50 miles wide and rises from slightly below sea level in the delta area to 400 feet in elevation at the northern and southern ends. The southern portion is called the San Joaquin Valley. Bakersfield and Tupman, California, are located on the southeastern end. Over 30,000 feet of sediments ranging in age from Cretaceous to recent have accumulated within the San Joaquin Basin. The basin was formed from compressive forces between the North American and Pacific continental plates. As the basin sank, sediments from the rising mountains to the east (ancestral Sierra Nevada) and lesser amounts from the west accumulated in a thick wedge in the valley. The valley was once a great inland sea basin that was inundated or flooded periodically. The last large lake to occupy the Valley was Lake Corcoran about 600,000 years ago. The lake occupied approximately the western half of the Valley from the Stockton arch south to the bend in the San Joaquin River.

Kern County is located in the southern Central Valley and extends east beyond the southern slope of the Eastern Sierra Nevada range into the Mojave Desert and includes parts of the Indian Wells Valley and the Antelope Valley. From the Sierras, the county extends across the floor of the San Joaquin Valley to the eastern edge of the Temblor Range, part of the Coastal Ranges. To the south, the county extends over the ridge of the Tehachapi Mountains.

The EDR report included soil data for two locations in the vicinity of the Subject Property. Data for the first location indicated a soil component name of Lokern with surficial deposits generally less than 7 inches deep. These soils are moderately well drained and have slow infiltration rates. There are two subsurface layers in this soil. The upper layer exists at a depth from 7 to 48 inches, and the lower (deeper) layer exists at a depth between 48 to 66 inches. Although no soil texture classes were reported by EDR for these soils, bedrock occurs at a depth greater than 66 inches below ground surface (bgs). The second location indicated a soil component name of Buttonwillow with surficial deposits generally less than 27 inches deep. These soils are moderately well-drained and have slow infiltration rates. There are two subsurface layers in this soil. The upper layer exists at a depth from 27 to 55 inches, and the lower (deeper) layer exists at a depth between 55 to 64 inches. Although no soil texture classes were reported by EDR for these soils, bedrock occurs at a depth greater than 64 inches bgs.

2.4.2 Hydrology

Surface Water

Surface water exists south of the Subject Property in canals and on the Subject Property in a few drainage ditches and irrigation ditches. Water is not constantly present in the Outlet Canal on the southern boundary of the Subject Property or in the drainage ditches but would be present during periods of time when crops are being irrigated. At the approximate east–west center of the Subject Property, an irrigation canal briefly extends to the southwest before intersecting with the West Side and Outlet Canals. The drainage ditch extends from the northwest to the southeast. Several smaller irrigation ditches traverse the Subject Property from north to south and east to west around crop fields. The irrigation ditches are fed by the West Side Canal, lying southwest of the Subject Property, and the East Side Canal, which lies approximately 0.25 mile east of the northeastern corner of the Subject Property (at the intersection of Adohr and Tupman Roads).

The Subject Property generally slopes to the west, toward the West Side Canal. From observation of the Subject Property and input provided by Mr. John Cauzza III, it appears that any surface water runoff caused by storm precipitation events would flow to the west and drain into the West Side Canal.

The Kern River Flood Control Channel is located approximately 700 feet south of the Project Site. This channel conveys overflows from the Kern River during flood events. The floodplain associated with this channel does not extend onto the Project Site. The California Aqueduct, which supplies agricultural and municipal areas in Southern California, is located parallel to and west of the West Side and Outlet canals, approximately 500 feet south of the Project Site.

According to Federal Emergency Management Agency (FEMA) data provided by EDR, the Subject Property is not situated within a 100-year or 500-year flood zone.

Groundwater and Oil and Gas Wells

The EDR report (Appendix D) mapped two groundwater wells on the Subject Property (in the central portion of the Subject Property), and an additional nine wells located within 0.5 mile of the property boundary. The two wells mapped in agricultural fields on the Subject Property were not visible during the URS 2012 site visit.

The EDR report lists two California Division of Oil, Gas, and Geothermal Resources (DOGGR)-registered oil and gas wells within a 1-mile radius from the boundary of the Subject Property. It appears that one of these wells (American Petroleum Institute [API] well number 02952932) was located in the central portion of the Subject Property. API well number 02937474 was located approximately 0.5 mile south of the Subject Property. These former wells are shown in the EDR Report in Appendix D. The DOGGR database entry stated that these wells were plugged and abandoned (dry hole), as of November 18, 1950. URS visited the locations of the two DOGGR wells and saw no evidence of the wells in the cultivated fields.

Wetlands

There are no mapped wetlands located on the Subject Property. According to the National Wetland Inventory map included in the EDR report, the nearest national and state wetlands are a small area approximately 0.1 mile east of the Subject Property border near the intersection of Tupman Road and Station Road. In addition, more extensive wetlands are mapped generally extending from the southeast to the northwest, in the Kern River Flood Control Channel.

3.1 SITE AND ADJOINING PROPERTY HISTORICAL USE INFORMATION

URS reviewed aerial photographs, historical topographic maps, and city directories to compile the historical site information presented in Table 3-1 below. URS requested historical Sanborn™ fire insurance maps for the Subject Property; however, none were available.

3.1.1 Aerial Photographs

URS reviewed 29 aerial photographs for the Subject Property and the surrounding areas available through EDR. Photographs were dated from 1946 (two photos), 1956 (two photos), 1967, 1974, 1984, 1994, 2005, and 2006. Each of the aerial photographs depicts the Subject Property as undeveloped and in use for agricultural production; primarily, crop production. These aerial photographs are included in Appendix C, and the descriptions of the photos are presented in Table 3-1.

3.1.2 Topographic Maps

URS reviewed five historic topographic maps of the Subject Property and surrounding properties available through EDR representing the years 1912, 1933, 1954, 1968, and 1973. The topographic maps reviewed are included in Appendix C, and the descriptions of the maps are presented in Table 3-1.

3.1.3 City Directories

URS requested historic city directories for the Subject Property from EDR through their collection of Haines Criss-Cross Directories for the years 1971 through 2006. EDR found no properties listed at the Subject Property address of Dairy Road/Adohr Road; Buttonwillow, California 93206.

URS requested historic city directories for surrounding properties from EDR using their Haines Criss-Cross Directories for the years 1971 through 2006 (although these years are not necessarily inclusive). EDR reported that city directories were available for the following properties surrounding the source:

- 2001: Residence at 7345 Adohr Road, Buttonwillow, CA 93206
- 2001: Port Organic Products, Inc., at 7361 Adohr Road, Buttonwillow, CA 93206
- 2006: Residence at 7345 Adohr Road, Buttonwillow, CA 93206
- 2006: Port Organic Products, Inc., at 7361 Adohr Road, Buttonwillow, CA 93206

Although these properties are located in unincorporated Kern County, they have Buttonwillow addresses for mailing and directory purposes.

3.1.4 Sanborn™ Fire Insurance Maps

EDR reported that there were no Sanborn™ Fire Insurance Maps available for the Subject Property. Sanborn Fire Insurance Maps typically include information pertaining to fire risk and may provide details related to buildings and other structures located on a specified property. It is not uncommon for these maps to be unavailable for these reports, and it is not an indication of potential environmental risk if no maps are available for the Subject Property.

Table 3-1
Historic Site Information

Date	Location	Finding	Source
1912	Subject Property	The 1912 topographic map does not contain section numbers, which makes it difficult to accurately identify the Subject Property. The Subject Property appears to be undeveloped, and no features are shown on the site itself.	USGS Topo map, 1912 Buena Vista Lake, California
	Adjacent Properties	Surrounding area features include the Elk Hills, the town of Buttonwillow, the West Side Canal, Buena Vista and Lake sloughs, North and Coles levees, the Southern Pacific Railroad (approximately 4.5 miles to the north), and two oil pumping stations (approximately 5.5 miles to the northwest and 6 miles to the west).	
1933	Subject Property	The 1933 topographic map shows the eastern edge of the Subject Property. No features or buildings are visible on the site, and it appears undeveloped.	USGS Topo map, 1933 Tupman, California
	Adjacent Properties	The 1933 topographic map shows the Mesquite Hunting Club directly to the northeast of the Subject Property (northeast of what is now the intersection of Tupman Road and Station Road). The East Side Canal runs along the eastern edge of the Subject Property. The Buena Vista Slough is about 3 miles to the south, and the town of Tupman is about 6 miles to the south of the Subject Property.	
1946	Subject Property	The 1946 aerial photographs show the majority of the Subject Property in use as agricultural fields; however, several narrow, long buildings are present in the north-central portion of the Subject Property. A ditch or levee generally parallel to the west of the drainage ditch is also visible north-south across the Subject Property.	Aerial Photograph, 1946
	Adjacent Properties	There are several buildings north of the Subject Property (in the Farm Operations Area) that match the current storage barns and additional long narrow buildings that are no longer present. A ditch matching the current drainage ditch runs across the Farm Operations Area from the northwest to the southeast. The areas to the north, east, and west of the Subject Property appear to be undeveloped except for agricultural fields. The area to the south of the Subject Property, past the canals, appears to be undeveloped.	
1954	Subject Property	The Subject Property appears without any structures in the 1956 topographic map.	USGS Topo map, 1954 East Elk Hills, California
	Adjacent Properties	The 1954 topographic map shows Dairy and Adohr roads (the intersection north of the Subject Property) and Tupman Road. Dairy and Tupman roads run north/south, and Adohr Road runs east/west. The map shows small structures north of the Subject Property, and a landing field east of the structures. To the south of the Subject Property, two wells are near a levee that runs east/west. Based on their labels, these wells are presumed to be water wells.	

Table 3-1
Historic Site Information (Continued)

Date	Location	Finding	Source
		There are three wells in the surrounding area: one about 500 feet to the northeast, one 0.25 mile to the east, and one less than 0.5 mile to the northwest. Based on their labels, these wells are presumed to be water wells. The West Side and Outlet canals are south of the Subject Property, with a narrow reservoir running northwest to southeast along the edge of the Outlet Canal. A levee runs south of the Subject Property and connects to a main drain from the north. A pipeline appears north of the Subject Property, originating at the intersection of Tupman and Adohr roads, and extending to the east. The topographic map labels do not identify the nature or content of the pipeline. About 5 miles southwest of the Subject Property, there are numerous oil wells and oil tanks in the east Elk Hills. The area is labeled *Naval Petroleum.*	
1956	Subject Property	The 1956 aerial photos do not show any of the long narrow structures shown on the 1946 aerial photo. The irrigation ditch or canal seen in the 1946 aerial photograph along the eastern edge of the Subject Property does not appear in the 1956 aerial photograph.	Aerial Photograph, 1956
	Adjacent Properties	The 1956 aerial photos do not show any significant changes in the surrounding areas from the 1946 aerial photos. What appears to be the West Side and Outlet canals are shown south of the Subject Property. An irrigation ditch or canal east of the Subject Property does not appear to be as prominent as in the 1946 aerial photograph.	
1967	Subject Property	The 1967 aerial photos do not show any significant changes in the Subject Property (agricultural fields and undeveloped); however, the two ditches have been replaced by a single north-south ditch that matches the current configuration of the drainage ditch.	Aerial Photograph, 1967
	Adjacent Properties	The 1967 aerial photos do not show any significant changes in the surrounding areas, with the exception of the construction of a new, large canal (the California Aqueduct). Canals and ditches that were apparent in the 1946 and 1956 aerial photos no longer appear on the Subject Property.	
1968	Subject Property	The 1968 map shows only the eastern edge of the Subject Property, which shows no change from the 1933 or 1954 maps for that area.	USGS Topo map, 1968 Tupman, California
	Adjacent Properties	The 1968 map shows only the eastern edge of the Subject Property, which shows no change from the 1933 or 1954 maps for the surrounding areas.	
1973	Subject Property	The 1973 map does not show any significant changes in the Subject Property (agricultural fields and undeveloped land).	USGS Topo map, 1973 Tupman, California
	Adjacent Properties	The 1973 map shows new, large buildings in the Farm Operations Area near the landing field. The 1973 map shows no other significant changes from the 1933, 1954, or 1968 maps of the surrounding areas except for the California Aqueduct, located south of the Subject Property.	

Table 3-1
Historic Site Information (Continued)

Date	Location	Finding	Source
1974	Subject Property	The 1974 aerial photos do not show any significant changes in the Subject Property (agricultural fields and undeveloped land).	Aerial Photograph, 1974
	Adjacent Properties	The 1974 aerial photos do not show any significant changes in the surrounding areas (agricultural fields and relatively undeveloped), with the exception of the completed California Aqueduct.	
1984	Subject Property	The 1984 aerial photos do not show any significant changes in the Subject Property (agricultural fields and undeveloped) from the 1974 aerial photos.	Aerial Photograph, 1984
	Adjacent Properties	The 1984 aerial photos do not show any significant changes in the surrounding areas, with the exception of the completed California Aqueduct south of the site.	
1994	Subject Property	The 1994 aerial photos do not show any significant changes in the Subject Property (agricultural fields and undeveloped) from the 1984 aerial photos.	Aerial Photograph, 1994
	Adjacent Properties	The 1994 aerial photos do not show any significant changes in the surrounding areas (agricultural fields and relatively undeveloped land) from the 1984 aerial photos.	
2001	Subject Property	The 2001 City Directory lists 7361 Adohr Road, Buttonwillow, CA 93206 as Port Organic Products Ltd.	City Directory, 2001
	Adjacent Properties	The 2001 City Directory lists 7345 Adohr Road, Buttonwillow, CA 93206 as residential.	
2005	Subject Property	The 2005 aerial photos does not show any significant changes in the Subject Property (agricultural production and undeveloped land) from the 1994 aerial photos.	Aerial Photograph, 2005
	Adjacent Properties	The 2005 aerial photo does not show any significant changes in the surrounding area with the exception of the addition of equipment, containers, and/or debris on the adjacent parcel to the north (Farm Operations Area) southeast of the rice drying barn.	
2006	Subject Property	The 2006 aerial photo does not show any significant changes in the Subject Property.	Aerial Photograph, 2006
		The 2006 aerial photo does not show any significant changes in the surrounding area.	
	Adjacent Properties	The 2006 City Directory lists 7361 Adohr Road, Buttonwillow, CA 93206 as Port Organic Products, Ltd., and Cauzza Brothers.	
2006	Subject Property	The 2006 City Directory lists 7361 Adohr Road, Buttonwillow CA 93206 as Port Organic Products, Ltd., and Cauzza Brothers.	City Directory, 2006
	Adjacent Properties	The 2006 City Directory lists 7345 Adohr Road, Buttonwillow, CA 93206 as residential.	

Source: EDR Report, 2012.

3.1.5 Environmental Lien and Activity Use Limitation Search

URS requested an environmental lien search from EDR, and the results of this search are provided in Appendix C. No environmental liens or Activity Use Limitations were recorded for the Subject Property, according to EDR. According to the Lien Search report the Subject Property is currently owned by HEI LLC.

3.2 PREVIOUS REPORTS

URS reviewed the following previous reports in preparing this Phase I ESA. According to Mr. Dane Peacock with BP, the AECOM Phase II ESA of the Subject Property and adjacent areas is the most recent environmental report that was commissioned by HECA LLC.

- The URS Phase I ESA of the HECA Project Site, dated April 6, 2009 (URS, 2009), describes a portion of the current Subject Property; it was based on a 2009 site visit conducted when the Port Organics plant was in operation north of the current Subject Property. This report concluded that RECs were present. Some of the RECs presented in the 2009 Phase I ESA of the 2009 HECA Project Site are applicable to the current Subject Property and are presented in the conclusion section of this report.

- A sampling report prepared by AECOM in September 2009 for samples collected from the interior and exterior fertilizer tailings piles at the former Port Organics plant is provided in Appendix E (AECOM, 2009). Although the samples were labeled as soil, the report indicates that the samples were collected from the tailings piles themselves. During 2009, the Port Organics interior tailings pile was located north and west of the 2009 HECA Project Site boundary, and the exterior tailings pile was located within the 2009 HECA Project Site boundary. These areas are north of the current Subject Property boundaries. The AECOM report indicates that the fertilizer tailing piles are characterized as "Non-RCRA hazardous waste" based on the analytical results. The term "Non-RCRA hazardous waste" means the waste does not meet the federal (RCRA) definition of hazardous waste, but it meets the more-stringent California definition of hazardous waste, as presented in Title 22 of the California Code of Regulations.

- A URS Phase I ESA of the HECA Project Site, dated August 24, 2010 (URS, 2010), describes a portion of the current Subject Property and areas that are adjacent to the current Subject Property, including the Farm Operations Area and the Ackerman Residence. This Phase I ESA was based on a 2010 site visit conducted when Port Organics was no longer operating in the Farm Operations Area. The report concluded that RECs were present; however, only one was located on the Subject Property: the soil staining adjacent to the airstrip and the drainage ditch. In addition, the Phase I ESA report discussed the unknown USTs and the use of pesticides on agricultural fields. These issues are discussed below and in the 2010 Phase II ESA that followed the Phase I ESA report.

- A December 2010, Phase II ESA conducted by AECOM reported on the results of their September 2010 field investigation on and adjacent to the Subject Property. The field investigation included a geophysical investigation to identify potential buried tanks, and

surface and subsurface soil sampling to evaluate the potential extent of contamination from past activities. The areas investigated by AECOM were based on nine RECs identified in the URS Phase I ESA report, and four additional Areas of Concern (AOCs). No buried tanks were located by the geophysical survey in the areas investigated north of the Subject Property. The survey identified one area of backfilled excavation adjacent to the Barn east of the Ackerman Parcel and a few hundred feet north of the Subject Property boundary. This location was not further investigated by AECOM.

- Soil samples were collected from soil borings at 5-, 10-, and 15-feet bgs. The soil sampling conducted generally did not identify elevated levels of contaminants, with the following exceptions.

  - Borings GP-18 and GP-20 were advanced adjacent to the former wash pad area east of the Ackerman Parcel and west of the South farm storage building in the Farm Operations Area. This location is approximately 250 feet north of the Subject Property boundary (see Photos 8 and 9 in Appendix B). Soil at this location was found to have elevated levels of petroleum hydrocarbons up to 25,000 milligrams per kilogram (mg/kg) of total petroleum hydrocarbons (TPH) in the mineral oil range, exceeding the 1,000 mg/kg screening levels. It appears that the contamination may be in the top 5 feet at this location. In addition, the washwater was historically discharged to a ditch at this location and a sample collected from the sediment at this location had TPH as mineral oil levels up to 93,000 mg/kg.
  - Soil boring GP-10 and sediment sample SS-4 were collected near the stained area adjacent to the southeast end of the crop duster airstrip (see photos 10 to 12 in Appendix B). No petroleum hydrocarbons or volatile organic compounds (VOCs) were detected at this location with the exception of benzene detected in sediment sample SS-4 at a concentration of 2.1 micrograms per kilogram. Low concentrations of several pesticides were detected in sediment sample SS-4, but not in GP-10. Concentrations of potassium, nitrate, sulfate, and phosphate were detected above background in the soil samples collected from boring GP-10 and sediment sample SS-4. In addition, the 5-foot sample collected at GP-10 had a pH of 3.85.
  - In order to evaluate pesticide concentrations in surficial soil, AECOM collected nine sets of 5-point composite samples, including five sets on the Subject Property and four in adjacent parcels. These samples were analyzed for organochlorine pesticides by U.S. EPA Method 8081, and were not analyzed for organophosphorous pesticides or herbicides. Endrin, endosulfan, and dieldrin are present in composite samples SC-1, SC-4, and SC-8 at concentrations that exceed the RWQCB Environmental Screening Levels (ESLs), but did not exceed the California Human Health Screening Levels (CHHSL) or Regional Screening Levels (RSL). SC-1 and SC-4 were located on the Subject Property, and SC-8 on the agricultural fields to the south. These results are consistent with the historical agricultural use. No consistent spatial pattern of pesticides above ESLs was observed.

- AECOM identified and investigated an additional AOC along Adohr Road due to a historical spill from the oil pipeline adjacent to the north side of the road, which was verbally reported by Mr. Sam Ackerman. No evidence of significant contamination was noted, and the historical spill location is approximately 0.5 mile north of the Subject Property
- The AECOM Phase II ESA noted heavy metals concentrations in soil that generally appear to be consistent with naturally occurring heavy metal concentrations in soil.
- Groundwater was not encountered during the Phase II ESA; however, AECOM was not able to advance borings beyond approximately 40 feet bgs. In addition, groundwater was not encountered at depths of up to 101 feet bgs by URS in January 2009.
- The Phase II investigation collected at least one sample at 5 feet bgs from each of the 9 areas identified as RECs in the URS 2010 Phase I ESA. The results from the soil samples collected in the vicinity of the RECs indicate that soil impacts are generally confined to the upper 5 feet. Based on this information, AECOM's investigation concluded that no other significant contamination was detected, in addition to the issues described above. The majority of the investigation covered the Farm Operations Area north of the Subject Property.

4.1 REGULATORY RECORDS

4.1.1 Regulatory Database Search Report

An EDR Radius Map Report was prepared for the Subject Property on March 19, 2012, in accordance with ASTM recommended guidelines, and is included as Appendix D. The EDR report presents the results of a search of federal and state databases, along with a description of each database, that list addresses of sites with known USTs; landfills; hazardous waste generation or TSDFs; and subsurface contamination in the surrounding area.

The goal of reviewing the database report is to identify facilities that have known and documented environmental conditions that may negatively impact the Subject Property.

Table 4-1 summarizes the database information provided by EDR with respect to hazardous substances and wastes on or near the Subject Property. Appendix D includes the complete regulatory database search report, which presents larger search radii because additional coverage was requested from EDR to provide additional information about the Subject Property vicinity. Table 4-1 lists sites within the ASTM search radii from the boundary of the Subject Property identified in the respective databases searched by EDR.

Table 4-1
Federal Databases Searched by EDR

Type of Database	Description of Database/Effective Date	Search Radius	Number of Sites Identified
NPL	NPL of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the U.S. EPA Superfund program.	1.5 mile	0
CORRACTS	RCRA TSDF ordered to implement corrective actions.	1.5 mile	0
CERCLIS	The CERCLIS database identifies hazardous waste sites that require investigation and possible remedial action to mitigate potential negative impacts on human health or the environment.	1 mile	0
FINDS	The Facility Index System (FINDS) database contains both facility information and pointers to other sources that contain more detail.	0.5 mile	1
RCRA TSDFs	Identifies RCRA TSDFs.	1 mile	0
ERNS	U.S. EPA's ERNS list contains reported spill records of oil and hazardous substances.	Target Property	0
RCRA Generators	RCRA regulated hazardous waste generator list; both Large- and Small-Quantity Generators are included in this list.	0.75 mile	0
MINES	Federal database containing all mine identification numbers issued for mines opened since 1971.	0.75 mile	0
DOD	Federal database for Department of Defense sites consisting of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres.	1.5 mile	1
LUST	List of information pertaining to reported LUST investigations.	1 mile	0
UST	State database of active USTs.	0.75 mile	0
AST	State database of registered ASTs.	0.75 mile	1
CA BOND EXP. PLAN	Bond Expenditure Plan – Department of Health Services expenditure plan for appropriation of Hazardous Substance Cleanup Bond Act funds.	1.5 mile	0
HIST UST	Hazardous Substance Storage Container Database – historical listing of UST sites.	0.75 mile	2

Table 4-1
Federal Databases Searched by EDR (Continued)

Type of Database	Description of Database/Effective Date	Search Radius	Number of Sites Identified
SWEEPS UST	Statewide Environmental Evaluation and Planning System – underground storage tank listing updated and maintained by a State Water Resources Control Board contractor in the early 1990s.	0.75 mile	1
SCH	School Property Evaluation Program – proposed and existing school sites evaluated by California Department of Toxic Substances Control (DTSC) for possible hazardous materials contamination.	0.75 mile	0
TOXIC PITS	Toxic Pits Cleanup Act Sites – identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.	1.5 mile	0
SWF/LF	State inventory of solid waste disposal facilities or landfill sites, includes both active and inactive historical landfills.	1 mile	0
WMUDS/ SWAT	Waste Management Unit Database System – used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units.	1 mile	0
CA WDS	Waste Discharge System – addresses sites which have been issued waste discharge requirements.	Target Property	0
CORTESE	Hazardous Waste & Substances Sites List – listed sites are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).	1 mile	0
SWRCY	Recycler Database – listing of recycling facilities in California.	1 mile	0
CA FID UST	Facility Inventory Database – contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board.	0.75 mile	0
SLIC	Statewide SLIC Cases (Spills, Leaks, Investigations and Cleanup) – designed to protect and restore water quality from spills, leaks, and discharges.	1 mile	0
ENVIRO-STOR	EnviroStor Database DTSC's Subject Property Mitigation and Brownfields Reuse Program – database that identifies sites that have known contamination or sites for which there may be reasons to investigate further.	1.5 mile	0
LIENS	Environmental Liens Listing – listing of property locations with environmental liens for California.	Target Property	0
CHMIRS	California Hazardous Material Incident Report System – information on reported hazardous material incidents (accidental releases or spills).	Target Property	0
Notify 65	Proposition 65 Records – facility notifications about releases that could impact drinking water.	1.5 mile	0

Table 4-1
Federal Databases Searched by EDR (Continued)

Type of Database	Description of Database/Effective Date	Search Radius	Number of Sites Identified
DEED	Deed Restriction Listing Subject Property Mitigation and Brownfields Reuse Program – sites cleaned up under the program's oversight.	1 mile	0
VCP	Voluntary Cleanup Program Properties – low threat level properties with confirmed or unconfirmed releases and requested that DTSC oversee investigation and/or cleanup activities.	1 mile	0
DRY CLEANERS	Cleaner Facilities – drycleaner related facilities with U.S. EPA ID numbers.	0.75 mile	0
WIP	Well Investigation Program Case List – cases in the San Gabriel and San Fernando Valley area.	0.75 mile	0
CDL	Clandestine Drug Labs – drug lab locations.	Target Property	0
RESPONSE	State Response Sites – identifies confirmed release sites where DTSC is involved in remediation.	1.5 mile	0
HAZNET	Facility and Manifest Data – data extracted from hazardous waste manifests received by the DTSC.	0.5 mile	0
EMI	Emissions Inventory Data – toxics and criteria pollutant emissions data collected by the Air Review Board and local air pollution agencies.	0.5 mile	2
HAULERS	Registered Waste Tire Haulers Listing – listing of registered waste tire haulers.	0.5 mile	0

Source: EDR Report, 2012.

Each database searched by EDR is referenced in Appendix D. The results of the records review are presented in the EDR report and are summarized below.

Subject Property

No database listings were mapped for the Subject Property by EDR.

Subject Property

No database listings were mapped for the Subject Property by EDR.

Adjacent Property

The EDR report identified the following listings adjacent to the Subject Property; however, it should be noted that database listings may be incorrectly plotted due to the poor address accuracy in the area:

- Two historical (HIST) USTs are listed in the HIST UST database near (vicinity of Adohr Road and Tupman Road), with the listed owner as "Palm Farms." From information

provided in the HIST UST database by EDR, Palm Farms, Inc., was listed as having five tanks, storing diesel fuel in two of the tanks, and unleaded, regular, and premium (each in single tanks) for the purposes of farming. Due to limited address information in the HIST UST database, the location of these historical USTs could not be determined from the database, and the historical aerial photographs showed only crops and roadway in this area. The UST database identified Mr. Sam Ackerman as the contact name for the historical USTs at Palm Farms. Therefore, HECA LLC subsequently contacted Mr. Sam Ackerman on July 18, 2010, and HECA LLC provided the following information to URS: Mr. Ackerman recalled that three USTs were previously located on the portion of the Subject Property that is owned by Mr. John Cauzza III, east of the fenceline between the Ackerman and Cauzza properties. He recalled that in 1984, these three tanks were removed due to the federally mandated upgrade requirements for all USTs. Mr. Ackerman did not know of any records regarding the removal of the USTs. Mr. Ackerman also recalled two USTs near the airstrip, located partially on the northeastern corner of the Subject Property and partially on the adjacent property. Mr. Ackerman did not know if these two tanks had been removed. The suspected locations of these tanks were investigated during the 2010 AECOM Phase II ESA as described in Section 3.2.

- The SWEEPS UST database lists five 5,000-gallon diesel USTs registered to Palm Farms in 1985. This listing is likely to be a duplicate of the historical USTs described above.

- The AST database lists a 31,120-gallon unspecified AST registered to Cauzza John & Laura. No further details on the type, contents, or condition of this AST are provided in the database listing. This listing is likely to be for the diesel AST located in the Farm Operations Area.

Surrounding Properties

In addition to the above listings, the following nearby listings were identified during the database review:

- Three listings on the EMI and FINDS databases for Western Milling and Shanco Commodities at 7361 Adohr Road appear to refer to air permits for particulate matter. These listings were mapped approximately 371 feet south of the Subject Property; however, no permanent structures are apparent in the area. This air emissions listing is not considered to be an environmental concern to the Subject Property.

- The Department of Defense (DOD) list, as provided to EDR, revealed that there is one DOD site located at a higher elevation and within approximately 1 mile southwest of the Subject Property boundary. This site is the Elk Hills Oil Field, which was formerly known as the Naval Petroleum Reserve. No details of the potential nature of contamination are available from the database; however, the site is not cross-listed on contaminated site databases. Based on the lack of known releases, the distance, and the location across the Kern River flood control channel, this site is not likely to pose an environmental threat to the Subject Property.

- A HIST UST listing is identified as Martin Snow Farm (EDR address: "Station Rd, ¼ Mile east of"), located approximately 0.1 mile east of the northeastern corner of the Subject Property. This location is consistent with the location of a small farmhouse located near the intersection of Tupman Road and Station Road. The database lists Martin Snow Farm as having two tanks installed in 1970 that were used to store diesel fuel and unleaded gasoline for the purposes of farming. The site is not listed on UST release databases. Based on the lack of known releases, the distance, and the cross-gradient location, this site is not likely to pose a significant environmental threat to the Subject Property.

Orphan Sites

Due to poor or inadequate address information, EDR is not always able to map all sites that have environmental concerns. These listed, but unmapped, properties are referred to as orphan sites. Although the orphan sites are not mapped, EDR searches the same databases that they do for mapped sites, and provides relevant information if an orphan site is found on one of the databases. EDR identified 57 orphan sites in the database report. URS attempted to locate the orphan sites listed and measure their distance from the Subject Property. Based on partial address information, URS concluded that 51 orphan sites identified by EDR were located outside the ASTM recommended survey radius in reference to the Subject Property. Two addresses were located at unmapped locations on Tupman Road: a Chevron pipeline company listing for hazardous waste shipments, and Weatherford listing for a 3,000-gallon AST. Neither listing is indicative of a release, and no Chevron or Weatherford sites were noted along Tupman Road in the vicinity of the Subject Property during the site visit. The four remaining sites could not be located based on partial information.

4.2 USER-PROVIDED INFORMATION

As part of the ASTM 1527-05 standard, the following additional inquiries were made to HECA LLC representatives as the report "users":

1. Identification of environmental cleanup liens against the subject property;
2. Specialized knowledge or experience regarding the subject property;
3. Relationship of the purchase price to the fair market value if the subject property was not contaminated;
4. Commonly known or reasonably ascertainable information regarding the subject property; and
5. Degree of obviousness of the presence or likely presence of contamination at the subject property.

According to HECA LLC representatives, no environmental issues, environmental cleanup liens, or previous reports exist except for those discussed in this 2010 Phase I ESA of the HECA Controlled Area and Ackerman Property prepared by URS and the 2010 Phase II Investigation Report prepared by AECOM.

5.1 LOCAL GOVERNMENT/REGULATORY AGENCY REPRESENTATIVES

URS contacted the KCEHSD, Hazardous Materials Division, and the KCFD for information regarding the Subject Property. In addition, URS requested files from Cal-EPA and performed searches of the online site databases for the Cal-EPA and RWQCB to identify any files regarding the Subject Property. Information and files obtained during the URS 2009 Phase I ESA of the HECA Project Site are also presented in this section.

5.1.1 Kern County Environmental Health Services Department

URS conducted a file review at the KCEHSD, Hazardous Materials Division, on July 8, 2010. URS contacted the KCEHSD in March 2012 concerning any new information regarding hazardous materials and hazardous waste activity at the Subject Property. No response has been received to date regarding new information available from the KCEHSD. If material information is received by URS, it will be provided in an addendum to this report. The reviewed files confirmed the results of the file review performed as part of the URS 2009 Phase I ESA of the adjacent Farm Operations Area; however, no files or information were available regarding the hazardous materials or hazardous waste at the Subject Property.

The KCEHSD files for the adjacent site to the North (Port Organics) can generally be summarized as follows:

- The Port Organics fertilizer manufacturing operation included the use of hazardous materials, including acids, bases, heavy metals, and petroleum hydrocarbons. Based on an April 12, 2005 inspection, KCEHSD concluded that the operations were generally not in compliance with applicable hazardous materials and hazardous waste regulations. The inspection report included photographs of the facility taken during the inspection. The photographs illustrate the relatively poor chemicals management practices and the fragmented state of the concrete catch basin in the storage area. Subsequently, Notices of Violations (NOVs) were issued to Port Organics.

- Follow-up inspections by California Accidental Release Prevention Program (CalARP) and KCEHSD on January 25, 2007, and KCEHSD on November 12, 2008, resulted in a reduced list of compliance issues.

- February 2006 and February 2008 HMBPs for Port Organics detail the amounts of stored chemicals at the site, which included over 12,000 pounds of aqueous ammonia, over 90,000 pounds of sulfuric acid, over 32,000 pounds of phosphoric acid, over 300,000 pounds of various inorganic salts, 40,000 gallons of liquid fish base, and over 40,000 gallons of liquid organic fertilizer product ("Agrolizer" and "Fishilizer"). A list of 73 notes, prepared by Port Organics, was also on file, detailing the nature and uses of various on-site storage and transfer equipment.

- In March 2008, KCEHSD issued a Consent Order with a proposed settlement fee of $9,238.50 for the just-described compliance issues. The Consent Order was signed by KCEHSD and a Port Organics representative.

The KCEHSD files for "Palm Farms" and "Palm Ranch" appear to be for the Farm Operations Area north of the Subject Property. These files describe the 1989 and 2010 hazardous materials storage at the Farm Operations Area, including the following:

- An August 1989 survey drawing showing four tanks labeled diesel (2×), gasoline, and propane. No indication is given as to whether these tanks were aboveground or belowground. However, the largest diesel tank shown matches the current diesel AST south of the maintenance shop.

- A February 2010 HMBP for the Farm Operations Area, indicating maximum on-site storage of 2 × 500 gallons waste oil, 3 × 1,000 gallons and 1 × 10,000 gallons propane, 2 × 5,000 gallons and 4 × 1,000 gallons diesel, 500 gallons gasoline, 4,800 pounds fungicide Vitavax, and 3,100 pounds red seed dye.

- The KCEHSD also noted that a wastewater drain pipe in the southeastern area of the Farm Operations Area was discharging into a nearby drainage ditch used by other farmers (see Section 6.3.4, below).

Copies of files obtained from the KCEHSD during the URS 2009 and 2010 Phase I ESAs are provided in Appendix G.

5.1.2 Kern County Fire Department

URS contacted the KCFD on June 7, 2010, concerning potential hazardous materials and hazardous waste activity at the Subject Property. In a July 5, 2010, telephone call, KCFD Deputy Fire Marshall Mike Cody stated that KCEHSD was the appropriate place to investigate for the requested information, rather than his department. URS contacted the KCFD in March 2012, concerning any new information regarding hazardous materials and hazardous waste activity at the Subject Property. No response has been received to date regarding new information available from the KCFD. If material information is received by URS, it will be provided in an addendum to this report.

5.1.3 Cal-EPA Department of Toxic Substances Control

On January 29, 2009, URS contacted Mr. Alex Baillie, Hazardous Substance Scientist with the California Department of Toxic Substances Control (DTSC) Statewide Compliance and Oversight Enforcement Branch, who stated that the DTSC did not have information on the Subject Property and was not aware of any hazardous material incident or oil spill reported at the Subject Property. URS contacted the DTSC in March 2012, concerning any new information regarding hazardous materials and hazardous waste activity at the Subject Property. The DTSC responded that there was no new information on the Subject Property.

URS searched the Cal-EPA DTSC EnviroStor database for any records on the Subject Property. There were no records found for the Subject Property when searched by county (Kern), town (Buttonwillow), zip code (93206), or using the names/phrases "Cauzza," "Port Organics Products, LTD," or "Palm Farms, Inc."

5.1.4 Regional Water Quality Control Board

URS contacted the RWQCB concerning any files for the Subject Property. As of the date of this report, no response was received from the agency. URS will provide any information received by the agency in an addendum to this report.

URS searched the RWQCB GeoTracker database for any records on the Subject Property. There were no records found for the Subject Property when searched by county (Kern), town (Buttonwillow), zip code (93206), or using the names/phrases "Cauzza," "Port Organics Products, Ltd," or "Palm Farms, Inc."

5.1.5 U.S. Environmental Protection Agency

URS contacted the U.S. EPA concerning any files for the Subject Property. On March 19, 2012, the U.S. EPA responded that they had no file for the Subject Property.

6.1 METHODOLOGY AND LIMITING CONDITIONS

URS performed a site reconnaissance at the Subject Property on February 8, 2012 and interviewed Mr. John Cauzza III and Mr. Sam Ackerman during the site visit. URS staff were not accompanied during the majority of the site visit. The Subject Property was observed by walking the perimeter and internal areas on established roadways. URS staff did not walk through cultivated fields; however, all portions of the fields were visible from the roadways. Areas inaccessible during the site visit are listed in Section 1.3. Appendix B includes photographs taken during site reconnaissance.

6.2 GENERAL SETTING

The Subject Property is between the intersections of Dairy Road, Adohr Road, and Tupman Road in Kern County, California.

The elevation of the Subject Property is approximately 288 feet above mean sea level. The Subject Property occupies an area of approximately 453 acres. The Subject Property primarily consists of cultivated agricultural land with irrigation ditches. No buildings were noted on the Subject Property during the site reconnaissance.

The properties surrounding the Subject Property include a Farm Operations Area to the north, followed by Adohr Road; to the east Tupman Road; and to the west the Dairy Road right-of-way that forms the western border of the Subject Property. An operating ranch and ranch house are east of the Subject Property across Tupman Road. The West Side and Outlet canals are south of the Subject Property, generally extending from the southeast to northwest. Beyond these is the Kern River Flood Control Channel, which appeared as arid vegetation during the site visit. The California Aqueduct lies to the south of this flood channel. The Aqueduct extends generally from the southeast to northwest and is positioned parallel to and south of the West Side and Outlet canals. The Tule Elk State Reserve is located approximately 0.25 mile east of the Subject Property, east of Tupman Road. The reserve extends generally from the north to the south, with Station Road forming the northern boundary. The reserve's southern boundary is just east of the community of Tupman, California. The locations of several of these features are shown on Figure 2.

The Farm Operations Area north of the Subject Property extends over approximately 30 acres and houses the only structures adjacent to the Subject Property. The former Port Organics fertilizer manufacturing plant (comprising approximately 3.5 acres) is on the eastern side of the Farm Operations Area. The area used for the fertilizer manufacturing plant was leased to Port Organics in the past, and their operations ceased at the beginning of 2009. At the time of this Phase I ESA, no documentation of closure or decommissioning was found in the KCEHSD records; however, all containers and the majority of the tailings piles had been removed from the site prior to the URS 2012 site visit.

6.3 INTERIOR AND EXTERIOR OBSERVATIONS

6.3.1 Structures, Grounds, and Subject Property Access

Access to the Subject Property is via Dairy, Adohr, Station, and Tupman Roads. Numerous dirt roads are established on the Subject Property, traversing and bordering the cultivated fields and irrigation ditches.

There are no structures on the Subject Property.

6.3.2 Water, Utilities, Pipelines

Pacific Gas and Electric Company (PG&E) provides electricity to the areas adjacent to the Subject Property. Overhead electrical lines and pole-mounted transformers serve buildings in the Farm Operations Area, and stand-alone well pumps south of the Subject Property. No overhead lines and pole-mounted transformers were noted on the Subject Property itself; but the EDR report identifies on high-voltage transmission line over the Subject Property.

No public water or sewer service is provided to the Subject Property. According to Mr. John Cauzza III, irrigation water is provided by the Buena Vista Water Storage District. Several wells are located adjacent and in close proximity to the Subject Property and are used to replenish water in the irrigation canals. Three wells plugged with concrete were noted south of the Subject Property. Two domestic water supply wells are currently present on the Farm Operations Area north of the Subject Property, as described in Section 6.3.3, below. According to Mr. John Cauzza III a water line traverses the Subject Property to the east towards an offsite well in the Station Road area. In addition, an unknown 2-inch steel pipe was noted in the embankment for the drainage canal on the northernmost portion of the Subject Property.

An oil pipeline runs north of the Subject Property (originating at the intersection of Adohr and Tupman Roads, and extending to the east from the point of origination. A lone pipeline marker was noted during site visit on the northern side of Adohr Road, east of the landing strip and west of Tupman Road.

6.3.3 Wells

As noted in Section 6.3.2, several wells are located adjacent to the south of the Subject Property and are used for irrigation.

Domestic water wells serve the adjacent parcels to the north.

According to the EDR report, two groundwater wells are located on the Subject Property (in the central portion of the Subject Property), and an additional nine wells are located within 0.5 mile of the property boundary. The two wells mapped in agricultural fields on the Subject Property were not visible during the URS site visit.

The EDR report listed two DOGGR-registered oil and gas wells that are located within a 1-mile radius of the Subject Property. One of these wells is located on the Subject Property, to the south-southeast of the center point of the Subject Property, as shown in Appendix D. EDR reported that the wells on the Subject Property were plugged and abandoned (dry holes).

The former well locations were approached during the site reconnaissance and observed from the nearest roadway to avoid damaging crops. No evidence of these former wells was noted during the 2010 or 2012 site visits.

6.3.4 Wastewater Discharge

No public sewer is provided to the Subject Property. According to Mr. John Cauzza III, no septic tanks and associated leach fields are present on the Subject Property; however, four are present in the adjacent Farm Operations area to the north. In addition, Mr. Ackerman stated that his residence is served by a septic tank and leach field north of the Subject Property.

No wastewater discharges from the Subject Property were noted. Agricultural irrigation runoff is collected in the drainage canal that runs through the center of the Subject Property.

No surface water discharges from the Farm Operations Area adjacent to the north were noted during the URS 2012 site visit, with the exception of agricultural irrigation runoff.

6.3.5 Stormwater Drainage/Discharge

Generally, stormwater generated on site would sheet flow to the nearest irrigation or drainage ditch or to the West, East, or Outlet canals. No stormwater permits are held by Mr. John Cauzza III for the farm operations. Mr. John Cauzza III stated that the Buena Vista Storage Water District holds a discharge permit for the drainage canals, and conducts water testing.

The Subject Property is generally flat and gently slopes to the west, toward the West Side Canal. From observation of the Subject Property, it does not appear that stormwater is generated in concentrated flows.

6.3.6 Drains and Sumps

No drains or sumps were noted on the Subject Property during the site reconnaissance. Irrigation drainage canals are described in Section 6.3.5, and shown on Figure 2.

6.3.7 Solid Waste Disposal

There are no designated waste storage areas established in the Subject Property. Agricultural wastes generated by crop planting and harvesting activities are removed from the areas upon generation. Solid wastes are also generated and stored in the Farm Operations Area adjacent north of the Subject Property. In addition, broken concrete and debris were observed in the irrigation ditches used to prevent scouring and reinforce the ditches.

6.3.8 Process Equipment

No process equipment was present on the Subject Property.

6.3.9 Underground Storage Tanks

As described in the "Subject Property" subsection of Section 4.1.1, the EDR report did not identify any existing or historical USTs associated with the Subject Property; however, the EDR report noted 5 historical USTs reported as owned by Palm Farms on Adohr Road, with no

address specified. Based on conversations with Mr. Sam Ackerman, at least three of these five tanks were on the Farm Operations Area north of the Subject Property, and the other two tanks may have been near the airstrip north of the Subject Property. Mr. Sam Ackerman reported that three of the USTs were removed in the 1980s, and he is not aware if the remaining two tanks were removed or are still present. Mr. Sam Ackerman was not aware of any current or historical USTs on the Subject Property. Mr. John Cauzza III reported that he was not aware of any current or historical USTs on his former portion of the Subject Property. As discussed in Section 3.2 AECOM performed a geophysical survey in 2010 to attempt to locate the potential USTs and could not find them in the areas searched (AECOM, 2010).

During the site reconnaissance, URS did not note any fill or vent pipes suggesting the potential presence of USTs on the Subject Property.

Two unknown large concrete covers were noted west of the south storage building, and Mr. John Cauzza III could not provide any information regarding the nature or former use of these structures. There is a potential that these covers are associated with USTs or septic tanks. According to Mr. Sam Ackerman, they may have been used as part of the equipment maintenance and washing operations that were historically conducted in this area. As discussed in Section 3.2, AECOM advanced a single boring adjacent to these features in 2010 to assess potential impacts from them, and no petroleum hydrocarbons were detected in the soil samples collected (AECOM, 2010).

6.3.10 Aboveground Storage Tanks

No ASTs were noted on the Subject Property.

6.3.11 Other Hazardous Materials/Waste Storage

No hazardous materials or wastes were noted on the Subject Property during the URS 2012 site visit.

6.3.12 Pits, Ponds, and Lagoons

There are no pits, ponds, or lagoons on the Subject Property. Irrigation and drainage canals operated by the Buena Vista Storage Water District are present on and adjacent to the Subject Property.

6.3.13 Stained/Discolored Soil or Pavement

Stained soils were observed at the following location on the Subject Property during the February 2012 site visit:

- In the apparent pesticide loading or washing area on the southeastern end of the crop duster landing strip (Photo 11).

No other stained soils were observed on the Subject Property; however, soil staining was noted on adjacent properties to the south (associated with water pump oil and diesel) and north (associated with operations at the Farm Operations Area, the former crop duster hangar, and water pumps in this area).

6.3.14 Evidence of Fill or Illegal Dumping

No evidence of unauthorized or potentially illegal dumping was observed on the Subject Property during the 2012 site visit.

Mr. John Cauzza III was not aware of any fill that had been brought on site in the past. Mr. Ackerman noted that sandy fill was imported as a foundation for the Ackerman residence north of the Subject Property.

6.3.15 Transformers/PCB Items

Numerous pole-mounted transformers were observed on parcels adjacent to the Subject Property, but none were noted on the Subject Property. No other potential polychlorinated biphenyl (PCB)-containing items were observed on the Subject Property.

6.3.16 Air Emissions

Air emission sources include farm tractors and other mobile farm equipment, and diesel-powered irrigation pumps. No permits exist for this equipment. According to San Joaquin Valley Air Pollution Control District rules, farm tractors and other off-road mobile equipment do not require an air permit. Permits are not required for stationary diesel-powered irrigation pumps that are under 50 horsepower. The air permit status of these small emission sources is not considered a significant environmental issue for the purpose of this Phase I ESA. No significant issues were noted with respect to air emissions at the Subject Property.

6.3.17 Asbestos-Containing Materials

URS did not conduct an asbestos survey at the Subject Property, as explained in Section 1.3; however, during the 2012 site visit, URS did not note building materials on the Subject Property, with the exception of concrete rubble placed in the irrigation ditches.

6.3.18 Lead-Based Paint

No painted surfaces were noted on the Subject Property.

6.3.19 Radon

There are no federal or state standards regulating radon exposure; however, the U.S. EPA recommends a maximum exposure level of 4.0 picocuries per liter (pCi/L). Mr. John Cauzza III and Mr. Ackerman were not aware of any radon testing conducted at the Subject Property. URS did not conduct radon sampling during the Subject Property visit. The Subject Property is located in Kern County within U.S. EPA Radon Zone 2, according to the EDR. Properties located in U.S. EPA Radon Zone 2 have a moderate potential to have radon concentrations greater than 2 but less than 4 pCi/L.

The Subject Property consists of approximately 453 acres of land described in Section 2.1, located west of Tupman Road and south of Adohr Road in unincorporated Kern County near Buttonwillow, California.

In performing this ESA and based on the site reconnaissance, review of available documents, and interviews with Mr. John Cauzza III, Mr. Sam Ackerman, and Mr. Dane Peacock, URS identified the following environmental conditions in connection with this Subject Property:

- EDR reported a record of five USTs in the HIST UST database described as Palm Farms, Inc., including two diesel fuel tanks, an unleaded gasoline tank, a regular gasoline tank, and a premium gasoline tank. The address reported for Palm Farms, Inc., is Adohr Road, mapped by EDR as approximately 0.985 mile north-northeast of the Subject Property, according to the EDR HIST UST list from 1990. Based on a conversation with Mr. Sam Ackerman, at least three of these USTs were located on the Farm Operations Area north of the Subject Property, and were removed in 1984. Mr. Ackerman reported that two USTs may be on the adjacent crop duster hangar area, and might not have been removed. These potential UST areas were investigated in 2010, and the USTs could not be located, as discussed in Section 3.2.
- Although the former property owner, Mr. John Cauzza III, reported that he was not aware of any USTs being historically located at the Subject Property, a pipe that may be a UST fill or vent pipe was reported by URS in the 2009 and 2010 Phase I ESAs in the Farm Operations Area north of the Subject Property (as discussed in Section 6.3.9). In addition, two unknown large concrete covers were noted west of the south storage building. Mr. John Cauzza III was aware of these underground structures, but he does not know their nature or details on their former use. Both of these areas were investigated in 2010 and no evidence of releases was found as discussed in Section 3.2.
- Stained soils were observed adjacent to the crop duster landing strip during the Subject Property visit, as detailed in Section 6.3.13. The soil staining is likely to derive from handling of fuels, lubricating oils, and/or pesticides. This area was investigated in 2010 and no significant contamination was found; however, the extent of subsurface impacts does not appear to be defined vertically or horizontally.
- A portion of the Subject Property has been used for agriculture, and agricultural chemicals such as pesticides and herbicides were applied to crops over time. URS noted no specific evidence of stains or storage related to agricultural chemicals, with the exceptions noted in the stained soils above. Surface soils in five areas on the Subject Property were sampled in 2010 to evaluate concentrations of pesticides. The organochlorine pesticides dieldrin, endrin, and endosulfan were detected above industrial screening levels (RWQCB ESLs) in selected samples, but did not exceed other state or federal screening levels (CHHSLs or RSLs). The pesticide results are discussed in more detail in Section 3.2.
- The EDR database search identified one former oil and gas well on the Subject Property that was reported as abandoned in the 1950s. URS visited the reported location of the well during the June 2010 and February 2012 site visits and found no evidence of the well. The history and abandoned status of these wells is documented by DOGGR.

URS did not encounter significant data gaps in performing this ESA, with the exception of the following:

- Time intervals greater than 5 years between historical maps and resources; however, based on the nature of the site use as agricultural fields and the site history available from sources dating back to 1912, this data gap does not appear to be significant.

- Selected environmental agencies have not provided updates on their files regarding the Subject Property at the time this report was prepared. Since the agency files were last reviewed in 2010, it is unlikely that significant new information is available; however, an addendum to this report will be issued if significant information is received from these agencies.

URS has performed an ESA of the Subject Property described in Section 1, located on Adohr Road in unincorporated Kern County, California. Our work was conducted in conformance with the scope and limitations of ASTM Practice E 1527-05. Any exceptions to, or deletions from, this practice are described in Section 1.3, Limitations and Exceptions. This ESA identified the following RECs:

- The 2010 Phase II investigation identified elevated concentrations of petroleum hydrocarbons and other contaminants on the former equipment wash area immediately north of the Subject Property boundary. Because the vertical and horizontal extent of contamination were not defined by the Phase II ESA, and this wash area discharged into a ditch south of the Farm Operations Area boundary, the contamination is considered a potential offsite REC to the Subject Property.
- Stained soils were observed during the Subject Property visit, as detailed in Section 6.3.13. The soil staining is likely to derive from handling of fuels, lubricating oils, and/or pesticides. The AECOM 2010 Phase II ESA sampled in the vicinity of the stained soil and identified selected contaminants; however the extent of any subsurface impacts is not defined.

In addition to the above RECs the following potential environmental issues were noted: in the opinion of URS, they are not considered RECs:

- Surficial samples collected from the agricultural fields on the Subject Property identified levels of pesticides dieldrin, endrin, and endosulfan at concentrations that exceed the RWQCB ESLs, but did not exceed the state CHHSL or federal RSLs. These results are consistent with the historical agricultural use, and no consistent spatial pattern of pesticides above ESLs was observed
- An agency database lists five former USTs located at Palm Farms, Inc., on Adohr Road. Because the Subject Property is also located on Adohr Road, and the property was purchased from Palm Farms, Inc., the USTs may have historically been located on or adjacent to the Subject Property. The 2010 AECOM Phase II ESA investigated selected potential locations for these USTs and identified no USTs and no contamination associated with USTs.

AECOM, 2009. *Results of Soil Sampling Activities Proposed Subject Property near the Intersection of Dairy Road and Adohr Road, Buttonwillow, California*, September 9.

AECOM, 2010. *Phase II Environmental Site Assessment Report, Proposed Hydrogen Energy California Project Site, Adohr and Dairy Roads, Kern County, California*, December.

American Society for Testing Materials (ASTM). 2005. Standard Practice for Environmental Subject Property Assessments: Phase I Environmental Subject Property Assessment Process: Designation E 1527-05.

Cal-EPA GeoTracker database. http://www.geotracker.waterboards.ca.gov/. Searched on March 16, 2012.

Environmental Data Resources, Inc. (EDR), 2012. *Radius Map with GeoCheck®: Inquiry Number: 3251004.1s*, EDR, Inc., Milford, Connecticut. March 19.

Environmental Data Resources, Inc. (EDR), 2010. *Historic Topographic Map Report: Report Number 2755337.44.* EDR, Inc., Milford, Connecticut. May 6.

Environmental Data Resources, Inc. (EDR), 2010. *Sanborn Map Report: Report Number 2755383.3s.* EDR, Inc., Milford, Connecticut. April 27.

Environmental Data Resources, Inc. (EDR), 2012. *Aerial Photograph Decade Package: Report Number* 3293634.1. EDR, Inc., Milford, CT. April 4.

Environmental Data Resources, Inc. (EDR). 2010. *City Directory Abstract: Report Number 2785218.6.* EDR, Inc., Milford, Connecticut. June 4.

Environmental Data Resources, Inc. (EDR), 2012. *Lien Search: Inquiry Number: 3251004.2S.* EDR, Inc., Milford, Connecticut. February 24.

Cal/EPA Envirostor database. http://www.envirostor.dtsc.ca.gov/. Accessed on March 16, 2012.

URS, 2009. *Phase I Environmental Site Assessment, HECA Project Site, Kern County, California*, April 6.

URS, 2010. *Phase I Environmental Site Assessment, HECA Project Site, Kern County, California*, August 24.

10.1 CORPORATE

URS, a Nevada Corporation, provides professional services in engineering and sciences applied to the earth and its environment. One of the main areas of practice is Environmental Property Investigation and Remediation, which involves the application of science and engineering to contamination assessment and cleanup; the management, minimization, treatment, and disposal of hazardous, solid and industrial waste; and regulatory compliance. Phase I ESAs are a part of this practice area and have been conducted by URS globally for several decades.

10.2 INDIVIDUAL

The qualifications of the Project Manager and of the other Environmental Professionals involved in this ESA meet the URS corporate requirements for performing ESAs.

Mr. Giorgio Molinario and Mr. Zenis Walley of the URS San Francisco office performed the site reconnaissance, and Mr. Molinario authored the Phase I ESA report.

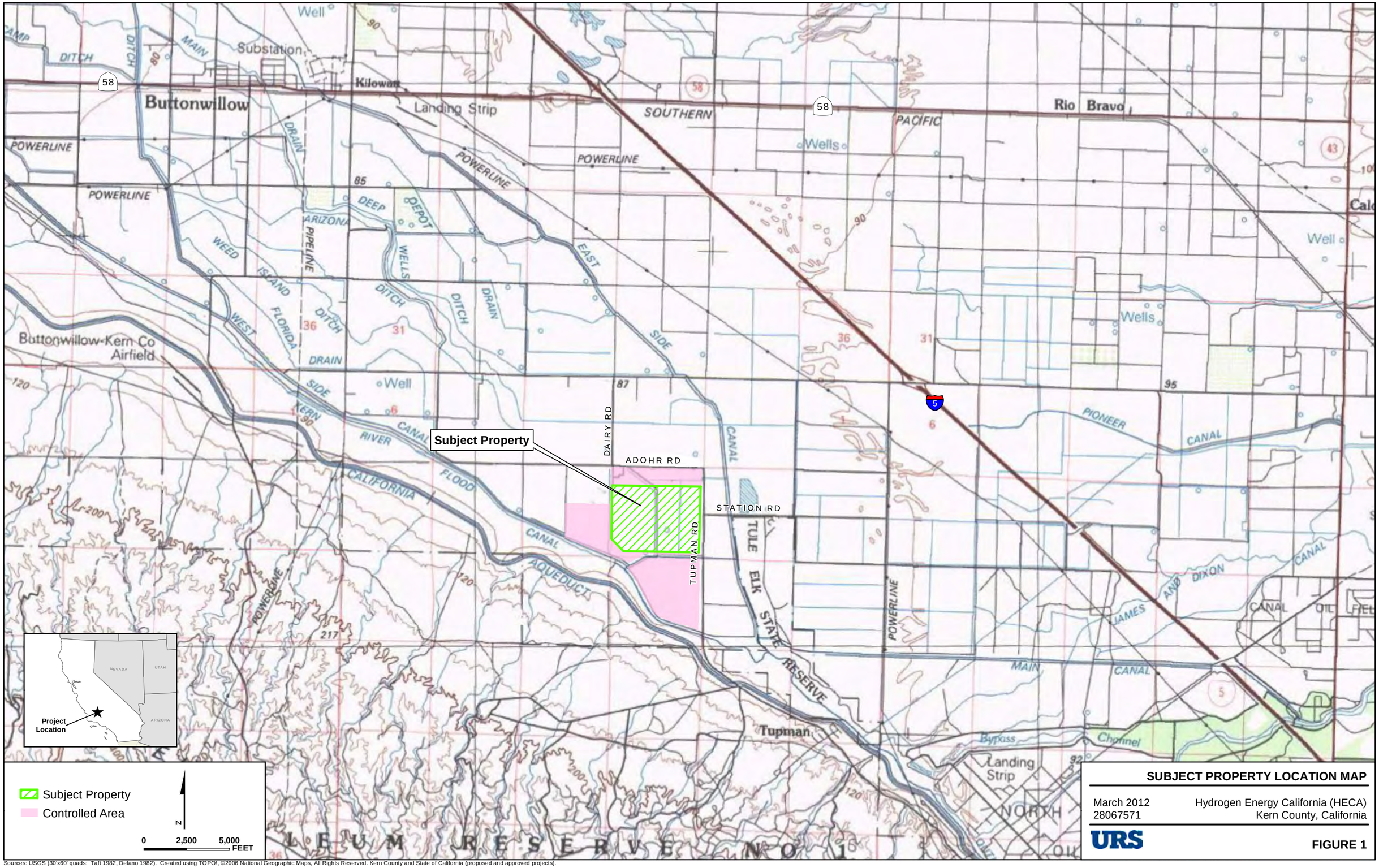
Mr. Molinario is an Environmental Chemist with more than 16 years of environmental compliance and due diligence experience. He has conducted a number of Phase I ESAs in California, the U.S., and internationally. His curriculum vitae is presented in Appendix A.

Mr. Walley is an experienced environmental compliance specialist with significant experience in Phase I ESAs at power generation facilities.

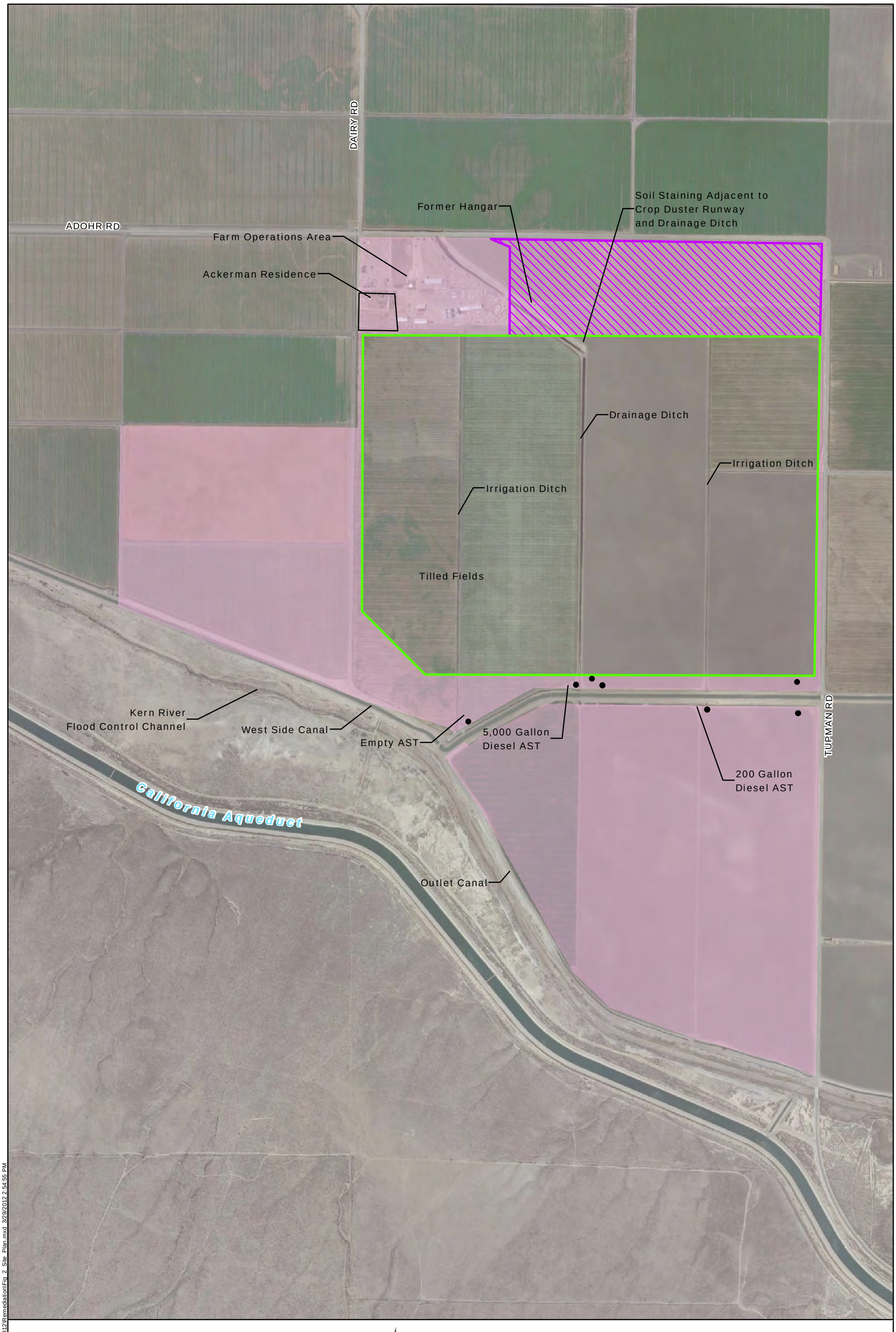
Ms. Cindy Fischer of the URS Denver office performed the internal technical review of this ESA. Ms. Fischer has over 20 years of relevant environmental professional experience.

April 27, 2012

Giorgio Molinario, REA 07436



Sources: USGS (30'x60' quads: Taft 1982, Delano 1982). Created using TOPO!, ©2006 National Geographic Maps, All Rights Reserved. Kern County and State of California (proposed and approved projects).



SITE PLAN

March 2012
28068052

Hydrogen Energy California (HECA)
Kern County, California

URS

FIGURE 2

U:\GIS\HECA\Projects\HECA_2012\Remediation\Fig_2_Site_Plan.mxd 3/29/2012 2:54:55 PM

Source: Aerial Photo, Digital Globe, 2008.

URS

Giorgio Molinario, REA

Senior Environmental Chemist / Project Manager

Areas of Expertise

Site Investigations and Remediation
Environmental Due Diligence
Regulatory Compliance

Education

M.A. (Thesis Pending)/ Environmental Studies/Brown University
B.Sc./Chemistry/1992/Brown University

Registration/Certification

Registered Environmental Assessor / CA / 07436

Training

40-Hour OSHA HAZWOPER
8-hour OSHA HAZWOPER Supervisor
8-hour OSHA HAZWOPER Refresher (2010)
8-Hour Mine Safety and Health Administration Miner Safety Training
5-Day EPA/AHERA Asbestos-Contractor Supervisor
5-Day EPA/AHERA Asbestos-Surveyor and Management Planner
FEMA incident Command System Level 200
USEP Level-A and Readiness Training (2007)
American Red Cross Adult CPR and First Aid

Overview

Mr. Molinario has 16 years of site investigation, auditing, and regulatory compliance experience. His experience includes due diligence and environmental compliance audits for purchase/sale of individual industrial plants or entire companies. He is well versed with complex numerical analysis of data including cost estimating and the use of probabilistic tools such as Crystal-Ball™ to forecast outcomes and costs. He has extensive experience with the U.S. Environmental Protection Agency, Cal-EPA Department of Toxic Substances Control, and private sites and has constructively interacted with complex groups of regulators and stakeholders.

Project Experience

Project Manager, Environmental Site Assessments (Phase I ESAs and Due Diligence), 1996 - ongoing: Mr. Molinario Managed and assisted with numerous ESAs for private and public clients. He conducted ESAs for buyer and vendor sides, in the U.S. and abroad including numerous fast-turnaround multi-site projects. In addition to Phase I ESAs, Mr. Molinario has performed numerous Phase II investigations and compliance audits in the U.S. and abroad targeting specific issues and working under a variety of regulatory regimes. A brief listing of some representative projects includes:

- Managed numerous multi-site Phase I and II ESAs and limited compliance audits of industrial, commercial, and residential site portfolios across the U.S. and abroad;
- Co-wrote the site assessment guidance document for a major oil company and implemented it on several site assessments.
- Managed Phase I and II ESAs of upstream oil and gas sites, petroleum storage sites, manufacturing plants, chemical plants, warehouses and distribution facilities, and landfills;
- Performed due diligence assessments in the US, UK, Italy, France, Israel, and Dem. Rep. of Congo, and managed projects with due diligence in Canada, Mexico, Germany, China, and India.
- Managed several Phase I and II ESAs of proposed power plant sites in California incorporating environmental due diligence, lender-specific requirements, and strategic data collection to incorporate into the California Energy Commission Application for Certification.
- Managed several Brownfield site assessments for the U.S. EPA including multi-parcel sites, former industrial sites, and tribal land.

Giorgio Molinario

Project Manager, Environmental Due Diligence (divestiture) guidance document project, Confidential Major Oil Client, California, 2004: In preparation for a major asset divestiture program Mr. Molinario co-authored a due diligence guidance document incorporating existing internal company protocols and industry best practices. The guidance document includes different levels of due diligence and sample checklists for assets ranging from retail portfolios to upstream facilities. Mr. Molinario worked with company HES staff and counsel to prepare the guidance that was later adopted as a company-wide document. Following the preparation of the guidance document Mr. Molinario 'field tested' the guidance on divestiture due diligence of the upstream assets in the Democratic Republic of Congo and on divestiture of two asphalt plants in the southwestern US.

Project Manager, Pre-acquisition Phase I and baseline Phase II site investigations of two proposed power plant sites, Confidential Client, California: Conducted environmental due diligence meeting client and lender standards at these two proposed power plant sites prior to site acquisition. Managed the baseline site investigation consisting of soil and groundwater investigation. Integrated data collection with the Application for Certification (AFC) team including collection of additional surface water and groundwater data, and collaboration with the biological survey teams.

Project Manager, Pre-acquisition due diligence and environmental liability cost estimating for an underwater power cable project, Confidential Client, California, 2007: Conducted environmental due diligence on parcels identified for use as AC to DC converter stations at the cable terminus. Prepared standard due diligence reports, as well as a detailed environmental remediation/liability cost estimate for use in planning potential remediation and redevelopment options.

Project Manager, Pre-acquisition due diligence of proposed innovative hydrogen power plant site, Confidential Client, California, 2010: This proposed power plant included over 1,000 acres of buffer agricultural land and existing farm and industrial operations on the proposed footprint. Mr. Molinario planned the site due diligence to include additional items required for the power plant Application for Certification (AFC). Mr. Molinario also planned the due diligence of the proposed pipeline and power line linears serving the site. He authored the environmental due diligence reports under an extremely aggressive project schedule.

Project Manager, International Aluminum, due diligence, compliance, and site investigation and remediation consulting 2006-present, $1M: Mr. Molinario was the project manager for the private equity acquisition of this vertically integrated industrial company. He managed resources from multiple URS offices to conduct expedited site audits. He advised the client, external counsel, and advisors on selecting a subset of the sites for a securitized leaseback transaction that would require additional due diligence and environmental compliance upgrades.

Giorgio Molinario

He is currently overseeing environmental compliance and site investigation and remediation tasks on multiple sites across the US for this company.

Senior Auditor, Fluoropolymer and Fluorocarbon manufacturer, due diligence and strategic acquisition consulting: Mr. Molinario was a key player in the high-level due diligence and strategic acquisition consulting for the proposed acquisition of a 900 million dollar fluoropolymer and fluorocarbon manufacturing company with facilities in U.S., Italy, and Germany. Mr. Molinario visited manufacturing plants and interviewed plant management, and senior environmental management to identify due diligence issues, potential for catastrophic failures from to the storage of hydofluoric acid, and future regulatory issues with the continued production of CFCs, HCFCs, and the use of mercury cells in the production of chlorine.

Task Manager, Pre-Acquisition Assessment, Former Oak Knoll Naval Medical Center, Confidential Client, Oakland, CA, 2006 : Mr. Molinario was tasked to review and assess existing environmental reports for this 180-acre navy hospital to prepare a strategy and probabilistic cost estimate for environmental remediation in support of redevelopment. Mr. Molinario prepared an inventory of environmental issues and a probabilistic cost model to integrate environmental remediation into the planning and redevelopment components of the project. The cost model was used by the developer to determine the bidding price for this asset.

Project Manager/Group Manager, U.S. EPA Region IX START Contract, 2006-2008. Managed URS' environmental response group during this contract that included over 150 task orders totaling over $12M. In addition to managing the group Mr. Molinario managed and performed a range of projects including emergency responses, Brownfields site assessments, and expedited removals at CERCLA and petroleum sites.

Project Manager/Project Chemist, State Superfund Sites, Cal-EPA Department of Toxic Substances Control, 1997- ongoing: Managed and performed a range of sampling, remedial, and report-writing tasks at numerous state Superfund sites ranging from mercury recycling facilities to former industrial facilities. Wrote sampling plans and Remedial Investigation Reports, and site investigation and in situ remediation projects.

Task Manager, San Francisco International Airport Runway Safety Area CEQA/NEPA Permitting, San Francisco, CA, San Francisco International Airport, 2011-present: Mr. Molinario managed the hazardous material assessment of the Environmental Assessment (EA) and Initial Study (IS) for this Runway Safety Area project. He assisted the project team and client in evaluating contaminated sites that may pose significant impacts to the construction, and preparing strategies to address the impacts without impacting the project schedule.

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo 1	
Direction Photo Taken: West	
Description: View of the northwest portion of the Subject Property (left) and the adjacent Farm Operations Area (right) across the drainage ditch.	

Photo 2	
Direction Photo Taken: Northwest	
Description: View of the adjacent property to the north. This adjacent portion of the Farm Operations Area that was formerly used as a storage area for the Port Organics fertilizer plant.	

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo 3	
Direction Photo Taken: Northwest	
Description: View of the adjacent property to the west (across Dairy Road right of way) which consists of cultivated fields.	

Photo 4	
Direction Photo Taken: Southwest	
Description: View of the Subject Property from the northeast.	

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo 5	
Direction Photo Taken: West	
Description: View of the northeast portion of the Subject Property (upper left), the Farm Operations Area (background)and adjacent fields to the north (foreground).	

Photo 6	
Direction Photo Taken: Southwest	
Description: View of the eastern portion of the Subject Property from the northeast edge.	

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo 7	
Direction Photo Taken: North	
Description: View of the southern portion of the Subject Property taken from one of the water wells on the adjacent parcel to the south.	

Photo 8	
Direction Photo Taken: South-southwest	
Description: View of the former equipment wash area on the Farm Operations Area north of the Subject Property. The Subject Property is visible in the background.	

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo. 9	
Direction Photo Taken: Southwest	
Description: Close-up view of the former equipment wash area discharge point into the ditch that lies north of the Subject Property. The Subject Property is in the background.	

Photo 10	
Direction Photo Taken: **West**	
Description: View to the west of north central portion of the Subject Property with the drainage ditch in the foreground and the Farm Operations Area on the right.	

URS	PHOTOGRAPHIC LOG	
Hydrogen Energy California LLC	**HECA Subject Property Kern County, CA**	**Date: 2/8/2012**

Photo 11	
Direction Photo Taken: Southwest	
Description: Close-up of the soil staining adjacent to the drainage ditch at the end of the former crop duster runway located on the eastern portion of the Subject Property.	

Photo. 12	
Direction Photo Taken: West-northwest	
Description: View of the drainage ditch adjacent to the former runway on the northeast portion of the Subject Property and the north adjacent parcel to the north.	

HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 3251004.2S
February 24, 2012

The EDR Environmental LienSearch™ Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

RESEARCH SOURCE

Source 1: Kern County, California Assessor

Source 2: Kern County, California Recorder

PROPERTY INFORMATION

Deed 1:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: John B. Cauzza, III and Laura K. Cauzza, husband and wife, Michael A. Cauzza and Lori Cauzza, husband and wife, Steven P. Cauzza and Antoinette M. Cauzza, husband and wife, and Ronald C. Cauzza, a married man as his sole and separate property and Jornistro Properties, LLC, a California limited liability company

Deed Dated: 02/03/2011

Deed Recorded: 02/03/2011

Instrument: 0211015825

Deed 2:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: Hydrogen Energy California, LLC, a Delaware limited liability company

Deed Recorded: 09/08/2011

Instrument: 0211117643

Legal Description: All that certain piece or parcel of land being a portion of the East Half of the Southeast Quarter of Section 10, Township 30 South, Range 24 East, M.D.M., in the unincorporated area, situate and lying in the County of Kern, State of California.

Legal Current Owner: Hydrogen Energy International, LLC, a Delaware limited liability company

Property Identifiers: 159-040-02

Deed 3:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: John B. Cauzza, III and Laura K. Cauzza, husband and wife, Michael A. Cauzza and Lori Cauzza, husband and wife, Steven P. Cauzza and Antoinette M. Cauzza, husband and wife, and Ronald C. Cauzza, a married man as his sole and separate property and Jornistro Properties, LLC, a California limited liability company

Deed Dated: 02/03/2011

Deed Recorded: 02/03/2011

Instrument: 0211015825

Deed 4:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: Hydrogen Energy California, LLC, a Delaware limited liability company

Deed Recorded: 09/08/2011

Instrument: 0211117643

Legal Description: All that certain piece or parcel of land being Parcel B of Lot Line Adjustment No. 63-94, in Certificate of compliance recorded 01/20/1995 as Instrument No. 7612 of Official Records, being that portion of Parcel 2 of Parcel Map Waiver No. 604, as evidenced by that certain Certificate of Compliance recorded 04/15/1985, in Book 5751, Page 519 of Official Records, being all those portions of Sections 9 and 10, Township 30 South, Range 24 East, M.D.M., and that portion of Section 15, Township 30 South, Range 24 East, M.D.M, together with all those portions of the West Half of the Southeast Quarter and the East Half of the Southwest Quarter of Section 10, Township 30 South, Range 24 East, situate and lying in the County of Kern, State of California.

Legal Current Owner: Hydrogen Energy International, LLC, a Delaware limited liability company

Property Identifiers: 159-040-16

Deed 5:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: Hydrogen Energy California, LLC, a Delaware limited liability company

Deed Recorded: 09/08/2011

Instrument: 0211117643

Legal Description: All that certain piece or parcel of land being a 4.28 acre parcel, more or less, being Parcel A of Parcel Map 10341, filed 08/29/1997 in Book 49, Pages 7 and 8 of Parcel Maps, situate and lying in an unincorporated area of the County of Kern, State of California.

Legal Current Owner: Hydrogen Energy International, LLC, a Delaware limited liability company

Property Identifiers: 159-040-17

EDR Environmental LienSearch™ Report

Deed 6:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: John B. Cauzza, III and Laura K. Cauzza, husband and wife, Michael A. Cauzza and Lori Cauzza, husband and wife, Steven P. Cauzza and Antoinette M. Cauzza, husband and wife, and Ronald C. Cauzza, a married man as his sole and separate property and Jornistro Properties, LLC, a California limited liability company

Deed Dated: 02/03/2011

Deed Recorded: 02/03/2011

Instrument: 0211015825

Deed 7:

Type of Deed: Grant Deed

Title is vested in: Hydrogen Energy International, LLC, a Delaware limited liability company

Title received from: Hydrogen Energy California, LLC, a Delaware limited liability company

Deed Recorded: 09/08/2011

Instrument: 0211117643

Legal Description: All that certain piece or parcel of land being Certificate of Compliance No. 1948, recorded 08/29/1997, as Instrument No. 97-115072, of Official Records, being a portion of Parcel A of Lot Line Adjustment No. 63-64, in Certificate of Compliance recorded 01/20/1995, as Instrument No. 7612 of Official records, being that portion of Parcel 2 of Parcel Map Waiver No. 604, as evidenced by that certain Certificate of Compliance recorded 04/15/1985, in Book 5751, Page 519 of Official Records, being all those portions of Sections 9 and 10, Township 30 South, Range 24 East, M.D.M., situate and lying in an unincorporated area of the County of Kern, State of California.

Legal Current Owner: Hydrogen Energy International, LLC, a Delaware limited liability company

Property Identifiers: 159-040-18

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:

Recorded:

Book:

Page:

Docket:

Volume:

Instrument:

Comments:

Miscellaneous:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Other AUL's: Found ☐ Not Found ☒

If found:

1st Party:

2nd Party:

Dated:
Recorded:
Book:
Page:
Docket:
Volume:
Instrument:
Comments:
Miscellaneous:

EDR Environmental LienSearch™ Report

DEED EXHIBIT

James W. Fitch, Assessor – Recorder
Kern County Official Records
Recorded at the request of
Public

JASON
2/03/2011
1:28 PM

DOC#: 0211015825

Stat Types: 1 Pages: 11

Fees	39.00
Taxes	** Conf **
Others	0.00
PAID	$39.00

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL THIS DEED
AND TAX BILLS TO:

Manatt, Phelps & Phillips, LLP
11355 West Olympic Boulevard
Los Angeles, California 90064
Attn: Keith Allen-Niesen, Esq.

(SPACE ABOVE THIS LINE FOR RECORDER'S USE)

APN: 159-040-02, 159-040-04, 159-040-11, 159-040-16, 159-040-18, 159-190-09

GRANT DEED

PURSUANT TO SECTION 11932 OF THE REVENUE & TAXATION CODE THE AMOUNT OF TRANSFER TAX WILL BE SHOWN ON A SEPARATE STATEMENT.

THE UNDERSIGNED GRANTORS DECLARE FOR GOOD AND VALUABLE CONSIDERATION, the receipt and adequacy of which is hereby acknowledged,

John B. Cauzza, III and Laura K. Cauzza, husband and wife, Michael A. Cauzza and Lori Cauzza, husband and wife, Steven P. Cauzza and Antoinette M. Cauzza, husband and wife, and Ronald C. Cauzza, a married man as his sole property and Jomistro Properties, LLC, a California limited liability company (collectively, "***Grantor***")

hereby GRANTS to HYDROGEN ENERGY CALIFORNIA LLC, a Delaware limited liability company ("***Grantee***"), the following described real property in the County of Kern, State of California:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

Together with all improvements thereon and all the estate and rights of Grantor in and to any easements, rights, privileges, appurtenances, water rights and other hereditaments appurtenant to the real property.

EXCEPTING AND RESERVING THEREFROM, for the benefit of Grantor and its assigns, heirs and successors and assigns, all oil, gas and other hydrocarbon rights and also all mineral rights (including, without limitation, all rock, sand, gravel and other earthen and alluvial materials) in, on or underlying the surface thereof, not otherwise reserved in deeds of record; provided, however, the exercise of any such mineral or other right(s) shall be in accordance with that certain Accommodation Agreement which is being recorded substantially concurrently herewith in the Official Records of the County of Kern, State of California.

[SIGNATURES ON THE NEXT PAGE]

DATED: February 3, 2011

JOHN B. CAUZZA, III, and LAURA K. CAUZZA, as community property

JOHN B. CAUZZA, III

LAURA K. CAUZZA

DATED: February 3, 2011

MICHAEL A. CAUZZA and LORI CAUZZA, as community property

MICHAEL A. CAUZZA

LORI CAUZZA

[SIGNATURES CONTINUED ON THE NEXT PAGE]

DATED: February 3, 2011

STEVEN P. CAUZZA and ANTOINETTE M. CAUZZA, as community property

STEVEN P. CAUZZA

ANTOINETTE M. CAUZZA

DATED: February 3, 2011

RONALD C. CAUZZA, a married man as his sole property

RONALD C. CAUZZA

DATED: February 3, 2011

JOMISTRO PROPERTIES, LLC,
a California limited liability company

By:
Name: John B. Cauzza, III
Its: President

[ACKNOWLEDGMENTS ON FOLLOWING PAGE]

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On February 3, 2011 before me, CONNIE D. SEATON, Notary Public, personally appeared JOHN B. CAUZZA, III and LAURA K. CAUZZA who proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public (Seal)

CONNIE D. SEATON
COMM. #1821878
NOTARY PUBLIC • CALIFORNIA
KERN COUNTY
My Comm. Exp. Nov. 21, 2012

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On February 3, 2011 before me, CONNIE D. SEATON, Notary Public, personally appeared MICHAEL A. CAUZZA and LORI CAUZZA, who proved to me on the basis of satisfactory evidence—to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public (Seal)

CONNIE D. SEATON
COMM. #1821878
NOTARY PUBLIC • CALIFORNIA
KERN COUNTY
My Comm. Exp. Nov. 21, 2012

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On February 3, 2011 before me, CONNIE D. SEATON, Notary Public, personally appeared STEVEN P. CAUZZA and ANTOINETTE M. CAUZZA, who proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public (Seal)

CONNIE D. SEATON
COMM. #1821878
NOTARY PUBLIC • CALIFORNIA
KERN COUNTY
My Comm. Exp. Nov. 21, 2012

STATE OF CALIFORNIA)
) ss.
COUNTY OF KERN)

On February 3, 2011 before me, CONNIE D. SEATON, Notary Public, personally appeared RONALD C. CAUZZA, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signatures on the instrument the persons, or the entity upon behalf of which the persons acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public (Seal)

CONNIE D. SEATON
COMM. #1821878
NOTARY PUBLIC • CALIFORNIA
KERN COUNTY
My Comm. Exp. Nov. 21, 2012

EXHIBIT A

CAUZZA PROPERTY

Real property located in the unincorporated area of the County of Kern, State of California, more particularly described as follows:

PARCEL A: (APN: 159-190-09)

ALL THAT PORTION OF SECTION 15, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTH AND EAST OF THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL AND SOUTH OF THE SOUTHERLY RIGHT OF WAY LINE OF BUENA VISTA WATER STORAGE DISTRICT MAIN CANAL, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NE CORNER OF SECTION 15, THENCE ALONG THE EAST LINE OF SAID SECTION 15, SOUTH 00° 07' WEST, 4,380.90 FEET TO A POINT ON THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL; THENCE ALONG THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL, THE FOLLOWING COURSES AND DISTANCES, TO WIT: NORTH 68° 39' WEST, 422.70 FEET; THENCE NORTH 74° 55' WEST, 1,527.70 FEET, NORTH 69° 31' WEST 581.30 FEET; THENCE NORTH 47° 04' WEST 584.20 FEET; NORTH 32° 23' WEST, 1,441.00 FEET; NORTH 26° 25' WEST, 849.20 FEET; NORTH 35° 54' WEST, 662.50 FEET TO A POINT; THENCE LEAVING CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL NORTH 47° 33' EAST, 240.50 FEET TO A POINT ON THE CENTER LINE OF THE MAIN CANAL; THENCE SOUTH 41° 50' EAST, 70.00 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF THE MAIN CANAL; THENCE ALONG THE SOUTHERLY LINE OF THE MAIN CANAL OF THE FOLLOWING COURSES AND DISTANCES, TO WIT:

NORTH 48° 10' EAST, 172.40 FEET AND NORTH 60° 33' EAST 972.80 FEET TO A POINT ON THE NORTHERLY LINE OF SAID SECTION 15; THENCE LEAVING THE MAIN CANAL AND RUNNING ALONG THE NORTH LINE OF SECTION 15, NORTH 89° 49' EAST, 3,187.40 FEET TO THE POINT OF BEGINNING.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED ½ OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND AS RESERVED IN DEED DATED MARCH 26, 1948 RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74 OF OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600 OF OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT OF ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL B: (APN: 159-040-02 AND 159-040-04)

THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT CERTAIN STRIP OF LAND AS CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT IN DEED RECORDED JULY 1, 1929 IN BOOK 304, PAGE 16 OF OFFICIAL RECORDS, SAID STRIP BEING 140 FEET IN WIDTH, 70 FEET ON EITHER SIDE OF A CENTER LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY RIGHT OF WAY LINE OF EAST SIDE CANAL, 100 FEET, NORTH MEASURED AT RIGHT ANGLES FROM THE SOUTH LINE OF SAID SECTION 11, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., THENCE WEST PARALLEL TO AND 100 FEET DISTANT FROM THE SOUTH LINE OF SAID SECTION 11, 1857.3 FEET TO A POINT ON THE WEST LINE OF SECTION 11, 100 FEET NORTH OF THE SOUTHWEST CORNER THEREOF; THENCE CONTINUING WEST PARALLEL TO AND 100 FEET DISTANT FROM THE SOUTH LINE OF SAID SECTION 10, 1321.1 FEET TO A POINT ON THE WESTERLY LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 10.

ALSO EXCEPTING THEREFROM ALL MINERALS, PETROLEUM, OIL, ASPHALTUM, GAS AND OTHER HYDROCARBON SUBSTANCES, INCLUDING HELIUM, WITHIN OR UNDERLYING SAID LAND, TOGETHER WITH THE EXCLUSIVE RIGHT OF INGRESS AND EGRESS AT ALL TIMES FOR THE PURPOSE OF PROSPECTING FOR, DRILLING FOR AND/OR PRODUCING THE SAME THEREFROM OR THEREUNDER BY FACILITIES LOCATED ON THE SURFACE THEREOF OR ON ADJOINING OR ADJACENT LAND AS RESERVED BY BELRIDGE OIL COMPANY, A CALIFORNIA CORPORATION, IN DEED RECORDED MAY 31, 1944 IN BOOK 1195, PAGE 133, OFFICIAL RECORDS.

PARCEL C: (APN: 159-040-11 and 159-040-16)

PARCEL B OF LOT LINE ADJUSTMENT NO. 63-94, IN CERTIFICATE OF COMPLIANCE RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 7612 OF OFFICIAL RECORDS BEING THAT PORTION OF PARCEL 2 OF PARCEL MAP WAIVER NO. 604 AS EVIDENCED BY THAT CERTAIN CERTIFICATE OF COMPLIANCE RECORDED APRIL 15, 1985 IN BOOK 5751, PAGE 519 OF OFFICIAL RECORDS, BEING ALL THOSE PORTIONS OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, KERN COUNTY, CALIFORNIA, AND THAT PORTION OF SECTION 15, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, KERN COUNTY, CALIFORNIA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 10, FROM WHICH POINT THE NORTHWEST CORNER OF SAID SECTION 10 BEARS N 89° 21' 55" W, 929.36 FEET; THENCE ALONG SAID NORTH LINE, S 89° 21' 55" E, 1714.76 FEET TO THE NORTHEAST CORNER OF SAID NORTHWEST QUARTER; THENCE ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 10, S 89° 21' 45" E, 2643.65 FEET TO THE NORTHEAST CORNER OF SAID SECTION 10; THENCE ALONG THE EAST LINE OF SAID NORTHEAST QUARTER, S 00° 45' 43" W, 2640.11 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 10; THENCE ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, N 89° 24' 15" W, 1321.11 FEET TO THE NORTHWEST CORNER OF THE EAST HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG THE WEST LINE OF SAID EAST HALF, S 00° 44' 00" W, 2469.88 FEET TO THE NORTH LINE OF THAT CERTAIN 140.00 FOOT WIDE STRIP OF LAND CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT IN BOOK 329, PAGE 453 OF OFFICIAL RECORDS;

THENCE ALONG SAID NORTH LINE THE FOLLOWING COURSES:

(1) N 89° 27' 40" W, 1831.54 FEET;

(2) S 60° 54' 20" W, 343.82 FEET TO THE NORTH LINE OF SAID SECTION 15;

(3) S 60° 54' 20" W, 740.04 FEET;

(4) S 48° 31' 20" W, 200.02 FEET TO THE CENTERLINE OF THE WEST SIDE CANAL;

THENCE ALONG SAID CENTERLINE THE FOLLOWING COURSES:

(1) N 51° 32' 40" W, 178.91 FEET;

(2) N 64° 09' 31" W, 912.16 FEET TO THE NORTH LINE OF SAID SECTION 15;

(3) N 67° 46' 19" W, 81.17 FEET TO THE WEST LINE OF SAID SECTION 10;

(4) N 67° 46' 19" W, 2838.88 FEET TO THE WEST LINE OF THE EAST HALF OF SAID SECTION 9;

THENCE ALONG SAID WEST LINE, S 00° 40' 52" W, 3.52 FEET TO SAID CENTERLINE OF THE WEST SIDE CANAL; THENCE ALONG SAID CENTERLINE, N 67° 38' 28" W, 19.35 FEET; THENCE N 00° 34' 36" E, 2037.03 FEET; THENCE S 89° 25' 15" E, 2619.93 FEET; THENCE N 00° 46' 41" E, 1108.72 FEET; THENCE S 89° 14' 01" E, 1205.04 FEET; THENCE N 00° 23' 43" W, 56.24 FEET; THENCE S 89° 51' 55" E, 369.39 FEET; THENCE N 00° 58' 27" W, 359.53 FEET; THENCE S 54° 20' 18" E, 1215.43 FEET; THENCE N 64° 12' 24" E, 75.09 FEET; THENCE N 2° 38' 35" W, 70.34 FEET; THENCE N 53° 45' 12" W, 1805.07 FEET; THENCE N 43° 21' 49" W, 261.03 FEET TO THE POINT OF BEGINNING BEING PARCEL B OF LOT LINE ADJUSTMENT NO. 63-94 RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 007612 OFFICIAL RECORDS.

TOGETHER WITH ALL THOSE PORTIONS OF THE WEST 1/2 OF THE SOUTHEAST 1/4 AND THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY AND EASTERLY OF THAT CERTAIN 140.00 FOOT STRIP OF LAND CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT, RECORDED DECEMBER 26, 1929 IN BOOK 329, PAGE 453 OF OFFICIAL RECORDS.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND AS RESERVED IN DEED DATED MARCH 26, 1948 RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74, OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600, OF OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT TO ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL D: (APN: 159-040-18)

CERTIFICATE OF COMPLIANCE NO. 1948, RECORDED AUGUST 29, 1997 AS INSTRUMENT NO. 97-115072 OF OFFICIAL RECORDS, BEING A PORTION OF PARCEL A OF LOT LINE ADJUSTMENT NO. 63-94, IN CERTIFICATE OF COMPLIANCE RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 7612 OF OFFICIAL RECORDS, BEING ALL THAT PORTION OF PARCEL 2 OF PARCEL MAP WAIVER NO. 604 IN CERTIFICATE OF COMPLIANCE RECORDED APRIL 15, 1985 IN BOOK 5751, PAGE 519 OF OFFICIAL RECORDS, BEING PORTIONS OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 10; THENCE ALONG THE NORTH LINE OF SAID SECTION 10, SOUTH 89°21'55" EAST, 929.36 FEET; THENCE SOUTH 43°21'49" EAST, 261.03 FEET; THENCE SOUTH 53°45'12" EAST, 1805.07 FEET; THENCE SOUTH 2°38'35" EAST, 70.34 FEET; THENCE SOUTH 64°12'24" WEST, 75.09 FEET; THENCE NORTH 54°20'18" WEST, 1215.43 FEET; THENCE SOUTH 00°58'27" EAST, 359.53 FEET; THENCE NORTH 89°51'55" WEST, 369.39 FEET; THENCE SOUTH 00°23'43' EAST, 56.24 FEET; THENCE NORTH 89°14'01" WEST, 1205.04 FEET TO THE WESTERLY LINE OF SAID PARCEL A; THENCE ALONG SAID WESTERLY LINE, NORTH 00°46'41" EAST, 1060.94 FEET TO THE NORTHWEST CORNER OF SAID PARCEL A; THENCE ALONG THE NORTH LINE OF SAID PARCEL A, SOUTH 89°23'30" EAST, 41.00 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT CERTAIN PARCEL OF LAND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 10; THENCE NORTH 89°23'30" WEST ALONG THE NORTH LINE OF SAID SECTION 9, A DISTANCE OF 41.00 FEET TO THE WEST LINE OF THE ABOVE DESCRIBED PARCEL "A"; THENCE SOUTH 00°46'41" WEST ALONG SAID WEST LINE A DISTANCE OF 640.93 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 89°13'19" EAST, A DISTANCE OF 444.00 FEET; THENCE SOUTH 00°46'41" WEST, A DISTANCE OF 419.92 FEET TO THE SOUTH LINE OF SAID PARCEL "A"; THENCE NORTH 89°14'01" WEST ALONG SAID SOUTH LINE A DISTANCE OF 444.00 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL "A"; THENCE NORTH 00°46'41" EAST ALONG THE WEST LINE OF SAID PARCEL "A", A DISTANCE OF 420.01 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND, AS RESERVED IN DEED RECORDED APRIL 29, 1948 IN BOOK 1481, PAGE 74 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL,

GAS, AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS GRANTED TO JOE BANDUCCI, ET AL, BY DEED RECORDED JULY 6, 1960 IN BOOK 3281, PAGE 600 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT TO ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL D1:

AN EASEMENT FOR INGRESS AND EGRESS OVER AND ACROSS THAT PORTION OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 9; THENCE NORTH 89°23'30" WEST, ALONG THE NORTH LINE OF SAID SECTION 9, A DISTANCE OF 26.15 FEET; THENCE SOUTH 00°36'30" WEST, A DISTANCE OF 30.00 FEET TO THE SOUTH LINE OF ADOHR ROAD; THENCE SOUTH 44°18'24" EAST, A DISTANCE OF 28.33 FEET; THENCE SOUTH 00°46'41" WEST, A DISTANCE OF 590.98 FEET TO THE POINT OF BEGINNING; THENCE (1) SOUTH 00°46'41" WEST, A DISTANCE OF 74.83 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTH AND HAVING A RADIUS OF 50.00 FEET; THENCE (2) SOUTHEASTERLY, NORTHEASTERLY, AND NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 266°10'39", AN ARC DISTANCE OF 232.98 FEET TO A POINT OF REVERSE CURVATURE (A RADIAL THROUGH SAID POINT BEARS NORTH 04°36'02" EAST) SAID POINT BEING THE BEGINNING OF A CURVE, CONCAVE TO THE NORTHEAST AND HAVING A RADIUS OF 25.00 FEET; THENCE (3) NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 86°10'39", AN ARC DISTANCE OF 37.60 FEET; THENCE (4) NORTH 89°13'19" WEST, A DISTANCE OF 30.00 FEET TO THE TRUE POINT OF BEGINNING.

James W. Fitch, Assessor – Recorder
Kern County Official Records
Recorded at the request of
Public

SOFIR
9/08/2011
1:42 PM

DOC#: 0211117643

Stat Types: 1 Pages: 12

Fees	48.00
Taxes	** Conf **
Others	0.00
PAID	$48.00

RECORDING REQUESTED BY,
WHEN RECORDED MAIL TO,
AND MAIL TAX STATEMENTS TO:
c/o BP Alternative Energy
Attn: Dane Peacock
700 Louisiana St., 32nd Fl.
Houston, Texas 77002

GRANT DEED

PURSUANT TO SECTION 11932 OF THE REVENUE & TAXATION CODE THE AMOUNT OF TRANSFER TAX WILL BE SHOWN ON A SEPARATE STATEMENT.

FOR VALUABLE CONSIDERATION,

receipt of which is hereby acknowledged,

HYDROGEN ENERGY CALIFORNIA LLC, a Delaware limited liability company (***"Grantor"***)

hereby GRANTS to **HYDROGEN ENERGY INTERNATIONAL LLC**, a Delaware limited liability company (***"Grantee"***), the following described real property in the County of Kern, State of California (the ***"Property"***):

(a) The land described on Exhibit "A" attached hereto (the ***"Land"***); and

(b) All right, title and interest of Grantor in and to the buildings, structures, and improvements, if any, situated on the Land and all fixtures and other property affixed thereto.

Together with the estate and rights of Grantor, if any, in and to: (i) any and all mineral, water and/or subterranean rights now or hereafter pertaining to the Land, to the extent owned by Grantor, (ii) any ingress/egress or other easements or agreements evidencing the same and other recorded or unrecorded instruments benefiting the Property, (iii) development rights, entitlements, governmental

approvals, licenses, permits, and similar such documents related to the Property, (iv) any and all right, title and interest of Grantor in and to any roads, streets, and ways public and/or private, now or hereafter serving the Property, and (v) the rights of landlord or lessor in and to existing leases of the Property or any portion thereof.

The conveyance of the Property made by this Deed is accepted Grantee subject to the following, which are exceptions to such conveyance and to any warranty of title by Grantor hereunder: all valid and subsisting encumbrances, conditions, covenants, restrictions, reservations, mineral/royalty reservations or mineral/royalty interest conveyances, exceptions, rights-of-way, and easements presently affecting the Property, rights, privileges, appurtenances, and hereditaments described in this Deed, and all laws, regulations, and restrictions applicable to the Property or the use of the Property by applicable governmental authorities.

SIGNATURES TO FOLLOW

GRANTOR:

HYDROGEN ENERGY CALIFORNIA LLC

By: Marilyn Wade
Name: MARILYN WADE
Title: Secretary

STATE OF California)

COUNTY OF Los Angeles)

On September 2, 2011 before me, Debbie L. Foster, Notary Public (here insert name and title of the officer), personally appeared Marilyn Wade, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

DEBBIE L. FOSTER
Commission # 1838438
Notary Public - California
Los Angeles County
My Comm. Expires Mar 25, 2013

Debbie L. Foster
(Signature)
Printed Name: DEBBIE L. FOSTER
Notary Public, State of: California

(NOTARY SEAL)

EXHIBIIT "A"
Legal Description

Real property in the City of Button Willow, County of Kern, State of California, described as follows:

PARCEL A:

PARCEL A IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, AS PER PARCEL MAP NO. 10341, FILED AUGUST 29, 1997 IN BOOK 49 PAGE(S) 7 AND 8 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND AS RESERVED IN DEED DATED MARCH 26, 1948 RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74, OR.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600, OF OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT TO ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852 PAGE 2322, OFFICIAL RECORDS.

ALSO EXCEPTING ALL REMAINING MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND, LYING BELOW A DEPTH OF 500 FEET, BUT WITHOUT THE RIGHT OF SURFACE ENTRY TO EXPLORE, REMOVE, MARKET, MINE OR DRILL FOR SAME, RESERVED BY PALM FARMS, INC., A CALIFORNIA CORPORATION, BY DEED RECORDED SEPTEMBER 15, 1997, AS INSTRUMENT NO. 97-120757, OF OFFICIAL RECORDS.

PARCEL A-1:

AN EASEMENT FOR INGRESS, EGRESS AND PRIVATE ROAD PURPOSES OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY:

ALL THAT PORTION OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALIFORNIA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 9; THENCE NORTH 89° 23' 30" WEST, ALONG THE NORTH LINE OF SAID SECTION 9, A DISTANCE OF 26.15 FEET; THENCE SOUTH 00° 36' 30" WEST, A DISTANCE OF 30.00 FEET TO THE SOUTH LINE OF ADOHR ROAD AND THE POINT OF BEGINNING.

THENCE (1) SOUTH 44° 18' 24" EAST, A DISTANCE OF 28.33 FEET;

THENCE (2) SOUTH 00° 46' 41" WEST, A DISTANCE OF 590.98 FEET;

THENCE (3) SOUTH 89° 13' 19" EAST, A DISTANCE OF 30.00 FEET;

THENCE (4) NORTH 00° 46' 41" EAST, A DISTANCE OF 591.17 FEET;

THENCE (5) NORTH 45° 42' 23" EAST, A DISTANCE OF 28.25 FEET TO THE SOUTH LINE OF ADOHR ROAD;

THENCE (6) NORTH 89° 22' 30" WEST, A DISTANCE OF 70.01 FEET MORE OR LESS TO THE TRUE POINT OF BEGINNING.

PARCEL B:

ALL THAT PORTION OF SECTION 15, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING NORTH AND EAST OF THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL AND SOUTH OF THE SOUTHERLY RIGHT OF WAY LINE OF BUENA VISTA WATER STORAGE DISTRICT MAIN CANAL, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE NE CORNER OF SECTION 15, THENCE ALONG THE EAST LINE OF SAID SECTION 15, SOUTH 00° 07' WEST, 4,380.90 FEET TO A POINT ON THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL; THENCE ALONG THE CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL, THE FOLLOWING COURSES AND DISTANCES, TO WIT: NORTH 68° 39' WEST, 422.70 FEET; THENCE NORTH 74° 55' WEST, 1,527.70 FEET, NORTH 69° 31' WEST 581.30 FEET; THENCE NORTH 47° 04' WEST 584.20 FEET; NORTH 32° 23' WEST, 1,441.00

FEET; NORTH 26° 25' WEST, 849.20 FEET; NORTH 35° 54' WEST, 662.50 FEET TO A POINT; THENCE LEAVING CENTER LINE OF THE KERN VALLEY WATER COMPANY CANAL NORTH 47° 33' EAST, 240.50 FEET TO A POINT ON THE CENTER LINE OF THE MAIN CANAL; THENCE SOUTH 41° 50' EAST, 70.00 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF THE MAIN CANAL; THENCE ALONG THE SOUTHERLY LINE OF THE MAIN CANAL OF THE FOLLOWING COURSES AND DISTANCES, TO WIT:

NORTH 48° 10' EAST, 172.40 FEET AND NORTH 60° 33' EAST 972.80 FEET TO A POINT ON THE NORTHERLY LINE OF SAID SECTION 15; THENCE LEAVING THE MAIN CANAL AND RUNNING ALONG THE NORTH LINE OF SECTION 15, NORTH 89° 49' EAST, 3,187.40 FEET TO THE POINT OF BEGINNING.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED ½ OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND AS RESERVED IN DEED DATED MARCH 26, 1948 RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74 OF OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600 OF OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT OF ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL C:

THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT CERTAIN STRIP OF LAND AS CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT IN DEED RECORDED JULY 1, 1929 IN BOOK 304, PAGE 16 OF OFFICIAL RECORDS, SAID STRIP BEING 140 FEET IN WIDTH, 70 FEET ON EITHER SIDE OF A CENTER LINE DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY RIGHT OF WAY LINE OF EAST SIDE CANAL, 100 FEET, NORTH MEASURED AT RIGHT ANGLES FROM THE SOUTH LINE OF SAID SECTION 11, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., THENCE WEST PARALLEL TO AND 100 FEET DISTANT FROM THE SOUTH LINE OF SAID SECTION 11, 1857.3 FEET TO A POINT ON THE WEST LINE OF SECTION 11, 100 FEET NORTH OF THE SOUTHWEST CORNER THEREOF; THENCE CONTINUING WEST PARALLEL TO AND 100 FEET DISTANT FROM THE SOUTH LINE OF SAID SECTION 10, 1321.1 FEET TO A POINT ON THE WESTERLY LINE OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 10.

ALSO EXCEPTING THEREFROM ALL MINERALS, PETROLEUM, OIL, ASPHALTUM, GAS AND OTHER HYDROCARBON SUBSTANCES, INCLUDING HELIUM, WITHIN OR UNDERLYING SAID LAND, TOGETHER WITH THE EXCLUSIVE RIGHT OF INGRESS AND EGRESS AT ALL TIMES FOR THE PURPOSE OF PROSPECTING FOR, DRILLING FOR AND/OR PRODUCING THE SAME THEREFROM OR THEREUNDER BY FACILITIES LOCATED ON THE SURFACE THEREOF OR ON ADJOINING OR ADJACENT LAND AS RESERVED BY BELRIDGE OIL COMPANY, A CALIFORNIA CORPORATION, IN DEED RECORDED MAY 31, 1944 IN BOOK 1195, PAGE 133, OFFICIAL RECORDS.

PARCEL D:

PARCEL B OF LOT LINE ADJUSTMENT NO. 63-94, IN CERTIFICATE OF COMPLIANCE RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 7612 OF OFFICIAL RECORDS BEING THAT PORTION OF PARCEL 2 OF PARCEL MAP WAIVER NO. 604 AS EVIDENCED BY THAT CERTAIN CERTIFICATE OF COMPLIANCE RECORDED APRIL 15, 1985 IN BOOK 5751, PAGE 519 OF OFFICIAL RECORDS, BEING ALL THOSE PORTIONS OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, KERN COUNTY, CALIFORNIA, AND THAT PORTION OF SECTION 15, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, KERN COUNTY, CALIFORNIA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 10, FROM WHICH POINT THE NORTHWEST CORNER OF SAID SECTION 10 BEARS N 89° 21' 55" W, 929.36 FEET; THENCE ALONG SAID NORTH LINE, S 89° 21' 55" E, 1714.76 FEET TO THE NORTHEAST CORNER OF SAID NORTHWEST QUARTER; THENCE ALONG THE NORTH LINE OF THE NORTHEAST QUARTER OF SAID SECTION 10, S 89° 21' 45" E, 2643.65 FEET TO THE NORTHEAST CORNER OF SAID SECTION 10; THENCE ALONG THE EAST LINE OF SAID NORTHEAST QUARTER, S 00° 45' 43" W, 2640.11 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 10; THENCE ALONG THE NORTH LINE OF SAID SOUTHEAST QUARTER, N 89° 24' 15" W, 1321.11 FEET TO THE NORTHWEST CORNER OF THE EAST HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG THE WEST LINE OF SAID EAST HALF, S 00° 44' 00" W, 2469.88 FEET TO THE NORTH LINE OF THAT CERTAIN 140.00 FOOT WIDE STRIP OF LAND

CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT IN BOOK 329, PAGE 453 OF OFFICIAL RECORDS;

THENCE ALONG SAID NORTH LINE THE FOLLOWING COURSES:

(1) N 89° 27' 40" W, 1831.54 FEET;

(2) S 60° 54' 20" W, 343.82 FEET TO THE NORTH LINE OF SAID SECTION 15;

(3) S 60° 54' 20" W, 740.04 FEET;

(4) S 48° 31' 20" W, 200.02 FEET TO THE CENTERLINE OF THE WEST SIDE CANAL;

(5) THENCE ALONG SAID CENTERLINE THE FOLLOWING COURSES:

(1) N 51° 32' 40" W, 178.91 FEET;

(2) N 64° 09' 31" W, 912.16 FEET TO THE NORTH LINE OF SAID SECTION 15;

(3) N 67° 46' 19" W, 81.17 FEET TO THE WEST LINE OF SAID SECTION 10;

(4) N 67° 46' 19" W, 2838.88 FEET TO THE WEST LINE OF THE EAST HALF OF SAID SECTION 9;

THENCE ALONG SAID WEST LINE, S 00° 40' 52" W, 3.52 FEET TO SAID CENTERLINE OF THE WEST SIDE CANAL; THENCE ALONG SAID CENTERLINE, N 67° 38' 28" W, 19.35 FEET; THENCE N 00° 34' 36" E, 2037.03 FEET; THENCE S 89° 25' 15" E, 2619.93 FEET; THENCE N 00° 46' 41" E, 1108.72 FEET; THENCE S 89° 14' 01" E, 1205.04 FEET; THENCE N 00° 23' 43" W, 56.24 FEET; THENCE S 89° 51' 55" E, 369.39 FEET; THENCE N 00° 58' 27" W, 359.53 FEET; THENCE S 54° 20' 18" E, 1215.43 FEET; THENCE N 64° 12' 24" E, 75.09 FEET; THENCE N 2° 38' 35" W, 70.34 FEET; THENCE N 53° 45' 12" W, 1805.07 FEET; THENCE N 43° 21' 49" W, 261.03 FEET TO THE POINT OF BEGINNING BEING PARCEL B OF LOT LINE ADJUSTMENT NO. 63-94 RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 007612 OFFICIAL RECORDS.

TOGETHER WITH ALL THOSE PORTIONS OF THE WEST 1/2 OF THE SOUTHEAST 1/4 AND THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, MOUNT DIABLO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, LYING SOUTHERLY AND EASTERLY OF THAT CERTAIN 140.00 FOOT STRIP OF LAND CONVEYED TO THE BUENA VISTA WATER STORAGE DISTRICT, RECORDED DECEMBER 26, 1929 IN BOOK 329, PAGE 453 OF OFFICIAL RECORDS.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND AS RESERVED IN DEED DATED MARCH 26, 1948 RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74, OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600, OF OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT TO ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL E:

CERTIFICATE OF COMPLIANCE NO. 1948, RECORDED AUGUST 29, 1997 AS INSTRUMENT NO. 97-115072 OF OFFICIAL RECORDS, BEING A PORTION OF PARCEL A OF LOT LINE ADJUSTMENT NO. 63-94, IN CERTIFICATE OF COMPLIANCE RECORDED JANUARY 20, 1995 AS INSTRUMENT NO. 7612 OF OFFICIAL RECORDS, BEING ALL THAT PORTION OF PARCEL 2 OF PARCEL MAP WAIVER NO. 604 IN CERTIFICATE OF COMPLIANCE RECORDED APRIL 15, 1985 IN BOOK 5751, PAGE 519 OF OFFICIAL RECORDS, BEING PORTIONS OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 10; THENCE ALONG THE NORTH LINE OF SAID SECTION 10, SOUTH 89°21'55" EAST, 929.36 FEET; THENCE SOUTH 43°21'49" EAST, 261.03 FEET; THENCE SOUTH 53°45'12" EAST, 1805.07 FEET; THENCE SOUTH 2°38'35" EAST, 70.34 FEET; THENCE SOUTH 64°12'24" WEST, 75.09 FEET; THENCE NORTH 54°20'18" WEST, 1215.43 FEET; THENCE SOUTH 00°58'27" EAST, 359.53 FEET; THENCE NORTH 89°51'55" WEST, 369.39 FEET; THENCE SOUTH 00°23'43' EAST, 56.24 FEET; THENCE NORTH 89°14'01" WEST, 1205.04 FEET TO THE WESTERLY LINE OF SAID PARCEL A; THENCE ALONG SAID WESTERLY LINE, NORTH 00°46'41" EAST, 1060.94 FEET TO THE NORTHWEST CORNER OF SAID PARCEL A; THENCE ALONG THE NORTH LINE OF SAID PARCEL A, SOUTH 89°23'30" EAST, 41.00 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THAT CERTAIN PARCEL OF LAND DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 10; THENCE NORTH 89°23'30" WEST ALONG THE NORTH LINE OF SAID SECTION 9, A DISTANCE OF 41.00 FEET TO THE WEST LINE OF THE ABOVE DESCRIBED PARCEL "A"; THENCE SOUTH 00°46'41" WEST ALONG SAID WEST LINE A DISTANCE OF 640.93 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 89°13'19" EAST, A DISTANCE OF 444.00 FEET; THENCE SOUTH 00°46'41" WEST, A DISTANCE OF 419.92 FEET TO THE SOUTH LINE OF SAID PARCEL "A"; THENCE NORTH 89°14'01" WEST ALONG SAID SOUTH LINE A DISTANCE OF 444.00 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL "A"; THENCE NORTH 00°46'41" EAST ALONG THE WEST LINE OF SAID PARCEL "A", A DISTANCE OF 420.01 FEET TO THE POINT OF BEGINNING.

ALSO EXCEPTING THEREFROM A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND, AS RESERVED IN DEED RECORDED APRIL 29, 1948 IN BOOK 1481, PAGE 74 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AN UNDIVIDED 1/8TH OF ALL MINERALS, OIL, GAS, AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS GRANTED TO JOE BANDUCCI, ET AL, BY DEED RECORDED JULY 6, 1960 IN BOOK 3281, PAGE 600 OF OFFICIAL RECORDS.

ALSO EXCEPTING THEREFROM AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A", ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT TO ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 14, 1986 IN BOOK 5852, PAGE 2322 OF OFFICIAL RECORDS.

PARCEL E1:

AN EASEMENT FOR INGRESS AND EGRESS OVER AND ACROSS THAT PORTION OF SECTIONS 9 AND 10, TOWNSHIP 30 SOUTH, RANGE 24 EAST, M.D.M., IN THE UNINCORPORATED AREA, COUNTY OF KERN, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST CORNER OF SAID SECTION 9; THENCE NORTH 89°23'30" WEST, ALONG THE NORTH LINE OF SAID SECTION 9, A DISTANCE OF 26.15 FEET; THENCE SOUTH 00°36'30" WEST, A DISTANCE OF 30.00 FEET TO THE SOUTH LINE OF ADOHR ROAD; THENCE SOUTH 44°18'24" EAST, A DISTANCE OF 28.33 FEET; THENCE SOUTH 00°46'41" WEST, A DISTANCE OF 590.98 FEET TO THE POINT OF BEGINNING; THENCE (1) SOUTH 00°46'41" WEST, A DISTANCE OF 74.83 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE NORTH AND HAVING A RADIUS OF 50.00 FEET; THENCE (2) SOUTHEASTERLY, NORTHEASTERLY, AND NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 266°10'39", AN ARC DISTANCE OF 232.98 FEET TO A POINT OF REVERSE CURVATURE (A RADIAL THROUGH SAID POINT BEARS NORTH 04°36'02" EAST) SAID POINT BEING THE BEGINNING OF A CURVE, CONCAVE TO THE NORTHEAST AND HAVING A RADIUS OF 25.00 FEET; THENCE (3) NORTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 86°10'39", AN ARC DISTANCE OF 37.60 FEET; THENCE (4) NORTH 89°13'19" WEST, A DISTANCE OF 30.00 FEET TO THE TRUE POINT OF BEGINNING.

PARCEL F:

A EASEMENT ESTATE AS CREATED BY THAT CERTAIN "GRANT OF EASEMENT & EASEMENT AGREEMENT" EXECUTED BY JOHN B. CAUZZA III AND LAURA K. CAUZZA HUSBAND AND WIFE AS COMMUNITY PROPERTY, MICHAEL A. CAUZZA AND LORI CAUZZA, HUSBAND AND WIFE AS COMMUNITY PROPERTY, STEVEN P. CAUZZA AND ANTOINETTE M. CAUZZA, HUSBAND AND WIFE AS COMMUNITY PROPERTY, RONALD C. CAUZZA, A MARRIED MAN AS HIS SOLE AND SEPARATE PROPERTY, EACH AS TO AN UNDIVIDED 1/4TH INTEREST, AS GRANTORS AND HYDROGEN ENERGY CALIFORNIA LLC, A DELAWARE LIMITED LAIBILITY COMPANY, AS GRANTEE, RECORDED MAY 3, 2011 AS INSTRUMENT NO. 201157636 OF OFFICIAL RECORDS OF KERN COUNTY, CALIFORNIA, ENCUMBERING THE FOLLOWING REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF KERN, STATE OF CALFORNIA, DESCRIBED AS FOLLOWS:

THE NORTH ONE HUNDERED FEET (100') OF PARCEL 2 AS SHOWN ON PARCEL MAP WAIVER NO. 603 (CERTIFICATE OF COMPLIANCE), AS EVIDENCED BY DOCUMENT RECORDED APRIL 15, 1985 AS INSTRUMENT NO. 85-36822 OF OFFICIAL RECORDS.

EXCEPT A PERMANENT AND PERPETUAL UNDIVIDED 1/2 OF ALL OIL, GAS, PETROLEUM AND OTHER HYDROCARBON SUBSTANCES WITHIN AND UNDERLYING SAID LAND, AS RESERVED IN DEED DATED MARCH 26, 1948, RECORDED APRIL 29, 1948 IN BOOK 1481 PAGE 74 OF OFFICIAL RECORDS.

ALSO EXCEPT AN UNDIVIDED 1/8TH OF ALL, MINERALS, OIL, GAS AND OTHER HYDROCARBON SUBSTANCES IN AND UNDER SAID LAND, AS GRANTED TO JOE G. BANDUCCI, ET AL, BY DEED DATED MAY 19, 1960, RECORDED JULY 6, 1960 IN BOOK 3281 PAGE 600, OFFICIAL RECORDS.

ALSO EXCEPT AS A MINERAL INTEREST AND NOT A ROYALTY INTEREST, 18.75% OF THE OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES IN, UNDER, OR PRODUCED AND SAVED FROM THE PROPERTY FULLY DESCRIBED ON EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF, WITH THE RIGHT OF ENTRY TO THE SURFACE OF SAID REAL PROPERTY FOR THE PURPOSE OF EXPLORING FOR, DEVELOPING AND

REMOVING SUCH OIL, GAS, HYDROCARBONS AND ASSOCIATED SUBSTANCES AS CONVEYED TO EDITH BANDUCCI, A WIDOW, ET AL, IN DEED RECORDED MARCH 18, 1986.

APN: 159-040-17-00-9 and 159-190-09-00-0 and 159-040-18-00-2 (Affects:Parcel D) and 159-190-09-00-0 (Affects:Parcel A) and 159-040-17 and 159-040-02-00 and 159-040-0

HECA
7345 Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 2785218.1
June 04, 2010

The EDR-City Directory Abstract

Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

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SECTION

Thank you for your business.
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2009 Enhancements to EDR City Directory Abstract

New for 2009, the EDR City Directory Abstract has been enhanced with additional information and features. These enhancements will make your city directory research process more efficient, flexible, and insightful than ever before. The enhancements will improve the options for selecting adjoining properties, and will speed up your review of the report.

City Directory Report. Three important enhancements have been made to the EDR City Directory Abstract:

1. *Executive Summary.* The report begins with an Executive Summary that lists the sources consulted in the preparation of the report. Where available, a parcel map is also provided within the report, showing the locations of properties researched.

2. *Page Images.* Where available, the actual page source images will be included in the Appendix, so that you can review them for information that may provide additional insight. EDR has copyright permission to include these images.

3. *Findings Listed by Location.* Another useful enhancement is that findings are now grouped by address. This will significantly reduce the time you need to review your abstracts. Findings are provided under each property address, listed in reverse chronological order and referencing the source for each entry.

Options for Selecting Adjoining Properties. Ensuring that the right adjoining property addresses are searched is one of the biggest challenges that environmental professionals face when conducting city directory historical research. EDR's new enhancements make it easier for you to meet this challenge. Now, when you place an order for the EDR City Directory Abstract, you have the following choices for determining which addresses should be researched.

1. *You Select Addresses and EDR Selects Addresses*. Use the "Add Another Address" feature to specify the addresses you want researched. Your selections will be supplemented by addresses selected by EDR researchers using our established research methods. Where available, a digital map will be shown, indicating property lines overlaid on a color aerial photo and their corresponding addresses. Simply use the address list below the map to check off which properties shown on the map you want to include. You may also select other addresses using the "Add Another Address" feature at the bottom of the list.

2. *EDR Selects Addresses.* Choose this method if you want EDR's researchers to select the addresses to be researched for you, using our established research methods.

3. *You Select Addresses.* Use this method for research based solely on the addresses you select or enter into the system.

4. *Hold City Directory Research Option.* If you choose to select your own adjoining addresses, you may pause production of your EDR City Directory Abstract report until you have had a chance to look at your other EDR reports and sources. Sources for property addresses include: your Certified Sanborn Map Report may show you the location of property addresses; the new EDR Property Tax Map Report may show the location of property addresses; and your field research can supplement these sources with additional address information. To use this capability, simply click "Hold City Directory research" box under "Other Options" at the bottom of the page. Once you have determined what addresses you want researched, go to your EDR Order Status page, select the EDR City Directory Abstract, and enter the addresses and submit for production.

Questions? Contact your EDR representative at 800-352-0050. For more information about all of EDR's 2009 report and service enhancements, visit www.edrnet.com/2009enhancements

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2006	Haines Criss-Cross Directory	X	X	X	-
2001	Haines Criss-Cross Directory	X	X	X	-
1996	Haines Criss-Cross Directory	X	X	X	-
1990	Haines Criss-Cross Directory	-	X	X	-
1985	Haines Criss-Cross Directory	-	X	X	-
1976	Haines Criss-Cross Directory	-	X	X	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

7345 Adohr Road
Buttonwillow, CA 93206

FINDINGS DETAIL

Target Property research detail.

Year	Uses	Source
2006	Residential	Haines Criss-Cross Directory
2001	Residential	Haines Criss-Cross Directory
1996	No Return	Haines Criss-Cross Directory

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

Adohr Road

Adohr Road

Year	*Uses*	*Source*
2006	No address listings beyond (7361) Adohr Road	Haines Criss-Cross Directory
	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
2001	No address listings beyond (7361) Adohr Road	Haines Criss-Cross Directory
	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
1996	No address listings beyond (7361) Adohr Road	Haines Criss-Cross Directory
	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
1990	No address listings Adohr Road	Haines Criss-Cross Directory
1985	No address listings Adohr Road	Haines Criss-Cross Directory
1976	No address listings Adohr Road	Haines Criss-Cross Directory

7361 Adohr Road

Year	*Uses*	*Source*
2006	Cauzza Brothers	Haines Criss-Cross Directory
	Port Organic Products Ltd	Haines Criss-Cross Directory
2001	Port Organic Products Ltd	Haines Criss-Cross Directory
1996	No Return	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY: ADDRESS NOT LISTED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not listed in the research source.

Address Researched	Address Not Listed in Research Source
7345 Adohr Road	1990, 1985, 1976

ADJOINING PROPERTY: ADDRESSES NOT LISTED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not listed in research source.

Address Researched	Address Not Listed in Research Source
Adohr Road	No Years Found
7361 Adohr Road	1990, 1985, 1976

HECA
7361 Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 2785214.1
June 04, 2010

The EDR-City Directory Abstract

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1996	Haines Criss-Cross Directory	X	X	X	-
1990	Haines Criss-Cross Directory	-	X	X	-
1985	Haines Criss-Cross Directory	-	X	X	-
1976	Haines Criss-Cross Directory	-	X	X	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

7361 Adohr Road
Buttonwillow, CA 93206

FINDINGS DETAIL

Target Property research detail.

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2001	Port Orga nic Products Ltd	Haines Criss-Cross Directory
1996	No Return	Haines Criss-Cross Directory

FINDINGS

ADJOINING PROPERTY DETAIL

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Adohr Road

Adohr Road

Year	Uses	Source
2006	No address listings beyond the Target Property	Haines Criss-Cross Directory
	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
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	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
1996	No address listings beyond the Target Property	Haines Criss-Cross Directory
	No other addresses (7200-7499) block Adohr Road	Haines Criss-Cross Directory
1990	No address listings Adohr Road	Haines Criss-Cross Directory
1985	No address listings Adohr Road	Haines Criss-Cross Directory
1976	No address listings Adohr Road	Haines Criss-Cross Directory

7345 Adohr Road

Year	Uses	Source
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FINDINGS

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7361 Adohr Road	1990, 1985, 1976

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Adohr Road	No Years Found
7345 Adohr Road	1990, 1985, 1976

HECA
Dairy Road/Adohr Road
Tupman, CA 93276

Inquiry Number: 2755383.3
April 27, 2010

Certified Sanborn® Map Report

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

4/27/10

Site Name:
HECA
Dairy Road/Adohr Road
Tupman, CA 93276

Client Name:
URS Corporation
One Montgomery Street
San Francisco, CA 94104-0000

EDR Inquiry # 2755383.3

Contact: Kali Futnani

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by URS Corporation were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: HECA
Address: Dairy Road/Adohr Road
City, State, Zip: Tupman, CA 93276
Cross Street:
P.O. # 28067571.800041
Project: HECA
Certification # 280E-4FFD-886C

Sanborn® Library search results
Certification # 280E-4FFD-886C

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

The Sanborn Library includes more than 1.2 million Sanborn fire insurance maps, which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

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HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 2755337.3
April 27, 2010

Certified Sanborn® Map Report

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

4/27/10

Site Name:
HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

EDR Inquiry # 2755337.3

Client Name:
URS Corporation
One Montgomery Street
San Francisco, CA 94104-0000

Contact: Kali_futnani

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Certified Sanborn Results:

Site Name: HECA
Address: Dairy Road/Adohr Road
City, State, Zip: Buttonwillow, CA 93206
Cross Street:
P.O. # 28067571.800041
Project: HECA
Certification # B907-481B-B008

Sanborn® Library search results
Certification # B907-481B-B008

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HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 2755371.3
April 26, 2010

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Milford, CT 06461
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www.edrnet.com

Certified Sanborn® Map Report

4/26/10

Site Name:
HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

EDR Inquiry # 2755371.3

Client Name:
URS Corporation
One Montgomery Street
San Francisco, CA 94104-0000

Contact: Kali Futnani

The complete Sanborn Library collection has been searched by EDR, and fire insurance maps covering the target property location provided by URS Corporation were identified for the years listed below. The certified Sanborn Library search results in this report can be authenticated by visiting www.edrnet.com/sanborn and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by Sanborn Library LLC, the copyright holder for the collection.

Certified Sanborn Results:

Site Name: HECA
Address: Dairy Road/Adohr Road
City, State, Zip: Buttonwillow, CA 93206
Cross Street:
P.O. # 28067571.800041
Project: HECA
Certification # D847-42C0-A70C

Sanborn® Library search results
Certification # D847-42C0-A70C

UNMAPPED PROPERTY

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HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 2755337.4
May 06, 2010

The EDR Historical Topographic Map Report

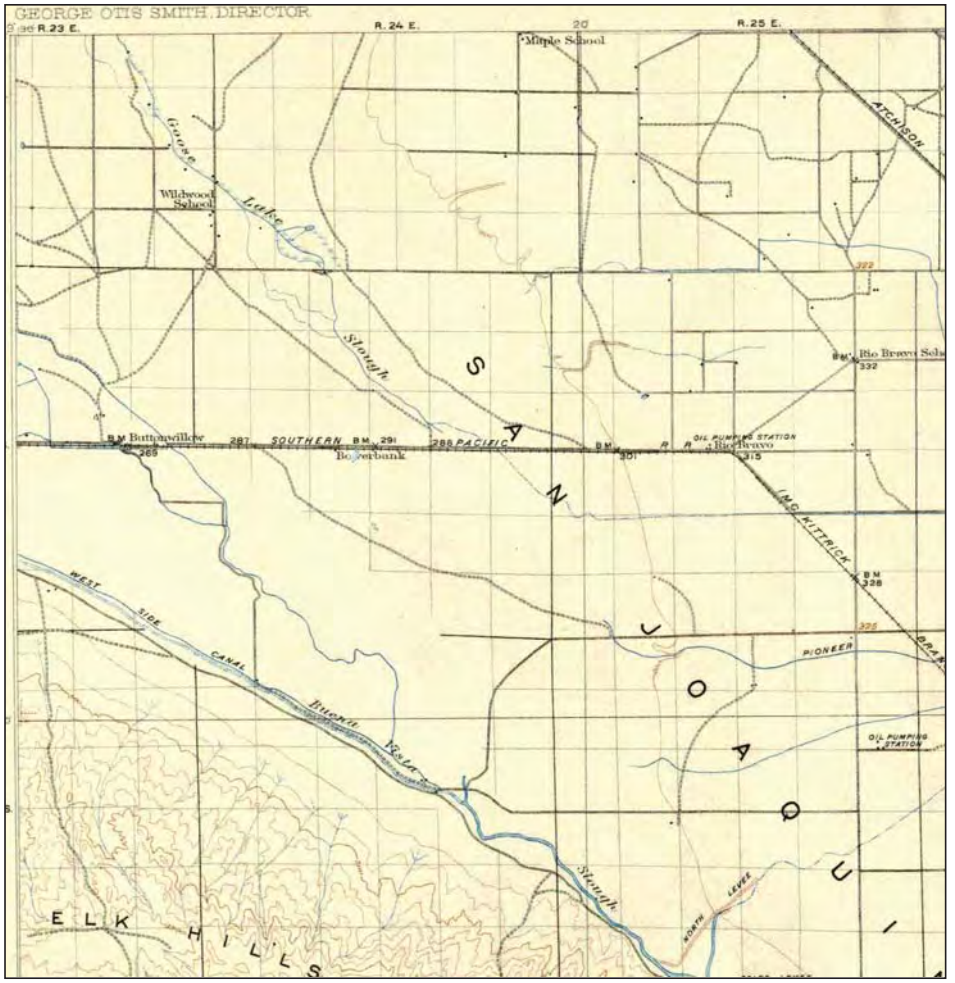
440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

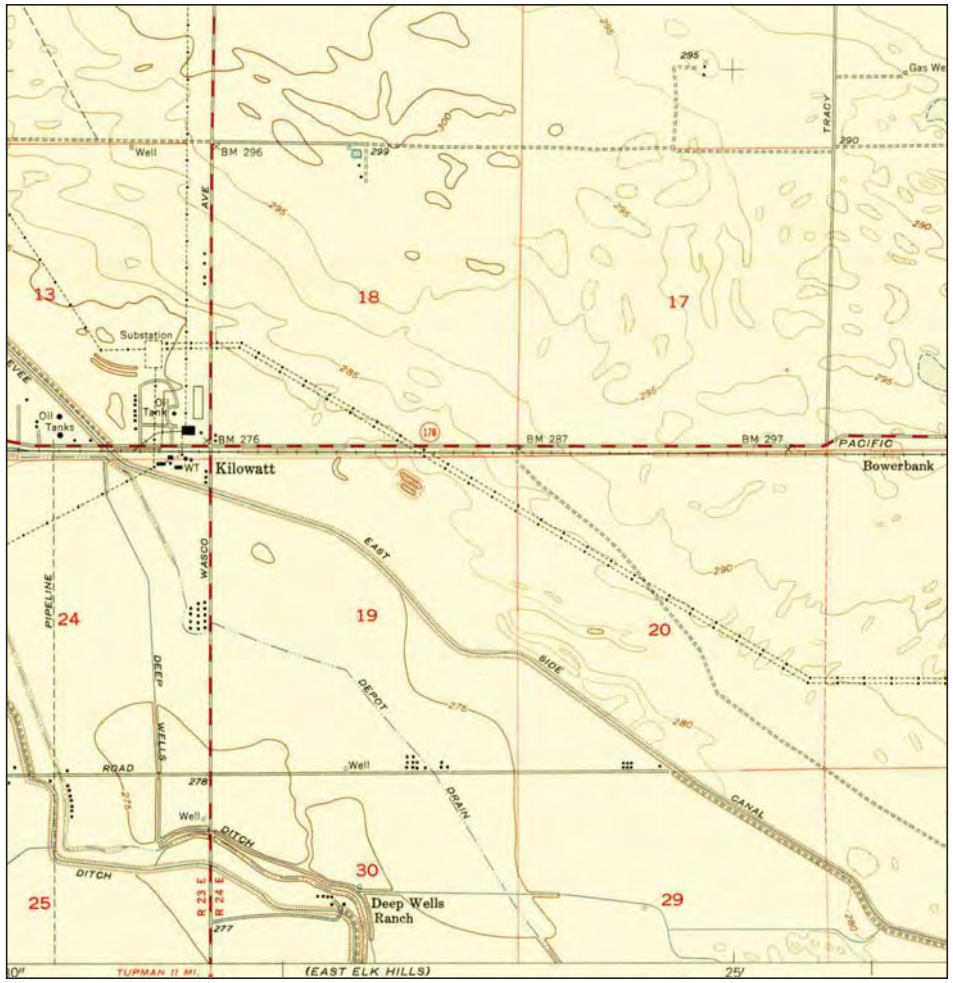
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Historical Topographic Map



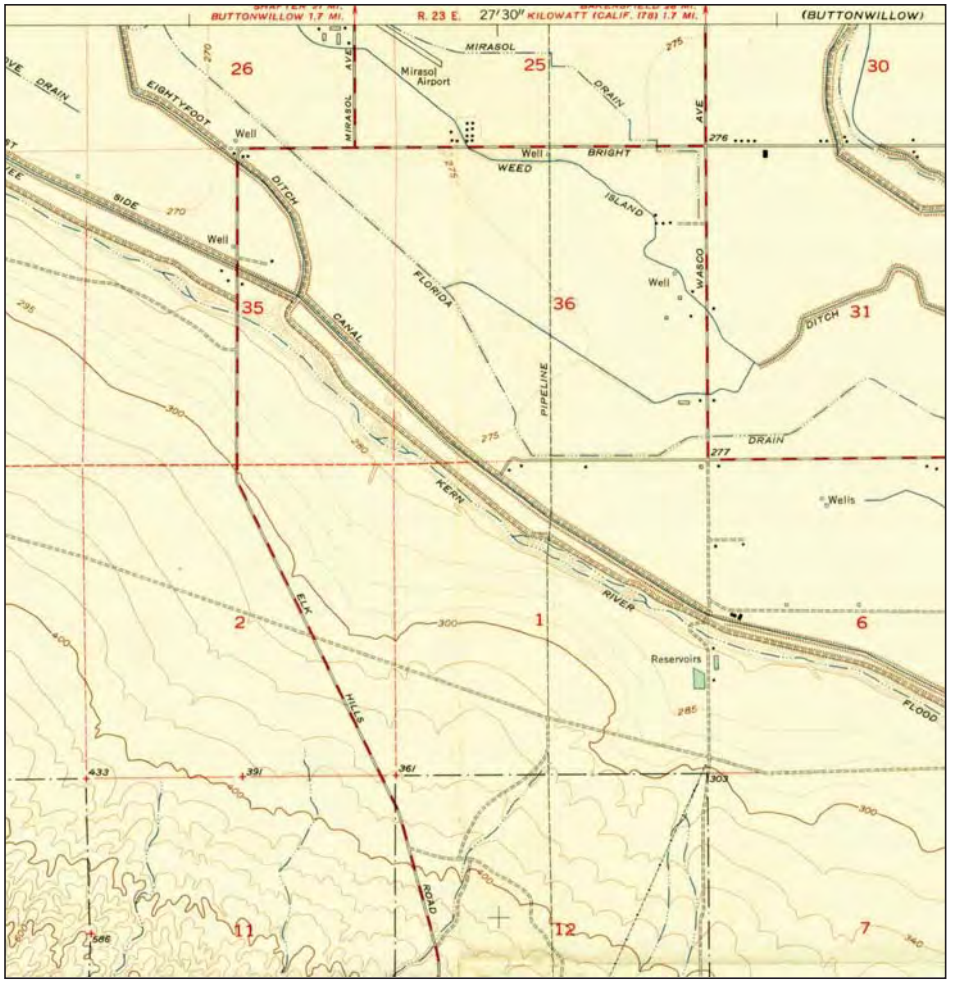
N	TARGET QUAD NAME: BUENA VISTA LAKE MAP YEAR: 1912 SERIES: 30 SCALE: 1:125000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow, CA 93206 LAT/LONG: 35.3547 / 119.4453	CLIENT: URS Corporation CONTACT: Kali_futnani INQUIRY#: 2755337.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



N	TARGET QUAD NAME: BUTTONWILLOW MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow, CA 93206 LAT/LONG: 35.3547 / 119.4453	CLIENT: URS Corporation CONTACT: Kali_futnani INQUIRY#: 2755337.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



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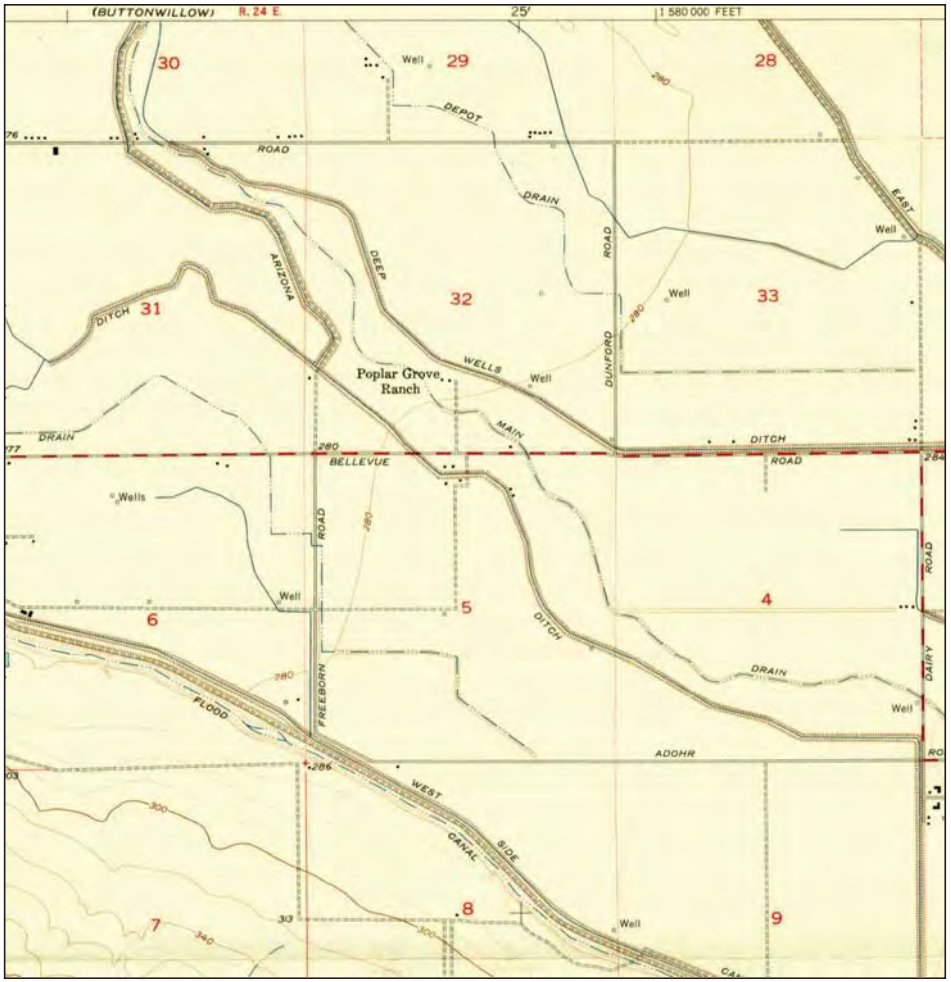
Historical Topographic Map



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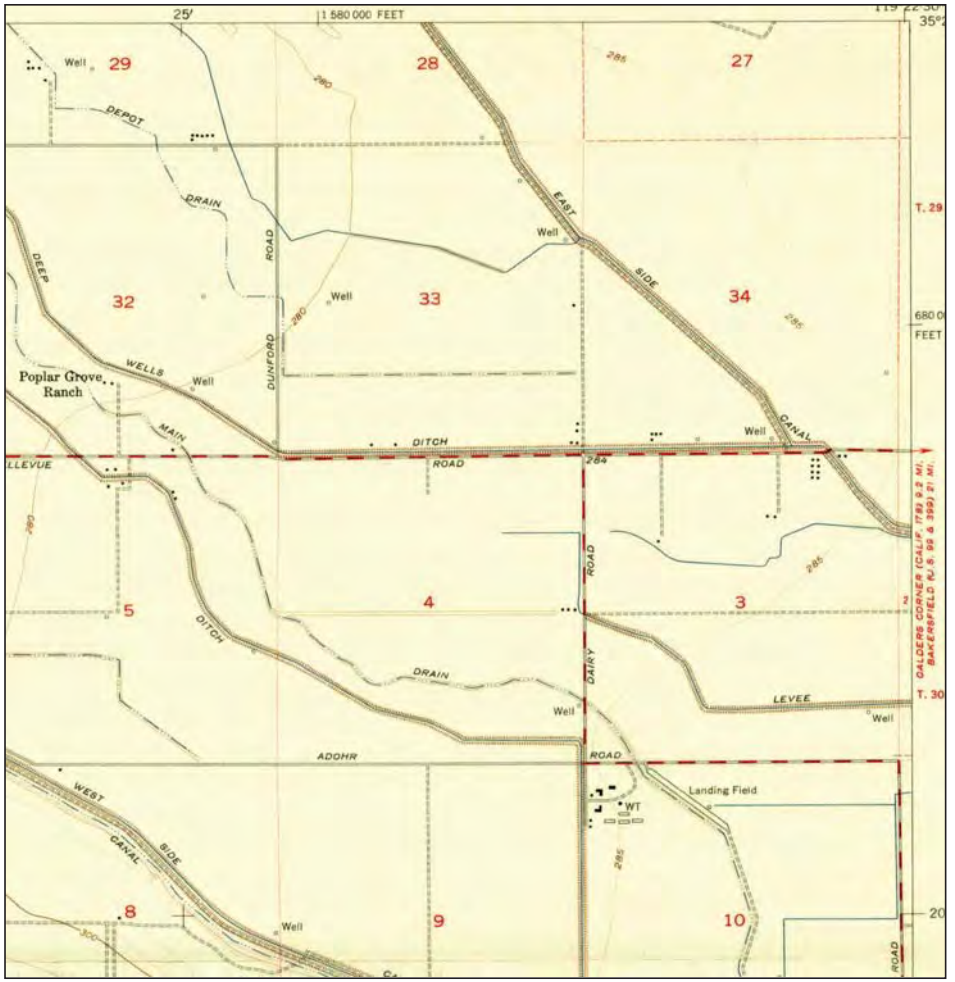
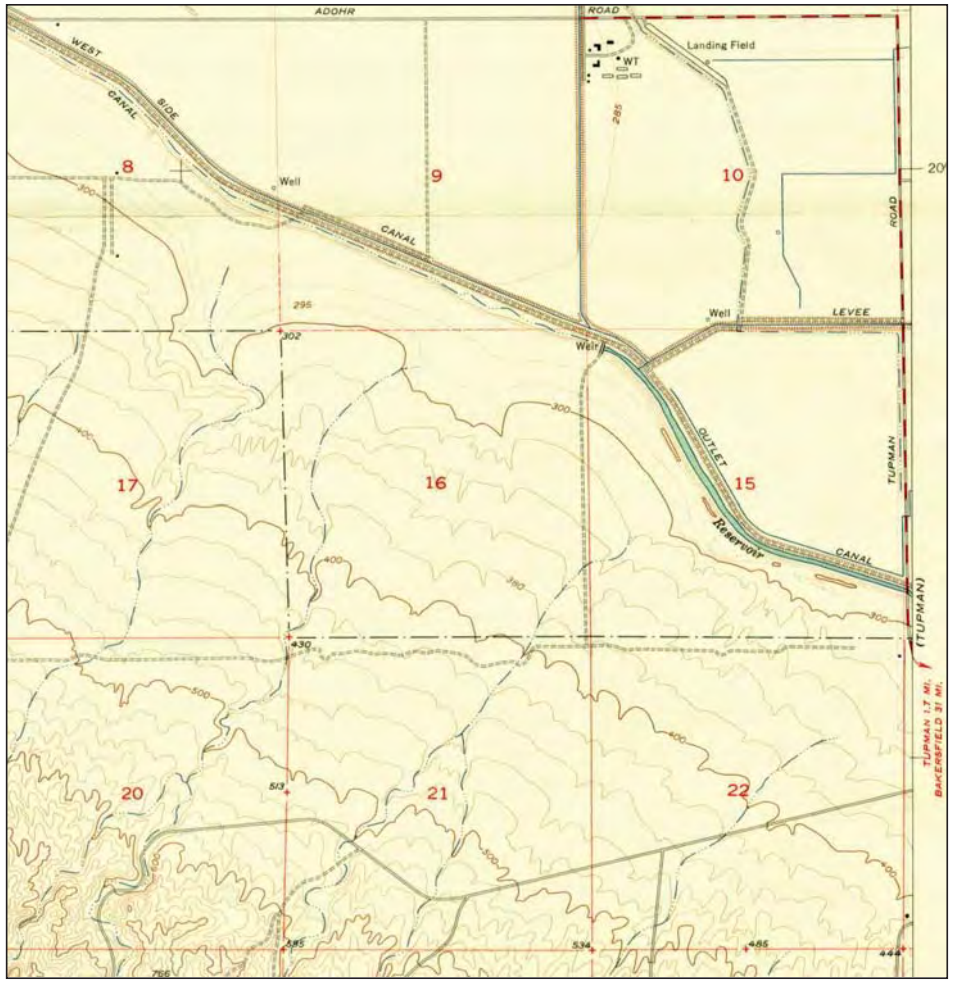
Historical Topographic Map



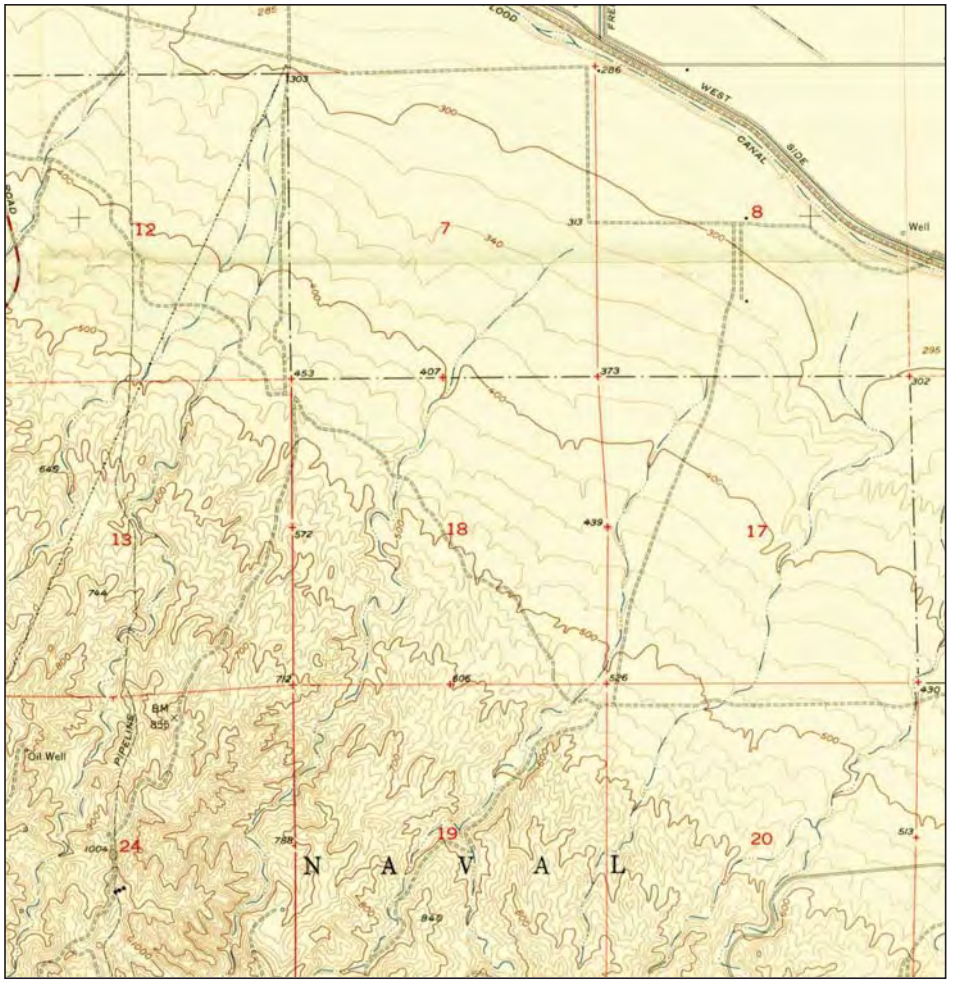
N	TARGET QUAD NAME: EAST ELK HILLS MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow, CA 93206 LAT/LONG: 35.3547 / 119.4453	CLIENT: URS Corporation CONTACT: Kali_futnani INQUIRY#: 2755337.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



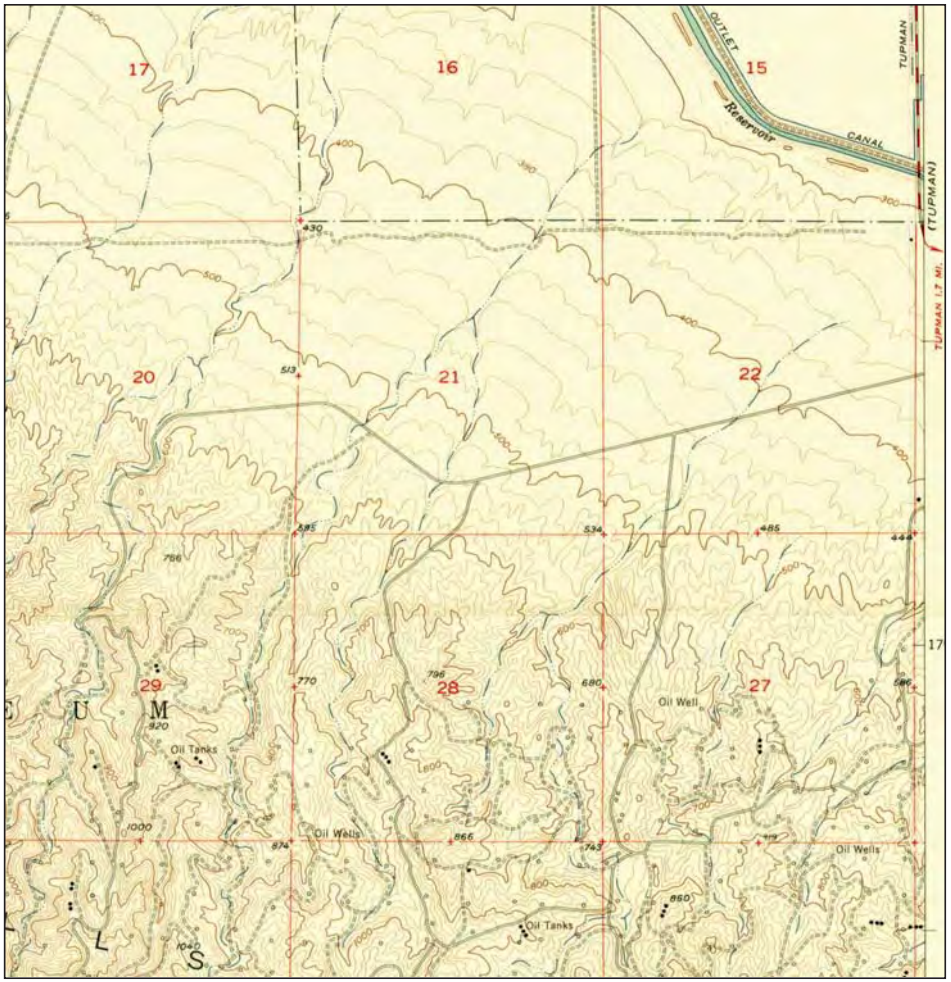
N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1954	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	SERIES: 7.5	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SCALE: 1:24000		

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1954	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	SERIES: 7.5	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SCALE: 1:24000		

Historical Topographic Map



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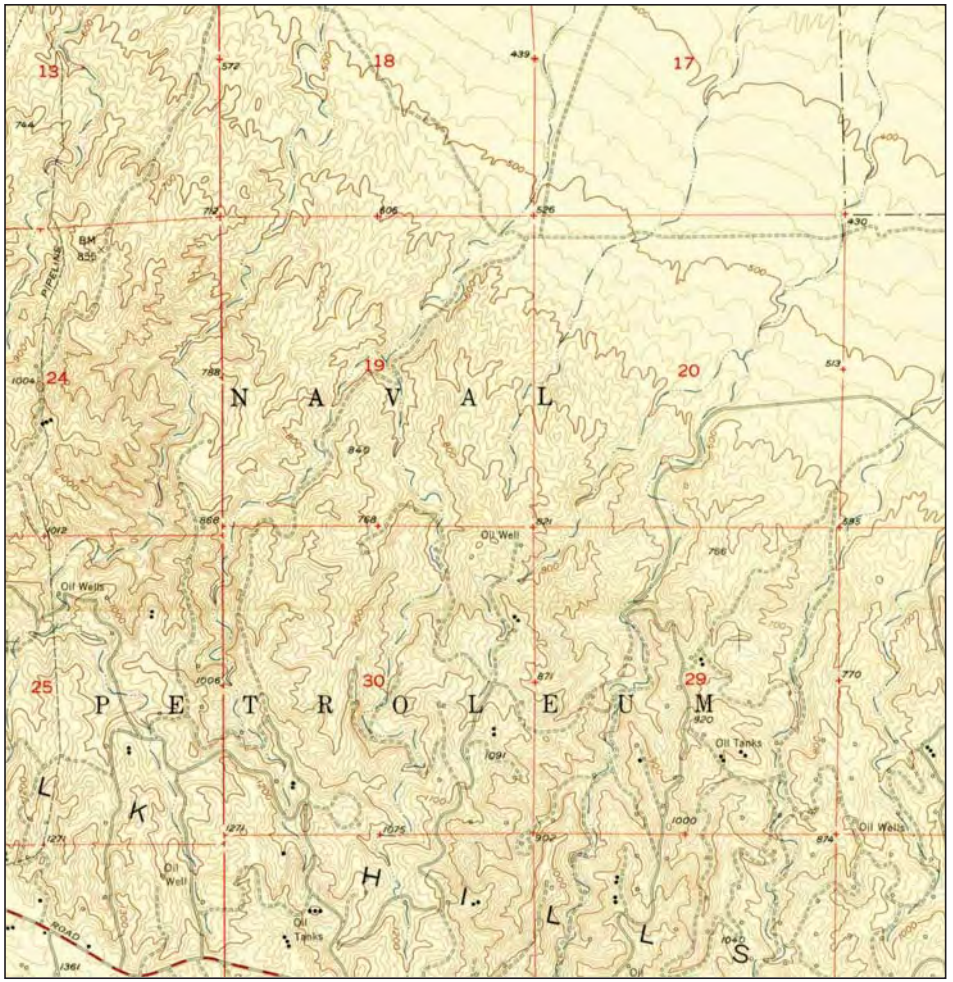
Historical Topographic Map



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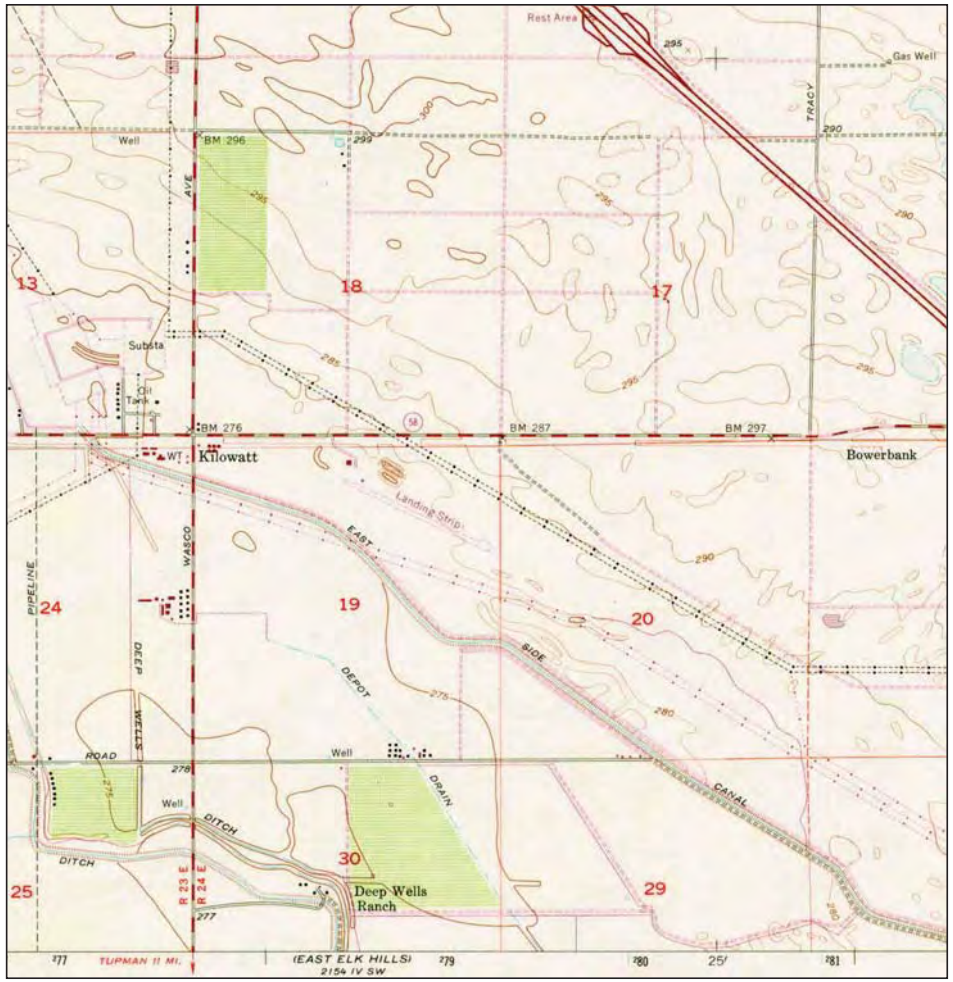
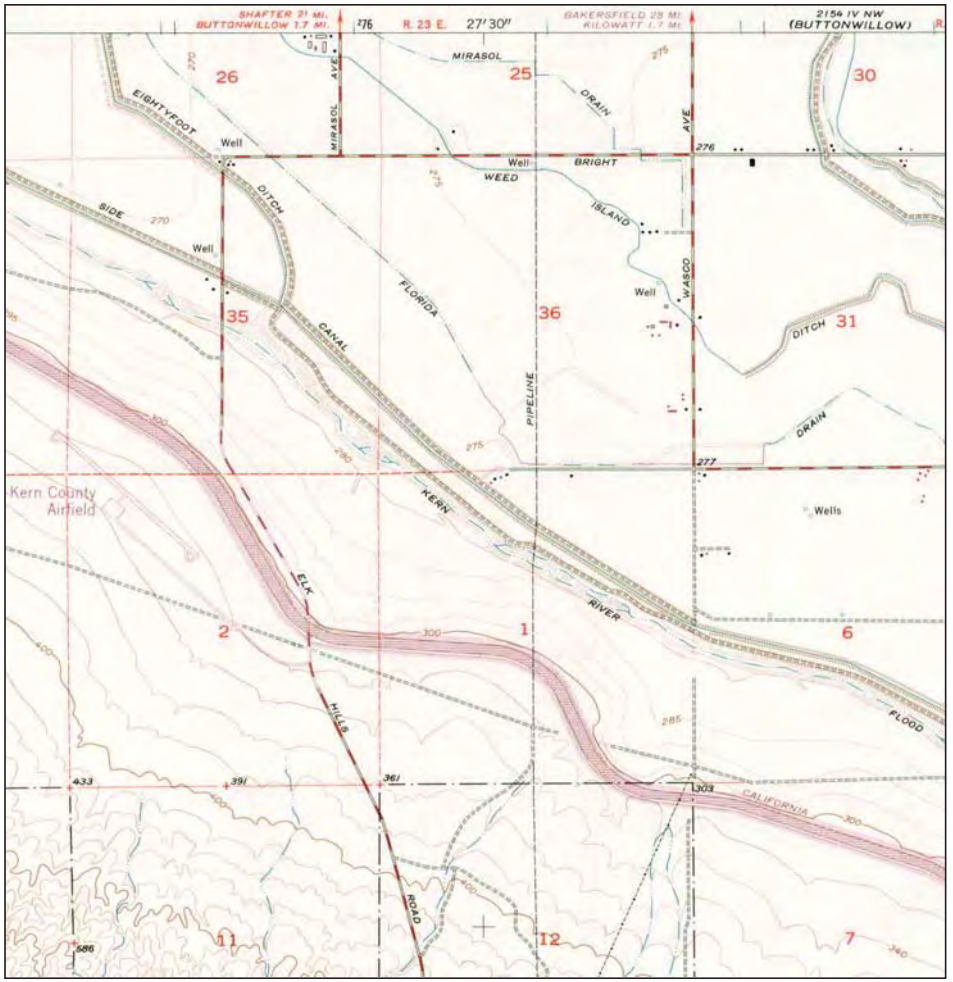
Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: BUTTONWILLOW	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
	SCALE: 1:24000		

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
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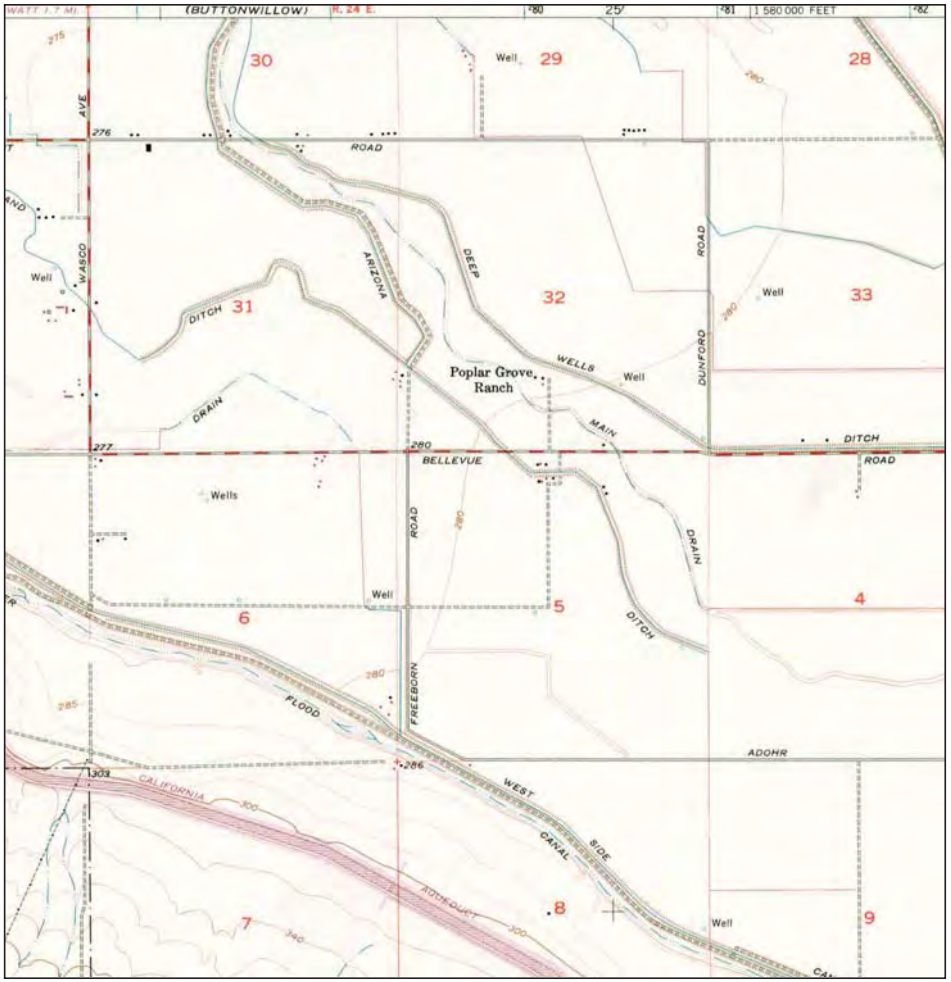
Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
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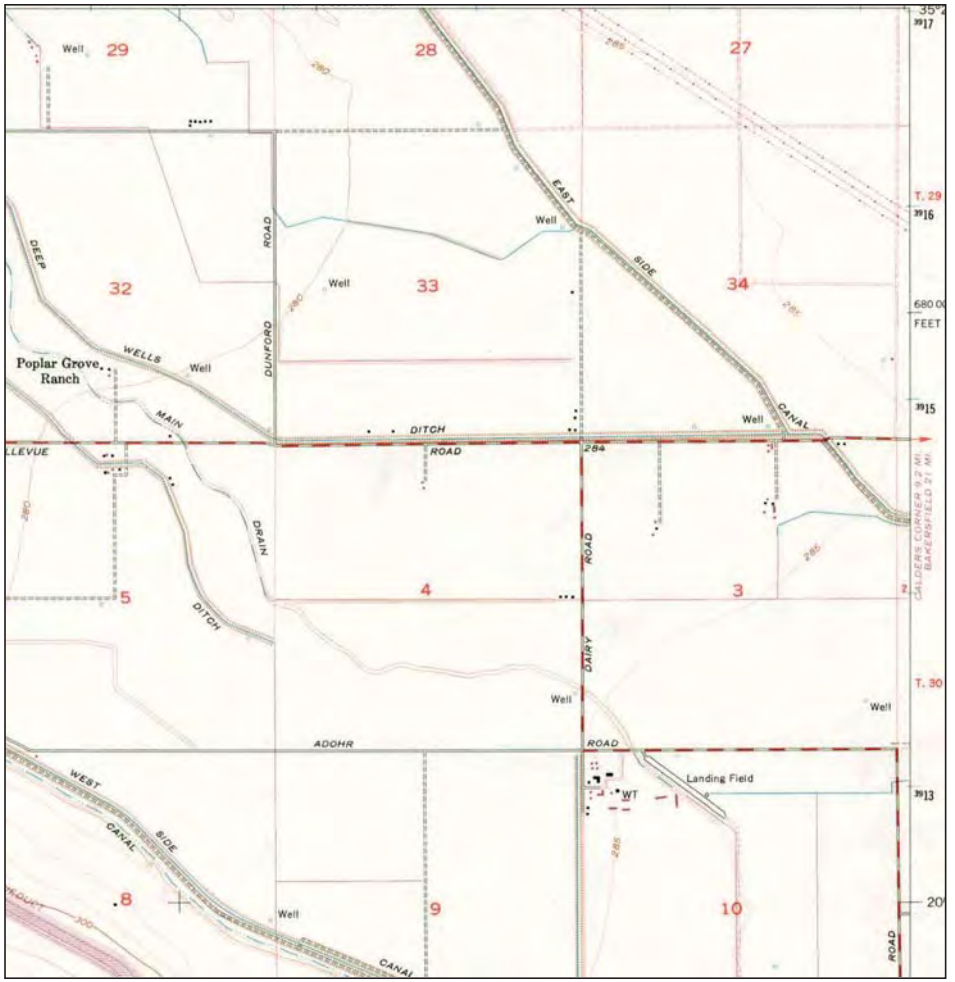
Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
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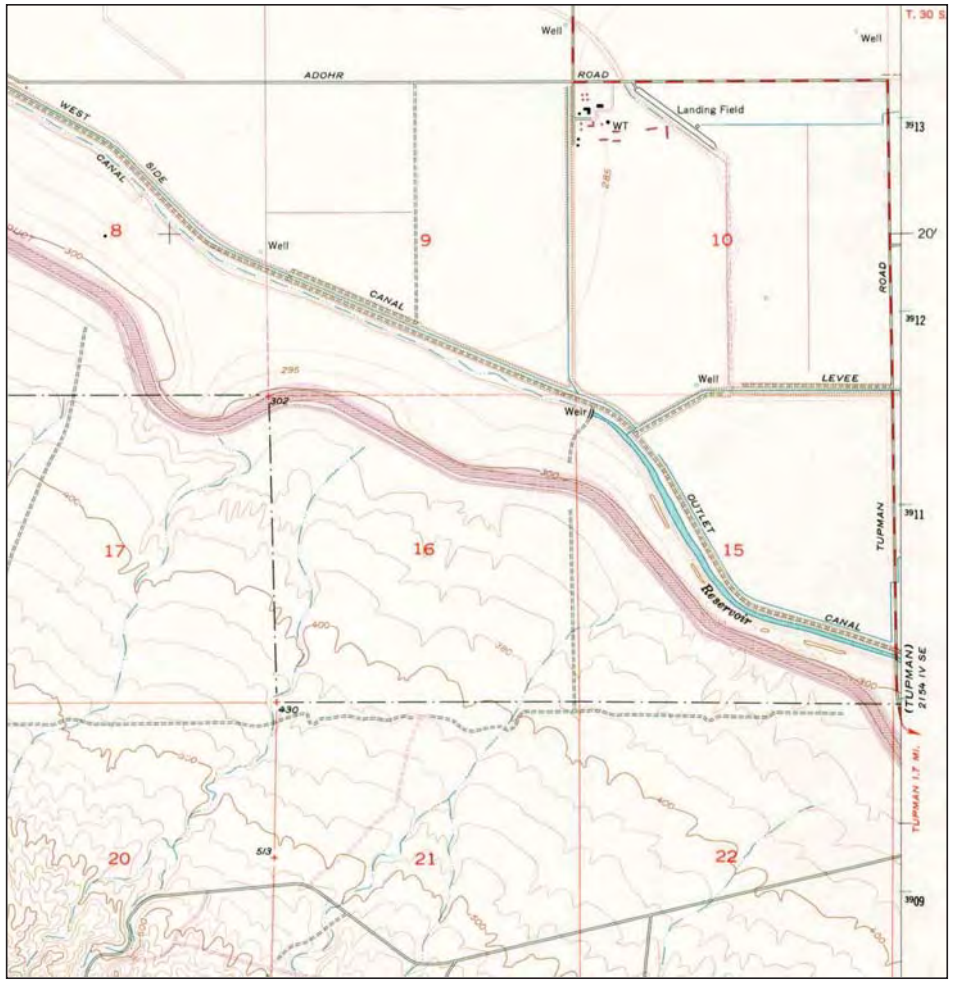
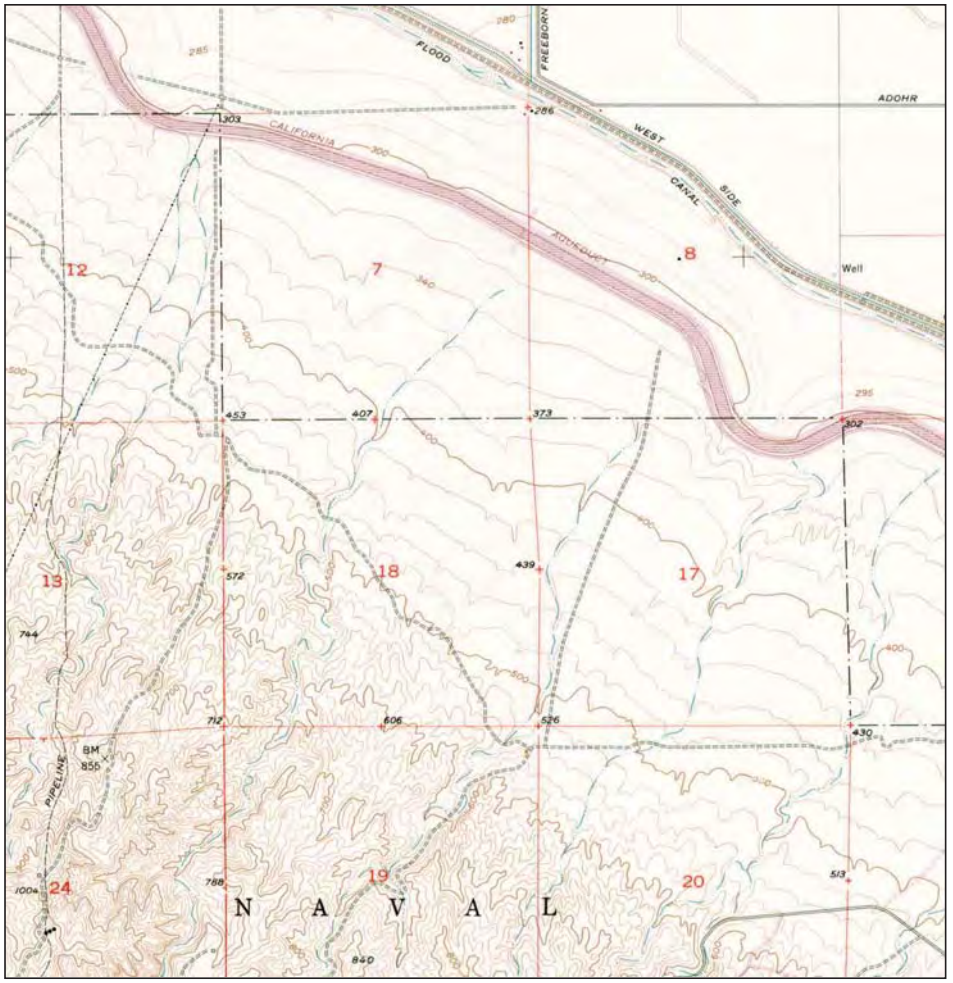
Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
	SCALE: 1:24000		

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali_futnani
	MAP YEAR: 1973	Buttonwillow, CA 93206	INQUIRY#: 2755337.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.3547 / 119.4453	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
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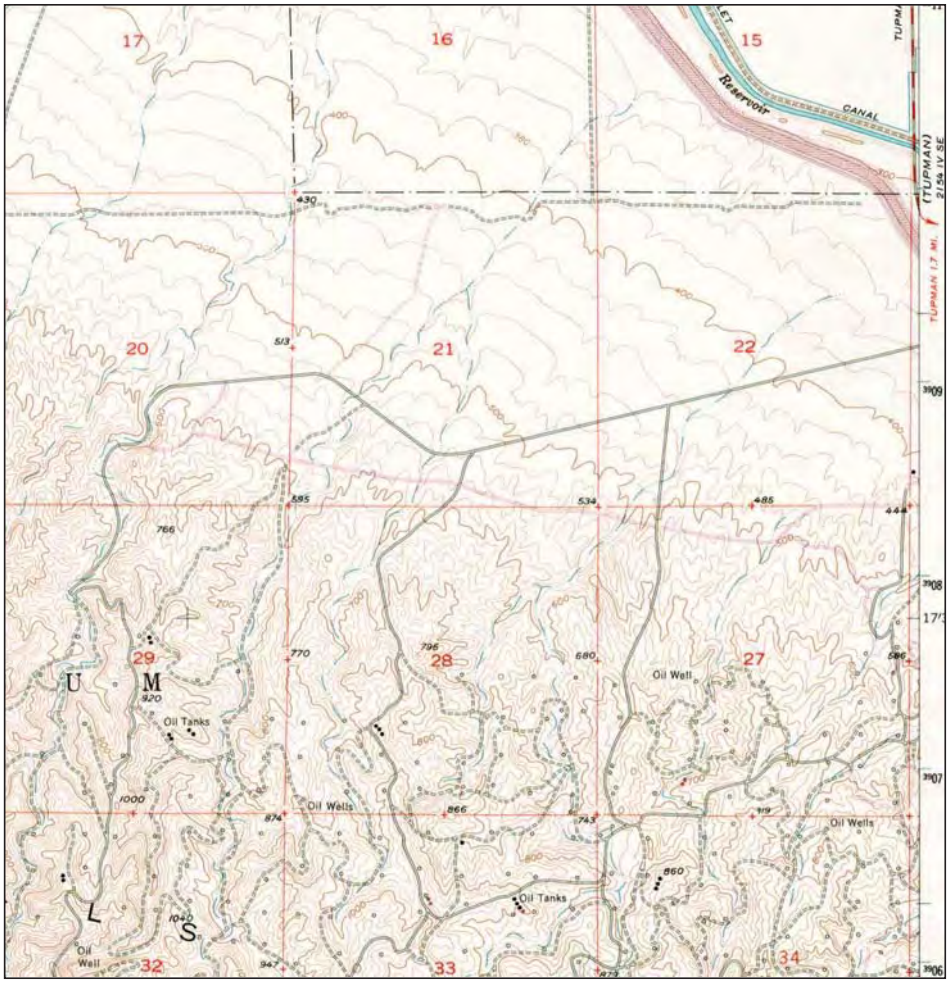
Historical Topographic Map



N	TARGET QUAD NAME: EAST ELK HILLS MAP YEAR: 1973 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow, CA 93206 LAT/LONG: 35.3547 / 119.4453	CLIENT: URS Corporation CONTACT: Kali_futnani INQUIRY#: 2755337.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map

N	TARGET QUAD NAME: EAST ELK HILLS MAP YEAR: 1973 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow, CA 93206 LAT/LONG: 35.3547 / 119.4453	CLIENT: URS Corporation CONTACT: Kali_futnani INQUIRY#: 2755337.4 RESEARCH DATE: 05/06/2010

HECA
Dairy Road/Adohr Road
Tupman, CA 93276

Inquiry Number: 2755383.4
May 06, 2010

The EDR Historical Topographic Map Report

EDR® Environmental Data Resources Inc

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Milford, CT 06461
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EDR Historical Topographic Map Report

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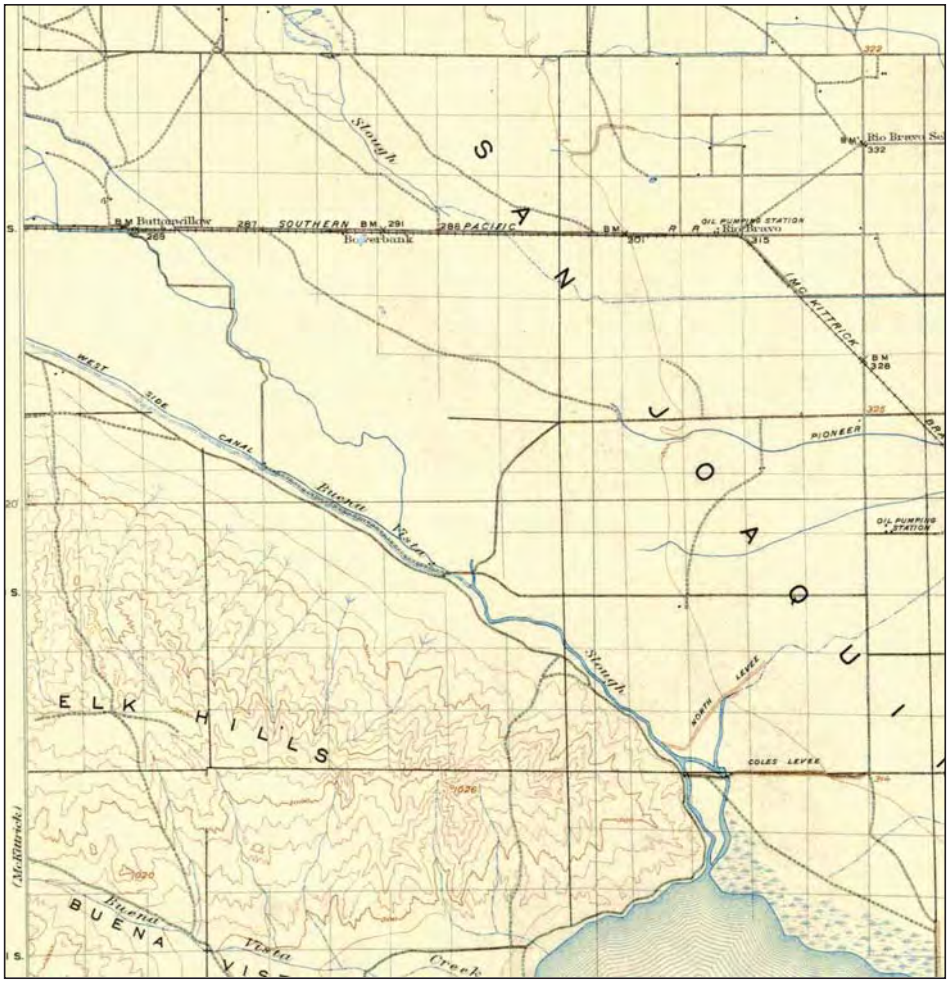
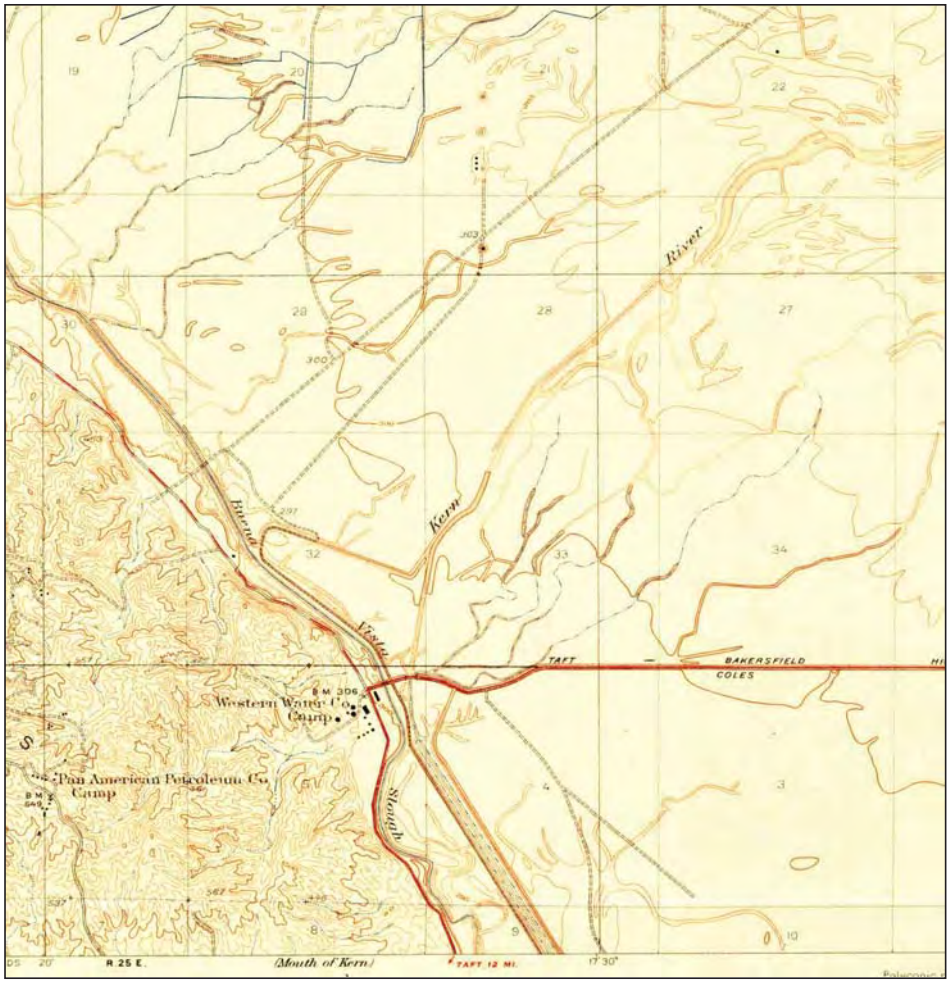
with any questions or comments.

Historical Topographic Map



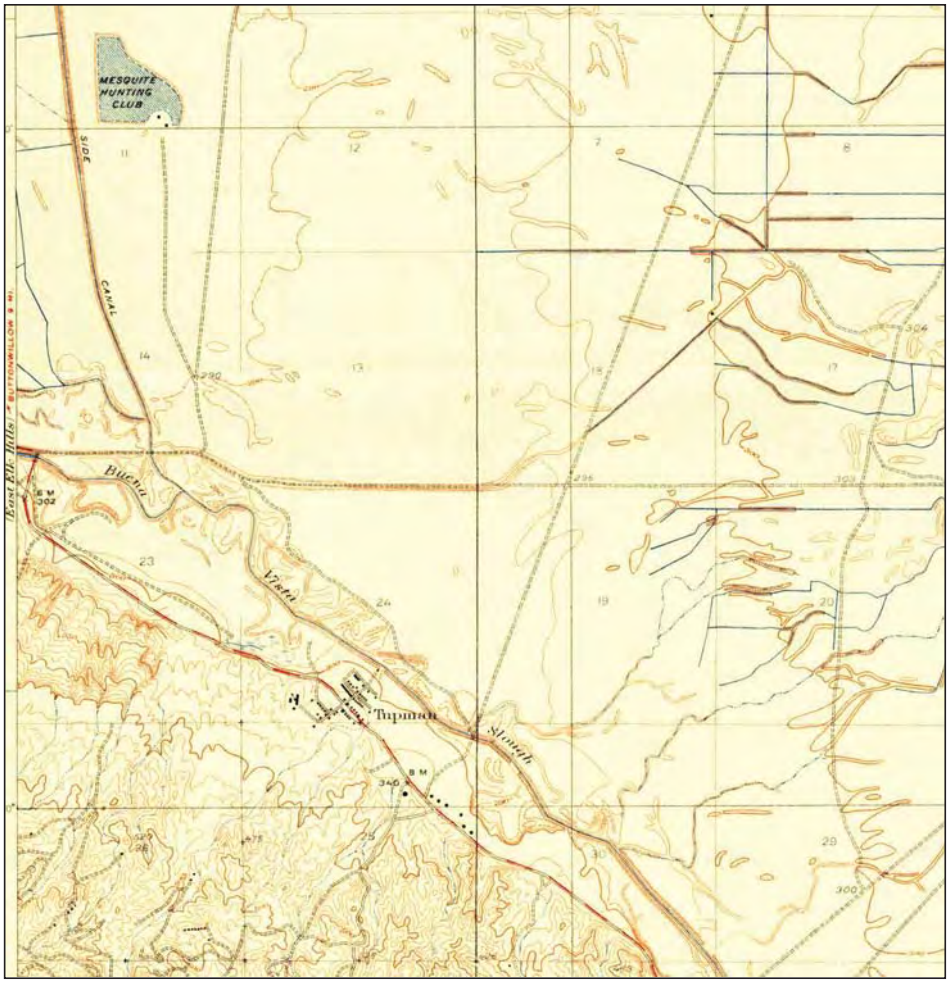
N	TARGET QUAD NAME: BUENA VISTA LAKE MAP YEAR: 1912 SERIES: 30 SCALE: 1:125000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



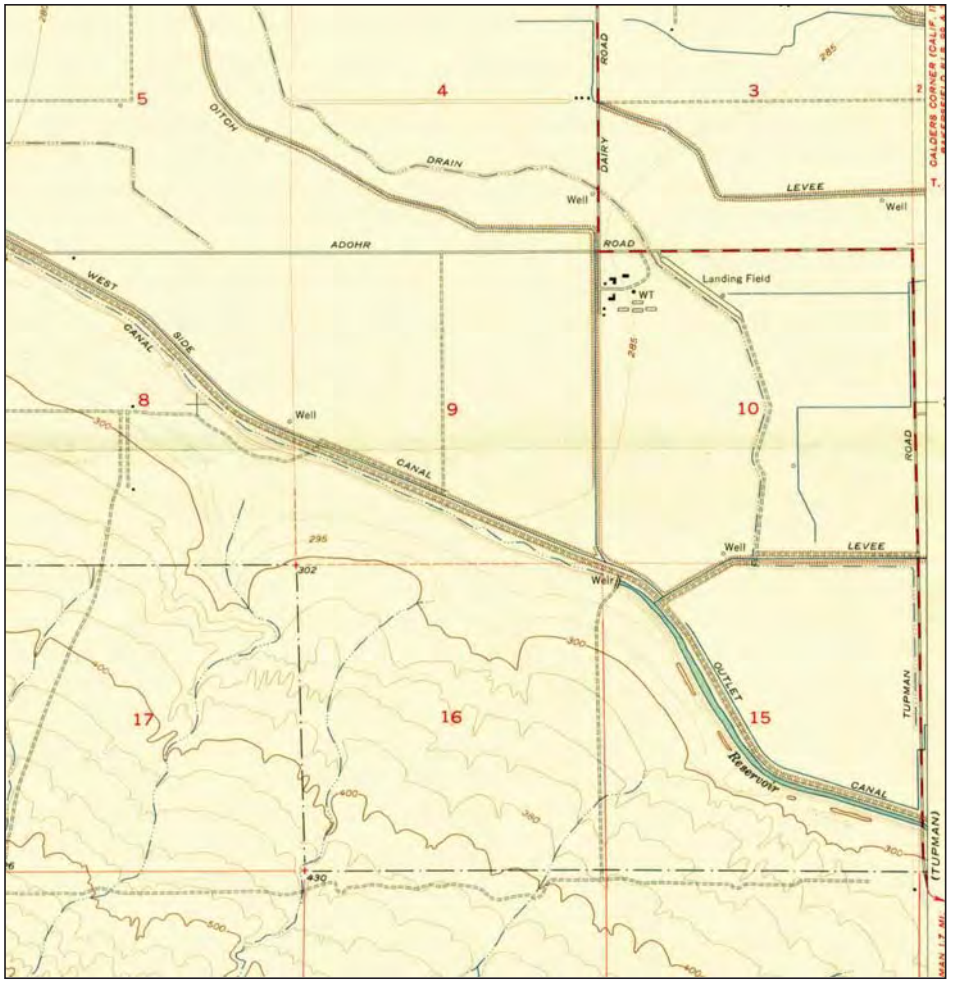
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1933 SERIES: 7.5 SCALE: 1:31680	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: TUPMAN	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali Futnani
	MAP YEAR: 1933	Tupman, CA 93276	INQUIRY#: 2755383.4
	SERIES: 7.5	LAT/LONG: 35.304 / 119.355	RESEARCH DATE: 05/06/2010
	SCALE: 1:31680		

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali Futnani
	MAP YEAR: 1954	Tupman, CA 93276	INQUIRY#: 2755383.4
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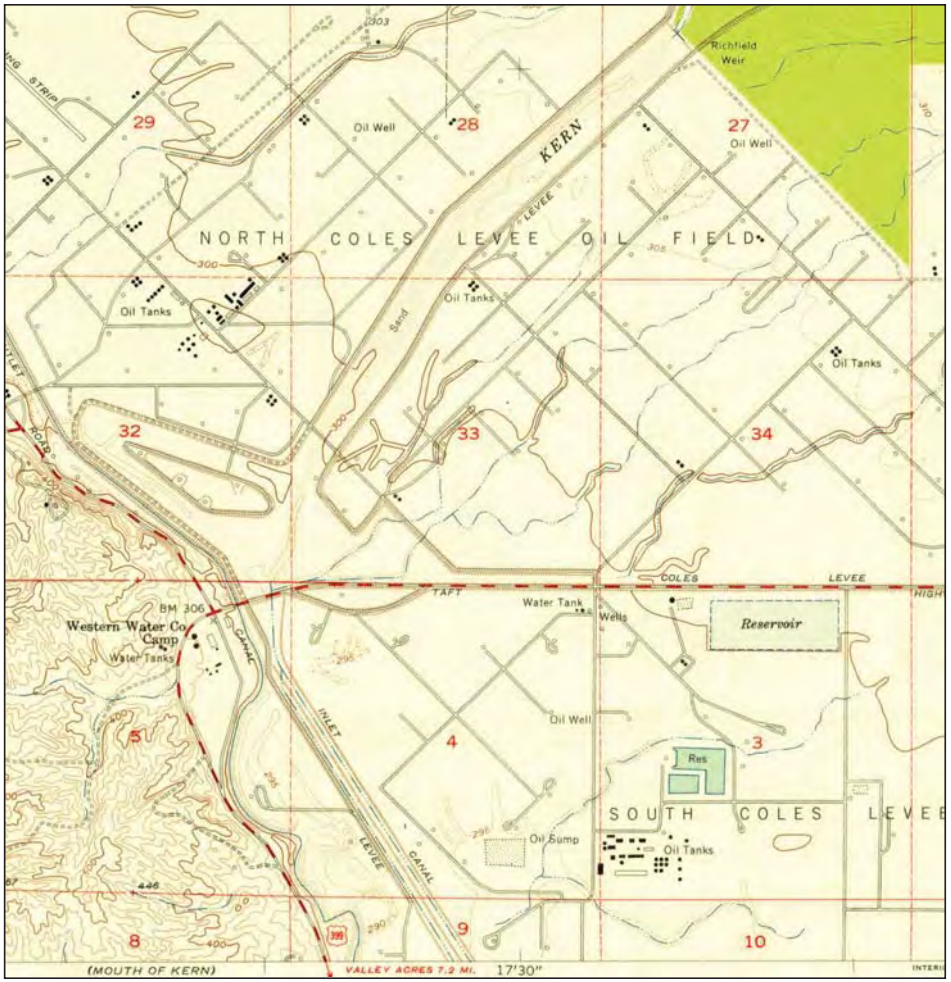
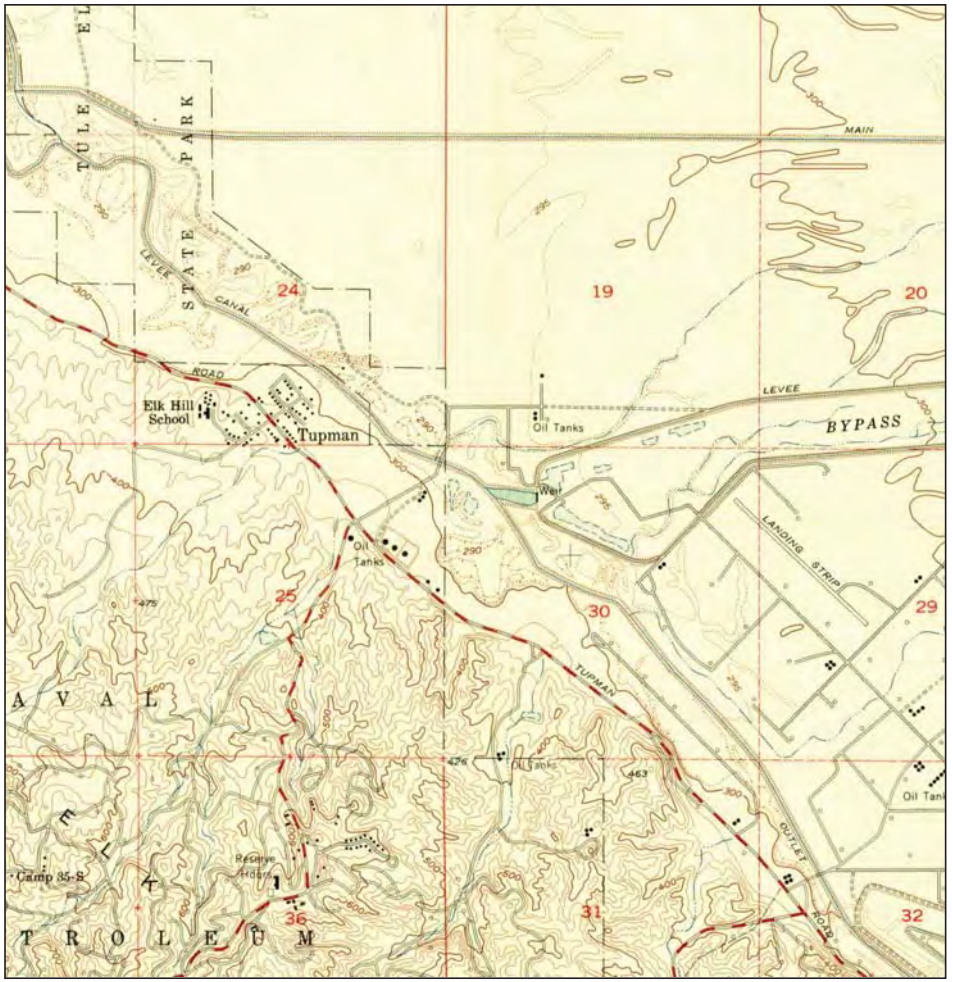
	SCALE: 1:24000		

Historical Topographic Map



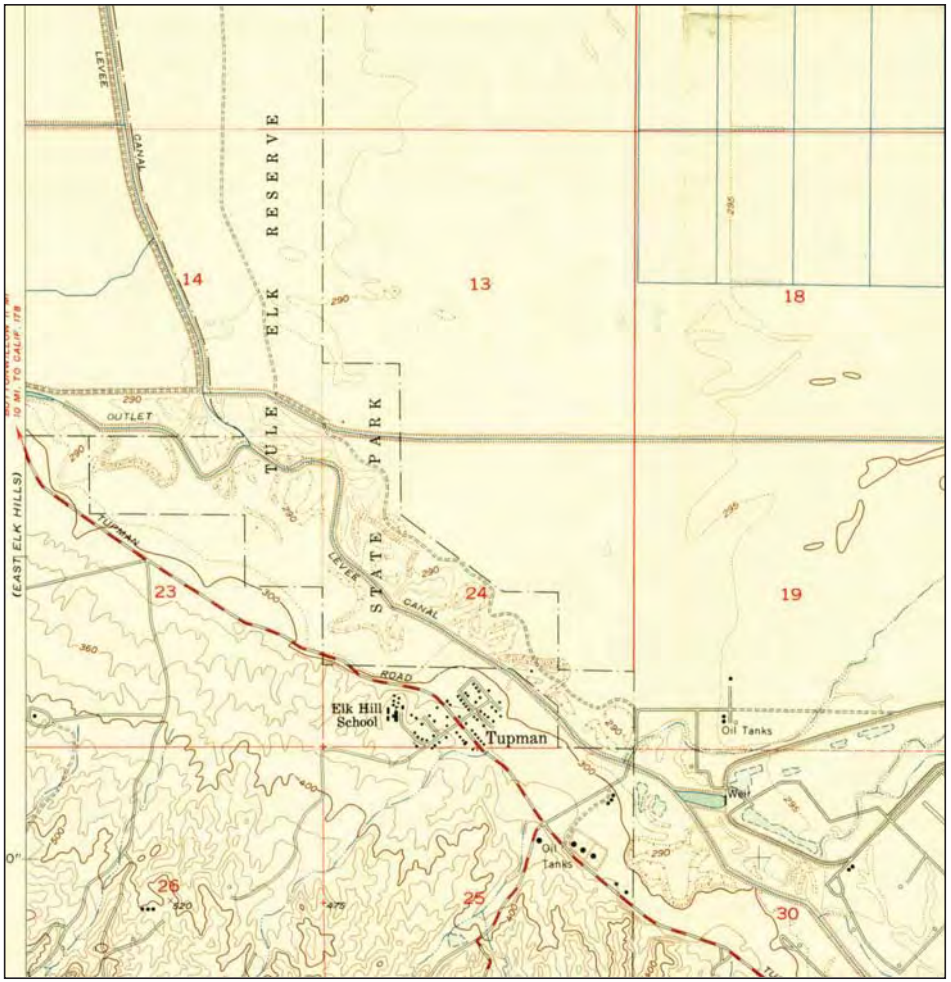
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



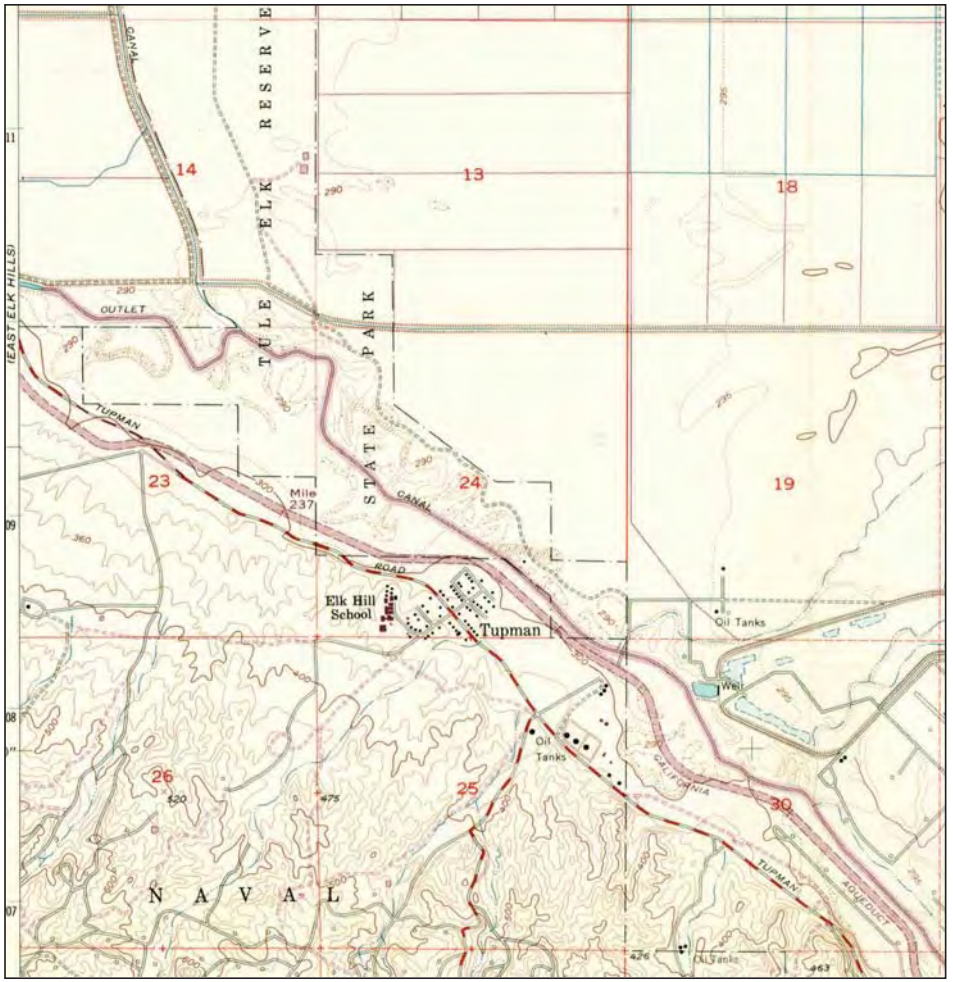
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



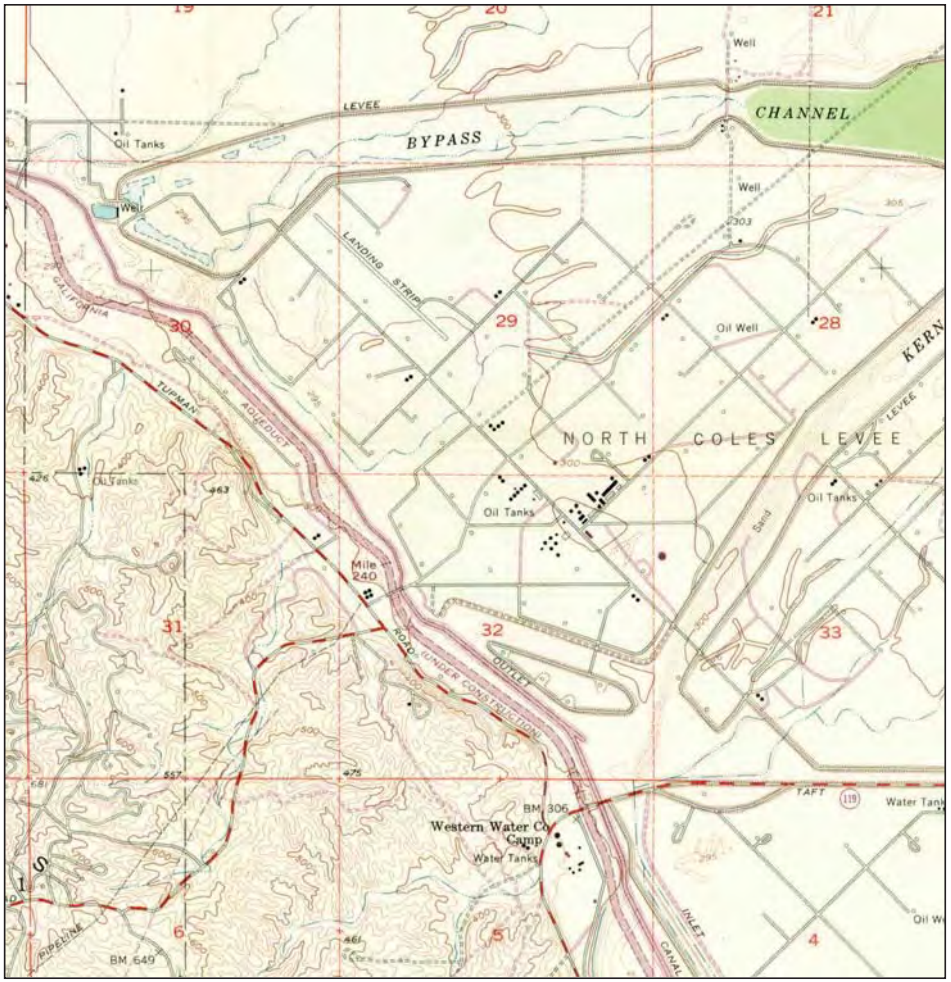
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



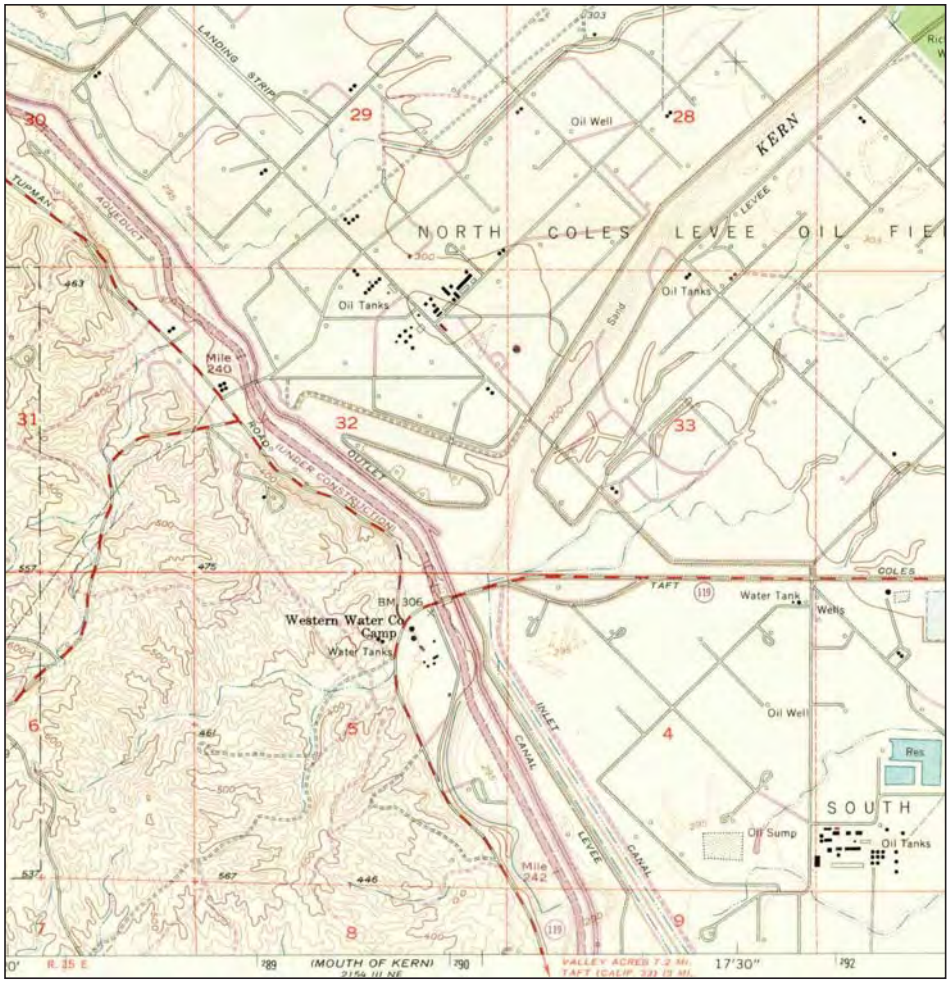
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1968 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



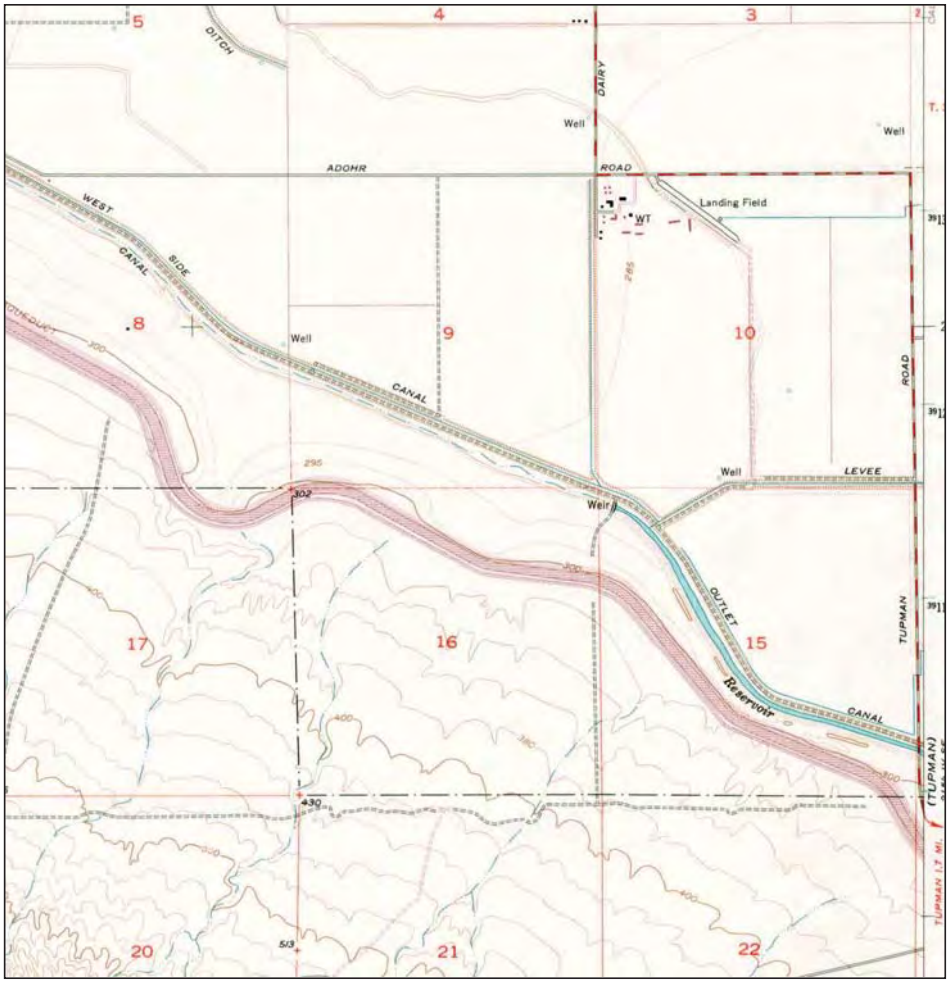
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1968 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



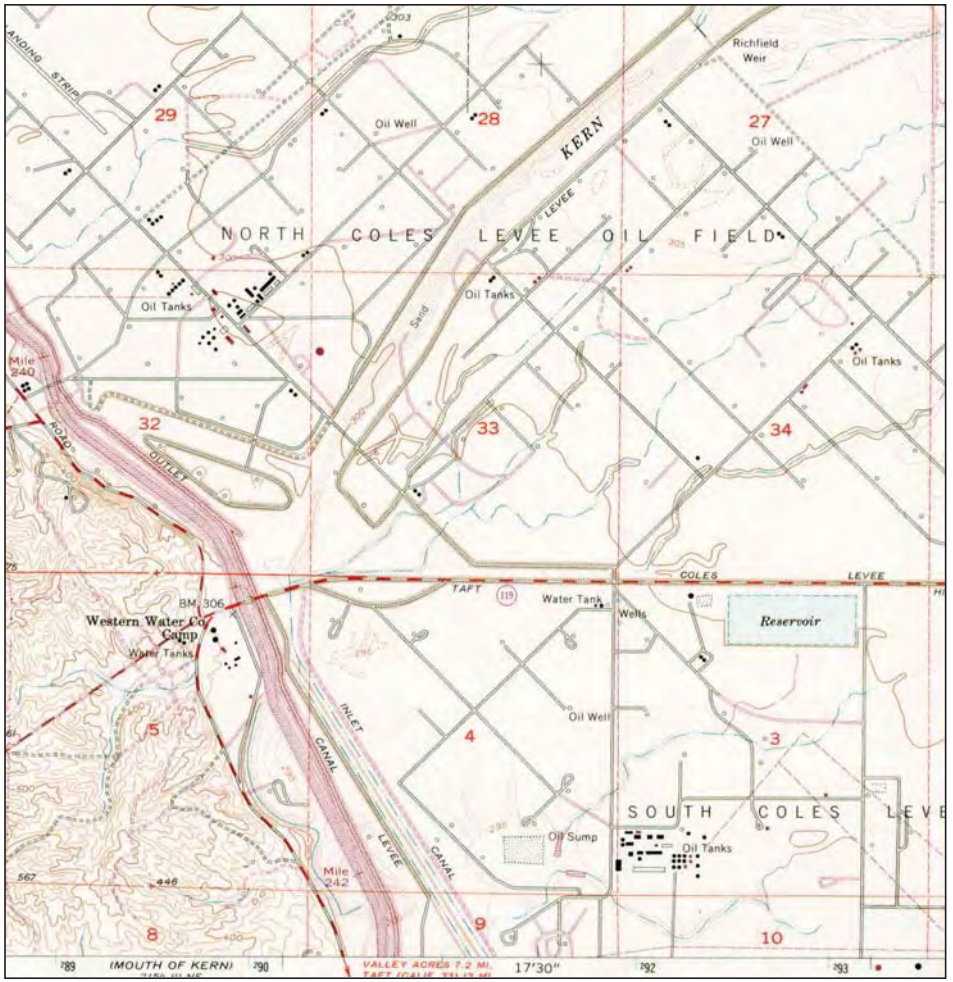
N	TARGET QUAD NAME: TUPMAN MAP YEAR: 1968 PHOTOREVISED FROM:1954 SERIES: 7.5 SCALE: 1:24000	SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Tupman, CA 93276 LAT/LONG: 35.304 / 119.355	CLIENT: URS Corporation CONTACT: Kali Futnani INQUIRY#: 2755383.4 RESEARCH DATE: 05/06/2010

Historical Topographic Map



N	TARGET QUAD	SITE NAME: HECA	CLIENT: URS Corporation
	NAME: EAST ELK HILLS	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali Futnani
	MAP YEAR: 1973	Tupman, CA 93276	INQUIRY#: 2755383.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.304 / 119.355	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
	SCALE: 1:24000		

Historical Topographic Map



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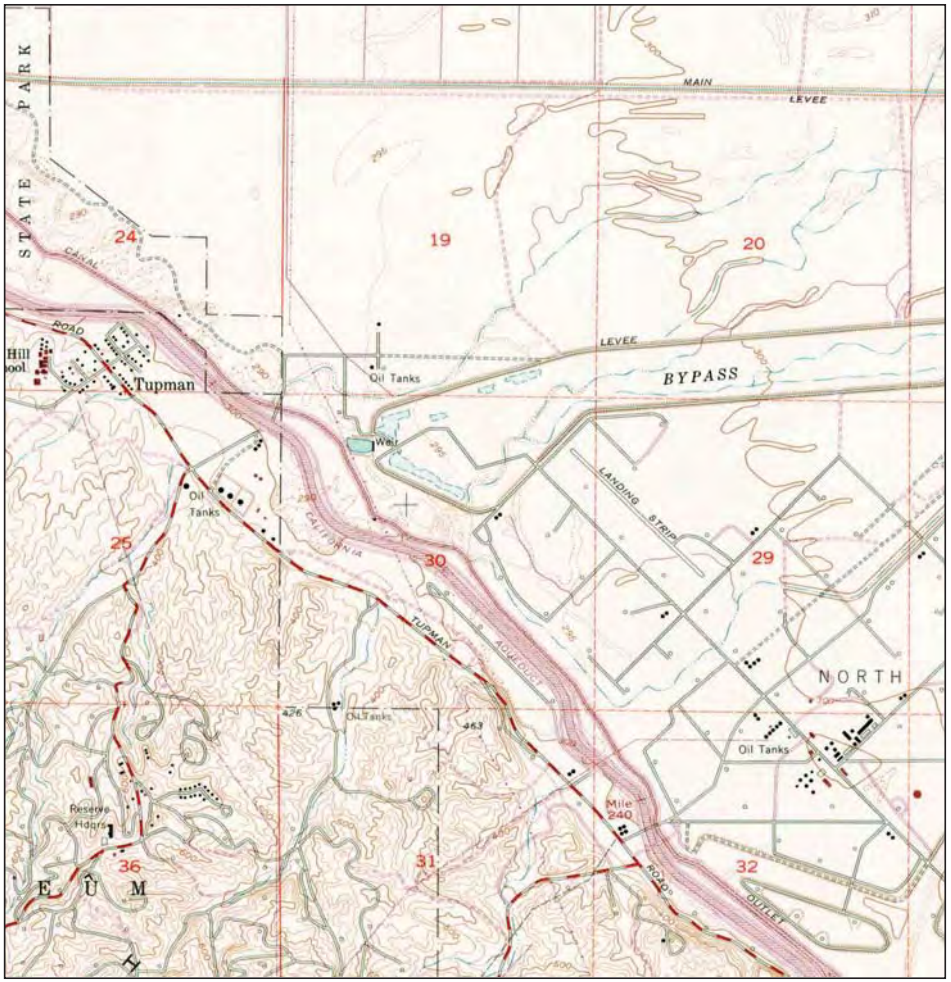
	NAME: TUPMAN	ADDRESS: Dairy Road/Adohr Road	CONTACT: Kali Futnani
	MAP YEAR: 1973	Tupman, CA 93276	INQUIRY#: 2755383.4
	PHOTOREVISED FROM:1954	LAT/LONG: 35.304 / 119.355	RESEARCH DATE: 05/06/2010
	SERIES: 7.5		
	SCALE: 1:24000		

Historical Topographic Map



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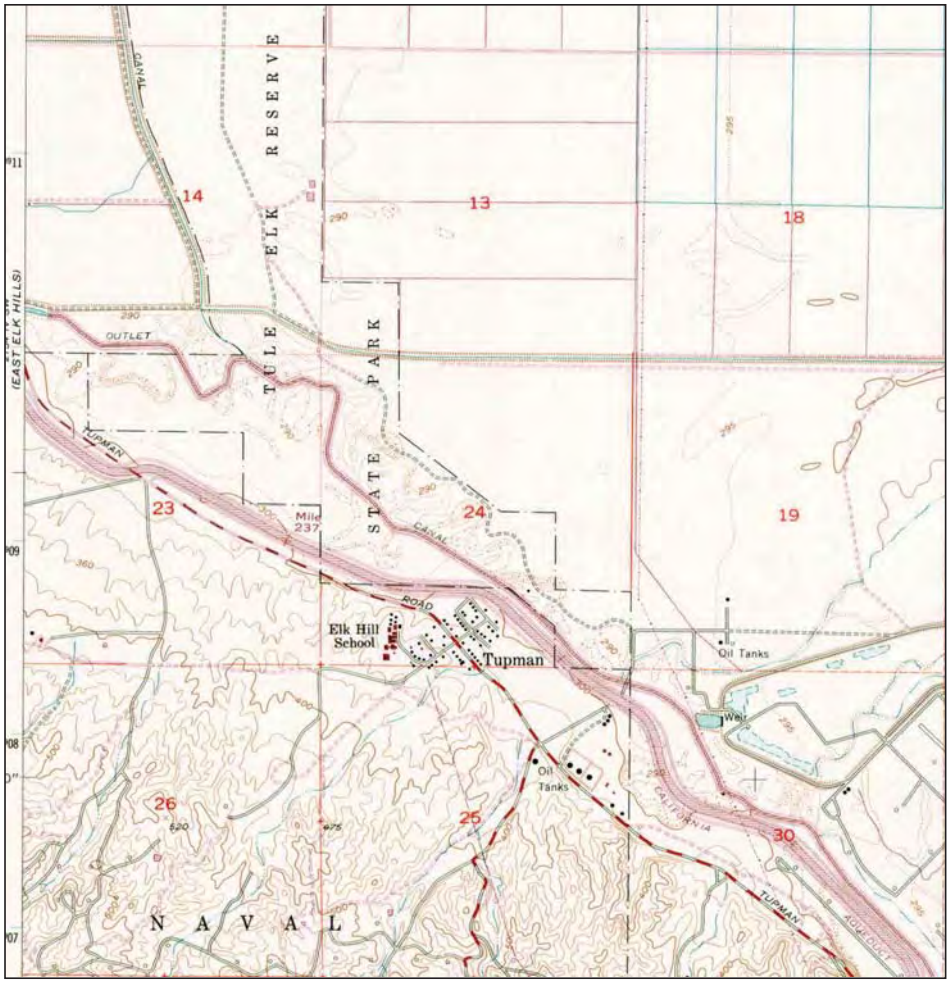
Historical Topographic Map



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HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 3293634.1
April 04, 2012

The EDR Aerial Photo Decade Package

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

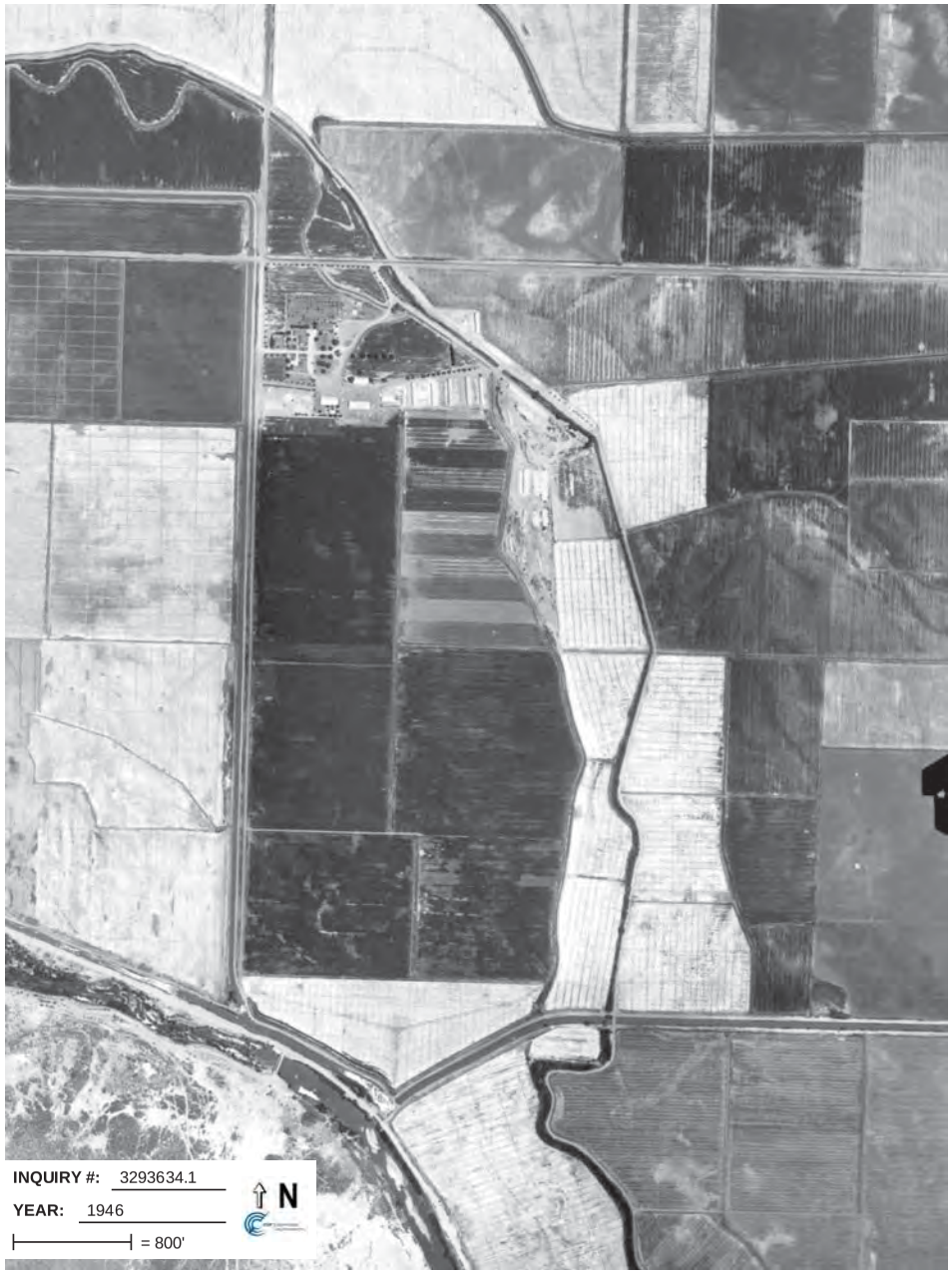
When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Date EDR Searched Historical Sources:
Aerial Photography April 04, 2012

Target Property:
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Year	***Scale***	***Details***	***Source***
1946	Aerial Photograph. Scale: 1"=800'	Flight Year: 1946	Fairchild
1946	Aerial Photograph. Scale: 1"=800'	Flight Year: 1946	Fairchild
1956	Aerial Photograph. Scale: 1"=800'	Flight Year: 1956	Robinson
1956	Aerial Photograph. Scale: 1"=800'	Flight Year: 1956	Robinson
1967	Aerial Photograph. Scale: 1"=800'	Flight Year: 1967	Western
1974	Aerial Photograph. Scale: 1"=800'	Flight Year: 1974	NASA
1984	Aerial Photograph. Scale: 1"=800'	Flight Year: 1984	USGS
1994	Aerial Photograph. Scale: 1"=500'	/Composite DOQQ - acquisition dates: 1994	EDR
2005	Aerial Photograph. Scale: 1"=500'	Flight Year: 2005	EDR
2006	Aerial Photograph. Scale: 1"=500'	Flight Year: 2006	EDR


INQUIRY #: 3293634.1
YEAR: 1946
= 800'
N


INQUIRY #: 3293634.1
YEAR: 19 6
= 800'
N


INQUIRY #: 3293634.1
YEAR: 19 6
= 800'
N


INQUIRY #: 3293634.1
YEAR: 196
= 800'
N


INQUIRY #: 3293634.1
YEAR: 19 4
= 800'
N


INQUIRY #: 3293634.1
YEAR: 1984
= 800'
N


INQUIRY #: 3293634.1
YEAR: 1994
= 00'
N


INQUIRY #: 3293634.1
YEAR: 200
= 00'
N


INQUIRY #: 3293634.1
YEAR: 2006
= 00'
N

HECA
Dairy Road/Adohr Road
Buttonwillow, CA 93206

Inquiry Number: 3251004.1s
March 19, 2012

The EDR Radius Map™ Report with GeoCheck®

Prepared using the EDR FieldCheck® System

EDR® Environmental Data Resources Inc

440 Wheelers Farms Road
Milford, CT 06461
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of the environmental records was conducted by Environmental Data Resources, Inc. (EDR). URS CORPORATION used the EDR FieldCheck System to review and/or revise the results of this search, based on independent data verification by URS CORPORATION. The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

DAIRY ROAD/ADOHR ROAD
BUTTONWILLOW, CA 93206

COORDINATES

Latitude (North):	35.3304000 - 35° 19' 49.44''
Longitude (West):	119.3857000 - 119° 23' 8.52''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	283153.6
UTM Y (Meters):	3912097.2
Elevation:	288 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	35119-C4 EAST ELK HILLS, CA
Most Recent Revision:	1973
East Map:	35119-C3 TUPMAN, CA
Most Recent Revision:	1973

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	2009, 2010
Source:	USDA

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No sites were identified in following databases.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ..... National Priority List

Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ..... National Priority List Deletions

Federal CERCLIS list

CERCLIS ..... Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ..... Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ..... CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-CESQG ..... RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ..... Engineering Controls Sites List
US INST CONTROL ..... Sites with Institutional Controls

Federal ERNS list

ERNS ..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ..... State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR ..... EnviroStor Database

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ..... Solid Waste Information System

State and tribal leaking storage tank lists

LUST ..... Geotracker's Leaking Underground Fuel Tank Report
SLIC ..... Statewide SLIC Cases

EXECUTIVE SUMMARY

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ..... Active UST Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land
FEMA UST ..... Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ..... Voluntary Cleanup Priority Listing
VCP ..... Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
ODI ..... Open Dump Inventory
WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ..... Clandestine Drug Labs
HIST Cal-Sites ..... Historical Calsites Database
SCH ..... School Property Evaluation Program
Toxic Pits ..... Toxic Pits Cleanup Act Sites
CDL ..... Clandestine Drug Labs
US HIST CDL ..... National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ..... Facility Inventory Database

Local Land Records

LIENS 2 ..... CERCLA Lien Information
LUCIS ..... Land Use Control Information System
LIENS ..... Environmental Liens Listing
DEED ..... Deed Restriction Listing

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing

Other Ascertainable Records

RCRA-NonGen	RCRA - Non Generators
DOT OPS	Incident and Accident Data
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
RAATS	RCRA Administrative Action Tracking System
CA BOND EXP. PLAN	Bond Expenditure Plan
NPDES	NPDES Permits Listing
WDS	Waste Discharge System
Cortese	"Cortese" Hazardous Waste & Substances Sites List
HIST CORTESE	Hazardous Waste & Substance Site List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
FINANCIAL ASSURANCE	Financial Assurance Information Listing
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
PCB TRANSFORMER	PCB Transformer Registration Database
PROC	Certified Processors Database
MWMP	Medical Waste Management Program Listing
COAL ASH DOE	Sleam-Electric Plan Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants
EDR Historical Auto Stations	EDR Proprietary Historic Gas Stations
EDR Historical Cleaners	EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State and tribal registered storage tank lists

AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

An online review and analysis by URS CORPORATION of the AST list,
as provided by EDR, and dated 08/01/2009 has revealed that there is 1 AST site
within approximately 0.75 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CAUZZA AG PARTNERS - PALM RANC	ADOHR AND DAIRY	N 1/8 - 1/4 (0.175 mi.)	B6	12

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

An online review and analysis by URS CORPORATION of the HIST UST list,
as provided by EDR, and dated 10/15/1990 has revealed that there are 2 HIST UST sites
within approximately 0.75 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
PALM FARMS, INC.	ADOHR RD.	W 0 - 1/8 (0.016 mi.)	1	8
MARTIN SNOW FARM	STATION RD, 1/4 MILE EA	E 0 - 1/8 (0.081 mi.)	5	11

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

An online review and analysis by URS CORPORATION of the SWEEPS UST list,
as provided by EDR, and dated 06/01/1994 has revealed that there is 1 SWEEPS UST site
within approximately 0.75 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PALM FARMS INC.	ADOHR RD	N 1/8 - 1/4 (0.184 mi.)	B7	12

Other Ascertainable Records

DOD: Consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

An online review and analysis by URS CORPORATION of the DOD list, as provided by EDR, and dated 12/31/2005 has revealed that there is 1 DOD site within approximately 1.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAVAL PETROLEUM RESERVE NUMBER		WSW 1 - 2 (1.096 mi.)	0	8

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

An online review and analysis by URS CORPORATION of the FINDS list, as provided by EDR, and dated 10/23/2011 has revealed that there is 1 FINDS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WESTERN MILLING LLC	7361 ADOHR RD	S 0 - 1/8 (0.070 mi.)	A4	11

EMI: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

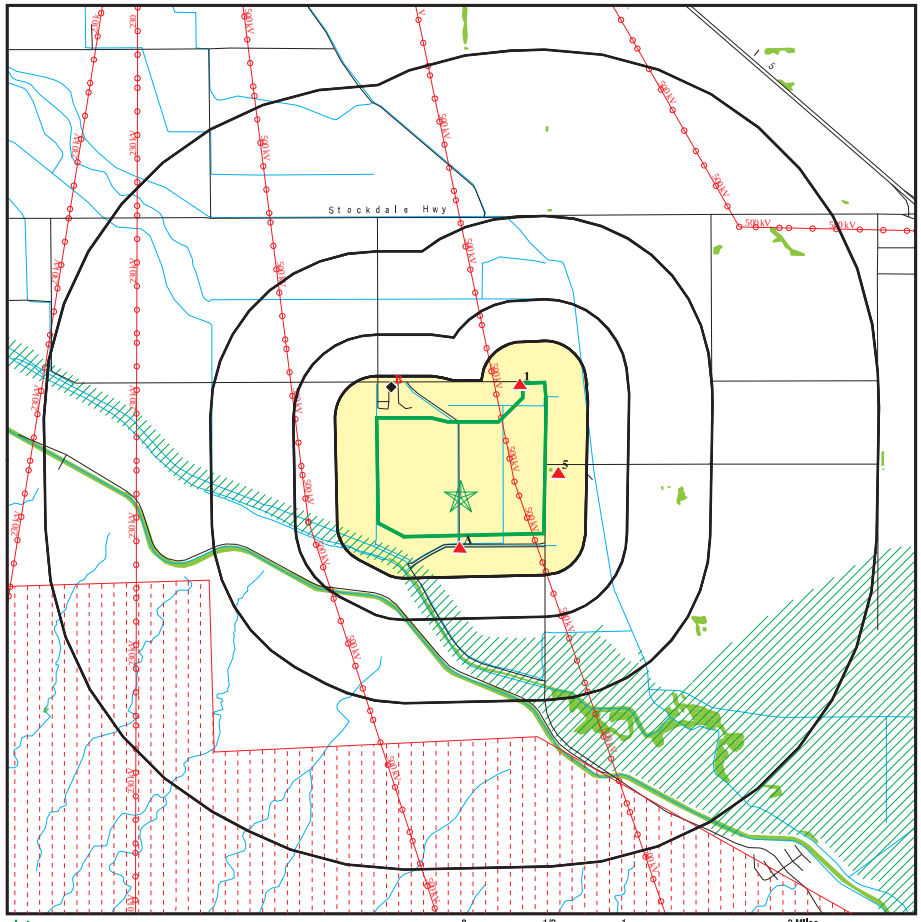
An online review and analysis by URS CORPORATION of the EMI list, as provided by EDR, and dated 12/31/2008 has revealed that there are 2 EMI sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WESTERN MILLING LLC	7361 ADOHR RD	S 0 - 1/8 (0.070 mi.)	A2	9
SHANCO COMMODITIES COMPANY INC	7361 ADOHR ROAD	S 0 - 1/8 (0.070 mi.)	A3	10

Due to poor or inadequate address information, the following sites were not mapped. Count: 57 records.

Site Name	Database(s)
CARRIZO TO MIDWAY 230 KV RECONDUCT	NPDES
TUPMAN SUBSTATION TRANSMISSION REL	NPDES
LOKERN FARMS COMPOSTING	LDS
OASIS' LIQUOR'S	SWEEPS UST
BANDUCCI & SON	SWEEPS UST
JENNIE RICCOMINI RESIDENCE	SWEEPS UST
J & R ROMANINI FARMS	SWEEPS UST
BUTTONWILLOW DEPOT	SWEEPS UST
SHELL OIL COMPANY	SWEEPS UST
GIN # 3 & 5	SWEEPS UST
ARCO GAS PLANT #8	SWEEPS UST
NORTH COLES LEVEE	SWEEPS UST
NORTH COLES LEVEE #3 WATER INJ	HIST UST, SWEEPS UST
ARCO OIL & GAS CO	LUST, CHMIRS
BUTTONWILLOW DUSTERS INC	CERC-NFRAP
SPICER CITY MARKET	LUST
PGE EAST MIDWAY SUBSTATION	UST
CHICCA BROS - BUTTONWILLOW	UST
ALVIDRES UNION 76	UST
WEST KERN MACHINERY, INC	UST
J & R ROMANINI FARMS	HIST UST
ARCO GAS PLANT #8	HIST UST
ARCO GAS PLANT #21	HIST UST
NORTH COLES LEVEE	HIST UST
DON POLLARD HAY SERVICE INC	AST
P G AND E - MIDWAY	AST
ROY AND JELSEY ROMANINI FARMS	AST
A J TORRIGIANI AND SON	AST
KOSAREFF FARMS	AST
OCCIDENTAL OF ELK HILLS INC	AST
WEATHERFORD US LP	AST
ELK HILLS POWER, LLC	WMUDS/SWAT
MONTEZ TRUCKING INC	HAZNET
URIEL GOMEZ ANGUILANO	HAZNET
CHEVRON PIPE LINE COMPANY	HAZNET
PACIFIC GAS & ELECTRIC/ MIDWAY SUB	HAZNET
WAYNE GEFFRIES	HAZNET
SOUTHERN CALIFORNIA EDISON	HAZNET
SHAWN SHIRALIAN	HAZNET
FARMER CO-OP GIN INC	HAZNET
ALVIDRES UNION 76	HAZNET
ALVIDRES AUTO SERVICE	HAZNET
SOUTHERN CALIFORNIA EDISON	HAZNET
EXXONMOBIL OIL CORP.	HAZNET
AERA ENERGY LLC	HAZNET
CENTRAL RESOURCES INC	HAZNET
HAN OVER COMPRESSION	HAZNET
GILLIAM & SONS INC	HAZNET
CHEVRON PIPE LINE COMPANY	HAZNET
KOCH OIL CO	HAZNET
BUTTONWILLOW AIRPORT	SLIC
J.R. SIMPLOT	SSTS
J.R. SIMPLOT	SSTS
J R SIMPLOT CO	SSTS
BUTTONWILLOW LAND & CATTLE CO	EMI
SEMITROPIC WATER STORAGE DIST	EMI
EXXONMOBIL OIL CORPORATION	EMI

OVERVIEW MAP - 3251004.1s

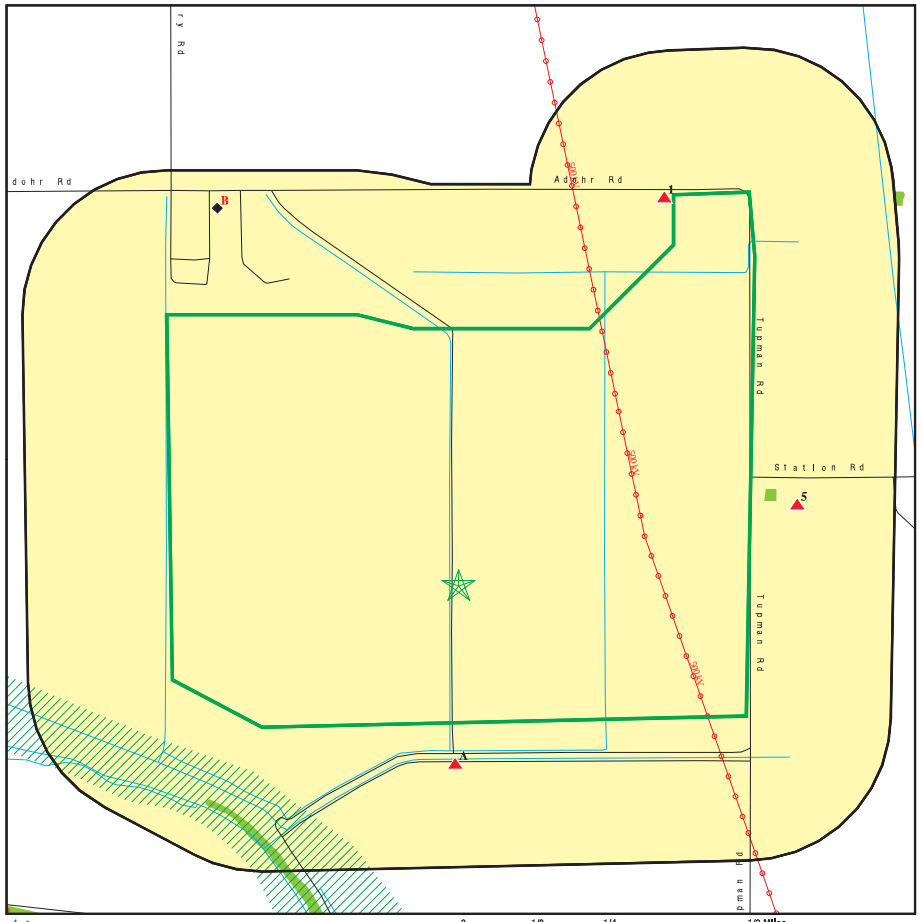


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow CA 93206 LAT/LONG: 35.3304 / 119.3857	CLIENT: URS Corporation CONTACT: Giorgio Molinario INQUIRY #: 3251004.1s DATE: March 19, 2012 4:51 pm

DETAIL MAP - 3251004.1s



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines from USGS
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This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: HECA ADDRESS: Dairy Road/Adohr Road Buttonwillow CA 93206 LAT/LONG: 35.3304 / 119.3857	CLIENT: URS Corporation CONTACT: Giorgio Molinario INQUIRY #: 3251004.1s DATE: March 19, 2012 4:53 pm

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.500		0	0	0	0	0	0
Proposed NPL	1.500		0	0	0	0	0	0
NPL LIENS	0.500		0	0	0	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.500		0	0	0	0	0	0
Federal CERCLIS list								
CERCLIS	1.000		0	0	0	0	NR	0
FEDERAL FACILITY	1.500		0	0	0	0	0	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	1.000		0	0	0	0	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.500		0	0	0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	1.000		0	0	0	0	NR	0
Federal RCRA generators list								
RCRA-LQG	0.750		0	0	0	0	NR	0
RCRA-SQG	0.750		0	0	0	0	NR	0
RCRA-CESQG	0.750		0	0	0	0	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	1.000		0	0	0	0	NR	0
US INST CONTROL	1.000		0	0	0	0	NR	0
Federal ERNS list								
ERNS	0.500		0	0	0	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.500		0	0	0	0	0	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.500		0	0	0	0	0	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	1.000		0	0	0	0	NR	0
State and tribal leaking storage tank lists								
LUST	1.000		0	0	0	0	NR	0
SLIC	1.000		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	1.000		0	0	0	0	NR	0
State and tribal registered storage tank lists								
UST	0.750		0	0	0	0	NR	0
AST	0.750		0	1	0	0	NR	1
INDIAN UST	0.750		0	0	0	0	NR	0
FEMA UST	0.750		0	0	0	0	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	1.000		0	0	0	0	NR	0
VCP	1.000		0	0	0	0	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	1.000		0	0	0	0	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	1.000		0	0	0	0	NR	0
ODI	1.000		0	0	0	0	NR	0
WMUDS/SWAT	1.000		0	0	0	0	NR	0
SWRCY	1.000		0	0	0	0	NR	0
HAULERS	0.500		0	0	0	NR	NR	0
INDIAN ODI	1.000		0	0	0	0	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	0.500		0	0	0	NR	NR	0
HIST Cal-Sites	1.500		0	0	0	0	0	0
SCH	0.750		0	0	0	0	NR	0
Toxic Pits	1.500		0	0	0	0	0	0
CDL	0.500		0	0	0	NR	NR	0
US HIST CDL	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.750		0	0	0	0	NR	0
HIST UST	0.750		2	0	0	0	NR	2
SWEEPS UST	0.750		0	1	0	0	NR	1
Local Land Records								
LIENS 2	0.500		0	0	0	NR	NR	0
LUCIS	1.000		0	0	0	0	NR	0
LIENS	0.500		0	0	0	NR	NR	0
DEED	1.000		0	0	0	0	NR	0
Records of Emergency Release Reports								
HMIRS	0.500		0	0	0	NR	NR	0
CHMIRS	0.500		0	0	0	NR	NR	0
LDS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	0.500		0	0	0	NR	NR	0
Other Ascertainable Records								
RCRA-NonGen	0.750		0	0	0	0	NR	0
DOT OPS	0.500		0	0	0	NR	NR	0
DOD	1.500		0	0	0	0	1	1
FUDS	1.500		0	0	0	0	0	0
CONSENT	1.500		0	0	0	0	0	0
ROD	1.500		0	0	0	0	0	0
UMTRA	1.000		0	0	0	0	NR	0
MINES	0.750		0	0	0	0	NR	0
TRIS	0.500		0	0	0	NR	NR	0
TSCA	0.500		0	0	0	NR	NR	0
FTTS	0.500		0	0	0	NR	NR	0
HIST FTTS	0.500		0	0	0	NR	NR	0
SSTS	0.500		0	0	0	NR	NR	0
ICIS	0.500		0	0	0	NR	NR	0
PADS	0.500		0	0	0	NR	NR	0
MLTS	0.500		0	0	0	NR	NR	0
RADINFO	0.500		0	0	0	NR	NR	0
FINDS	0.500		1	0	0	NR	NR	1
RAATS	0.500		0	0	0	NR	NR	0
CA BOND EXP. PLAN	1.500		0	0	0	0	0	0
NPDES	0.500		0	0	0	NR	NR	0
WDS	0.500		0	0	0	NR	NR	0
Cortese	1.000		0	0	0	0	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
Notify 65	1.500		0	0	0	0	0	0
DRYCLEANERS	0.750		0	0	0	0	NR	0
WIP	0.750		0	0	0	0	NR	0
ENF	0.500		0	0	0	NR	NR	0
HAZNET	0.500		0	0	0	NR	NR	0
EMI	0.500		2	0	0	NR	NR	2
INDIAN RESERV	1.500		0	0	0	0	0	0
SCRD DRYCLEANERS	1.000		0	0	0	0	NR	0
FINANCIAL ASSURANCE	0.500		0	0	0	NR	NR	0
HWP	1.500		0	0	0	0	0	0
HWT	0.750		0	0	0	0	NR	0
PCB TRANSFORMER	0.500		0	0	0	NR	NR	0
PROC	1.000		0	0	0	0	NR	0
MWMP	0.750		0	0	0	0	NR	0
COAL ASH DOE	0.500		0	0	0	NR	NR	0
COAL ASH EPA	1.000		0	0	0	0	NR	0
EDR PROPRIETARY RECORDS								
EDR Proprietary Records								
Manufactured Gas Plants	1.500		0	0	0	0	0	0
EDR Historical Auto Stations	0.750		0	0	0	0	NR	0
EDR Historical Cleaners	0.750		0	0	0	0	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

DOD
Region
WSW
> 1
5787 ft.

NAVAL PETROLEUM RESERVE NUMBER ONE
NAVAL PETROLEUM RESERVE N (County), CA

DOD

CUSA139675
N/A

DOD:
Feature 1: Navy DOD
Feature 2: Not reported
Feature 3: Not reported
URL: Not reported
Name 1: Naval Petroleum Reserve Number One
Name 2: Not reported
Name 3: Not reported
State: CA
DOD Site: Yes
Tile name: CAKERN

1
West
< 1/8
0.016 mi.
85 ft.

PALM FARMS, INC.
ADOHR RD.
BUTTONWILLOW, CA 93206

HIST UST

U001580887
N/A

Relative:
Higher

Actual:
288 ft.

HIST UST:
Region: STATE
Facility ID: 00000042966
Facility Type: Other
Other Type: FARMING
Total Tanks: 0005
Contact Name: SAM ACKERMAN
Telephone: 8053274693
Owner Name: PALM FARMS, INC.
Owner Address: P.O. BOX 1118
Owner City,St,Zip: BAKERSFIELD, CA 93302

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 5
Year Installed: Not reported
Tank Capacity: 00003000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: None

Tank Num: 003
Container Num: 3
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: REGULAR

PALM FARMS, INC. (Continued)

U001580887

Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 004
Container Num: 4
Year Installed: Not reported
Tank Capacity: 00003000
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 005
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

A2
South
< 1/8
0.070 mi.
371 ft.

WESTERN MILLING LLC
7361 ADOHR RD
BUTTONWILLOW, CA 94578

Site 1 of 3 in cluster A

EMI

S108433824
N/A

Relative:
Higher

Actual:
288 ft.

EMI:
Year: 2005
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: .9938425643605206896
Part. Matter 10 Micrometers & Smllr Tons/Yr: .288214343664551

Year: 2006
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0

WESTERN MILLING LLC (Continued) **S108433824**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1.080588793103448275
Part. Matter 10 Micrometers & Smllr Tons/Yr: .31337075

Year: 2007
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1.080588793103448275
Part. Matter 10 Micrometers & Smllr Tons/Yr: .31337075

Year: 2007
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1.080588793103448275
Part. Matter 10 Micrometers & Smllr Tons/Yr: .31337075

A3 **SHANCO COMMODITIES COMPANY INC** **EMI** **S106839184**
South **7361 ADOHR ROAD** **N/A**
< 1/8 **BUTTONWILLOW, CA**
0.070 mi.
371 ft. **Site 2 of 3 in cluster A**

Relative:
Higher

Actual:
288 ft.

EMI:
Year: 2000
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0

SHANCO COMMODITIES COMPANY INC (Continued) **S106839184**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 8
Part. Matter 10 Micrometers & Smllr Tons/Yr: 2

Year: 2003
County Code: 15
Air Basin: SJV
Facility ID: 3355
Air District Name: SJU
SIC Code: 4221
Air District Name: SAN JOAQUIN VALLEY UNIFIED APCD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1
Part. Matter 10 Micrometers & Smllr Tons/Yr: 0

A4 **WESTERN MILLING LLC** **FINDS** **1011991231**
South **7361 ADOHR RD** **N/A**
< 1/8 **BUTTONWILLOW, CA 93206**
0.070 mi.
371 ft. **Site 3 of 3 in cluster A**

Relative:
Higher

Actual:
288 ft.

FINDS:

Registry ID: 110038028461

Environmental Interest/Information System
The NEI (National Emissions Inventory) database contains information on stationary and mobile sources that emit criteria air pollutants and their precursors, as well as hazardous air pollutants (HAPs).

CRITERIA AND HAZARDOUS AIR POLLUTANT INVENTORY

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5 **MARTIN SNOW FARM** **HIST UST** **U001580882**
East **STATION RD, 1/4 MILE EAST OF** **N/A**
< 1/8 **BUTTONWILLOW, CA 93206**
0.081 mi.
429 ft.

Relative:
Higher

Actual:
288 ft.

HIST UST:
Region: STATE
Facility ID: 00000012669
Facility Type: Other
Other Type: FARMING
Total Tanks: 0000
Contact Name: MARTIN SNOW
Telephone: 8053257779
Owner Name: MARTIN SNOW
Owner Address: 3344 EL ENCANTO CT.
Owner City,St,Zip: BAKERSFIELD, CA 93301

MARTIN SNOW FARM (Continued) **U001580882**

Tank Num: 001
Container Num: 2
Year Installed: 1970
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Tank Construction: Not reported
Leak Detection: Stock Inventor

Tank Num: 002
Container Num: 1
Year Installed: 1970
Tank Capacity: 00000550
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Tank Construction: Not reported
Leak Detection: Stock Inventor

B6 **CAUZZA AG PARTNERS - PALM RANCH** **AST** **A100323375**
North **ADOHR AND DAIRY** **N/A**
1/8-1/4 **BUTTONWILLOW, CA 93206**
0.175 mi.
923 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
285 ft.

AST:
Owner: CAUZZA JOHN & LAURA
Total Gallons: 31,120
Certified Unified Program Agencies: Kern

B7 **PALM FARMS INC.** **SWEEPS UST** **S106930448**
North **ADOHR RD** **N/A**
1/8-1/4 **BUTTONWILLOW, CA 93206**
0.184 mi.
974 ft. **Site 2 of 2 in cluster B**

Relative:
Lower

Actual:
286 ft.

SWEEPS UST:
Status: A
Comp Number: 42966
Number: 9
Board Of Equalization: Not reported
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 09-30-89
Tank Status: A
Owner Tank Id: 1
Swrcb Tank Id: 15-000-042966-000001
Actv Date: 07-01-85
Capacity: 5000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: 5

Status: A
Comp Number: 42966
Number: 9

PALM FARMS INC. (Continued) **S106930448**

Board Of Equalization: Not reported
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 09-30-89
Tank Status: A
Owner Tank Id: 5
Swrcb Tank Id: 15-000-042966-000002
Actv Date: 07-01-85
Capacity: 3000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 42966
Number: 9
Board Of Equalization: Not reported
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 09-30-89
Tank Status: A
Owner Tank Id: 3
Swrcb Tank Id: 15-000-042966-000003
Actv Date: 07-01-85
Capacity: 5000
Tank Use: M.V. FUEL
Stg: P
Content: LEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 42966
Number: 9
Board Of Equalization: Not reported
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 09-30-89
Tank Status: A
Owner Tank Id: 4
Swrcb Tank Id: 15-000-042966-000004
Actv Date: 07-01-85
Capacity: 3000
Tank Use: M.V. FUEL
Stg: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: A
Comp Number: 42966
Number: 9
Board Of Equalization: Not reported
Ref Date: 07-01-85
Act Date: Not reported
Created Date: 09-30-89
Tank Status: A
Owner Tank Id: 2

PALM FARMS INC. (Continued) **S106930448**

Swrcb Tank Id: 15-000-042966-000005
Actv Date: 07-01-85
Capacity: 5000
Tank Use: M.V. FUEL
Stg: P
Content: DIESEL
Number Of Tanks: Not reported

Count: 57 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BUTTONWILLOW	1005431572	J.R. SIMPLOT	HWY 58 FRONT ST	93206	SSTS
BUTTONWILLOW	S106930076	OASIS' LIQUOR'S	I5 & 58 27736 HWY 58	93206	SWEEPS UST
BUTTONWILLOW	U004112573	PGE EAST MIDWAY SUBSTATION	I-5 & HWY 58	93206	UST
BUTTONWILLOW	S106923074	BANDUCCI & SON	RR 1 BOX 85 MCKITTRI HWY	93206	SWEEPS UST
BUTTONWILLOW	S106927755	JENNIE RICCOMINI RESIDENCE	RR 1 BOX 84 HWY 58	93206	SWEEPS UST
BUTTONWILLOW	S111079345	MONTEZ TRUCKING INC	INTERSTATE 5 S OF HWY 58	93206	HAZNET
BUTTONWILLOW	S103678965	URIEL GOMEZ ANGUILANO	HWY 5 AT BUTTONWILLOW EXIT	93206	HAZNET
BUTTONWILLOW	1009305689	J.R. SIMPLOT	41335 HWY 58	93206	SSTS
BUTTONWILLOW	U004111323	CHICCA BROS - BUTTONWILLOW	HWY 58 2.5 M W	93206	UST
BUTTONWILLOW	A100339708	DON POLLARD HAY SERVICE INC	40948 HWY 58	93206	AST
BUTTONWILLOW	A100338197	P G AND E - MIDWAY	HWY 58 3 MI W OF I-5	93206	AST
BUTTONWILLOW	A100337614	ROY AND JELSEY ROMANINI FARMS	HWY 58 AND CORN CAMP	93206	AST
BUTTONWILLOW	1012195794	J R SIMPLOT CO	41335 HWY 58	93206	SSTS
BUTTONWILLOW	U001580874	J & R ROMANINI FARMS	HIGHWAY 58	93206	HIST UST
BUTTONWILLOW	S106927573	J & R ROMANINI FARMS	HIGHWAY 58	93206	SWEEPS UST
BUTTONWILLOW	S104573772	CHEVRON PIPE LINE COMPANY	HWY 58 2 MI S OF LOKERN RD	93206	HAZNET
BUTTONWILLOW	S109429940	PACIFIC GAS & ELECTRIC/ MIDWAY SUB	HWY 58	93000	HAZNET
BUTTONWILLOW	1003879066	BUTTONWILLOW DUSTERS INC	HWY 58	93206	CERC-NFRAP
BUTTONWILLOW	S106923687	BUTTONWILLOW DEPOT	HWY 58 ON SOUTHSIDE	93206	SWEEPS UST
BUTTONWILLOW	S103643582	WAYNE GEFFRIES	22736 HWY 58/I5	00000	HAZNET
BUTTONWILLOW	S107620341	BUTTONWILLOW LAND & CATTLE CO	CORNER OF WASCO WAY & HWY 58	93206	EMI
BUTTONWILLOW	S107139197	SOUTHERN CALIFORNIA EDISON	N.W. CORNER OF HWY 58 & WASCO	93206	HAZNET
BUTTONWILLOW	S106090100	SHAWN SHIRALIAN	6725 N GOLDEN STATE BLVD	93206	HAZNET
BUTTONWILLOW	S105722435	FARMER CO-OP GIN INC	39329 HIWAY 58	00000	HAZNET
BUTTONWILLOW	S106932093	SHELL OIL COMPANY	I-5 HWY 58/TRACY AVE	93206	SWEEPS UST
BUTTONWILLOW	S103619741	ALVIDRES UNION 76	100 W HWY 58	93206	HAZNET
BUTTONWILLOW	U004112557	ALVIDRES UNION 76	100 W HWY 58 & MAIN ST	93206	UST
BUTTONWILLOW	S111082227	ALVIDRES AUTO SERVICE	100 W HWY 58 & MAIN ST	93206	HAZNET
BUTTONWILLOW	S106926734	GIN # 3 & 5	LERDO HWY & MAIN D/RA	93206	SWEEPS UST
BUTTONWILLOW	S110654331	SPICER CITY MARKET	LERDO HWY & MAIN DRAIN RD	93206	LUST
BUTTONWILLOW	S109287555	LOKERN FARMS COMPOSTING	LOKERN RD, EAST HWY 33		LDS
BUTTONWILLOW	S106921428	SEMITROPIC WATER STORAGE DIST	MERCED AVE & HWY 5		EMI
BUTTONWILLOW	S106485995	BUTTONWILLOW AIRPORT	ST. ROUTE 58	93206	SLIC
BUTTONWILLOW	A100339984	A J TORRIGIANI AND SON	N SIDE HWY 58 W OF PALOMAS	93206	AST
BUTTONWILLOW	A100338823	KOSAREFF FARMS	STOCKDALE HWY AND DUNFORD	93206	AST
BUTTONWILLOW	S108221055	SOUTHERN CALIFORNIA EDISON	N W CORNER OF HWY 58 & WASCO W	93206	HAZNET
BUTTONWILLOW	U004112556	WEST KERN MACHINERY, INC	1/4 M W/INT 5-LERDO HWY	93206	UST
BUTTONWILLOW	S111291251	CARRIZO TO MIDWAY 230 KV RECONDUCT	WASCO AND HIGHWAY 58	93206	NPDES
MCKITTRICK	S109426326	EXXONMOBIL OIL CORP.	19662 HWY 33	93206	HAZNET
TUPMAN	S103948871	AERA ENERGY LLC	25761 HIGHWAY 119	93276	HAZNET
TUPMAN	A100338159	OCCIDENTAL OF ELK HILLS INC	28590 HWY 119	93276	AST
TUPMAN	S105724360	CENTRAL RESOURCES INC	25761 HWY 119	93276	HAZNET
TUPMAN	S108748188	HAN OVER COMPRESSION	28590 HWY 119	93276	HAZNET

Count: 57 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
TUPMAN	S109934227	GILLIAM & SONS INC	28590 HIGHWAY 19	93276	HAZNET
TUPMAN	S103479930	ARCO OIL & GAS CO	NORTH COLES LEVEE	93276	LUST, CHMIRS
TUPMAN	S106830898	EXXONMOBIL OIL CORPORATION	EMIDIO PUMPING STATION	93276	EMI
TUPMAN	S106922801	ARCO GAS PLANT #8	25 MI OF BAKERSFIELD/TA HWY	93276	SWEEPS UST
TUPMAN	U001583279	ARCO GAS PLANT #8	25 MI OF BAKERSFIELD/TAFT HWY	93276	HIST UST
TUPMAN	U001583278	ARCO GAS PLANT #21	25 MI OF BAKERSFIELD/TAFT HWY	93276	HIST UST
TUPMAN	S110737006	TUPMAN SUBSTATION TRANSMISSION REL	OFF STOCKDALE HWY NEAR HWY 43	93276	NPDES
TUPMAN	S102806170	CHEVRON PIPE LINE COMPANY	TUPMAN RD.	93276	HAZNET
TUPMAN	A100337228	WEATHERFORD US LP	25890 TUPMAN	93276	AST
TUPMAN	S103680088	KOCH OIL CO	TUPMAN RD/HWY 119	93276	HAZNET
TUPMAN	S106929957	NORTH COLES LEVEE	23 MI W OF BAKERSFIELD HWY 119	93276	SWEEPS UST
TUPMAN	U001583282	NORTH COLES LEVEE	23 MI W OF BAKERSFIELD/HWY 119	93276	HIST UST
TUPMAN	U001583283	NORTH COLES LEVEE #3 WATER INJ	25 MI W OF BAKERSFIELD HWY 119	93276	HIST UST, SWEEPS UST
TUPMAN CA	S104384508	ELK HILLS POWER, LLC	PO BOX 1001	93276	WMUDS/SWAT

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 09/07/2011
Date Data Arrived at EDR: 10/12/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 141

Source: EPA
Telephone: N/A
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites
A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 09/07/2011
Date Data Arrived at EDR: 10/12/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 141

Source: EPA
Telephone: N/A
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens
Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions
The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 09/07/2011
Date Data Arrived at EDR: 10/12/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 141
Source: EPA
Telephone: N/A
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/27/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14
Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing
A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2010
Date Data Arrived at EDR: 01/11/2011
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 36
Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/13/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 12/28/2011
Date Data Arrived at EDR: 02/27/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 14
Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 08/19/2011
Date Data Arrived at EDR: 08/31/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 132
Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 01/05/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 67
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 01/05/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 67
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 01/05/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 67
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 01/05/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 67
Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 12/30/2011
Date Data Arrived at EDR: 12/30/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 10/03/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/18/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites
Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/07/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database
The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/07/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 15

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System
Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/21/2011
Date Data Arrived at EDR: 11/22/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 21

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Quarterly

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/20/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 32

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/20/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 32

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16
Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22
Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 7
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/03/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 09/12/2011
Date Data Arrived at EDR: 09/13/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 59
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Semi-Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/07/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 34
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 11/01/2011
Date Data Arrived at EDR: 11/21/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 50
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/20/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 33
Source: SWRCB
Telephone: 916-480-1028
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
Registered Aboveground Storage Tanks.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21
Source: State Water Resources Control Board
Telephone: 916-341-5712
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 7
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 42
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 25
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/01/2011
Date Data Arrived at EDR: 11/21/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 50
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/10/2011
Date Data Arrived at EDR: 05/11/2011
Date Made Active in Reports: 06/14/2011
Number of Days to Update: 34
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 07/01/2011
Date Data Arrived at EDR: 08/26/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 18
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 12/14/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 26
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2011
Date Data Arrived at EDR: 11/01/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 10
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 02/03/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/16/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/07/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 15
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 08/04/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 01/06/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/27/2011
Date Data Arrived at EDR: 06/27/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 78
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/12/2011
Date Data Arrived at EDR: 12/19/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 31
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/24/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 28
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/06/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 10/07/2011
Date Data Arrived at EDR: 12/09/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 32
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/06/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 02/07/2012
Date Data Arrived at EDR: 02/07/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 15
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/15/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/14/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 7
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/07/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 09/01/2007
Date Data Arrived at EDR: 11/19/2008
Date Made Active in Reports: 03/30/2009
Number of Days to Update: 131
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24
Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8
Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing
Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 09/09/2011
Date Data Arrived at EDR: 09/16/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 13
Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

LUCIS: Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/09/2005
Date Data Arrived at EDR: 12/11/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 31
Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Varies

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 12/16/2011
Date Data Arrived at EDR: 12/16/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 34
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 12/12/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 37

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/13/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 10/04/2011
Date Data Arrived at EDR: 10/04/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 38

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 05/03/2011
Date Made Active in Reports: 06/15/2011
Number of Days to Update: 43

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/20/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 32

Source: State Water Quality Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 01/20/2012
Date Data Arrived at EDR: 01/20/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 32

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

Other Ascertainable Records

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRA-NonGen: RCRA - Non Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 11/10/2011
Date Data Arrived at EDR: 01/05/2012
Date Made Active in Reports: 03/12/2012
Number of Days to Update: 67

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/05/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/29/2011
Date Data Arrived at EDR: 08/09/2011
Date Made Active in Reports: 11/11/2011
Number of Days to Update: 94

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/07/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 08/12/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 112

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 01/25/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 36

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 09/28/2011
Date Data Arrived at EDR: 12/14/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 27

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/14/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/28/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Varies

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/18/2011
Date Data Arrived at EDR: 09/08/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 21

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/07/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 09/01/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 131

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/28/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2006
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 64

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 07/20/2011
Date Data Arrived at EDR: 11/10/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 61

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/01/2010
Date Data Arrived at EDR: 11/10/2010
Date Made Active in Reports: 02/16/2011
Number of Days to Update: 98

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/21/2011
Date Data Arrived at EDR: 07/15/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 60
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 01/10/2012
Date Data Arrived at EDR: 01/12/2012
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 49
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/12/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/23/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 79
Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/13/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System
The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 03/01/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 62
Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Biennially

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Quarterly

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/21/2011
Date Data Arrived at EDR: 11/22/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 21
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Quarterly

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 01/03/2012
Date Data Arrived at EDR: 01/03/2012
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 16
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 01/03/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/20/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 01/19/2012
Date Data Arrived at EDR: 01/19/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 33
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 08/15/2011
Date Data Arrived at EDR: 08/23/2011
Date Made Active in Reports: 10/03/2011
Number of Days to Update: 41
Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/19/2011
Date Made Active in Reports: 08/16/2011
Number of Days to Update: 28
Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2008
Date Data Arrived at EDR: 09/29/2010
Date Made Active in Reports: 10/18/2010
Number of Days to Update: 19
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34
Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing
The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54
Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/06/2012
Next Scheduled EDR Contact: 05/07/2012
Data Release Frequency: Varies

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/12/2011
Date Data Arrived at EDR: 12/19/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 31
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 12/07/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 35
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

COAL ASH DOE: Sleam-Electric Plan Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 01/18/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 08/17/2010
Date Data Arrived at EDR: 01/03/2011
Date Made Active in Reports: 03/21/2011
Number of Days to Update: 77
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/16/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/18/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 34
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/18/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/09/2010
Date Data Arrived at EDR: 08/11/2010
Date Made Active in Reports: 08/20/2010
Number of Days to Update: 9
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 12/02/2011
Next Scheduled EDR Contact: 03/12/2012
Data Release Frequency: Quarterly

FINANCIAL ASSURANCE 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/29/2011
Date Data Arrived at EDR: 11/30/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 13
Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Varies

FINANCIAL ASSURANCE 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 03/01/2007
Date Data Arrived at EDR: 06/01/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 02/03/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands
Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339
Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: N/A

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/03/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

EDR PROPRIETARY RECORDS

EDR Proprietary Records

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites
A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/12/2012
Date Data Arrived at EDR: 01/13/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 39
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Semi-Annually

Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 01/12/2012
Date Data Arrived at EDR: 01/13/2012
Date Made Active in Reports: 02/24/2012
Number of Days to Update: 42
Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/30/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/28/2011
Date Data Arrived at EDR: 11/29/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 14

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/07/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Semi-Annually

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 08/31/2010
Date Data Arrived at EDR: 09/01/2010
Date Made Active in Reports: 09/30/2010
Number of Days to Update: 29

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 03/16/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/20/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 09/29/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 35

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 10/17/2011
Next Scheduled EDR Contact: 01/30/2012
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/23/2012
Date Data Arrived at EDR: 01/24/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 28

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/24/2012
Next Scheduled EDR Contact: 05/07/2012
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 11/17/2011
Next Scheduled EDR Contact: 03/05/2012
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 12/29/2011
Date Data Arrived at EDR: 02/02/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 19

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 05/07/2012
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/23/2012
Date Data Arrived at EDR: 01/25/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 28

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 04/06/2012
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/28/2003
Date Data Arrived at EDR: 10/23/2003
Date Made Active in Reports: 11/26/2003
Number of Days to Update: 34

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 03/05/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/16/2012
Date Data Arrived at EDR: 01/18/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 35

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/16/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Semi-Annually

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/13/2012
Date Data Arrived at EDR: 01/24/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 01/09/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Semi-Annually

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 03/05/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 12/05/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: No Update Planned

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 4
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/01/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 4
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2011
Date Data Arrived at EDR: 11/18/2011
Date Made Active in Reports: 12/14/2011
Number of Days to Update: 26
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/12/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 37
Source: Placer County Health and Human Services
Telephone: 530-889-7312
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/26/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 26
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/26/2012
Date Made Active in Reports: 02/24/2012
Number of Days to Update: 29
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/26/2012
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 08/02/2011
Date Data Arrived at EDR: 10/12/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 27
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/13/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2011
Date Data Arrived at EDR: 10/14/2011
Date Made Active in Reports: 11/08/2011
Number of Days to Update: 25
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/13/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 12/16/2011
Number of Days to Update: 15
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database
The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/09/2010
Date Data Arrived at EDR: 09/15/2010
Date Made Active in Reports: 09/29/2010
Number of Days to Update: 14
Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/16/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2011
Date Data Arrived at EDR: 11/04/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 39
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 01/18/2012
Date Data Arrived at EDR: 01/18/2012
Date Made Active in Reports: 02/22/2012
Number of Days to Update: 35
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 01/09/2012
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Semi-Annually

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 01/17/2012
Date Data Arrived at EDR: 01/17/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 35
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/19/2012
Next Scheduled EDR Contact: 07/02/2012
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/15/2011
Date Data Arrived at EDR: 12/15/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 35
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/19/2012
Next Scheduled EDR Contact: 07/02/2012
Data Release Frequency: Semi-Annually

SANTA CLARA COUNTY:

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/09/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 41
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 03/05/2012
Next Scheduled EDR Contact: 06/18/2012
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/16/2012
Date Data Arrived at EDR: 02/17/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 4
Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/13/2012
Next Scheduled EDR Contact: 05/28/2012
Data Release Frequency: Annually

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/19/2011
Date Data Arrived at EDR: 01/06/2012
Date Made Active in Reports: 01/27/2012
Number of Days to Update: 21
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/19/2012
Next Scheduled EDR Contact: 07/02/2012
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/19/2011
Date Data Arrived at EDR: 01/17/2012
Date Made Active in Reports: 02/24/2012
Number of Days to Update: 38
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/19/2012
Next Scheduled EDR Contact: 07/02/2012
Data Release Frequency: Quarterly

SONOMA COUNTY:

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/05/2011
Date Data Arrived at EDR: 04/06/2011
Date Made Active in Reports: 05/12/2011
Number of Days to Update: 36

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/27/2011
Next Scheduled EDR Contact: 04/16/2012
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/12/2011
Date Data Arrived at EDR: 12/13/2011
Date Made Active in Reports: 01/17/2012
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/12/2012
Next Scheduled EDR Contact: 06/25/2012
Data Release Frequency: Semi-Annually

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 10/27/2011
Date Data Arrived at EDR: 11/23/2011
Date Made Active in Reports: 12/13/2011
Number of Days to Update: 20

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/09/2012
Next Scheduled EDR Contact: 04/23/2012
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/27/2011
Date Data Arrived at EDR: 02/03/2012
Date Made Active in Reports: 02/21/2012
Number of Days to Update: 18

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/30/2012
Next Scheduled EDR Contact: 05/14/2012
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/19/2011
Date Made Active in Reports: 01/17/2012
Number of Days to Update: 29

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/19/2011
Next Scheduled EDR Contact: 04/02/2012
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 12/28/2011
Date Data Arrived at EDR: 01/06/2012
Date Made Active in Reports: 01/17/2012
Number of Days to Update: 11

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/21/2011
Next Scheduled EDR Contact: 04/09/2012
Data Release Frequency: Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/20/2012
Date Data Arrived at EDR: 02/20/2012
Date Made Active in Reports: 03/15/2012
Number of Days to Update: 24

Source: Department of Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/20/2012
Next Scheduled EDR Contact: 06/04/2012
Data Release Frequency: Annually

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 07/20/2011
Date Made Active in Reports: 08/11/2011
Number of Days to Update: 22

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/20/2012
Next Scheduled EDR Contact: 04/30/2012
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/10/2012
Date Data Arrived at EDR: 02/09/2012
Date Made Active in Reports: 03/09/2012
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/09/2012
Next Scheduled EDR Contact: 05/21/2012
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 01/26/2012
Date Made Active in Reports: 03/06/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/23/2012
Next Scheduled EDR Contact: 05/07/2012
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 06/24/2011
Date Made Active in Reports: 06/30/2011
Number of Days to Update: 6

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/27/2012
Next Scheduled EDR Contact: 06/11/2012
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2010
Date Data Arrived at EDR: 08/19/2011
Date Made Active in Reports: 09/15/2011
Number of Days to Update: 27

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/19/2012
Next Scheduled EDR Contact: 07/02/2012
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data
Source: Rextag Strategies Corp.
Telephone: (281) 769-2247
U.S. Electric Transmission and Power Plants Systems Digital GIS Data

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

HECA
DAIRY ROAD/ADOHR ROAD
BUTTONWILLOW, CA 93206

TARGET PROPERTY COORDINATES

Latitude (North):	35.3304 - 35° 19' 49.44"
Longitude (West):	119.3857 - 119° 23' 8.52"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	283153.6
UTM Y (Meters):	3912097.2
Elevation:	288 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	35119-C4 EAST ELK HILLS, CA
Most Recent Revision:	1973
East Map:	35119-C3 TUPMAN, CA
Most Recent Revision:	1973

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

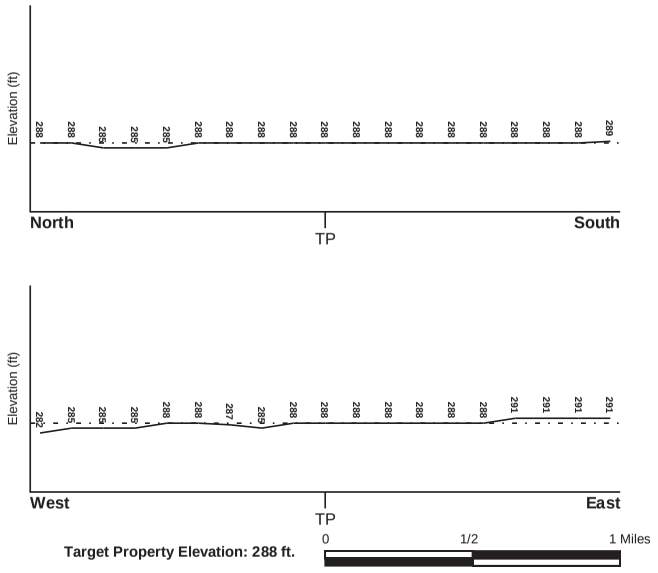
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
KERN, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property: 06029C - FEMA DFIRM Flood data

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
EAST ELK HILLS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius: 1.25 miles
Status: Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

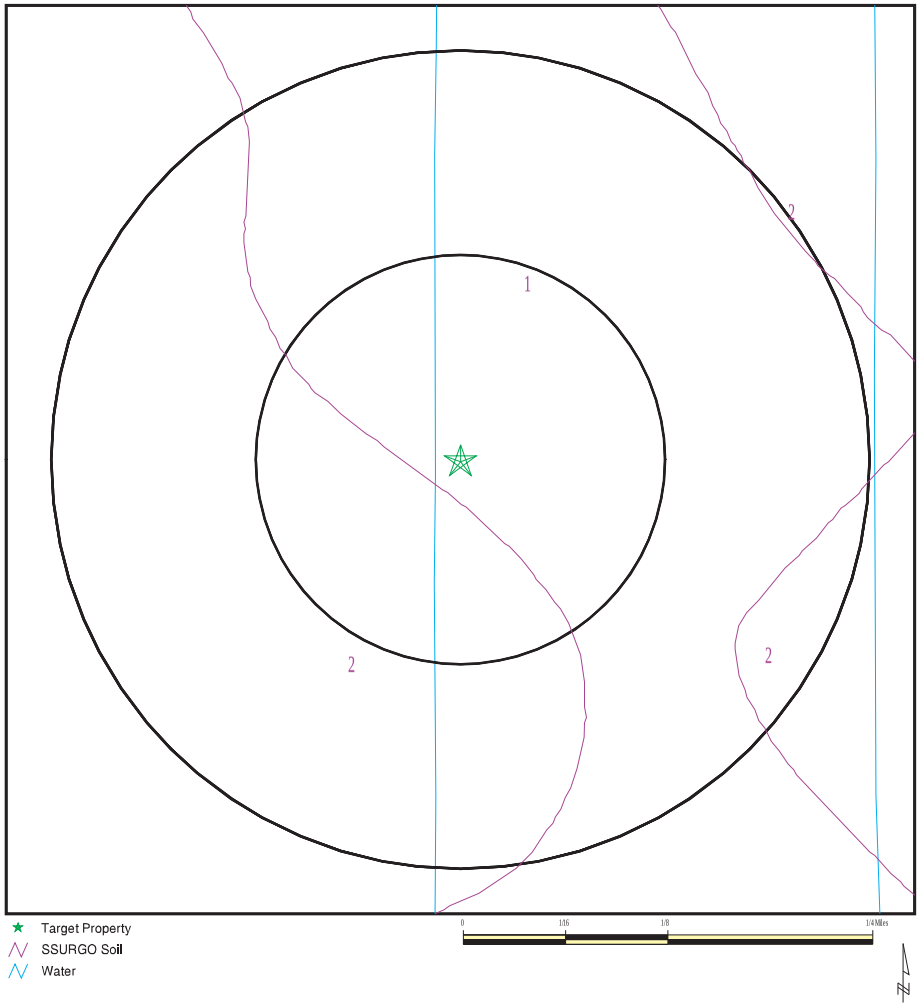
GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT		GEOLOGIC AGE IDENTIFICATION	
Era:	Cenozoic	Category:	Stratifed Sequence
System:	Quaternary		
Series:	Quaternary		
Code:	Q *(decoded above as Era, System & Series)*		

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 3251004.1s



SITE NAME:	HECA
ADDRESS:	Dairy Road/Adohr Road Buttonwillow CA 93206
LAT/LONG:	35.3304 / 119.3857
CLIENT:	URS Corporation
CONTACT:	Giorgio Molinario
INQUIRY #:	3251004.1s
DATE:	March 19, 2012 4:53 pm

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: BUTTONWILLOW

Soil Surface Texture:
Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches		Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9
2	27 inches	55 inches		Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9
3	55 inches	64 inches		Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9

Soil Map ID: 2

Soil Component Name: LOKERN

Soil Surface Texture:
Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches		Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9
2	7 inches	48 inches		Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9
3	48 inches	66 inches		Not reported	Not reported	Max: 14 Min: 4	Max: 8.4 Min: 7.9

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3175424	1/4 - 1/2 Mile NW
2	USGS3175401	1/4 - 1/2 Mile SSW
4	USGS3175386	1/2 - 1 Mile SW
6	USGS3175411	1/2 - 1 Mile East
B7	USGS3175402	1/2 - 1 Mile WSW
A8	USGS3175428	1/2 - 1 Mile ENE
10	USGS3175257	1/2 - 1 Mile NE
C12	USGS3175271	1/2 - 1 Mile North
D13	USGS3175248	1/2 - 1 Mile NW

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

No PWS System Found

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

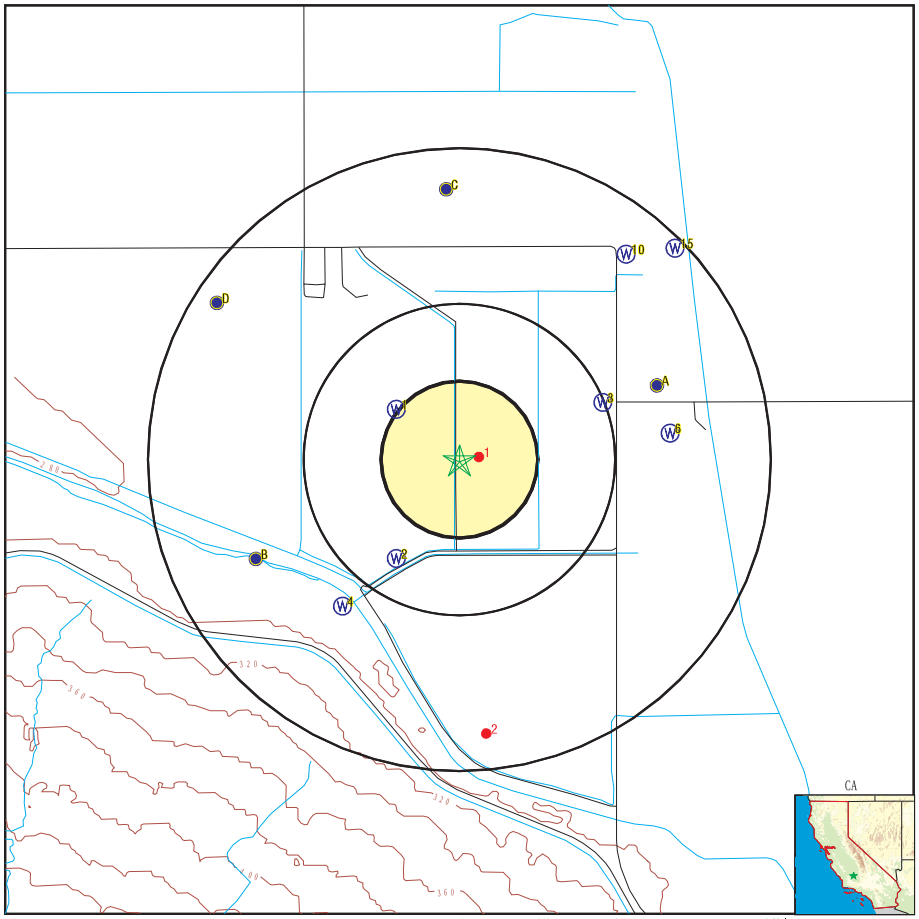
MAP ID	WELL ID	LOCATION FROM TP
3	CADW40000021752	1/4 - 1/2 Mile ENE
A5	CADW40000021761	1/2 - 1 Mile ENE
B9	CADW40000021665	1/2 - 1 Mile WSW
C11	CADW40000021850	1/2 - 1 Mile North
D14	CADW40000021799	1/2 - 1 Mile WNW
15	17492	1/2 - 1 Mile NE

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CAOG80000105543	0 - 1/8 Mile East
2	CAOG80000102967	1/2 - 1 Mile South

PHYSICAL SETTING SOURCE MAP - 3251004.1s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME: HECA	CLIENT: URS Corporation
ADDRESS: Dairy Road/Adohr Road Buttonwillow CA 93206	CONTACT: Giorgio Molinario INQUIRY #: 3251004.1s
LAT/LONG: 35.3304 / 119.3857	DATE: March 19, 2012 4:53 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
1 **NW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS3175424**

Agency cd:	USGS	Site no:	351958119231801
Site name:	030S024E10F001M		
Latitude:	351958	EDR Site id:	USGS3175424
Longitude:	1192318	Dec lat:	35.33274015
Dec lon:	-119.38928149	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S10 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360
Altitude:	286.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

	Database	EDR ID Number
2 **SSW** **1/4 - 1/2 Mile** **Lower**	**FED USGS**	**USGS3175401**

Agency cd:	USGS	Site no:	351933119231801
Site name:	031S024E10P002M		
Latitude:	351933	EDR Site id:	USGS3175401
Longitude:	1192318	Dec lat:	35.32579584
Dec lon:	-119.38928152	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S10 T31S R24E M
Location map:	KERN RIVER F2	Map scale:	63360

Altitude:	300.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

3
ENE
1/4 - 1/2 Mile
Higher

CA WELLS **CADW40000021752**

Longitude:	-119.3766
Latiude:	35.3331
Stwellno:	30S24E11E061M
Districtco:	8
Welluseco:	O
Countyco:	15
Gwcode:	502214
Site id:	CADW40000021752

4
SW
1/2 - 1 Mile
Higher

FED USGS **USGS3175386**

Agency cd:	USGS	Site no:	351925119232901
Site name:	030S024E15D001M		
Latitude:	351925	EDR Site id:	USGS3175386
Longitude:	1192329	Dec lat:	35.32357368
Dec lon:	-119.3923372	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	SES15 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360

Altitude:	Not Reported		
Altitude method:	Not Reported		
Altitude accuracy:	Not Reported		
Altitude datum:	Not Reported		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	1954
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	502	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

A5
ENE
1/2 - 1 Mile
Higher

CA WELLS **CADW40000021761**

Longitude:	-119.374
Latiude:	35.3339
Stwellno:	30S24E11E001M
Districtco:	3
Welluseco:	Z
Countyco:	15
Gwcode:	502214
Site id:	CADW40000021761

6
East
1/2 - 1 Mile
Higher

FED USGS **USGS3175411**

Agency cd:	USGS	Site no:	351954119222201
Site name:	030S024E11L001M		
Latitude:	351954	EDR Site id:	USGS3175411
Longitude:	1192222	Dec lat:	35.33162899
Dec lon:	-119.37372536	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S11 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360

Altitude:	488.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

B7
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS3175402**

Agency cd:	USGS	Site no:	351933119234501
Site name:	030S024E09R001M		
Latitude:	351933	EDR Site id:	USGS3175402
Longitude:	1192345	Dec lat:	35.32579587
Dec lon:	-119.3967818	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S09 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360
Altitude:	285.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	1957
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	522	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00

Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1961-02-20	Ground water data end date:	1961-02-20
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-02-20	70.00	

A8
ENE
1/2 - 1 Mile
Higher

FED USGS **USGS3175428**

Agency cd:	USGS	Site no:	352002119222301
Site name:	030S024E11E001M		
Latitude:	352002	EDR Site id:	USGS3175428
Longitude:	1192223	Dec lat:	35.33385117
Dec lon:	-119.37400313	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S11 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360
Altitude:	285.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1961-02-19	Ground water data end date:	1961-02-19
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-02-19	67.00	

B9
WSW
1/2 - 1 Mile
Higher

CA WELLS **CADW40000021665**

Longitude:	-119.3968
Latiude:	35.3258
Stwellno:	30S24E09R001M
Districtco:	3
Welluseco:	Z
Countyco:	15
Gwcode:	502214
Site id:	CADW40000021665

10
NE
1/2 - 1 Mile
Higher

FED USGS **USGS3175257**

Agency cd:	USGS	Site no:	352024119223101
Site name:	030S024E11E002M		
Latitude:	352024	EDR Site id:	USGS3175257
Longitude:	1192231	Dec lat:	35.33996216
Dec lon:	-119.3762254	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	Not Reported
Location map:	EAST ELK HILLS	Map scale:	24000
Altitude:	287.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	10		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Valley flat		
Site type:	Ground-water other than Spring	Date construction:	1983
Date inventoried:	19890407	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	19.20	Hole depth:	Not Reported
Source of depth data:	other government (other than USGS)		
Project number:	470645674		
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

C11
North
1/2 - 1 Mile
Higher

CA WELLS **CADW40000021850**

Longitude:	-119.386
Latiude:	35.343
Stwellno:	30S24E03Q001M
Districtco:	3
Welluseco:	Z
Countyco:	15
Gwcode:	502214
Site id:	CADW40000021850

C12
North
1/2 - 1 Mile
Higher

FED USGS **USGS3175271**

Agency cd:	USGS	Site no:	352035119230601
Site name:	030S024E03Q001M		
Latitude:	352035	EDR Site id:	USGS3175271
Longitude:	1192306	Dec lat:	35.3430177
Dec lon:	-119.38594797	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	S03 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360
Altitude:	286.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	1957
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	564	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1961-02-20	Ground water data end date:	1961-02-20
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-02-20	66.00	

D13
NW
1/2 - 1 Mile
Lower

FED USGS **USGS3175248**

Agency cd:	USGS	Site no:	352016119235301
Site name:	030S024E09A001M		
Latitude:	352016	EDR Site id:	USGS3175248
Longitude:	1192353	Dec lat:	35.33774009
Dec lon:	-119.39900404	Coor meth:	M
Coor accr:	S	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	029
Country:	US	Land net:	NES09 T30S R24E M
Location map:	KERN RIVER F2	Map scale:	63360
Altitude:	284.00		
Altitude method:	Interpolated from topographic map		
Altitude accuracy:	5		
Altitude datum:	National Geodetic Vertical Datum of 1929		
Hydrologic:	TulareBuena Vista Lakes. California. Area = 8510 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y		
Type of ground water site:	Single well, other than collector or Ranney type		
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	168	Hole depth:	Not Reported
Source of depth data:	Not Reported		
Project number:	Not Reported		
Real time data flag:	0	Daily flow data begin date:	0000-00-00
Daily flow data end date:	0000-00-00	Daily flow data count:	0
Peak flow data begin date:	0000-00-00	Peak flow data end date:	0000-00-00
Peak flow data count:	0	Water quality data begin date:	0000-00-00
Water quality data end date:	0000-00-00	Water quality data count:	0
Ground water data begin date:	1961-02-21	Ground water data end date:	1961-02-21
Ground water data count:	1		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1961-02-21	53.00	

D14
WNW
1/2 - 1 Mile
Lower

CA WELLS **CADW40000021799**

Longitude:	-119.399
Latiude:	35.3377
Stwellno:	30S24E09A001M
Districtco:	3
Welluseco:	Z
Countyco:	15
Gwcode:	502214
Site id:	CADW40000021799

15
NE
1/2 - 1 Mile
Higher

CA WELLS **17492**

Water System Information:

Prime Station Code:	30S/24E-11D02 M	User ID:	15C
FRDS Number:	1500157001	County:	Kern
District Number:	45	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	352025.0 1192221.0	Precision:	0.5 Mile (30 Seconds)
Source Name:	WELL 01		
System Number:	1500157		
System Name:	PALM FARMS INC		
Organization That Operates System:	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance — Database — EDR ID Number

1
East
0 - 1/8 Mile — **OIL_GAS** — **CAOG80000105543**

Districtnu:	4	Apinumber:	02952932
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	Quintana Production Co.		
Wellnumber:	56X-10	Leasename:	Union-Gamay
Blmwell:	N	Countyname:	Kern
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	10	Township:	30S
Range:	24E	Basemeridi:	MD
Elevation:	286 MAT		
Locationde:	Fr SE cor 1750N 2450W		
Latitude83:	35.33052		
Longitude8:	-119.384598		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	06988	Cacountyco:	029
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000105543		

2
South
1/2 - 1 Mile — **OIL_GAS** — **CAOG80000102967**

Districtnu:	4	Apinumber:	02937474
Activewell:	N	Well type:	OG
Wellsymbol:	DH	Confidenti:	Not Reported
Operatorna:	E. A. Bender, Operator		
Wellnumber:	55	Leasename:	Palm Farms
Blmwell:	N	Countyname:	Kern
Fieldname:	Any Field		
Areaname:	Any Area		
Section :	15	Township:	30S
Range:	24E	Basemeridi:	MD
Elevation:	299 KB		
Locationde:	Fr ctr 330S 330E		
Latitude83:	35.317644		
Longitude8:	-119.384176		
Gissourcec:	hud		
Comments:	Not Reported		
Operatorco:	B3300	Cacountyco:	029
Fieldcode:	000	Areacode:	00
Td:	0		
Site id:	CAOG80000102967		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93206	1	0

Federal EPA Radon Zone for KERN County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93206

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.900 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Health Services
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

APPENDIX E

Port Organics Products, LTD Tailing Piles Analyses

from 2009 (AECOM) and

2005 (Kern County Environmental Health Department)

Results from AECOM

AECOM

AECOM Environment
3995 Via Oro Avenue, Long Beach, CA 90810
T 562.420.2933 F 562.420.2915 www.aecom.com

September 9, 2009

Mr. Pete Kafalas
Hydrogen Energy International LLC
One World Trade Center
Long Beach, California 90831

Subject: Results of Soil Sampling Activities
Proposed Site near the Intersection of Dairy Rd and Adohr Rd
Buttonwillow, California

Dear Mr. Kafalas,

On behalf of Hydrogen Energy International LLC (HEI), AECOM Environment (AECOM) submits this report describing the sampling and analytical test results of soil samples collected from two tailings piles at the proposed project site in Kern County in order to facilitate waste characterization of the tailings piles in preparation for removal and disposal. Soil sampling was conducted and analytical testing of the collected soil samples for total petroleum hydrocarbons (TPH), Volatile Organic Compounds (VOC), CAM 17 Metals, pH, ammonia, and acute fish toxicity bioassay (96 hour).

Soil sampling activities

In accordance with the work plan, four soil samples were collected from the indoor tailings pile located inside a barn type structure at .5 feet below ground surface (bgs), one from West side of the pile, two from the North side, and one from the East side (South side of the pile is against the wall of the structure and is inaccessible). Four samples from an outdoor tailings pile (located east of the barn structure) were taken at .5 feet bgs, one from each cardinal side. Additionally, two background samples (from .5 feet bgs) were taken from areas near the perimeter of the site in areas distant from the former operations of the facility (fence line south of the barn) and were presumed unlikely to be contaminated. Sample locations are marked and designated in the attached Figure 1. The samples were collected for analyses of TPH, VOC, CAM 17 Metals, pH, ammonia, and acute fish toxicity bioassay using disposable sampling scoops and 32oz glass containers. Soil samples were placed in an ice-filled cooler and shipped via Federal Express to EMSL Analytical Inc, a National Environmental Laboratory Accreditation Conference (NELAC) certified laboratory, under standard chain-of-custody procedures. EMSL performed analysis of TPH, VOC, CAM 17 Metals, pH and ammonia. Acute fish toxicity bioassay was performed by Associated Laboratories, also a National Environmental Laboratory Accreditation Conference (NELAC) certified laboratory.

Analytical Results Review

Soil samples were analyzed for TPH as diesel-range organics (TPH-DRO), using EPA Method 8015B, VOCs using EPA Method 8260B, CAM 17 Metals using EPA Method 6010B (EPA Method 7471A for Mercury) and pH using EPA Method 9045C. EPA test method for acute fish toxicity analysis will be determined by Associated Laboratories. A summary of soil analytical results for constituents above regulatory limits is provided in Table 1. Attachment 1 contains the EMSL laboratory reports.

All soil samples (from inside tailings pile, the outside tailings pile, and the background samples) were within acceptable pH range for non-hazardous disposal. CAM 17 Metals analysis showed elevated

levels, above regulatory limits for land designated for commercial use, of Arsenic in 3 of the 4 indoor tailings pile samples (001, 003, and 004), 3 of 4 outdoor tailings pile samples (001, 003, and 004). Background samples, while below regulatory limits, showed elevated levels of Arsenic (4.8 mg/kg and 4.5 mg/kg respectively). Based on the Phase I Environmental Site Assessment conducted by URS in April 2009, elevated levels of Arsenic can be considered normal for the area and are likely due to the natural geology of the area. Other metals were also detected above limits; please refer to Table 1 for detailed results. TPH-DRO was detected at levels significantly above the reporting limits in all of the indoor soil samples. No VOCs were detected above their respective reporting limits in any of the soil samples. Samples from the indoor tailings pile (HECA-IN-001, 002, 003, and 004) failed the acute fish toxicity bioassay with an LC50 <500 mg/L, which classifies the material as Hazardous Waste. Samples from the outdoor tailings pile (HECA-OUT-001, 002, 003, and 004) as well as the two background samples (HECA-BG-001, and 002) passed the acute fish toxicity bioassay with an LC50>750 mg/L.

Waste Management

No waste was generated as result of the soil sampling activities. No waste manifests are included with this report.

Determinations

Due to the elevated TPH-DRO levels found in the indoor tailings pile and the elevated levels of metals and ammonia found in the outdoor tailings pile, and the results of the acute fish toxicity bioassay, the determination is that the tailings piles will have to be disposed of as non-RCRA hazardous waste pursuant to CCR Title 22. AECOM contacted the Clean Harbors disposal site in Buttonwillow, CA and a full waste categorization was completed, which concluded that the tailings can be disposed of as non-RCRA Hazardous Waste. Based on the analysis, AECOM secured estimates for transportation and disposal from Clean Harbors Inc. and Belshire Environmental. Clean Harbors, due to the proximity of their disposal site to the proposed project site (both in Buttonwillow, CA) estimated transportation costs of $380 per load (23-24 tons per truck, five total loads estimated) and disposal costs of $20 per ton ($36 per ton total cost for transportation and disposal). Belshire Environmental estimated costs for transportation and disposal at roughly $80 per ton.

Should you have any questions or need further information regarding the above, please contact Galen Cooter from AECOM at (562) 420-2933.

Sincerely yours,

Galen Cooter
Senior Staff Specialist
galen.cooter@aecom.com

cc: Aniekan Udobot – AECOM
Matthew George – AECOM

Enclosures: Table 1 – Constituents Above Regulatory Limits
Figure 1 – Sample Locations and Designations
Attachment 1 – Laboratory Reports

Table 1 – Constituents Above Regulatory Limits

Table 1

Sample Number	Constituent	Concentration (mg/kg)	Regulatory Limit (mg/kg)
HECA-IN-001	Arsenic	5.5	5
	TPH-DRO	4500	1000
	Fish Toxicity	LC50<500	LC50>500
HECA-IN-002	Mercury	0.31	0.2
	TPH-DRO	5400	1000
	Fish Toxicity	LC50<500	LC50>500
HECA-IN-003	Arsenic	5.6	5
	TPH-DRO	5900	1000
	Fish Toxicity	LC50<500	LC50>500
HECA-IN-004	Arsenic	6.1	5
	TPH-DRO	4600	1000
	Fish Toxicity	LC50<500	LC50>500
HECA-OUT-001	Arsenic	5.6	5
	Cadmium	2	1
	Chromium	10	5
	Ammonia	43000	410
HECA-OUT-002	Cadmium	2	1
	Chromium	8.7	5
	Ammonia	35000	410
HECA-OUT-003	Arsenic	8.6	5
	Cadmium	2.6	1
	Chromium	15	5
	Copper	30	25
	Lead	11	5
	Vanadium	31	24
	Zinc	250	250
	Ammonia	38000	410
HECA-OUT-004	Arsenic	6.4	5
	Cadmium	1.6	1
	Chromium	6.8	5
	Ammonia	36000	410
HECA-BG-001	Chromium	3.5	5
	Copper	30	25
	Vanadium	24	24
HECA-BG-002	Chromium	9.4	5
	Lead	6.1	5

Figure 1 – Sample Locations and Designations