

US EPA ARCHIVE DOCUMENT

Table 2b1. San Jacinto Elementary School Key Pollutant Concentrations (1,3-Butadiene and Benzene) and Meteorological Data, October 13, 2011 - January 29, 2012) (Long Report).

Hour of Sample	Parameter	Units	10/13/2011	10/19/2011	10/25/2011	10/31/2011	11/6/2011	11/12/2011	11/18/2011	11/24/2011	11/30/2011	12/6/2011	12/12/2011	12/18/2011	12/30/2011	1/5/2012	1/11/2012	1/17/2012	1/23/2012	1/29/2012
			THU	WED	TUE	MON	SUN	SAT	FRI	THU	WED	TUE	MON	SUN	FRI	THU	WED	TUE	MON	SUN
Entire	Butadiene, 1,3-	µg/m ³	1.80	0.69	0.05	0.29	0.03	0.06	0.04	0.44	0.22	0.99	0.07	0.04	0.23	0.15	1.60	0.56	0.69	0.71
	Benzene	µg/m ³	5.11	9.11	0.58	3.83	0.43	0.44	0.56	3.39	2.30	2.29	1.14	0.65	2.63	1.31	1.48	2.48	3.29	6.52
	% Hours w/Wind Direction from Expected ZOI ^a	%	83.3	66.7	0.0	4.2	0.0	0.0	0.0	12.5	4.2	91.7	4.2	0.0	0.0	0.0	54.2	75.0	25.0	0.0
	Wind Speed (avg. of hourly speeds)	mph	6.0	5.9	8.0	4.0	8.0	7.6	5.6	4.1	3.9	10.0	4.8	5.1	3.7	4.4	11.4	8.7	4.5	4.6
	Wind Direction (avg. of unitized vector) ^b	deg.	12.5	348.4	159.6	197.6	114.1	177.2	140.6	175.7	143.4	303.3	110.9	139.5	198.1	184.8	278.9	14.8	71.6	149.3
	% of Hours with Speed below 2 knots	%	20.8	29.2	0.0	8.3	0.0	0.0	4.2	33.3	33.3	0.0	8.3	0.0	37.5	4.2	0.0	0.0	4.2	12.5
	Daily Average Temperature	° F	73.4	61.8	74.8	64.1	72.1	70.9	66.7	61.1	55.7	38.3	59.9	61.8	63.9	65.4	54.5	55.4	62.7	54.0
01:00	Daily Precipitation	inches	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.10	0.00
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	14.0	16.0	13.0	0.0	11.0	13.5	8.4	5.8	2.4	9.0	5.4	6.2	7.0	5.8	9.7	6.6	4.5	5.3
02:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	340.0	310.0	160.0	0.0	131.3	184.6	113.2	138.9	93.4	320.2	98.9	143.7	221.7	190.1	237.3	234.7	39.0	139.1
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	15.0	18.0	14.0	3.5	8.5	12.3	8.9	4.5	2.1	10.2	5.8	5.8	6.3	5.8	9.9	5.2	5.3	5.1
03:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	360.0	320.0	160.0	267.1	132.7	176.5	116.6	144.4	151.2	314.1	124.6	153.0	222.3	127.8	217.4	215.5	27.2	147.4
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	15.0	18.0	10.0	4.8	7.9	11.1	10.4	2.7	3.0	12.3	4.6	3.1	4.3	3.5	9.4	7.3	4.2	5.6
04:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	360.0	330.0	150.0	213.5	124.2	177.4	128.0	183.9	190.3	313.9	145.4	145.0	187.2	123.5	213.2	354.9	26.3	166.1
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	8.0	15.0	10.0	5.1	8.1	6.8	8.9	2.3	3.5	11.3	3.5	2.4	2.5	3.4	7.5	10.7	3.4	2.6
05:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	340.0	320.0	150.0	212.8	120.2	179.7	128.5	204.0	207.4	314.1	164.9	147.8	198.2	153.7	210.4	359.2	22.4	173.4
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	8.0	8.0	8.0	4.9	7.2	5.4	10.2	1.6	3.8	10.6	2.2	3.0	1.9	2.6	5.8	10.8	4.0	1.8
06:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	360.0	300.0	160.0	223.1	119.6	182.2	131.9	192.4	195.1	312.0	181.5	128.4	251.3	197.1	195.8	347.8	29.8	189.7
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	6.0	3.0	7.0	4.3	5.7	4.3	8.8	2.9	2.3	10.5	3.0	3.2	1.2	2.2	6.0	12.2	3.4	2.0
07:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	350.0	240.0	160.0	206.2	117.3	181.2	140.1	238.1	173.6	312.0	170.4	133.9	228.4	205.6	204.7	352.8	42.2	193.8
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	5.0	6.0	5.0	4.2	5.0	5.5	6.9	2.1	2.6	10.8	3.2	3.4	1.3	3.3	6.3	11.3	1.8	2.8
08:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	350.0	250.0	160.0	198.1	107.6	175.0	137.2	219.7	150.9	307.9	158.3	127.8	136.9	202.1	205.3	349.2	60.1	212.0
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	5.0	6.0	6.0	3.9	5.0	5.8	6.1	2.0	2.6	10.4	2.6	3.5	2.2	3.0	5.7	11.6	4.0	3.1
09:00	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	330.0	250.0	170.0	199.2	96.8	172.8	147.9	220.3	151.7	311.0	140.4	136.5	131.5	195.2	210.4	346.3	77.8	224.7
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	6.0	7.0	6.0	3.7	5.2	5.3	5.0	2.6	2.4	8.1	2.5	4.4	3.8	2.9	6.6	11.5	4.2	3.5
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	350.0	320.0	160.0	207.3	92.8	173.2	144.9	224.9	131.5	296.9	135.9	128.2	140.5	194.6	225.2	345.5	80.5	235.9
	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00

Table 2b1. San Jacinto Elementary School Key Pollutant Concentrations (1,3-Butadiene and Benzene) and Meteorological Data, October 13, 2011 - January 29, 2012) (Long Report).

Hour of Sample	Parameter	Units	10/13/2011	10/19/2011	10/25/2011	10/31/2011	11/6/2011	11/12/2011	11/18/2011	11/24/2011	11/30/2011	12/6/2011	12/12/2011	12/18/2011	12/30/2011	1/5/2012	1/11/2012	1/17/2012	1/23/2012	1/29/2012
			THU	WED	TUE	MON	SUN	SAT	FRI	THU	WED	TUE	MON	SUN	FRI	THU	WED	TUE	MON	SUN
22:00	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	10.0	5.0	9.0	7.4	12.0	12.0	3.4	9.8	9.9	9.7	6.0	9.1	7.2	5.7	13.2	3.7	3.9	9.0
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	120.0	90.0	150.0	143.0	136.0	201.0	133.2	134.7	124.3	305.8	93.6	135.6	201.2	188.0	332.9	109.7	67.3	131.6
23:00	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	7.0	0.0	13.0	7.4	12.2	12.4	5.3	9.1	11.0	10.0	8.3	10.2	8.4	5.6	12.7	4.2	4.5	9.1
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	60.0	0.0	160.0	149.3	138.2	201.7	125.4	131.6	124.4	317.2	107.2	134.1	210.0	183.4	327.2	144.4	68.4	128.0
24:00	Precipitation for Preceding Hour	inches	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	0.0	5.0	13.0	7.2	11.3	12.4	5.4	8.5	12.4	10.2	6.8	9.8	8.1	6.7	11.3	6.3	6.6	8.7
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	0.0	110.0	160.0	146.9	131.9	201.3	114.6	134.6	123.7	331.5	87.4	130.7	217.6	193.7	313.0	153.8	76.0	118.8

All precipitation and temperature data were from the William P. Hobby Airport NWS Station. Wind information was not taken at the site on from 10/13/11 to 10/30/11, and the NWS Station data was used as a surrogate. Additionally, wind information was not collected during the first 14 hours on 10/31/11.

Wind information was not taken at the site on from 10/13/11 to 10/30/11, and the NWS Station data was used as a surrogate. Additionally, wind information was not collected during the first 14 hours on 10/31/11. Finally, instrument error occurred during the first 4 hours of sampling on 3/11/12, the first 10 hours of sampling on 3/29/12, and the last two hours on 5/28/12.

^a Based on count of hours for which vector wind direction is from expected zone of influence.

^b Wind direction for each day is represented by values derived by scalar averaging of hourly estimates that were produced (by wind instrumentation's logger) as unitized vectors (specified as degrees from due north).

^c Due to the limitations of wind measurement equipment at this site, the equipment reports at the end of each hour, wind direction as a unitized vector quantity derived by averaging multiple (i.e., 1-minute data) unitized vectors measured by the equipment over that hour.

Table 2b2. San Jacinto Elementary School Key Pollutant Concentrations (1,3-Butadiene and Benzene) and Meteorological Data, February 4, 2012-May 28, 2012 (Long Report).

Hour of Sample	Parameter	Units	2/4/2012	2/9/2012	2/10/2012	2/16/2012	3/5/2012	3/11/2012	3/17/2012	3/23/2012	3/28/2012	3/29/2012	4/4/2012	4/22/2012	4/28/2012	5/4/2012	5/16/2012	5/22/2012	5/28/2012
			SAT	THU	FRI	THU	MON	SUN	SAT	FRI	WED	THU	WED	SUN	SAT	FRI	WED	TUE	MON
22:00	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	9.6	4.7	10.0	7.5	12.6	2.5	9.3	4.4	6.3	5.1	7.6	6.0	10.0	8.2	3.4	10.1	5.9
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	355.9	167.2	10.8	84.5	141.7	230.1	161.9	236.3	156.6	178.5	275.7	6.7	120.9	167.1	75.6	183.7	213.3
23:00	Precipitation for Preceding Hour	inches	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	11.1	2.8	8.7	6.2	12.7	4.0	11.0	3.2	7.0	6.3	8.0	5.2	9.9	9.0	3.9	10.4	8.0
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	0.9	143.8	10.4	110.3	153.4	214.9	158.6	43.7	119.8	179.9	269.1	31.9	119.7	158.9	95.6	175.4	180.0
24:00	Precipitation for Preceding Hour	inches	0.00	0.04	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Wind Speed (Avg. of Speeds During Preceding Hour)	mph	10.1	1.7	9.1	5.9	12.6	5.8	10.8	3.9	8.0	7.3	7.7	5.7	10.4	9.4	4.6	10.9	8.0
	Wind Direction (Avg. of Vectors During Preceding Hour) ^c	deg.	357.5	253.5	11.9	113.1	146.1	206.2	164.0	287.7	124.0	194.8	276.8	349.1	117.0	155.1	128.1	173.3	200.0

All precipitation and temperature data were from the William P. Hobby Airport NWS Station. Wind information was not taken at the site on from 10/13/11 to 10/30/11, and the NWS Station data was used as a surrogate. Additionally, wind information was not collected during the first 14 hours on 10/31/11.

Wind information was not taken at the site on from 10/13/11 to 10/30/11, and the NWS Station data was used as a surrogate. Additionally, wind information was not collected during the first 14 hours on 10/31/11. Finally, instrument error occurred during the first 4 hours of sampling on 3/11/12, the first 10 hours of sampling on 3/29/12, and the last two hours on 5/28/12.

^a Based on count of hours for which vector wind direction is from

^b Wind direction for each day is represented by values derived by scalar averaging of hourly estimates that were produced (by wind instrumentation's logger) as unitized vectors (specified as degrees from due north).

^c Due to the limitations of wind measurement equipment at this site, the equipment reports at the end of each hour, wind direction as a unitized vector quantity derived by averaging multiple (i.e., 1-minute data) unitized vectors mea

Point Source Emission Sources Within 2 Miles of the School.

NEI Facility Name	NEI Site ID	TRI ID	Distance (miles)	NEI HAP Category Name	2002 NATA Emissions (tpy)	2005 NATA Emissions (tpy)	2008 NEI Emissions (tpy)	2005 TRI Emissions (tpy)	2006 TRI Emissions (tpy)
DEER PARK PLANT	NEI6567	77536LBRZL41TID	0.67	1,3-Butadiene	0.45	0.44	0.17	0.44	2.00E-03
				Benzene	0.07	0.03	0.03	--	--
DEER PARK PLANT--HOUSTON	NEI13264	NONE	1.31	1,3-Butadiene	--	--	2.47E-08	--	--
				Benzene	1.43E-06	6.91E-04	3.99E-04	--	--
EQUILON LUBRICANTS CO DEER PARK	NEITXT\$11709	77536QLNLB5900H	1.21	Benzene	0.05	0.05	--	--	--
GEO SPECIALTY CHEMICAL	NEI6843	77536WRGRC739BA	1.59	Benzene	2.46E-07	2.38E-04	1.99E-04	--	--
OXY VINYLs LP DEER PARK-VCM PLANT	NEITX20177536CCDNTTI	77536CCDNTTIDAL	0.81	Benzene	--	0.01	--	0.01	3.00E-03
POLYETHYLENE PLANT	NEI11196	NONE	1.43	1,3-Butadiene	--	--	0.16	--	--
				Benzene	--	0.01	0.09	--	--
ROHM & HAAS TEXAS INC.	NEI8357	77536RHMND6600L	1.85	Benzene	25.55	58.45	9.89	29.17	27.20
SAFETY KLEEN DEER PARK INCORPORATED	NEI7162	77536SFTYK2027B	1.95	1,3-Butadiene	--	--	9.38E-03	--	--
				Benzene	--	0.07	0.12	0.03	--
SHELL OIL DEER PARK	NEI11119	77536DRPRK5900H	0.86	1,3-Butadiene	6.94	67.95	29.61	67.93	51.17
		77536SHLLLHIGHW		Benzene	69.12	19.35	28.59	39.85	34.61

NEI Facility Name	NEI Site ID	TRI ID	Distance (miles)	NEI HAP Category Name	2007 TRI Emissions (tpy)	2008 TRI Emissions (tpy)	2009 TRI Emissions (tpy)	2010 TRI Emissions (tpy)	2011 TRI Emissions (tpy)
DEER PARK PLANT	NEI6567	77536LBRZL41TID	0.67	1,3-Butadiene	0.17	0.01	0.02	0.01	0.0025
				Benzene	--	--	--	--	--
DEER PARK PLANT--HOUSTON	NEI13264	NONE	1.31	1,3-Butadiene	--	--	--	--	--
				Benzene	--	--	--	--	--
EQUILON LUBRICANTS CO DEER PARK	NEITXT\$11709	77536QLNLB5900H	1.21	Benzene	--	--	--	--	--
GEO SPECIALTY CHEMICAL	NEI6843	77536WRGRC739BA	1.59	Benzene	--	--	--	--	--
OXY VINYLs LP DEER PARK-VCM PLANT	NEITX20177536CCDNTTI	77536CCDNTTIDAL	0.81	Benzene	2.80E-03	2.43E-03	2.77E-04	8.23E-04	8.83E-04
POLYETHYLENE PLANT	NEI11196	NONE	1.43	1,3-Butadiene	--	--	--	--	--
				Benzene	--	--	--	--	--
ROHM & HAAS TEXAS INC.	NEI8357	77536RHMND6600L	1.85	Benzene	12.77	9.91	--	--	--
SAFETY KLEEN DEER PARK INCORPORATED	NEI7162	77536SFTYK2027B	1.95	1,3-Butadiene	0.01	0.01	0	0.003	0.001
				Benzene	0.16	0.12	0.0065	0.0005	0.27
SHELL OIL DEER PARK	NEI11119	77536DRPRK5900H	0.86	1,3-Butadiene	39.83	37.23	33.80	22.67	33.78
		77536SHLLLHIGHW		Benzene	27.01	32.66	30.28	28.66	26.34