REDACTED VERSION

9532071

EPAHO043001427

2009 Weekly Appointments

DAYMINDER® Brand

Thank you for choosing this DayMinder® brand planning product to help you manage today's most precious commodity – your time. Although we can't put more hours in the day or days in the week, we are committed to developing products that keep you organized and make you more productive.

The DayMinder® brand and its parent company, MeadWestvaco, continuously strive for excellence. From product quality and innovation to preserving the environment and U.S. jobs, we care about the same things you do.

For decades, people have relied upon DayMinder® brand products for the most comprehensive selection to meet a variety of planning, organizing and recordkeeping needs. In today's fast-paced, ever-changing world you can always count on the DayMinder® brand to get you where you need to be, when you need to be there.

We appreciate your loyalty to the DayMinder® brand, and we will continue to bring you the products and formats you trust and depend on to plan your life. Best wishes for a successful, organized and productive year!

Reorder number: G200-00, Black
G210-00, Black, with Tabbed Telephone/Address
G210-10, Refill

Printed with Soy Based Inks on Recycled Paper containing 30% Post-Consumer Waste

MeadWestvaco Consumer & Office Products, Sidney, NY 13838
Made in USA www.ataglance.com © 2007 MeadWestvaco Corporation

EPAHO043001428

[redacted]

GENERAL INFORMATION

NAME Prabhakar R. Thaoguda

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____ CAR _____

COMPANY NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ FAX _____ CAR _____

LOST OR STOLEN CREDIT CARD INFORMATION

CARD NAME _____ PHONE _____

CARD NAME _____ PHONE _____

EMERGENCY INFORMATION

NOTIFY _____ RELATIONSHIP _____

PHONE _____ WORK PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

OR NOTIFY _____ RELATIONSHIP _____

PHONE _____ WORK PHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

MEDICAL INFORMATION

PHYSICIAN _____ PHONE _____

INSURANCE/HMO _____ POLICY # _____

ALLERGIES _____ BLOOD GROUP _____

AUTOMOBILE INFORMATION

INSURANCE CO _____ POLICY # _____

BROKER _____ PHONE _____

DRIVERS LICENSE # _____ EXP. _____

PLATE # _____ EXP. _____

Refill Order Information:

If you have Book #	Reorder	
G200	Book #G200	Nonrefillable Weekly-Minder® Planner
G210	Book #G210	Nonrefillable Weekly-Minder® Planner with Tabbed Phone/Address

Important Dates

Holiday	2009	2010	2011	2012
New Year's	Thu/Jan 1	Fri/Jan 1	Sat/Jan 1	Sun/Jan 1
Ashura (occurs twice in 2009- 12/27/09)	Wed/Jan 7	Thu/Dec 16	Mon/Dec 5	Sat/Nov 24
Martin Luther King, Jr. Day (US)	Mon/Jan 19	Mon/Jan 18	Mon/Jan 17	Mon/Jan 16
Lunar New Year	Mon/Jan 26	Sun/Feb 14	Thu/Feb 3	Mon/Jan 23
Anniversary of the Constitution (M)	Thu/Feb 5	Fri/Feb 5	Sat/Feb 5	Sun/Feb 5
Lincoln's Birthday (US)	Thu/Feb 12	Fri/Feb 12	Sat/Feb 12	Sun/Feb 12
Valentine's Day	Sat/Feb 14	Sun/Feb 14	Mon/Feb 14	Tue/Feb 14
Presidents' Day (US)	Mon/Feb 16	Mon/Feb 15	Mon/Feb 21	Mon/Feb 20
Washington's Birthday (US)	Sun/Feb 22	Mon/Feb 22	Tue/Feb 22	Wed/Feb 22
Flag Day (M)	Tue/Feb 24	Wed/Feb 24	Thu/Feb 24	Fri/Feb 24
Ash Wednesday	Wed/Feb 25	Wed/Feb 17	Wed/Mar 9	Wed/Feb 22
Eastern Orthodox Lent begins	Mon/Mar 2	Mon/Feb 15	Mon/Mar 7	Mon/Feb 27
Daylight Saving Time begins	Sun/Mar 8	Sun/Mar 14	Sun/Mar 13	Sun/Mar 11
St. Patrick's Day	Tue/Mar 17	Wed/Mar 17	Thu/Mar 17	Sat/Mar 17
Spring begins	Fri/Mar 20	Sat/Mar 20	Sun/Mar 20	Tue/Mar 20
Benito Juarez' Birthday (M)	Sat/Mar 21	Sun/Mar 21	Mon/Mar 21	Wed/Mar 21
Palm Sunday	Sun/Apr 5	Sun/Mar 28	Sun/Apr 17	Sun/Apr 1
Passover*	Thu/Apr 9	Tue/Mar 30	Tue/Apr 19	Sat/Apr 7
Good Friday	Fri/Apr 10	Fri/Apr 2	Fri/Apr 22	Fri/Apr 6
Easter	Sun/Apr 12	Sun/Apr 4	Sun/Apr 24	Sun/Apr 8
Easter Monday (C)	Mon/Apr 13	Mon/Apr 5	Mon/Apr 25	Mon/Apr 9
Eastern Orthodox Easter	Sun/Apr 19	Sun/Apr 4	Sun/Apr 24	Sun/Apr 15
Holocaust Remembrance Day	Tue/Apr 21	Sun/Apr 11	Sun/May 1	Thu/Apr 19
Administrative Professionals Day (C,US)	Wed/Apr 22	Wed/Apr 21	Wed/Apr 27	Wed/Apr 25
Labor Day (M)	Fri/May 1	Sat/May 1	Sun/May 1	Tue/May 1
Battle of Puebla (M)	Tue/May 5	Wed/May 5	Thu/May 5	Sat/May 5
Mother's Day (M)	Sun/May 10	Mon/May 10	Tue/May 10	Thu/May 10
Mother's Day (C,US)	Sun/May 10	Sun/May 9	Sun/May 8	Sun/May 13
Armed Forces Day (US)	Sat/May 16	Sat/May 15	Sat/May 21	Sat/May 19
Victoria Day (C)	Mon/May 18	Mon/May 24	Mon/May 23	Mon/May 21
Memorial Day, Observed (US)	Mon/May 25	Mon/May 31	Mon/May 30	Mon/May 28
Flag Day (US)	Sun/Jun 14	Mon/Jun 14	Tue/Jun 14	Thu/Jun 14
Father's Day	Sun/Jun 21	Sun/Jun 20	Sun/Jun 19	Sun/Jun 17
Summer begins	Sun/Jun 21	Mon/Jun 21	Tue/Jun 21	Wed/Jun 20
St. Jean Baptiste (Québec)	Wed/Jun 24	Thu/Jun 24	Fri/Jun 24	Sun/Jun 24
Canada Day	Wed/Jul 1	Thu/Jul 1	Fri/Jul 1	Sun/Jul 1
Independence Day (US)	Sat/Jul 4	Sun/Jul 4	Mon/Jul 4	Wed/Jul 4
Civic Holiday (C)	Mon/Aug 3	Mon/Aug 2	Mon/Aug 1	Mon/Aug 6
First of Ramadan	Sat/Aug 22	Wed/Aug 11	Mon/Aug 1	Sat/Jul 21
Labor Day (C,US)	Mon/Sep 7	Mon/Sep 6	Mon/Sep 5	Mon/Sep 3
Patriot Day (US)	Fri/Sep 11	Sat/Sep 11	Sun/Sep 11	Tue/Sep 11
Declaration of Independence (M)	Tue/Sep 15	Wed/Sep 15	Thu/Sep 15	Sat/Sep 15
Independence Day (M)	Wed/Sep 16	Thu/Sep 16	Fri/Sep 16	Sun/Sep 16
Rosh Hashanah*	Sat/Sep 19	Thu/Sep 9	Thu/Sep 29	Mon/Sep 17
(Eid) al Fitr	Sun/Sep 20	Fri/Sep 10	Tue/Aug 30	Sun/Aug 19
Autumn begins	Tue/Sep 22	Thu/Sep 23	Fri/Sep 23	Sat/Sep 22
Yom Kippur*	Mon/Sep 28	Sat/Sep 18	Sat/Oct 8	Wed/Sep 26
Columbus Day, Observed (US)	Mon/Oct 12	Mon/Oct 11	Mon/Oct 10	Mon/Oct 8
Thanksgiving (C)	Mon/Oct 12	Mon/Oct 11	Mon/Oct 10	Mon/Oct 8
Day of the Race (M)	Mon/Oct 12	Tue/Oct 12	Wed/Oct 12	Fri/Oct 12
National Boss Day (US)	Fri/Oct 16	Sat/Oct 16	Sun/Oct 16	Tue/Oct 16
United Nations Day	Sat/Oct 24	Sun/Oct 24	Mon/Oct 24	Wed/Oct 24
Halloween	Sat/Oct 31	Sun/Oct 31	Mon/Oct 31	Wed/Oct 31
Daylight Saving Time ends	Sun/Nov 1	Sun/Nov 7	Sun/Nov 6	Sun/Nov 4
All Saints Day (M)	Sun/Nov 1	Mon/Nov 1	Tue/Nov 1	Thu/Nov 1
Day of the Dead (M)	Mon/Nov 2	Tue/Nov 2	Wed/Nov 2	Fri/Nov 2
Election Day (US)	Tue/Nov 3	Tue/Nov 2	Tue/Nov 8	Tue/Nov 6
Veterans Day (US)	Wed/Nov 11	Thu/Nov 11	Fri/Nov 11	Sun/Nov 11
Remembrance Day (C)	Wed/Nov 11	Thu/Nov 11	Fri/Nov 11	Sun/Nov 11
Revolution Anniversary (M)	Fri/Nov 20	Sat/Nov 20	Sun/Nov 20	Tue/Nov 20
Thanksgiving (US)	Thu/Nov 26	Thu/Nov 25	Thu/Nov 24	Thu/Nov 22
(Eid) al Adha	Fri/Nov 27	Tue/Nov 16	Sun/Nov 6	Fri/Oct 26
Pearl Harbor Remembrance Day (US)	Mon/Dec 7	Tue/Dec 7	Wed/Dec 7	Fri/Dec 7
Hanukkah*	Sat/Dec 12	Thu/Dec 2	Wed/Dec 21	Sun/Dec 9
Virgin of Guadalupe (M)	Sat/Dec 12	Sun/Dec 12	Mon/Dec 12	Wed/Dec 12
First of Muharram	Fri/Dec 18	Tue/Dec 7	Sat/Nov 26	Thu/Nov 15
Winter begins	Mon/Dec 21	Tue/Dec 21	Wed/Dec 21	Fri/Dec 21
Christmas	Fri/Dec 25	Sat/Dec 25	Sun/Dec 25	Tue/Dec 25
Boxing Day (C)	Sat/Dec 26	Sun/Dec 26	Mon/Dec 26	Wed/Dec 26
Kwanzaa begins	Sat/Dec 26	Sun/Dec 26	Mon/Dec 26	Wed/Dec 26

* All Jewish holidays start at sundown the day before they are listed here

C - Canada, M - Mexico, US - United States

EPAHO043001429

December 29 - 31

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

29 MONDAY
364/2

First of Muharram

8 CES computer : login
1 2 safety
9
2
10
3
11
4
12
5
Evening

30 TUESDAY
365/1

8
1
9
2
10
3
11
4
12
5
Evening

31 WEDNESDAY
366/0

8
1
9
2
10
3
11
4
12
5
Evening

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

1 - 4 January

New Year's

THURSDAY 1
1/364

8 Municipal solid waste landfill limits
1

	Total	TCLP	EPA
9 Benzene	10	2 0.5	0.5
As	36	1.8	5.0
10 Ba	2000	3 100	100
Cd	10	0.5	1
11 Cr	100	4 5.0	5
Pb	30	1.5	5
12 Hg	4	5 0.2	0.2
Evening Se	20	1.0	1
Ag	100	5.0	5

FRIDAY 2
2/363

8 TPH
1 1500
TOX
50
9 NORM
2 below reg limits
10 Beryllium
3 0.08
11 Antimony
4 1.0
12 Nickel
5 70.0
Evening

3 SATURDAY
3/362

SUNDAY 4
4/361

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001430

January 5 - 7

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

5 MONDAY
5/360

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

6 TUESDAY
6/359

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

7 WEDNESDAY
7/358

Ashura

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

8 - 11 January

THURSDAY 8
8/357

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 9
9/356

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

10 SATURDAY
10/355

SUNDAY 11
11/354

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001431

January 12 - 14

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

12 MONDAY
12/353

8
9 CES Hydroblasting procedures
10 Brian Monatocoy
11 Fax 910-341-3171
12
Evening Tel 910-341-5504
1
2
3
4
5

13 TUESDAY
13/352

email: Bria Brayan. monatoboy @ Invista.com Caps

8
9
10
11
12
Evening
1
2
3
4
5

14 WEDNESDAY
14/351

8
9
10
11
12
Evening
1
2
3
4
5

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

15 - 18 January

THURSDAY 15
15/350

Erin Hernandez, Claudia Thomas
8 Ronnie Morales, Darrin Raymond last day
9
10
11
12
Evening
1
2
3
4
5

FRIDAY 16
16/349

8
9
10
11
12
Evening
1
2
3
4
5

17 SATURDAY
17/348

SUNDAY 18
18/347

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001432

January 19 - 21

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

19 MONDAY
19/346

Martin Luther King, Jr. Day (US)

8 TCEQ - Exit Interview response sent to Ms. Barbara Johnston today by FedEx.

9

10

11

12

Evening

1

2

3

4

5

20 TUESDAY
20/345

8 Tank cleaning with thermal oxidizer / carbon scrubber handled at

9

10 1. Alfa Tech SVCS, Industrial Rd, Pasadena, TX

2. Quala Systems, Clute, TX - has carbon bed

11 3. Philip SVCS, La Porte, TX

12

Evening

1

2

3

4

5

21 WEDNESDAY
21/344

8 1st half of march 35 metric tons

9 byproduct of CNG facilities

10

11

12

Evening

1

2

3

4

5

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

22 - 25 January

THURSDAY 22
22/343

8 Inspector Tony (COH) Came to check on odor complaint from yesterday at 2pm (Pesticide

9 odor). James was cleaning muddy water and the inspector said it was alright.

10

11 2008 Annual Waste Summary for Post Apothus was mailed to TCEQ today. Also, submitted Dec 2008 waste manifests for CES to Steers.

12

Evening

1

2

3

4

5

FRIDAY 23
23/342

8

9

10

11

12

Evening

1

2

3

4

5

24 SATURDAY
24/341

SUNDAY 25
25/340

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001433

January 26 - 28

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

26 MONDAY
26/339

Lunar New Year

8
9
10
11
12
Evening

1
2
3
4
5

27 TUESDAY
27/338

8
9
10
11
12
Evening

1
2
3
4
5

28 WEDNESDAY
28/337

8
9
10
11
12
Evening

1
2
3
4
5

29 Jan. - 1 Feb.

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

THURSDAY 29
29/336

8
9
10
11
12
Evening

1
2
3
4
5

FRIDAY 30
30/335

8
9
10
11
12
Evening

1
2
3
4
5

31 SATURDAY
31/334

SUNDAY 1
32/333

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001434

February 2 - 4

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

2 MONDAY
33/332

8 Crown Cantetra -12 was shipped to Crowcan - Kentucky on 1-5-09. Called and
9 Spoke to Lisa on the status. She said that Adrian is working on it and should hear
10 something from her this week.

11

12

Evening

1

2

3

4

5

3 TUESDAY
34/331

8

9

10

11

12

Evening

1

2

3

4

5

4 WEDNESDAY
35/330

Texas Mutual

8 Susan Larison, ARM
713-316-2136 Tel: 713-376-1319 Cell

9 Gary P Profile 3166

10

11

12

Evening

1

2

3

4

5

5 - 8 February

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Anniversary of the Constitution (M)

THURSDAY 5
36/329

8

9

10

11

12

Evening

1

2

3

4

5

FRIDAY 6
37/328

8

9

10

11

12

Evening

1

2

3

4

5

7 SATURDAY
38/327

SUNDAY 8
39/326

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001435

February 9 - 11

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

9 MONDAY
40/325

8 1
9 2
10 3
11 4
12 5
Evening

10 TUESDAY
41/324

8 1
9 2
10 3
11 4
12 5
Evening

11 WEDNESDAY
42/323

8 1
9 2
10 3
11 4
12 5
Evening

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

12 - 15 February

Lincoln's Birthday (US)

THURSDAY 12
43/322

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 13
44/321

8 1
9 2
10 3
11 4
12 5
Evening

14 SATURDAY
45/320

Valentine's Day

SUNDAY 15
46/319

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO0430014 36

February 16 - 18

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

16 MONDAY
47/318

Presidents' Day (US)

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

17 TUESDAY
48/317

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

18 WEDNESDAY
49/316

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

19 - 22 February

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

THURSDAY 19
50/315

Leonardo
8 COH -Tony & Desouza
came and visited CES at 3:50 pm and
9 said they had a odor complaint
at 1 pm today but they could not
10 confirm it.
11 | 4
12 | 5
Evening

FRIDAY 20
51/314

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

21 SATURDAY
52/313

SUNDAY 22
53/312

Washington's Birthday (US)

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300143 7

February 23 - 25

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

23 MONDAY
54/311

8 Call Janis @ 409-853-5905 about a past due bill
9 Tower Med Ctr ; Nederland
$477.50 409-3124-2321
10 paid on 2-5-09
11
12
Evening
4
5

24 TUESDAY
55/310

Flag Day (M)

8
9
10
11
12
Evening
1
2
3
4
5

25 WEDNESDAY
56/309

Ash Wednesday

8 - diagram of RTO, what are we doing on it, step by step & diagrams
9
10 - Have the RTO guy give this report
11 - group H occupancy - haz mat occupancy
12
Evening
1
5

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

26 Feb. - 1 Mar.

THURSDAY 26
57/308

8
9
10
11
12
Evening
1
2
3
4
5

FRIDAY 27
58/307

8
9
10
11
12
Evening
1
2
3
4
5

28 SATURDAY
59/306

SUNDAY 1
60/305

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001438

March 2 - 4

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

2 MONDAY
61/304

Eastern Orthodox Lent begins

8
9
10
11
12
Evening

1
2
3
4
5

3 TUESDAY
62/303

8
9
10
11
12
Evening

1
2
3
4
5

4 WEDNESDAY
63/302

8
9
10
11
12
Evening

1
2
3
4
5

5 - 8 March

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

5 THURSDAY
64/301

8
9
10
11
12
Evening

1
2
3
4
5

6865
512-239-

6 FRIDAY
65/300

8 Spoke to Jessie Bottinghouse @ TCEQ
9 on reuse of products generated from
processing hazardous waste. The question
10 asked was can we profile in hazardous
w/w with D001 and D018, then recovered
11 oil, can this recovered oil be handled
as product. The answer is yes.
12
Evening

1
4
5

7 SATURDAY
66/299

SUNDAY 8
67/298

Daylight Saving Time begins

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001439

March 9 - 11

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

9 MONDAY
68/297

8 DOT Recert-forms given for Matt Taylor, Joseph Hernandez & Noah Berry → drug screen also

9

10

11

12

1

2

3

4

5

Evening

10 TUESDAY
69/296

8

9

10

11

12

1

2

3

4

5

Evening

11 WEDNESDAY
70/295

8

9

10

11

12

1

2

3

4

5

Evening

12 - 15 March

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

THURSDAY 12
71/294

8

9

10

11

12

1

2

3

4

5

Evening

FRIDAY 13
72/293

8 JoAnn - from COH BAQC called and said there was a complaint from Calhoun on 3-11-09 at 1pm of odor. I told her we were processing metals water at 12:30pm (Strawser) and oily water at 1:30pm (Enviro solutions) - neither of them were odorous and no odor all week long

9

10

11

12

1

4

5

Evening

14 SATURDAY
73/292

SUNDAY 15
74/291

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001440

March 16 - 18

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

16 MONDAY
75/290

8 Boiler #074533 annual inspection next monday @ 7am

9

10

11

12

1

2

3

4

5

Evening

17 TUESDAY
76/289

St. Patrick's Day

8 3:10pm Dr. David ~~try~~ came in @ 9am

9

10

11

12

1 ~~EE~~ EPA Audit

2 EPA left at 4:30 pm

3

4

5

Evening

18 WEDNESDAY
77/288

8 EPA here at 8:40AM

9 until 4:31pm

10

11

12

1

2

3

4

5

Evening

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

19 - 22 March

THURSDAY 19
78/287

8 EPA Audit ended at 11:30 am

9

10

11

12

1

2

3

4

5

Evening

Spring begins

FRIDAY 20
79/286

8

9

10

11

12

1

2

3

4

5

Evening

21 SATURDAY
80/285

Benito Juarez' Birthday (M)

SUNDAY 22
81/284

AT-A-GLANCE®

A B CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001441

March 23 - 25

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

23 MONDAY
82/283

8 Submit Method & MEK PBR to TCEQ before March 31, 2009

9 Boiler Inspection @ 7am

10 Boiler # 074533

11

12

Evening

1

2

3

4

5

24 TUESDAY
83/282

8

9

10

11

12

Evening

1

2

3

4

5

25 WEDNESDAY
84/281

8

9 Fire Protection Engineer

10 (1) - Fire & Bldg Codes

11 Fire safety specialist experience fire & Bldg codes

12

Evening

Shirt comings

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

26 - 29 March

- needs the report from fire safety specialist
- no more extensions from fireman

THURSDAY 26
85/280

8

9 AIG Fire inspection - Port Arthur

10

11

12

Evening

1

2

3

4

5

FRIDAY 27
86/279

8 AIG Fire Inspection - CES

9

10

11

12

Evening

1

2

3

4

5

28 SATURDAY
87/278

SUNDAY 29
88/277

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001442

Mar. 30 - Apr. 1

March 2009							April 2009						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4
8	9	10	11	12	13	14	5	6	7	8	9	10	11
15	16	17	18	19	20	21	12	13	14	15	16	17	18
22	23	24	25	26	27	28	19	20	21	22	23	24	25
29	30	31					26	27	28	29	30		

30 MONDAY
89/276

8 1
9 2
10 3
11 4
12 5
Evening

31 TUESDAY
90/275

8 COH - BAQC - Leonard, Joann Came
in at 1:50pm based on a ~~xx~~ odor
9 complaint recd at 2 10am today. They
drove around the facility and did
10 not confirm any odor. 3
11 4
12 5
Evening

1 WEDNESDAY
91/274

8 1
9 2
10 3
11 4
12 5
Evening

2 - 5 April

May 2009							June 2009						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2		1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29	30				
31													

THURSDAY 2
92/273

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 3
93/272

8 1
9 2
10 3
11 4
12 5
Evening

4 SATURDAY
94/271

SUNDAY 5
95/270

Palm Sunday

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001443

April 6 - 8

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

6 MONDAY
96/269

8 1

9 2

10 3

11 4

12 5

Evening

7 TUESDAY
97/268

8 1

9 2

10 3

11 4

12 5

Evening

8 WEDNESDAY
98/267

Passover begins at sundown

8 1

9 2

10 3

11 4

12 5

Evening

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

9 - 12 April

Passover

9 THURSDAY
99/266

8 1

9 2

10 3

11 4

12 5

Evening

Good Friday

10 FRIDAY
100/265

8 1

9 2

10 3

11 4

12 5

Evening

11 SATURDAY
101/264

12 SUNDAY
102/263

Easter

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001444

April 13 - 15

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

13 MONDAY
103/262

Easter Monday (C)

COH - Leo, Sonja, Tanvir are here to check the status of compliance of Agreed Order

8 9:20AM

10 Emissions inventory?

11

12

1

2

3

4

5

Evening

14 TUESDAY
104/261

8

9

10

11

12

1

2

3

4

5

Evening

15 WEDNESDAY
105/260

8

9

10

11

12

1

2

3

4

5

Evening

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

16 - 19 April

THURSDAY 16
106/259

8

9

10

11

12

1

2

3

4

5

Evening

FRIDAY 17
107/258

8

9

10

11

12

1

2

3

4

5

Evening

18 SATURDAY
108/257

SUNDAY 19
109/256

Eastern Orthodox Easter

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300144S

April 20 - 22

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

20 MONDAY
110/255

Tammy Jackson 713-584-1423

8 TARGA - ~~Tricia Radki~~

NCMS - Tricia Radki

9 2 620-669-4423

10 3

11 4

12 5

Evening

21 TUESDAY
111/254

Holocaust Remembrance Day

8 1

9 2

10 3

11 4

12 5

Evening

22 WEDNESDAY
112/253

Administrative Professionals Day (C, US)

8 1

9 2

10 3

11 4

12 5

Evening

23 - 26 April

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

THURSDAY 23
113/252

8 ~~David~~ Charles Slater. PACES driver

1 had an accident ~~about~~ late evening

9 and Steve coordinated the spill

cleanup with Milstead Env help.

10 3

11 4

12 5

Evening

FRIDAY 24
114/251

8 1

9 2

10 3

11 4

12 5

Evening

25 SATURDAY
115/250

SUNDAY 26
116/249

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001446

April 27 - 29

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

27 MONDAY
117/248

8 David, EPA called and said he will visit CES tomorrow at 9:30AM to
9 take a picture of 2 receiving frac tanks. The analytical they ran tested positive for
10 pool for tote near fence line and for drums in the 90 day storage area.
11 EPA wants profiles 4 for these materials.
12
5
Evening

28 TUESDAY
118/247

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

29 WEDNESDAY
119/246

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

30 Apr. - 3 May

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

THURSDAY 30
120/245

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

FRIDAY 1
121/244

Labor Day (M)

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

2 SATURDAY
122/243

SUNDAY 3
123/242

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001447

May 4 - 6

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

4 MONDAY
124/241

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

5 TUESDAY
125/240

Battle of Puebla (M)

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

6 WEDNESDAY
126/239

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7 - 10 May

THURSDAY 7
127/238

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

FRIDAY 8
128/237

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

9 SATURDAY
129/236

SUNDAY 10
130/235

Mother's Day (C, M, US)

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001448

May 11 - 13

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

11 MONDAY
131/234

8 1

9 2

10 3

11 4

12 5

Evening

12 TUESDAY
132/233

8 1

9 2

10 3

11 4

12 5

Evening

13 WEDNESDAY
133/232

8 1

9 2

10 3

11 4

12 5

Evening

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

14 - 17 May

THURSDAY 14
134/231

8 1

9 2

10 3

11 4

12 5

Evening

FRIDAY 15
135/230

8 1

9 2

10 3

11 4

12 5

Evening

16 SATURDAY
136/229

Armed Forces Day (US)

SUNDAY 17
137/228

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAH0043001449

May 18 - 20

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

18 MONDAY
138/227

Victoria Day (C)

8 1

9 2

10 3

11 4

12 5

Evening

19 TUESDAY
139/226

8 1

9 2

10 3

11 4

12 5

Evening

20 WEDNESDAY
140/225

8 1

9 2

10 3

11 4

12 5

Evening

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

21 - 24 May

THURSDAY 21
141/224

8 1

9 2

10 3

11 4

12 5

Evening

FRIDAY 22
142/223

8 1

9 2

10 3

11 4

12 5

Evening

23 SATURDAY
143/222

SUNDAY 24
144/221

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001450

May 25 - 27

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

25 MONDAY
145/220

Memorial Day, Observed (US)

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

26 TUESDAY
146/219

8 | 1
4 in meters 4 & 9 - Loren will
9 | 2
take them to detect for recalib-
10 | 3
ration today.
11 | 4
12 | 5
Evening

27 WEDNESDAY
147/218

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

28 - 31 May

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

THURSDAY 28
148/217

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 29
149/216

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

30 SATURDAY
150/215

SUNDAY 31
151/214

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300145 1

June 1 - 3

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

1 MONDAY
152/213

Martin 281-383-1248 office
$240.
24¢
$1900.00
19¢
Cholesterol
BP
Diabetes screening

Evening

2 TUESDAY
153/212

Body Mass index (ht x wt)

Evening

3 WEDNESDAY
154/211

Reclean & degased - check with James

Evening

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

4 - 7 June

THURSDAY 4
155/210

Evening

FRIDAY 5
156/209

Evening

6 SATURDAY
157/208

SUNDAY 7
158/207

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001452

June 8 - 10

May 2009							June 2009						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
					1	2		1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	29	30				
31													

8 MONDAY
159/206

8 1
9 2
10 3
11 4
12 5
Evening

9 TUESDAY
160/205

AIG Audit 1049 am

8 1
① SPCC - Facility Lay out ✓
9 2
PIER - SQG ✓ 1049 Audit ✓ 1040 am
10 3
② List of NOV's
11 4
12 ③ Training matrix 1051
Evening

10 WEDNESDAY
161/204

8 ~~④ Fleet safety Program~~
9 Fleet safety Manual - Consider
10 3
mock DOT Audit - request
11 4
12 5
Evening

11 - 14 June

July 2009							August 2009						
S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4							1
5	6	7	8	9	10	11	2	3	4	5	6	7	8
12	13	14	15	16	17	18	9	10	11	12	13	14	15
19	20	21	22	23	24	25	16	17	18	19	20	21	22
26	27	28	29	30	31		23	24	25	26	27	28	29
							30	31					

THURSDAY 11
162/203

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 12
163/202

8 1
9 2
10 3
11 4
12 5
Evening

13 SATURDAY
164/201

SUNDAY 14
165/200

Flag Day (US)

AT·A·GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001453

June 15 - 17

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

15 MONDAY
166/199

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

16 TUESDAY
167/198

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

17 WEDNESDAY
168/197

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

18 - 21 June

THURSDAY 18
169/196

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 19
170/195

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

20 SATURDAY
171/194

SUNDAY 21
172/193

Father's Day
Summer begins

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAH04300145 4

June 22 - 24

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

22 MONDAY
173/192

8 1
9 2
10 3
11 4
12 5
Evening

23 TUESDAY
174/191

8 1
9 2
10 3
11 4
12 5
Evening

24 WEDNESDAY
175/190

St. Jean Baptiste (Québec)

8 1
9 2
10 3
11 4
12 5
Evening

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

25 - 28 June

THURSDAY 25
176/189

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 26
177/188

8 1
9 2
10 3
11 4
12 5
Evening

27 SATURDAY
178/187

SUNDAY 28
179/186

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001455

Jun. 29 - Jul. 1

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

2 - 5 July

29 MONDAY
180/185

8 1

Irvin asked for EZ Tags for units

9 101 & 108 2

10 Ed Robbins, Robbin Properties
Phase I on 12 Acres on Miller Rd

11 #3, 512-261-9122

12 5

Evening

30 TUESDAY
181/184

8 1

9 2

10 3

11 4

12 5

Evening

1 WEDNESDAY
182/183

Canada Day

8 1

9 2

10 3

11 4

12 5

Evening

THURSDAY 2
183/182

8 1

9 2

10 3

11 4

12 5

Evening

FRIDAY 3
184/181

8 1

9 2

10 3

11 4

12 5

Evening

4 SATURDAY
185/180

Independence Day (US)

SUNDAY 5
186/179

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001456

July 6 - 8

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

6 MONDAY
187/178

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

7 TUESDAY
188/177

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

8 WEDNESDAY
189/176

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

9 - 12 July

THURSDAY 9
190/175

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 10
191/174

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

11 SATURDAY
192/173

SUNDAY 12
193/172

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001457

July 13 - 15

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

13 MONDAY
194/171

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

14 TUESDAY
195/170

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

15 WEDNESDAY
196/169

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

16 - 19 July

THURSDAY 16
197/168

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 17
198/167

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

18 SATURDAY
199/166

SUNDAY 19
200/165

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300145 8

July 20 - 22

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

20 MONDAY
201/164

8 1
9 2
10 3
11 4
12 5
Evening

21 TUESDAY
202/163

8 1
9 2
10 3
11 4
12 5
Evening

22 WEDNESDAY
203/162

8 1
9 2
10 3
11 4
12 5
Evening

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

23 - 26 July

THURSDAY 23
204/161

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 24
205/160

8 1
9 2
10 3
11 4
12 5
Evening

25 SATURDAY
206/159

SUNDAY 26
207/158

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300145 9

July 27 - 29

June 2009

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

27 MONDAY
208/157

8 1
9 2
10 3
11 4
12 5
Evening

28 TUESDAY
209/156

8 1
9 2
10 3
11 4
12 5
Evening

29 WEDNESDAY
210/155

8 EPA is here 1 James & Kenneth [illegible]
9 Came in around 2 10:30 AM with
10 questions on process flow diagram for 3
process water. Loren explained the
11 process to EPA. 4 Ken spoke to Clint also
on the phone.
Diagram of CWT, flow diagram
12 5
Evening
Sample point

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

30 Jul. - 2 Aug.

THURSDAY 30
211/154

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 31
212/153

8 1
9 2
10 3
11 4
12 5
Evening

1 SATURDAY
213/152

SUNDAY 2
214/151

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001460

August 3 - 5

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

3 MONDAY
215/150

Civic Holiday (C)

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

4 TUESDAY
216/149

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

5 WEDNESDAY
217/148

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

6 - 9 August

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

6 THURSDAY
218/147

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

7 FRIDAY
219/146

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

8 SATURDAY
220/145

9 SUNDAY
221/144

AT-A-GLANCE®

EPAHO043001461

August 10 - 12

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

10 MONDAY
222/143

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

11 TUESDAY
223/142

8 | 1
7 am Boiler in
9 | 2
10 | 3
11 | 4
12 | 5
Evening

12 WEDNESDAY
224/141

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

13 - 16 August

THURSDAY 13
225/140

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 14
226/139

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

15 SATURDAY
227/138

SUNDAY 16
228/137

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001462

August 17 - 19

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

17 MONDAY
229/136

8 1
9 2
10 3
11 4
12 5
Evening

18 TUESDAY
230/135

8 1
9 2
10 3
11 4
12 5
Evening

19 WEDNESDAY
231/134

8 1
9 2
10 3
11 4
12 5
Evening

20 - 23 August

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

THURSDAY 20
232/133

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 21
233/132

8 1
9 2
10 3
11 4
12 5
Evening

22 SATURDAY
234/131

First of Ramadan

SUNDAY 23
235/130

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001463

August 24 - 26

July 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

24 MONDAY
236/129

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

25 TUESDAY
237/128

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

26 WEDNESDAY
238/127

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

27 - 30 August

THURSDAY 27
239/126

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

FRIDAY 28
240/125

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5
Evening

29 SATURDAY
241/124

SUNDAY 30
242/123

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001464

Aug. 31 - Sep. 2

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

31 MONDAY
243/122

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

1 TUESDAY
244/121

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

2 WEDNESDAY
245/120

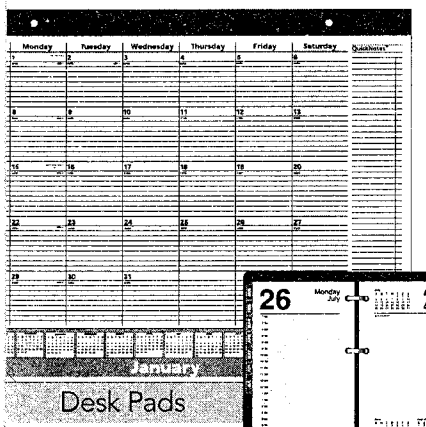
8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

AT-A-GLANCE®

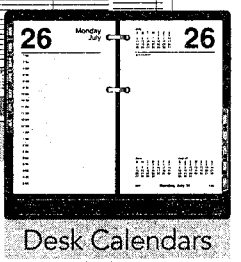
Time to Reorder

The best source is where you usually purchase stationery products.

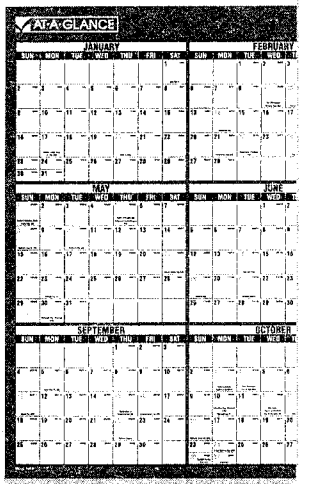
If this product is not available locally, you may use the reorder form on the next page.



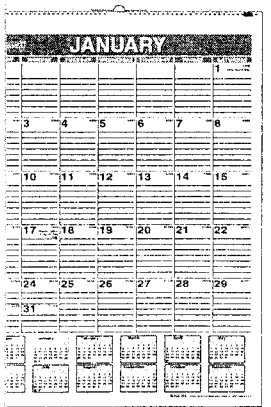
Desk Pads



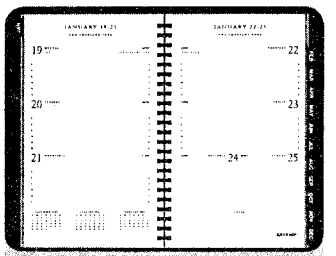
Desk Calendars



Erasable Planners



Wall Calendars


Appointment Books

AT-A-GLANCE® provides a wide selection of planning products to help you stay organized and make you more productive.

EPAHO043001465

AT-A-GLANCE®

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Name _____ Business _____
Last First

Address _____

City _____ State _____ Zip _____

Daytime Phone ( ) _____

Please e-mail me regarding my order, new products and specials at:

E-mail Address _____

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Call (800) 365-9327 or Fax (866) 329-7005
ORDER ON LINE www.ataglance.com

FILL IN ALL INFORMATION BELOW

Quantity	Item Description	Price ea.	Total
	G200-00, black	**$14.69**	
	G210-00, black, tabbed tel/add section	**$17.69**	
	Shipping/Handling		$5.95
	Canadian Orders	+ $5.00	
	International Orders	+ $15.00	
	NY State Residents Add Tax		
		Total	

PAYMENT METHOD

Enclose your personal check or money order made payable to **Calendars** or credit card information. Check applicable box:

☐ Check/Money Order ($20.00 service charge on all returned checks)
☐ Credit Card (AmEx, MC, Visa, Discover)

Credit Card Account No. _____

Expiration Date _____

CCID (3 or 4 digit security code on card) _____

Signature of Authorized Buyer _____

EPAHO043001466

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

THURSDAY 246/119 **3**

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 247/118 **4**

8 1
9 2
10 3
11 4
12 5
Evening

5 SATURDAY 248/117

SUNDAY 249/116 **6**

AT-A-GLANCE®

September 7 - 9

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Labor Day (C, US)

7 MONDAY
250/115

8
9
10
11
12
Evening

1
2
3
4
5

8 TUESDAY
251/114

8
9
10
11
12
Evening

1
2
3
4
5

9 WEDNESDAY
252/113

8
9
10
11
12
Evening

1
2
3
4
5

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

10 - 13 September

THURSDAY 10
253/112

8
9
10
11
12
Evening

1
2
3
4
5

Patriot Day (US)

FRIDAY 11
254/111

8
9
10
11
12
Evening

1
2
3
4
5

12 SATURDAY
255/110

SUNDAY 13
256/109

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001467

September 14 - 16

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

14 MONDAY
257/108

8 1
9 2
10 3
11 4
12 5
Evening

15 TUESDAY
258/107

Declaration of Independence (M)

8 1
9 2
10 3
11 4
12 5
Evening

16 WEDNESDAY
259/106

Independence Day (M)

8 1
9 2
10 3
11 4
12 5
Evening

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

17 - 20 September

THURSDAY 17
260/105

8 1
9 2
10 3
11 4
12 5
Evening

Rosh Hashanah begins at sundown

FRIDAY 18
261/104

8 1
9 2
10 3
11 4
12 5
Evening

19 SATURDAY
262/103

Rosh Hashanah

SUNDAY 20
263/102

(Eid) al Fitr

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300146 8

September 21 - 23

August 2009

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

21 MONDAY
264/101

8 1
9 2
10 3
11 4
12 5
Evening

22 TUESDAY
265/100

Autumn begins

8 1
9 2
10 3
11 4
12 5
Evening

23 WEDNESDAY
266/99

8 1
9 2
10 3
11 4
12 5
Evening

24 - 27 September

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

THURSDAY 24
267/98

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 25
268/97

8 1
9 2
10 3
11 4
12 5
Evening

26 SATURDAY
269/96

SUNDAY 27
270/95

Yom Kippur begins at sundown

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001469

September 28 - 30

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

1 - 4 October

28 MONDAY
271/94

Yom Kippur

8 1
9 2
10 3
11 4
12 5
Evening

29 TUESDAY
272/93

8 1
9 2
10 3
11 4
12 5
Evening

30 WEDNESDAY
273/92

8 1
9 2
10 3
11 4
12 5
Evening

THURSDAY 1
274/91

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 2
275/90

8 1
9 2
10 3
11 4
12 5
Evening

3 SATURDAY
276/89

SUNDAY 4
277/88

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001470

October 5 - 7

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

5 MONDAY
278/87

8 1
9 2
10 3
11 4
12 5
Evening

6 TUESDAY
279/86

8 1
9 2
10 3
11 4
12 5
Evening

7 WEDNESDAY
280/85

8 1
9 2
10 3
11 4
12 5
Evening

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

8 - 11 October

THURSDAY 8
281/84

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 9
282/83

8 1
9 2
10 3
11 4
12 5
Evening

10 SATURDAY
283/82

SUNDAY 11
284/81

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300147 1

October 12 - 14

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

12 MONDAY
285/80

Columbus Day, Observed (US)
Thanksgiving (C)
Day of the Race (M)

8 1
9 2
10 3
11 4
12 5
Evening

13 TUESDAY
286/79

8 1
9 2
10 3
11 4
12 5
Evening

14 WEDNESDAY
287/78

8 1
9 2
10 3
11 4
12 5
Evening

THURSDAY 15
288/77

8 1
9 2
10 3
11 4
12 5
Evening

National Boss Day (US)

FRIDAY 16
289/76

8 1
9 2
10 3
11 4
12 5
Evening

17 SATURDAY
290/75

SUNDAY 18
291/74

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO0430014 72

October 19 - 21

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

19 MONDAY
292/73

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

20 TUESDAY
293/72

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

21 WEDNESDAY
294/71

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

22 - 25 October

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

THURSDAY 22
295/70

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 23
296/69

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

24 SATURDAY
297/68

United Nations Day

SUNDAY 25
298/67

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300147 3

October 26 - 28

September 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

26 MONDAY
299/66

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5

Evening

27 TUESDAY
300/65

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5

Evening

28 WEDNESDAY
301/64

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5

Evening

THURSDAY 29
302/63

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5

Evening

FRIDAY 30
303/62

8 — 1
9 — 2
10 — 3
11 — 4
12 — 5

Evening

31 SATURDAY
304/61

Halloween

SUNDAY 1
305/60

Daylight Saving Time ends
All Saints Day (M)

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300147 4

November 2 - 4

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

2 MONDAY
306/59

Day of the Dead (M)

8 1
9 2
10 3
11 4
12 5
Evening

3 TUESDAY
307/58

Election Day (US)

8 1
9 2
10 3
11 4
12 5
Evening

4 WEDNESDAY
308/57

8 1
9 2
10 3
11 4
12 5
Evening

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

5 - 8 November

THURSDAY 5
309/56

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 6
310/55

8 1
9 2
10 3
11 4
12 5
Evening

7 SATURDAY
311/54

SUNDAY 8
312/53

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001475

November 9 - 11

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

9 MONDAY
313/52

8
9
10
11
12
Evening

1
2
3
4
5

10 TUESDAY
314/51

8
9
10
11
12
Evening

1
2
3
4
5

11 WEDNESDAY
315/50

Veterans Day (US)
Remembrance Day (C)

8
9
10
11
12
Evening

1
2
3
4
5

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

12 - 15 November

THURSDAY 12
316/49

8
9
10
11
12
Evening

1
2
3
4
5

FRIDAY 13
317/48

8
9
10
11
12
Evening

1
2
3
4
5

14 SATURDAY
318/47

SUNDAY 15
319/46

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001476

November 9 - 11

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

9 MONDAY
313/52

8
9
10
11
12
Evening

1
2
3
4
5

10 TUESDAY
314/51

8
9
10
11
12
Evening

1
2
3
4
5

11 WEDNESDAY
315/50

Veterans Day (US)
Remembrance Day (C)

8
9
10
11
12
Evening

1
2
3
4
5

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

12 - 15 November

THURSDAY 12
316/49

8
9
10
11
12
Evening

1
2
3
4
5

FRIDAY 13
317/48

8
9
10
11
12
Evening

1
2
3
4
5

14 SATURDAY
318/47

SUNDAY 15
319/46

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001477

November 16 - 18

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

16 MONDAY
320/45

8 1
9 2
10 3
11 4
12 5
Evening

17 TUESDAY
321/44

8 1
9 2
10 3
11 4
12 5
Evening

18 WEDNESDAY
322/43

8 1
9 2
10 3
11 4
12 5
Evening

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

19 - 22 November

THURSDAY 19
323/42

8 1
9 2
10 3
11 4
12 5
Evening

Revolution Anniversary (M)

FRIDAY 20
324/41

8 1
9 2
10 3
11 4
12 5
Evening

21 SATURDAY
325/40

SUNDAY 22
326/39

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO043001478

November 23 - 25

October 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

23 MONDAY
327/38

8 1

9 2

10 3

11 4

12 5

Evening

24 TUESDAY
328/37

8 1

9 2

10 3

11 4

12 5

Evening

25 WEDNESDAY
329/36

8 1

9 2

10 3

11 4

12 5

Evening

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

26 - 29 November

Thanksgiving (US)

THURSDAY 26
330/35

8 1

9 2

10 3

11 4

12 5

Evening

(Eid) al Adha

FRIDAY 27
331/34

8 1

9 2

10 3

11 4

12 5

Evening

28 SATURDAY
332/33

SUNDAY 29
333/32

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001479

Nov. 30 - Dec. 2

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

30 MONDAY
334/31

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

1 TUESDAY
335/30

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

2 WEDNESDAY
336/29

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

3 - 6 December

THURSDAY 3
337/28

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

FRIDAY 4
338/27

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

5 SATURDAY
339/26

SUNDAY 6
340/25

AT-A-GLANCE®

AB CD EF GH IJ KL MN OP QR ST UV WX YZ

EPAHO04300148O

December 7 - 9

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7 MONDAY
341/24

Pearl Harbor Remembrance Day (US)

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

8 TUESDAY
342/23

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

9 WEDNESDAY
343/22

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

10 - 13 December

THURSDAY 10
344/21

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

Hanukkah begins at sundown

FRIDAY 11
345/20

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

12 SATURDAY
346/19

Hanukkah
Virgin of Guadalupe (M)

SUNDAY 13
347/18

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO04300148

December 14 - 16

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

14 MONDAY
348/17

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

15 TUESDAY
349/16

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

16 WEDNESDAY
350/15

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

17 - 20 December

THURSDAY 17
351/14

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

First of Muharram

FRIDAY 18
352/13

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

19 SATURDAY
353/12

SUNDAY 20
354/11

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001482

December 21 - 23

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

21 MONDAY
355/10

Winter begins

8 1
9 2
10 3
11 4
12 5
Evening

22 TUESDAY
356/9

8 1
9 2
10 3
11 4
12 5
Evening

23 WEDNESDAY
357/8

8 1
9 2
10 3
11 4
12 5
Evening

24 - 27 December

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

THURSDAY 24
358/7

8 1
9 2
10 3
11 4
12 5
Evening

FRIDAY 25
359/6

Christmas

8 1
9 2
10 3
11 4
12 5
Evening

26 SATURDAY
360/5

Boxing Day (C)
Kwanzaa begins

SUNDAY 27
361/4

Ashura

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001483

December 28 - 30

November 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

December 2009

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

January 2010

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February 2010

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

31 Dec. - 3 Jan.

28 MONDAY
362/3

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

29 TUESDAY
363/2

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

30 WEDNESDAY
364/1

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

THURSDAY 31
365/0

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

New Year's

FRIDAY 1
1/364

8 | 1
9 | 2
10 | 3
11 | 4
12 | 5
Evening

2 SATURDAY
2/363

SUNDAY 3
3/362

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001484

2008/2009/2010

2008

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

2009

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

February 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

March 2009

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

April 2009

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

May 2009

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

June 2009

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July 2009

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August 2009

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September 2009

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November 2009

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December 2009

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2010

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February 2010

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June 2010

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NAMES AND ADDRESSES | TELEPHONE

Access PW : Privacy1

AIG Fire Inspector — Jorge Lopez

cell (b) (4) [redacted]

A&B Labs 713-

AIG

~~use~~ Login screen

- global loss prevention
- Env Mgmt & Risk
- Document Mgmt
- system document
- Folders
- Transportation

website: WWW.aigriskmanagement.com

Login: ~~pll~~ CES email address

PW: (b) (4) [redacted]

Mark Wilkins

cell (b) (4) [redacted]

Ammonia scrubbing - dilute citric acid solution

Chris Farmer — (b) (4) [redacted] cell

OSHA Attorney — from Sheehy, Ware & Pappas, P.C.

AT-A-GLANCE®

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001485

NAMES AND ADDRESSES	TELEPHONE
Buzzcard, [redacted]	www.buzzcard.gatech.edu/

NAMES AND ADDRESSES	TELEPHONE
Concentra - Manita Cope Ed, CopeEngg ed.cope@copeengineering.com (Fire safety Specialist)	[redacted] Cell 713-426-2326 Tel 713-264-8644 Fax
→ Concentra, Leslie 290 & Beltway Office;	713-280-0365 6360 West Sam Houston Pkwy N Suite 200B Houston, 77041
City of Houston - Tamara Bode	713-640-4200

EPAHO043001486

NAMES AND ADDRESSES	TELEPHONE
Dr. Bott email	(b) (4) [redacted]

NAMES AND ADDRESSES	TELEPHONE
Residues of Hazwaste in empty containers 261.7	
Exxon Mobil - Gatguard info	409-757-3321
Entech Engineering - Billy Lee	(b) (4) [redacted] Cel
EXIROS : Login: thanaudu1	
PW: (b) (4) [redacted]	
Ellen Hoffman (b) (4) [redacted]	
~~Exiros~~ Exiros: UN Thanaudu1	
PW: (b) (4) [redacted] (case sensitive)	

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

NAMES AND ADDRESSES	TELEPHONE
Fed Ex ~~Ground~~ Freight Package Systems Inc	
TCEQ # 87041	
EPA # TX 0001358114	
Fleetcare Tech 1-800-877-0800	(b) (4)
Login: 205034P ; PW	(b) (4)
http://www.fleetnet.net/	
Fleet # (b) (4)	Acct # (b) (4)
	(b) (4)
Fire Marshall - Gerard Rey	
- Mark Ritchie	(b) (4)
(b) (4)	
(b) (4)	

firecode CFR 29
- address all hazards
- physical and health hazards

RTO - issues
- give a diagram on what was in the report
- NFPA stds - safety devices need to be addressed

CES faxes numbers 713-676-1671
713-748-8664

NAMES AND ADDRESSES	TELEPHONE
HW Petroleum - Dayna Ring	(b) (4)
Dring@HWpetro.com	
(b) (4)	
Hemaiths websites - newspread.de	
- hkumart.info	
Garner Environmental	
Bruce Dumsnil	281-930-1200

EPAHO043001488

NAMES AND ADDRESSES	TELEPHONE
HACSC login: prabhakar-thangudu	
PW: pravaca	
Huntsman- Sam Simino	(b) (4) [redacted]
(Coastguard info).	
Houston Fire Dept. Station 45	
Chief Hooker	(b) (4) [redacted]
TEAP	

NAMES AND ADDRESSES	TELEPHONE
India	(b) (4) [redacted]
Kuhlman Gulley 2 miles south	

EPAHO043001489

NAMES AND ADDRESSES	TELEPHONE
JJ Keller - Troy lentz	(b) (4) [redacted]

NAMES AND ADDRESSES	TELEPHONE
KMTEX Tracey	(b) (4) [redacted]

court guard info

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

EPAHO043001490

NAMES AND ADDRESSES	TELEPHONE
Lee Trans - Margaret [redacted]	936-632-1925 main-line
~~dd dgd~~ dqds@leetrans.com	
moberlechner@leetrans.com	

NAMES AND ADDRESSES	TELEPHONE
myescreen	1-800-881-0722
manjucell [redacted]	
McQuain Agency - Bonding Company	
Erin McQuain 281-350-6600 Ext 205	
monica Aguillard 832-435-1973	
Marita 713-675-4922	
→ Login: cesenvironmental	
PW: [redacted]	
mortgage	

EPAHO043001491

NAMES AND ADDRESSES	TELEPHONE
Newpark Env Svcs, LLC (State ID 39098) Yvonne Hudspeth, CSR, NCMS username: [redacted] PW: (b) (4) [redacted] Newpark Finger print test compatibility, solids, % oil (limit is 5%) Radioactive scan, flash point). NCMS - Tricia Radke	EPA ID# TXR000036731 409-794-3119; 1355 fax

NAMES AND ADDRESSES	TELEPHONE
Odor Control Company 1-800-970-8660 O'Rourke Petroleum HSE Tim Menard 281-774-0004 615-1229 Outlook: (b) (4) [redacted]	Nick Burgess H_2S & Mercaptan odor control Rusie Oliver (b) (4) [redacted]

Outfall Sampling

½ metals - Red tape (Plastic) on top (Nitric acid)
BOD & TSS - Plastic 1 liter
O & G - Glass bottles
COD / TKN / Total Phosphorus - yellow tape (Sulfuric acid)
pH / NO_2 N & NO_3 N - Plastic ½ liter

→ H_2SO_4 - glass
→ plastic

EPAHO043001492

NAMES AND ADDRESSES	TELEPHONE	NAMES AND ADDRESSES	TELEPHONE
Accesss PW : (b) (4)			
Pollution control Professor on line Environmental Clinic pollutionmentrol @ ~~aol~~ pfonline.com			
Stephen R. Schulte, PE Hixson, Inc Cincinnati, OH			

EPAHO043001493

NAMES AND ADDRESSES	TELEPHONE
RCRA digouts facilities with flare or emission capture systems Alfa Tech services Pasadena, TX Quala Systems, Clute, TX Philip svcs, La Porte, TX Ralph Chiquet 281-379-7197 (b) (4)	
Rineco - Misty Duncan ethomas; Kool!	(b) (4)
Republic - Rose Reimann 979-848-1031	

NAMES AND ADDRESSES	TELEPHONE
http://safer.fmcsa.dot.gov/companySnapshot.aspx Jesse Baltinghouse - TCEQ 512-239-6865 Tel 512-239-6355 Fax	

EPAHO043001494

NAMES AND ADDRESSES	TELEPHONE
Texas Association of Environmental Professionals	
Bobby Aguilar, TCEQ,	713-767-3747
Texas mutual - Susan Larison	713-316-2136 Tel
	713-376-1319 Cell
Tom Stang, Rohm & Haas	281-228-2997
Donna Phillips, TCEQ, Regional Director	
Regional # 12	713-767-3659
dophilli@tceq.state.tx.us	
Terry Aguillard	409-960-1760
TxDOT : https://apps.dot.state.tx.us/apps/mccs2/	
Total metals (SW-846 6010C) - Ar, Ba, Cd, Cr, Pb, Se, S	
Total Mercury (SW-846 7470A)	
BTEX - Purgeable Aromatics (SW-846 8021B)	
~~BTEX~~ ethyl benzene, m & p-xylenes, o-xylene	
TARGA Resources - Tammy Jackson	
713-584-1423 tjackson@targaresources.com	
Tx Mutual - Karin Crouse	
1-800-859-5995 x	7291
TCEQ - Region 12 contact name	
Jesse Boultinghouse, manager	
512-239-2334	
Tenaris - Exiros	UN: Thangudu1
	PW: CesEnv99 (case sensitive)
TCEQ query	
http://www4.tceq.state.tx.us/IHWFacility/index.cfm?fuseaction=search.criteria	

NAMES AND ADDRESSES	TELEPHONE
USIS [# 0031858]	1-800-288-8504
Linda Terrell	Ext: 2646
Linda.Terrell@USIS.com	
~~Hirite~~ - USIS new name - HireRite Solutions, Inc	
4500 S. 129th East Avenue, suite 200	
Tulsa, OK 74134-5885	

EPAHO043001495

AB CD EF GH IJ KL MN OP QR ST UV

NAMES AND ADDRESSES	TELEPHONE
David Vandenberg Meta Vandenberg Cell	(b) (4)

NAMES AND ADDRESSES	TELEPHONE
WCM weebly.com Login: thangudu ; WWdisposal: pthangudu@cesenvironmental.com pravaca1 www.wmdisposal.com lkraen@wm.com ~~fax~~ 832-668-3156 Tel 713-423-1888 Welder: Tracey Goulding	281-446-7070 Fax: 281-446-3345 PW: pravaca Lauren (b) (4)

W X Y Z

AT-A-GLANCE®

EPAHO043001496

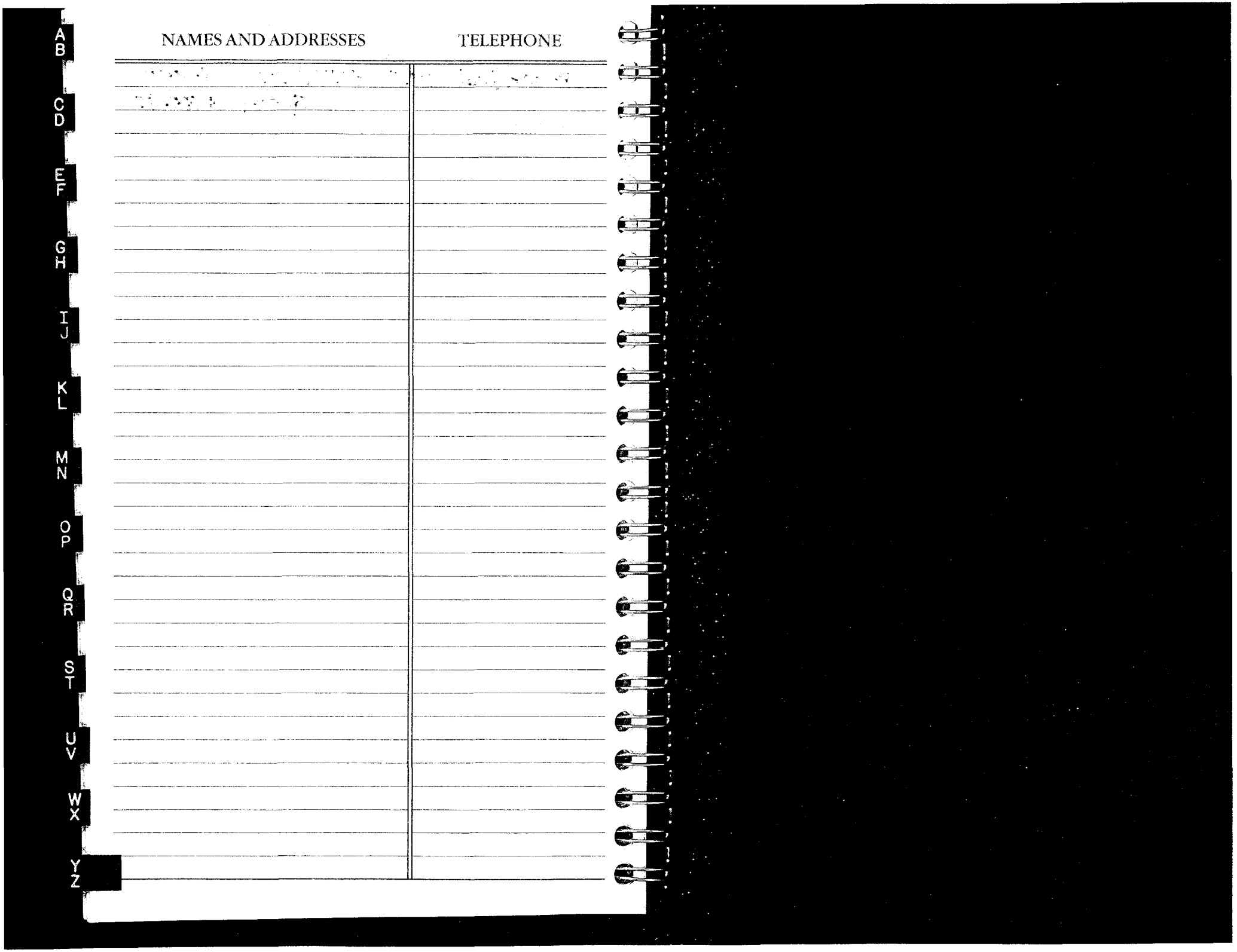
AB CD EF GH IJ KL MN OP QR ST UV WX YZ

NAMES AND ADDRESSES	TELEPHONE

NAMES AND ADDRESSES	TELEPHONE
Zee medical PO# 377677	$990 spent $155.92
Jerry milk (b) (4) [redacted]	

AT-A-GLANCE

EPAHO043001497



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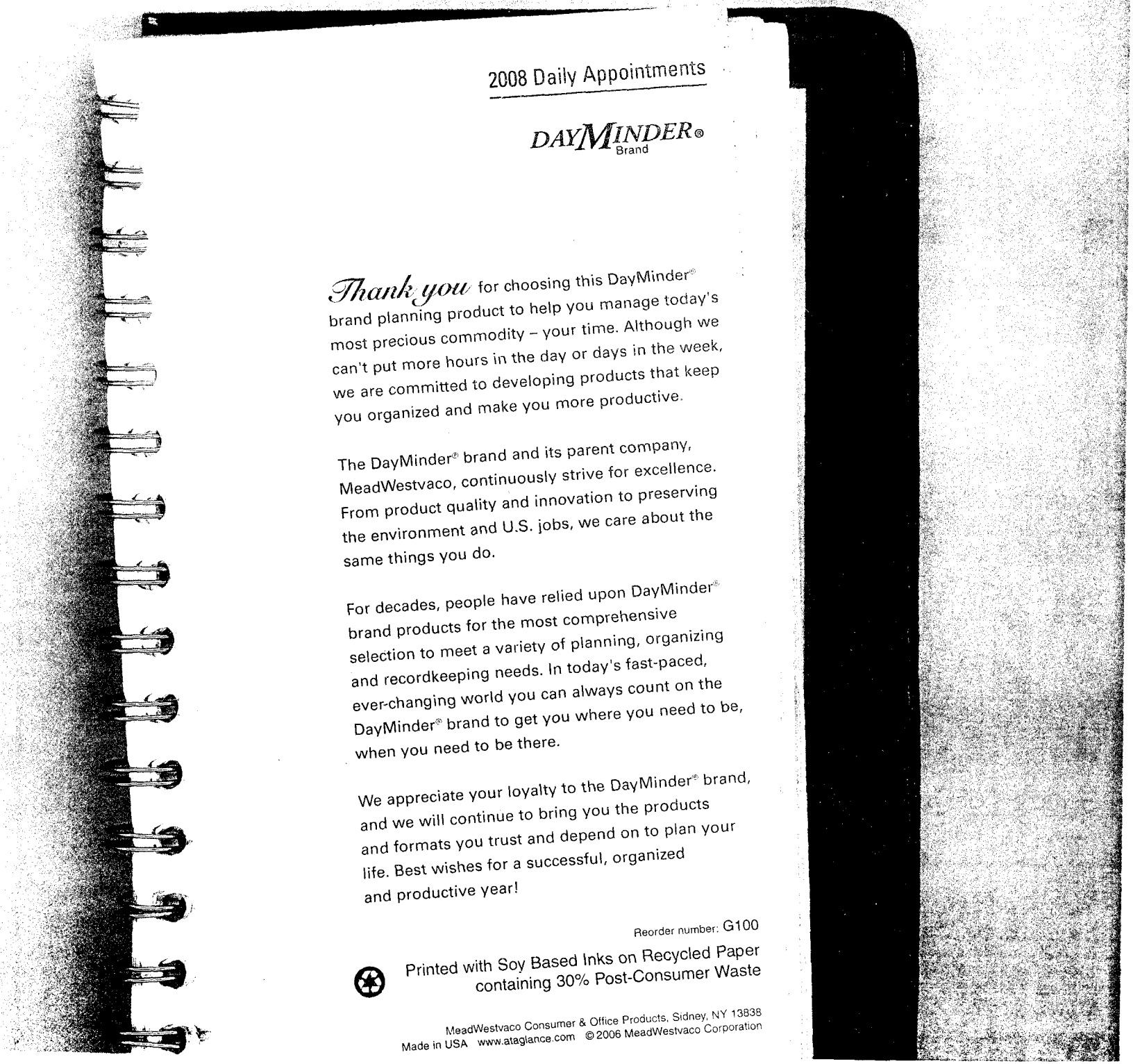

2008 Daily Appointments

DAYMINDER® Brand

Thank you for choosing this DayMinder® brand planning product to help you manage today's most precious commodity – your time. Although we can't put more hours in the day or days in the week, we are committed to developing products that keep you organized and make you more productive.

The DayMinder® brand and its parent company, MeadWestvaco, continuously strive for excellence. From product quality and innovation to preserving the environment and U.S. jobs, we care about the same things you do.

For decades, people have relied upon DayMinder® brand products for the most comprehensive selection to meet a variety of planning, organizing and recordkeeping needs. In today's fast-paced, ever-changing world you can always count on the DayMinder® brand to get you where you need to be, when you need to be there.

We appreciate your loyalty to the DayMinder® brand, and we will continue to bring you the products and formats you trust and depend on to plan your life. Best wishes for a successful, organized and productive year!

Reorder number: G100

Printed with Soy Based Inks on Recycled Paper containing 30% Post-Consumer Waste

MeadWestvaco Consumer & Office Products, Sidney, NY 13838
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EPAHO043001499

2007/2008/2009

2007

January 2007

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February 2007

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March 2007

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April 2007

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July 2007

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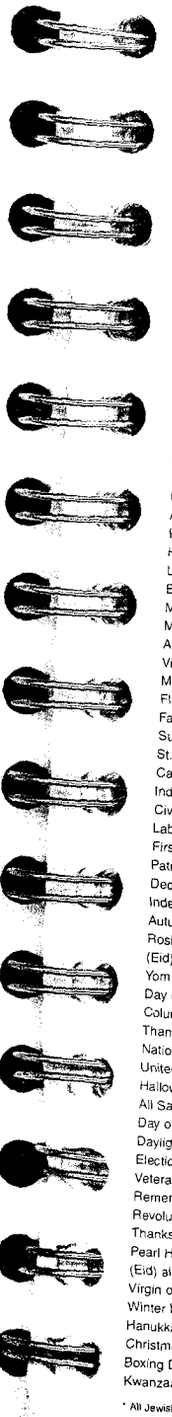

Important Dates

Holiday	2008	2009	2010	2011
New Year's	Tue/Jan 1	Thu/Jan 1	Fri/Jan 1	Sat/Jan 1
First of Muharram (occurs twice in 2008- 12/29/08)	Thu/Jan 10	Fri/Dec 18	Tue/Dec 7	Sat/Nov 26
Ashura (occurs twice in 2009- 12/27/09)	Sat/Jan 19	Wed/Jan 7	Thu/Dec 16	Mon/Dec 5
Martin Luther King, Jr. Day (US)	Mon/Jan 21	Mon/Jan 19	Mon/Jan 18	Mon/Jan 17
Anniversary of the Constitution (M)	Tue/Feb 5	Thu/Feb 5	Fri/Feb 5	Sat/Feb 5
Ash Wednesday	Wed/Feb 6	Wed/Feb 25	Wed/Feb 17	Wed/Mar 9
Lunar New Year	Thu/Feb 7	Mon/Jan 26	Sun/Feb 14	Wed/Feb 2
Lincoln's Birthday (US)	Tue/Feb 12	Thu/Feb 12	Fri/Feb 12	Sat/Feb 12
Valentine's Day	Thu/Feb 14	Sat/Feb 14	Sun/Feb 14	Mon/Feb 14
Presidents' Day (US)	Mon/Feb 18	Mon/Feb 16	Mon/Feb 15	Mon/Feb 21
Washington's Birthday (US)	Fri/Feb 22	Sun/Feb 22	Mon/Feb 22	Tue/Feb 22
Flag Day (M)	Sun/Feb 24	Tue/Feb 24	Wed/Feb 24	Thu/Feb 24
Daylight Saving Time begins	Sun/Mar 9	Sun/ Mar 8	Sun/Mar 14	Sun/Mar 13
Eastern Orthodox Lent begins	Mon/Mar 10	Mon/Mar 2	Mon/Feb 15	Mon/Mar 7
Palm Sunday	Sun/Mar 16	Sun/Apr 5	Sun/Mar 28	Sun/Apr 17
St. Patrick's Day	Mon/Mar 17	Tue/Mar 17	Wed/Mar 17	Thu/Mar 17
Spring begins	Thu/Mar 20	Fri/Mar 20	Sat/Mar 20	Sun/Mar 20
Benito Juarez' Birthday (M)	Fri/Mar 21	Sat/Mar 21	Sun/Mar 21	Mon/Mar 21
Good Friday	Fri/Mar 21	Fri/Apr 10	Fri/Apr 2	Fri/Apr 22
Easter	Sun/Mar 23	Sun/Apr 12	Sun/Apr 4	Sun/Apr 24
Easter Monday (C)	Mon/Mar 24	Mon/Apr 13	Mon/Apr 5	Mon/Apr 25
Passover*	Sun/Apr 20	Thu/Apr 9	Tue/Mar 30	Tue/Apr 19
Administrative Professionals Day (C,US)	Wed/Apr 23	Wed/Apr 22	Wed/Apr 21	Wed/Apr 27
Eastern Orthodox Easter	Sun/Apr 27	Sun/Apr 19	Sun/Apr 4	Sun/Apr 24
Holocaust Remembrance Day	Thu/May 1	Tue/Apr 21	Sun/Apr 11	Sun/May 1
Labor Day (M)	Thu/May 1	Fri/May 1	Sat/May 1	Sun/May 1
Battle of Puebla (M)	Mon/May 5	Tue/May 5	Wed/May 5	Thu/May 5
Mother's Day (M)	Sat/May 10	Sun/May 10	Mon/May 10	Tue/May 10
Mother's Day (C,US)	Sun/May 11	Sun/May 10	Sun/May 9	Sun/May 8
Armed Forces Day (US)	Sat/May 17	Sat/May 16	Sat/May 15	Sat/May 21
Victoria Day (Canada)	Mon/May 19	Mon/May 18	Mon/May 24	Mon/May 23
Memorial Day, Observed (US)	Mon/May 26	Mon/May 25	Mon/May 31	Mon/May 30
Flag Day (US)	Sat/Jun 14	Sun/Jun 14	Mon/Jun 14	Tue/Jun 14
Father's Day	Sun/Jun 15	Sun/Jun 21	Sun/Jun 20	Sun/Jun 19
Summer begins	Sat/Jun 21	Sun/Jun 21	Mon/Jun 21	Tue/Jun 21
St. Jean Baptiste (Québec)	Tue/Jun 24	Wed/Jun 24	Thu/Jun 24	Fri/Jun 24
Canada Day	Tue/Jul 1	Wed/Jul 1	Thu/Jul 1	Fri/Jul 1
Independence Day (US)	Fri/Jul 4	Sat/Jul 4	Sun/Jul 4	Mon/Jul 4
Civic Holiday (Canada)	Mon/Aug 4	Mon/Aug 3	Mon/Aug 2	Mon/Aug 1
Labor Day (C,US)	Mon/Sep 1	Mon/Sep 7	Mon/Sep 6	Mon/Sep 5
First of Ramadan	Tue/Sep 2	Sat/Aug 22	Wed/Aug 11	Mon/Aug 1
Patriot Day (US)	Thu/Sep 11	Fri/Sep 11	Sat/Sep 11	Sun/Sep 11
Declaration of Independence (M)	Mon/Sep 15	Tue/Sep 15	Wed/Sep 15	Thu/Sep 15
Independence Day (M)	Tue/Sep 16	Wed/Sep 16	Thu/Sep 16	Fri/Sep 16
Autumn begins	Mon/Sep 22	Tue/Sep 22	Thu/Sep 23	Fri/Sep 23
Rosh Hashanah*	Tue/Sep 30	Sat/Sep 19	Thu/Sep 9	Thu/Sep 29
(Eid) al Fitr	Thu/Oct 2	Sun/Sep 20	Fri/Sep 10	Tue/Aug 30
Yom Kippur*	Thu/Oct 9	Mon/Sep 28	Sat/Sep 18	Sat/Oct 8
Day of the Race (M)	Sun/Oct 12	Mon/Oct 12	Tue/Oct 12	Wed/Oct 12
Columbus Day, Observed (US)	Mon/Oct 13	Mon/Oct 12	Mon/Oct 11	Mon/Oct 10
Thanksgiving (Canada)	Mon/Oct 13	Mon/Oct 12	Mon/Oct 11	Mon/Oct 10
National Boss Day (US)	Thu/Oct 16	Fri/Oct 16	Sat/Oct 16	Sun/Oct 16
United Nations Day	Fri/Oct 24	Sat/Oct 24	Sun/Oct 24	Mon/Oct 24
Halloween	Fri/Oct 31	Sat/Oct 31	Sun/Oct 31	Mon/Oct 31
All Saints Day (M)	Sat/Nov 1	Sun/Nov 1	Mon/Nov 1	Tue/Nov 1
Day of the Dead (M)	Sun/Nov 2	Mon/Nov 2	Tue/Nov 2	Wed/Nov 2
Daylight Saving Time ends	Sun/Nov 2	Sun/Nov 1	Sun/Nov 7	Sun/Nov 6
Election Day (US)	Tue/Nov 4	Tue/Nov 3	Tue/Nov 2	Tue/Nov 8
Veterans Day (US)	Tue/Nov 11	Wed/Nov 11	Thu/Nov 11	Fri/Nov 11
Remembrance Day (Canada)	Tue/Nov 11	Wed/Nov 11	Thu/Nov 11	Fri/Nov 11
Revolution Anniversary (M)	Thu/Nov 20	Fri/Nov 20	Sat/Nov 20	Sun/Nov 20
Thanksgiving (US)	Thu/Nov 27	Thu/Nov 26	Thu/Nov 25	Thu/Nov 24
Pearl Harbor Remembrance Day (US)	Sun/Dec 7	Mon/Dec 7	Tue/Dec 7	Wed/Dec 7
(Eid) al Adha	Tue/Dec 9	Fri/Nov 27	Tue/Nov 16	Sun/Nov 6
Virgin of Guadalupe (M)	Fri/Dec 12	Sat/Dec 12	Sun/Dec 12	Mon/Dec 12
Winter begins	Sun/Dec 21	Mon/Dec 21	Tue/Dec 21	Wed/Dec 21
Hanukkah*	Mon/Dec 22	Sat/Dec 12	Thu/Dec 2	Wed/Dec 21
Christmas	Thu/Dec 25	Fri/Dec 25	Sat/Dec 25	Sun/Dec 25
Boxing Day (C)	Fri/Dec 26	Sat/Dec 26	Sun/Dec 26	Mon/Dec 26
Kwanzaa begins	Fri/Dec 26	Sat/Dec 26	Sun/Dec 26	Mon/Dec 26

* All Jewish holidays start at sundown the day before they are listed here

C - Canada, M - Mexico, US - United States

EPAHO043001500

31 December Monday

365/0

December 2007
S M T W T F S
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9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30 31

7:00 a.m. — p.m. 12:00

7702-3208

7:15 US DOT 869392 ; MC 400234 — 12:15
7:30 EPA ID TXD 008 950 461 — 12:30
7:45 Fed Tax ID 760592985 — 12:45
8:00 State Tax ID 17605929854 — 1:00
8:15 Tx DOT Certificate 0055165524-C — 1:15
8:30 TCEQ : RN 100693282 — 1:30
8:45 TCEQ : CN 600618946 — 1:45
9:00 DUN & B 00-173-6581; rating: 3A2 — 2:00
9:15 SIC 1542; 4212 — 2:15
9:30 NAICS 562219 — 2:30
9:45 ISNetworld - Drug Program Administrator — 2:45
10:00 - Stacy Bughm, NCMS 620-669-4428 — 3:00
10:15 Texas Mutual - pthangudu; pravaca — 3:15
10:30 ISN - pthangudu; Pravaca 2 214-303-4900 Brittany — 3:30
10:45 Tx Mutual Claudia, Florida 1-888-252-5075 — 3:45
Ext 2206 - medical questions
11:00 — 4:00
11:15 Steers ER006121 ; pravaca1 — 4:15
11:30 myesween : Cesenvironmental ; drugscreen3 — 4:30
11:45 Lion Technology : prabhakarT, blueitem — 4:45
Course: 525 888-546-6511
Websupport: 973-383-0800
5:00 Metcalf & Eddy - Wastewater Engineering — 6:30
5:15 Treatment and Reuse ISBN 978-0-704 18783-4 — 6:45
5:30 Reliant : thangudu; pravaca 713-207-7777 #4 2018 2523 — 7:00
5:45 Fuelman : www.fleetnet.net ; UN-265034 P — 7:15
6:00 1-800-871-0800 PW: CES4you — 7:30
6:15 Hemanth; 335666 Georgia Tech Station, Atlanta — 7:45
GA 30332-1640 ; 832-659-1409 ; TXDL 25321529

Fleet management card services

January 2008
S M T W T F S
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13 14 15 16 17 18 19
20 21 22 23 24 25 26
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Tuesday January 1

New Year's 1/365

7:00 a.m. — p.m. 12:00

7:15 RUBOSH Law Firm - Ticket Dismissal — 12:15
7:30 713-222-0880 0990; 1619 Lubbock; 4pm — 12:30
7:45 Lead Abatement, Armando Saenz 281-847-9635 — 12:45
8:00 Cut-(1)Hibistat towelette (clean with it) — 1:00
8:15 (2) Spray staphA septic — 1:15
8:30 (3) Skin shield — 1:30
8:45 (4) Cover with bandage — 1:45
9:00 — 2:00
9:15 Kellen online ; login: mmgovt9 PW: mm6691 — 2:15
9:30 — 2:30
9:45 login: thangudu; PW: pt1063 — 2:45
10:00 IFTA - state comptroller's office — 3:00
10:15 Andrea Sorensen 1-800-531-5441 X33707 — 3:15
10:30 Safety Shoes - Mike Nabors — 3:30
10:45 713-928-6691 (office); 281-923-2256 (cell) — 3:45
11:00 GT userID: 902349035; http://www.buzzcard.gatech.edu — 4:00
11:15 WM login: pthangudu@cesenvironmental.com — 4:15
11:30 PW (b) (4) — 4:30
11:45 JJKellu: Account# (b) (4) 1-800-327-6868 tisa 2406 2581 Sivil
Comm. 800-843-3174 X 23614
5:00 (b) (4) — 6:30
5:15 Visa: 4807 0732 0205 3173 909 065 mail Bowman; CES Environmental Service — 6:45
5:30 Mark Stoebner TCEQ 512-239-6150 — 7:00
5:45 Ins Alliance : Debra 713-966-1777 — 7:15
6:00 Fax 713-966-1700 — 7:30
6:15 Concentra 7 to 6 M-F; 8-12 Sat. — 7:45
Fax 713-973-7947

AT-A-GLANCE®

EPAHO043001501

2 January Wednesday

2/364

January 2008

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7:00 a.m. — **p.m. 12:00**

7:15 Amsterdam Printing: Rep: Tischa Hall 12:15
7:30 1-866-~~203-9917~~ 466-1438 # 3674 # 043-8225 12:30
7:45 City mortgage 1-800-283-7918 12:45
8:00 HAISC: ~~Thangudu, Pravaca~~ 281-476-9900 Prabhakar Thangudu, Pravaca 3173 **1:00**
8:15 Benzene 19BENZEN 1:15
8:30 H_2S Awareness 19H_2S1 1:30
8:45 RCRA Part 1 19RCRA1 1:45
9:00 RCRA Part 2 19RCRA2 **2:00**
9:15 TCEQ: Scott Green → 1-512-239-6412 2:15
9:30 Jessie Bottinghouse 2:30
9:45 Terry ~~Barker~~ Baca 512-239-6842 Tel → 1-512-239-6865 → Fax: 6383 2:45
10:00 WM: Pfluger Clay 713-423-1837 **3:00**
10:15 Approvals Chemist 3:15
10:30 1901 Aften Street 3:30
10:45 Kotler Fire Protection: Bob Tallon/Mike Shrake 3:45
11:00 713-733-6888 **4:00**
11:15 Harvey Stahl 710 → Equipment # 356 4:15
11:30 PICS auditing for Shell Lubricants 4:30
11:45 949-387-1940 Ext: 707 4:45
Jessee Cota Login: thangudu; pw: (b) (4) [redacted]
5:00 FMC - Steve Gibson 610-458-5559 Tel 6:30
5:15 610-458-7044 fax; 484-364-1233 cell 6:45
steve-gibson@fmc.com
5:30 First Advantage 1-800-684-4448 #4 **7:00**
5:45 Debra-Marie Wood: dwood@ins-alliance.com 7:15
6:00 713-966-1777 direct
6:15 800-856-1776
713-966-1700 fax

February 2008

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Thursday January 3

3/363

7:00 a.m. Jindal - purchasing - Preston Teague **p.m. 12:00**
7:15 281-383-5108 12:15
7:30 preston.teague@jswsteelusa.com 12:30
7:45 12:45
8:00 South Coast Fire and Safety **1:00**
8:15 Alex Williams 713-649-6691; fax 6694 1:15
8:30 6230 Brookhill, Hou, TX 77087 1:30
8:45 Jennifer Grillo cell 832-723-7599 1:45
9:00 Concentra - Marilla ext. 108 **2:00**
9:15 USIS Account # (b) (4) [redacted] 2:15
9:30 Air meter filter parts - ~~cork~~ (1) White 2:30
9:45 cork 54-05-K0401 2:45
10:00 (2) External filter P/N: (b) (4) [redacted]
10:15 Texas Mutual 1-800-859-5995 3:15
10:30 NDI password: (b) (4) [redacted] 3:30
10:45 Texas Boiler Inspector - Mike Spurling 3:45
11:00 713-924-6307 **4:00**
11:15 COH - Stormwater Inspector Willy Harvey 4:15
11:30 713-293-2908 4:30
11:45 All metal Recovery - we pay cash for scrap steel and iron, we come to you 832-253-7706 4:45
5:00 Reliant thangudu, pravaca 6:30
5:15 RRCT Vince 512-463-6778 6:45
5:30 AT&T 1-800-288-2020 **7:00**
5:45 Texas Water management - Mark Atkins 7:15
6:00 281-685-4420 7:30
6:15 Louisiana DOT overweight tickets 7:45

4 January Friday

4/362

January 2008

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7:00 a.m. — p.m. 12:00

7:15 McCoys - 303-526-2674 - Jamie — 12:15
7:30 Lubrizol - Fran G. Hejtmanek — 12:30
7:45 832-260-7843 — 12:45
8:00 fgh@lubrizol.com — 1:00
8:15 godaddy.com — 1:15
8:30 Customer # 7501; pin [redacted] (b) (4) — 1:30
8:45 ~~Customer #~~ Confir# 20633440 — 1:45
9:00 PW: pravaca1, pin [redacted] (b) (4) — 2:00
9:15 Texas Mutual - Worker's Comp — 2:15
9:30 Policy # TSF0001086044 — 2:30
9:45 1-800-859-5995 — 2:45
10:00 6210 East Highway 290 — 3:00
10:15 Austin, TX 78723-1098 — 3:15
10:30 www.texasmutual.com — 3:30
10:45 HON - Hazardous organic neshap — 3:45
11:00 MON - Miscellaneous organic neshap — 4:00
11:15 Ensource Corporation 713-896-8309 Tel — 4:15
11:30 Megan Flowers 713-896-8928 Fax — 4:30
11:45 mflower@ensourcecorp.com — 4:45
8226 X Warren Rd ?, Hon 77040
5:00 Harris County online ticket pmt — 6:30
5:15 website: www.ccl.hctx.net — 6:45
5:30 Exiros : [redacted] (b) (4) — 7:00
5:45 — 7:15
6:00 Training Network James Russell — 7:30
6:15 1-800-397-5125 #1122 — 7:45

February 2008

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Saturday January 5

5/361

7:00 a.m. — p.m. 12:00

7:15 Manju Continental GL 061856; 9820 — 12:15
7:30 Cynthia Rankin - Clark's Attorney — 12:30
7:45 713-225-3600 — 12:45
8:00 Rineco 1-800-377-4692 Susie 328 — 1:00
8:15 Fax 1-501-778-8505 — 1:15
8:30 Pipeline Filters - Pyrophoric (test) — 1:30
8:45 UHCs - characteristic wastes must meet universal — 1:45
9:00 treatment standards (UTS) for all UHCs prior to — 2:00
9:15 land disposal. [UHCs listed in Section 268.48] — 2:15
9:30 UHCs are identified in characteristic wastes — 2:30
9:45 and are found in UTS table at 268.48 for the — 2:45
10:00 listed and characteristic waste codes except — 3:00
10:15 for fluoride, selenium, sulfides, vanadium, — 3:15
10:30 and zinc) — 3:30
10:45 Regulated hazardous constituents are the — 3:45
11:00 constituents known to be in listed and TC — 4:00
11:15 waste and are found in the 268.40 table — 4:15
11:30 for the listed waste code. — 4:30
11:45 Newmark 713-346-0200 — 4:45
Customer Service 713-346-0211 — Sunday 6/360 6
→ Alfred Garza; Fay
houstonwarranty@newmark.com
Google Envirofacts

TxDOT www.dot.state.tx.us/apps/mccs2/
[redacted] (b) (4)

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EPAHO043001503

7 January Monday

7/359

January 2008
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7:00 a.m. — p.m. 12:00

7:15 Intergulf 281-474-4210 Tel; 2987 fax
7:30 ~~Veld~~ Veolia 713-307-2100 Tel, 7600 ~~fax~~
7:45 LES 713-671-4800 # 4806 Crystal ~~g~~
8:00 regarding ASR; 281-594-9988 cell
8:15 Paez; 8935 N.W. 148th Street, Miami FL 33018
8:30 Concentra Mobile Services - Tara Hollimon
8:45 713-280-0365
9:00 Total Safety 281-867-2300
9:15 Rose Bainum cell 979-481-3199 Republic
9:30 Republic - steve Brown; cell; Bobby [redacted]
9:45 979-848-1302 ~~Di~~ Tel
10:00 713-539-3782 cell Carl [redacted] Tel
10:15 281-867-2309 Glen Lindsey
10:30
10:45 Republic - Rose 979-848-1031 Tel
11:00 EZ Tag: Account # [redacted]
11:15 Fax: 832-590-6625
11:30 Tel: 281-875-3279
11:45 USIS 402-483-6600 tel; 7949-fax

5:00 PCI - Maya 1-800-388-7242
5:15 Total Safety - Glen Lindsey
5:30 glindsey@totalsafety.com
5:45 281-709-3144
6:00 PCI - Drew Hurst cell [redacted]
6:15 dhurst@pollutioncontrol.com

6:30
6:45
7:00
7:15
7:30
7:45

February 2008
S M T W T F S
1 2
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Tuesday January 8

8/358

7:00 a.m. — p.m. 12:00

7:15 COH - ~~Clyde~~ Clyde Smith | Charles Graham
7:30 T 281-575-2800 | [redacted]
7:45 F 281-983-6704
8:00 SWPPP - COH & Willie Harvey
8:15 T 713-678-5820
8:30 F 713-676-6514
8:45 PPG: Doug Williamson
9:00 337-708-4334 T; 4766 fax
9:15 dwilliamson@ppg.com
9:30 RCRA Hotline 1-800-424-9346
9:45 Concentra - Tara Hollimon
10:00 713-280-0365 T
10:15 713-817-7398
10:30 First Advantage - www.fadv.com/hire-check/
10:45
11:00 Account # [redacted]
11:15 Web login pthrangadu
11:30 PW: [redacted]
11:45 H&W Petroleum - Marc Bellemore
713-670-1825 - Direct
5:00 713-672-0893 - office
5:15 COH - Naomi Macias 713-640-4276 T; 4588 F
5:30 COH - Ira Wade 713-640-4200 ira.wade@cityofhouston.net
5:45 PPG - Jeff Grimes 281-471-0943
6:00 jgrimes@ppg.com
6:15

7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001504

9 January Wednesday

9/357

January 2008

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7:00 a.m. — p.m. 12:00

7:15 Tom Stang, Rohm & Haas — 12:15
7:30 281-228-2997 — 12:30
7:45 tstang@rohmhaas.com — 12:45
8:00 waste disposal coordinator — 1:00
8:15 Jim Well - 281-228-2900 — 1:15
8:30 David McCormick, BCM — 1:30
8:45 713-398-7209 Cell — 1:45
9:00 — 2:00
9:15 Mahender Mohite PE, MBA — 2:15
9:30 Lead Env. Engineer — 2:30
9:45 MWH — 2:45
10:00 5100 Westheimer, suite 580 — 3:00
10:15 Houston, TX 77056 — 3:15
10:30 Cell 832-331-2264 — 3:30
10:45 Graphic Products - Doug Johnson — 3:45
11:00 800-788-5572 — 4:00
11:15 WCM - Sharon Garrett — 4:15
11:30 Cisco Boiler - Roger 713-928-5700 — 4:30
11:45 Chuck — 4:45
COH - bids and contracts
5:00 Leena Farris 832-393-8729 — 6:30
Bobby Quasim 713-837-9028
5:15 Enterprise - Ed Laszcz — 6:45
5:30 832-584-4995 cell — 7:00
5:45 281-385-4300 offic — 7:15
6:00 Chem Aqua - David 281-610-4827 — 7:30
6:15 Port Arthur - 2420 South Gulfway Drive — 7:45
Port Arthur, TX 77640

Thursday January 10

First of Muharram 10/356

February 2008

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24	25	26	27	28	29	

7:00 a.m. — p.m. 12:00

2420 South Hwy 87
Port Arthur, TX 77640

7:15 NWD Lab - Chris - Technical & Methods — 12:15
7:30 281-705-3174 Cell; 936-321-6060 office — 12:30
7:45 Crowcon Tetra - Adrian — 12:45
8:00 1-800-527-6926 — 1:00
8:15 21 Kenton Lands Road, Erlanger KY 41018-1845 — 1:15
8:30 Hana Sadiku, 12319 Nockey St., Hou 77086 — 1:30
8:45 System 1 - New Park class I waste liquids — 1:45
9:00 System 2 - Republic - sludge class I — 2:00
9:15 System 3 - BFI - Class 2 solids — 2:15
9:30 Clint Hopkins 832-298-9726 — 2:30
9:45 Mancomm 1-800-626-2666 — 2:45
10:00 www.mancomm.com — 3:00
10:15 Complete blood panel — 3:15
10:30 Sonya Lewis - COH - 713-640-4249 — 3:30
10:45 Lee Trans - Accounting - Sara Vest — 3:45
11:00 936-632-1925 Ext 124 — 4:00
11:15 ISN :- PThangudu; PW: ~~DC297~~ ~~D2 CGT~~ — 4:15
11:30 Pravacaz — 4:30
11:45 Texas Mutual Larry Leutwyler 713-316-2201 — 4:45
Evelyn Sasser 713-316-2267
5:00 email esasser@texasmutual.com — 6:30
5:15 Mike Zerella, Chacolate Bayou — 6:45
5:30 "100 años de soledad" — 7:00
5:45 Gabriel Garcia Marquez — 7:15
6:00 — 7:30
6:15 — 7:45

AT-A-GLANCE®

11 January Friday

1/355

January 2008

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27	28	29	30	31		

7:00 a.m. Regulators' Top Violations (2003-2005)
7:15
7:30 1. Waste Label not properly filled out
7:45 2. Weekly inspections not complete
8:00 3. Open waste containers
8:15 4. Required Annual Training NOT documented
8:30 5. Failure to characterize waste
8:45 6. Satellite Accumulation Errors
9:00
9:15 NCMS online
9:30 Non-exempt pthengvu@caseenvironmental.com
9:45 PW pxy782
10:00
10:15 David Vandenberg
10:30 Health South I-45 Conroe
10:45 Rm# 2094 B 281-364-2000
11:00
11:15
11:30
11:45

p.m. 12:00
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5:00
5:15 The name of the Rose
5:30 Umberto ECO
5:45 El Nombre de la Rosa
6:00
6:15

6:30
6:45
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EPAHO043001506

February 2008

S	M	T	W	T	F	S
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3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

Saturday January 12

12/354

7:00 a.m.
7:15 Used oil RCRA Training
7:30 ICOT 256-726-8776 x 104
7:45 email: admin@icottraining.org
8:00 login: thangvu; PW: (b) (4)
8:15
8:30 Canyon Offshore - need CEA in REM to do Health
8:45 Glen Wooten 713-856-6010
9:00 Brittmore - between Cky Road & Tanner
9:15 Lubrizol - ACRN Training - Amps Unit
9:30 Mike Zarella, HSSE Advisor, 713-241-2450
9:45 mike.zarella@nautecholmo.com; mzarella@shell.com
10:00 T 713-678-5808; F 713-676-6514
10:15 Cell (b) (4)
10:30 Pavan 1001 N. 2nd Street, Apt# 525
10:45
11:00 Philadelphia, PA 19123
11:15 440-278-0750
11:30 Hemanth; 335666 Georgia Tech Station
11:45 Atlanta, GA 30332 1-404-849-1141
Buzzcard 902349035

p.m. 12:00
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Sunday 13/353 **13**

A/C - Robert 409-682-2272
Concentra - Kim - manager
713-973-7943
(b) (4) Cell
ebay: thangvu1
(b) (4)

AT-A-GLANCE®

14 January Monday

14/352

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m. — p.m. 12:00

7:15 Houston Fence 281-499-2516 Sharon
7:30 Operator: Doug King
7:45 Antimony 1; Beryllium 0.08; Nickel 70
8:00 Center Point Energy 713-635-7405 Larry Wunderlich
8:15
8:30
8:45 TCEQ 512-239-1000
9:00 Superfund information:
9:15 → Jeff Patterson, Superfund
9:30 → jepatter@tceq.state.tx.us
9:45 512-239-2489
10:00 City of Port Arthur - Solid Waste -
10:15
10:30 Gerald Robinson 409-983-8518
10:45 ~~[illegible] 2554~~ Prevical
11:00
11:15 ISN Account # (b) (4) [redacted]
11:30
11:45

5:00 ISN - Enterprise - EPCO group
5:15 Lynn Simpson office: 281-424-~~684~~ 680
5:30 Losimpson@epprod.com -680
5:45 cell (b) (4) [redacted]
6:00
6:15 Glenn Esterholm 713-381-5903

Tuesday January 15

15/351

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m. — p.m. 12:00

CES 4904 Griggs

7:30 ~~No~~
7:45 NO NPL (National Priorities List & 02
8:00 Superfund list) sites were listed
8:15 within the ASTM minimum search
8:30 distance of 1.0 mile radius
8:45 around the subject property.
9:00 NO CERCLIS sites listed within
9:15 the ASTM minimum search distance of
9:30 0.5 mile around the subject property.
9:45 NO RCRIS sites were listed within
10:00 the ASTM minimum search distance
10:15 of 1.0 mile for RCRA treatment,
10:30 storage, and disposal (TSD) facilities.
10:45 The subject property was not listed
11:00 on the database of being a RCRA
11:15 facility as of 1996.
11:30
11:45 Population density 2,248/sq mi (868/km²)

5:00 Water well - 6 water wells within 1 mile radius
5:15 [3 located, 2 plotted, 1 partially numbered]
5:30 No unnumbered water wells
5:45
6:00
6:15

AT-A-GLANCE

EPAHO043001507

16 January Wednesday

16/350

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.

7:15 EPA - CERCLA - 703-308-8645
Washington DC
7:30
7:45 703-308-8192 Dale Ruther
8:00
→ Shannon.Juile@epa.gov
8:15 or
8:30 ruther.dale@epa.gov
8:45
9:00 jj Keller : User name : thanguda
PW : (b) (4)
9:15
9:30 Fire Protection Services
9:45 Ned Spears 713-924-9600
10:00 Cell (b) (4)
10:15 H&W Petroleum - Matt Mczasek
10:30 713-672-0893
10:45 (b) (4) Cell
11:00 → did a turn key job at
11:15 Jindal on 9/27/08.
11:30 → Fax 713-673-5412
11:45 Access PW : safety1

p.m. 12:00
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5:00 SMF Energy Corp. Meera Hutson
5:15 954-308-4199
5:30
5:45 SCSWLA PRF online
6:00 RUN : thanguda
6:15 PW : (b) (4)

6:30
6:45
7:00
7:15
7:30
7:45

Thursday January 17

17/349

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.

7:15 Shutila.com
7:30 313-934-1520
7:45
8:00 TCEQ : Jennifer Beatty
8:15 Air Permits Initial Review Team
8:30 512-239-2057
8:45 jbeatty@tceq.State.tx.us
9:00 &
9:15 apinit@tceq.State.tx.us
9:30
9:45 Exxon Mobile Chemical Contact
10:00 Keith Truman 281-870-6801 office
10:15 (b) (4) Cell
10:30
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5:00 Guidance on wastewater treatment:
5:15 There is no minimum percent of oil
5:30 that wastewater must contain for
5:45 legitimate recycling (~~RE~~ RPC # ~~4p6~~ 4/26/89-02)
6:00
6:15

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001508

18 January Friday

18/348

January 2008
S M T W T F S
1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

7:00 a.m. glycd - sell to Phoenix oil or
Atlantic Industrial
- oil - blendability with black oil
- chlorated, flash, ash,
Recycle - black oil
- Krishna Rao Domaraju
(b) (4)
DOT Certification on a manifest by
generator:
This is to certify that the above-named
materials are properly classified, described,
packaged, marked and labeled and are
in proper condition for transportation
according to the applicable regulations
of the Department of Transportation.
p.m. 12:00

Dr. Shrestha
(b) (4)

Saturday January 19

Ashura 19/347

February 2008
S M T W T F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29

7:00 a.m.
CN 603423427
RN 105756111
2420 South Gulfway Dr. Port Arthur TX 77640
Port Arthur Chemical & Environmental Services, LLC
Fed Tax ID 26-0558960
State 12635 88960 4; SIC = 2819
WCM
110 N Bender Ave, Humble, TX 77338
281-446-7070.
NAICS — 325188
p.m. 12:00

Sunday 20/346 **20**

ILLINOIS EPA
Ms. Donna Nicholson
217-782-3559

AT-A-GLANCE®

EPAHO043001509

21 January Monday

21/345 Martin Luther King, Jr. Day (US)

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
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27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00 TCEQ Unit 101 is the
5:15 vacuum box (about 2000 gal)
5:30 located inside the tank wash.
5:45 The first flush is either vacuumed
6:00 or collected in a drum and
6:15 transferred to this first flush

6:30
6:45
7:00
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7:45

Tuesday January 22

22/344

February 2008

S	M	T	W	T	F	S
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10	11	12	13	14	15	16
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24	25	26	27	28	29	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00 tank - when the first flush tank is
5:15 full it is taken to WWTP by Truck
5:30 104. The sump in the tank wash
5:45 the large tank behind tank wash
6:00 is part of ~~TKT~~ unit 109.
6:15

6:30
6:45
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7:45

AT-A-GLANCE

EPAHO043001510

23 January Wednesday

23/343

January 2008

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		1	2	3	4	5
6	7	8	9	10	11	12
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20	21	22	23	24	25	26
27	28	29	30	31		

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Thursday January 24

24/342

February 2008

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					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

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AT-A-GLANCE®

EPAH00430015 11

25 January Friday

25/341

January 2008						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
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8:15	1:15
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8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday January 26

26/340

February 2008						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
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7:00 a.m.	**p.m. 12:00**
7:15	12:15
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8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
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11:00	**4:00**
11:15	4:15
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11:45	4:45

Sunday 27
27/339

AT-A-GLANCE®

EPAHO043001512

28 January Monday

28/338

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
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9:00	**2:00**
9:15	2:15
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9:45	2:45
10:00	**3:00**
10:15	3:15
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10:45	3:45
11:00	**4:00**
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11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday January 29

29/337

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m. posted 2007 OSHA 300A	**p.m. 12:00**
7:15 – Spoke to Lynn Simpson @ EPCO	12:15
7:30 regarding ISN Score	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
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10:00	**3:00**
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11:00	**4:00**
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5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAHO043001513

30 January Wednesday

30/336

January 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

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February 2008

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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

Thursday January 31

31/335

7:00 a.m.
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EPAHO043001514

1 February Friday

32/334

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

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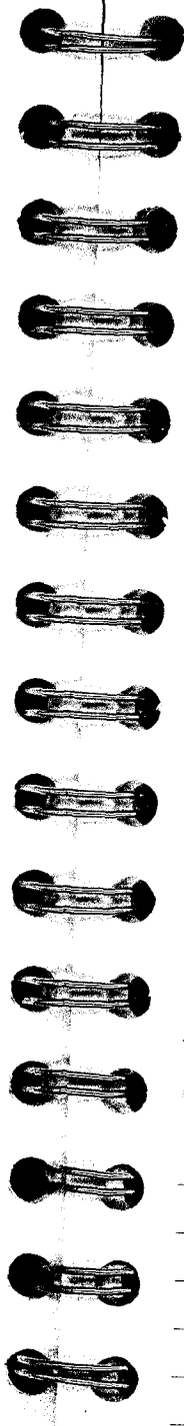

March 2008

S	M	T	W	T	F	S
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2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Saturday February 2

33/333

7:00 a.m.

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Sunday 34/332 **3**

AT-A-GLANCE®

EPAHO043001515

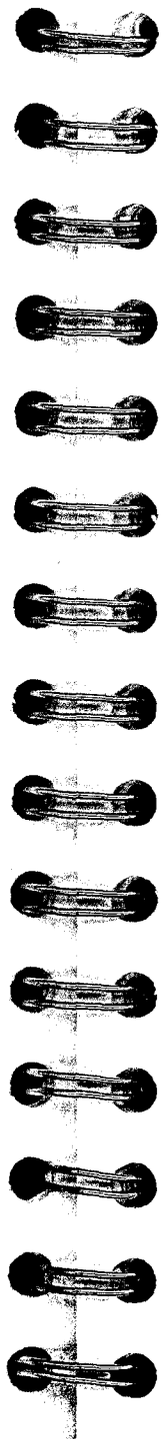
4 February Monday

35/331

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	**p.m. 12:00**
7:15 Gave DOT relase - concentra authorization	12:15
7:30 to CSR for Brent, Matt, Derek & David	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Tuesday February 5

Anniversary of the Constitution (M) 36/330

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO04300151 6

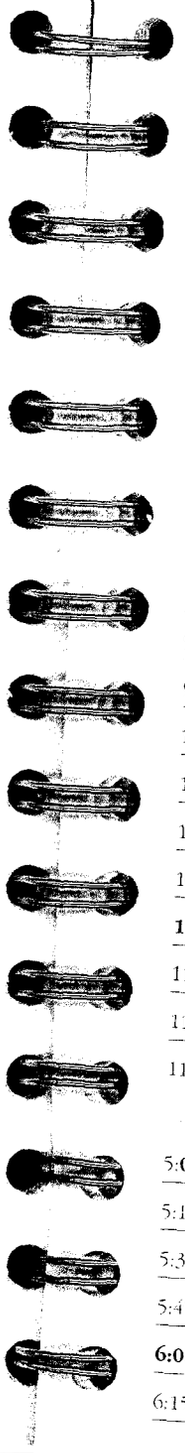
6 February Wednesday

37/329 Ash Wednesday

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



Thursday February 7

Lunar New Year 38/328

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAHO043001517

8 February Friday

39/327

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.

7:15 - emailed Marc Sonier with updates to

7:30 CES profiles that reflected edits to

7:45 alcohol exemption profile

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

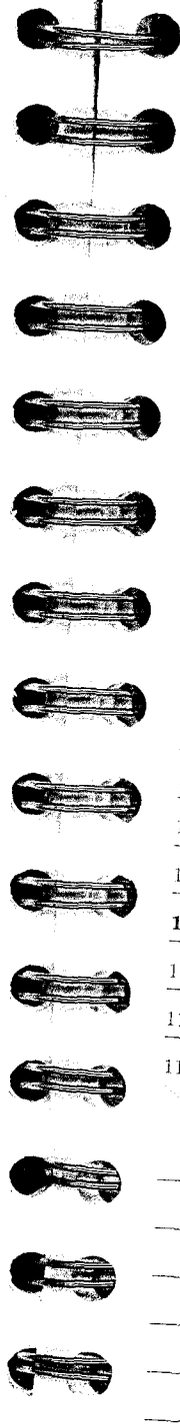
6:45

7:00

7:15

7:30

7:45



March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Saturday February 9

40/326

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

Sunday 41/325 **10**

AT-A-GLANCE

EPAHO043001518

11 February Monday

42/324

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00 SPILL waste — 6:30
5:15 The generator of the SPILL is — 6:45
5:30 either the owner of the material — **7:00**
5:45 or the transporter. If the generator — 7:15
6:00 does not have an EPA ID a Emergency — 7:30
6:15 ID, TCEQ will give a temporary — 7:45
EPA and generator ID and spill waste code

Tuesday February 12

Lincoln's Birthday (US) 43/323

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00 — 6:30
5:15 — 6:45
5:30 — **7:00**
5:45 — 7:15
6:00 — 7:30
6:15 — AT-A-GLANCE® 7:45

EPAHO043001519

13 February Wednesday

44/322

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.

7:15 Attended Texas Mutual workshop for Policy Holders held at Hilton Inn SW Freeway

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Thursday February 14

Valentine's Day 45/321

7:00 a.m.

7:15 Talked to Doris Poole Turner and Terry

7:30 Baca at TCEQ regarding waste receipt

7:45 submittals for one time shipments.

8:00 Was told to use ~~TXCESQG~~ TXCESQG for

8:15 generator's EPA ID and XXX12 for

8:30 registration number.

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

AT-A-GLANCE® 7:45

EPAHO043001520

15 February Friday

46/320

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
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4:30
4:45

5:00
5:15
5:30
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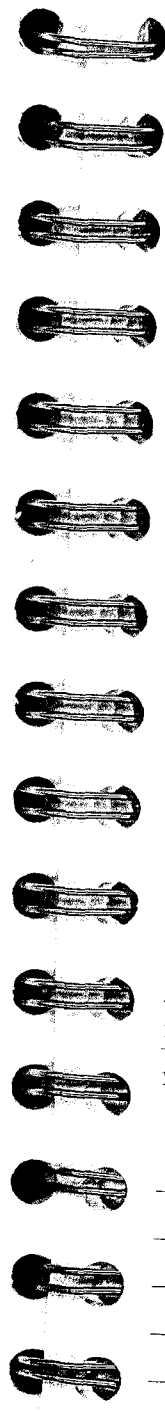
6:00
6:15

6:30
6:45
7:00
7:15
7:30
7:45



March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Saturday February 16

47/319

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

Sunday 48/318 **17**

AT-A-GLANCE®

EPAHO043001521

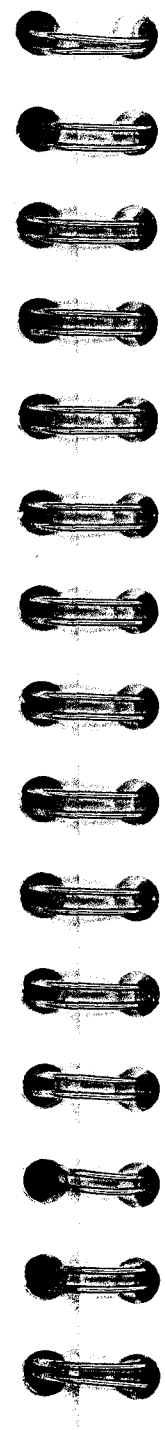
18 February Monday

49/317 Presidents' Day (US)

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Tuesday February 19

50/316

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001522

20 February Wednesday

51/315

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	Registered Kim for (RCRA 525)	**p.m. 12:00**	
7:15	SQG - Generating and Shipping	12:15	
7:30	Hazardous Waste - The Complete	12:30	
7:45	Course Online	12:45	
8:00		**1:00**	
8:15		1:15	
8:30		1:30	
8:45		1:45	
9:00		**2:00**	
9:15		2:15	
9:30		2:30	
9:45		2:45	
10:00		**3:00**	
10:15		3:15	
10:30		3:30	
10:45		3:45	
11:00		**4:00**	
11:15		4:15	
11:30		4:30	
11:45		4:45	
5:00		6:30	
5:15		6:45	
5:30		**7:00**	
5:45		7:15	
6:00		7:30	
6:15		7:45	

Thursday February 21

52/314

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.		**p.m. 12:00**	
7:15	faxed NCMS compliance docs	12:15	
7:30	requested by EPCO on	12:30	
7:45	Sebastian and Steve Stricken	12:45	
8:00		**1:00**	
8:15		1:15	
8:30		1:30	
8:45		1:45	
9:00		**2:00**	
9:15		2:15	
9:30		2:30	
9:45		2:45	
10:00		**3:00**	
10:15		3:15	
10:30		3:30	
10:45		3:45	
11:00		**4:00**	
11:15		4:15	
11:30		4:30	
11:45		4:45	
5:00		6:30	
5:15		6:45	
5:30		**7:00**	
5:45		7:15	
6:00		7:30	
6:15		7:45	

AT-A-GLANCE®

EPAHO043001523

22 February Friday

53/313 Washington's Birthday (US)

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
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3:45
4:00
4:15
4:30
4:45

5:00
5:15
5:30
5:45
6:00
6:15

6:30
6:45
7:00
7:15
7:30
7:45

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Saturday February 23

54/312

7:00 a.m.
7:15 Juan Farias came in at 10:15am
7:30 and said today is his last day at
7:45 CES
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

Sunday 24
55/311
Flag Day (M)

AT-A-GLANCE®

EPAHO043001524

25 February Monday

56/310

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m. — **p.m. 12:00**

7:15 Submitted TCEQ Waste Code 12:15
7:30 9027207H to Steers today 12:30
7:45 12:45
8:00 Caustic odor @ 6:30pm, checked warehouse, **1:00**
8:15 Beeline unloading west Tx (Enterprise) 1:15
8:30 caustic, no spill, may not 1:30
8:45 ~~to~~ have scrubber going at the 1:45
9:00 Time of unloading, called Marlin **2:00**
9:15 2:15
9:30 2:30
9:45 2:45
10:00 **3:00**
10:15 3:15
10:30 3:30
10:45 3:45
11:00 **4:00**
11:15 4:15
11:30 4:30
11:45 4:45

5:00 6:30
5:15 6:45
5:30 **7:00**
5:45 7:15
6:00 7:30
6:15 7:45

Tuesday February 26

57/309

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m. — **p.m. 12:00**

7:15 About 6:50pm Novah Berry 12:15
7:30 was rear ended by a Honda 12:30
7:45 Civic as he was making a 12:45
8:00 left turn on to Wayland Street **1:00**
8:15 from Griggs Rd. Police 1:15
8:30 showed up. ~~and~~ Noah was 1:30
8:45 not at fault. I gave him paper 1:45
9:00 work to go to Concentra in the morning **2:00**
9:15 to get a drug test. It was 2:15
9:30 ~~at~~ 8:30pm when he came back 2:30
9:45 to the yard. 2:45
10:00 **3:00**
10:15 About 10:20am Byron Kuhl called 3:15
10:30 and ~~he~~ said our unit 273 threw a 3:30
10:45 rock on his windshield that Cracked 3:45
11:00 and Greg said to pay a check after **4:00**
11:15 Byron signs a release form. 4:15
11:30 Sent the release form to Byron 4:30
11:45 on 3-3-08. 4:45

5:00 6:30
5:15 6:45
5:30 **7:00**
5:45 7:15
6:00 7:30
6:15 7:45

AT-A-GLANCE®

EPAHO043001525

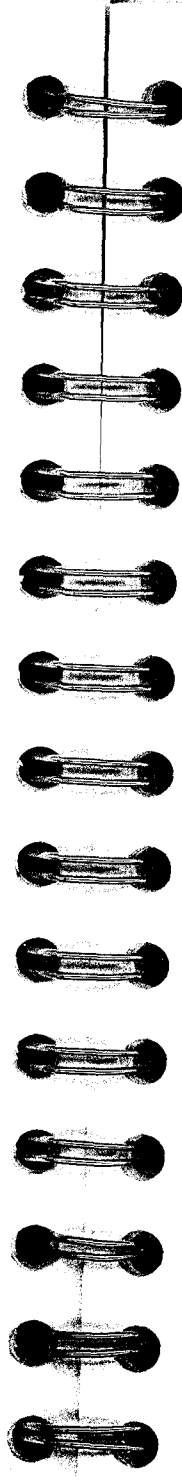
27 February Wednesday

58/308

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Thursday February 28

59/307

7:00 a.m.	**p.m. 12:00**
7:15 Submitted annual waste summary	12:15
7:30 To TCEQ on Steers	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAHO043001526

29 February Friday

60/306

February 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	**7:45**

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Saturday March 1

61/305

7:00 a.m.	**p.m. 12:00**
7:15 -updated Drivers' LIC & DOT info in	12:15
7:30 access	12:30
7:45 -Checked on Drivers' previous employment	12:45
8:00 history & Drugand alcohol verification forms	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 62/304 **2**

AT-A-GLANCE®

EPAHO043001527

3 March Monday

63/303

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.

7:15

7:30

7:45 Durim emailed stating his finger may

8:00 have been broken. I called him while

8:15 he was on his way back. He said

8:30 he would see me as soon as he

8:45 makes it to the yard - upon

9:00 arrival, he said his ~~was~~ finger

9:15 was okay and no need to be

9:30 concerned. I offered to take him

9:45 to the clinic but declined.

10:00 Notified Ryan of this.

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

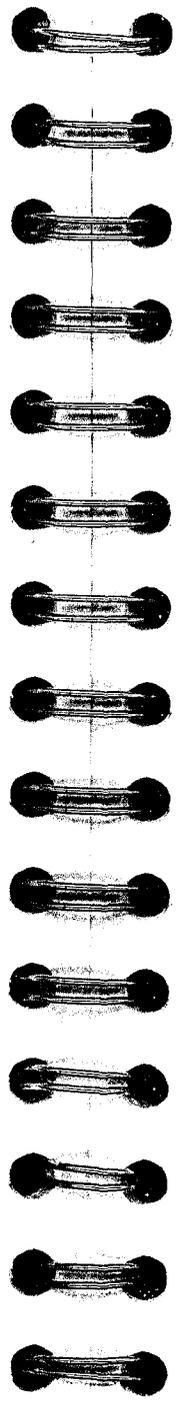
6:45

7:00

7:15

7:30

7:45



Tuesday March 4

64/302

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

AT-A-GLANCE® 7:45

EPAHO043001528

5 March Wednesday

65/301

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.

7:15

7:30 Martin called at about 1:50 pm

7:45 and Moises Ramirez

DOB; (b) (4)

8:00

8:15 SS (b) (4)

8:30 [redacted]

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

Thursday March 6

66/300

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15 Left air meter 4 at Detect

7:30 - pump not working

7:45 - face plate Cracked

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001529

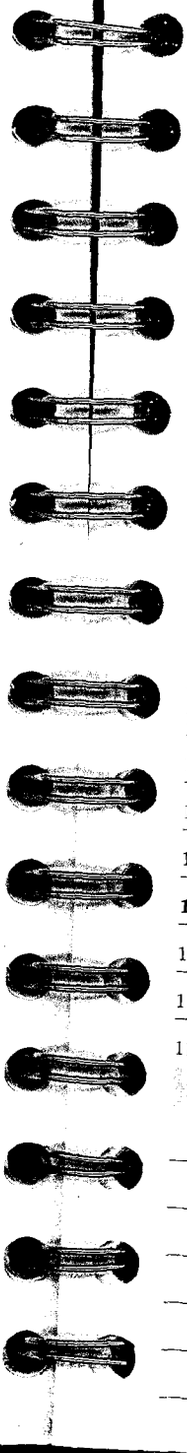
7 March Friday

67/299

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



Saturday March 8

68/298

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 69/297 **9**

Daylight Saving Time begins

AT-A-GLANCE®

EPAHO043001530

10 March Monday

70/296 Eastern Orthodox Lent begins

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m. — **p.m. 12:00**

7:15 for Steve: check on
7:30 Ethylene dibromide
7:45 ~ 2 loads/a week
8:00 from Stolt to Alvin chemicals
8:15 need to transfer - find how
8:30 a PIH Std
8:45 need approval
9:00
9:15 mailed SOQ's
9:30 Financials (2004-05-06)
9:45 OSHA 300 Summary
10:00 TO
10:15 ① Kirk Spinks, VOPAK
10:30 [redacted] (b) (4)
10:45 kirk.spinks@vopak.com
11:00
11:15 ② Fermin Navarro, Odfjell
11:30 [redacted] (b) (4)
11:45 fermin.navarro@odfjell.com
5:00
5:15 sent the above at Clark Hickmans
5:30 request on Billy ~~Grahams~~ Griff
5:45 request - [redacted] (b) (4)
6:00
6:15 Air meter on hand remain low due to increased business. Total 8 in account with 2 missing. Ordered one today.

12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45
6:30
6:45
7:00
7:15
7:30
7:45

Tuesday March 11

71/295

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m. — **p.m. 12:00**

7:15 PPG Lake Charles HSE Ester Liggio
7:30
7:45 Exxon mobile - CES facility Audit
8:00 the gentleman came at 11:45 am
8:15 to see Matt and audit the facility.
8:30
8:45 ~~Ein~~
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45
5:00
5:15
5:30
5:45
6:00
6:15

12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45
6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE

EPAHO043001531

12 March Wednesday

72/294

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

5:00
5:15
5:30
5:45
6:00
6:15

6:30
6:45
7:00
7:15
7:30
7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Thursday March 13

73/293

7:00 a.m.
7:15 Amsterdam Printing:
7:30 Employment Application Bilingual
7:45 Item # 33517
8:00 50 ea $39.06
8:15 1-800-203-9917 #3674 Tischa Hall
8:30 Priority Code: (b) (4)
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

5:00
5:15
5:30
5:45
6:00
6:15

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001532

14 March Friday

74/292

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m. — **p.m. 12:00**

7:15 COH — 12:15

7:30 Jenny Brixey - Sour Smell — 12:30

7:45 — 12:45

8:00 10 AM - 11:15 — **1:00**

8:15 South & East of property — 1:15

8:30 to the North — 1:30

8:45 - Saw work being done on — 1:45

9:00 scrubber — **2:00**

9:15 — 2:15

9:30 - any activity from 10 - 11:15 — 2:30

9:45 " " 1:30 - 2 pm — 2:45

10:00 — **3:00**

10:15 - what material, what activity — 3:15

10:30 any unusual loads — 3:30

10:45 - anything wrong with the — 3:45

11:00 scrubber — **4:00**

11:15 - Sample analysis for the — 4:15

11:30 loads we are dealing — 4:30

11:45 — 4:45

5:00 - anybody checking on the — 6:30

5:15 scrubber, what preventative — 6:45

5:30 measurements — **7:00**

5:45 - improvements & procedures — 7:15

6:00 — 7:30

6:15 Tanker LT-112 Bay 5 - cleaning tanker from Southern Truck Leasing — 7:45

2:19 pm

Saturday March 15

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

75/291

7:00 a.m. Smell being felt from — **p.m. 12:00**

7:15 Centrifuge area — 12:15

7:30 — 12:30

7:45 Nothing was found during — 12:45

8:00 a walk through with — **1:00**

8:15 Jennie & Leonardo of COH & — 1:15

8:30 Greg Bowman — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 When scrubber media change out — 2:15

9:30 occurs, its done under vacuum to control — 2:30

9:45 fumes and odors, using a vacuum — 2:45

10:00 trailer — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

Sunday 76/290 **16**

Palm Sunday

AT-A-GLANCE

EPAHO043001533

17 March Monday

77/289 St. Patrick's Day

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m. — **p.m. 12:00**

7:15 Matt Taylor said he got over 12:15
7:30 weight ticket today (280, 264) 12:30
7:45 and asked ~~to~~ how he can avoid 12:45
8:00 that in the future. I told him **1:00**
8:15 to go by the weigh station 1:15
8:30 to get full weight whenever 1:30
8:45 he needed or suspected 1:45
9:00 **2:00**
9:15 2:15
9:30 2:30
9:45 2:45
10:00 **3:00**
10:15 3:15
10:30 3:30
10:45 3:45
11:00 **4:00**
11:15 4:15
11:30 4:30
11:45 4:45

5:00 6:30
5:15 6:45
5:30 **7:00**
5:45 7:15
6:00 7:30
6:15 7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Tuesday March 18

78/288

7:00 a.m. — **p.m. 12:00**

7:15 spoke to Jessie Bottinghouse at TCEQ 12:15
7:30 512-239-6412 regarding Haz 12:30
7:45 Waste Recycling for Zac 12:45
8:00 was told that Zach did not update **1:00**
8:15 their NOR for waste codes 0087, 1:15
8:30 203H, and 0101 209H TCEQ mailed a 1:30
8:45 letter to Matt on 3-17-08. 1:45
9:00 **2:00**
9:15 Intercontinental Terminals 2:15
9:30 Early ~~Dawney~~ 281-884-0254 2:30
9:45 1943 Battlegroundground Road 2:45
10:00 Deer Park ~~Tel~~ ~~Ea Porte~~, TX 77536 **3:00**
10:15 ~~John~~ 3:15
10:30 edawdy@iterm.com ~~Tel 281-884-0300~~ 3:30
10:45 fax: 281-884-0238 ~~Fax 281-884-0342~~ 3:45
11:00 Overnighted the package on 3-18-08 **4:00**
11:15 SOQ 4:15
11:30 3yr OSHA Summary 4:30
11:45 3rd financials 2004, 2005, 2006 4:45

5:00 → hard copy 6:30
5:15 88429 6:45
5:30 **7:00**
5:45 Talked to Ron Smith who 7:15
6:00 confirmed submission of N updated 7:30
6:15 NOR to Steers 7:45

AT-A-GLANCE

EPAHO043001534

19 March Wednesday

79/287

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m. Visiting ZACH in LaPlace — **p.m. 12:00**

7:15 with RON Smith 8AM — 12:15

7:30 — 12:30

7:45 — 12:45

8:00 Adam Smith — **1:00**

8:15 Kinder Morgan — 1:15

8:30 4735 Point Clair Road — 1:30

8:45 St. Gabriel, LA 70776 — 1:45

9:00 — **2:00**

9:15 Tel: 225-933-9345 — 2:15

9:30 — 2:30

9:45 Fax: AdamSmith—@ — 2:45

10:00 kindermorgan.com — **3:00**

10:15 — 3:15

10:30 Jindal April 15–18 — 3:30

10:45 — 3:45

11:00 Evacuation Assembly Point #1 & 2 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

5:00 — 6:30

5:15 — 6:45

5:30 — **7:00**

5:45 — 7:15

6:00 — 7:30

6:15 — 7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Thursday March 20

Spring begins 80/286

7:00 a.m. David's accident — **p.m. 12:00**

7:15 — 12:15

7:30 Fast lane — 12:30

7:45 David used break — 12:45

8:00 skid into her - half a car length — **1:00**

8:15 pulled off to the side — 1:15

8:30 — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 — 2:15

9:30 — 2:30

9:45 — 2:45

10:00 — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

5:00 — 6:30

5:15 — 6:45

5:30 — **7:00**

5:45 — 7:15

6:00 — 7:30

6:15 — AT-A-GLANCE® 7:45

EPAHO043001535

21 March Friday

81/285 Good Friday
Benito Juarez' Birthday (M)

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Corey Leutwyler – Tx Mutual
713-316-2201

Saturday March 22

82/284

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 83/283 **23**
Easter

AT-A-GLANCE®

EPAHO043001536

24 March Monday

84/282 Easter Monday (C)

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.

7:15 TOOK air meter 6 and left it at

7:30 Detect for repair as the charge

7:45 contact plate broke. Loren was

8:00 to pick it back up

8:15

8:30 Joaquin

8:45 Michelle - Tx Mutual
713-316-2120

9:00 - back pay checks status

9:15 - refused to work date

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15 - went to check on distillation

11:30 tank digout work to check

11:45 entry permit conditions and status. Joe C, Cody, Lara,

5:00 + James woodard working on this

5:15 project, provided

5:30

5:45 Alan Barbee

6:00 (b) (4) [redacted]

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Tuesday March 25

85/281

7:00 a.m. Meeting with COH BARC @ 9AM

7:15 Slide show

7:30 Investigation Summary:

7:45 CES Environmental

8:00 4904 Griggs Road, Houston

Mr. Blanco Arrived

8:15

8:30 Status Summary

8:45 Oct 3, 05 to March 12, 2007

9:00 - 49 citizen complaint

9:15 - 18 different homes

9:30 - five citations issued

9:45 - two ~~not~~ NOVs issued

10:00 - all complaints originated

10:15 from citizen complaints

10:30 - complaints correspond with

10:45 wind direction

11:00

11:15 Complaints &

11:30 CES Respond

11:45 Action Plan

5:00 Sept 2-5, 2006 3 citizen

5:15 Complaints

5:30 Sept. 22, 2006

5:45

6:00 Oct 11, 2006 - several complaints

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001537

26 March Wednesday

Karl's Brother

86/280

Sat 2pm

(b) (4) [redacted]

James Cooper

2603 Southmore Hou 77004

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Time	Entry
7:00 a.m.	
7:15	June 5, 2007 2 citizen complaints
7:30	Nov 28, 2007 citizen complaints
7:45	
8:00	Dec 12, 2007 2 citizen complaints
8:15	
8:30	Jan 2008 2 NOV's
8:45	March 14, 2008
9:00	
9:15	Summary
9:30	- continue to receive odor complaints
9:45	
10:00	- BAQC identified odors
10:15	coming from CES
10:30	- missing connection to outside
10:45	the facility
11:00	
11:15	- VOC monitors
11:30	- Presenting info to a city
11:45	attorney
5:00	State rules } Docu
5:15	City rules }
5:30	ordinances }
5:45	
6:00	Documentation of what is
6:15	done to mitigate the odors

Thursday March 27

87/279

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

CoH here today to investigate odor complaint
- hydrocarbon & amine

Time	Entry
7:00 a.m.	work for short term ? 3 months
7:15	and move forward
7:30	
7:45	- need to see SOPs
8:00	- criteria for accepting and
8:15	rejecting
8:30	
8:45	- next meeting ? April 8, 2008
9:00	
9:15	Donny (b) (4) [redacted]
9:30	Direct Line
9:45	Lab
10:00	Council member : Wanda Adams
10:15	- Enterprise Caustic
10:30	- Lubrizol recovered organic
10:45	skimmings
11:00	- miscellaneous
11:15	- March 27 Safety meeting
11:30	LOTO
11:45	Marlin covered odor issues in the mtg
5:00	Tideport Jerry Simpson
5:15	281-862-9668
5:30	EPA ID TXR000026641
5:45	
6:00	
6:15	

AT-A-GLANCE®

28 March Friday

88/278

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
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2:00
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4:15
4:30
4:45

5:00
5:15
5:30
5:45
6:00
6:15
6:30
6:45
7:00
7:15
7:30
7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Saturday March 29

89/277

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

Sunday 90/276 **30**

AT-A-GLANCE®

EPAHO043001539

31 March Monday

91/275

March 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

7:00 a.m.

7:15 Trust fund mailed to Austin

7:30 Trust today

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Tuesday April 1

92/274

7:00 a.m.

7:15 EBIONICS system was removed today

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001540

2 April Wednesday

93/273

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.		**p.m. 12:00**
7:15	McCoy Associates meeting today	12:15
7:30	PICS — 949-387-[illegible]40	12:30
7:45	→ PQS Arlwen Allen Ex 707	12:45
8:00	→ Desktop audit	**1:00**
8:15	→ office audit	1:15
8:30	through WEBCam	1:30
8:45	62 Questions	1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

Thursday April 3

94/272

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001541

4 April Friday

95/271

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15 Talked to Terry Parker at TCEQ

7:30 regarding Hydroghem @ Entergy

7:45 manifests. As long as the

8:00 manifests have the correct generator

8:15 address, EPA ID and state ID,

8:30 you have met the TCEQ and

8:45 EPA requirements.

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

~~1:00~~

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday April 5

96/270

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

Sunday 97/269 **6**

AT-A-GLANCE®

EPAHO043001542

7 April Monday

98/268

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15 11:50am - the was H_2S odor

7:30 in the yard. Strong

7:45 odors coming from WWTP

8:00 Rolando said he was through

8:15 unloading Beeline trailer just

8:30 before then, nothing could be

8:45 detected on the Crawlin air meter

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Tuesday April 8

99/267

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

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6:00

6:15

p.m. 12:00

12:15

12:30

12:45

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3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001543

9 April Wednesday

100/266

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	**p.m. 12:00**
7:15 Jindal April shutdown	12:15
7:30 JUS-0408-0056	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday April 10

101/265

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO04300154 4

11 April Friday

102/264

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.		p.m. 12:00
7:15	City of Hon BARC inspecta	12:15
7:30	Nguyen Ly came at 12:35 pm	12:30
7:45	to investigate an odor complaint	12:45
8:00	but said he did not notice	**1:00**
8:15	anything. And He just came in	1:15
8:30	to inform.	1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday April 12

103/263

7:00 a.m.		p.m. 12:00
7:15		12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45

Sunday 104/262 **13**

AT-A-GLANCE®

EPAHO043001545

14 April Monday

105/261

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.		**p.m. 12:00**
7:15		12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00	Allan Barbee - Safety Audit	**2:00**
9:15	Annual Audit - Texas Mutual	2:15
9:30	along with Cyndee Purtee	2:30
9:45	of Ins Alliance.	2:45
10:00		**3:00**
10:15	Safety Traing - Fire Extinguisher	3:15
10:30	out of date	3:30
10:45	Hand railing on ~~safety~~ shower Stall	3:45
11:00		**4:00**
11:15	H_2O_2 Bern n	4:15
11:30		4:30
11:45	Outfall Cover	4:45
5:00	Ladder [illegible]	6:30
5:15		6:45
5:30	Exit door blo	**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

Tuesday April 15

106/260

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.		**p.m. 12:00**
7:15	No pins on crowfoot connections	12:15
7:30		12:30
7:45	unchained gas cylinders	12:45
8:00	Electrical panel not covered	**1:00**
8:15	Eyew	1:15
8:30		1:30
8:45	Ladder not tied	1:45
9:00	S.	**2:00**
9:15		2:15
9:30		2:30
9:45	EZ Jog Bradwood - 275	2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

AT-A-GLANCE®

EPAHO043001546

16 April Wednesday

107/259

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15 Environmented Lawyer

7:30 -Porter & Hedges -Lawfirm

7:45 Ratna

8:00 –

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday April 17

108/258

7:00 a.m.

7:15 – Mark Stoebner, TCEQ called

7:30 and said that he is sending

7:45 pdf file of acceptance of trust

8:00 fund. 6 years remaining in

8:15 the 0&f funding

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001547

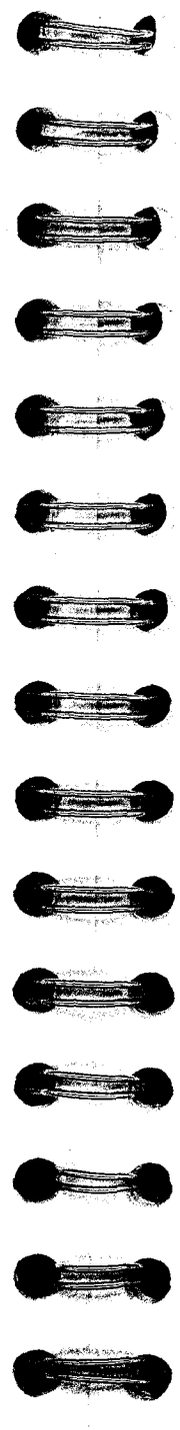
18 April Friday

109/257

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday April 19

Passover begins at sundown 110/256

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 111/255 **20**

Passover

AT-A-GLANCE®

EPAHO043001548

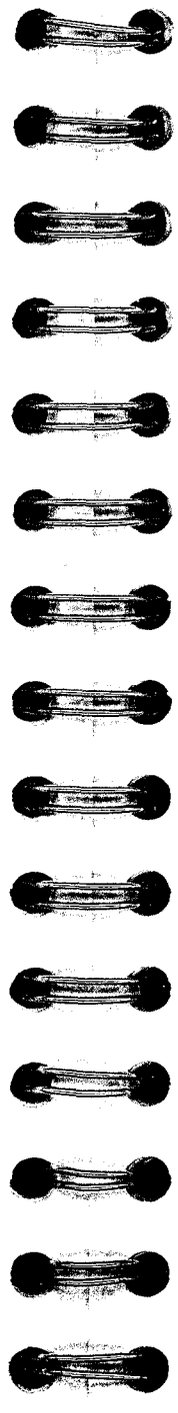
21 April Monday

112/254

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.		p.m. 12:00
7:15	went to court on odor ticket	12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45



May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Tuesday April 22

113/253

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001549

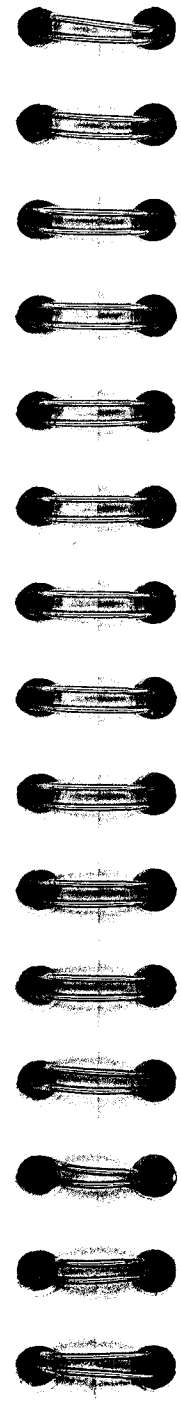
23 April Wednesday

114/252 Administrative Professionals Day (C, US)

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday April 24

115/251

7:00 a.m.	**p.m. 12:00**
7:15 Rolando Castillo reported that	12:15
7:30 he had ~~by~~ sulfuric acid	12:30
7:45 mist in the eyes in Brownsville	12:45
8:00 on Tuesday (4-22-08) at 1:00pm	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001550

25 April Friday

116/250

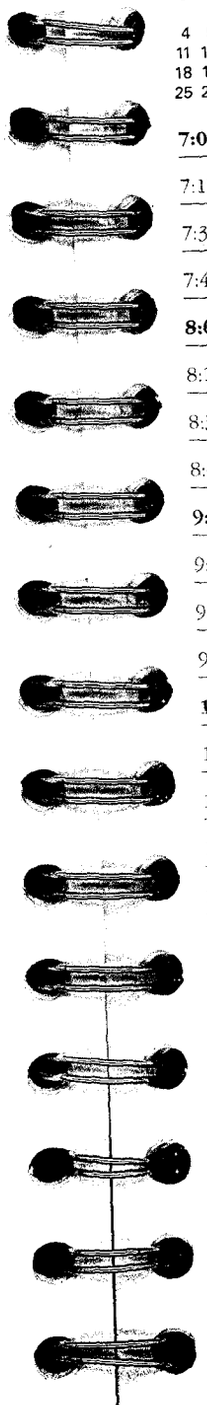
April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

5:00
5:15
5:30
5:45
6:00
6:15
6:30
6:45
7:00
7:15
7:30
7:45



May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday April 26

117/249

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

Sunday 27
118/248

Eastern Orthodox Easter

AT-A-GLANCE®

EPAHO043001551

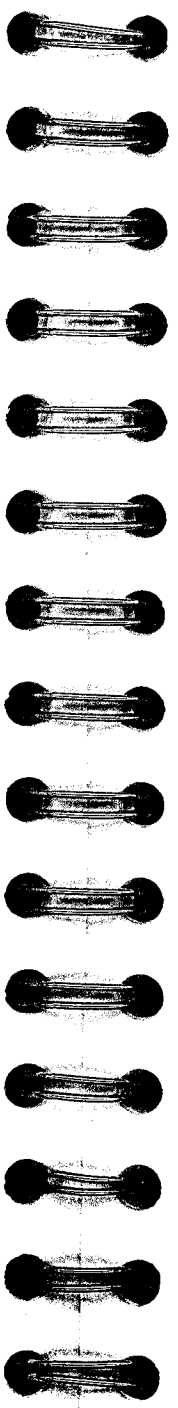
28 April Monday

119/247

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.	hazardous listed	**p.m. 12:00**	
7:15	When you profile in a waste	12:15	
7:30	to CES from a generator with	12:30	
7:45	do you need to do LDR form	12:45	
8:00		**1:00**	
8:15	DO we need to do LDR forms	1:15	
8:30	for a listed waste ?	1:30	
8:45		1:45	
9:00		**2:00**	
9:15		2:15	
9:30		2:30	
9:45		2:45	
10:00		**3:00**	
10:15		3:15	
10:30		3:30	
10:45		3:45	
11:00		**4:00**	
11:15		4:15	
11:30		4:30	
11:45		4:45	
5:00		6:30	
5:15		6:45	
5:30		**7:00**	
5:45		7:15	
6:00		7:30	
6:15		7:45	



Tuesday April 29

120/246

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.		**p.m. 12:00**	
7:15		12:15	
7:30		12:30	
7:45		12:45	
8:00		**1:00**	
8:15		1:15	
8:30		1:30	
8:45		1:45	
9:00		**2:00**	
9:15		2:15	
9:30		2:30	
9:45		2:45	
10:00		**3:00**	
10:15		3:15	
10:30		3:30	
10:45		3:45	
11:00		**4:00**	
11:15		4:15	
11:30		4:30	
11:45		4:45	
5:00		6:30	
5:15		6:45	
5:30		**7:00**	
5:45		7:15	
6:00		7:30	
6:15		7:45	

AT-A-GLANCE®

EPAHO043001552

30 April Wednesday

121/245

April 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday May 1

Labor Day (M) 122/244
Holocaust Remembrance Day

7:00 a.m.

7:15 Mtg W/ BAQC 10 A M

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001553

2 May Friday

123/243

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. — **p.m. 12:00**

7:15 Spoke to Terry Baca at — 12:15
7:30 TCEQ regarding ~~an~~ accepting — 12:30
7:45 waste from facilities — 12:45
8:00 under the jurisdiction of — **1:00**
8:15 Texas Railroad Commission. — 1:15
8:30 I was told that ~~you~~ CES — 1:30
8:45 can accept such waste — 1:45
9:00 as long as it meets CES permit — **2:00**
9:15 acceptance criteria. In such — 2:15
9:30 case the generator's EPA ID — 2:30
9:45 is irrelevant and the generator ~~name~~ — 2:45
10:00 STKD default ID is — **3:00**
10:15 RRGEN and the form code — 3:15
10:30 for the waste is RRCT — 3:30
10:45 — 3:45
11:00 — **4:00**
11:15 AIG: Luis Resendez — 4:15
11:30 William B. Little — 4:30
11:45 713-831-4800 — 4:45

5:00 Aug 24, 2006 — 6:30
5:15 Winnie, TX, White — 6:45
5:30 driving CES truck 2006 Tractor — **7:00**
5:45 Fruit 1986 Semi — 7:15
6:00 291/241 — Int — 7:30
6:15 — 7:45

Saturday May 3

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

124/242

7:00 a.m. — **p.m. 12:00**

7:15 — 12:15
7:30 — 12:30
7:45 — 12:45
8:00 — **1:00**
8:15 — 1:15
8:30 — 1:30
8:45 — 1:45
9:00 — **2:00**
9:15 — 2:15
9:30 — 2:30
9:45 — 2:45
10:00 — **3:00**
10:15 — 3:15
10:30 — 3:30
10:45 — 3:45
11:00 — **4:00**
11:15 — 4:15
11:30 — 4:30
11:45 — 4:45

Sunday 125/241 **4**

AT-A-GLANCE®

EPAHO043001554

5 May Monday

126/240 Battle of Puebla (M)

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. 9AM **p.m. 12:00**

7:15 South 146 South - Red truck 12:15

7:30 Blackdiver 12:30

7:45 doing 80 12:45

8:00 cut of on Kemah **1:00**

8:15 Changes 1:15

8:30 the roundeadlight 1:30

8:45 → Mike Fowler 1:45

9:00 Cell (b) (4) **2:00**

9:15 The writing Academy 2:15

9:30 2:30

9:45 SWPPP mtg with Ellen 2:45

10:00 -Add H_2O_2 tank on the map **3:00**

10:15 3:15

10:30 Spoke to Vince 512-463-6778 3:30

10:45 at RRCT regarding oil & gas 3:45

11:00 waste reciept by CES and the **4:00**

11:15 needed permitting. 4:15

11:30 -Surface waste Mgmt 4:30

11:45 - oil and gas waste 4:45

- State wide rules - Rule 98

5:00 6:30

5:15 6:45

5:30 **7:00**

5:45 7:15

6:00 7:30

6:15 7:45

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Tuesday May 6

127/239

7:00 a.m. **p.m. 12:00**

7:15 Stripping chart 12:15

7:30 12:30

7:45 2 inch increments U.S. GAL 12:45

8:00 2" to 20" **1:00**

8:15 — spoke to mark Atkins at 1:15

8:30 Texas water management regarding 1:30

8:45 the drummed waste 281-685-~~4420~~ 4420 1:45

9:00 he said he will call back and **2:00**

9:15 give Sherry's number 2:15

9:30 2:30

9:45 -Sebastien called at 10pm 2:45

10:00 and said he needed to go to the **3:00**

10:15 doctor because caustic got in 3:15

10:30 his eyes and he is hurting. 3:30

10:45 He called from Beaumont. Told 3:45

11:00 him to go see the doctor and **4:00**

11:15 gave him workmans comp 4:15

11:30 policy info. 4:30

11:45 4:45

5:00 6:30

5:15 6:45

5:30 **7:00**

5:45 7:15

6:00 7:30

6:15 AT-A-GLANCE® 7:45

EPAHO043001555

7 May Wednesday

128/238

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. — **p.m. 12:00**

Juanita said that Salvador Garcia was hurt due to caustic spray about midnight last night
- talked to Sam Brown and came to know Karl is taking care of his case

- Kelly Knighton (b) (4) [redacted] Knighton Kelly DOL gov.
Dept of Labor, OSHA
Houston South Area Office
17625 El Caminoreal
Suite 400
Houston TX 77058
- 1st item
- PPE not provided with Hazmat pick up
- drivers not informed of Hazwaste chemicals in haul

- PPE, Hazard assessment of drivers and handler

5 working days
15th of May

Thursday May 8

129/237

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m. — **p.m. 12:00**

SWPPP

- Do quarterly spill ~~m~~ reporting
- Spill Kits - locate them on the map
- directional flow by outfall

P
Sectors ~~RE~~ NEP

146 to Dayton

$ Paul

~~93~~ (b) (4) [redacted]

AT-A-GLANCE®

9 May Friday

130/236

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

5:00	Texas RR Commission	6:30
5:15	Vince 512-463-6778	6:45
5:30	- Surface Waste Mgmt	**7:00**
5:45	- oil and gas waste	7:15
6:00	- State Wide Rule 98	7:30
6:15	www.RRCT.com	7:45

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Saturday May 10

Mother's Day (M) 131/235

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 11
132/234

Mother's Day (C, US)

AT-A-GLANCE®

EPAHO043001557

12 May Monday

133/233

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

Tuesday May 13

134/232

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001558

14 May Wednesday

135/231

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Thursday May 15

136/230

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Leonardo & from COH were here at 3:35 pm and said that they needed to issue a citation for odor that was detected on Grace lane at 3:30 pm

AT-A-GLANCE®

EPAHO043001559

16 May

137/229

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. — **p.m. 12:00**

7:15 Called and told Scott Shimek — 12:15
7:30 about DOT Road check for — 12:30
7:45 this year June 3rd - 5th — 12:45
8:00 — **1:00**
8:15 Called Tx Boiler inspector to — 1:15
8:30 inspect boiler # 138292 on — 1:30
8:45 7-21-2008 at 7am (Monday) — 1:45
9:00 and left a message — **2:00**
9:15 — 2:15
9:30 — 2:30
9:45 when customers ship characteristic — 2:45
10:00 hazardous waste and check of — **3:00**
10:15 some of the UHC's, we need — 3:15
10:30 to treat the waste to make — 3:30
10:45 sure we can treat them to — 3:45
11:00 be below the ~~AU~~ UHC levels — **4:00**
11:15 — 4:15
11:30 — 4:30
11:45 — 4:45

5:00 June 3-5 DOT Road check — 6:30
5:15 All DOT vehicles going through — 6:45
5:30 a weigh station will go through — **7:00**
5:45 extensive inspection, vehicle repair — 7:15
6:00 permits, driver log books, registration — 7:30
6:15 driver licenses, medical examiners — 7:45
certificate

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Saturday May 17

Armed Forces Day (US) 138/228

7:00 a.m. — **p.m. 12:00**

7:15 — 12:15
7:30 — 12:30
7:45 — 12:45
8:00 — **1:00**
8:15 — 1:15
8:30 — 1:30
8:45 — 1:45
9:00 — **2:00**
9:15 — 2:15
9:30 — 2:30
9:45 — 2:45
10:00 — **3:00**
10:15 — 3:15
10:30 — 3:30
10:45 — 3:45
11:00 — **4:00**
11:15 — 4:15
11:30 — 4:30
11:45 — 4:45

Sunday 18
139/227

AT-A-GLANCE®

EPAHO043001560

19 May Monday

140/226 Victoria Day (C)

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday 20 May

141/225

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001561

21 May Wednesday

142/224

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Thursday May 22

143/223

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001562

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Saturday **May 24**

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday **25**

5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001563

26 May Monday

147/219 Memorial Day, Observed (US)

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday May 27

148/218

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	**p.m. 12:00**
7:15 Ellen is here to go over NOR and SWPPP	12:15
7:30	12:30
7:45 - Lime Tank	12:45
8:00 - mark all WMUs and other	**1:00**
8:15 units appropriately	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00 WMU 129 in the old	6:30
5:15 tankwash to hold water	6:45
5:30 from old tankwash	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001564

28 May Wednesday

149/217

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. — **p.m. 12:00**

7:15 Dropped off 6 samples at
7:30 Environ for Recents
7:45 Cks 1 & 2 Solids & Sludges
8:00 Tank wash Sump & R/O Box Sys
8:15 [samples collected on 5-27-08 from 4:30pm to 5:00 pm
8:30 Leonardo Desouza, COH came at
8:45 12:15pm and said there was
9:00 nuisance complaint from a neighbor
9:15 that started at 4pm on 5-27-08 and
9:30 lasted through 4 am today. He
9:45 said he did not see anything unusual.
10:00 I gave him my Card.
10:15
10:30 Dennis Winkler, APR
10:45 Winkler Public Relations came
11:00 to CES and met with Greg Bowden,
11:15 Karl and myself.
11:30
11:45 Noah Berry was in an accident reported around 5pm today
5:00 Dennis Winkler (b) (4)
5:15
5:30
5:45
6:00
6:15

12:15 12:30 12:45 **1:00** 1:15 1:30 1:45 **2:00** 2:15 2:30 2:45 **3:00** 3:15 3:30 3:45 **4:00** 4:15 4:30 4:45 6:30 6:45 **7:00** 7:15 7:30 7:45

Thursday May 29

150/216

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m. — **p.m. 12:00**

7:15 10Am meeting with COH BAQC
7:30 Jenny, Jedd, Karl, Greg, Pratham, Arturo
7:45 Don, Saundra, Pam Berger, LaNeice Blue
8:00 Naomi Macias, Steven, Paulette
8:15 Greg said CES is doing everything possible to
8:30 mitigate odors and does not understand why
8:45 Water Dept is ~~not~~ injecting into these
9:00 discussions. CES makes continuous improvements.
9:15 CES has odor patrol & spent $1M in mitigating
9:30 odors. Greg wants to know what are the
9:45 ~~of~~ water issues. Arturo says council
10:00 members are also engaged.
10:15 Paulette – needs info on the CES ops, she wants
10:30 to get into an agreement with CES, senior off
10:45 corrective actions, if agreed on things are not
11:00 done may lead to penalties, timeline for implem
11:15 very 6 months, send documentation to COH. Paulette
11:30 brought a case history to share with CES
11:45 Pam Berger – wants a tour; wants to know how
5:00 we handle on a ~~date~~ day to day basis, what
5:15 the CES capacities are, the processes
5:30 LaNeice – all waste loads have a profile
5:45 Arturo – scrubbers replaced with thermal
6:00 oxidizers; Greg – thermal oxidizers have
6:15 to work in conjunction with scrubbers
Thermal oxidizers is pretty involved ~$0.5M
Jed – recycling is emphasized
Arturo – it is CES' decision if they want to
relocate or process problem streams elsewhere
all that COH wants to do is eliminate odors – cont'd

1:15 1:30 1:45 **2:00** 2:15 2:30 2:45 **3:00** 3:15 3:30 3:45 **4:00** 4:15 4:30 4:45 6:30 6:45 **7:00** 7:15 7:30 7:45

AT-A-GLANCE®

EPAHO043001565

30 May Friday

151/215

May 2008

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m. Greg: pursuing other locations for second site for processing problem streams, capital intensive, CES may have a 2nd site by August 2008, adm patrol already in, thermal oxidizers in the next 6 weeks

8:00

8:15

8:30 Arthur's Summary: need to have accountability, mgmt wants details, review needs, wants involve different depts; timeline is imp. in terms of accomplishment

8:45

9:00

9:15 How COH responds when they get complaints

9:30

9:45 Paulette: env compliance agreements, penalties everybody involved is happy with past agreements in this arena

10:00

10:15 CES can put out a comprehensive report for council members

10:30

10:45 - citations can be handled differently

11:00 - can be postponed

11:15

11:30 Ayuk - Dept of Health & Human Services

11:45

5:00 Sebastian was let go today because of DOT log violations and because he cannot work at night

5:15

5:30

5:45 Ellen Haffman called to inform that she spoke with Jesse McBoltinghouse at TCEQ regarding registration of CES Sump at the street - was told that no need to register on NOR

6:00

6:15

6:30

6:45

7:00

7:15

7:45

p.m. 12:00 12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45

Saturday, May 31

152/214

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00 12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45

Sunday 153/213 1

AT-A-GLANCE®

EPAHO043001566

2 June Monday

154/212

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.

7:15 McKay's unraveled - ordered

7:30 a book for Joseph Camp - spoke to

7:45 Pamela at McCoys

8:00 → ordered one more book for Joy

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

Tuesday June 3

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

155/211

7:00 a.m. COH BAQC reps

7:15 Sharron Reese & Nguyen Ly

7:30 came at 10 am to investigate

7:45 an odor complaint that was

8:00 made at 6pm yesterday. Gave them

8:15 a tour of the facility. ~~and~~ They didn't

8:30 confirm any odor and were happy

8:45 with the facility inspection

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001567

4 June Wednesday

156/210

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m. — **p.m. 12:00**

7:15 Kotter Fire Protection & Ansul did a demo fr CES skid mount fire extinguisher at 10 am Clint, Joe Camp, Scott, Jorge, etc were present for the demo on maintenance — 12:15

7:30 — 12:30

7:45 — 12:45

8:00 — **1:00**

8:15 — 1:15

8:30 — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 — 2:15

9:30 — 2:30

9:45 — 2:45

10:00 — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

5:00 — 6:30

5:15 — 6:45

5:30 — **7:00**

5:45 — 7:15

6:00 — 7:30

6:15 — 7:45

Thursday June 5

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

157/209

7:00 a.m. — **p.m. 12:00**

7:15 Faxed SWP3 correction documents to Willie Harvey, COH at 713-676-6514 — 12:15

7:30 — 12:30

7:45 — 12:45

8:00 — **1:00**

8:15 — 1:15

8:30 — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 — 2:15

9:30 — 2:30

9:45 — 2:45

10:00 — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

5:00 — 6:30

5:15 — 6:45

5:30 — **7:00**

5:45 — 7:15

6:00 — 7:30

6:15 — AT-A-GLANCE® 7:45

EPAHO043001568

6 June Friday

158/208

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday June 7

159/207

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 160/206 **8**

AT-A-GLANCE®

EPAHO043001569

9 June Monday

161/205

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00 spoke to Oklahoma Highway	6:30
5:15 Patrol (405-702-0813) on	6:45
5:30 David Vandenberg's Ticket	**7:00**
5:45 OK ØØ A 1Ø 41818. They will	7:15
6:00 mail a penalty ticket $75 in	7:30
6:15 6 weeks	7:45

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Tuesday June 10

162/204

7:00 a.m.	**p.m. 12:00**
7:15 ~~Newmarket @ 10am - Alfred Garza~~	12:15
7:30 Ordered McCoy's book for Greg	12:30
7:45	12:45
8:00 Greg Lawrence Came in about 10:35-pm	**1:00**
8:15 and complained about H_2S smell on	1:15
8:30 Wayland Street. Went and monitored	1:30
8:45 And the meter did not pick anything.	1:45
9:00 There was no smell	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001570

11 June Wednesday

163/203

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	p.m. 12:00
7:15 New mark at 10 am today - Alfred	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday June 12

164/202

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00 First Aid Kit restocked	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAH00430015 71

13 June Friday

165/201

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.

7:15 LES 713-671-4800 # 4806

Crystal - Annual Summary Report

7:30

7:45

8:00 Safety Mtg - Hazlem

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

Saturday June 14

Flag Day (US) 166/200

7:00 a.m.

7:15 About 9:00am the odor got worst.

7:30 and multi rae registered 6.4 on the

7:45 VOC and the H2OS, LELO

8:00 and oxygen 20.7. Joe C. said

8:15 he is changing the scrubber in

8:30 WWTP. The odor was pretty bad

8:45 by the warehouse.

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

Sunday 15

167/199

Father's Day

AT-A-GLANCE®

EPAH00430015 72

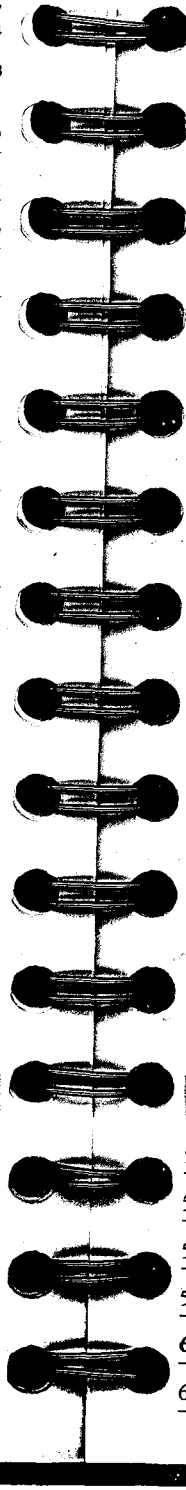
16 June Monday

168/198

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Tuesday June 17

169/197

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001573

18 June Wednesday

170/196

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.

7:15 OSHA's visit to CES @ 9am

7:30 Mr - Armando Rodriguez

7:45 Whistle Blower Investigation

8:00 He is here to ~~facilitate communication~~

8:15 between Gregory Lawrence & CES

8:30 Gregory : 1yr on 20th June

8:45 - on the 11th witnessed OSHA vidation

9:00 in the Tankwash, told Karl

9:15 - Darrin retaliated saying a ~~wet ticket~~ missing - was written up

9:30 - approached by marlin to see if Greg ~~made a comp~~ made a OSHA complain

10:00 (May 14) ; Greg he said he did

10:15 not complain

10:30 - on May 28 - Greg was put on the

10:45 evening shift - asked Darrin

11:00 why he was put in that situation

11:15 Darrin has been a source of

11:30 problem . He is comfortable with

11:45 Chris. Darrin's attitude became

5:00 worse in the last one month

5:15 - felt he was being retaliated

5:30 OSHA Regulation 11 C

5:45

6:00 Caught outfall Samples (1&2) at 7p.m.

6:15 Rain started at 6:50pm.

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

Thursday June 19

171/195

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00 Left outfall 1&2 Samples at NES

5:15 lab (Benchmark samples) today at

5:30 9:45AM

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO04300157 4

20 June Friday

172/194

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday June 21

Summer begins 173/193

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 174/192 **22**

AT-A-GLANCE®

EPAHO043001575

23 June Monday

175/191

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday June 24

St. Jean Baptiste (Québec) 176/190

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001576

25 June Wednesday

177/189

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

Thursday June 26

178/188

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001577

27 June Friday

179/187

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

7:00 a.m.		p.m. 12:00
7:15	COH was here at 1pm	12:15
7:30	3 reps: Issac, Eugene, &	12:30
7:45	Sonya Louis	12:45
8:00		1:00
8:15	Eugene has collected air	1:15
8:30	samples inside WWTP &	1:30
8:45	fmn near bullet tanks	1:45
9:00		2:00
9:15	I was told that they came in	2:15
9:30	to see scrubber specs.	2:30
9:45	when told they are not available	2:45
10:00	they wanted to tour the facility	3:00
10:15	to look around and take specs	3:15
10:30	on the equipment.	3:30
10:45		3:45
11:00		4:00
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		7:00
5:45		7:15
6:00		7:30
6:15		7:45

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Saturday June 28

180/186

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	1:00
8:15	1:15
8:30	1:30
8:45	1:45
9:00	2:00
9:15	2:15
9:30	2:30
9:45	2:45
10:00	3:00
10:15	3:15
10:30	3:30
10:45	3:45
11:00	4:00
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 181/185 29

AT-A-GLANCE®

EPAHO043001578

30 June Monday

182/184

June 2008

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	at 4 am in the there was a	**p.m. 12:00**	
7:15	leak fitted from the flange	12:15	
7:30	and Martin had the crew cleaning	12:30	
7:45	the yard. NaOmi was here and	12:45	
8:00	took the sample. Hector came here	**1:00**	
8:15	at 8:10 am and walked the yard	1:15	
8:30	and started taking pictures.	1:30	
8:45		1:45	
9:00		**2:00**	
9:15		2:15	
9:30		2:30	
9:45		2:45	
10:00		**3:00**	
10:15		3:15	
10:30		3:30	
10:45		3:45	
11:00		**4:00**	
11:15		4:15	
11:30		4:30	
11:45		4:45	
5:00		6:30	
5:15		6:45	
5:30		**7:00**	
5:45		7:15	
6:00		7:30	
6:15		7:45	

Tuesday July 1

Canada Day 183/183

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001579

2 July Wednesday

184/182

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday July 3

185/181

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

7:15 COH Daryl Tate & Wade were here at 3pm on an odor complaint and came with an infrared camera. T. Wade issued a NOV for 6-27-08 9PM odor complaint.

9:00 Robert Hickman accident today 12:00pm at Liberty Forge

AT-A-GLANCE®

EPAHO043001580

4 July Friday

186/180 Independence Day (US)

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday July 5

187/179

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 188/178 **6**

AT-A-GLANCE®

EPAHO043001581

7 July Monday

189/177

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.		p.m. 12:00
7:15	GE Audit 4:55 pm	12:15
7:30		12:30
7:45	Fire Extinguishers	12:45
8:00	Eye wash	**1:00**
8:15	PPE - no lanyards on in	1:15
8:30	the tankwash	1:30
8:45	Safety glasses use is lax	1:45
9:00	throughout the facility	**2:00**
9:15	- H_2O_2 remove old berm	2:15
9:30	- asphalt staining	2:30
9:45		2:45
10:00	- bullet tanks, Secondary	**3:00**
10:15	containment	3:15
10:30	- what is the pressure - ambient	3:30
10:45		3:45
11:00	- thermal oxidizers	**4:00**
11:15	- get robust influent	4:15
11:30	temperature control	4:30
11:45		4:45
5:00	- check all ladders	6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Tuesday July 8

190/176

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001582

9 July Wednesday

191/175

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	RFT, ~~PFT~~ PFT, Audiometric Test by Concentra 5am - 3:30pm	**p.m. 12:00**
7:15		12:15
7:30		12:30
7:45	Ellen : (b) (4)	12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45

5:00	Class 1 non Haz Rinsewater	6:30
5:15	Profile recertification form was	6:45
5:30	was faxed to Newpoint today	**7:00**
5:45	Profile # ~~08~~ 08 08 081014 BH.	7:15
6:00	It is good through 8-8-09. New	7:30
6:15	analytical is needed in Aug 2008.	7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Thursday July 10

192/174

7:00 a.m.	RFT, PFT, Audiometric Testing Noon to 10pm	**p.m. 12:00**
7:15		12:15
7:30		12:30
7:45	meeting with Dennis Winkler	12:45
8:00		**1:00**
8:15	- communicate to the people live around the facility	1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45

5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15	AT-A-GLANCE®	7:45

EPAHO043001583

11 July Friday

193/173

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Saturday July 12

194/172

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 13
195/171

AT-A-GLANCE®

EPAHO043001584

14 July Monday

196/170

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.

Fax: 713-640-4388

7:15 Naomi Macias, CoH,

7:30 (b) (4) called at

7:45 8:30 am and asked for a copy

8:00 of manifest of the material that

8:15 was spilled on 6-30-08 that she

8:30 came to investigate around 7:45am on

8:45 that day.

9:00 Spoke to Martin about this.

9:15 Martin said the material was spilled

9:30 from them KMTex sludge box (, about

9:45 10 gallons). Naomi also wanted to

10:00 talk to Greg Bowman.

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

12:00 p.m.

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Tuesday July 15

197/169

7:00 a.m. Fuelman H&W Petroleum

7:15 Mark Bellemare

7:30 (b) (4)

7:45

8:00

8:15 -ordered 100 gate clickers from

8:30 Stewart Doss on Personal Credit

8:45 Card

9:00

9:15 00157094 – M

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

12:00 p.m.

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001585

16 July Wednesday

198/168

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday July 17

199/167

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15 Attended to CHMM meeting at	12:15
7:30 Brady's Landing. Ran into	12:30
7:45 Tom Stang, Jed Anderson, Lance	12:45
8:00 Short, and David McCormick and	**1:00**
8:15 Mahender Mohite.	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001586

18 July Friday

200/166

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.		p.m. 12:00
7:15	Spoke to chuck at Cisco Boiler	12:15
7:30	(b) (4)	12:30
7:45	regarding paper work on the	12:45
8:00	welding done by Cisco on	1:00
8:15	TX Boiler 074533	1:15
8:30	-chuck said he will speak to	1:30
8:45	Roger and provide some proof	1:45
9:00	for records	2:00
9:15		2:15
9:30	- 286 - Greg Lawrence)	2:30
9:45		2:45
10:00	Ronnie from Dana called	3:00
10:15	to report that the driver had	3:15
10:30	done an excellent job in doing	3:30
10:45	the pretrip inspection.	3:45
11:00		4:00
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		7:00
5:45		7:15
6:00		7:30
6:15		7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Saturday July 19

201/165

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	1:00
8:15	1:15
8:30	1:30
8:45	1:45
9:00	2:00
9:15	2:15
9:30	2:30
9:45	2:45
10:00	3:00
10:15	3:15
10:30	3:30
10:45	3:45
11:00	4:00
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 202/164 20

AT-A-GLANCE®

EPAHO043001587

21 July Monday

203/163

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m. Town inspection scheduled for TX Boiler 138292 in the boiler room at Tankwash

- Change gaskets
- water - too hard - don't be to aggressive but need to control salts
- blow down 4 times / day until the scale is down - then once / day

R-1 form from Cinco boiler need to give the form to Mr. Spurling and keep a copy in the file

Cleaver Brooks - Boiler
- Hand hose & Manway gasket

7:15 7:30 7:45 **8:00** 8:15 8:30 8:45 **9:00** 9:15 9:30 9:45 **10:00** 10:15 10:30 10:45 **11:00** 11:15 11:30 11:45

p.m. 12:00 12:15 12:30 12:45 **1:00** 1:15 1:30 1:45 **2:00** 2:15 2:30 2:45 **3:00** 3:15 3:30 3:45 **4:00** 4:15 4:30 4:45

5:00 5:15 5:30 5:45 **6:00** 6:15

6:30 6:45 **7:00** 7:15 7:30 7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Tuesday July 22

204/162

7:00 a.m. 7:15 7:30 7:45 **8:00** 8:15 8:30 8:45 **9:00** 9:15 9:30 9:45 **10:00** 10:15 10:30 10:45 **11:00** 11:15 11:30 11:45

p.m. 12:00 12:15 12:30 12:45 **1:00** 1:15 1:30 1:45 **2:00** 2:15 2:30 2:45 **3:00** 3:15 3:30 3:45 **4:00** 4:15 4:30 4:45

5:00 5:15 5:30 5:45 **6:00** 6:15

6:30 6:45 **7:00** 7:15 7:30 7:45

AT-A-GLANCE®

EPAHO043001588

23 July Wednesday

205/161

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

COH - Willie Harvey
Copy of site map
SWPPP
- site map, NOI, application
fax: 713-676-6514

- mailed Arkansas Hwy Patrol
Hazmt renewal application

Thursday July 24

206/160

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:0**
5:45	
6:00	
6:15	

AT-A-GL

EPAHO043001589

25 July Friday

207/159

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.
7:15
7:30
7:45
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9:15
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10:45
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11:30
11:45

p.m. 12:00
12:15
12:30
12:45
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6:30
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7:00
7:15
7:30
7:45

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Saturday July 26

208/158

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

p.m. 12:00
12:15
12:30
12:45
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3:00
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3:45
4:00
4:15
4:30
4:45

Sunday 27
209/157

AT-A-GLANCE®

EPAHO043001590

28 July Monday

210/156

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m. — **p.m. 12:00**

Boiler Inspection 7 am
→ Cleaver Brooks Boiler - outside boiler room
TX ~~139282~~ 180235

Mr. Mike Spurling inspected the boiler and reactivated ~~inspection~~ the boiler - ~~8~~ equipment number ~~826~~

4:52 pm
610 & Cullen - Blowntine Peter Bilt
Leonardo - COH

5pm - Petroleum Express
wastewater CES# 2085

→ Windshield Cracked

Steve Adams
409-354-3034
Entertain the request

AIG Agent: David Barrett
913-338-9275
Claim # (b) (4) [redacted]

Tuesday July 29

211/155

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m. — **p.m. 12:00**

Bought two new Crowcon Tetra air meters to replace 2 old ones that could not be repaired. Unit numbers for the new ones are 12 and 14.

AT-A-GLANCE®

EPAHO043001591

30 July Wednesday

212/154

July 2008

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

7:00 a.m.	
7:15	mailed 2nd Qtr IFTA report
7:30	
7:45	Emailed NCMS : Employee list &
8:00	Contractor info
8:15	to Teresa Patterson.
8:30	
8:45	GE Audit today
9:00	
9:15	Gave COCs to Chris today for
9:30	3rd Qtr VSIS Random
9:45	
10:00	
10:15	
10:30	
10:45	
11:00	
11:15	
11:30	
11:45	
5:00	
5:15	
5:30	
5:45	
6:00	
6:15	

p.m. 12:00	
12:15	
12:30	
12:45	
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1:15	
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3:45	
4:00	
4:15	
4:30	
4:45	
6:30	
6:45	
7:00	
7:15	
7:30	
7:45	

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Thursday July 31

213/153

7:00 a.m.	
7:15	Republic Waste Services - Audit
7:30	Steve Braun, Bobby Howell
7:45	
8:00	
8:15	
8:30	
8:45	
9:00	
9:15	
9:30	
9:45	
10:00	
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10:45	
11:00	
11:15	
11:30	
11:45	
5:00	
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5:30	
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6:15	

p.m. 12:00	
12:15	
12:30	
12:45	
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4:45	
6:30	
6:45	
7:00	
7:15	
7:30	
7:45	

AT-A-GLANCE®

EPAHO043001592

1 August Friday

214/152

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.

7:15 Spoke to Lynn at Concentra

7:30 713-280-0365

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00 Acrolonitrile Safety Training

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

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2:00

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3:00

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3:45

4:00

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4:45

6:30

6:45

7:00

7:15

7:30

7:45

Saturday August 2

215/151

7:00 a.m.

7:15

7:30

7:45

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9:00

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11:45

p.m. 12:00

12:15

12:30

12:45

1:00

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1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

Sunday 3

216/150

AT-A-GLANCE®

EPAHO043001593

4 August Monday

217/149 Civic Holiday (C)

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday August 5

218/148

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001594

6 August Wednesday

219/147

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.

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p.m. 12:00

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7:00

7:15

7:30

7:45

Thursday August 7

220/146

7:00 a.m.

7:15 11:40 am

7:30

7:45 H2S exposure

8:00

8:15 (1) Gregory L. informed Karl Guidry

8:30 of H2S presence in Lubrizol lands

8:45 to CES in the past - This was done

9:00 on Aug 1, 2008. This was also reported

9:15 Dustin Raymond. Gregory had headache

9:30 over the weekend and also prior

9:45 weekend. Karl was supposed to

10:00 do some research and was to get back

10:15 with Gregory. This was not done

10:30 (2) Gregory says he was exposed to

10:45 H2S over 350 ppm for over 2 week.

11:00 (3) Gregory wants to know the company

11:15 policy for dealing with H2S and

11:30 what is going to be done to minimize

11:45 driven exposure to H2S.

X

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

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1:00

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6:30

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7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001595

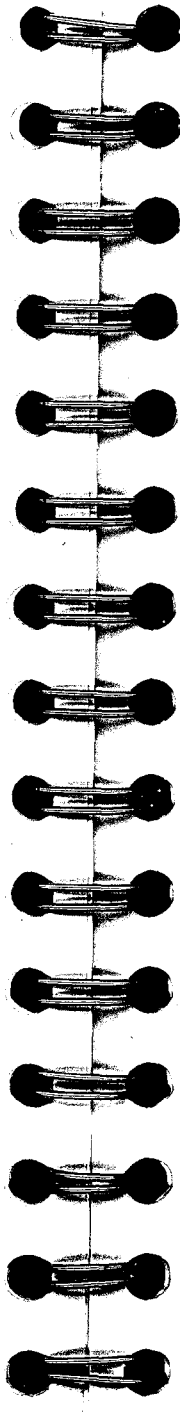
8 August Friday

221/145

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Saturday August 9

222/144

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 223/143 **10**

AT-A-GLANCE®

EPAHO043001596

11 August Monday

224/142

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.
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p.m. 12:00
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7:45

Tuesday August 12

225/141

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.
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p.m. 12:00
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7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001597

13 August Wednesday

226/140

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	p.m. 12:00
7:15 E	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Thursday August 14

227/139

7:00 a.m.	p.m. 12:00
7:15 Eric Petroleum expres	12:15
7:30	12:30
7:45 281-202-8727	12:45
8:00	**1:00**
8:15 Aug 2006	1:15
8:30	1:30
8:45 monitoring 2007	1:45
9:00	**2:00**
9:15 no spills observed	2:15
9:30 Break it down by q/inter	2:30
9:45 and qtr	
10:00	**3:00**
10:15	3:15
10:30 Spill impact need to be	3:30
10:45 called	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001598

15 August Friday

228/138

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
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Saturday August 16

229/137

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Sunday 17
230/136

AT-A-GLANCE®

EPAHO043001599

18 August Monday

231/135

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

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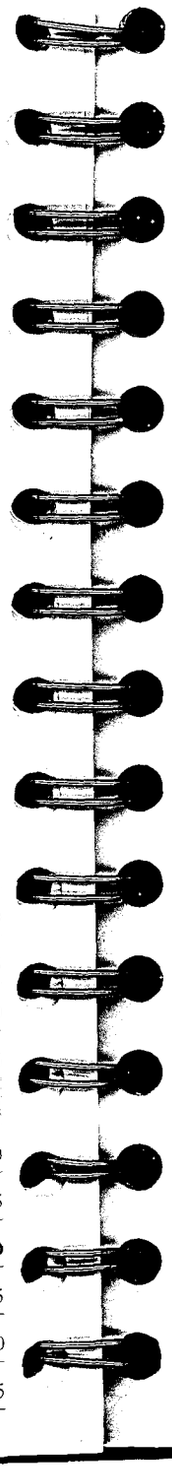

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Tuesday August 19

232/134

7:00 a.m.
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AT-A-GLANCE®

EPAHO043001600

20 August Wednesday

233/133

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
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8:45	1:45
9:00	**2:00**
9:15	2:15
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9:45	2:45
10:00	**3:00**
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10:45	3:45
11:00	**4:00**
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11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday August 21

234/132

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
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7:00 a.m.	**p.m. 12:00**
7:15	12:15
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5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001601

22 August Friday

235/131

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

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Saturday August 23

236/130

7:00 a.m.
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Sunday 237/129 **24**

AT-A-GLANCE®

EPAHO043001602

25 August Monday

238/128

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
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September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Tuesday August 26

239/127

7:00 a.m.	**p.m. 12:00**
7:15 Acrylonitrile OSHA standard	12:15
7:30 29 CFR 1910.1045	12:30
7:45 Safety Training was	12:45
8:00 conducted by Subbhir Desai	**1:00**
8:15 today Attendees	1:15
8:30 - Magnann	1:30
8:45 Milton	1:45
9:00 Rickely	**2:00**
9:15 Andres	2:15
9:30 Quin	2:30
9:45 Prabhakar	2:45
10:00 Steve	**3:00**
10:15	3:15
10:30 meeting with Dr. Ddarg Sudhir	3:30
10:45 & at Concentra	3:45
11:00 Medical Surveillance	**4:00**
11:15 - Physical Exam	4:15
11:30 - GI	4:30
11:45 - X'ray	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001603

27 August Wednesday

240/126

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
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9:15	2:15
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9:45	2:45
10:00	**3:00**
10:15	3:15
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10:45	3:45
11:00	**4:00**
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11:45	4:45
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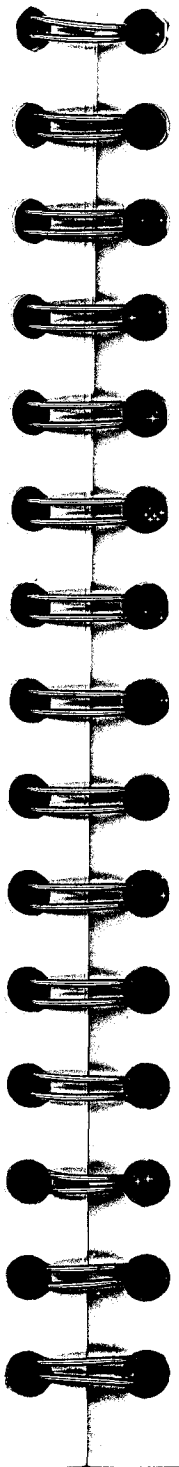
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



Thursday August 28

241/125

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
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5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001604

29 August Friday

242/124

August 2008

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
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September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Saturday August 30

243/123

7:00 a.m.
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Sunday 244/122 **31**

AT-A-GLANCE®

EPAHO043001605

1 September Monday

245/121 Labor Day (C, US)

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
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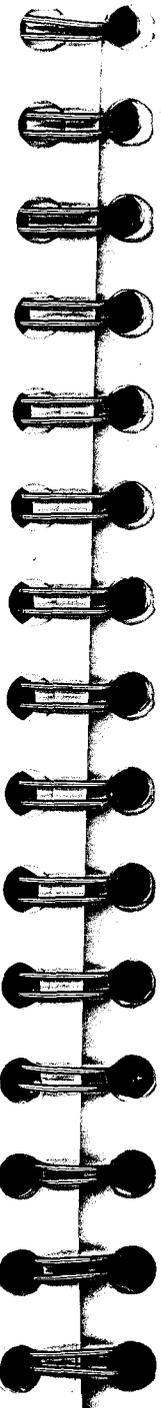


October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Tuesday September 2

First of Ramadan 246/120

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001606

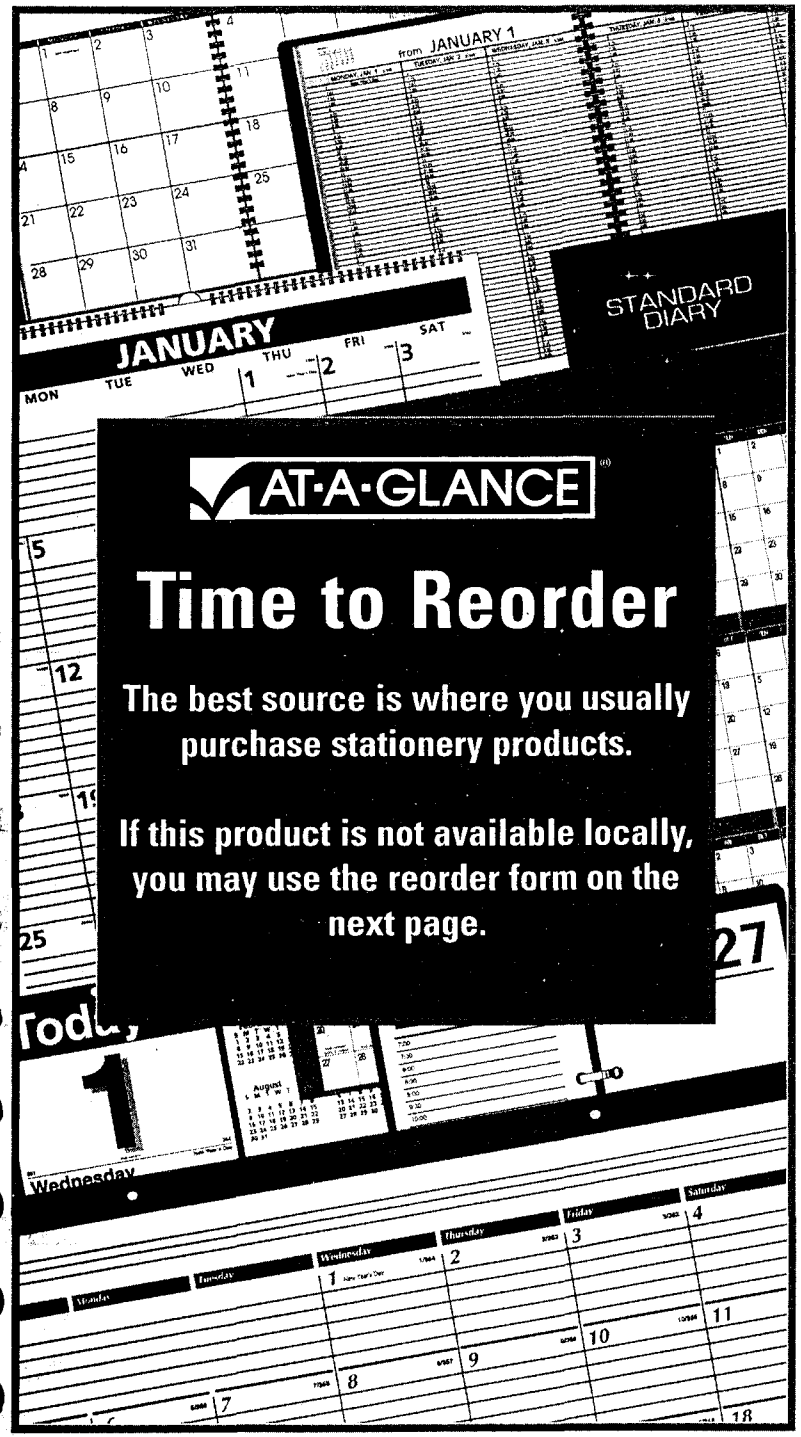
3 September Wednesday

247/119

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.		p.m. 12:00
7:15	WM Audit today	12:15
7:30		12:30
7:45	Mr. Alan Barbee's visit	12:45
8:00		**1:00**
8:15	Enterprise Trans Driver	1:15
8:30	2 COLD	1:30
8:45	0000	1:45
9:00		**2:00**
9:15	- eyewash - no cover	2:15
9:30		2:30
9:45	-fire extinguisher - missing nozzle on forklift	2:45
10:00		**3:00**
10:15	-drop bar	3:15
10:30		3:30
10:45	Safety latch on the	3:45
11:00	gooseneck Trailer	**4:00**
11:15	- hole watch	4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45



EPAHO043001607

2009 ORDER FORM

Name _____ Business _____
Last First

Address _____

City _____ State _____ Zip _____

Daytime Phone ( ) _____ E-mail* _____

If unable to obtain where you purchase stationery products, send entire page with payment (U.S. $) in full to:

CALENDARS
P O BOX 400
SIDNEY, NY 13838

Call 1 (800) 365-9327
or Fax (866) 329-7005
ORDER ON LINE
www.ataglance.com

FILL IN ALL INFORMATION BELOW

Qty.	Item Description	Price ea.	Total
	G100-00, Black	**$19.39**	
	G100-10, Assorted	**$19.39**	
	Shipping/Handling	$5.00	
	Canadian Orders	+ $5.00	
	International Orders	+ $15.00	
	NY State Residents Add Tax		
	TOTAL		

Payment Options

You can pay by check or credit card. Check applicable box:

☐ Check payable to "CALENDARS" ($20.00 Service Charge on all returned checks)

PAYMENT VIA CHECK OR CREDIT CARD MUST ACCOMPANY ORDER FORM.

☐ MasterCard ☐ Visa ☐ American Express ☐ Discover

Card Number _____

Expiration Date (MM/YY) _____ Credit Card ID _____
(required)

Cardholder Name _____
(please print)

Signature _____

Orders are processed within 48 hours and usually arrive within 7 - 10 days from date received.

*We will notify you when your order ships.

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Thursday **September 4**

248/118

7:00 a.m.	12:30pm C of H	**p.m. 12:00**
7:15	- NOV Joann Huffman & Wade	12:15
7:30	what specific ops at this Time	12:30
7:45	also confirmed on Grace Lane	12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

AT-A-GLANCE®

EPAHO043001608

5 September Friday

249/117

September							2008
S	M	T	W	T	F	S	
	1	2	3	4	5	6	
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30					

October							2008
S	M	T	W	T	F	S	
			1	2	3	4	
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30	31		

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
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9:45	2:45
10:00	**3:00**
10:15	3:15
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10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday September 6

250/116

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 251/115 7

AT-A-GLANCE®

EPAHO043001609

8 September Monday

252/114

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.

7:15 COH Inspector Maverick Thigpen
7:30 did a site Tour on 8-14-08
7:45 and a response to his requestes
8:00 was due today. Responded
8:15 by fax on 9-4-08. Called him
8:30 today to ask if he received the
8:45 fax. He said yes and said
9:00 that he did not get a chance to
9:15 review it yet.
9:30
9:45
10:00
10:15
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5:00
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p.m. 12:00

12:15
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12:45
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7:45

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Tuesday September 9

253/113

7:00 a.m.

7:15 Sam Brown ~~said~~ reported
7:30 75ppm phenol in the discharge
7:45 water to COH. Called
8:00 Charles Graham at the City &
8:15 ~~informed~~. Charles said to continue to
8:30 monitor
8:45
9:00 Channel 13 here to do press
9:15 coverage.
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

5:00 Safety Training Folders on
5:15 ~~the~~ following employees were
5:30 given to Marlin today
5:45 Dustin Harrington -236
6:00 Joey Sutter 232
6:15 Larry Coker 231

p.m. 12:00

12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
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4:00
4:15
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4:45

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001610

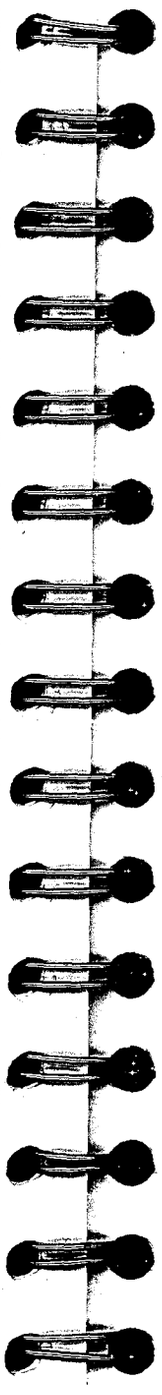
10 September Wednesday

254/112

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Thursday September 11

Patriot Day (US) 255/111

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001611

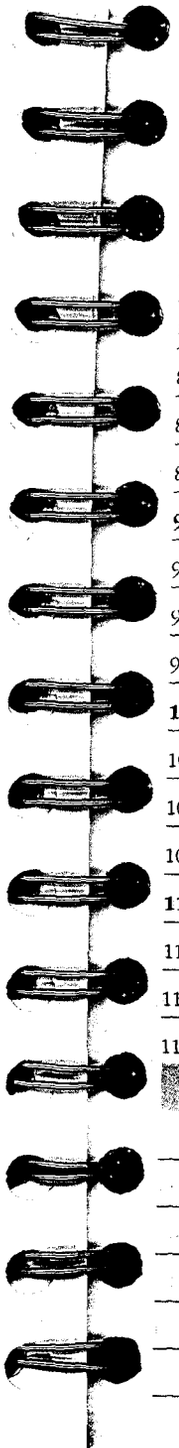
12 September Friday

256/110

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Saturday September 13

257/109

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 14
258/108

AT-A-GLANCE®

EPAHO04300161 2

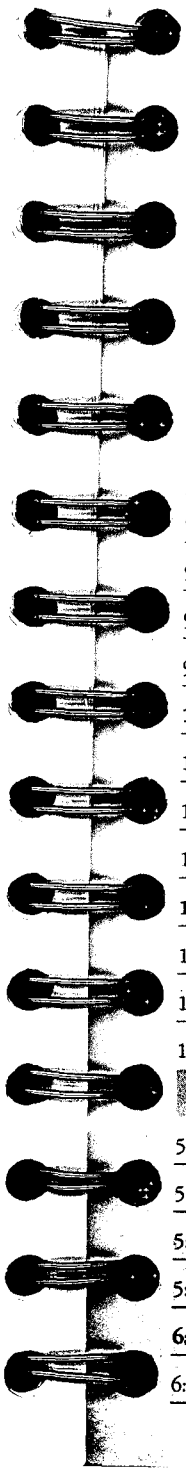
15 September Monday

259/107 Declaration of Independence (M)

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Tuesday September 16

Independence Day (M) 260/106

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAHO043001613

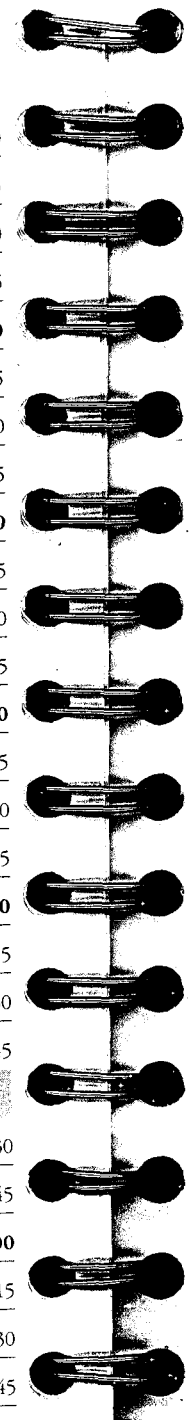
17 September Wednesday

261/105

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Thursday September 18

262/104

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO04300161 4

19 September Friday

263/103

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.
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p.m. 12:00
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6:45
7:00
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7:45

Saturday September 20

264/102

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
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9:00
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p.m. 12:00
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1:45
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4:30
4:45

Sunday 265/101 **21**

AT-A-GLANCE®

EPAHO043001615

22 September Monday

266/100 Autumn begins

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday September 23

267/99

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001616

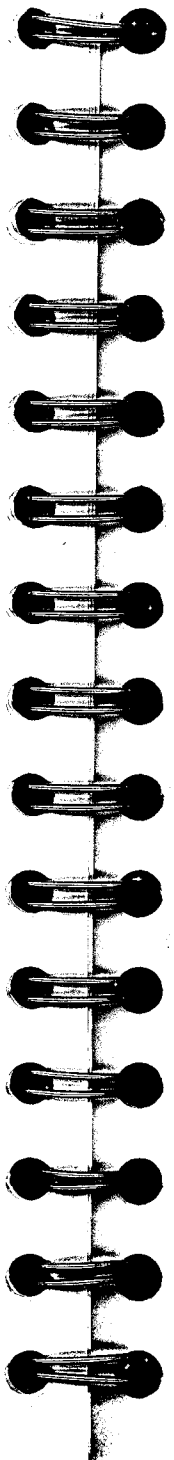
24 September Wednesday

268/98

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Thursday September 25

269/97

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO04300161 7

26 September Friday

270/96

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

7:00 a.m.
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p.m. 12:00
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7:30
7:45

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Saturday September 27

271/95

7:00 a.m.
7:15
7:30
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9:00
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11:45

p.m. 12:00
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4:15
4:30
4:45

Sunday 272/94 **28**

AT-A-GLANCE®

EPAHO043001618

29 September Monday

273/93 Rosh Hashanah begins at sundown

September 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday September 30

Rosh Hashanah 274/92

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO04300161 9

1 October Wednesday

275/91

out 32 37,400

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday October 2

(Eid) al Fitr 276/90

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Around 2:45 pm there was fire in a trailer brought from Kinder Morgan. The trailer was in the unloading area next to oil facility. Juan was using a sludge judge to sample and on the third stroke it created fire. The trailer was not grounded. 911 was called but by the time they arrived the fire was contained. The trailer will be dropped off at Port Arthur. A call was placed to Clark fire to service the skid mount fire extinguisher.

AT-A-GLANCE®

EPAHO043001620

3 October Friday

277/89

October 2008
S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

7:00 a.m. Visit to CES PA with Steve
7:15
7:30 (1) Sign for Trailer - Office main
7:45 (2) Speed limit sign - 5 mile (4)
8:00 (3) Sign for Guard Shack Ex
8:15 (4) Sign for Scale house
8:30 (5) Steps to dock need repair
8:45 Build 2 portable steps with railing
9:00
9:15 (6) Connex box - Need appropriate labels
9:30 Drum Unloading dock
9:45 (7) Emergency phone numbers
10:00 (1) Lining socks
10:15
10:30 (8) Sign for lab on the door
10:45 (9) Lab need exhaust fan on
11:00
11:15 (10) Sign on bath room in the lab
11:30 (11) Fire extinguisher for lab
11:45
(12) ~~Main~~ PPE sign for on the lab door
5:00
5:15
5:30 (13) Emergency info Sign in the lab → near gate exit
5:45
6:00 (14) Fire extinguishers while unloading flammables
6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45
5:00
5:15
5:30
5:45
6:00
6:15
6:30
6:45
7:00
7:15
7:30
7:45

November 2008
S M T W T F S
1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

Saturday October 4

278/88

7:00 a.m. needs grounding ~~when unite for~~ trailers
7:15
7:30
7:45 (15) Bullet storage tanks need ~~for~~ labels
8:00 - confined space entry permit labels
8:15 - emergency info signs
8:30 - eyewash
8:45 Need Smoking Signs
9:00
9:15 (16) Label the Supply
9:30 lines
9:45
10:00 (17) Label all tanks
10:15 oily water Separator
10:30
10:45
11:00
11:15 (18) Eye wash bottles
11:30 (19) Flammable storage Cabinet
11:45

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

Sunday 279/87 5

AT-A-GLANCE®

EPAHO043001621

6 October Monday

280/86

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.

7:15 City of Houston Meeting at CES 2pm 17 people in the audience

7:30

7:45 9 from CES + 8 from COH

8:00 Sept 8 to 11 - Mammal Sampling

8:15 Carbon Scrubber in use

8:30 no problems with emissions

8:45

9:00 Sept 25 to oct 1, 1 sample collected each day in Tedlar bags - benzene

9:15 levels were high -

9:30 monitor:

9:45 Nearest fixed air Milby Park

10:00 Caesar Chavez

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Tuesday October 7

281/85

Read our weather station wind

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001622

8 October Wednesday

October 2008
S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

282/84 Yom Kippur begins at sundown

OH - Tony was here & issued an NOV

7:00 a.m. Meeting @ WCM with
7:15 Clark, Marlin, Desiree
7:30 Thermal oxidizer 95% efficiency
7:45 get certification from manufact
8:00 to meet 98% destruction efficiency
8:15
8:30 info on product
8:45 Size of trailer, amount
9:00 of product, (equivalent of gasoline
9:15 static fire)
9:30
9:45 Port Arthur
10:00
10:15 Napthenic 20,000 gal tank
10:30 want to add 2 more tanks
10:45 napthenic caustic
11:00 ↓ (Sulfuric)
11:15 add acid ↑ to 2pH
11:30 ↓
11:45 pump water
↓
5:00 Pump product into a
5:15 holding tank to separate water at
5:30 ↓
5:45 MSDS for (napthenic)
6:00 weak caustic solution
6:15

mailed Steeps ×2 accountrepresentative TCEQ today

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45
6:30
6:45
7:00
7:15
7:30
7:45

Thursday October 9

November 2008
S M T W T F S
1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30

Yom Kippur 283/83

bring oil), make emulsion

7:00 a.m. Vacuum distill water oil
7:15 and remove pollutants, water and
7:30 recover good oil
7:45
8:00 TL - 3 mil BTU
8:15
8:30 Marine vapor Control
8:45 need to 98% control destruction
9:00 efficiency
9:15 - comply with Coast Guard &
9:30 TCEQ guidelines
9:45
10:00 WCM prepared ~~to~~ ops ~~manual~~ manual
10:15 manual
10:30 - 3 month process with
10:45 Coast Guard, TCEQ is
11:00 a 4 month process
11:15
11:30 Rail Car Cleaning
11:45 EPA 2.18 guideline to
meeting these requirements
5:00 emissions from rail cars
5:15 ove 0.5 psia need to be
5:30 controlled
5:45 Beaumont Port Arthur are is a
6:00 non attainment facility
6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45
6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001623

10 October Friday

284/82

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

tank to truck loading is a Vapor balance (? or vented to the atmosphere

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday October 11

285/81

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 286/80 **12**

Day of the Race (M)

AT-A-GLANCE®

EPAHO043001624

13 October Monday

287/79 Columbus Day, Observed (US)
Thanksgiving (C)

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.

7:15 Gerardo Rey, Fire Inspectn
7:30 from COH was here to
7:45 inspect CES
rey.gerardo@cityofhouston.net
713-247-4113 (T) 8468 (F)
8:00
8:15
8:30
8:45 wanted to ~~city~~ see COH
9:00 permits for storing
9:15 Corrosives
9:30 Flammables - Combustibles
9:45 Hazmat
10:00 Hotwork Permit ~~for~~ welding
10:15
10:30
10:45
11:00
11:15
11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00

12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Tuesday October 14

288/78

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
10:45
11:00
11:15
11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
2:00
2:15
2:30
2:45
3:00
3:15
3:30
3:45
4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001625

15 October Wednesday

289/77

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m. — **p.m. 12:00**

7:15 Tony & ~~Cam~~ COH 12:15

7:30 Came in at 2:29pm and said 12:30

7:45 they have complaint from neighbors 12:45

8:00 about an odor issue. They took **1:00**

8:15 an upwind & downwind sample 1:15

8:30 to analyze. They came in just 1:30

8:45 to notify. 1:45

9:00 **2:00**

9:15 2:15

9:30 2:30

9:45 2:45

10:00 **3:00**

10:15 3:15

10:30 3:30

10:45 3:45

11:00 **4:00**

11:15 4:15

11:30 4:30

11:45 4:45

5:00 6:30

5:15 6:45

5:30 **7:00**

5:45 7:15

6:00 7:30

6:15 7:45

Thursday October 16

National Boss Day (US) 290/76

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m. — **p.m. 12:00**

7:15 Leonardo DeSouza came in at 11am 12:15

7:30 and said he had complaints at 9am 12:30

7:45 and 10 am today from neighbors. 12:45

8:00 **1:00**

8:15 1:15

8:30 1:30

8:45 1:45

9:00 **2:00**

9:15 2:15

9:30 2:30

9:45 2:45

10:00 **3:00**

10:15 3:15

10:30 3:30

10:45 3:45

11:00 **4:00**

11:15 4:15

11:30 4:30

11:45 4:45

5:00 6:30

5:15 6:45

5:30 **7:00**

5:45 7:15

6:00 7:30

6:15 7:45

AT-A-GLANCE®

EPAHO043001626

17 October Friday

291/75

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.

7:15

7:30 Dispute of workers comp claim

7:45 Daryl Johnson.

8:00

8:15 Mission City 281-403-7050

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

6:30

6:45

7:00

7:15

7:30

7:45

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Saturday October 18

292/74

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

4:00

4:15

4:30

4:45

Sunday 293/73 **19**

AT-A-GLANCE®

EPAHO043001627

20 October Monday

294/72

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m. — **p.m. 12:00**

7:15 COH inspector Nguyen Ly — 12:15
7:30 came in and said he — 12:30
7:45 is here on a Complaint — 12:45
8:00 at 12noon but has not — **1:00**
8:15 Confirmed any odor — 1:15
8:30 (b) (4) — 1:30
8:45 Need to call him and — 1:45
9:00 tell him if the misters are — **2:00**
9:15 working. — 2:15
9:30 — 2:30
9:45 — 2:45
10:00 — **3:00**
10:15 — 3:15
10:30 — 3:30
10:45 — 3:45
11:00 — **4:00**
11:15 — 4:15
11:30 — 4:30
11:45 — 4:45

5:00 — 6:30
5:15 — 6:45
5:30 — **7:00**
5:45 — 7:15
6:00 — 7:30
6:15 — 7:45

Tuesday October 21

295/71

7:00 a.m. — **p.m. 12:00**

7:15 — 12:15
7:30 — 12:30
7:45 — 12:45
8:00 — **1:00**
8:15 — 1:15
8:30 — 1:30
8:45 — 1:45
9:00 — **2:00**
9:15 — 2:15
9:30 — 2:30
9:45 — 2:45
10:00 — **3:00**
10:15 — 3:15
10:30 — 3:30
10:45 — 3:45
11:00 — **4:00**
11:15 — 4:15
11:30 — 4:30
11:45 — 4:45

5:00 — 6:30
5:15 — 6:45
5:30 — **7:00**
5:45 — 7:15
6:00 — 7:30
6:15 — 7:45

AT-A-GLANCE

EPAHO043001628

22 October Wednesday

296/70

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m. — Scott Skinner's accident 9:40 Am

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

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4:00

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4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

Thursday October 23

297/69

7:00 a.m.

7:15

7:30

7:45

8:00

8:15

8:30

8:45

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

p.m. 12:00

12:15

12:30

12:45

1:00

1:15

1:30

1:45

2:00

2:15

2:30

2:45

3:00

3:15

3:30

3:45

~~4:00~~

4:15

4:30

4:45

5:00

5:15

5:30

5:45

6:00

6:15

6:30

6:45

7:00

7:15

7:30

7:45

AT-A-GLANCE®

EPAHO043001629

24 October Friday

298/68 United Nations Day

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00 Pavan Air Tran: OFQCYE	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Saturday October 25

299/67

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 300/66 **26**

AT-A-GLANCE

EPAHO043001630

27 October Monday

301/65

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday October 28

302/64

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

EPAHO043001631

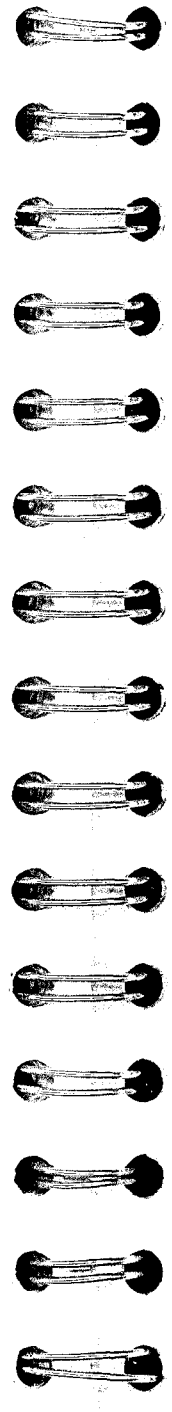
29 October Wednesday

303/63

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45



November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Thursday October 30

304/62

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

11am Maverick Thigpen
Ellen's timings
M & W (3rd & 5th
[Tue pm - not convenient]

AT-A-GLANCE®

EPAHO043001632

31 October Friday

305/61 Halloween

October 2008

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

7:00 a.m.
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7:00
7:15
7:30
7:45

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Saturday November 1

All Saints Day (M) 306/60

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
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11:45

p.m. 12:00
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2:45
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3:30
3:45
4:00
4:15
4:30
4:45

Sunday 307/59 **2**

Day of the Dead (M)
Daylight Saving Time ends

AT-A-GLANCE®

EPAHO043001633

3 November Monday

308/58

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m. — p.m. 12:00

New Park

Randall Landry

(b) (4)

→cell

I-10 to winnie

Exit - hwy 73

6 miles - Wilbert Rd

on the right - 7 miles

Wednesday

Thursday at 10am

10:00 Terry Atchison HFD

St. 25

(b) (4)

11:00 — 4:00

4pm: Ryan said David Vanden was life flighted to St. Elizabeth in Beaumont from Newpark in winnie, from He fell off from a trailer and was bleeding from the head. He seems to be doing OK but no details at Elizabeth,

(b) (4)

(b) (4)

5:00 — 7:00

Tuesday **November 4**

Election Day (US) 309/57

7:00 a.m. — p.m. 12:00

11:00 — 4:00

5:00 — 7:00

EPAHO043001634

5 November Wednesday

310/56

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m. TCEQ Meeting

7:15 Multi media

7:30

7:45 Pre-treatment - Gary

8:00

8:15 ↑ SOP for profiles

8:30

8:45 & List of products we receive
emission from product?
→ how it is processed
need for the last 3 years

9:00

9:15

9:30

9:45

10:00

10:15

10:30

10:45

11:00

11:15

11:30

11:45

5:00

5:15

5:30

5:45

6:00

6:15

p.m. 12:00 12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45 6:30 6:45 7:00 7:15 7:30 7:45

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Thursday November 6

Dr. Gary
FAX 281-484-7632

311/55

7:00 a.m. (1) 90011191 on/off

(2) 900 25191 on/off
9992 on/off

(3) 900569H
↳ D001 add D002
add D018, D002
901 609H

& Need copies of SOP for profiles

(5) Need copies of MSDS for Oct. 21st products we receive for recycling 12 ppb, 28 ppb

(6) Styrene & Benzene - high levels
- styrene based resins
- rinse for Styrene
- ~~Gasoline~~ Benzene - trace

(Have to wait to make changes until 11-21-08)

p.m. 12:00 12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45 6:30 6:45 7:00 7:15 7:30 7:45

AT-A-GLANCE

EPAHO043001635

7 November Friday

312/54

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Email (1) Site Plan
(2) update NOR
(3) WMU 105
not waste
(4) Products is not waste

Saturday November 8

313/53

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 9
314/52

EPAHO043001636

10 November Monday

315/51

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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6:45
7:00
7:15
7:30
7:45

Tuesday November 11

Veterans Day (US) 316/50
Remembrance Day (C)

7:00 a.m.
7:15
7:30
7:45
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6:30
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7:00
7:15
7:30
7:45

EPAHO043001637

12 November Wednesday

317/49

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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Thursday November 13

318/48

7:00 a.m.
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EPAHO043001638

14 November Friday

319/47

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Saturday November 15

320/46

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 321/45 **16**

AT-A-GLANCE®

EPAHO043001639

17 November Monday

322/44

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

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Tuesday November 18

323/43

7:00 a.m.
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7:45

AT-A-GLANCE®

EPAHO043001640

19 November Wednesday

324/42

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m. TCEQ site visit - Site Review
7:15 Continuation - Sharareh Rafati
7:30 Prabhakar, & Phil Evans
7:45 & Bâtemaki
8:00
8:15 Tank - 10 water from Centrifuge
8:30 " 11 oil " "
8:45 " 4 feed to Centrifuge
9:00
9:15
9:30
9:45
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p.m. 12:00
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6:30
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7:00
7:15
7:30
7:45

Thursday November 20

Revolution Anniversary (M) 325/41

7:00 a.m.
7:15
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AT-A-GLANCE®

EPAHO04300164

21 November Friday

326/40

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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4:00
4:15
4:30
4:45

5:00 Kinit Panik
5:15 Global Management Partners
5:30 (b) (4) Cell,
5:45 301-468-8483 direct
6:00
6:15
6:30
6:45
7:00
7:15
7:30
7:45

Saturday November 22

327/39

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
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4:45

Sunday 328/38 **23**

AT-A-GLANCE®

EPAHO043001642

24 November Monday

329/37

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Tuesday November 25

330/36

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001643

26 November Wednesday

331/35

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday November 27

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Thanksgiving (US) 332/34

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	AT-A-GLANCE® 7:45

EPAHO043001644

28 November Friday

333/33

November 2008

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
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December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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Saturday November 29

334/32

7:00 a.m.
7:15
7:30
7:45
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Sunday 335/31 **30**

AT-A-GLANCE®

EPAHO04300164S

1 December Monday

336/30

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Tuesday December 2

337/29

7:00 a.m.
7:15 Talked to Dra. Garza
7:30 (b) (4)
7:45
8:00 regarding publication in spanish
8:15 newspaper
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
10:30
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p.m. 12:00
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AT-A-GLANCE®

EPAHO043001646

3 December Wednesday

338/28

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday December 4

339/27

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001647

5 December Friday

340/26

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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5:45
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6:15

p.m. 12:00
12:15
12:30
12:45
1:00
1:15
1:30
1:45
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2:15
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3:45
4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday December 6

341/25

7:00 a.m.
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
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9:45
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p.m. 12:00
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4:15
4:30
4:45

Sunday 342/24 **7**

Pearl Harbor Remembrance Day (US)

AT-A-GLANCE®

EPAHO043001648

8 December Monday

343/23

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m. — p.m. 12:00

7:15 Lucy Sciallo
7:30 US Chemical Safety Board
7:45 202-261-7653
8:00 → told her no physical damage because of the thermal oxidizer explosion
8:15
8:30
8:45 on 12-6-08
9:00 Only debris scattered
9:15 on 4 or 5 homes
9:30
9:45 - Exit vent piping blew
10:00 from ~~vent pip~~
10:15
10:30 Bobby Aguilar - TCEQ
10:45 713-767-3747
11:00 Shureh
11:15 Rian Bienek
11:30 City of Houston
11:45 Daryl Tate & Tony
5:00
5:15 Incident report
5:30
5:45 Ricky Wilson - called
6:00 TCEQ
6:15 713-767-3738

12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45 6:30 6:45 7:00 7:15 7:30 7:45

Tuesday December 9

(Eid) al Adha 344/22

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m. — p.m. 12:00

7:15 9005-609H - Copies of manual
7:30 ~~Jan, March, June~~
7:45
8:00
8:15 9010609H "
8:30 ~~Feb, Apr, May~~
8:45
9:00 9013409H "
9:15
9:30 Eric Hauser - Dec 8th Complaint
9:45 - chemodors & airborne particles
10:00 - explosion
10:15 -
10:30 281-320-9796 - Air Consulting, TRI
10:45 Obrien Consultants
11:00
11:15
11:30
11:45
5:00
5:15
5:30
5:45
6:00
6:15

12:15 12:30 12:45 1:00 1:15 1:30 1:45 2:00 2:15 2:30 2:45 3:00 3:15 3:30 3:45 4:00 4:15 4:30 4:45 6:30 6:45 7:00 7:15 7:30 7:45

AT-A-GLANCE®

EPAHO043001649

10 December Wednesday

345/21

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

Thursday December 11

346/20

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.		**p.m. 12:00**
7:15	Sims North	12:15
7:30		12:30
7:45	ammonia problems are tied	12:45
8:00	to phenol	**1:00**
8:15	ammonia 1ppm is a problem	1:15
8:30	nitrification bacteria	1:30
8:45		1:45
9:00	~~TOC~~ TTO limit of 50 ppm	**2:00**
9:15	→ for sample point 5	2:15
9:30	COH sampling = 4 times/year/minimum	2:30
9:45	→ composite	2:45
10:00	method 624/625	**3:00**
10:15	Grab ?	3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

AT-A-GLANCE®

EPAHO043001650

12 December Friday

347/19 Virgin of Guadalupe (M)

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30 New Boiler :	12:30
7:45 Cleaver Brooks	12:45
8:00	**1:00**
8:15 model CB700-450	1:15
8:30 Serial # L 92425	1:30
8:45	1:45
9:00	**2:00**
9:15 OLD TW Boiler	2:15
9:30	2:30
9:45 Williams & Davis	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
	6:30
5:00	6:45
5:15	**7:00**
5:30	7:15
5:45	7:30
6:00	7:45
6:15	

Saturday December 13

348/18

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	p.m. 12:00
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
10:30	3:30
10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45

Sunday 349/17 **14**

AT-A-GLANCE®

EPAHO043001651

15 December Monday

350/16

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.
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7:15
7:30
7:45

Tuesday December 16

351/15

7:00 a.m. Scrubber incident occurred at 1:23pm
7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
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11:45

p.m. 12:00
12:15
12:30
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6:00
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6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001652

17 December Wednesday

352/14

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.

7:15 Marlin called and said
7:30 Dana needs to run an analysis
7:45 (GC/MS) done on Champion
8:00 water to see % solvents and
8:15 pass on this info to Philip
8:30 Evans at WCM to assess
8:45 what needs to be done for
9:00 the PBR - talked to Dana
9:15 and informed her of this. She
9:30 said she will take care
9:45 of this.
10:00
10:15 TCEQ - Sharazch was here today
10:30 OSHA - Houston South Area office
10:45 was here today to investigate
11:00 ~~explosion~~ explosion
11:15
11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00

12:15
12:30
12:45
1:00
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1:45
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2:15
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3:30
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4:00
4:15
4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday December 18

353/13

7:00 a.m.

7:15
7:30
7:45
8:00
8:15
8:30
8:45
9:00
9:15
9:30
9:45
10:00
10:15
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10:45
11:00
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11:30
11:45

5:00
5:15
5:30
5:45
6:00
6:15

p.m. 12:00

12:15
12:30
12:45
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3:00
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4:00
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4:30
4:45

6:30
6:45
7:00
7:15
7:30
7:45

AT-A-GLANCE®

EPAHO043001653

19 December Friday

354/12

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m. — **p.m. 12:00**

7:15 Safety files for the following employees who were given to Karl to take to PACES — 12:15

7:30 — 12:30

7:45 — 12:45

8:00 Keld, Jay Sutton, Bradwood, Brent — **1:00**

8:15 Stilig, Juan Mendoza — 1:15

8:30 — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 — 2:15

9:30 — 2:30

9:45 — 2:45

10:00 — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

5:00 — 6:30

5:15 — 6:45

5:30 — **7:00**

5:45 — 7:15

6:00 — 7:30

6:15 — 7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday December 20

355/11

7:00 a.m. — **p.m. 12:00**

7:15 — 12:15

7:30 — 12:30

7:45 — 12:45

8:00 — **1:00**

8:15 — 1:15

8:30 — 1:30

8:45 — 1:45

9:00 — **2:00**

9:15 — 2:15

9:30 — 2:30

9:45 — 2:45

10:00 — **3:00**

10:15 — 3:15

10:30 — 3:30

10:45 — 3:45

11:00 — **4:00**

11:15 — 4:15

11:30 — 4:30

11:45 — 4:45

Sunday 356/10 **21**

Winter begins
Hanukkah begins at sundown

AT-A-GLANCE®

EPAHO043001654

22 December Monday

357/9 Hanukkah

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.		**p.m. 12:00**
7:15	meeting with Alan Barbee	12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15	NOR - Submittal	6:45
5:30	Modified 903060H - Still bottoming	**7:00**
5:45	added F003 & D001 to this	7:15
6:00	waste stream	7:30
6:15		7:45

Tuesday December 23

358/8

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
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10:45	3:45
11:00	**4:00**
11:15	4:15
11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001655

24 December Wednesday

359/7

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
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10:00	**3:00**
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11:00	**4:00**
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11:30	4:30
11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Thursday December 25

Christmas 360/6

7:00 a.m.	**p.m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
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11:00	**4:00**
11:15	4:15
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5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

AT-A-GLANCE®

EPAHO043001656

26 December Friday

361/5 Boxing Day (C)
Kwanzaa begins

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.
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January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Saturday December 27

362/4

7:00 a.m.
7:15
7:30
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4:45

Sunday 363/3 **28**

AT-A-GLANCE®

EPAHO043001657

29 December Monday

364/2 First of Muharram

December 2008

S	M	T	W	T	F	S
		1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

7:00 a.m.	Conference call with Greg, Karl, Clark, Anissa, Debbie, ~~Greg~~, Steve, Matt, Bob, Ted Dennis 7pm-3:	**p.m. 12:00**
7:15		12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00		6:30
5:15		6:45
5:30		**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

Tuesday December 30

365/1

January 2009

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7:00 a.m.		**p.m. 12:00**
7:15		12:15
7:30		12:30
7:45		12:45
8:00		**1:00**
8:15		1:15
8:30		1:30
8:45		1:45
9:00		**2:00**
9:15		2:15
9:30		2:30
9:45		2:45
10:00		**3:00**
10:15		3:15
10:30		3:30
10:45		3:45
11:00		**4:00**
11:15		4:15
11:30		4:30
11:45		4:45
5:00	Larry Wells, ExxonMobil	6:30
5:15	Larry.W.Wells@exxonmobil.com	6:45
5:30	281-654-8425	**7:00**
5:45		7:15
6:00		7:30
6:15		7:45

AT-A-GLANCE®

EPAHO043001658

31 December Wednesday

December 2008

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

366/0

Karl – Cell

(b) (4) [redacted]

7:00 a.m.	**m. 12:00**
7:15	12:15
7:30	12:30
7:45	12:45
8:00	**1:00**
8:15	1:15
8:30	1:30
8:45	1:45
9:00	**2:00**
9:15	2:15
9:30	2:30
9:45	2:45
10:00	**3:00**
10:15	3:15
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10:45	3:45
11:00	**4:00**
11:15	4:15
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11:45	4:45
5:00	6:30
5:15	6:45
5:30	**7:00**
5:45	7:15
6:00	7:30
6:15	7:45

CERTIFICATE OF LIABILITY INSURANCE

OP ID DH CESEN-1 DATE (MM/DD/YYYY) 01/24/08

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

[illegible] Alliance
[illegible] Fax:713-966-1700

[illegible] Environmental Services Inc
[illegible]

INSURERS AFFORDING COVERAGE — NAIC #

INSURER A	Texas Mutual Ins Co	22945
INSURER B		
INSURER C		
INSURER D		
INSURER E		

		POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	X Contractual Liab / X Professional Liab	PROP2118365	01/25/08	01/25/09	EACH OCCURRENCE	$1,000,000
					DAMAGE TO RENTED PREMISES (Ea occurrence)	$100,000
					MED EXP (Any one person)	$10,000
		PROP2118365	01/25/08	01/25/09	PERSONAL & ADV INJURY	$1,000,000
					GENERAL AGGREGATE	$2,000,000
					PRODUCTS - COMP/OP AGG	$2,000,000
A		5062132 MCS-90 ENDT INCLUDED	01/25/08	01/25/09	COMBINED SINGLE LIMIT (Ea accident)	$1,000,000
					BODILY INJURY (Per person)	$
					BODILY INJURY (Per accident)	$
					PROPERTY DAMAGE (Per accident)	$
					AUTO ONLY - EA ACCIDENT	$
					OTHER THAN AUTO ONLY EA ACC	$
					AGG	$
A	X OCCUR / CLAIMS MADE / RETENTION $10,000	000001579217	01/25/08	01/25/09	EACH OCCURRENCE	$7,000,000
					AGGREGATE	$7,000,000
						$
						$
						$
B		TSF0001086044	01/25/08	01/25/09	X TORY LIMITS / OTH ER	
					E.L. EACH ACCIDENT	$1,000,000
					E.L. DISEASE - EA EMPLOYEE	$1,000,000
					E.L. DISEASE - POLICY LIMIT	$1,000,000
C	Motor Truck Cargo	IMP6758691	01/25/08	01/25/09	Veh/Loss	10000/10000
A	Pollution/on/off	PL82189739	01/25/08	01/25/09	Per Claim	1,000,000

[illegible] (Except Workers Compensation) and Waiver of Subrogation [illegible] included in favor of the certificate holder, as required by written [illegible]

EPAHO043001659

methanol and MEK PBR

EPAHO043001660

mailed to TCEQ on 3-26-09

FOSTER PLACE STATION
HOUSTON, Texas
770219998
4841490027-0096
03/26/2009 (800)275-8777 02:38:38 PM

Sales Receipt

Product Description	Sale Qty	Unit Price	Final Price
AUSTIN TX 78753			$1.68
Zone-2 First-Class Large Env			
5.30 oz.			
Return Rcpt (Green Card)			$2.20
Certified			$2.70
Label #:	70053110000304927097		
Issue PVI:			$6.58
AUSTIN TX 78753			$0.42
Zone-2 First-Class Letter			
1.00 oz.			
Return Rcpt (Green Card)			$2.20
Certified			$2.70
Label #:	70053110000304927103		
Issue PVI:			$5.32
Total:			$11.90

Paid by:
MasterCard $11.90
Account #: XXXXXXXXXXXX7501
Approval #: 83353B
Transaction #: 64
23903140135

Order stamps at USPS.com/shop or call 1-800-Stamp24. Go to USPS.com/clicknship to print shipping labels with postage. For other information call 1-800-ASK-USPS.

Bill#:1000400460803
Clerk:08

All sales final on stamps and postage
Refunds for guaranteed services only
Thank you for your business
****
****
HELP US SERVE YOU BETTER

Go to: http://gx.gallup.com/pos

TELL US ABOUT YOUR RECENT POSTAL EXPERIENCE

YOUR OPINION COUNTS
****
****

Customer Copy

7005 3110 0003 0492 7097

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CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®
AUSTIN TX 78753

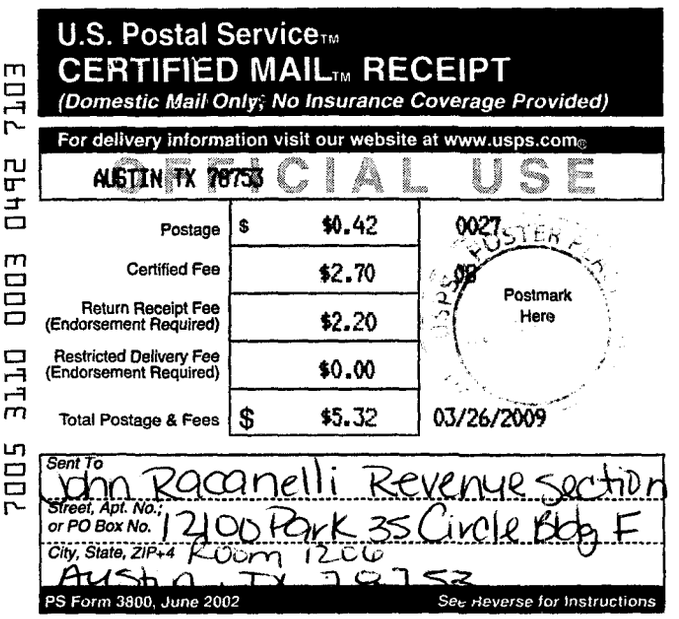
OFFICIAL USE

Postage	$	$1.68
Certified Fee		$2.70
Return Receipt Fee (Endorsement Required)		$2.20
Restricted Delivery Fee (Endorsement Required)		$0.00
Total Postage & Fees	$	$6.58

Postmark Here
08
03/26/2009

Sent To: Air Permits Initial Review Team (APIRT)
Street, Apt. No., or PO Box No.: 12100 Park 35 Circle Bldg C 3rd Flr
City, State, ZIP+4: Austin TX 78753

PS Form 3800, June 2002 — See Reverse for Instructions



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AUSTIN TX 78753

OFFICIAL USE

Postage	$ $0.42	0027
Certified Fee	$2.70	08
Return Receipt Fee (Endorsement Required)	$2.20	Postmark Here
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total Postage & Fees	$ $5.32	03/26/2009

Sent To: John Racanelli Revenue Section
Street, Apt. No.; or PO Box No.: 12100 Park 35 Circle Bldg F
City, State, ZIP+4: Room 1206 Austin, TX 78753

PS Form 3800, June 2002 — See Reverse for Instructions

7005 3110 0003 0492 7103

- Champion - oil water emulsion (Toluene, Formaldehy
etc).

TK OT 11 & 14 - make it a part of

+ oil improvent PBR rather than stand alone

- centrifuge, motor oil, distillation moving to TCE

Prabhaker Thangudu

From: Philip Evans [pevans@wcmgroup.com]
Sent: Thursday, January 15, 2009 6:24 PM
To: Prabhaker Thangudu
Cc: Desiree Westcott
Subject: Methanol and MEK Recycle Process PBR Documentation

Per your request, attached is the PBR documentation for the Methanol and MEK recycle distillation process. The document has been updated from the previous version to address the elevated temperature storage of the MEK process wastewater in tanks OT-11 or OT-14 that vent to the thermal oxidizer. The previous version of the PBR documentation discussed the controlled process emissions through the diesel scrubber and carbon bed system and did not address this additional handling step. The emissions were calculated using information provided by CES personnel with regard to operating procedures and conditions including process and storage temperature. As shown, the estimated emissions of each chemmical are below the limits specified by the applicable PBR (30 TAC 106.261; 1.0 lb/hr and 4.38 TPY). Since the process was initiated in 2008, the PBR document is required to be registered with TCEQ no later than March 31, 2009. Please review the document and contact me with any questions or changes.

This document was prepared for the purpose of obtaining TCEQ authorization for the construction and operation of the referenced process and its associated emissions under the State of Texas air quality permitting regulations. This document does not address compliance with any other environmental regulations or health and safety rules.

Thanks,

Phil Evans

The WCM Group, Inc.

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Prabhaker Thangudu

From: Philip Evans [pevans@wcmgroup.com]
Sent: Friday, January 09, 2009 12:09 PM
To: Prabhaker Thangudu
Subject: Methanol MEK PBR Document

Attached is a copy of the PBR documentation for the batch Methanol and MEK Distillation process. As shown, the chemical emissions qualify for authorization under 30 TAC 106.261. As such, registration with TCEQ is required no later than March 31, 2009.

Thanks,
Phil

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SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Mr John Racanelli
Revenue section (MC-214)
Texas commission on
Environmental Quality
12100 Park 35 circle, Building F
Room 1206
Austin, TX 78753

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 3110 0003 0492 7103

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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CERTIFIED MAIL™

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Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: John Racanelli Revenue Section
Street, Apt. No.; or PO Box No.: 12100 Park 35 Circle Bldg F
City, State, ZIP+4: Room 1206 Austin, TX 78753

PS Form 3800, June 2002 See Reverse for Instructions

CES Environmental Services, Inc.
4904 Griggs Road • Houston, TX 77021

Mr John Racanelli
Revenue section (MC-214)
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F, Room 1206
Austin, Texas 78753

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

March 26, 2009

Mr. John Racanelli
Revenue Section (MC-214)
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F, Room 1206
Austin, Texas 78753

CERTIFIED MAIL
7005 3110 0003 0492 7103

Reference: CES Environmental Services, Inc.
Houston, Harris County, Texas
Registration of Permits-By-Rule 30 TAC 106.261
CN600618946; RN 100693282

Dear Mr. Racanelli:

Please find enclosed, a check in the amount of $100 to cover the fee for the above referenced Permits-By-Rule (PBR) registration. A copy of the Pl-7-CERT Form is also enclosed.

Please let us know if you need additional information.

Sincerely,

Prabhakar R. Thangudu
HSE Manager

44993

CES ENVIRONMENTAL SERVICES, INC.
4904 GRIGGS ROAD
HOUSTON, TEXAS 77021
(713) 676-1460

BANK OF AMERICA, NA
35-2/1130

3/25/2009

PAY TO THE ORDER OF TCEQ $ **100.00

One Hundred and 00/100********** DOLLARS

TCEQ
Cashiers Office MC-16
PO Box 13087
Austin, TX 78711-3087

MEMO 0803198H

⑈044993⑈ ⑆113000023⑆ 005??222453 3⑈

44993

CES ENVIRONMENTAL SERVICES, INC.
TCEQ

3/25/2009

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
3/25/2009	Bill	03252009	100.00	100.00		100.00
					Check Amount	100.00

CES Environmental S 0803198H 100.00

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services, Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Road			
City: Houston		State: Texas	Zip Code:77021
Phone No.: 713-676-1460	Fax No.: 713-676-1676	E-mail Address: mbowman@cesenviormental.com	
C. Technical Contact Name: Philip Evans		Title: Director Technical Services	
Company: The WCM Group, Inc.			
Mailing Address: PO Box 3247			
City: Humble		State: Texas	77347
Phone No.: 281-446-7070	Fax No.: 281-446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Road			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris	Zip Code: 77021	
II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services, Inc.		☒ Permanent ☐ Portable	
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106. 261	§ 106.		
§ 106.262	§ 106.		
§ 106.	§ 106.		
Are you claiming a **historical standard exemption or PBR**?		☐ YES ☒ NO	
If "YES," enter effective date and Rule Number:			

EPAHO043001671

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

II. FACILITY AND SITE INFORMATION *(continued)*		
C. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes.)		☒ YES ☐ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261, 262
D. Are there any **other facilities** at this **site** which are **authorized by an Air Standard Exemption or PBR**?		☒ YES ☐ NO
If "YES," enter Registration Number and Rule Number:	X-15980, 83798, 84713	261, 262, 472, 532
E. Are there any **other air preconstruction permits** at this site?		☐ YES ☒ NO
If "YES," enter Permit Numbers:		
Are there any other air preconstruction permits at this site that would be directly associated with this project?		☐ YES ☒ NO
If "YES," enter Permit Numbers:		
F. Is this facility located at a site which is required to obtain a federal operating permit pursuant to 30 TAC Chapter 122?		☐ YES ☒ NO ☐ To be determined
If the site currently has an existing federal operating permit, enter the permit number:		
Identify the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted.		
☐ Initial Application for an FOP	☐ Significant Revision for an SOP	☐ Minor Revision for an SOP
☐ Operational Flexibility/off Permit Notification for an SOP	☐ Revision for GOP	☐ To be Determined ☒ None
Identify the type(s) issued and/or FOP application(s) submitted/pending for the site. *(Check all that apply)*		
☐ SOP ☐ GOP	☐ GOP application/revision application: Submitted or under APD review.	
☐ SOP application/revision application: submitted or under APD review.		☐ N/A
G. TCEQ Account Identification Number *(if known)*:	HG 1270 B	
III. FEE INFORMATION		
To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.		
A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?		☐ YES ☒ NO
B. What is the fee amount?		

EPAHO043001672

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION *(continued)*			
*If "YES," to any of the following three questions, a **$100** fee is require. Otherwise, a **$450** fee is required.*			
Does this business have less than 100 employees?			☐ YES ☒ NO
Does this business have less than 6 million dollars in annual gross receipts?			☐ YES ☒ NO
Is this registration submitted by a governmental entity with a population of less than 10,000?			☐ YES ☒ NO
C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:	☐ YES ☒ NO	*Was fee Paid online?*	☐ YES ☒ NO
Company name of check: The WCM Group Inc.		Fee amount:	$ 450

IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION

Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:

Animal Feeding Operations § 106.161, Livestock Auction Facilities § 106.162, Saw Mills § 106.223, Grain Handling, Storage and Drying § 106.283, Auto Body Refinishing Facilities §106.436, and Air Curtain Incinerator § 106.496

A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES.")*		☐ YES ☐ NO
B. Distance from this facility's emission release point to the nearest property line:		feet
Distance from this facility's emission release point to the nearest off-property structure:		feet

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS
Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.

A. Is confidential information submitted and properly marked "**CONFIDENTIAL**" with this registration?		☐ YES ☒ NO
B. Is a process flow diagram or a process description attached?		☒ YES ☐ NO
C. Are emissions data and calculations for this claim attached?		☒ YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)		☒ YES ☐ NO

*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*

E. Is information attached showing how the **specific PBR** requirements are met for this registration? (***PBR checklist** may be used, but are optional*)		☒ YES ☐ NO
F. Distance from this facility's emission release point to the nearest property line:		100 feet
Distance from this facility's emission release point to the nearest off-property structure:		200 feet

Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.

EPAHO043001673

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE: _____ *(ORIGINAL SIGNATURE REQUIRED)*

DATE: 3/26/09

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form, and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

EPAHO043001674

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Air Permits Initial Review Team (APIRT), mc 161
Texas Commission on Environmental Quality
12100 Park 35 Circle Building C
Third floor
Austin, TX 78753

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7005 3110 0003 0492 7097

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

PLACE STICKER AT TOP OF ENVELOPE TO THE RIGHT OF THE RETURN ADDRESS, FOLD AT DOTTED LINE
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7005 3110 0003 0492 7097

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)
For delivery information visit our website at www.usps.com®
OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: Air Permits Initial Review Team (APIRT)
Street, Apt. No., or PO Box No.: 12100 Park 35 Circle Bldg C 3rd fl
City, State, ZIP+4: Austin TX 78753

PS Form 3800, June 2002 See Reverse for Instructions

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

March 26, 2009

Air Permits Initial Review Team (APIRT), MC161
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building C, Third Floor
Austin, Texas 78753

CERTIFIED MAIL
7005 3110 0003 0492 7097

Reference: Registration of Permits-By-Rule
CES Environmental Services, Inc.
4904 Griggs Road
Houston, Harris County, Texas
CN600618946; RN 100693282

Dear Sir or Madam:

Please find enclosed documentation to authorize the recycling process to produce Methanol and MEK. The project qualifies for authorization under Permits-By-Rule (PBRs) 30 TAC 106.261.

Please let us know if you need additional information.

Yours truly,

Prabhakar R. Thangudu
HSE Manager

44993

CES ENVIRONMENTAL SERVICES, INC.
4904 GRIGGS ROAD
HOUSTON, TEXAS 77021
(713) 676-1460

BANK OF AMERICA, NA
35-2/1130

3/25/2009

PAY TO THE ORDER OF TCEQ $ **100.00

One Hundred and 00/100********** DOLLARS

TCEQ
Cashiers Office MC-16
PO Box 13087
Austin, TX 78711-3087

MEMO 0803198H

Matt Bowman MP

⑈044993⑈ ⑆113000023⑆ 005772224533⑈

44993

CES ENVIRONMENTAL SERVICES, INC.
TCEQ

3/25/2009

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
3/25/2009	Bill	03252009	100.00	100.00		100.00
					Check Amount	100.00

CES Environmental S 0803198H 100.00

PERMIT-BY-RULE AUTHORIZATION FOR

RECYCLE DISTILLATION PROCESSING SYSTEMS

METHANOL AND MEK

Prepared for
CES ENVIRONMENTAL SERVICES INC.
Houston, Harris County, Texas

Prepared by
THE WCM GROUP, INC.
Humble, Texas

November 2008

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TCEQ §106.4 CHECKLIST

TCEQ §106.261 CHECKLIST

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2 - FACILITY PLOT PLAN

3 - PROCESS FLOW DIAGRAM

INTRODUCTION

CES Environmental Services Inc. (CES) operates a tank container cleaning facility at 4904 Griggs Road in Houston, Harris County, Texas (CN600618946, RN100693282) under Texas Commission on Environmental Quality (TCEQ) Permit Exemption No. 15980 and subsequent Permit-By-Rule (PBR) Registration No. 75375. CES is submitting the enclosed documentation to demonstrate PBR authorization for the operation of a recycling process to produce Methanol or MEK product at the site.

Specifically, a mixture of Methanol, non-volatile polymers and water or a mixture of MEK and water enter the facility in a truck tank and is pumped into the recycled distillation processing system. The recycle distillation process system produces Methanol or MEK product from the received specified material mixtures. Wastewater generated from the recycle distillation process is sent to the existing on-site wastewater treatment facility. Details on these operations can be found in the Process Description section of this registration and in the attached calculations.

CES is located in the Houston/Galveston ozone nonattainment area and is classified as a minor source for Volatile Organic Compound (VOC) emissions. The emissions increase associated with this project is approximately 0.70 tons per year (tpy) of VOC. As a result, the project does not trigger nonattainment netting.

A PI-7-CERT form, as well as TCEQ §106.4, and §106.261 Checklists, are provided in the Forms section of this report. Emission calculations are provided in Attachment A. A Site Location Map, Aerial Photograph, Facility Plot Plan, and Process Flow Diagram are included in the Figures section.

EPAHO043001680

1.0 PROCESS DESCRIPTION

A mixture of Methanol, non-volatile polymer solids (primarily Ethylene Vinyl Acetate-Ethylene Vinyl Alcohol Copolymer with small amounts of Ethylene Vinyl Acetate Polymer and Ethylene Vinyl Alcohol Polymer), and water enters the facility through tank truck or other transport vessel. Alternatively, a mixture of MEK and water is received from a tank truck or other transport vessel.

The Methanol mixture may be pumped through a filter to remove the solids if needed and then into the recycle distillation processing system. The MEK mixture will be pumped directly into the recycle distillation processing system as filtration is not required.

The recycle distillation system is heated to approximately 120 F to separate Methanol or MEK from the water. The Methanol or MEK vapor from the recycle distillation process passes through a condenser where it is cooled to approximately 70°F and the condensed liquid is collected in an accumulator vessel. Emissions of any uncondensed vapor from the accumulator vessel are routed to a diesel scrubber and then to activated carbon drums before being vented to the atmosphere. The material collected in the accumulator vessel is then transferred into the product tank trailer. The product trailer is also vented to the scrubber system. The water remaining water in the distillation tank is tested to ensure removal of the organics and then sent to the existing on-site water treatment facility.

EPAHO043001681

2.0 EMISSIONS SUMMARY

Emissions from the Methanol or MEK recovery operation are calculated based on several process steps. Exhaust exiting the carbon units is monitored daily to ensure VOC emitted to the atmosphere remains below 100 ppmv. This limit includes both Methanol and MEK vapors. The emission calculations for all emissions venting through controls are, therefore, conservatively calculated based on the volume displaced and a 100 ppmv concentration of VOC in the carbon bed exhaust. The carbon bed is replaced with fresh carbon when its exhaust concentration reaches 100 ppmv VOC.

Emissions from disconnecting vapor collection hoses are calculated assuming the vapor volume inside the hose is saturated with the last material to pass through the hose. Fugitive emissions from potential leaks at valves, pumps, and connections associated with this project are calculated using the methods and emission factors specified in the TCEQ document "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives". A thirty percent reduction credit is taken for operation's personnel monitoring the loading/unloading operations for leaks that can be detected with visible, audible, or olfactory means per the technical guidance.

The emission calculations conservatively assume a 100 ppmv concentration for both Methanol and MEK for PBR compliance evaluation purposes. The emission total is based on both Methanol and MEK at full production rates. The total project increase is 1.17 tpy, which is well below the level requiring nonattainment or PSD review.

EPAHO043001682

ATTACHMENT A

EMISSION CALCULATIONS

PBR EVALUATION SUMMARY

Total Emissions

Chemical	CAS	TLV	PBR	Limit		Actual		PBR Compliance	
				lb/hr	tpy	lb/hr	tpy	lb/hr	TPY
Ethylene Vinyl Acetate	24937-78-8	10	N/A	N/A	N/A	0	0	YES	YES
Ethylene Vinyl Alcohol		10	N/A	N/A	N/A	0	0	YES	YES
Ethylene Vinyl Acetate-Ethylene Vinyl Alcohol Copolymer	26221-27-2	10	N/A	N/A	N/A	0	0	YES	YES
Water	7732-18-5	N/A	N/A	N/A	N/A	N/A	N/A		
Methanol	67-56-1	262	106.261	1	10	0.146	0.585	YES	YES
MEK	78-93-3	560	106.261	1	10	0.162	0.586	YES	YES
Diesel	68334-30-5	N/A	106.261	6.0	10.0	0.045	0.003	YES	YES
Total VOC	N/A	N/A	N/A	N/A	25	0.307	1.170	N/A	N/A

Diesel is evaluated as a refinery petroleum faction containing < 10% benzene [106.261(a)(2)]

Notes:
For evaluation purposes it is conservatively assumed that all process steps can occur in the same hour.
The TLV for Inhalable Particulate Not Otherwise Classified is used for all solid materials.

EPAHO043001684

CES Environmental Services
Emissions from unloading into distillation tank.

The Methanol or MEK mixture is pumped from the incoming tank truck trailer into the recycle distillation tank. Emissions are routed through carbon adsorption beds with a maximum exhaust concentration of 100 ppmv VOC

PV = nRT
n = PV/RT
n(VOC) = n * C/1,000,000
lb = n*MW = MW(PV/RT)

P =	14.7	psia		
V (hourly) =	5000	gal/hr =	668.45	ft3/hr
V (annual) =	450,000	gal/yr =	60160.43	ft3/yr
R =	10.73	(psi*ft3)/(lbmole*R)		
T =	80	F =	540	R
C =	100	ppmv VOC		

MW =	32.04	lb/lbmole	Methanol
MW =	72.11	lb/lbmole	MEK
MW =	130	lb/lbmole	Diesel

	moles/hr	moles/yr
n =	1.70	152.63
n (VOC) =	1.70E-04	1.53E-02

Emissions		
Chemical	lb/hr	tpy
Methanol	0.00543	0.00024
MEK	0.01223	0.00055
Diesel	0.02205	0.00099

EPAHO043001685

CES Environmental Services
Emissions from distillation tank.

The distillation tank is heated to remove the Methanol or MEK from the water. The overhead vapors are then cooled to 70F.
Flow rate is conservatively based on maximum vapor displacement.
Emissions are routed through carbon adsorption beds with a maximum exhaust concentration of 100 ppmv VOC

PV = nRT
n = PV/RT
n(VOC) = n * C/1,000,000
lb = n*MW = MW(PV/RT)

P =	14.7	psia		
V (hourly) =	5000	gal/hr =	668.45	ft3/hr
V (annual) =	450,000	gal/yr =	60160.43	ft3/yr
R =	10.73	(psi*ft3)/(lbmole*R)		
T =	70	F =	530	R
C =	100	ppmv VOC		

MW =	32.04	lb/lbmole	Methanol
MW =	72.11	lb/lbmole	MEK
MW =	130	lb/lbmole	Diesel

	moles/hr	moles VOC/hr
n =	1.73	155.51
n (VOC) =	1.73E-04	1.56E-02

Emissions		
Chemical	lb/hr	tpy
Methanol	0.0055	0.0002
MEK	0.0125	0.0006
Diesel	0.0225	0.0010

EPAHO043001686

CES Environmental Services
Emissions from transfer of recovered material to tank truck (loading)

Methanol or MEK recovered from the distillation process is routed into the product truck tank.
Emissions are routed through carbon adsorption beds with a maximum exhaust concentration of 100 ppmv VOC

PV = nRT
n = PV/RT
n(VOC) = n * C/1,000,000
lb = n*MW = MW(PV/RT)

P =	14.7	psia		
V (hourly) =	80	gal/hr =	10.70	ft3/hr
V (annual) =	360,000	gal/yr =	48128.34	ft3/yr
R =	10.73	(psi*ft3)/(lbmole*R)		
T =	80	F =	540	R
C =	100	ppmv VOC		
MW =	32.04	lb/lbmole	Methanol	
MW =	72.11	lb/lbmole	MEK	
MW =	130	lb/lbmole	Diesel	

	moles/hr	moles/yr
n =	0.03	122.10
n (VOC) =	2.71E-06	1.22E-02

Emissions		
Chemical	lb/hr	tpy
Methanol	0.0001	0.0002
MEK	0.0002	0.0004
Diesel	0.0004	0.0008

EPAHO043001687

CES Environmental Services
Hose Clearing/Disconnecting Emissions

Hose Length:	30	feet		
Hose Diameter:	2	inch =	0.17	ft
Hose Volume:	0.0218	ft3		
Events Per Year:	90			

Product Loading Hoses:
The liquid hose between the distillation tank and the product tank trailer is blown with air into the tank trailer.
The displaced vapors are included in the loading emissions.
The hose is then disconnected. The remaining saturated vapor volume in the hose is released to the atmosphere

lb = MW*n = MW(PV/RT)
Vpa = 2.6412 psia

Material	lb/hr	tpy
Methanol	3.18E-04	1.43E-05
MEK	0.00E+00	0.00E+00

Distillation Tank Transfer Hose:
The same calculation can also represent the disconnecting the hose from the inbound truck to the distillation tank.
It is assumed the vapor reminaing in the hose is staurated.
Emissions from disconnecting the line are as follows.

lb = MW*n = MW(PV/RT)

MATERIAL	Liquid Composition (%)	MW (lb/lb-mole)	Mole Fraction	Temperature (F)	VPa (psia)	Emissions	
						(lb/hr)	(tpy)
Methanol	100.00	32.0	3.0169	80	7.968	9.61E-04	4.32E-05
MEK	100.00	72.1	6.7900	80	13.429	3.64E-03	1.64E-04

The non-volatile solids are excluded from the composition to conservatively calculate and evaluate the methanol emissions.

EPAHO043001688

CES Environmental Services
Fugitive Emissions

Distillation Tank

Component Type	Service	Quantity	Emission Factor	Operating Schedule	Emissions	
					lb/hr	tpy
Valves	Light Liquid	8	0.0035	8760	0.0280	0.1226
Valves	Gas/Vapor	3	0.0089	8760	0.0267	0.1169
Flanges	Light Liquid	22	0.0005	8760	0.0110	0.0482
Flanges	Gas/Vapor	10	0.0029	8760	0.0290	0.1270
Pumps	Light Liquid	1	0.0386	8760	0.0386	0.1691
					0.1333	0.5839

note: no control efficiency taken.

Speciation		Emissions	
Material	Wt %	lb/hr	tpy
Methanol	100	0.1333	0.5839
MEK	100	0.1333	0.5839

Conservative emissions assume that both Methanol and MEK may utilize the equipment 100% of the time

EPAHO043001689

Chemical Properties

Chemical	CAS	MW	Density	Antoine's		
			lb/gal	A	B	C
Water	7732-18-5	18	8.34	6.09	733.91	131.29
Methanol	67-56-1	32.04	6.59	7.898	1474.08	229.13
MEK	78-93-3	72.11	6.75	7.2087	1368.21	236.5
Diesel	68334-30-5	130	7.1	7.117	2209.1	275

Water Transferred:	4000 gal	0.98039216
MeCL2 Transferred:	80 gal	0.01960784
	4080	

EPAHO043001690

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services, Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Road			
City: Houston		State: Texas	Zip Code:77021
Phone No.: 713-676-1460	Fax No.: 713-676-1676	E-mail Address: mbowman@cesenviormental.com	
C. Technical Contact Name: Philip Evans		Title: Director Technical Services	
Company: The WCM Group, Inc.			
Mailing Address: PO Box 3247			
City: Humble		State: Texas	77347
Phone No.: 281-446-7070	Fax No.: 281-446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Road			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris	Zip Code: 77021	
II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services, Inc.		☒ Permanent ☐ Portable	
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106. 261	§ 106.		
§ 106.262	§ 106.		
§ 106.	§ 106.		
Are you claiming a **historical standard exemption or PBR**?		☐ YES ☒ NO	
If "YES," enter effective date and Rule Number:			

EPAHO043001691

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

II. FACILITY AND SITE INFORMATION *(continued)*			
C. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes.)			☒ YES ☐ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261, 262	
D. Are there any **other facilities** at this **site** which are **authorized by an Air Standard Exemption or PBR**?			☒ YES ☐ NO
If "YES," enter Registration Number and Rule Number:	X-15980, 83798, 84713	261, 262, 472, 532	
E. Are there any **other air preconstruction permits** at this site?			☐ YES ☒ NO
If "YES," enter Permit Numbers:			
Are there any other air preconstruction permits at this site that would be directly associated with this project?			☐ YES ☒ NO
If "YES," enter Permit Numbers:			
F. Is this facility located at a site which is required to obtain a federal operating permit pursuant to 30 TAC Chapter 122?			☐ YES ☒ NO ☐ To be determined
If the site currently has an existing federal operating permit, enter the permit number:			
Identify the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted.			
☐ Initial Application for an FOP	☐ Significant Revision for an SOP	☐ Minor Revision for an SOP	
☐ Operational Flexibility/off Permit Notification for an SOP	☐ Revision for GOP	☐ To be Determined	☒ None
Identify the type(s) issued and/or FOP application(s) submitted/pending for the site. *(Check all that apply)*			
☐ SOP	☐ GOP	☐ GOP application/revision application: Submitted or under APD review.	
☐ SOP application/revision application: submitted or under APD review.		☐ N/A	
G. TCEQ Account Identification Number *(if known)*:	HG 1270 B		
III. FEE INFORMATION			
To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.			
A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?			☐ YES ☒ NO
B. What is the fee amount?			

EPAHO043001692

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION *(continued)*			
*If "YES," to any of the following three questions, a **$100** fee is require. Otherwise, a **$450** fee is required.*			
Does this business have less than 100 employees?			☐ YES ☒ NO
Does this business have less than 6 million dollars in annual gross receipts?			☐ YES ☒ NO
Is this registration submitted by a governmental entity with a population of less than 10,000?			☐ YES ☒ NO
C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:	☐ YES ☒ NO	*Was fee **Paid** online?*	☐ YES ☒ NO
Company name of check: The WCM Group Inc.		Fee amount:	$ 450
IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION ***Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:*** ***Animal Feeding Operations § 106.161, Livestock Auction Facilities § 106.162, Saw Mills § 106.223, Grain Handling, Storage and Drying § 106.283, Auto Body Refinishing Facilities §106.436, and Air Curtain Incinerator § 106.496***			
A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES.")*			☐ YES ☐ NO
B. Distance from this facility's emission release point to the nearest property line:			feet
Distance from this facility's emission release point to the nearest off-property structure:			feet
V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS ***Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.***			
A. Is confidential information submitted and properly marked "**CONFIDENTIAL**" with this registration?			☐ YES ☒ NO
B. Is a process flow diagram or a process description attached?			☒ YES ☐ NO
C. Are emissions data and calculations for this claim attached?			☒ YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)			☒ YES ☐ NO
*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*			
E. Is information attached showing how the **specific PBR** requirements are met for this registration? (***PBR checklist** may be used, but are optional*)			☒ YES ☐ NO
F. Distance from this facility's emission release point to the nearest property line:			100 feet
Distance from this facility's emission release point to the nearest off-property structure:			200 feet
Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.			

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE: _____ (*ORIGINAL SIGNATURE REQUIRED*) DATE: 3/26/09

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form. and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

EPAHO043001694

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR PERMITS DIVISION

TITLE 30 TAC § 106.4 "QUICK-CHECK" APPLICABILITY CHECKLIST

Company Name: CES Environmental Services, Inc.
Checklist completed by: The WCM Group, Inc. Date: December 2008
Facility Type: Tank Truck Cleaning, Product recovery and wastewater treatment
Permit(s) by rule claimed: 30 TAC Chapter §106: 261
Project Description (including equipment, materials, and brief process description):

A recovery distillation processing system will produce Methanol or MEK from organic polymer water mixtures.

CO	0.00	NO_X	0.00	VOC	1.17
PM	0.00	SO_2	0.00	Other	0.00

The following questions require a "Yes" or "No" answer to be indicated for this permit by rule claim:

A. Title 30 TAC § 106.4(a)(5): Current Permit by Rule Requirements

Yes X No☐ Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106? *If "Yes ", continue to next question If "No ", please contact the Air Permits Division for a copy of the current permit by rule to be claimed.*

B. Title 30 TAC § 106.4(a)(7): Permit by rule prohibition check

Yes☐ No X Are there any air permits under the same account containing permit conditions which prohibit or restrict the use of permits by rule?
If "No ", continue to next question
If "Yes ", permits by rule may not be used or their use must meet the restrictions of the permit.
A new permit or permit amendment may be required.
List permit number(s): _____

C. Title 30 TAC § 106.4(b): Circumvention check

Title 30TAC§ 106.4(b) states "No person shall circumvent by artificial limitations the requirements of§l 16.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:

A. *dividing a complete project into separate segments to circumvent §106.4(a)(l) limits;*
B. *claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity;*
C. *claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized.*

Yes☐ No X Does your project meet any of the criteria listed above?
If "No ", continue to next rule question If "Yes ", a permit y rule may not be claimed.

D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules

Yes X No☐ Will the facility comply with all rules and regulations of the TCEQ, the intent of the Texas Clean Air Act, and any local permitting or registration requirements? *If "Yes ", continue to next rule question If "No ", a permit by rule may not be claimed.*

E. Title 30 TAC § 106.4(a)(l): Emission limits check

Yes X No☐ The maximum emissions from all facilities at the site, including this permit by rule claim, are less than 25 tpy of any contaminant.
If the answer to this questions is "Yes ", no further review is needed to complete this checklist. Forward all information needed to verify your permit by rule claim to the . If "No ", this checklist cannot be used. Please complete the standard 30 TAC § 106.4 Applicability Checklist.

EPAHO043001695

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER		
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES ☐ NO ☐N/A
b1	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
b2	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
a1	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES ☐ NO ☐N/A
a2	Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials (check all that apply):	☐ YES X NO ☐ N/A

☐ acetylene	☐ helium	☐ propyl ether	☐ limestone
☐ argon	☐ isohexane	☐ sulfur dioxide	☐ magnesite
☐ butane	☐ isopropyl alcohol	☐ alumina	☐ marble
☐ crude oil	☐ methyl acetylene	☐ calcium carbonate	☐ pentaerythritol
☐ carbon monoxide	☐ methyl chloroform	☐ calcium silicate	☐ plaster of paris
☐ cyclohexane	☐ methyl cyclohexane	☐ cellulose fiber	☐ silicon
☐ cyclohexene	☐ neon	☐ cement dust	☐ silicon carbide
☐ cyclopentan	☐ nonan	☐ emery dust	☐ starch
☐ ethyl acetate	☐ oxides of nitrogen	☐ glycerin mist	☐ sucrose
☐ ethanol	☐ propane	☐ gypsum	☐ zinc stearate
☐ ethyl ether	☐ propyl alcohol	☐ iron oxide dust	☐ zinc oxide
☐ ethylene	☐ propylene	☐ kaolin	

☐ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene
☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116

a3	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? List chemical: Methanol / MEK L value: 262 / 590	X YES ☐ NO ☐ N/A
	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? List chemical:_____	☐ YES ☐ NO XN/A
	Are total new or increased emissions, including fugitives,of a chemical with a limit value of less than 200 mg/m^3? *If "Yes" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC §106.262 to authorize the emissions, if applicable.*	☐ YES ☐ NO XN/A

EPAHO043001696

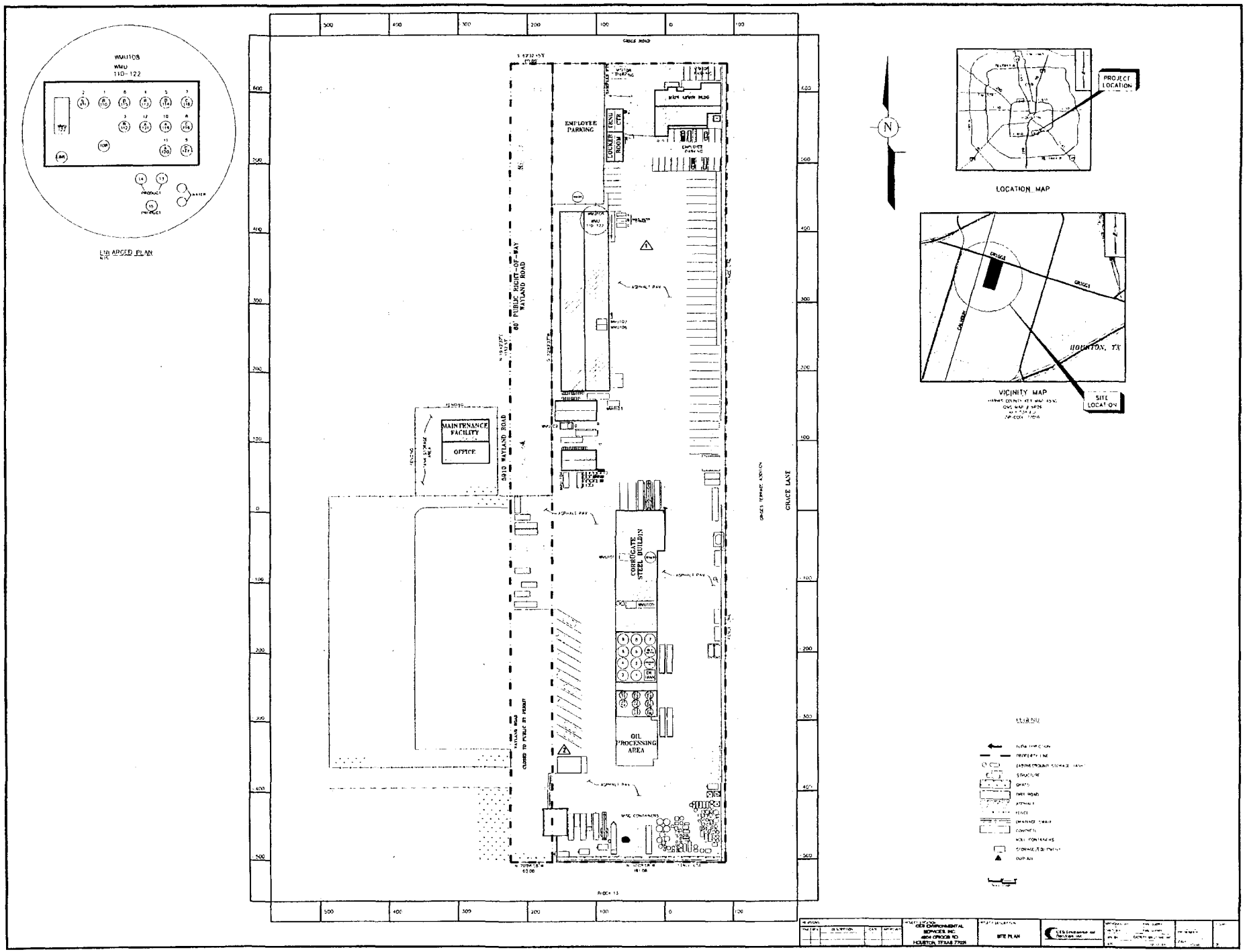
a4	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES X NO ☐N/A
a5	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES X NO ☐N/A
a6	Are emission increases five tons per year or greater? If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.	☐ YES X NO ☐N/A
a7	Are emission increases less than five tons per year? If "YES," this checklist must be attached to a Form PI-7 and include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any. (pick one): X Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or ☐ By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	X YES ☐ NO ☐N/A

FIGURE 1

AREA MAP

FIGURE 2

FACILITY PLOT PLAN

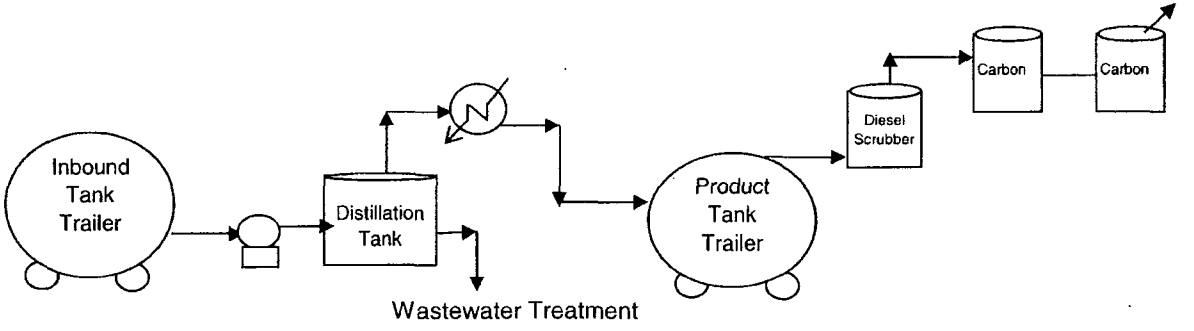


EPAHO043001700

FIGURE 3

PROCESS FLOW DIAGRAM

CES ENVIRONMENTAL SERVICES, INC
METHANOL OR MEK RECOVERY PROCESS



EPAHO043001702

FORMS

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr John Racanelli
Revenue section (MC-214)
Texas commission on
Environmental Quality
12100 Park 35 circle. Building F
Room 1206
Austin. TX 78753

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X 3-27 ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7005 3110 0003 0492 7103

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

EPAHO043001704

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

CES Environmental Services INC.
4904 Griggs Rd
Houston, TX 77021

(Prabhaker T.)

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Air Permits Initial Review Team (APIRT), MC 161
Texas Commission on Environmental Quality
12100 Park 35 Circle Building C
Third floor
Austin, TX 78753

COMPLETE THIS SECTION ON DELIVERY

A. Signature

☐ Agent
☑ Addressee

B. Received by (Printed Name) Addie L Cumberland

C. Date of Delivery 7/30/04

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7005 3110 0003 0492 7097

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

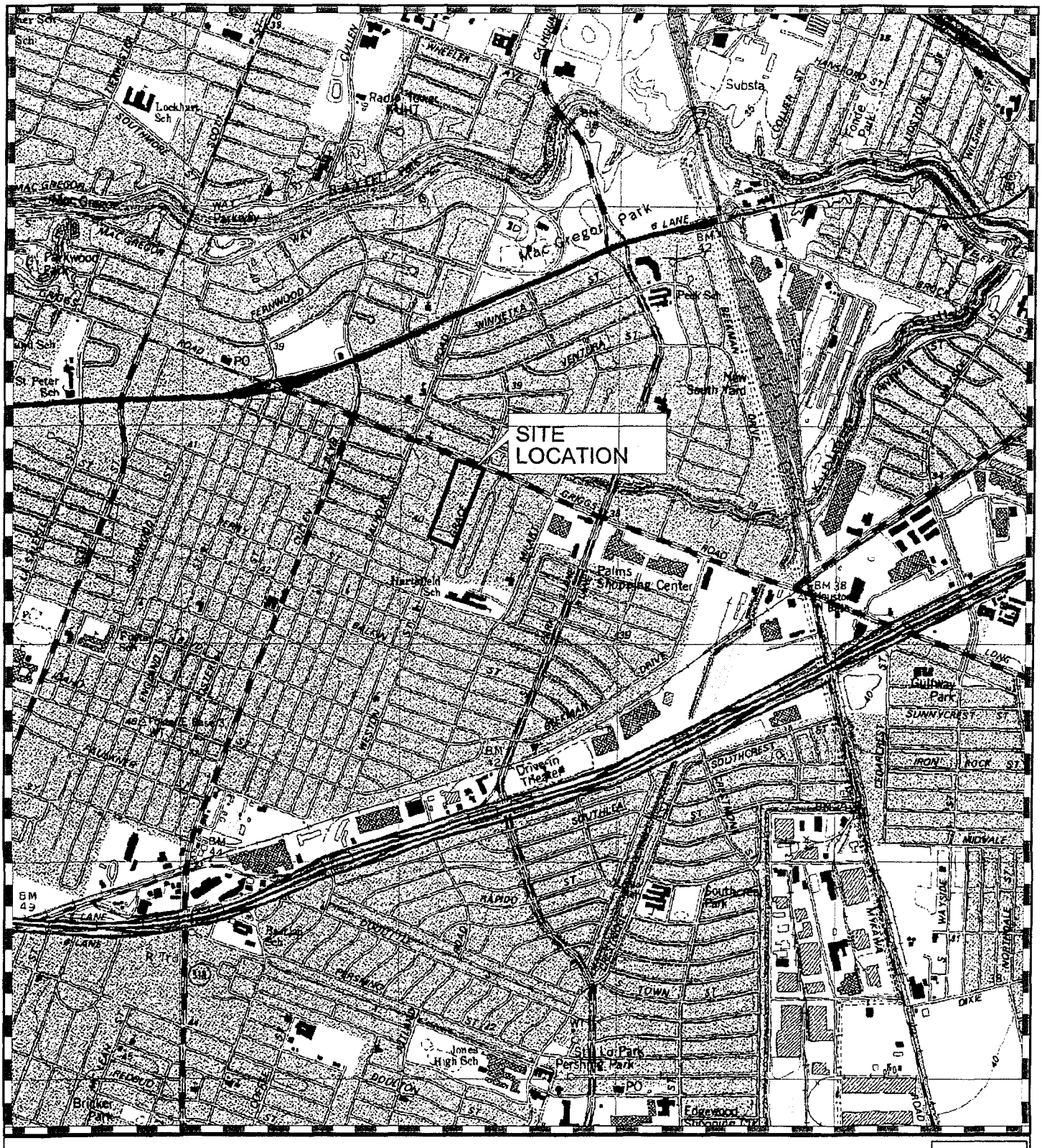
EPAHO043001706

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

CES Environmental Services
4904 Griggs Rd.
Houston, TX. 77021



1320 0 1320
1:24,000 1" = 2000 feet feet

TOPOGRAPHIC MAP

CES ENVIRONMENTAL SERVICES, INC.

4904 GRIGGS ROAD

HOUSTON, HARRIS COUNTY, TEXAS

North

FIGURE 1

ENVIRONMENTAL PROFESSIONALS

Reproduced from U.S. Topographic Quadrangle: Park Place Texas; Zone 15

DRAWN BY: LLS DATE: 04-10-2008

FILE: H:-client-CES-Houston site.geo

SIB Project PBR
4-10-2008

EPAHO043001709

Prabhaker Thangudu

From: Jennifer Rust
Sent: Thursday, March 26, 2009 10:23 AM
To: Prabhaker Thangudu
Subject: FW: VARIOUS SAMPLES FOR DISPOSAL

Do we have a form for this?

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Thursday, March 26, 2009 10:20 AM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman; Garza,MargaretHOPIX
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jennifer,

Please send a disposal certificate for the samples pickup on Friday 03-20-09 as soon as you can.

Appreciate it.

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division
MITSUI PLASTICS, INC.

From: Garza,MargaretHOPIX
Sent: Wednesday, March 18, 2009 9:52 AM
To: 'Jennifer Rust'
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jenny,

Please use 424118.

Tks,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division
MITSUI PLASTICS, INC.

From: Jennifer Rust [mailto:jrust@cesenvironmental.com]
Sent: Wednesday, March 18, 2009 9:37 AM
To: Garza,MargaretHOPIX
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

What is the PO#?

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Monday, March 16, 2009 5:33 PM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jennifer,

Please find attached signed doc. Please advise when we will be able to remove samples from Palmer warehouse.

Tks,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division
MITSUI PLASTICS, INC.

From: Jennifer Rust [mailto:jrust@cesenvironmental.com]
Sent: Monday, March 16, 2009 5:06 PM
To: Garza,MargaretHOPIX
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Just refaxed.

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Monday, March 16, 2009 4:58 PM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jenny,

The form should be addressed to Mitsui Plastics Inc. i/o Mitsui USA. Also our GM is Koji Kakinuma. Please send revised form for signature.

Tks,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division

MITSUI PLASTICS, INC.

From: Jennifer Rust [mailto:jrust@cesenvironmental.com]
Sent: Monday, March 16, 2009 4:44 PM
To: Garza,MargaretHOPIX
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Just faxed!

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Monday, March 16, 2009 4:19 PM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jennifer,

Attached is the MSDS for Kisuma 5A per your request. Please send the updated profile to 713-759-1517. My phone no is 713-236-6292.

Thanks & Regards,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division

MITSUI PLASTICS, INC.

From: Jennifer Rust [mailto:jrust@cesenvironmental.com]
Sent: Monday, March 16, 2009 3:13 PM
To: Garza,MargaretHOPIX
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

I have the MSDS' for all of these except Kisuma 5A – please send this at your earliest convenience. Our scanner is currently down so I need to faxed the updated profile – what number would you like me send it to? Also may I have your phone number – I can't seem to locate the correct one. Once I receive the signed profile we will be able to pick up the material within 2-3 days!

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Friday, March 13, 2009 5:01 PM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

Jennifer,

There have been some additions to our list which may revise your quote.

Revised list of products include:

54.6 kg/2 drums of NC-4
1 - 1 kg sample bottles of Alcamizer P93
6 - 1 kg sample bottles of Kisuma 5B1G
4 - 1 kg sample bottles of DHT-4V
7 bags of Kisuma Alcamizer-P93
10 – 1 kg sample bottles of Kisuma 5A
3 – 1 kg sample bottles of Kisuma 5A

Also, please change your contact information from Kathy Rayburn to myself as she is with our Mitsui & Co (USA), Inc. group and we are Mitsui Plastics Inc.

Thank you in advance.

Best Regards,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division

MITSUI PLASTICS, INC.

From: Jennifer Rust [mailto:jrust@cesenvironmental.com]
Sent: Thursday, March 12, 2009 3:59 PM
To: Garza,MargaretHOPIX
Cc: Butler,HirokoNYPIX; MJ@Palmer; Gary Brauckman
Subject: RE: VARIOUS SAMPLES FOR DISPOSAL

The MSDS are not the exact ones we picked up last time at Palmer Logistics (with the exception of the NC-4) – they are all non-hazardous & solid so we can add them to the existing profile – I just need a signature on the updated profile – attached, before we can pick the material up. The cost is as follows

Transportation - $350 / load + fuel surcharge
Field Tech to place bottles in cut top tote - $28 / hr (estimated 2 -3hrs)
PPE - $25/man/day
Disposal of tote - $150 / tote

Thank You!

Jennifer Rust

Direct: 713-800-7913
Cell: 713-367-8581

From: Garza,MargaretHOPIX [mailto:Ma.Garza@mitsui.com]
Sent: Thursday, March 12, 2009 2:59 PM
To: Jennifer Rust
Cc: Butler,HirokoNYPIX; Garza,MargaretHOPIX; MJ@Palmer
Subject: VARIOUS SAMPLES FOR DISPOSAL

Jennifer,

We are in need of your services to have the following samples disposed located at Palmer Logistics (same as previous):

54.6 kg/2 drums of NC-4
1 - 1 kg sample bottles of Alcamizer P93
6 - 1 kg sample bottles of Kisuma 5B1G

4 - 1 kg sample bottles of DHT-4V

Attached are copies of the MSDS for your review. Please advise if you require additional documents.

Regards,

Margaret Garza
Senior Sales Support Coordinator – Houston office - HOPIX
Plastic Additives and Catalysts Group
Functional Materials Division

MITSUI PLASTICS, INC.

ENVIRONMENTAL PROFESSIONALS

WCM

The WCM Group, Inc.

April 16, 2008

Air Permits Initial Review Team (APIRT), MC161
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building C, Third Floor
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
40402900

Reference: Registration of Permits-By-Rule
CES Environmental Services, Inc.
4904 Griggs Road
Houston, Harris County, Texas
CN600618946; RN100693282

Dear Sir or Madam:

On behalf of CES Environmental Services, Inc. (CES), please find enclosed documentation to authorize the processing of wastewater containing sulfurized isobutylene. The project qualifies for authorization under Permits-By-Rule (PBRs) §106.261, §106.262, §106.472 and §106.532.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Matt Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Philip B. Evans
Director, Technical Services

PBE/tv
26927:5330010.let.doc

Enclosure

cc: M. Bowman
L. Vasse
B. Allen

P.O. Box 3247, Humble, TX 77347-3247 Tel (281) 446-7070 Fax (281) 446-3348 110 Bender Ave., Humble, TX 77338

ENVIRONMENTAL PROFESSIONALS

The WCM Group, Inc.

April 16, 2008

Mr. John Racanelli
Revenue Section (MC-214)
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F, Room 1206
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
40402901

Reference: CES Environmental Services, Inc.
Houston, Harris County, Texas
Registration of Permit-By-Rule §106.261
CN600618946; RN100693282

Dear Mr. Racanelli:

On behalf of CES Environmental Services, Inc. (CES), please find, enclosed, a check in the amount of $100 to cover the fee for the above referenced Permit-By-Rule (PBR) registration. A copy of the PI-7-CERT Form is also enclosed.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Matt Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Philip B. Evans
Director, Technical Services

PBE/tv
26927:5330010.let.doc

Enclosure

cc: M. Bowman
L. Vasse
B. Allen

Security features are included. Details on back.

THE WCM GROUP INC.
PETTY CASH ACCOUNT
P.O. BOX 3247
HUMBLE, TX 77347-3247

ComericA
Comerica Bank - Texas
Houston, Texas
www.comerica.com

1392

32-75/1110
787

DATE April 16, 2008

PAY ONE HUNDRED DOLLARS AND NO/100---------- DOLLARS $ 100.00

TO THE ORDER OF TCEQ

TWO SIGNATURES REQUIRED
NO CHECKS ALLOWED OVER $5,000.00

Susan C Howell

MP

⑈001392⑈ ⑆111000753⑆ 1880776545⑈

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GUARDIAN® SAFETY

THE WCM GROUP INC.
PETTY CASH ACCOUNT
HUMBLE, TX 77347-3247

DETACH AND RETAIN THIS STATEMENT
THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW
IF NOT CORRECT, PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED

DATE	DESCRIPTION		AMOUNT
4/16/08	CES PBR REGISTRATION FEE	CES-HOU-PBR	$ 100.00

A2

PERMIT-BY-RULE AUTHORIZATION FOR

SIB WASTEWATER TREATMENT PROCESS

Prepared for
CES ENVIRONMENTAL SERVICES, INC.
Houston, Harris County, Texas

Prepared by
THE WCM GROUP, INC.
Humble, Texas

April 2008

PERMIT-BY-RULE AUTHORIZATION FOR

SIB WASTEWATER TREATMENT PROCESS

Prepared for
CES ENVIRONMENTAL SERVICES, INC.
Houston, Harris County, Texas

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EPAHO043001721

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TCEQ PI-7CERT FORM

TCEQ §106.4 CHECKLIST

TCEQ §106.261 CHECKLIST

TCEQ §106.262 CHECKLIST

TCEQ §106.472 CHECKLIST

FIGURES

1 - AREA MAP

2 - FACILITY SITE PLAN

3 - PROCESS FLOW DIAGRAM

EPAHO043001722

INTRODUCTION

CES Environmental Services, Inc. (CES) operates tank container cleaning and wastewater treatment facilities at 4904 Griggs Road in Houston, Harris County, Texas (CN600618946, RN100693282) under Texas Commission on Environmental Quality (TCEQ) Permit Exemption No. 15980 and subsequent Permits-By-Rule (PBRs) Registration No. 75375, 83191 and 83798.

CES is submitting the enclosed documentation to demonstrate PBR authorization for the treatment and processing of a wastewater stream containing sulfurized isobutylene at the site. Sulfurized isobutylene wastewater (SIB) is transported to the facility in a truck tank and is pumped into a treatment tank. The SIB undergoes oxidization and acidification then chemical additions to precipitate metals, reduce BOD and suspended solids. Operational details on this operation are found in the Process Description section of this registration.

CES is located in the Houston/Galveston ozone nonattainment area and is classified as a minor source for Volatile Organic Compound (VOC) emissions. The emissions increase associated with this project is calculated as 0.38 tons per year (tpy) of VOC. As a result, the project does not trigger nonattainment netting.

A PI-7-CERT Form with TCEQ §106.4, §106.261 §106.262 and §106.472 Checklists are provided in the Forms section of this report. Emission calculations are provided in Attachment A. A topographic map, facility site plan, and process flow diagram are included in the Figures section.

EPAHO043001723

1.0 PROCESS DESCRIPTION

Sulfurized isobutylene wastewater (SIB) is transported to the facility in a truck tank. This wastewater mixture is composed of water with sulfurized isobutylene and sodium salts of sodium sulfide and sodium hydroxide. The SIB mixture undergoes oxidization, acidification and chemical additions to precipitate metals and suspended solids. The material is then filtered for solid and wastewater disposal.

The percent ranges of the constituents of the received wastewater mixture are as follows: Water at 85-95%; Sulfurized Isobutylene sulfur compound at <5%; Sodium Sulfide at 1–5%; Sodium Hydrosulfide at 2–5%. The wastewater mixture is received via tank truck or isocontainer and transferred into a 10,000-gallon wastewater treatment tank (T1) using a tank-to-tank vapor exchange. Several treatment steps occur in this tank. The first stage is oxidization of the isobutylene and sulfides with a 10% solution of hydrogen peroxide fed at a controlled rate into the treatment tank. This slow transfer rate minimizes the heat of reaction and ensures the complete oxidation of the isobutylene and sulfide compound. The 10% hydrogen peroxide solution is pumped from a 550-gallon dilution tank (H2) supplied by a larger 5,500-gallon tank (H1) storing 35% hydrogen peroxide. Both tanks vent to a water scrubber. The second treatment stage is acidification by introduction of sulfuric acid (97%) to reduce the pH from 10 su to the pH 5.0 su to facilitate solids precipitation. Sulfuric acid is supplied from a small 1,000-gallon storage tank (S).

A vapor collection system using two 24 cfm vacuum pumps draws a negative pressure across the treatment tank capturing all vapors emitted from the transfer processes, the oxidation process and the acidification process. The vapors route to a caustic scrubber vessel where they are diffused into a sodium hydroxide solution. This scrubber then vents to the existing facility scrubber header system that consists of an 85-gallon knockout tank, two in-series 10% caustic and 5% bleach towers then finally a deodorizer tower. The vapor is exhausted with a 10 hp blower through the 30-feet tall vent stack. The overall emission control efficiency of the system is 98%.

The final stages of wastewater treatment involve the addition of ferric chloride, calcium hydroxide and anionic polymer solutions to create a filtrate ready for disposal. The vessel is then mixed thoroughly. The final treatment step is the addition of an anionic polymer. With proper agitation, this final stage of chemical treatment creates the large flocculent that precipitates out solids and reduces BOD.

The precipitated mixture now moves to a sludge tank (ST) then through a filter press. The sludge tank vents to the existing facility scrubber system. The filtrate water from the press is discharged via pipeline to an off-site POTW. The solids from the filter press are transferred into a solids bin for proper classification and disposal.

EPAHO043001724

2.0 EMISSIONS SUMMARY

Emissions from the SIB wastewater processing are calculated from tank losses due to material transfers. All volatile materials are vented through a caustic scrubber. Fugitive emissions from potential leaks at valves, pumps, and connections associated with this project are calculated using the methods and emission factors specified in the TCEQ document "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives". Reduction credit is taken for operations personnel monitoring the operations for leaks that can be detected with audible, visible or olfactory means. The total project increase of volatile organics is 0.38 tpy, well below the level requiring non-attainment or PSD review.

EPAHO043001725

PERMIT-BY-PRULE APPLICABILITY

SUMMARY OF PROJECT CHEMICALS

CAS No.	Chemical	PBR
115-11-7	Isobutylene	106.261
772-84-1	Hydrogen peroxide	106.262
1313-82-2	Sodium Sulfide	106.472
16721-80-5	Sodium Hydrosulfide	106.472
7664-93-9	Sulfuric Acid solution	106.472
7705-08-0	Ferric chloride	106.472 / 106.532
1305-62-0	Calcium hydroxide	106.472 / 106.532
---	Polymer solution	106.532
---	Wastewater	106.532

SUMMARY OF PROJECT EQUIPMENT

Status	FIN	Description	Project Use	PBR
new	T1	10,000-gal capacity Vert Fixed Roof Tank	Treatment Tank	106.472 (2), 106.532
new	CSV	Caustic diffuser scrubber vessel	vent control	106.261/106.262
new	H1	5,500-gal capacity Horz Fixed Roof Tank	Hydrogen Peroxide 35% storage	106.262
new	H2	550-gal capacity tote	Hydrogen Peroxide 10% storage	106.262
new	S	220-gal capacity Vert Fixed Roof vessel	Sulfuric Acid Storage	106.472 (5)
new	F	600-gal capacity Vert Fixed Roof Tank	Ferric chloride storage	106.472 (3)/106.532
existing	C	4,000-gal capacity Vert Fixed Roof Tank	calcium hydroxide	106.472 (3)/106.532
N/A	P	55-gal drum	Polymer solution storage	106.532
existing	ST	sludge tank	Waste Water separation	106.532

EPAHO043001726

ATTACHMENT A

EMISSION CALCULATIONS

SUMMARY OF EMISSIONS AND PBR APPLICABILITY DOCUMENTATION

PBR 106.472

Chemical	Storage		Fugitives		Total	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Sodium Sulfide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium Hydrosulfide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulfuric Acid	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ferric chloride	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
calcium hydroxide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Neutralization salts	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PBR 106.261 / 106.262

Chemical	Storage		Fugitives		Total		
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	
Isobutylene	0.1147	0.3831	0.0000	0.0001	0.1147	0.3832	
Hydrogen peroxide	0.0004	0.0002	0.0011	0.0047	0.0015	0.0049	
					0.1162	**0.3882**	**TOTAL**

PBR Compliance

Chemical	Applicable PBR	TLV mg/m^3	PBR Allowable		PBR Compliance	
			lb/hr	TPY	lb/hr	TPY
Isobutylene	106.261	-	1.00	10.0	YES	YES
Hydrogen peroxide	106.262	1.4	0.009	5.0	YES	YES

PBR Allowables:

		lb/hr	ton/yr
106.261		1.0	10.0
106.262	E=L/K		5.0

L = TLV (mg/m^3)
K = 157 ,receptor distance > 270 ft

EPAHO043001728

TANK EMISSION CALCULATIONS

	Tank ID:	T1	H1	H2	S	F	C	ST
	Material:	Sulfurized Isobutylene	Hydroxide Peroxide 35%	Hydrogen Peroxide 10%	Sulfuric Acid	Ferric Chloride	Calcium Hydroxide	Sludge/Treated Wastewater
Annual Throughput, gal/yr	Q =	832,000	582,400	499,200	45,760	6,240	104,000	1,493,440
Max Hourly Transfer Rate, gal/hr	FR =	4,000	1,100	550	50	50	50	50
Emissions:								
Maximum Hourly Emissions, lb/hr	**Lmax =**	**0.13528**	**0.00212**	**0.00150**	**0.00000**	**0.01551**	**0.01389**	**0.00000**
Total Annual Emissions, TPY	**Lt =**	**0.45200**	**0.01822**	**0.00041**	**0.00000**	**0.00095**	**0.01052**	**0.00000**
Annual Average Hourly Emis, lb/hr	Lavg =	0.103	0.004	0.00009	0.000	0.000	0.002	0.000
Standing loss, lb/yr	Ls =	19.011	3.293	0.072	0.000	0.871	5.626	0.000
Working loss, lb/yr	Lw =	884.993	33.143	0.748	0.000	1.032	15.404	0.000
Material Properties:								
Molecular Weight, lb/lb-mole	Mv =	42.42	6.87	8.08	98.07	18.00	18.00	0.00
Vapor Pressure @ Tla, psia	Pva =	1.05	0.35	0.39	0.00	0.39	0.35	0.00
Vapor Pressure @ Tln, psia	Pvn =	0.93	0.29	0.33	0.00	0.33	0.29	0.00
Vapor Pressure @ Tlx, psia	Pvx =	1.19	0.41	0.46	0.00	0.46	0.41	100.00
Max. Vapor Pressure @ mTlx, psia	Pvmax =	1.67	0.59	0.71	0.00	0.72	0.65	0.00
Tank Properties:								
Vapor control device		scrubber	scrubber	scrubber	scrubber	none	none	scrubber
Vapor control efficiency, %	e =	98	98	98	98	0	0	98
Capacity volume, gal	Cv =	9,975	5,398	547	940	595	4,230	940
Shell Diameter, ft	D =	8.5	8.3	4.5	4.0	4.5	12.0	4.0
Shell Height/Length, ft	Hs =	23.5	13.5	4.6	10.0	5.0	5.0	10.0
Tank Orientation (vertical or horizontal)		vert	horiz	vert	vert	vert	vert	vert
Roof type (cone or dome)		cone	N/A	cone	cone	cone	cone	cone
Tank Color (white, light gray, other)		white	white	white	white	white	white	white
Solor absorbance factor	a =	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Pressure vent setting, psig	Pbp =	0.3	0	0.3	0	0	0	0
Vacuum vent setting, psia	Pbv =	-0.3	0	-0.3	0	0	0	0
Effective diameter, ft	De =	8.5	11.9	4.5	4.0	4.5	12.0	4.0
Avg. Liquid Height, ft	Hl =	11.8	4.1	2.3	5.0	2.5	2.5	5.0
Max. Liquid Height, ft	Hlx =	23.5	8.3	4.6	10.0	5.0	5.0	10.0
Roof Outage, ft	Hro =	0.00	0.00	0.05	0.04	0.05	0.13	0.04
Vapor Space Outage, ft	Hvo =	11.75	4.13	2.35	5.04	2.55	2.63	5.04
Vapor space volume, ft^3	Vv =	666.75	459.65	37.33	63.36	40.51	296.88	63.36

EPAHO043001729

Operating Conditions (Houston, Tx):								
Atmospheric pressure, psia	Pa =	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Annual Avg. Daily solar insulation factor, Btu/ft^2 day	I =	1351	1351	1351	1351	1351	1351	1351
Annual Avg. Daily max. ambient temp, R	Tax =	539.1	539.1	539.1	539.1	539.1	539.1	539.1
Annual Avg. Daily min. ambient temp, R	Tan =	517.4	517.4	517.4	517.4	517.4	517.4	517.4
Annual Avg. Daily vapor temp. range, R	^Tv =	22.1	22.1	22.1	22.1	22.1	22.1	22.1
Annual Daily avg. liquid surface temp, R	Tla =	530.1	530.1	520.0	530.1	530.1	530.1	530.1
Annual Avg. Daily min. liquid surface temp., R	Tln =	524.6	524.6	515.0	524.6	524.6	524.6	524.6
Annual Avg. Daily max. liquid surface temp., R	Tlx =	535.6	535.6	525.0	535.6	535.6	535.6	535.6
Highest Month Daily solar insulation factor, Btu/ft^2 day	ml =	1898	1898	1898	1898	1898	1898	1898
Highest Month Daily max. ambient temp, R	mTax =	553.6	553.6	553.6	553.6	553.6	553.6	553.6
Highest Month Daily min. ambient temp, R	mTan =	532.5	532.5	532.5	532.5	532.5	532.5	532.5
Highest Month Daily vapor temp. range, R	m^Tv =	24.2	24.2	24.2	24.2	24.2	24.2	24.2
Highest Month Daily max. liquid surface temp., R	mTlx =	551.7	551.7	525.0	551.7	551.7	551.7	551.7
Gas Constant, psia-ft^3/lb mole-R	R =	10.73	10.73	10.73	10.73	10.73	10.73	10.73
Vapor Density, lb/ft^3	Wv =	0.008	0.000	0.001	0.000	0.001	0.001	0.000
Daily vapor pressure range, psia	^Pv =	0.257	0.124	0.134	0.000	0.131	0.117	100.000
Vapor space expansion factor	Ke =	0.016	0.050	0.010	0.042	0.051	0.050	6.844
Vented vapor saturation factor	Ks =	0.604	0.929	0.954	1.000	0.950	0.954	1.000
Working Loss Product Factor	Kp =	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turnovers	N =	83.41	107.89	912.22	48.68	10.49	24.59	1588.83
Turnover factor	Kn =	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Operating Days, days/yr	Days =	365	365	365	365	365	365	365

EPAHO043001730

TANK EMISSION SPECIATION

	Tank ID:	T1		H1		H2		S		F		C		ST	
	EPN:	T1		H1		H2		S		F		C		ST	
Stream	**wt frac.**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Isobutylene	0.8476	0.1147	0.3831												
Sodium Sulfide(salt)	0.0000	0.0000	0.0000												
Sodium Hydrosulfide (salt)	0.0000	0.0000	0.0000												
Water	0.1524	0.0206	0.0689												
Hydrogen Peroxide 35%	0.0463			0.0001	0.0001										
Hydrogen Peroxide 10%	0.2191					0.0003	0.0001								
Sulfuric Acid	1.0000							0.0000	0.0000						
Ferric Chloride solution	0.0000									0.0000	0.0000				
water	1.0000									0.0155	0.0439				
Calcium Hydroxide	0.0000											0.0000	0.0000		
Water	1.0000											0.0139	0.0105		
Neutralization salts	0.0000													0.0000	0.0000
Water	0.0000													0.0000	0.0000

Speciation	**lb/hr**	**TPY**
Isobutylene	0.1147	0.3831
Sodium Sulfide(salt)	0.0000	0.0000
Sodium Hydrosulfide (salt)	0.0000	0.0000
Hydrogen Peroxide	0.0004	0.0002
Sulfuric Acid	0.0000	0.0000
Ferric Chloride solution	0.0000	0.0000
Calcium Hydroxide	0.0000	0.0000
Neutralization salts	0.0000	0.0000
Water	0.0500	0.1233

EPAHO043001731

FUGITIVE EMISSION ESTIMATES

MATERIAL	FIN	VP (psia)	Liquid wt frac.	Stream Type LL,HL,G/V	Valves	lbs/hr	Flanges	lbs/hr	Gas/Vapor Valves	lbs/hr	Gas/Vapor Flanges	lbs/hr	Pumps	lbs/hr	Relief Valves	lbs/hr	Agitator	lbs/hr	Total lb/hr	EMISSIONS (lb/hr)	EMISSIONS (ton/yr)
Isobutylene	T1	1.67428	0.0500	LL	8	0.00084	22	0.00033	0	0	0	0	1	0.002702	1	0.006879	1	0.000015	0.0005	0.0000	0.0001
Hydrogen peroxide 30%	H1	0.58773	0.3000	LL	8	0.00084	20	0.0003	0	0	0	0	1	0.002702	1	0.006879	0	0	0.0032	0.0010	0.0042
Hydrogen peroxide 10 %	H2	0.70865	0.1000	LL	16	0.00168	44	0.00066	0	0	0	0	1	0.002702	1	0.006879	1	0.000015	0.0012	0.0001	0.0005
																				0.0011	0.0049

Speciation	Total lb/hr	TPY
Isobutylene	0.0000	0.0001
Hydrogen peroxide	0.0011	0.0047
Total	0.0011	0.0049

Total is multiplied by liquid weight fraction
365 days in service

Monitoring is performed in accordance with TCEQ AVO.

SOCMI Factors	Valves	Flanges	G/V Vlv	G/V Flng	Pumps	Relief Vlv	Agitator
Light Liquid (LL)	0.0035	0.0005	--	--	0.0386	--	0.0005
Gas / Vapor (G/V)	--	--	0.0089	0.0029	--	0.2293	--
Heavy Liquid (HL)	0.0007	0.00007	--	--	0.0161	--	0.00007
LL,G/V - Efficiency (%)	97	97	97	97	93	97	97
HL - Efficiency (%)	0	0	30	30	0	0	0

* Per TNRCC guidance, fugitive emissions are not estimated for materials with vapor pressure < 0.002 psia.

EPAHO043001732

FORMS

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services, Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Rd.			
City: Houston		State: TX	Zip Code: 77021
Phone No.: (713) 676-1460	Fax No.: (713) 676-1676	E-mail Address: mbowman@cesenvironmental.com	
C. Technical Contact Name: Philip Evans			
Company: The WCM Group, Inc.			
Mailing Address: 110 Bender Ave			
City: Humble		State: TX	Zip Code: 77336
Phone No. : (281) 446-7070	Fax No.: (281) 446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Rd.			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris		Zip Code: 77021

II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services Inc.			X Permanent ❒ Portable
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106.261	§ 106.532		
§ 106.262	§ 106.		
§ 106.472	§ 106.		
Are you claiming a **historical standard exemption or PBR**?			❒ YES X NO
If "YES," enter effective date and Rule Number:			
C. Are you registering a **grandfathered** facility? *If "YES," attach documentation of construction date:*			❒ YES X NO
D. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes)			X YES ❒ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261/262	
E. Are there any **other facilities** at this **site** which are **authorized by an Air Standard Exemption or PBR**?			❒ YES X NO
If "YES," enter Registration Number and Rule Number:			
F. Are there any **other air preconstruction permits** at this site?			❒ YES X NO
If "YES," enter Permit Numbers:			
G. Is this site required to obtain an **air federal operating permit**?			❒ YES X NO
If "YES," enter Permit Number:			
H. TCEQ Account Identification Number *(if known)*:	HG-1270-B		

EPAHO043001734

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION

To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.

A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?	☐ YES X NO
B. What is the fee amount? *If "YES," to any of the following three questions, a **$100** fee is require. Otherwise, a **$450** fee is required.*	
Does this business have less than 100 employees?	X YES ☐ NO
Does this business have less than 1 million dollars in annual gross receipts?	☐ YES X NO
Is this registration submitted by a governmental entity with a population of less than 10,000?	☐ YES X NO

C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:		*Was fee **Paid** online?*	☐ YES X NO
Company name of check:		Fee amount:	$100

IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION

Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:

Animal Feeding Operations § 106.161 ***Livestock Auction Facilities § 106.162*** ***Saw Mills § 106.223***

Grain Handling, Storage and Drying § 106.283 ***Auto Body Refinishing Facilities § 106.436*** ***Air Curtain Incinerator § 106.496***

A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES".)*	☐ YES ☐ NO

B. Distance from this facility's emission release point to the nearest property line:	feet
Distance from this facility's emission release point to the nearest off-property structure:	feet

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS

Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.

A. Is Confidential information submitted and properly marked "CONFIDENTIAL" with this registration?	☐ YES X NO
B. Is a process flow diagram or a process description attached?	X YES ☐ NO
C. Are emissions data and calculations for this claim attached?	X YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)	X YES ☐ NO

*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*

E. Is information attached showing how the **specific PBR** requirements are met for this registration? (***PBR checklist** may be used, but are optional*)	X YES ☐ NO

F. Distance from this facility's emission release point to the nearest property line:	100 feet
Distance from this facility's emission release point to the nearest off-property structure:	270 feet

Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE:	DATE: 4/16/08

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form. and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

EPAHO043001736

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR PERMITS DIVISION

TITLE 30 TAC § 106.4 "QUICK-CHECK" APPLICABILITY CHECKLIST

Company Name: CES Environmental Services, Inc.
Checklist completed by: The WCM Group, Inc. Date: 04/09/2008
Facility Type: Tank Spot Vessel Cleaning & Waste Processing
Permit(s) by rule claimed: 30 TAC Chapter §106: 261, 262, 472, 532
Project Description (including equipment, materials, and brief process description):

This project installs a treatment tank and associated chemical storage vessels to process a sulfurized isobutylene wastewater stream through oxidation, acidification and chemical treatment. The settled solution is then separated for solid and liquid disposal.

CO	0.00	NO_X	0.00	VOC	0.38
PM	0.00	SO_2	0.00	Other (H_2O_2)	0.005

The following questions require a "Yes" or "No" answer to be indicated for this permit by rule claim:

A. Title 30 TAC § 106.4(a)(5): Current Permit by Rule Requirements

Yes X No☐ Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106?
If "Yes ", continue to next question If "No ", please contact the Air Permits Division for a copy of the current permit by rule to be claimed.

B. Title 30 TAC § 106.4(a)(7): Permit by rule prohibition check

Yes☐ No X Are there any air permits under the same account containing permit conditions which prohibit or restrict the use of permits by rule?
If "No ", continue to next question
If "Yes ", permits by rule may not be used or their use must meet the restrictions of the permit.
A new permit or permit amendment may be required.
List permit number(s): _____

C. Title 30 TAC § 106.4(b): Circumvention check

Title 30TAC§ 106.4(b) states "No person shall circumvent by artificial limitations the requirements of§l 16.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:

A. dividing a complete project into separate segments to circumvent §106.4(a)(l) limits;
B. claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity;
C. claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized.

Yes☐ No X Does your project meet any of the criteria listed above?
If "No ", continue to next rule question If "Yes ", a permit y rule may not be claimed.

D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules

Yes X No☐ Will the facility comply with all rules and regulations of the TCEQ, the intent of the Texas Clean Air Act, and any local permitting or registration requirements? *If "Yes ", continue to next rule question If "No ", a permit by rule may not be claimed.*

E. Title 30 TAC § 106.4(a)(l): Emission limits check

Yes X No☐ The maximum emissions from all facilities at the site, including this permit by rule claim, are less than 25 tpy of any contaminant.
If the answer to this questions is "Yes ", no further review is needed to complete this checklist. Forward all information needed to verify your permit by rule claim to the . If "No ", this checklist cannot be used. Please complete the standard 30 TAC § 106.4 Applicability Checklist.

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here [ ] if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER		
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES ☐ NO ☐N/A
b1	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
b2	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
a1	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES ☐ NO ☐N/A
a2	Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials (check all that apply):	☐ YES ☐ NO X N/A

☐ acetylene	☐ helium	☐ propyl ether	☐ limestone
☐ argon	☐ isohexane	☐ sulfur dioxide	☐ magnesite
☐ butane	☐ isopropyl alcohol	☐ alumina	☐ marble
☐ crude oil	☐ methyl acetylene	☐ calcium carbonate	☐ pentaerythritol
☐ carbon monoxide	☐ methyl chloroform	☐ calcium silicate	☐ plaster of paris
☐ cyclohexane	☐ methyl cyclohexane	☐ cellulose fiber	☐ silicon
☐ cyclohexene	☐ neon	☐ cement dust	☐ silicon carbide
☐ cyclopentan	☐ nonan	☐ emery dust	☐ starch
☐ ethyl acetate	☐ oxides of nitrogen	☐ glycerin mist	☐ sucrose
☐ ethanol	☐ propane	☐ gypsum	☐ zinc stearate
☐ ethyl ether	☐ propyl alcohol	☐ iron oxide dust	☐ zinc oxide
☐ ethylene	☐ propylene	☐ kaolin	

☐ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene
☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116

a3	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? List chemical:_____ L value:_____	☐ YES ☐ NO X N/A
	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? List chemical:___isobutylene_____	X YES ☐ NO ☐ N/A

	Are total new or increased emissions, including fugitives,of a chemical with a limit value of less than 200 mg/m^3? If "Yes" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC §106.262 to authorize the emissions, if applicable.	☐ YES ☐ NO X N/A
a4	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES X NO ☐N/A
a5	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES X NO ☐N/A
a6	Are emission increases five tons per year or greater? If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.	☐ YES X NO ☐N/A
a7	Are emission increases less than five tons per year? If "YES," this checklist must be attached to a Form PI-7 and include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any. (pick one): X Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or ☐ By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	X YES ☐ NO ☐N/A

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.
The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.262 (30 TAC § 106.262) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER			
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES	❑ NO ❑ N/A
b1.	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	❑ YES	X NO ❑ N/A
b2.	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard perm? *If "YES," this PBR cannot be used to authorize emissions from the project.*	❑ YES	X NO ❑ N/A
c.	Is the facility authorized under another section of this chapter or under a standard permit? *If "YES," subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*	X YES	❑ NO ❑ N/A
a1.	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES	❑ NO ❑ N/A
a2.	Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K? See Table 262 Figures 1 and 2. *If "YES," the notification shall include a description of the project, calculations for all emissions being claimed under this PBR:*	X YES	❑ NO ❑ N/A
	Chemical: hydrogen peroxide L value: 1.4 D: 270 K: 157		
a3.	Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? *If "YES," the notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, and a description of pollution control equipment, if any..*	X YES	❑ NO ❑ N/A
a4.	Are one or more of the following chemicals is handled for this registration? (Check all that apply) *If "YES," answer the following four questions.*	❑ YES	X NO ❑ N/A

❑ acrolein	❑ diazomethane	❑ hydrogen sulfide	❑ ozone
❑ allyl chloride	❑ diborane	❑ ketene	❑ pentaborne
❑ ammonia (anhydrous)	❑ diglycidyl ether	❑ methylamine	❑ perchloromethyl mercaptan
❑ arsine	❑ dimethylhydrazine	❑ methyl bromide	❑ perchloryl fluoride
❑ boron trifluoride	❑ ethyleneimine	❑ methyl hydrazine	❑ phosgene
❑ bromine	❑ ethyl mercaptan	❑ methyl isocyanate	❑ phosphine
❑ carbon disulfide	❑ fluorine	❑ methyl mercaptan	❑ phosphorus trichloride
❑ chlorine	❑ formaldehyde (anhydrous)	❑ nickel carbonyl	❑ selenium
❑ chlorine dioxide	❑ hydrogen bromide	❑ nitric acid	❑ hexafluoride stibine
❑ chlorine trifluoride	❑ hydrogen chloride	❑ nitric oxide	❑ liquefied sulfur dioxide
❑ chloroacetaldehyde	❑ hydrogen cyanide	❑ nitrogen dioxide	❑ sulfur pentafluorid
❑ chloropicrin	❑ hydrogen fluoride	❑ oxygen difluoride	❑ tellurium hexafluoride
❑ chloroprene	❑ hydrogen selenide		

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

	Are all facilities are located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor?	❑ YES	❑ NO	❑ N/A
	Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) less than or equal to 500 pounds on the plant property?	❑ YES	❑ NO	❑ N/A
	Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation (49 Code of Federal Regulation, Parts 171-178)?	❑ YES	❑ NO	❑ N/A
	Are any changes to or additions of any existing air pollution abatement equipment?	❑ YES	❑ NO	❑ N/A
a5.	Are there any changes to or additions of any existing air pollution abatement equipment?	❑ YES	❑ NO	❑ N/A
a6.	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater that 5.0% opacity in any six-minute period?	❑ YES	❑ NO	❑ N/A

D, Feet	K	
100	326	E=maximum allowable hourly emission, and never to exceed 6 pounds per hour.
200	200	
300	139	
400	104	
600	65	
700	54	
800	46	K=value from the table on this page. (interpolate intermediate values)
900	39	
1,000	34	
2,000	14	D=distance to the nearest off-plant receptor
3,000 or more	8	

TABLE 262
LIMIT VALUES (L) FOR USE WITH EXEMPTIONS FROM PERMITTING § 106.262

The values are not to be interpreted as acceptable health effects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Acetone	590.
Acetaldehyde	9.
Acetone	4.
Acetonitrile	34.
Acetylene	2662.
N-Amyl Acetate	2.7
Sec-Amyl Acetate	1.1
Benzene	3.
Beryllium and Compounds	0.0005
Boron Trifluride, as HF	0.5
Butyl Alcohol,	76.
Butyl Acrylate	19.
Butyl Chromate	0.01
Butyl Glycidyl Ether	30.
Butyl Mercaptain	0.3
Butyraldehyde	1.4
Butyric Acid	1.8
Butyronitrile	22.
Carbon Tetrachloride	12.
Chloroform	10.
Chlorophenol	0.2
Chloroprene	3.6
Chromic Acid	0.01
Chromium Metal, Chromium II and III Compounds	0.1
Chromium VI Compounds	0.01
Coal Tar Pitch Volatiles	0.1
Creosote	0.1
Cresol	0.5
Cumene	50.
Dicyclopentadiene	3.1
Diethylaminoethanol	5.5
Diisobutyl Ketone	63.9
Dimethyl Aniline	6.4
Dioxane	3.6

Compound	Limit (L) Milligrams Per Cubic Meter
Dipropylamine	8.4
Ethyl Acrylate	0.5
Ethylene Dibromide	0.38
Ethylene Glycol	26.
Ethylene Glycol Dinitrate	0.1
Ethylidene 2-norbornene, 5-	7.
Ethyl Mercaptan	0.08
Ethyl Sulfide	1.6
Glycolonitrile	5.
Halothane	16.
Heptane	350.
Hexanediamine, 1, 6-	0.32
Hydrogen Chloride	1.
Hydrogen Fluoride	0.5
Hydrogen Sulfide	1.1
Isoamyl Acetate	133.
Isoamyl Alcohol	15.
Isobutyronitrile	22.
Kepone	0.001
Kerosene	100.
Malononitrile	8.
Mesityl Oxide	40.
Methyl Acrylate	5.8
Methyl Amyl Ketone	9.4
Methyl-T-Butyl Ether	45.
Methyl Butyl Ketone	4.
Methyl Disulfide	2.2
Methylenebis (2-chloroaniline) (MOCA)	0.003
Methylene Chloride	26.
Methyl Isoamyl Ketone	5.6
Methyl Mercaptan	0.2
Merthyl Methacrylate	34.
Methyl Propyl Ketone	530.
Methyl Sulfide	0.3
Mineral Spirits	350.
Naphtha	350.
Nickel, Inorganic Compounds	0.015
Nitroglycerine	0.1

Compound	Limit (L) Milligrams Per Cubic Meter
Nitropropane	5.
Octane	350.
Parathion	0.05
Pentane	350.
Perchloroethylene	33.5
Petroleum Ether	350.
Phenyl Mercaptan	0.4
Propionitrile	14.
Propyl Acetate	62.6
Propylene Oxide	20.
Propyl Mercaptan	0.23
Silica-amorphous-precipitated, silica gel	4.
Silicon Carbide	4.
Stoddard Solvent	350.
Styrene	21.
Succiononitrile	20.
Tolidin	0.02
Trichloroethylene	135.
Trinethylamine	0.1
Valeric Acid	0.34
Vinyl Acetate	15.
Vinyl Chloride	2.

NOTE: The time weighted average (TWA) threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (AGGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short Term Exposure Level (STEL) or Ceiling Limit (annotated with a "C") published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.

Texas Commission on Environmental Quality

Exemption §106.472 Checklist
(Previously Standard Exemption 51)

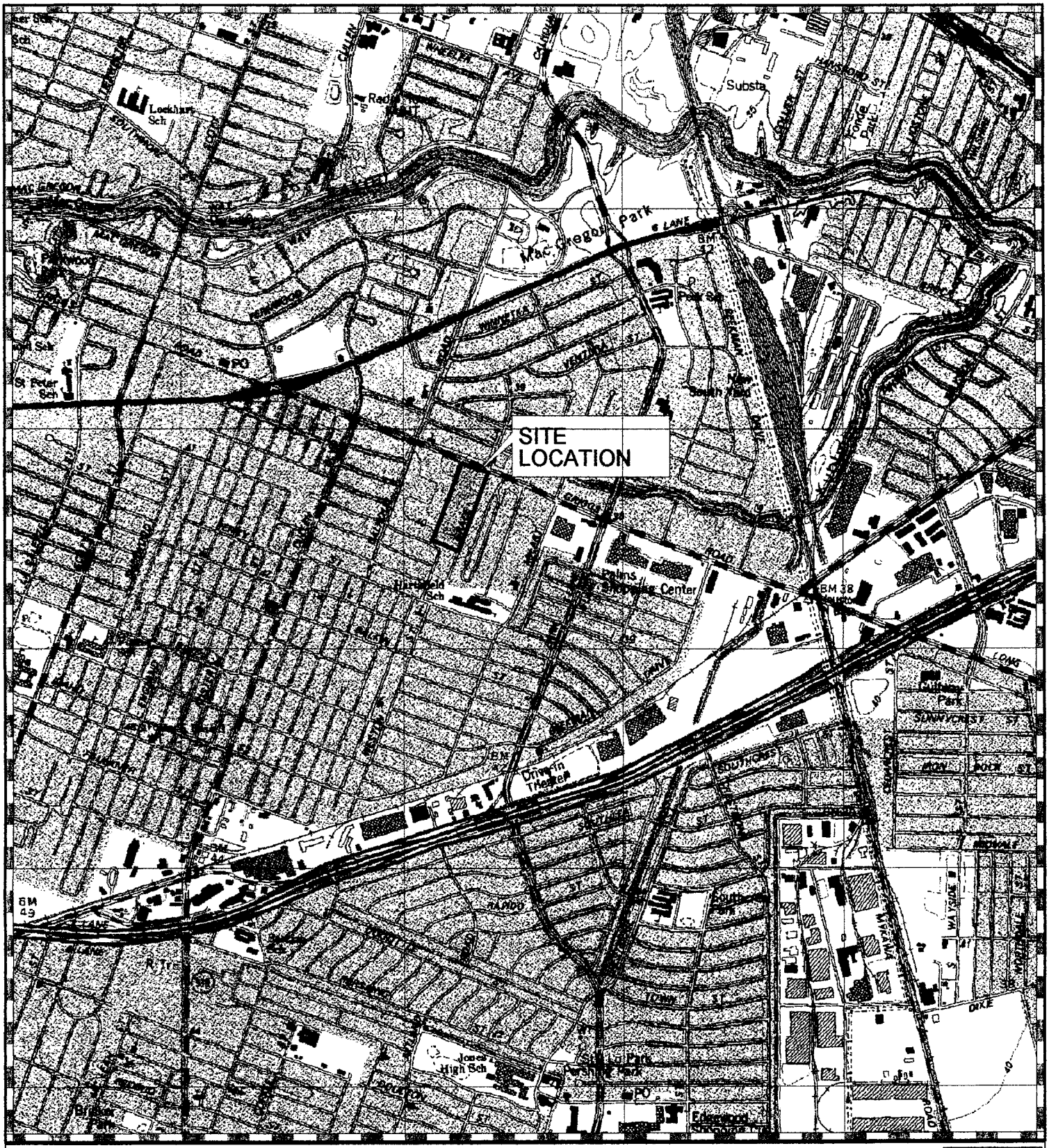
Organic Liquid Loading and Unloading

The following checklist is designed to help you confirm that you meet §106.472, previously Standard Exemption 51 (STDX 51), requirements. **Any "no" answers indicate that the claim of registration may not meet all requirements for the use of Exemption §106.472, previously Standard Exemption 51.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met, or obtain a construction permit.

YES	NO	NA	DESCRIPTION
X	_	_	Have you included a description of how this exemption claim meets the general rule for the use of exemptions (§106, Subchapter A checklist is available)?
X	_	_	Are all the facilities claimed for exemption specifically named in the general section of §106.472, previously STDX 51? (This exemption has been interpreted to allow mixing or blending but not chemical reaction in tankage.)
X	_	_	Is the equipment designed to prevent visible emissions?
X	_	_	Are all the chemicals to be loaded, unloaded, or stored described in §106.472, previously STDX 51(a) - (i)? Attach a list of the chemicals and identify the appropriate item of §106.472, previously STDX 51 that applies. Include additional supporting data. For example, a §106.472, previously STDX 51(i), claim should identify initial boiling points of all compounds to be covered.
_	_	X	Will aqueous ammonia solutions, hydrochloric acid, or acetic acid be vented through a water scrubber?
_	_	X	Are facilities loading, unloading, or storing butyric acid, isobutyric acid, methacrylic acid, mercaptans, croton oil, 2-methyl styrene, or any other compound with an initial boiling point of 300 degrees F or greater listed in 40 CFR 261, Appendix VIII, located at least 500 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facility or the owner of the property upon which the facility is located? List these compounds and show their handling location on an attached scaled plot plan.

FIGURE 1

TOPOGRAPHIC MAP



TOPOGRAPHIC MAP

CES ENVIRONMENTAL SERVICES, INC.

4904 GRIGGS ROAD

HOUSTON, HARRIS COUNTY, TEXAS

FIGURE 1

Reproduced from U.S. Topographic Quadrangle: Park Place Texas; Zone 15

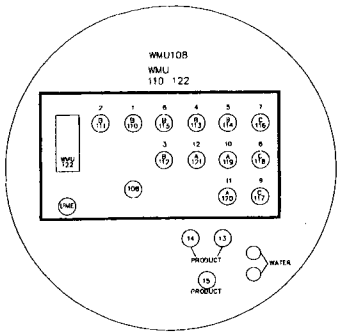
DRAWN BY: LLS DATE: 04-10-2008

FILE: H:-client-CES-Houston site.geo

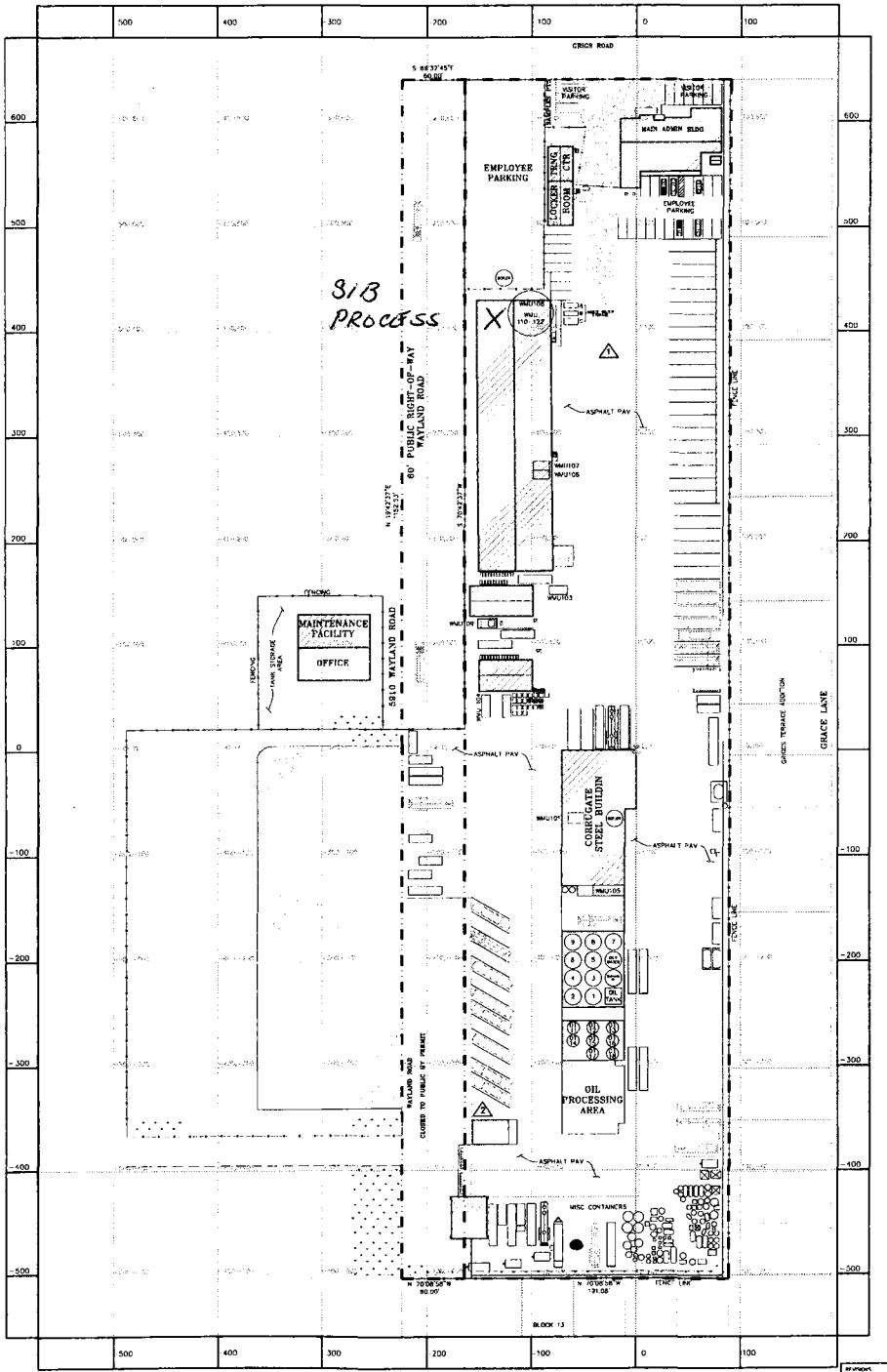
EPAHO043001747

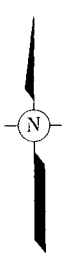
FIGURE 2

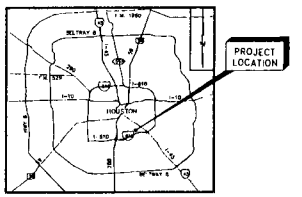
FACILITY SITE PLAN



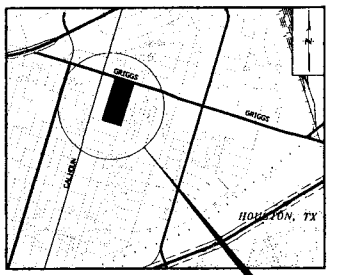
ENLARGED PLAN
NTS







LOCATION MAP



VICINITY MAP
HARRIS COUNTY KEY MAP 453G
DMS MAP # MP26
HLT 334 E-J
ZIP CODE 77092

LEGEND

- FLOW DIRECTION
- PROPERTY LINE
- (ABOVEGROUND STORAGE TANK)
- STRUCTURE
- GRASS
- DIRT ROAD
- ASPHALT
- FENCE
- DRAINAGE SWALE
- CONCRETE
- ROLL CONTAINERS
- STORAGE/EQUIPMENT
- OUTFALL

REVISIONS				PROJECT LOCATION: CES ENVIRONMENTAL SERVICES, INC. 4804 GRIGGS RD. HOUSTON, TEXAS 77021	PROJECT DESCRIPTION: SITE PLAN		APPROVED BY:	
ZONE / REV	DESCRIPTION	DATE	APPROVED				DRAWN BY:	JOB NUMBER
							DATE:	SCALE:

ORIGINAL SCALE IN INCHES
FOR REDUCED PLANS

EPAHO043001749

FIGURE 3

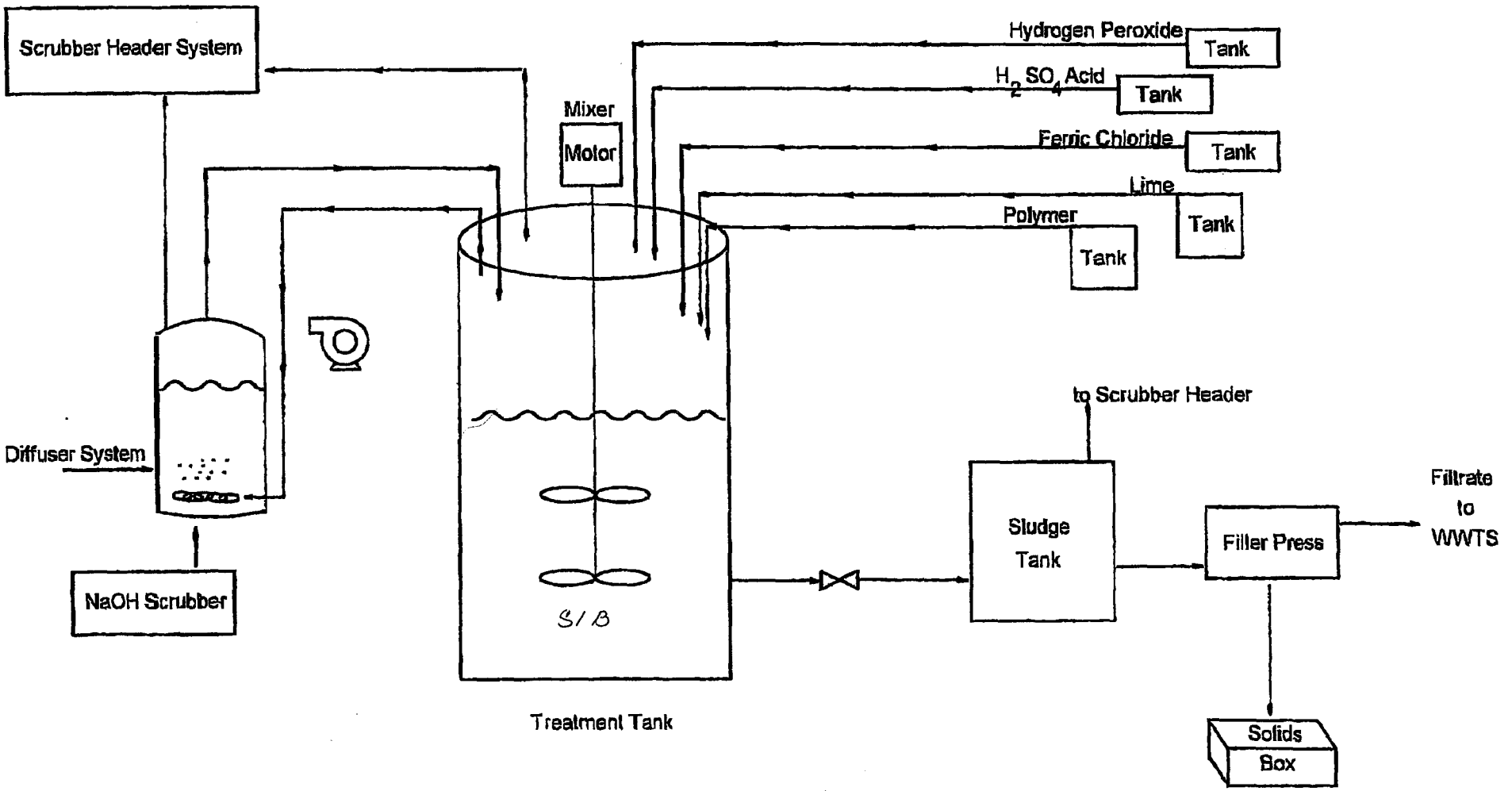
PROCESS FLOW DIAGRAM

CES Environmental Services, Inc .

SIB Rinse Water Treatment

Process Flow Diagram

March 28, 2008



EPAHO043001751

April 10, 2008

Air Permits Initial Review Team (APIRT), MC161
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building C, Third Floor
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
40402900

Reference: Registration of Permits-By-Rule
CES Environmental Services, Inc.
4904 Griggs Road
Houston, Harris County, Texas
CN600618946; RN100693282

Dear Sir or Madam:

On behalf of CES Environmental Services, Inc. (CES), please find enclosed documentation to authorize the processing of wastewater containing sulfurized isobutylene. The project qualifies for authorization under Permits-By-Rule (PBRs) §106.261, §106.262, §106.472 and §106.532.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Matt Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Philip B. Evans
Director, Technical Services

PBE/tv
26927:5330010.let.doc

Enclosure

cc: M. Bowman
L. Vasse
B. Allen

April 10, 2008

Mr. John Racanelli
Revenue Section (MC-214)
Texas Commission on Environmental Quality
12100 Park 35 Circle, Building F, Room 1206
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
40402901

Reference: CES Environmental Services, Inc.
Houston, Harris County, Texas
Registration of Permit-By-Rule §106.261
CN600618946; RN100693282

Dear Mr. Racanelli:

On behalf of CES Environmental Services, Inc. (CES), please find, enclosed, a check in the amount of $100 to cover the fee for the above referenced Permit-By-Rule (PBR) registration. A copy of the PI-7-CERT Form is also enclosed.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Matt Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Philip B. Evans
Director, Technical Services

PBE/tv
26927:5330010.let.doc

Enclosure

cc: M. Bowman
L. Vasse
B. Allen

PERMIT-BY-RULE AUTHORIZATION FOR

SIB WASTEWATER TREATMENT PROCESS

Prepared for
CES ENVIRONMENTAL SERVICES, INC.
Houston, Harris County, Texas

Prepared by
THE WCM GROUP, INC.
Humble, Texas

April 2008

EPAHO043001754

PERMIT-BY-RULE AUTHORIZATION FOR

SIB WASTEWATER TREATMENT PROCESS

Prepared for
CES ENVIRONMENTAL SERVICES, INC.
Houston, Harris County, Texas

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EPAHO043001756

ATTACHMENTS

A - EMISSION CALCULATIONS

FORMS

TCEQ PI-7CERT FORM

TCEQ §106.4 CHECKLIST

TCEQ §106.261 CHECKLIST

TCEQ §106.262 CHECKLIST

TCEQ §106.472 CHECKLIST

FIGURES

1 - AREA MAP

2 - FACILITY SITE PLAN

3 - PROCESS FLOW DIAGRAM

EPAHO043001757

INTRODUCTION

CES Environmental Services, Inc. (CES) operates tank container cleaning and wastewater treatment facilities at 4904 Griggs Road in Houston, Harris County, Texas (CN600618946, RN100693282) under Texas Commission on Environmental Quality (TCEQ) Permit Exemption No. 15980 and subsequent Permits-By-Rule (PBRs) Registration No. 75375, 83191 and 83798.

CES is submitting the enclosed documentation to demonstrate PBR authorization for the treatment and processing of a wastewater stream containing sulfurized isobutylene at the site. Sulfurized isobutylene wastewater (SIB) is transported to the facility in a truck tank and is pumped into a treatment tank. The SIB undergoes oxidization and acidification then chemical additions to precipitate metals, reduce BOD and suspended solids. Operational details on this operation are found in the Process Description section of this registration.

CES is located in the Houston/Galveston ozone nonattainment area and is classified as a minor source for Volatile Organic Compound (VOC) emissions. The emissions increase associated with this project is calculated as 0.38 tons per year (tpy) of VOC. As a result, the project does not trigger nonattainment netting.

A PI-7-CERT Form with TCEQ §106.4, §106.261 §106.262 and §106.472 Checklists are provided in the Forms section of this report. Emission calculations are provided in Attachment A. A topographic map, facility site plan, and process flow diagram are included in the Figures section.

EPAHO043001758

1.0 PROCESS DESCRIPTION

Sulfurized isobutylene wastewater (SIB) is transported to the facility in a truck tank. This wastewater mixture is composed of water with sulfurized isobutylene and sodium salts of sodium sulfide and sodium hydroxide. The SIB mixture undergoes oxidization, acidification and chemical additions to precipitate metals and suspended solids. The material is then filtered for solid and wastewater disposal.

The percent ranges of the constituents of the received wastewater mixture are as follows: Water at 85-95%; Sulfurized Isobutylene sulfur compound at <5%; Sodium Sulfide at 1–5%; Sodium Hydrosulfide at 2–5%. The wastewater mixture is received via tank truck or isocontainer and transferred into a 10,000-gallon wastewater treatment tank (T1) using a tank-to-tank vapor exchange. Several treatment steps occur in this tank. The first stage is oxidization of the isobutylene and sulfides with a 10% solution of hydrogen peroxide fed at a controlled rate into the treatment tank. This slow transfer rate minimizes the heat of reaction and ensures the complete oxidation of the isobutylene and sulfide compound. The 10% hydrogen peroxide solution is pumped from a 550-gallon dilution tank (H2) supplied by a larger 5,500-gallon tank (H1) storing 35% hydrogen peroxide. Both tanks vent to a water scrubber. The second treatment stage is acidification by introduction of sulfuric acid (97%) to reduce the pH from 10 su to the pH 5.0 su to facilitate solids precipitation. Sulfuric acid is supplied from a small 1,000-gallon storage tank (S).

A vapor collection system using two 24 cfm vacuum pumps draws a negative pressure across the treatment tank capturing all vapors emitted from the transfer processes, the oxidation process and the acidification process. The vapors route to a caustic scrubber vessel where they are diffused into a sodium hydroxide solution. This scrubber then vents to the existing facility scrubber header system that consists of an 85-gallon knockout tank, two in-series 10% caustic and 5% bleach towers then finally a deodorizer tower. The vapor is exhausted with a 10 hp blower through the 30-feet tall vent stack. The overall emission control efficiency of the system is 98%.

The final stages of wastewater treatment involve the addition of ferric chloride, calcium hydroxide and anionic polymer solutions to create a filtrate ready for disposal. The vessel is then mixed thoroughly. The final treatment step is the addition of an anionic polymer. With proper agitation, this final stage of chemical treatment creates the large flocculent that precipitates out solids and reduces BOD.

The precipitated mixture now moves to a sludge tank then through a filter press. The sludge tank vents to the existing facility scrubber system. The filtrate water from the press is discharged via pipeline to an off-site POTW. The solids from the filter press are transferred into a solids bin for proper classification and disposal.

EPAHO043001759

2.0 EMISSIONS SUMMARY

Emissions from the SIB wastewater processing are calculated from tank losses due to material transfers. All volatile materials are vented through a caustic scrubber. Fugitive emissions from potential leaks at valves, pumps, and connections associated with this project are calculated using the methods and emission factors specified in the TCEQ document "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives". Reduction credit is taken for operations personnel monitoring the operations for leaks that can be detected with audible, visible or olfactory means. The total project increase of volatile organics is 0.38 tpy, well below the level requiring non-attainment or PSD review.

EPAHO043001760

PERMIT-BY-PRULE APPLICABILITY

SUMMARY OF PROJECT CHEMICALS

CAS No.	Chemical	PBR
115-11-7	Isobutylene	106.261
772-84-1	Hydrogen peroxide	106.262
1313-82-2	Sodium Sulfide	106.472
16721-80-5	Sodium Hydrosulfide	106.472
7664-93-9	Sulfuric Acid solution	106.472
7705-08-0	Ferric chloride	106.472 / 106.532
1305-62-0	Calcium hydroxide	106.472 / 106.532
---	Polymer solution	106.532
---	Wastewater	106.532

SUMMARY OF PROJECT EQUIPMENT

Status	FIN	Description	Project Use	PBR
new	T1	10,000-gal capacity Vert Fixed Roof Tank	Treatment Tank	106.472 (2), 106.532
new	CSV	Caustic diffuser scrubber vessel	vent control	106.261/106.262
new	H1	5,500-gal capacity Horz Fixed Roof Tank	Hydrogen Peroxide 35% storage	106.262
new	H2	550-gal capacity tote	Hydrogen Peroxide 10% storage	106.262
new	S	220-gal capacity Vert Fixed Roof vessel	Sulfuric Acid Storage	106.472 (5)
new	F	500-gal capacity Vert Fixed Roof Tank	Ferric chloride storage	106.472 (3)/106.532
existing	C	4,000-gal capacity Vert Fixed Roof Tank	calcium hydroxide	106.472 (3)/106.532
N/A	P	55-gal drum	Polymer solution storage	106.532
existing	ST	sludge tank	Waste Water separation	106.532

ATTACHMENT A

EMISSION CALCULATIONS

SUMMARY OF EMISSIONS AND PBR APPLICABILITY DOCUMENTATION

PBR 106.472

Chemical	Storage		Fugitives		Total	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Sodium Sulfide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sodium Hydrosulfide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sulfuric Acid	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Ferric chloride	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
calcium hydroxide	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Neutralization salts	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

PBR 106.261 / 106.262

Chemical	Storage		Fugitives		Total		
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	
Isobutylene	0.1147	0.3819	0.0000	0.0001	0.1147	0.3820	
Hydrogen peroxide	0.0004	0.0002	0.0011	0.0047	0.0015	0.0049	
					0.1162	**0.3870**	**TOTAL**

PBR Compliance

Chemical	Applicable PBR	TLV mg/m^3	PBR Allowable		PBR Compliance	
			lb/hr	TPY	lb/hr	TPY
Isobutylene	106.261	-	1.00	10.0	YES	YES
Hydrogen peroxide	106.262	1.4	0.009	5.0	YES	YES

PBR Allowables:

		lb/hr	ton/yr
106.261		1.0	10.0
106.262	E=L/K		5.0

L = TLV (mg/m^3)
K = 157 ,receptor distance > 270 ft

EPAHO043001763

TANK EMISSION CALCULATIONS

	Tank ID:	T1	H1	H2	S	F	C	T2	ST
	Material:	Sulfurized Isobutylene	Hydroxide Peroxide 35%	Hydrogen Peroxide 10%	Sulfuric Acid	Ferric Chloride	Calcium Hydroxide	Treated Wastewater	Sludge/Treated Wastewater
Annual Throughput, gal/yr	Q =	832,000	582,400	499,200	45,760	6,240	104,000	1,493,440	1,493,440
Max Hourly Transfer Rate, gal/hr	FR =	4,000	1,100	550	50	50	50	50	50
Emissions:									
Maximum Hourly Emissions, lb/	**Lmax =**	**0.13528**	**0.00212**	**0.00150**	**0.00000**	**0.01551**	**0.01389**	**0.00027**	**0.00000**
Total Annual Emissions, TPY	**Lt =**	**0.45058**	**0.01807**	**0.00041**	**0.00000**	**0.00086**	**0.01052**	**0.11311**	**0.00000**
Annual Average Hourly Emis, lb/h	Lavg =	0.103	0.004	0.00009	0.000	0.000	0.002	0.026	0.000
Standing loss, lb/yr	Ls =	16.174	2.989	0.073	0.000	0.687	5.626	9.031	0.000
Working loss, lb/yr	Lw =	884.993	33.143	0.748	0.000	1.032	15.404	217.184	0.000
Material Properties:									
Molecular Weight, lb/lb-mole	Mv =	42.42	6.87	8.08	98.07	18.00	18.00	18.00	0.00
Vapor Pressure @ Tla, psia	Pva =	1.05	0.35	0.39	0.00	0.39	0.35	0.34	0.00
Vapor Pressure @ Tln, psia	Pvn =	0.93	0.29	0.33	0.00	0.33	0.29	0.29	0.00
Vapor Pressure @ Tlx, psia	Pvx =	1.19	0.41	0.46	0.00	0.46	0.41	0.40	100.00
Max. Vapor Pressure @ mTlx, psi	Pvmax =	1.67	0.59	0.71	0.00	0.72	0.65	0.64	0.00
Tank Properties:									
Vapor control device		scrubber	scrubber	scrubber	scrubber	none	none	scrubber	scrubber
Vapor control efficiency, %	e =	98	98	98	98	0	0	98	98
Capacity volume, gal	Cv =	8,272	4,888	564	940	470	4,230	8,272	940
Shell Diameter, ft	D =	8.0	8.0	4.0	4.0	4.0	12.0	8.0	4.0
Shell Height/Length, ft	Hs =	22.0	13.0	6.0	10.0	5.0	5.0	22.0	10.0
Tank Orientation (vertical or horizontal)		vert	horiz	vert	vert	vert	vert	vert	vert
Roof type (cone or dome)		cone	N/A	cone	cone	cone	cone	cone	cone
Tank Color (white, light gray, other)		white	white	white	white	white	white	white	white
Solor absorbance factor	a =	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Pressure vent setting, psig	Pbp =	0.3	0	0.3	0	0	0	0	0
Vacuum vent setting, psia	Pbv =	-0.3	0	-0.3	0	0	0	0	0
Effective diameter, ft	De =	8.0	11.5	4.0	4.0	4.0	12.0	8.0	4.0
Avg. Liquid Height, ft	Hl =	11.0	4.0	3.0	5.0	2.5	2.5	11.0	5.0
Max. Liquid Height, ft	Hlx =	22.0	8.0	6.0	10.0	5.0	5.0	22.0	10.0
Roof Outage, ft	Hro =	0.00	0.00	0.04	0.04	0.04	0.13	0.08	0.04
Vapor Space Outage, ft	Hvo =	11.00	4.00	3.04	5.04	2.54	2.63	11.08	5.04
Vapor space volume, ft^3	Vv =	552.92	416.21	38.22	63.36	31.94	296.88	557.11	63.36

EPAHO043001764

Operating Conditions (Houston, Tx):									
Atmospheric pressure, psia	Pa =	14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7
Annual Avg. Daily solar insulation	I =	1351	1351	1351	1351	1351	1351	1351	1351
Annual Avg. Daily max. ambient te	Tax =	539.1	539.1	539.1	539.1	539.1	539.1	539.1	539.1
Annual Avg. Daily min. ambient te	Tan =	517.4	517.4	517.4	517.4	517.4	517.4	517.4	517.4
Annual Avg. Daily vapor temp. rar	^Tv =	22.1	22.1	22.1	22.1	22.1	22.1	22.1	22.1
Annual Daily avg. liquid surface te	Tla =	530.1	530.1	520.0	530.1	530.1	530.1	530.1	530.1
Annual Avg. Daily min. liquid surfa	Tln =	524.6	524.6	515.0	524.6	524.6	524.6	524.6	524.6
Annual Avg. Daily max. liquid surf	Tlx =	535.6	535.6	525.0	535.6	535.6	535.6	535.6	535.6
Highest Month Daily solar insulatio	ml =	1898	1898	1898	1898	1898	1898	1898	1898
Highest Month Daily max. ambien	mTax =	553.6	553.6	553.6	553.6	553.6	553.6	553.6	553.6
Highest Month Daily min. ambient	mTan =	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5
Highest Month Daily vapor temp. t	m^Tv =	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2
Highest Month Daily max. liquid su	mTlx =	551.7	551.7	525.0	551.7	551.7	551.7	551.7	551.7
Gas Constant, psia-ft^3/lb mole-R	R =	10.73	10.73	10.73	10.73	10.73	10.73	10.73	10.73
Vapor Density, lb/ft^3	Wv =	0.008	0.000	0.001	0.000	0.001	0.001	0.001	0.000
Daily vapor pressure range, psia	^Pv =	0.257	0.124	0.134	0.000	0.131	0.117	0.115	100.000
Vapor space expansion factor	Ke =	0.016	0.050	0.010	0.042	0.051	0.050	0.050	6.844
Vented vapor saturation factor	Ks =	0.620	0.931	0.941	1.000	0.951	0.954	0.834	1.000
Working Loss Product Factor	Kp =	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turnovers	N =	100.58	119.15	885.14	48.68	13.28	24.59	180.55	1588.83
Turnover factor	Kn =	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Operating Days, days/yr	Days =	365	365	365	365	365	365	365	365

EPAHO043001765

TANK EMISSION SPECIATION

	Tank ID:	T1		H1		H2		S		F		C		T2		ST	
	EPN:	T1		H1		H2		S		F		C		T2		ST	
Stream	**wt frac.**	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
Isobutylene	0.8476	0.1147	0.3819														
Sodium Sulfide(salt)	0.0000	0.0000	0.0000														
Sodium Hydrosulfide (salt)	0.0000	0.0000	0.0000														
Water	0.1524	0.0206	0.0687														
Hydrogen Peroxide 35%	0.0463			0.0001	0.0001												
Hydrogen Peroxide 10%	0.2191					0.0003	0.0001										
Sulfuric Acid	1.0000							0.0000	0.0000								
Ferric Chloride solution	0.0000									0.0000	0.0000						
water	1.0000									0.0155	0.0387						
Calcium Hydroxide	0.0000											0.0000	0.0000				
Water	1.0000											0.0139	0.0105				
Isobutylene	0.0000													0.0000	0.0000		
Hydrogen Peroxide 10%	0.0000													0.0000	0.0000		
Salts	0.0000													0.0000	0.0000		
Sulfuric Acid	0.0000													0.0000	0.0000		
Water	1.0000													0.0003	0.1131		
Neutralization salts	0.0000															0.0000	0.0000
Water	0.0000															0.0000	0.0000

Speciation	lb/hr	TPY
Isobutylene	0.1147	0.3819
Sodium Sulfide(salt)	0.0000	0.0000
Sodium Hydrosulfide (salt)	0.0000	0.0000
Hydrogen Peroxide	0.0004	0.0002
Sulfuric Acid	0.0000	0.0000
Ferric Chloride solution	0.0000	0.0000
Calcium Hydroxide	0.0000	0.0000
Neutralization salts	0.0000	0.0000
Water	0.0503	0.2310

EPAHO043001766

FUGITIVE EMISSION ESTIMATES

MATERIAL	FIN	VP (psia)	Liquid wt frac.	Stream Type LL,HL,G/V	Valves	lbs/hr	Flanges	lbs/hr	Gas/Vapor Valves	lbs/hr	Gas/Vapor Flanges	lbs/hr	Pumps	lbs/hr	Relief Valves	lbs/hr	Agitator	lbs/hr	Total lb/hr	EMISSIONS (lb/hr)	(ton/yr)
Isobutylene	T1	1.67428	0.0500	LL	8	0.00084	22	0.00033	0	0	0	0	1	0.002702	1	0.006879	1	0.000015	0.0005	0.0000	0.0001
Hydrogen peroxide 30%	H1	0.58773	0.3000	LL	8	0.00084	20	0.0003	0	0	0	0	1	0.002702	1	0.006879	0	0	0.0032	0.0010	0.0042
Hydrogen peroxide 10 %	H2	0.70865	0.1000	LL	16	0.00168	44	0.00066	0	0	0	0	1	0.002702	1	0.006879	1	0.000015	0.0012	0.0001	0.0005
																				0.0011	0.0049

Speciation	Total lb/hr	TPY
Isobutylene	0.0000	0.0001
Hydrogen peroxide	0.0011	0.0047
Total	0.0011	0.0049

Total is multiplied by liquid weight fraction
365 days in service

Monitoring is performed in accordance with TCEQ AVO.

SOCMI Factors	Valves	Flanges	G/V Vlv	G/V Flng	Pumps	Relief Vlv	Agitator
Light Liquid (LL)	0.0035	0.0005	--	--	0.0386	--	0.0005
Gas / Vapor (G/V)	--	--	0.0089	0.0029	--	0.2293	--
Heavy Liquid (HL)	0.0007	0.00007	--	--	0.0161	--	0.00007
LL,G/V - Efficiency (%)	97	97	97	97	93	97	97
HL - Efficiency (%)	0	0	30	30	0	0	0

* Per TNRCC guidance, fugitive emissions are not estimated for materials with vapor pressure < 0.002 psia.

EPAHO043001767

FORMS

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services, Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Rd.			
City: Houston		State: TX	Zip Code: 77021
Phone No.: (713) 676-1460	Fax No.: (713) 676-1676	E-mail Address: mbowman@cesenvironmental.com	
C. Technical Contact Name: Philip Evans			
Company: The WCM Group, Inc.			
Mailing Address: 110 Bender Ave			
City: Humble		State: TX	Zip Code: 77336
Phone No. : (281) 446-7070	Fax No.: (281) 446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Rd.			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris		Zip Code: 77021

II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services Inc.			X Permanent ☐ Portable
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106.261	§ 106.532		
§ 106.262	§ 106.		
§ 106.472	§ 106.		
Are you claiming a **historical standard exemption or PBR**?			☐ YES X NO
If "YES," enter effective date and Rule Number:			
C. Are you registering a **grandfathered** facility? *If "YES," attach documentation of construction date:*			☐ YES X NO
D. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes)			X YES ☐ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261/262	
E. Are there any **other facilities** at this **site** which are **authorized by an Air Standard Exemption or PBR**?			☐ YES X NO
If "YES," enter Registration Number and Rule Number:			
F. Are there any **other air preconstruction permits** at this site?			☐ YES X NO
If "YES," enter Permit Numbers:			
G. Is this site required to obtain an **air federal operating permit**?			☐ YES X NO
If "YES," enter Permit Number:			
H. TCEQ Account Identification Number *(if known)*:	HG-1270-B		

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Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION			
To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.			
A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?			☐ YES X NO
B. What is the fee amount? *If "YES," to any of the following three questions, a **$100** fee is require. Otherwise, a **$450** fee is required.*			
Does this business have less than 100 employees?			X YES ☐ NO
Does this business have less than 1 million dollars in annual gross receipts?			☐ YES X NO
Is this registration submitted by a governmental entity with a population of less than 10,000?			☐ YES X NO
C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:		*Was fee **Paid** online?*	☐ YES X NO
Company name of check:		Fee amount:	$100

IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION		
Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:		
Animal Feeding Operations § 106.161 ***Livestock Auction Facilities § 106.162*** ***Saw Mills § 106.223***		
Grain Handling, Storage and Drying § 106.283 ***Auto Body Refinishing Facilities § 106.436*** ***Air Curtain Incinerator § 106.496***		
A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES".)*		☐ YES ☐ NO
B. Distance from this facility's emission release point to the nearest property line:		feet
Distance from this facility's emission release point to the nearest off-property structure:		feet

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS ***Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.***		
A. Is Confidential information submitted and properly marked "CONFIDENTIAL" with this registration?		☐ YES X NO
B. Is a process flow diagram or a process description attached?		X YES ☐ NO
C. Are emissions data and calculations for this claim attached?		X YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)		X YES ☐ NO
*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*		
E. Is information attached showing how the **specific PBR** requirements are met for this registration? (***PBR checklist** may be used, but are optional*)		X YES ☐ NO
F. Distance from this facility's emission release point to the nearest property line:	100	feet
Distance from this facility's emission release point to the nearest off-property structure:	270	feet
Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.		

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE:	DATE:

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form. and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
AIR PERMITS DIVISION

TITLE 30 TAC § 106.4 "QUICK-CHECK" APPLICABILITY CHECKLIST

Company Name: CES Environmental Services, Inc.
Checklist completed by: The WCM Group, Inc. Date: 04/09/2008
Facility Type: Tank Spot Vessel Cleaning & Waste Processing
Permit(s) by rule claimed: 30 TAC Chapter §106: 261, 262, 472, 532
Project Description (including equipment, materials, and brief process description):

This project installs a treatment tank and associated chemical storage vessels to process a sulfurized isobutylene wastewater stream through oxidation, acidification and chemical treatment. The settled solution is then separated for solid and liquid disposal.

CO	0.00	NO_X	0.00	VOC	0.38
PM	0.00	SO_2	0.00	Other (H_2O_2)	0.005

The following questions require a "Yes" or "No" answer to be indicated for this permit by rule claim:

A. Title 30 TAC § 106.4(a)(5): Current Permit by Rule Requirements

Yes X No☐ Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106?
If "Yes ", continue to next question If "No ", please contact the Air Permits Division for a copy of the current permit by rule to be claimed.

B. Title 30 TAC § 106.4(a)(7): Permit by rule prohibition check

Yes☐ No X Are there any air permits under the same account containing permit conditions which prohibit or restrict the use of permits by rule?
If "No ", continue to next question
If "Yes ", permits by rule may not be used or their use must meet the restrictions of the permit.
A new permit or permit amendment may be required.
List permit number(s): _____

C. Title 30 TAC § 106.4(b): Circumvention check

Title 30TAC§ 106.4(b) states "No person shall circumvent by artificial limitations the requirements of§l 16.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:

A. dividing a complete project into separate segments to circumvent §106.4(a)(l) limits;
B. claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity;
C. claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized.

Yes☐ No X Does your project meet any of the criteria listed above?
If "No ", continue to next rule question If "Yes ", a permit y rule may not be claimed.

D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules

Yes X No☐ Will the facility comply with all rules and regulations of the TCEQ, the intent of the Texas Clean Air Act, and any local permitting or registration requirements? *If "Yes ", continue to next rule question If "No ", a permit by rule may not be claimed.*

E. Title 30 TAC § 106.4(a)(l): Emission limits check

Yes X No☐ The maximum emissions from all facilities at the site, including this permit by rule claim, are less than 25 tpy of any contaminant.
If the answer to this questions is "Yes ", no further review is needed to complete this checklist. Forward all information needed to verify your permit by rule claim to the . If "No ", this checklist cannot be used. Please complete the standard 30 TAC § 106.4 Applicability Checklist.

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here [ ] if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER	
Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES ☐ NO ☐N/A
b1 Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
b2 Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐N/A
a1 Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES ☐ NO ☐N/A
a2 Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials (check all that apply):	☐ YES ☐ NO X N/A

☐ acetylene	☐ helium	☐ propyl ether	☐ limestone
☐ argon	☐ isohexane	☐ sulfur dioxide	☐ magnesite
☐ butane	☐ isopropyl alcohol	☐ alumina	☐ marble
☐ crude oil	☐ methyl acetylene	☐ calcium carbonate	☐ pentaerythritol
☐ carbon monoxide	☐ methyl chloroform	☐ calcium silicate	☐ plaster of paris
☐ cyclohexane	☐ methyl cyclohexane	☐ cellulose fiber	☐ silicon
☐ cyclohexene	☐ neon	☐ cement dust	☐ silicon carbide
☐ cyclopentan	☐ nonan	☐ emery dust	☐ starch
☐ ethyl acetate	☐ oxides of nitrogen	☐ glycerin mist	☐ sucrose
☐ ethanol	☐ propane	☐ gypsum	☐ zinc stearate
☐ ethyl ether	☐ propyl alcohol	☐ iron oxide dust	☐ zinc oxide
☐ ethylene	☐ propylene	☐ kaolin	

☐ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene
☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116

a3 Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? List chemical:_____ L value:_____	☐ YES ☐ NO X N/A
Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? List chemical:___isobutylene_____	X YES ☐ NO ☐ N/A

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	Are total new or increased emissions, including fugitives,of a chemical with a limit value of less than 200 mg/m^3? If "Yes" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC §106.262 to authorize the emissions, if applicable.	☐ YES ☐ NO X N/A
a4	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES X NO ☐N/A
a5	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES X NO ☐N/A
a6	Are emission increases five tons per year or greater? If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.	☐ YES X NO ☐N/A
a7	Are emission increases less than five tons per year? If "YES," this checklist must be attached to a Form PI-7 and include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any. (pick one): X Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or ☐ By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	X YES ☐ NO ☐N/A

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Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.
The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.262 (30 TAC § 106.262) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER			
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES	☐ NO ☐ N/A
b1.	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	X NO ☐ N/A
b2.	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard perm? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	X NO ☐ N/A
c.	Is the facility authorized under another section of this chapter or under a standard permit? *If "YES," subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*	X YES	☐ NO ☐ N/A
a1.	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES	☐ NO ☐ N/A
a2.	Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K? See Table 262 Figures 1 and 2. *If "YES," the notification shall include a description of the project, calculations for all emissions being claimed under this PBR:*	X YES	☐ NO ☐ N/A
	Chemical: hydrogen peroxide L value: 1.4 D: 270 K: 157		
a3.	Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? *If "YES," the notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, and a description of pollution control equipment, if any..*	X YES	☐ NO ☐ N/A
a4.	Are one or more of the following chemicals is handled for this registration? (Check all that apply) *If "YES," answer the following four questions.*	☐ YES	X NO ☐ N/A

☐ acrolein	☐ diazomethane	☐ hydrogen sulfide	☐ ozone
☐ allyl chloride	☐ diborane	☐ ketene	☐ pentaborne
☐ ammonia (anhydrous)	☐ diglycidyl ether	☐ methylamine	☐ perchloromethyl mercaptan
☐ arsine	☐ dimethylhydrazine	☐ methyl bromide	☐ perchloryl fluoride
☐ boron trifluoride	☐ ethyleneimine	☐ methyl hydrazine	☐ phosgene
☐ bromine	☐ ethyl mercaptan	☐ methyl isocyanate	☐ phosphine
☐ carbon disulfide	☐ fluorine	☐ methyl mercaptan	☐ phosphorus trichloride
☐ chlorine	☐ formaldehyde (anhydrous)	☐ nickel carbonyl	☐ selenium
☐ chlorine dioxide	☐ hydrogen bromide	☐ nitric acid	☐ hexafluoride stibine
☐ chlorine trifluoride	☐ hydrogen chloride	☐ nitric oxide	☐ liquefied sulfur dioxide
☐ chloroacetaldehyde	☐ hydrogen cyanide	☐ nitrogen dioxide	☐ sulfur pentafluorid
☐ chloropicrin	☐ hydrogen fluoride	☐ oxygen difluoride	☐ tellurium hexafluoride
☐ chloroprene	☐ hydrogen selenide		

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Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

	Are all facilities are located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor?	❑ YES	❑ NO	❑ N/A
	Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) less than or equal to 500 pounds on the plant property?	❑ YES	❑ NO	❑ N/A
	Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation (49 Code of Federal Regulation, Parts 171-178)?	❑ YES	❑ NO	❑ N/A
	Are any changes to or additions of any existing air pollution abatement equipment?	❑ YES	❑ NO	❑ N/A
a5.	Are there any changes to or additions of any existing air pollution abatement equipment?	❑ YES	❑ NO	❑ N/A
a6.	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater that 5.0% opacity in any six-minute period?	❑ YES	❑ NO	❑ N/A

D, Feet	K	
100	326	E=maximum allowable hourly emission, and never to exceed 6 pounds per hour.
200	200	
300	139	
400	104	
600	65	
700	54	
800	46	K=value from the table on this page. (interpolate intermediate values)
900	39	
1,000	34	
2,000	14	D=distance to the nearest off-plant receptor
3,000 or more	8	

TABLE 262
LIMIT VALUES (L) FOR USE WITH EXEMPTIONS FROM PERMITTING § 106.262

The values are not to be interpreted as acceptable health effects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Acetone	590.
Acetaldehyde	9.
Acetone	4.
Acetonitrile	34.
Acetylene	2662.
N-Amyl Acetate	2.7
Sec-Amyl Acetate	1.1
Benzene	3.
Beryllium and Compounds	0.0005
Boron Trifluride, as HF	0.5
Butyl Alcohol,	76.
Butyl Acrylate	19.
Butyl Chromate	0.01
Butyl Glycidyl Ether	30.
Butyl Mercaptain	0.3
Butyraldehyde	1.4
Butyric Acid	1.8
Butyronitrile	22.
Carbon Tetrachloride	12.
Chloroform	10.
Chlorophenol	0.2
Chloroprene	3.6
Chromic Acid	0.01
Chromium Metal, Chromium II and III Compounds	0.1
Chromium VI Compounds	0.01
Coal Tar Pitch Volatiles	0.1
Creosote	0.1
Cresol	0.5
Cumene	50.
Dicyclopentadiene	3.1
Diethylaminoethanol	5.5
Diisobutyl Ketone	63.9
Dimethyl Aniline	6.4
Dioxane	3.6

Compound	Limit (L) Milligrams Per Cubic Meter
Dipropylamine	8.4
Ethyl Acrylate	0.5
Ethylene Dibromide	0.38
Ethylene Glycol	26.
Ethylene Glycol Dinitrate	0.1
Ethylidene 2-norbornene, 5-	7.
Ethyl Mercaptan	0.08
Ethyl Sulfide	1.6
Glycolonitrile	5.
Halothane	16.
Heptane	350.
Hexanediamine, 1, 6-	0.32
Hydrogen Chloride	1.
Hydrogen Fluoride	0.5
Hydrogen Sulfide	1.1
Isoamyl Acetate	133.
Isoamyl Alcohol	15.
Isobutyronitrile	22.
Kepone	0.001
Kerosene	100.
Malononitrile	8.
Mesityl Oxide	40.
Methyl Acrylate	5.8
Methyl Amyl Ketone	9.4
Methyl-T-Butyl Ether	45.
Methyl Butyl Ketone	4.
Methyl Disulfide	2.2
Methylenebis (2-chloroaniline) (MOCA)	0.003
Methylene Chloride	26.
Methyl Isoamyl Ketone	5.6
Methyl Mercaptan	0.2
Merthyl Methacrylate	34.
Methyl Propyl Ketone	530.
Methyl Sulfide	0.3
Mineral Spirits	350.
Naphtha	350.
Nickel, Inorganic Compounds	0.015
Nitroglycerine	0.1

Compound	Limit (L) Milligrams Per Cubic Meter
Nitropropane	5.
Octane	350.
Parathion	0.05
Pentane	350.
Perchloroethylene	33.5
Petroleum Ether	350.
Phenyl Mercaptan	0.4
Propionitrile	14.
Propyl Acetate	62.6
Propylene Oxide	20.
Propyl Mercaptan	0.23
Silica-amorphous-precipitated, silica gel	4.
Silicon Carbide	4.
Stoddard Solvent	350.
Styrene	21.
Succiononitrile	20.
Tolidin	0.02
Trichloroethylene	135.
Trinethylamine	0.1
Valeric Acid	0.34
Vinyl Acetate	15.
Vinyl Chloride	2.

NOTE: The time weighted average (TWA) threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (AGGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short Term Exposure Level (STEL) or Ceiling Limit (annotated with a "C") published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.

Texas Commission on Environmental Quality

Exemption §106.472 Checklist
(Previously Standard Exemption 51)

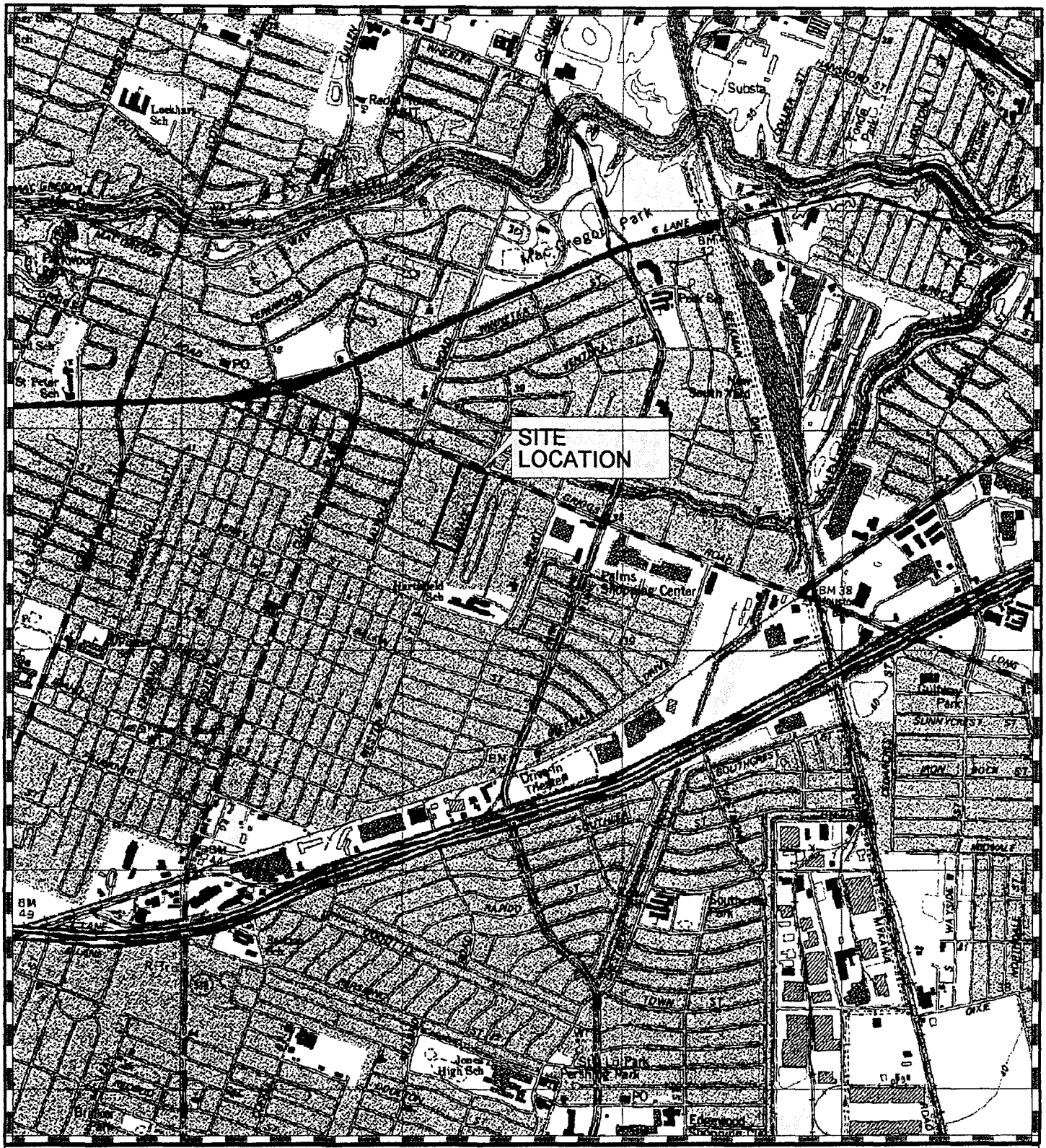
Organic Liquid Loading and Unloading

The following checklist is designed to help you confirm that you meet §106.472, previously Standard Exemption 51 (STDX 51), requirements. **Any "no" answers indicate that the claim of registration may not meet all requirements for the use of Exemption §106.472, previously Standard Exemption 51.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met, or obtain a construction permit.

YES	NO	NA	DESCRIPTION
X	_	_	Have you included a description of how this exemption claim meets the general rule for the use of exemptions (§106, Subchapter A checklist is available)?
X	_	_	Are all the facilities claimed for exemption specifically named in the general section of §106.472, previously STDX 51? (This exemption has been interpreted to allow mixing or blending but not chemical reaction in tankage.)
X	_	_	Is the equipment designed to prevent visible emissions?
X	_	_	Are all the chemicals to be loaded, unloaded, or stored described in §106.472, previously STDX 51(a) - (i)? Attach a list of the chemicals and identify the appropriate item of §106.472, previously STDX 51 that applies. Include additional supporting data. For example, a §106.472, previously STDX 51(i), claim should identify initial boiling points of all compounds to be covered.
_	_	X	Will aqueous ammonia solutions, hydrochloric acid, or acetic acid be vented through a water scrubber?
_	_	X	Are facilities loading, unloading, or storing butyric acid, isobutyric acid, methacrylic acid, mercaptans, croton oil, 2-methyl styrene, or any other compound with an initial boiling point of 300 degrees F or greater listed in 40 CFR 261, Appendix VIII, located at least 500 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facility or the owner of the property upon which the facility is located? List these compounds and show their handling location on an attached scaled plot plan.

FIGURE 1

TOPOGRAPHIC MAP



1320 0 1320
1:24,000 1" = 2000 feet feet

TOPOGRAPHIC MAP

CES ENVIRONMENTAL SERVICES, INC.

4904 GRIGGS ROAD

HOUSTON, HARRIS COUNTY, TEXAS

North

FIGURE

1

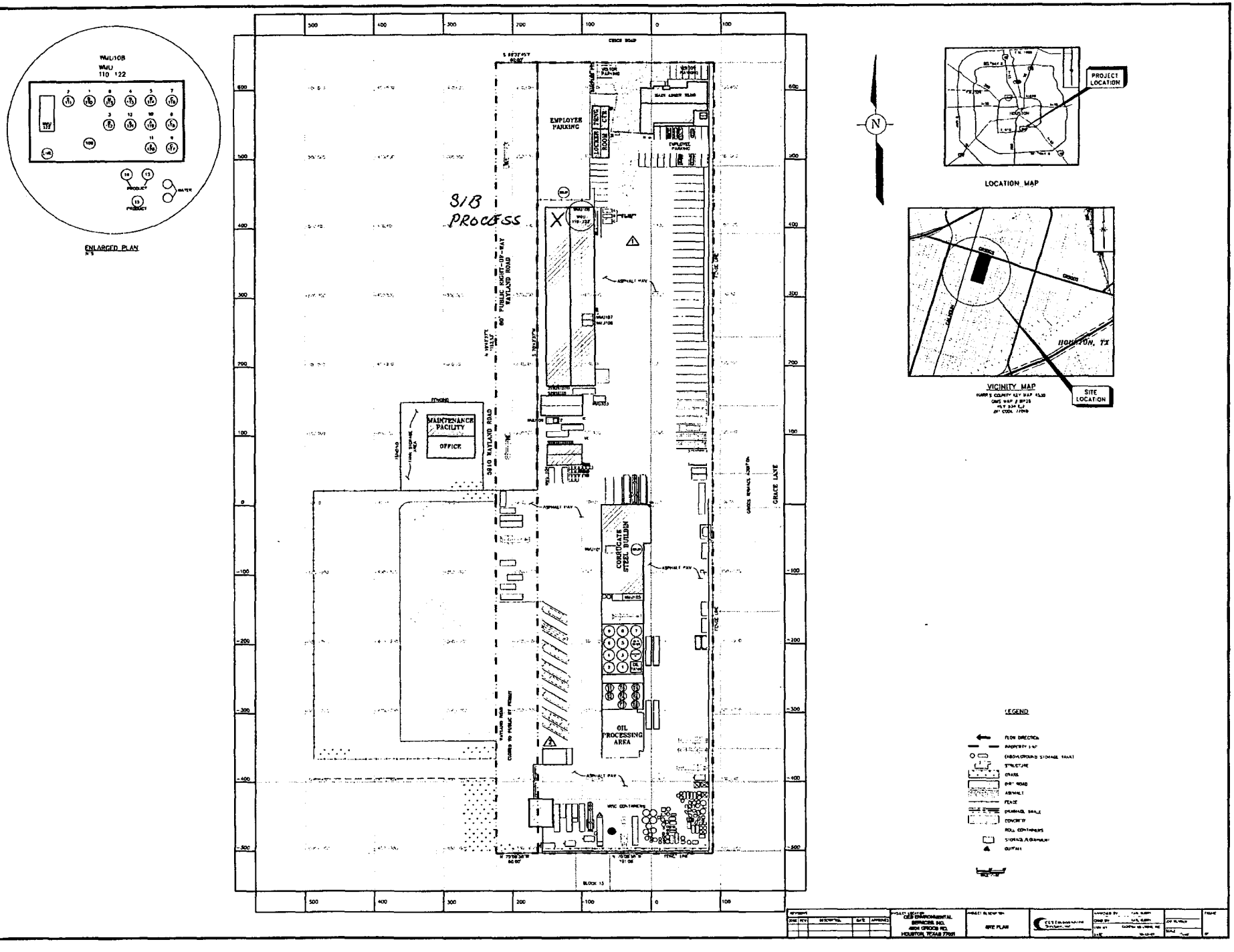
Reproduced from U.S. Topographic Quadrangle: Park Place Texas; Zone 15

DRAWN BY: LLS DATE: 04-10-2008

FILE: H:-client-CES-Houston site.geo

FIGURE 2

FACILITY SITE PLAN



EPAHO043001784

FIGURE 3

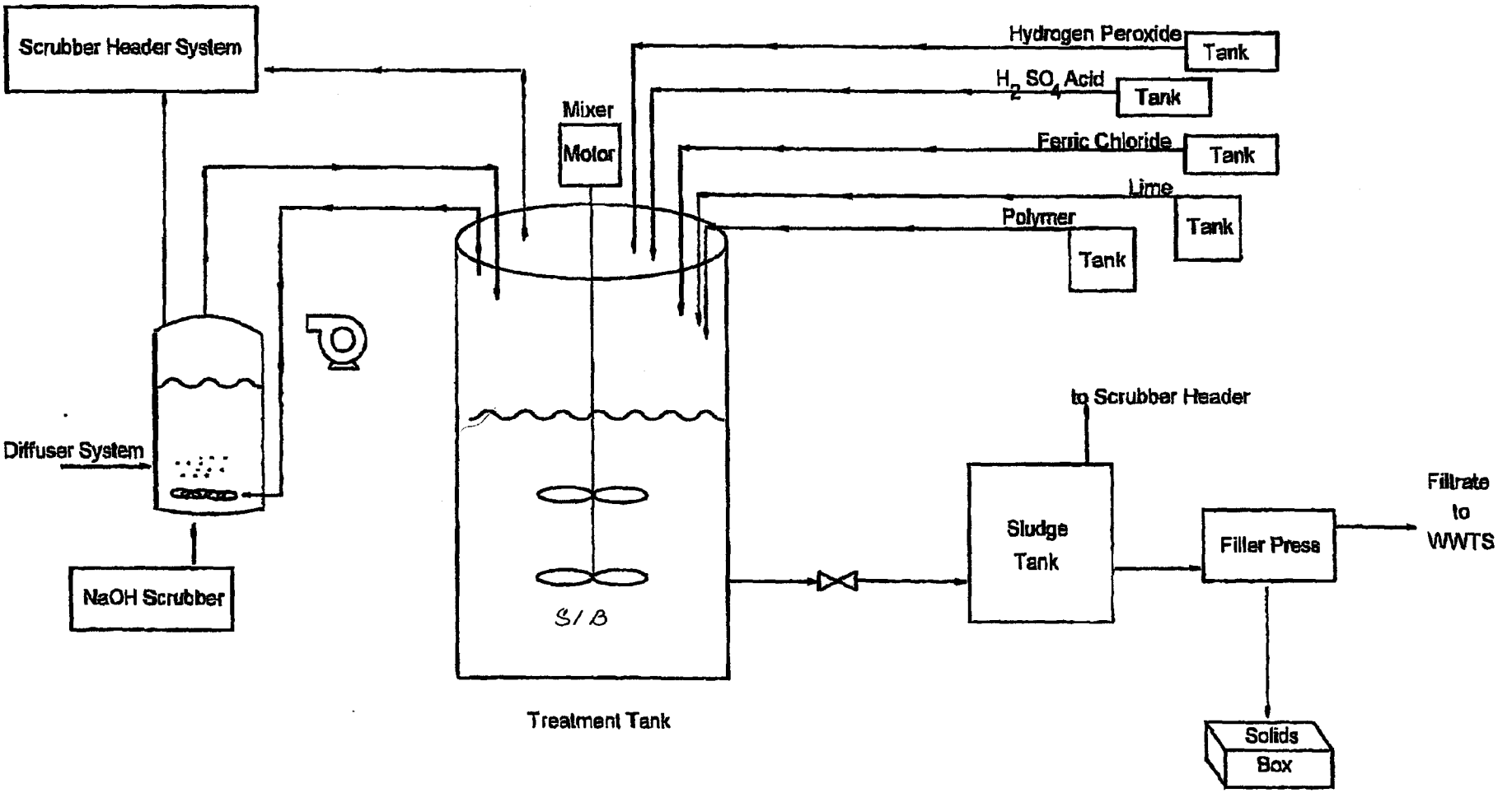
PROCESS FLOW DIAGRAM

CES Environmental Services, Inc .

SIB Rinse Water Treatment

Process Flow Diagram

March 28, 2008



EPAHO043001786

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 23, 2008

RECEIVED
MAY 30 2008
BY:

MR MATT BOWMAN
PRESIDENT
CES ENVIRONMENTAL SERVICES
4904 GRIGGS RD
HOUSTON TX 77021

Permit by Rule Registration Number:	84713
Location/City/County:	4904 Griggs Rd, Houston, Harris County
Project Description/Unit:	Treatment of Sulfurized Isobutylene Wastewater
Regulated Entity Number:	RN100693282
Customer Reference Number:	CN600618946
New or Existing Site:	Existing
Affected Permit (if applicable):	None
Renewal Date (if applicable):	None

CES Environmental Services, Inc., has certified the emissions associated with the treatment of sulfurized isobutylene wastewater under Title 30 Texas Administrative Code §§ 106.261, 106.262, 106.472, 106.532. For rule information see www.tceq.state.tx.us/permitting/air/nav/numerical_index.html.

No planned MSS emissions have been represented or reviewed for this registration and none will be authorized by this registration. The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements. This certification is taken under the authority delegated by the Executive Director of the TCEQ. If you have questions, please contact Mr. Jon Edwards, P.E. at (512) 239-5863.

All analytical data generated by a mobile or stationary laboratory to support the compliance with an air permit must be obtained from a NELAC (National Environmental Laboratory Accreditation Conference) accredited laboratory. For additional information regarding the laboratory accreditation program, please see the following website which includes the accreditation and exemption information:
http://www.tceq.state.tx.us/compliance/compliance_support/qa/env_lab_accreditation.html

Sincerely,

Certified Emissions:

VOCs	0.38	tpy
PM as Inorganics	0.17	tpy

Anne M. Inman, P.E., Manager
Rule Registrations Section
Air Permits Division

cc: Bureau Chief of Air Quality Control, Health and Human Services Department, City of Houston, Houston
Director, Environmental Public Health Division, Harris County Public Health and Environmental Services, Pasadena
Air Section Manager, Region 12 - Houston
Project Number: 137945

EPAHO043001787

PI-7-CERT PBR
01-02-2008

EPAHO043001788

office
FDS 04

COPY

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Rd.			
City: Houston		State: TX	Zip Code: 77021
Phone No.: (713) 676-1460	Fax No.: (713) 676-1676	E-mail Address: mbowman@cesenvironmental.com	
C. Technical Contact Name: Philip Evans			
Company: The WCM Group, Inc.			
Mailing Address: 110 Bender Ave			
City: Humble		State: TX	Zip Code: 77336
Phone No. : (281) 446-7070	Fax No.: (281) 446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Rd.			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris		Zip Code: 77021

II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services Inc.			X Permanent ☐ Portable
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106.261	§ 106.		
§ 106.262	§ 106.		
§ 106.472	§ 106.		
Are you claiming a **historical standard exemption or PBR**?			☐ YES X NO
If "YES," enter effective date and Rule Number:			
C. Are you registering a **grandfathered** facility? *If "YES," attach documentation of construction date:*			☐ YES X NO
D. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes)			☐ YES X NO
If "YES," enter Registration Number and Rule Number:			
E. Are there any **other facilities** at this **site** which are **authorized by an Air Standard Exemption or PBR**?			X YES ☐ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261/262	
F. Are there any **other air preconstruction permits** at this site?			☐ YES X NO
If "YES," enter Permit Numbers:			
G. Is this site required to obtain an **air federal operating permit**?			☐ YES X NO
If "YES," enter Permit Number:			
H. TCEQ Account Identification Number *(if known)*:	HG1270B		

EPAHO043001790

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION

To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.

A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?			☐ YES X NO
B. What is the fee amount? *If "YES," to any of the following three questions, a **$100** fee is require. Otherwise, a **$450** fee is required.*			
Does this business have less than 100 employees?			X YES ☐ NO
Does this business have less than 1 million dollars in annual gross receipts?			☐ YES X NO
Is this registration submitted by a governmental entity with a population of less than 10,000?			☐ YES X NO
C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:		*Was fee **Paid** online?*	☐ YES X NO
Company name of check:		Fee amount:	$100

IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION

Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:

Animal Feeding Operations § 106.161 ***Livestock Auction Facilities § 106.162*** ***Saw Mills § 106.223***

Grain Handling, Storage and Drying § 106.283 ***Auto Body Refinishing Facilities § 106.436*** ***Air Curtain Incinerator § 106.496***

A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES".)*		☐ YES ☐ NO
B. Distance from this facility's emission release point to the nearest property line:		feet
Distance from this facility's emission release point to the nearest off-property structure:		feet

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS

Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.

A. Is Confidential information submitted and properly marked "CONFIDENTIAL" with this registration?		☐ YES X NO
B. Is a process flow diagram or a process description attached?		X YES ☐ NO
C. Are emissions data and calculations for this claim attached?		X YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)		X YES ☐ NO

*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*

E. Is information attached showing how the **specific PBR** requirements are met for this registration? (***PBR checklist** may be used, but are optional*)		X YES ☐ NO
F. Distance from this facility's emission release point to the nearest property line:	100	feet
Distance from this facility's emission release point to the nearest off-property structure:	125	feet

Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE:	DATE: 1-2-08

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form. and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

EPAHO043001792

COPY

ENVIRONMENTAL PROFESSIONALS

WCM

The WCM Group, Inc.

January 2, 2008

Mr. David Howell
Permits Administrative Review (PAR) Section (MC 166)
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
12100 Park 35 Circle, Building F, First Floor, Room 1206
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
P2487110

Reference: CES Environmental Services, Inc.
4904 Griggs Road
Houston, Harris County, Texas
Registration of Permits-By-Rule §106.261, §106.262, and §106.472
CN600618946; RN100693282

Dear Mr. Howell:

On behalf of CES Environmental Services, Inc. (CES), please find enclosed documentation authorizing the operation of an Oil Improvement Process at the referenced site. The process qualifies for authorization under Permits-By-Rule (PBRs) §106.261, §106.262, and §106.472.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Mat Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Michael D. Clark for Philip Evans

Philip B. Evans
Director, Technical Services

PBE/tv
26661:5330008.lts.doc

Enclosure

cc: M. Bowman
L. Vasse
B. Allen

EPAHO043001793

ENVIRONMENTAL PROFESSIONALS

The WCM Group, Inc.

January 2, 2008

Mr. John Racanelli
Revenue Section (MC-214)
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
12100 Park 35 Circle, Building F, Room 1206
Austin, Texas 78753

LONE STAR
AIRBILL NUMBER
P2487111

Reference: CES Environmental Services, Inc.
4904 Griggs Road
Houston, Harris County, Texas
Registration of Permits-By-Rule §106.261, §106.262, and §106.472
CN600618946; RN100693282

Dear Mr. Racanelli:

On behalf of CES Environmental Services, Inc. (CES), please find enclosed a check in the amount of $100 to cover the fee for the above referenced Permit-By-Rule (PBR) registration. A copy of the PI-7-CERT Form is also enclosed.

If you have questions regarding this registration, or require further information, please do not hesitate to contact Mr. Mat Bowman of CES at (713) 676-1460, or me directly at (281) 446-7070.

Sincerely,

Michael D. Chestnut for Philip Evans

Philip B. Evans
Director, Technical Services

PBE/tv
26661:5330008.lts.doc

Enclosures

cc: M. Bowman
L. Vasse
B. Allen

THE WCM GROUP INC.
PETTY CASH ACCOUNT
P.O. BOX 3247
HUMBLE, TX 77347-3247

Comerica Bank - Texas
Houston, Texas
www.comerica.com

1364

32-75/1110
787

DATE 1-02-08

PAY ONE HUNDRED DOLLARS AND NO/100 DOLLARS $ 100.00

TO THE ORDER OF

TCEQ
REVENUE STATION (MC214)
12100 PARK 35 CIRCLE, BLDG F
AUSTIN, TEXAS 78753

TWO SIGNATURES REQUIRED
NO CHECKS ALLOWED OVER $5,000.00

Susan E Howell

MP

⑈001364⑈ ⑆111000753⑆ 1880776545⑈

THE WCM GROUP INC.
PETTY CASH ACCOUNT
HUMBLE, TX 77347-3247

DETACH AND RETAIN THIS STATEMENT
THE ATTACHED CHECK IS IN PAYMENT OF ITEMS DESCRIBED BELOW
IF NOT CORRECT, PLEASE NOTIFY US PROMPTLY. NO RECEIPT DESIRED

DATE	DESCRIPTION	AMOUNT
1/02/08	TCEQ OIL IMPROVEMENT AREA, PBR REGISTRATION FEE CES-HOU-PBR	$ 100.00

A2

PERMIT-BY-RULE AUTHORIZATION FOR

OIL IMPROVEMENT PROCESS

Prepared for
CES ENVIRONMENTAL SERVICES, INC.
Houston, Harris County, Texas

Prepared by
THE WCM GROUP, INC.
Humble, Texas

January 2008

EPAHO043001796

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INTRODUCTION iii

1.0 PROCESS DESCRIPTION 1

2.0 EMISSIONS SUMMARY 3

EPAHO043001797

ATTACHMENTS

A - EMISSION CALCULATIONS

B - PBR AUTHORIZATIONS BY EQUIPMENT

FORMS

TCEQ PI-7CERT FORM

TCEQ §106.4 CHECKLIST

TCEQ §106.261 CHECKLIST

TCEQ §106.262 CHECKLIST

TCEQ §106.472 CHECKLIST

FIGURES

1 - SITE LOCATION MAP

2 - FACILITY PLOT PLAN

3 - AERIAL PHOTOGRAPH

4 - PROCESS FLOW DIAGRAM

EPAHO043001798

INTRODUCTION

CES Environmental Services, Inc. (CES) operates a tank container cleaning and waste handling facility at 4904 Griggs Road in Houston, Harris County, Texas (CN600618946, RN100693282) under Texas Commission on Environmental Quality (TCEQ) Permit Exemption No. 15980 and a series of Permits-By-Rule (PBRs).

CES is submitting the enclosed documentation to demonstrate PBR authorization for an Oil Quality Improvement operation at the site. Specifically, the process treats oil and mixed molecular weight petroleum hydrocarbons received from off-site to remove water and other impurities. Details on these operations can be found in the Process Description section of this application and in the attached calculations. The equipment and processes covered by this PBR are authorized under 30 TAC 106.261, 106.262, and 106.472. Attachment B includes a table summarizing each piece of equipment and the relevant PBR authorization.

CES is located in the Houston/Galveston ozone nonattainment area and is classified as a minor source for Volatile Organic Compound (VOC) emissions. The emissions increase associated with this project is approximately 1.46 tons per year (tpy) of VOC. As a result, the project is not major by itself and does not result in reclassification of the site as a major source.

A PI-7-CERT Form, as well as TCEQ §106.4, §106.261, §106.262, and §106.472 Checklists, are provided in the Forms section of this report. Emission calculations are provided in Attachment A. A Site Location Map, Facility Plot Plan, Aerial Photograph, and Process Flow Diagram are included in the Figures section.

EPAHO043001799

1.0 PROCESS DESCRIPTION

Materials for processing received from off-site are stored and processed in a series of tanks near the south end of the CES property. The materials received fall into three general categories: mixed molecular weight petroleum hydrocarbons, oily water, or base oil and water. Upon entering the site, oily water is typically stored in Tank OT-7 or OT-8, but may be stored in any of the tanks associated with the oil process. Similarly, base oil and water (also referred to as wet base oil) is typically stored in Tanks OT-1 or OT-2, but may be stored in any of the oil processing tanks. Mixed molecular weight petroleum hydrocarbons are stored and processed in Tank OT-9.

Mixed molecular weight petroleum hydrocarbons enter the facility mixed with water. The light organics are gravity phase separated from the water in Tank OT-9. The mixed molecular weight petroleum hydrocarbons are then transferred to bullet truck trailers designed for LPG service and shipped off-site as CES Fuel.

The two remaining material types (oily water and wet base oil) undergo similar four step processes to recover usable oil materials.

The first processing step for both material types is removal of water through gravity phase separation while in storage. This process generally occurs in the tank in which the oil was originally stored, but any of the oil processing tanks may be utilized as needed.

The second processing phase consists of heating to further facilitate phase separation. An emulsion breaker is added to improve the separation of oil and water. Sulfuric acid may also be used for pH adjustment. Oily water is normally treated in Tank OT-3 while wet base oil is normally treated in tank OT-4, although these rolls can be reversed if required. This operation qualifies for PBR 106.472 because there is no actual reaction taking place in the tanks.

The third phase of processing differs for the two material types. The oily water is sent to Tank OT-5 and then to a centrifuge to remove the remaining water. The oil from the centrifuge is then sent to Tank FO-1. The wet base oil is sent to Tank OT-10 and is then fed to a vacuum distillation system where the remaining water is removed. Emissions from the centrifuge and distillation systems are vented through a scrubber for odor control. No credit for emission reduction is being taken in this PBR for the scrubber.

The fourth step in the process is the transfer of the finished oil to holding tanks. These may be any of the tanks associated with the oil quality improvement process. From these tanks, the oil may be returned to Step 3 for further processing or be loaded into transport vessels for removal from the site.

EPAHO043001800

All water removed from the Oil Quality Improvement Process is stored in Tank WT-1 and then sent to the existing on-site wastewater treatment facility.

EPAHO043001801

2.0 EMISSIONS SUMMARY

Emissions from the Oil Quality Improvement operation are calculated based on several process steps. The oil and mixed molecular weight petroleum hydrocarbons entering the facility can contain significant quantities of water. The emissions are conservatively calculated assuming only the organic components.

Emissions from the tanks are calculated using methods specified in AP-42. Because of the variable composition of the mixed molecular weight petroleum hydrocarbons, the emission calculations of that material are estimated using the average molecular weight and constituent vapor pressure.

The Material Data Safety Sheet (MSDS) for the oil specifies that it has a vapor pressure < 0.1 mmHg (<0.002 psia). Because the oil handling tanks are heated to approximately 200°F, the higher vapor pressure of 0.1 psia is used. Tank OT-9 is not heated. The temperature of Tank OT-9, the Sulfuric Acid Tank, and the Emulsion Breaker Tank are calculated in accordance with AP-42. Due to the very small quantity of VOC present in the recovered water, it is assumed that there are no VOC emissions from Tank WT-1. Due to the variable composition of the mixed molecular weight petroleum hydrocarbons, the speciation of emissions from Tank OT-9 is calculated using the maximum content of each component, generally 30 percent, with the balance of the composition being water.

Loading and unloading of mixed molecular weight petroleum hydrocarbons between the process and truck tanks and other transport vessels is vapor balanced back to the storage tank. As a result, there are no emissions from loading activities except from the disconnecting of loading lines. Emissions from the loading of oil into transport vessels are calculated in accordance with AP-42. Emissions from disconnecting of hoses are calculated assuming the vapor volume inside the hose is saturated with the last material to pass through the hose. It also assumes that all of the residual liquid in the line, which is calculated with the clingage factor from AP-42 Chapter 7, evaporates.

Fugitive emissions from potential leaks at valves, pumps, and connections associated with this project are calculated using the methods and emission factors specified in the TCEQ document "Air Permit Technical Guidance for Chemical Sources: Equipment Leak Fugitives". A thirty percent reduction credit is taken for operations personnel monitoring for leaks that can be detected with visible, audible, or olfactory means.

The total project increase is, therefore, 1.46 tpy, well below the level requiring nonattainment or PSD review.

EPAHO043001802

ATTACHMENT A

EMISSION CALCULATIONS

Emission Summary

Evaluation:		Piping Components (Fugitive)		Distillation		Centerfuge		Storage		Loading		Total				PBR LIMITS		PBR COMPLIANCE ?	
Component	CAS	Emissions (lb/hr)	Emissions (TPY)	Emissions (lb/hr)	Emissions (TPY)	Emissions (lb/hr)	Emissions (TPY)	Emissions (lb/hr)	Emissions (TPY)	Emissions (lb/hr)	Emissions (TPY)	Emissions (lb/hr) [1,2]	Emissions (TPY)	TLV or L-Value	Applicable PBR	Hourly (lb/hr)	Annual (TPY)	Hourly (lb/hr)	Annual (TPY)
Xylene	106-42-3	0.0046	0.0202	-	-	-	-	0.3087	0.0565	0.0052	0.0010	0.3185	0.0777	434	106.261	1	4.38	Yes	Yes
Heptane	142-82-5	0.0046	0.0202	-	-	-	-	0.6615	0.1207	0.0052	0.0010	0.6713	0.1419	350	106.261	1	4.38	Yes	Yes
Hexane	110-54-3	0.0046	0.0202	-	-	-	-	1.0832	0.1977	0.0052	0.0010	1.0930	0.2189	1760	106.262	6.00	10.00	Yes	Yes
Ethyl Benzene	100-41-4	0.0046	0.0202	-	-	-	-	0.2113	0.0386	0.0052	0.0010	0.2210	0.0598	434	106.261	1	4.38	Yes	Yes
Toluene	108-88-3	0.0046	0.0202	-	-	-	-	0.4932	0.0900	0.0052	0.0010	0.5029	0.1112	188	106.262	1.25	5.49	Yes	Yes
Methanol	67-56-1	0.0046	0.0202	-	-	-	-	1.0240	0.1869	0.0052	0.0010	1.0337	0.2081	262	106.262	1.75	7.65	Yes	Yes
Butanol	71-363	0.0046	0.0202	-	-	-	-	0.1447	0.0264	0.0052	0.0010	0.1545	0.0476	76	106.262	0.51	2.22	Yes	Yes
Propanol	71-23-8	0.0046	0.0202	-	-	-	-	0.3989	0.0724	0.0052	0.0010	0.4067	0.0936	492	106.261	1	4.38	Yes	Yes
Ethanol	64-17-5	0.0046	0.0202	-	-	-	-	0.7598	0.1387	0.0052	0.0010	0.7696	0.1599	1880	106.261	6	10.00	Yes	Yes
Dimethyl Disulfide	624-92-0	0.0046	0.0202	-	-	-	-	0.4955	0.0904	0.0052	0.0010	0.5052	0.1116	N/A	106.261	1	4.38	Yes	Yes
Diethyl Disulfide	110-81-6	0.0046	0.0202	-	-	-	-	0.1014	0.0185	0.0052	0.0010	0.1112	0.0397	N/A	106.261	1	4.38	Yes	Yes
Gasoline	86290-81-5	0.0046	0.0202	-	-	-	-	1.2914	0.2357	0.0052	0.0010	1.3012	0.2569	890	106.262	5.93	10.00	Yes	Yes
Acetic Acid	64-19-7	0.0023	0.0101	-	-	-	-	0.1465	0.0267	0.0026	0.0005	0.1514	0.0373	25	106.262	0.17	0.73	Yes	Yes
Isopropyl Ether	108-20-3	0.0046	0.0202	-	-	-	-	1.0729	0.1958	0.0052	0.0010	1.0827	0.2170	1040	106.262	6.00	10.00	Yes	Yes
Propionic Acid	64-19-7	0.0046	0.0202	-	-	-	-	0.0843	0.0154	0.0052	0.0010	0.0940	0.0366	30	106.262	0.20	0.88	Yes	Yes
Naphthalene	91-20-3	0.0046	0.0202	-	-	-	-	0.0049	0.0009	0.0052	0.0010	0.0147	0.0221	52	106.262	0.35	1.52	Yes	Yes
Propylamine	107-10-8	0.0020	0.0087	-	-	-	-	0.9725	0.1775	0.0022	0.0004	0.9767	0.1867	N/A	106.261	1	4.38	Yes	Yes
Kerosene	8008-20-6	0.0046	0.0202	-	-	-	-	0.0187	0.0034	0.0052	0.0010	0.0285	0.0246	100	106.262	0.67	2.92	Yes	Yes
Diesel	68334-30-5	0.0046	0.0202	-	-	-	-	0.0145	0.0026	0.0052	0.0010	0.0243	0.0239	N/A	106.261	1	4.38	Yes	Yes
Ethylene Glycol	107-21-1	0.0046	0.0202	-	-	-	-	0.0033	0.0006	0.0052	0.0010	0.0131	0.0216	26	106.262	0.17	0.76	Yes	Yes
Propylene Glycol	57-55-6	0.0046	0.0202	-	-	-	-	0.0019	0.0004	0.0052	0.0010	0.0117	0.0216	N/A	106.261	1	4.38	Yes	Yes
Naphtha		-	-	-	-	-	-	0.0425	0.0078	-	-	0.0425	0.0078	350	106.261	1	4.38	Yes	Yes
Oil		0.1460	0.6396	0.0714	0.3128	0.0629	0.0167	0.7877	0.1149	0.0712	0.0169	0.2803	0.9691	N/A	106.261	1	4.38	Yes	Yes
Sulfuric Acid	7664-93-9			-	-	-	-	3.75E-04	2.02E-06	-	-	0.0004	0.0000	1	106.262	2.95E-03	0.01	Yes	Yes

1) Total Oil emissions shown for 106.261/262 compliance does not include storage or loading emissions, which are authorized under 106.472.
2) Emissions of each light ends constituent are based on the maximum potential of that material in the mixture. The sum of the components will therefore be greater than 100% of the total emissions.

Project Total Emissions:	VOC
lb/hr	2.78
TPY	1.46

Allowable hourly emission rate for PBR 106.262 calculated as follows:

E = L / K

where

E = Allowable emissions (lb/hr)

L = L-value from 106.262 or 1997 ACGIH Manual

K = Coefficient for distance to nearest receptor

Oil Improvement Area Distance To Receptor (D,ft) > 125 ft

K = 339

Light Ends Distance To Receptor (D,ft) > 150 ft

K = 277

If L / K > 6.0 lb/hr, then E = 6.0 lb/hr

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Properties

		Max	Density	MW	Antaine's			Pv @	Pv @	Pv @	Pv @	Pv @	Pv @
Chemical	CAS No.	%	lb/gal	lb/lbmole	A	B	C	537	548	527	555	568	542
Xylene	106-42-3	30	7.2145	106.167	6.9905	1453.43	215.307	0.170619836	0.23607	0.121372	0.295147	0.427426	0.199428
Heptane	142-82-5	30	5.75	100.206	6.8938	1264.37	216.636	0.892396614	1.180043	0.665753	1.430149	1.967116	1.020607
Hexane	110-54-3	30	5.5244	86.17	6.8702	1168.72	224.21	2.947354594	3.758	2.285245	4.442684	5.866076	3.312192
Ethyl Benzene	100-41-4	30	7.2648	106.169	6.9572	1424.255	213.206	0.185290359	0.256125	0.13192	0.319987	0.462773	0.216481
Toluene	108-88-3	30	7.27	92.142	6.9546	1344.8	219.482	0.553856534	0.740465	0.408533	0.904289	1.259888	0.636766
Methanol	67-56-1	30	6.59	32.04	7.898	1474.08	229.13	2.43754719	3.273431	1.790544	4.011192	5.622979	2.808286
Butanol	71-363	30	6.78	74.124	7.4768	1362.39	178.77	0.120674756	0.183927	0.077264	0.24528	0.393892	0.147827
Propanol	71-23-8	30	6.7097	60.1	7.8477	1499.21	204.64	0.406769968	0.586744	0.276753	0.754551	1.144066	0.48511
Ethanol	64-17-5	30	6.62	46.07	8.32	1718.1	237.52	1.161652698	1.603393	0.829575	2.002801	2.899869	1.356003
Dimethyl Disulfide	624-92-0	30	8.9029	94.1894	6.9779	1346.342	218.863	0.557737575	0.746991	0.410608	0.913368	1.275059	0.641783
Diethyl Disulfide	110-81-6	30	8.2954	122.243	6.9751	1485.97	208.958	0.081972338	0.116323	0.056757	0.147948	0.220332	0.09699
Gasoline	86290-81-5	30	6.1	66	6.813	1268.035	273.15	7.052355895	8.484656	5.819444	9.644835	11.9496	7.705982
Acetic Acid	64-19-7	15	8.8	60.053	7.2996	1479.02	216.81	0.297106625	0.411766	0.211	0.515431	0.748002	0.347547
Isopropyl Ether	108-20-3	30	6.032	102.178	7.0971	1257.6	230.01	2.847919527	3.65619	2.192956	4.343427	5.783138	3.210899
Propionic Acid	79-09-4	30	8.3236	74.0792	7.5476	1617.06	205.67	0.067259009	0.099506	0.044563	0.130214	0.203231	0.081194
Naphthalene	91-20-3	30	8.3541	128.18	6.8458	1606.529	187.227	0.003690151	0.005838	0.002274	0.00799	0.013406	0.004602
Propylamine	107-10-8	13	6.0079	59.1108	7.2672	1218.1	229.9	5.989436657	7.630777	4.648974	9.017449	11.90168	6.728091
Kerosene	8008-20-6	30	6.6763	128.3	7.094	2155.31	273.15	0.014278654	0.019551	0.0103	0.02431	0.034991	0.0166
Diesel	68334-30-5	30	7.1	130	7.117	2209.1	275	0.011040899	0.015177	0.007933	0.018924	0.027366	0.01286
Ethylene Glycol	107-21-1	30	9.347	62.0682	8.7945	2615.4	244.91	0.002487365	0.003957	0.001532	0.005454	0.009308	0.003108
Propylene Glycol	57-55-6	30	8.631	76.097	7.4514	1587.4	160	0.001456621	0.002638	0.000774	0.003951	0.007654	0.00194
Naphtha		50	7.78	86.1	7.166	1980.964	273.15	0.064743108	0.086425	0.047954	0.105583	0.147562	0.074358
Sulfuric Acid	7664-93-9		15.27	98.073	10.468	4145.84	273.15	7.16649E-06	1.31E-05	3.82E-06	1.99E-05	4.02E-05	9.58E-06
Water	7732-18-5		8.34	18.0152	6.09	733.91	131.29	0.483679211	0.70911	0.320432	0.917571	1.393503	0.581987

Name	Pa	Pn	Px	Px (hourly)	MW	lb/gal
CES Fuel	1.23	0.95	1.57	2.49	85.99	7.252076

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TRANSPORT VESSEL LOADING

From AP-42 Chapter 5
LL = 12.46 SPM/T lb/1000 gal

S = Saturation Factor =	0.6	
P = Vapor Pressure =	0.01	psia
M = Molecular Weight =	150	lb/lbmole
T = Temperature =	660	R
LL =	0.0170	lb/1000 gal
Maximum Load Rate	3000.0000	gal/hr
Annual Throughput	1272000.0000	gal/yr
Oil Loading Emissions =	0.0510 lb/hr	0.0108 tpy

Loading and unloading of light ends is vapor balanced and therefore does not generate emissions.

Before being disconnected the loading hose is blown into the truck/railcar with nitrogen, leaving only residual liquid clingage on the walls of the hose. It is conservatively assumed that all of the residual material in the line evaporates.

TRANSFER LINE DISCONNECTING - VOC

EPN - OL-1

Product	Clingage Factor (bbl/1000 ft2)	Product Volume (gal)	Density (lb/gal)	Clingage Mass in Line (lb)	Vapor Pressure (psia)	MW (lb/lbmole)	Vapor Mass in Line (lb)	VOC Emissions (lb/hr)	Loads (year)	VOC Emissions (TPY)
Oil	0.0015	0.00237	8.5	0.0202	0.01	150	2.18E-07	0.0202	500	0.0050
CES Fuel	0.0015	0.00237	7.25	0.0172	1.23	85.99	2.68E-05	0.0172	400	0.0034
							Max. VOC	0.0202		0.0050

Notes:

1. Volume Product = Line Surface Area (3.14 x D x L) x Clingage Factor x 42 gal/bbl / 1000
2. Clingage Factor from AP-42 Chapter 7.
3. Mass in Line = (Product Volume x Density)

Line Dimensions:

L	6 ft
D	2 in
Line Volume (V)	0.13 cu ft
Line Area (A)	37.68 sq ft

Where V = pi * r² * L

Speciation:

Product	Liquid wt frac	Emissions (lb/hr)	Emissions (TPY)
Xylene	0.3000	0.0052	0.001
Heptane	0.3000	0.0052	0.001
Hexane	0.3000	0.0052	0.001
Ethyl Benzene	0.3000	0.0052	0.001
Toluene	0.3000	0.0052	0.001
Methanol	0.3000	0.0052	0.001
Butanol	0.3000	0.0052	0.001
Propanol	0.3000	0.0052	0.001
Ethanol	0.3000	0.0052	0.001
Dimethyl Disulfide	0.3000	0.0052	0.001
Diethyl Disulfide	0.3000	0.0052	0.001
Gasoline	0.3000	0.0052	0.001
Acetic Acid	0.1500	0.0026	0.001
Isopropyl Ether	0.3000	0.0052	0.001
Propionic Acid	0.3000	0.0052	0.001
Naphthalene	0.3000	0.0052	0.001
Propylamine	0.1300	0.0022	0.000
Kerosene	0.3000	0.0052	0.001
Diesel	0.3000	0.0052	0.001
Ethylene Glycol	0.3000	0.0052	0.001
Propylene Glycol	0.3000	0.0052	0.001

1) Composition is based on worst case weight fraction for each component to allow for variation.

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Basis Information:

COMPONENTS	Gas/Vapor Components (comp.)	Light Liquid Components (comp.)	Heavy Liquid Components (comp.)	Estimated Fugitive Emissions Lights		Estimated Fugitive Emissions Heavies	
				lb/hr	ton/yr	lb/hr	ton/yr
VALVES	0	5	70	0.0005	0.0023	0.0343	0.1502
FLANGES	0	15	210	0.0053	0.0230	0.0103	0.0451
PUMP SEALS	0	1	9	0.0027	0.0118	0.1014	0.4443
OPEN ENDED LINES	0	0	0	0.0000	0.0000	0.0000	0.0000
DRAINS	0	0	0	0.0000	0.0000	0.0000	0.0000
RELIEF VALVES	0	1	0	0.0069	0.0301	0.0000	0.0000
SAMPLE CONNECTIONS*	0	0	0	0.0000	0.0000	0.0000	0.0000
TOTAL	0	22	289	0.0154	0.0673	0.1460	0.6396

Component Emission Factors

Component	Gas/Vapor Factor (lb/hr/comp)	28 M % Reduction (%)	Light Liquid Factor (lb/hr/comp)	28 M % Reduction (%)	Heavy Liquid Factor (lb/hr/comp)	28 M % Reduction (%)
VALVES	0.0089	97.0	0.0035	97.0	0.0007	30.0
FLANGES	0.0029	97.0	0.0005	30.0	0.00007	30.0
PUMP SEALS	0.0386	93.0	0.0386	93.0	0.0161	30.0
OPEN ENDED LINES	0.004	100.0	0.004	75.0	0.004	100.0
DRAINS	0.004	97.0	0.0027	97.0	0.0027	30.0
RELIEF VALVES	0.2293	97.0	0.2293	97.0	0.2293	30.0
SAMPLE CONNECTIONS*	0.0330	97.0	0.0000	97.0	0.0000	30.0

Emission Factors from TCEQ guidance document on equipment leaks.

Includes Flange Monitoring

* Sample connections are capped or blinded.

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Speciation

Name	Max. Liquid wt frac.	Emissions lb/hr	Emissions ton/yr
Xylene	0.30	0.0046	0.0202
Heptane	0.30	0.0046	0.0202
Hexane	0.30	0.0046	0.0202
Ethyl Benzene	0.30	0.0046	0.0202
Toluene	0.30	0.0046	0.0202
Methanol	0.30	0.0046	0.0202
Butanol	0.30	0.0046	0.0202
Propanol	0.30	0.0046	0.0202
Ethanol	0.30	0.0046	0.0202
Dimethyl Disulfide	0.30	0.0046	0.0202
Diethyl Disulfide	0.30	0.0046	0.0202
Gasoline	0.30	0.0046	0.0202
Acetic Acid	0.15	0.0023	0.0101
Isopropyl Ether	0.30	0.0046	0.0202
Propionic Acid	0.30	0.0046	0.0202
Naphthalene	0.30	0.0046	0.0202
Propylamine	0.13	0.0020	0.0087
Kerosene	0.30	0.0046	0.0202
Diesel	0.30	0.0046	0.0202
Ethylene Glycol	0.30	0.0046	0.0202
Propylene Glycol	0.30	0.0046	0.0202
Oil	1.00	0.1460	0.6396
		0.0046	**0.0202**

1) Composition is based on worst case weight fraction for each component to allow for variation.
2) Relief valves on oil tanks are accounted for by setting the tank vent settings to zero in the tank emission calculations.

EPAHO043001808

CES Environmental Services
Houston, TX
Estimated Tank Emissions

DATA ENTRY

Tank Identification			OT-1	OT-2	OT-3	OT-4	OT-5	OT-6	OT-7	OT-8	OT-9	OT-10	FO-1	Sulfuric Acid Tank	Emulsion Breaker Tank	Centrifuge
EPN			OT-1	OT-2	OT-3	OT-4	OT-5	OT-6	OT-7	OT-8	OT-9	OT-10	FO-1	ST-1	ET-1	SV-1
Material Stored			Base Oil/Water	Base Oil/Water	Base Oil/Water	Base Oil/Water	Oil/Water	Base Oil/Water	Oil/Water	Oil/Water	CES Fuel/Water	Oil/Water	Oil/Water	Sulfuric Acid	Emulsion Breaker	Oil/Water
Tank Capacity	Vol., gallons		16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	16,800	7,518	4,000	270	16,800
Throughput	gallons		72,000	72,000	1,200,000	72,000	1,200,000	72,000	1,200,000	1,200,000	600,000	873,600	1,200,000	20,000	250	1,200,000
Tank Controlled	Yes/No		No	No	No	No	No	No	No	No	No	No	No	No	No	No
Control Efficiency	e, %		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
Shell Height	Hs, ft		20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Shell Length	Ls, ft		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	7.9	8.0	12.0	12.0	12.0
Orientation	Vertical=1/Horizontal=2		1	1	1	1	1	1	1	1	1	2	1	1	1	1
Fill Rate	gallons/hr		3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	4,000	250	3,000
Molecular Weight, lb/lb-mole			150.000	150.000	150.000	150.000	150.000	150.000	150.000	150.000	85.985	150.000	150.000	98.073	95.086	150.000
Vapor Pressure @ Tln, psia	526.90	R	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.9521	0.0100	0.0100	3.82E-08	0.0608	0.0100
Vapor Pressure @ Tla, psia	537.23	R	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	1.2287	0.0100	0.0100	7.17E-08	0.1122	0.0100
Vapor Pressure @ Tlx, psia	547.57	R	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	1.5720	0.0100	0.0100	1.31E-05	0.1534	0.0100
Max. Vapor Pressure @ Tlx, psia	567.80	R	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	0.0100	2.4886	0.0100	0.0100	4.02E-05	0.2729	0.0100

ESTIMATED EMISSIONS

Maximum Hourly Losses	Lm, lb/hr		0.107	0.107	0.083	0.107	0.083	0.107	0.083	0.083	1.496	0.080	0.038	0.000	0.154	0.083
Standing Losses	Ls, lb/yr		8.32	8.32	8.32	8.32	8.32	8.32	8.32	8.32	546.78	10.32	3.68	0.00	56.72	8.32
Working Losses	Lw, lb/yr		2.57	2.57	25.14	2.57	25.14	2.57	25.14	25.14	0.00	23.20	15.20	0.00	0.06	25.14
Uncontrolled Total Losses	Lt, lb/yr		10.89	10.89	33.46	10.89	33.46	10.89	33.46	33.46	546.78	33.52	18.88	0.00	56.79	33.46
	Lt, ton/yr		0.0054	0.0054	0.0167	0.0054	0.0167	0.0054	0.0167	0.0167	0.2734	0.0168	0.0094	0.0000	0.0284	0.0167
Controlled Total Losses	Lmc, lb/hr		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Ltc, ton/yr		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PHYSICAL PARAMETER CALCULATIONS

Diameter, D	Effective diameter, De		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	13.4	8.0	12.0	12.0	12.0
Avg. Liquid Height	Hl, ft		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Max. Liquid Height	Hlx, ft		19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	16.0	20.0	4.7	0.3	19.9
Cone Roof Outage	Hro, ft		0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.139	0.063	0.125	0.125	0.125
Vapor Space Outage	Hvo, ft		10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.125	10.139	10.063	10.125	10.125	10.125
Vapor space volume	Vv, ft^3		1144.53	1144.53	1144.53	1144.53	1144.53	1144.53	1144.53	1144.53	1144.53	1419.48	506.59	1144.53	1144.53	1144.53
Breather vent pressure setting	Pbp, psig		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.03	0.03	0.00
Breather vent vacuum setting	Pbv, psig		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.00	0.00	-0.03	-0.03	0.00
Gas Constant	R, psia-ft^3/lb mole-R		10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732	10.732
Vapor Density	Wv, lb/ft^3		0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0183	0.0003	0.0003	0.0000	0.0018	0.0003
Daily vapor pressure range	^Pv, psia		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8199	0.0000	0.0000	0.0000	0.0726	0.0000
Vapor space expansion factor	Ke		0.077	0.077	0.077	0.077	0.077	0.077	0.077	0.077	0.119	0.077	0.077	0.073	0.078	0.077
Vented vapor saturation factor	Ks		0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.995	0.803	0.995	0.995	1.000	0.943	0.995
Working Loss Product Factor	Kp		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net Annual Throughput	Q, bbl/yr		1,714.3	1,714.3	28,571.4	1,714.3	28,571.4	1,714.3	28,571.4	28,571.4	14,285.7	20,800.0	28,571.4	476.2	6.0	28,571.4
Turnovers	N		4.3	4.3	71.4	4.3	71.4	4.3	71.4	71.4	35.7	52.0	159.6	5.0	0.9	71.4
Turnover factor	Kn		1.00	1.00	0.59	1.00	0.59	1.00	0.59	0.59	1.00	0.74	0.35	1.00	1.00	0.59

MAX. HRLY LOSSES: Lm = (Lwmax x FR) / (N x Vol)

STANDING LOSSES: Ls = 365 x Vv x Wv x Ke x Ks

WORKING LOSSES: Lw = 0.0010 x Mv x Pva x Q x Kn. x Kp
Lwmax = 0.0010 x Mv x Pvx x Q x Kn. x Kp

UNCONTROLLED
TOTAL HOURLY LOSSES: Lt = (Ls + Lw)
TOTAL ANNUAL LOSSES: Lt = (Ls + Lw) / 2000 lb/ton

CONTROLLED
TOTAL HOURLY LOSSES: Lt = (Ls + Lw) x (1-e/100)
TOTAL ANNUAL LOSSES: Lt = (Ls + Lw) / 2000 lb/ton x (1-e/100)

METEROLOGICAL CALCULATIONS:

Data Location		Houston, TX	ANNUAL	MAX HRLY
Daily avg. liquid surface temp, R		Tla	537.23	554.97
Daily avg. ambient temp, R		Taa	528.25	543.05
Liquid bulk temp, R		Tb	531.33	546.13
Daily solar insulation factor, Btu/ft^2 day		I	1351	1896
Atmospheric pressure, psia		Pa	14.7	14.7
Daily max. ambient temp, R		Tax	539.1	553.6
Daily min. ambient temp, R		Tan	517.4	532.5
Daily vapor temp. range, R		^Tv	41.35	51.33
Daily max. liquid surface temp., R		Tlx	547.57	567.80
Daily min. liquid surface temp., R		Tln	526.90	542.14
Solar absorbance factor		a	0.68	0.68

Notes:
OT-9 loading is vapor balanced, so there are no working losses for that tank.

EPAHO043001809

OT-9 Speciation

Total OT-9 Emissions = 1.50 lb/hr 0.27 tpy

Partial Pressures assuming max%wt in balance water

Chemical	MW	wt%	Moles lbmole	Mole Fraction	temp 537 F	Vapor Mole Frac	Vapor Wt lb	Vapor Wt Fraction	OT-9 lb/hr	tpy
Xylene	106.167	30	0.2826	0.0678	0.0116	0.0250	2.6554	0.1313	0.1967	0.0359
Water	18.0152	70	3.8856	0.9322	0.4509	0.9750	17.5646	0.8687		
Heptane	100.206	30	0.2994	0.0715	0.0638	0.1245	12.4720	0.4416	0.6615	0.1207
Water	18.0152	70	3.8856	0.9285	0.4491	0.8755	15.7730	0.5584		
Hexane	86.17	30	0.3481	0.0822	0.2424	0.3532	30.4321	0.7231	1.0832	0.1977
Water	18.0152	70	3.8856	0.9178	0.4439	0.6468	11.6529	0.2769		
Ethyl Benzene	106.169	30	0.2826	0.0678	0.0126	0.0271	2.8776	0.1410	0.2113	0.0386
Water	18.0152	70	3.8856	0.9322	0.4509	0.9729	17.5269	0.8590		
Toluene	92.142	30	0.3256	0.0773	0.0428	0.0875	8.0670	0.3292	0.4932	0.0900
Water	18.0152	70	3.8856	0.9227	0.4463	0.9125	16.4380	0.6708		
Methanol	32.04	30	0.9363	0.1942	0.4733	0.5484	17.5711	0.6835	1.0240	0.1869
Water	18.0152	70	3.8856	0.8058	0.3898	0.4516	8.1354	0.3165		
Butanol	74.124	30	0.4047	0.0943	0.0114	0.0253	1.8775	0.0966	0.1447	0.0264
Water	18.0152	70	3.8856	0.9057	0.4381	0.9747	17.5589	0.9034		
Propanol	60.1	30	0.4992	0.1138	0.0463	0.0975	5.8600	0.2649	0.3969	0.0724
Water	18.0152	70	3.8856	0.8862	0.4286	0.9025	16.2586	0.7351		
Ethanol	46.07	30	0.6512	0.1435	0.1667	0.2870	13.2215	0.5072	0.7598	0.1387
Water	18.0152	70	3.8856	0.8565	0.4143	0.7130	12.8451	0.4928		
Dimethyl Disulfide	94.1894	30	0.3185	0.0758	0.0423	0.0864	8.1341	0.3307	0.4955	0.0904
Water	18.0152	70	3.8856	0.9242	0.4470	0.9136	16.4594	0.6693		
Diethyl Disulfide	122.243	30	0.2454	0.0594	0.0049	0.0106	1.2946	0.0677	0.1014	0.0185
Water	18.0152	70	3.8856	0.9406	0.4549	0.9894	17.8244	0.9323		
Gasoline	66	30	0.4545	0.1047	0.7386	0.6304	41.6068	0.8620	1.2914	0.2357
Water	18.0152	70	3.8856	0.8953	0.4330	0.3696	6.6583	0.1380		
Acetic Acid	60.053	15	0.2498	0.0503	0.0149	0.0315	1.8913	0.0978	0.1465	0.0267
Water	18.0152	85	4.7182	0.9497	0.4594	0.9685	17.4478	0.9022		
Isopropyl Ether	102.178	30	0.2936	0.0703	0.2001	0.3079	31.4623	0.7162	1.0729	0.1958
Water	18.0152	70	3.8856	0.9297	0.4497	0.6921	12.4680	0.2838		
Propionic Acid	74.0792	30	0.4050	0.0944	0.0063	0.0143	1.0583	0.0562	0.0843	0.0154
Water	18.0152	70	3.8856	0.9056	0.4380	0.9857	17.7578	0.9438		
Naphthalene	128.18	30	0.2340	0.0568	0.0002	0.0005	0.0589	0.0033	0.0049	0.0009
Water	18.0152	70	3.8856	0.9432	0.4562	0.9995	18.0069	0.9967		
Propylamine	59.1108	13	0.2199	0.0436	0.2609	0.3606	21.3145	0.6492	0.9725	0.1775
Water	18.0152	87	4.8293	0.9564	0.4626	0.6394	11.5192	0.3508		
Kerosene	128.3	30	0.2338	0.0568	0.0008	0.0018	0.2275	0.0125	0.0187	0.0034
Water	18.0152	70	3.8856	0.9432	0.4562	0.9982	17.9833	0.9875		
Diesel	130	30	0.2308	0.0561	0.0006	0.0014	0.1760	0.0097	0.0145	0.0026
Water	18.0152	70	3.8856	0.9439	0.4566	0.9986	17.9908	0.9903		
Ethylene Glycol	62.0682	30	0.4833	0.1106	0.0003	0.0006	0.0397	0.0022	0.0033	0.0006
Water	18.0152	70	3.8856	0.8894	0.4302	0.9994	18.0037	0.9978		
Propylene Glycol	76.097	30	0.3942	0.0921	0.0001	0.0003	0.0232	0.0013	0.0019	0.0004
Water	18.0152	70	3.8856	0.9079	0.4391	0.9997	18.0097	0.9987		

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Emulsion Breaker Speciation

Component	% wt	MW lb/lbmole	Moles	Mole Fraction	Pv @ 537 psia	Pv @ 548 psia	Pv @ 527 psia	Pv @ 555 psia	Pv @ 568 psia	Pv @ 542 psia
Xylene	50	106.167	0.4710	0.4478	0.0764	0.1057	0.0544	0.1322	0.1914	0.0893
Naphtha	50	86.1	0.5807	0.5522	0.0358	0.0477	0.0265	0.0583	0.0815	0.0411
Total				1.0000	0.1122	0.1534	0.0808	0.1905	0.2729	0.1304

Total Emulsion Breaker Tank Emissions: 0.15 lb/hr 0.03 tpy

Component	% wt	MW lb/lbmole	Moles	Mole Fraction	Pva psia	Vapor Mole Fraction	apor Weigh (lb)	Vapor Weight Fraction	Emissions (lb)	(tpy)
Xylene	50.0000	106.1670	0.4710	0.4478	0.0764	0.6812	72.3259	0.7249	0.1120	0.0206
Naphtha	50.0000	86.1000	0.5807	0.5522	0.0358	0.3188	27.4447	0.2751	0.0425	0.0078
Total				1.0000	0.1122	1.0000	99.7706	1.0000		

EPAHO043001811

CES Environmental Services
Houston, TX
Oil Improvement Process Vacuum Distillation
EPN: SV-1

Basis Information:
Emissions calculated as follows:

q = [{{{{(V/100) x Fm) / (M x (Tv/Tx))} x Mv)} x {1-(e/100)}}
Q = [[{{{{(V/100) x Fa) / (M x (Tv/Ta))} x Mv)} x {1-(e/100)}] x H) / 2000

Where:
- q = Quantity of VOC emissions (lb/hr)
- Q = Quantity of VOC emissions (ton/yr)
- V = VOC concentration (%v estimated)
- Fa = Average flow rate of vent gas (cfh)
- Fm = Maximum flow rate of vent gas (cfh)
- Mv = Vapor molecular weight (lb/lb mole)
- M = Molar volume (385 ft^3/mole - Gas Constant)
- Tv = Temperature of vent gas (deg. R)
- Ta = Annual average ambient temperature (deg. R)
- Tx = Highest monthly average ambient temperature (deg. R)
- H = Operating time (hr/yr)
- e = Control efficiency (%)

MAXIMUM HOURLY EMISSIONS (q):

Material: Oil

Input:			Emissions:		
V =	0.68	%	q =	0.071	lb/hr
Fm =	80	ft^3/hr			
Mv =	58.08	lb/lbmole			
M =	404	ft^3/mole			
Tv =	610	R			
Tx =	554	R			
e =	0	%			

ANNUAL EMISSIONS (Q):

Material: Oil

Input:			Emissions:		
V =	0.68	%	Q =	0.313	ton/yr
Fa =	80	ft^3/hr			
Mv =	58.08	lb/lbmole			
M =	393	ft^3/mole			
Tv =	610	R			
Ta =	539	R			
H =	8760	hr/yr			
e =	0	%			

ATTACHMENT B

PBR AUTHORIZATIONS BY EQUIPMENT

EQUIPMENT	EPN	DESCRIPTION	AUTHORIZATION
OT-1	OT-1	Wet Base Oil Tank	106.472(1)
OT-2	OT-2	Wet Base Oil Tank	106.472(1)
OT-3	OT-3	Oily Water Treatment Tank	106.472(1)
OT-4	OT-4	Wet Base Oil Treatment Tank	106.472(1)
OT-5	OT-5	Centrifuge Feed Tank	106.472(1)
OT-6	OT-6	Wet Base Oil Tank	106.472(1)
OT-7	OT-7	Oily Water Tank	106.472(1)
OT-8	OT-8	Oily Water Tank	106.472(1)
OT-9	OT-9	Mixed Molecular Weight Petroleum Hydrocarbons Storage	106.261/106.262
OT-10	OT-10	Distillation Feed Tank	106.472(1)
FO-1	FO-1	Centrifuged Oil Storage Tank	106.472(1)
WT-1	WT-1	Water Storage	N/A
Centrifuge	SV-1	Centrifuge	106.472(1)
Distillation	SV-1	Vacuum Distillation System	106.472(1)
Sulfuric Acid Tank	ST-1	Sulfuric Acid Storage	106.472(5)
Emulsion Breaker Tank	ET-1	Emulsion Breaker Storage Tank	106.261
Loading	OL-1	Product Loading	106.472(1)/ 106.261/106.262
Fugitives	OF-1	Oil Improvement Area Fugitives	106.261/106.262

FORMS

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

I. REGISTRANT INFORMATION			
A. TCEQ Customer Reference Number:	CN-600618946	TCEQ Regulated Entity Number:	RN-100693282
Note: If "NO," CN or RN number was entered above; please fill out the required Core Data Form, which will be available in Step II of the submittal process.			
B. Company or Other Legal Customer Name: CES Environmental Services Inc.			
Company Official Contact Name: Matt Bowman		Title: President	
Mailing Address: 4904 Griggs Rd.			
City: Houston		State: TX	Zip Code: 77021
Phone No.: (713) 676-1460	Fax No.: (713) 676-1676	E-mail Address: mbowman@cesenvironmental.com	
C. Technical Contact Name: Philip Evans			
Company: The WCM Group, Inc.			
Mailing Address: 110 Bender Ave			
City: Humble		State: TX	Zip Code: 77336
Phone No. : (281) 446-7070	Fax No.: (281) 446-3348	E-mail Address: pevans@wcmgroup.com	
D. Facility Location Information - Street Address: 4904 Griggs Rd.			
If "NO," street address, provide written driving directions to the site: (attach description if additional space is needed)			
City: Houston	County: Harris		Zip Code: 77021

II. FACILITY AND SITE INFORMATION			
A. Name and Type of Facility: CES Environmental Services Inc.			X Permanent ☐ Portable
B. PBR claimed under **30 TAC § 106** *(List all)*:			
§ 106.261	§ 106.		
§ 106.262	§ 106.		
§ 106.472	§ 106.		
Are you claiming a **historical standard exemption or PBR?**			☐ YES X NO
If "YES," enter effective date and Rule Number:			
C. Are you registering a **grandfathered** facility? *If "YES," attach documentation of construction date:*			☐ YES X NO
D. Is there a previous Standard Exemption or PBR for the facility in this registration? (Attach details regarding changes)			☐ YES X NO
If "YES," enter Registration Number and Rule Number:			
E. Are there any **other facilities at this site** which are **authorized by an Air Standard Exemption or PBR?**			X YES ☐ NO
If "YES," enter Registration Number and Rule Number:	75375, 83191	261/262	
F. Are there any **other air preconstruction permits** at this site?			☐ YES X NO
If "YES," enter Permit Numbers:			
G. Is this site required to obtain an **air federal operating permit?**			☐ YES X NO
If "YES," enter Permit Number:			
H. TCEQ Account Identification Number *(if known)*:	HG1270B		

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Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

III. FEE INFORMATION			
To determine if a fee is required answer the following question. If "YES," to question III. A., a fee is not required, skip to Section IV. If "NO," to answer II. A., then go to Section III. B. See Section VI. for address to send fee or go to www.2.tceq.state.tx.us/epay to pay online.			
A. Is this registration an update to a previously registered facility and accompanied by a Certification Form solely to establish a federally enforceable emission limit?			☐ YES X NO
B. What is the fee amount? *If "YES," to any of the following three questions, a $100 fee is require. Otherwise, a $450 fee is required.*			
Does this business have less than 100 employees?			X YES ☐ NO
Does this business have less than 1 million dollars in annual gross receipts?			☐ YES X NO
Is this registration submitted by a governmental entity with a population of less than 10,000?			☐ YES X NO
C. Check/Money Order or Transaction Number *(Payable to TCEQ)*:		*Was fee Paid online?*	☐ YES X NO
Company name of check:		Fee amount:	$100

IV. SELECTED FACILITY REVIEWS ONLY—TECHNICAL INFORMATION		
Note: If claiming one of the following PBRs, complete this section, then skip to Section VI., "Submitting your registration" below:		
Animal Feeding Operations § 106.161 *Livestock Auction Facilities § 106.162* *Saw Mills § 106.223* *Grain Handling, Storage and Drying § 106.283* *Auto Body Refinishing Facilities § 106.436* *Air Curtain Incinerator § 106.496*		
A. Is the applicable PBR checklist attached which shows the facility meets all general and specific requirements of the PBR(s) being claimed? *(If submitting electronically, click "YES".)*		☐ YES ☐ NO
B. Distance from this facility's emission release point to the nearest property line:		feet
Distance from this facility's emission release point to the nearest off-property structure:		feet

V. TECHNICAL INFORMATION INCLUDING STATE AND FEDERAL REGULATORY REQUIREMENTS *Registrants must be in compliance with all applicable state and federal regulations and standards to claim a PBR.*	
A. Is Confidential information submitted and properly marked "CONFIDENTIAL" with this registration?	☐ YES X NO
B. Is a process flow diagram or a process description attached?	X YES ☐ NO
C. Are emissions data and calculations for this claim attached?	X YES ☐ NO
D. Is information attached showing how the **general** requirements (**30 TAC § 106.4**) of the PBR is met for this Registration? (**PBR checklists** may be used, but are optional)	X YES ☐ NO
*Note: Please be reminded that if the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under **30 TAC Chapter 101, Subchapter H, Division 3**, the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x emissions from these facilities.*	
E. Is information attached showing how the **specific PBR** requirements are met for this registration? *(PBR checklist may be used, but are optional)*	X YES ☐ NO
F. Distance from this facility's emission release point to the nearest property line:	100 feet
Distance from this facility's emission release point to the nearest off-property structure:	125 feet
Note: In limited cases, a map or drawing of the site and surrounding land use may be requested during the technical review or at the request of the TCEQ Regional Office or local air pollution control program during an investigation.	

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Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VI. SIGNATURE FOR CERTIFICATION AND REGISTRATION

The signature below indicates that the Responsible Official has knowledge of the facts herein set forth and that the same are true, accurate, and complete to the best of my knowledge and belief. By this signature, the maximum emission rates listed on this certification reflect the maximum anticipated emissions due to the operation of this facility and all representations in this certification of emissions are conditions upon which the facilities and sources will operate. It is understood that it is unlawful to vary from these representations unless the certification is first revised. The signature certifies that to the best of the Responsible Official's knowledge and belief, the project will satisfy the conditions and limitations of the indicated exemption or permit by rule and the facility will operated in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. The signature below certifies that, based on information and belief formed after reasonable inquiry, the statements and information above and contained in the attached document(s) are true, accurate, and complete. **If you questions on how to fill out this form or about air quality permits. Please call 512/239-1250.** *Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.*

SIGNATURE: Matt Baker DATE: 1-2-08

VII. SUBMITTING COPIES OF THE CERTIFICATION AND REGISTRATION

Copies must be sent as listed below:
Processing delays may occur if copies are not sent as noted.

Who	*Where*	*What*
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753 Fax No.: (512) 239-2123 *(do not follow fax with paper copies)*	Originals Form PI-7, Core Data Form. and all attachments
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check Copy of Form PI-7 and Core Data Form
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.state.tx.us, or call (512) 239-1250.	Copy of Form PI-7, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.state.tx.us/nav/permits/air_permits.html or call (512) 239-1250	Copy of Form PI-7, Core Data Form, and all attachments.

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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION
AIR PERMITS DIVISION

TITLE 30 TAC § 106.4 "QUICK-CHECK" APPLICABILITY CHECKLIST

Company Name: **CES Environmental Services, Inc.**
Checklist completed by: **The WCM Group, Inc.** Date: **12/28/2007**
Facility Type: **Transport Vessel Cleaning & Waste Processing**
Permit(s) by rule claimed: 30 TAC Chapter **§106:261, 262, 472**
Project Description (including equipment, materials, and brief process description):
Oil Improvement Process Area

List the maximum annual emission rates, in **TONS PER YEAR (TPY)**, for this project:

CO 0.00	NO_x 0.00	VOC 1.46
PM 0.00	SO_2 0.00	Other 0.00

The following questions require a "Yes" or "No" answer to be indicated for this permit by rule claim:

A. Title 30 TAC § 106.4(a)(5): Current Permit by Rule Requirements

Yes X No☐ Have you checked to determine if this exempt project is being claimed under the current version of 30 TAC 106?
If "Yes", continue to next question
If "No", please contact the TNRCC Air Permits Division for a copy of the current permit by rule to be claimed.

B. Title 30 TAC § 106.4(a)(7): Permit by rule prohibition check

Yes☐No X Are there any air permits under the same account containing permit conditions which prohibit or restrict the use of permits by rule?
If "No", continue to next question
If "Yes", permits by rule may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.
List permit number(s):

C. Title 30 TAC § 106.4(b): Circumvention check

Title 30 TAC § 106.4(b) states "No person shall circumvent by artificial limitations the requirements of §116.110 of this title (covering permitting)." Circumvention by artificial limitations may include but is not limited to:

A. dividing a complete project into separate segments to circumvent §106.4(a)(1) limits;

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B. *claiming feed or production rates below the physical capacity of the project's equipment in order to begin constructing facilities before a permit or permit amendment is approved for full scale operations, particularly when the unit will not be economically viable at less than permitted capacity;*

C. *claiming a limited chemical list in order to begin constructing facilities before a permit or permit amendment is approved for additional chemicals, particularly when the unit will not be economically viable until the additional chemicals are authorized.*

Yes☐No X Does your project meet any of the criteria listed above?
If "No", continue to next rule question
If "Yes", a permit by rule may not be claimed

D. Title 30 TAC § 106.4(c) and (d): Compliance with all Rules

Yes X No☐ Will the facility comply with all rules and regulations of the TNRCC, the intent of the Texas Clean Air Act, and any local permitting or registration requirements?
If "Yes", continue to next rule question
If "No", a permit by rule may not be claimed.

E. Title 30 TAC § 106.4(a)(1): Emission limits check

Yes X No☐ The maximum emissions from all facilities at the site, including this permit by rule claim, are less than 25 tpy of any contaminant.
If the answer to this questions is "Yes", no further review is needed to complete this checklist. Forward all information needed to verify your permit by rule claim to the TNRCC.
If "No", this checklist cannot be used. Please complete the standard 30 TAC § 106.4 Applicability Checklist

Title 30 Texas Administrative Code § 106.261
Permit By Rule (PBR) Checklist
Facilities (Emission Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here [ ] if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.261 (30 TAC § 106.261) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER		
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES ☐ NO ☐ N/A
b1	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐ N/A
b2	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard permit? *If "YES," this PBR cannot be used to authorize emissions from the project*	☐ YES X NO ☐ N/A
a1	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES ☐ NO ☐ N/A
a2	Are total new or increased emissions, including fugitives, less than or equal to 6.0 pounds per hour (lb/hr) and ten tons per year of the following materials (check all that apply):	X YES ☐ NO ☐ N/A

☐ acetylene	☐ helium	☐ propyl ether	☐ limestone
☐ argon	☐ isohexane	☐ sulfur dioxide	☐ magnesite
☐ butane	☐ isopropyl alcohol	☐ alumina	☐ marble
☐ crude oil	☐ methyl acetylene	☐ calcium carbonate	☐ pentaerythritol
☐ carbon monoxide	☐ methyl chloroform	☐ calcium silicate	☐ plaster of paris
☐ cyclohexane	☐ methyl cyclohexane	☐ cellulose fiber	☐ silicon
☐ cyclohexene	☐ neon	☐ cement dust	☐ silicon carbide
☐ cyclopentan	☐ nonan	☐ emery dust	☐ starch
☐ ethyl acetate	☐ oxides of nitrogen	☐ glycerin mist	☐ sucrose
X ethanol	☐ propane	☐ gypsum	☐ zinc stearate
☐ ethyl ether	☐ propyl alcohol	☐ iron oxide dust	☐ zinc oxide
☐ ethylene	☐ propylene	☐ kaolin	

☐ refinery petroleum fractions (except for pyrolysis naphthas and pyrolysis gasoline) containing less than ten volume percent benzene
☐ fluorocarbons Numbers 11, 12, 13, 14, 21, 22, 23, 113, 114, 115, and 116

a3	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical having a limit value (L) greater than 200 milligrams per cubic meter (mg/m^3) as listed and referenced in Table 262 of 30 TAC § 106.262 of this title (relating to Facilities (Emission and Distance Limitations)? List chemical: See Calculations L value: See Calculations	X YES ☐ NO ☐ N/A
	Are total new or increased emissions, including fugitives, less than or equal to 1.0 lb/hr of any chemical not listed or referenced in Table 262? List chemical: See Calculations	X YES ☐ NO ☐ N/A

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	Are total new or increased emissions, including fugitives,of a chemical with a limit value of less than 200 mg/m^3? *If "Yes" the authorization of the chemical is not allowed under this section. We suggest you use 30 TAC §106.262 to authorize the emissions, if applicable.*	☐ YES ☐ NO XN/A
a4	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES X NO ☐N/A
a5	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater than 5.0% opacity in any six-minute period?	☐ YES X NO ☐N/A
a6	Are emission increases five tons per year or greater? If "YES," this checklist must be attached to a Form PI-7 within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any.	☐ YES X NO ☐N/A
a7	Are emission increases less than five tons per year? If "YES," this checklist must be attached to a Form PI-7 and include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any. (pick one): X Within ten days following the installation or modification of the facilities. The notification shall include a description of the project, calculations, data identifying specific chemical names, limit values, and a description of pollution control equipment, if any; or ☐ By March 31 of the following year summarizing all uses of this permit by rule in the previous calendar year.	X YES ☐ NO ☐N/A

EPAHO043001822

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

Electronic Submittal - Only enter the PI-7 confirmation number here if submitting electronically.
Hard-Copy Submittal - Print and complete the following checklist.

The following checklist is designed to help you confirm that you meet Title 30 Texas Administrative Code § 106.262 (30 TAC § 106.262) requirements. If you do not meet all the requirements, you may alter the project design or operation in such a way that all the requirements of the PBR are met or you may obtain a construction permit. The PBR forms, tables, checklists and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at, www.tceq.state.tx.us/nav/permits/air_permits.html.

CHECK THE MOST APPROPRIATE ANSWER				
	Is a description or checklist of how this claim meets the general requirements for the use of PBRs in 30 TAC § 106.4 attached?	X YES	☐ NO	☐ N/A
b1.	Is this claim for construction of a facility authorized in another section of this chapter or for which a standard permit is in effect? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	X NO	☐ N/A
b2.	Is this claim for any change to any facility authorized under another section of this chapter or authorized under a standard perm? *If "YES," this PBR cannot be used to authorize emissions from the project.*	☐ YES	X NO	☐ N/A
c.	Is the facility authorized under another section of this chapter or under a standard permit? *If "YES," subsection (a)(2) and (3) of this section may be used to qualify the use of other chemicals at the facility.*	☐ YES	X NO	☐ N/A
a1.	Are facilities or changes located at least 100 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facilities or the owner of the property upon which the facilities are located?	X YES	☐ NO	☐ N/A
a2.	Are new or increased emissions, including fugitives, emitted in a quantity less than five tons per year or in a quantity less than E as determined by using the equation E=L/K? See Table 262 Figures 1 and 2. *If "YES," the notification shall include a description of the project, calculations for all emissions being claimed under this PBR:*	X YES	☐ NO	☐ N/A
	Chemical: See Calculations L value: See Calculations D: See Calculations K: See Calculations			
a3.	Is this checklist attached to a Form PI-7 within ten days following the installation or modification of the facilities? *If "YES," the notification shall include a description of the project, calculations, and data identifying specific chemical names, L values, and a description of pollution control equipment, if any.*	X YES	☐ NO	☐ N/A
a4.	Are one or more of the following chemicals is handled for this registration? (Check all that apply) *If "YES," answer the following four questions.*	☐ YES	X NO	☐ N/A

☐ acrolein	☐ diazomethane	☐ hydrogen sulfide	☐ ozone
☐ allyl chloride	☐ diborane	☐ ketene	☐ pentaborne
☐ ammonia (anhydrous)	☐ diglycidyl ether	☐ methylamine	☐ perchloromethyl mercaptan
☐ arsine	☐ dimethylhydrazine	☐ methyl bromide	☐ perchloryl fluoride
☐ boron trifluoride	☐ ethyleneimine	☐ methyl hydrazine	☐ phosgene
☐ bromine	☐ ethyl mercaptan	☐ methyl isocyanate	☐ phosphine
☐ carbon disulfide	☐ fluorine	☐ methyl mercaptan	☐ phosphorus trichloride
☐ chlorine	☐ formaldehyde (anhydrous)	☐ nickel carbonyl	☐ selenium
☐ chlorine dioxide	☐ hydrogen bromide	☐ nitric acid	☐ hexafluoride stibine
☐ chlorine trifluoride	☐ hydrogen chloride	☐ nitric oxide	☐ liquefied sulfur dioxide
☐ chloroacetaldehyde	☐ hydrogen cyanide	☐ nitrogen dioxide	☐ sulfur pentafluorid
☐ chloropicrin	☐ hydrogen fluoride	☐ oxygen difluoride	☐ tellurium hexafluoride
☐ chloroprene	☐ hydrogen selenide		

Title 30 Texas Administrative Code § 106.262
Permit by Rule (PBR) Checklist
Facilities (Emission and Distance Limitations)

	Are all facilities are located at least 300 feet from the nearest property line and 600 feet from any off-plant receptor?	☐ YES	☐ NO	☐ N/A
	Are the cumulative amount of any of the following chemicals resulting from one or more authorizations under this section (but not including permit authorizations) less than or equal to 500 pounds on the plant property?	☐ YES	☐ NO	☐ N/A
	Are all listed chemicals handled only in unheated containers operated in compliance with the United States Department of Transportation regulation (49 Code of Federal Regulation, Parts 171-178)?	☐ YES	☐ NO	☐ N/A
	Are any changes to or additions of any existing air pollution abatement equipment?	☐ YES	☐ NO	☐ N/A
a5.	Are there any changes to or additions of any existing air pollution abatement equipment?	☐ YES	☐ NO	☐ N/A
a6.	Will there be any visible emissions, except uncombined water, emitted to the atmosphere from any point or fugitive source in amounts greater that 5.0% opacity in any six-minute period?	☐ YES	☐ NO	☐ N/A

D, Feet	K	
100	326	E=maximum allowable hourly emission, and never to exceed 6 pounds per hour.
200	200	
300	139	
400	104	
600	65	
700	54	
800	46	K=value from the table on this page. (interpolate intermediate values)
900	39	
1,000	34	
2,000	14	D=distance to the nearest off-plant receptor
3,000 or more	8	

TABLE 262
LIMIT VALUES (L) FOR USE WITH EXEMPTIONS FROM PERMITTING § 106.262

The values are not to be interpreted as acceptable health effects values relative to the issuance of any permits under Chapter 116 of this title (relating to Control of Air Pollution by Permits for new Construction or Modification).

Compound	Limit (L) Milligrams Per Cubic Meter
Acetone	590.
Acetaldehyde	9.
Acetone	4.
Acetonitrile	34.
Acetylene	2662.
N-Amyl Acetate	2.7
Sec-Amyl Acetate	1.1
Benzene	3.
Beryllium and Compounds	0.0005
Boron Trifluride, as HF	0.5
Butyl Alcohol,	76.
Butyl Acrylate	19.
Butyl Chromate	0.01
Butyl Glycidyl Ether	30.
Butyl Mercaptain	0.3
Butyraldehyde	1.4
Butyric Acid	1.8
Butyronitrile	22.
Carbon Tetrachloride	12.
Chloroform	10.
Chlorophenol	0.2
Chloroprene	3.6
Chromic Acid	0.01
Chromium Metal, Chromium II and III Compounds	0.1
Chromium VI Compounds	0.01
Coal Tar Pitch Volatiles	0.1
Creosote	0.1
Cresol	0.5
Cumene	50.
Dicyclopentadiene	3.1
Diethylaminoethanol	5.5
Diisobutyl Ketone	63.9
Dimethyl Aniline	6.4
Dioxane	3.6

Compound	Limit (L) Milligrams Per Cubic Meter
Dipropylamine	8.4
Ethyl Acrylate	0.5
Ethylene Dibromide	0.38
Ethylene Glycol	26.
Ethylene Glycol Dinitrate	0.1
Ethylidene 2-norbornene, 5-	7.
Ethyl Mercaptan	0.08
Ethyl Sulfide	1.6
Glycolonitrile	5.
Halothane	16.
Heptane	350.
Hexanediamine, 1, 6-	0.32
Hydrogen Chloride	1.
Hydrogen Fluoride	0.5
Hydrogen Sulfide	1.1
Isoamyl Acetate	133.
Isoamyl Alcohol	15.
Isobutyronitrile	22.
Kepone	0.001
Kerosene	100.
Malononitrile	8.
Mesityl Oxide	40.
Methyl Acrylate	5.8
Methyl Amyl Ketone	9.4
Methyl-T-Butyl Ether	45.
Methyl Butyl Ketone	4.
Methyl Disulfide	2.2
Methylenebis (2-chloroaniline) (MOCA)	0.003
Methylene Chloride	26.
Methyl Isoamyl Ketone	5.6
Methyl Mercaptan	0.2
Merthyl Methacrylate	34.
Methyl Propyl Ketone	530.
Methyl Sulfide	0.3
Mineral Spirits	350.
Naphtha	350.
Nickel, Inorganic Compounds	0.015
Nitroglycerine	0.1

Compound	Limit (L) Milligrams Per Cubic Meter
Nitropropane	5.
Octane	350.
Parathion	0.05
Pentane	350.
Perchloroethylene	33.5
Petroleum Ether	350.
Phenyl Mercaptan	0.4
Propionitrile	14.
Propyl Acetate	62.6
Propylene Oxide	20.
Propyl Mercaptan	0.23
Silica-amorphous-precipitated, silica gel	4.
Silicon Carbide	4.
Stoddard Solvent	350.
Styrene	21.
Succiononitrile	20.
Tolidin	0.02
Trichloroethylene	135.
Trinethylamine	0.1
Valeric Acid	0.34
Vinyl Acetate	15.
Vinyl Chloride	2.

NOTE: The time weighted average (TWA) threshold Limit Value (TLV) published by the American Conference of Governmental Industrial Hygienists (AGGIH), in its TLVs and BEIs guide (1997 Edition) shall be used for compounds not included in the table. The Short Term Exposure Level (STEL) or Ceiling Limit (annotated with a "C") published by the ACGIH shall be used for compounds that do not have a published TWA TLV. This section cannot be used if the compound is not listed in the table or does not have a published TWA TLV, STEL, or Ceiling Limit in the ACGIH TLVs and BEIs guide.

Texas Commission on Environmental Quality

Exemption §106.472 Checklist
(Previously Standard Exemption 51)

Organic Liquid Loading and Unloading

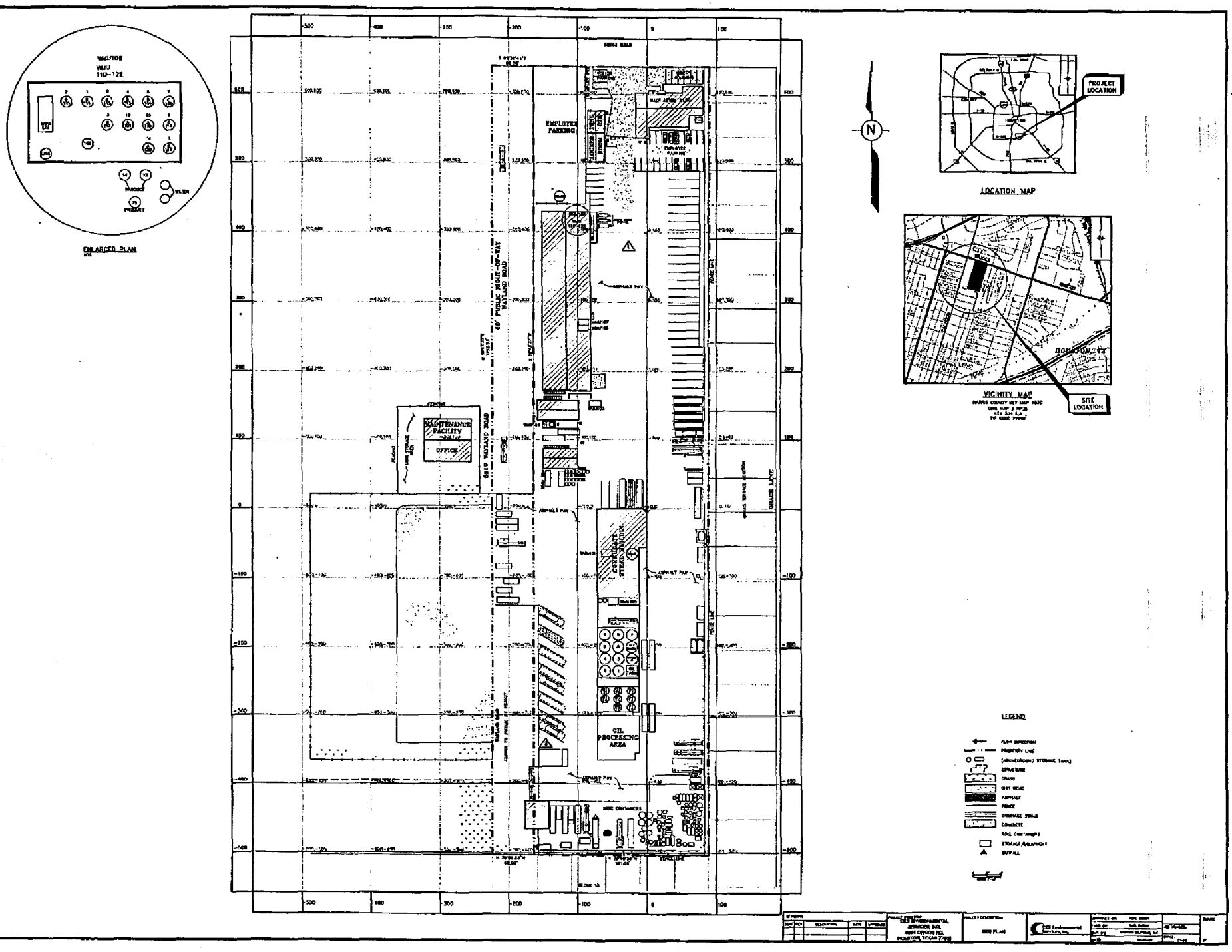
The following checklist is designed to help you confirm that you meet §106.472, previously Standard Exemption 51 (STDX 51), requirements. **Any "no" answers indicate that the claim of registration may not meet all requirements for the use of Exemption §106.472, previously Standard Exemption 51.** If you do not meet all the requirements, you may alter the project design/operation in such a way that all the requirements of the exemption are met, or obtain a construction permit.

YES	NO	NA	DESCRIPTION
X	_	_	Have you included a description of how this exemption claim meets the general rule for the use of exemptions (§106, Subchapter A checklist is available)?
X	_	_	Are all the facilities claimed for exemption specifically named in the general section of §106.472, previously STDX 51? (This exemption has been interpreted to allow mixing or blending but not chemical reaction in tankage.)
X	_	_	Is the equipment designed to prevent visible emissions?
X	_	_	Are all the chemicals to be loaded, unloaded, or stored described in §106.472, previously STDX 51(a) - (i)? Attach a list of the chemicals and identify the appropriate item of §106.472, previously STDX 51 that applies. Include additional supporting data. For example, a §106.472, previously STDX 51(i), claim should identify initial boiling points of all compounds to be covered.
_	_	X	Will aqueous ammonia solutions, hydrochloric acid, or acetic acid be vented through a water scrubber?
_	_	X	Are facilities loading, unloading, or storing butyric acid, isobutyric acid, methacrylic acid, mercaptans, croton oil, 2-methyl styrene, or any other compound with an initial boiling point of 300 degrees F or greater listed in 40 CFR 261, Appendix VIII, located at least 500 feet from any recreational area or residence or other structure not occupied or used solely by the owner or operator of the facility or the owner of the property upon which the facility is located? List these compounds and show their handling location on an attached scaled plot plan.

SITE LOCATION MAP

EPAHO043001830

FACILITY PLOT PLAN



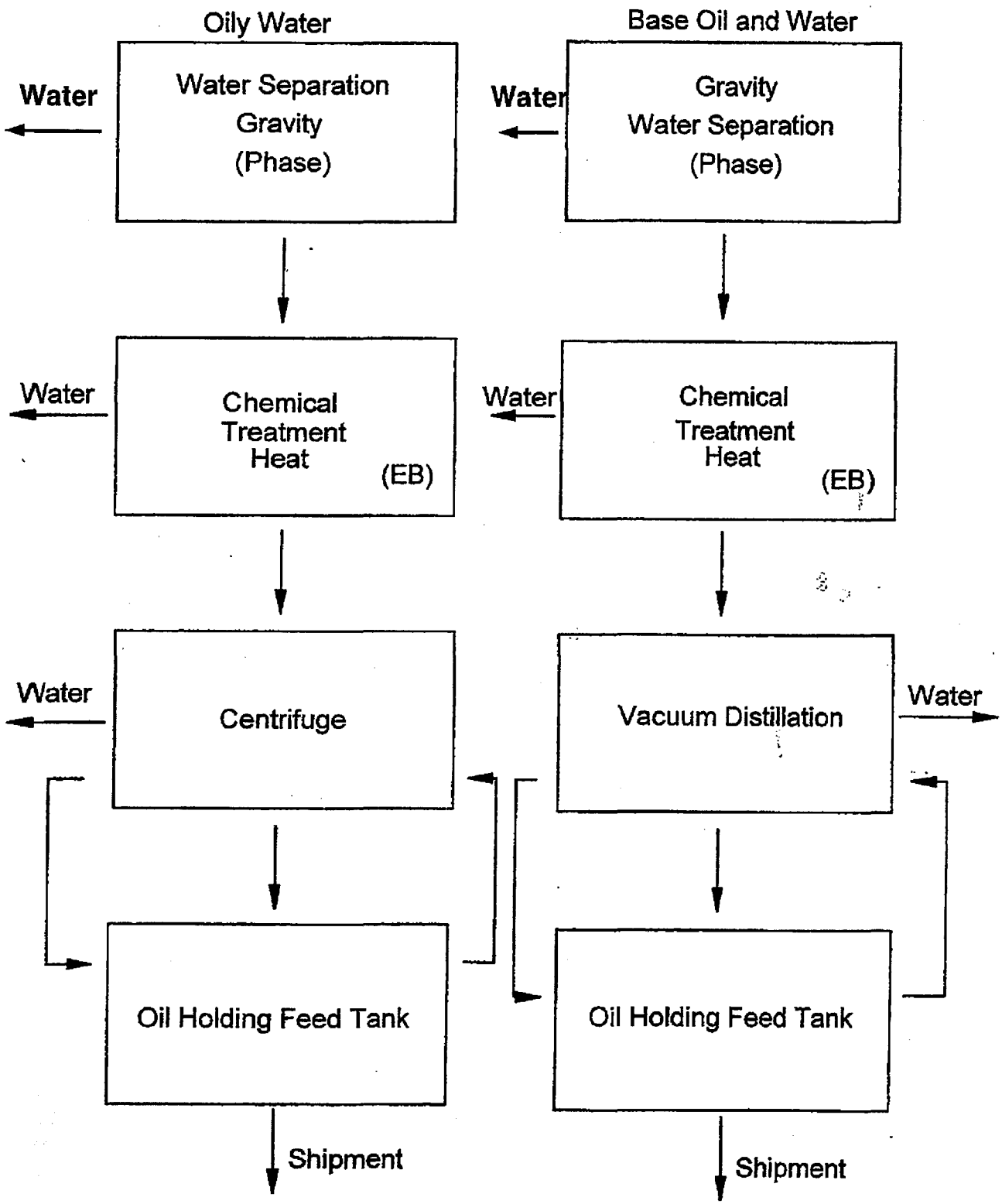
EPAHO043001832

AERIAL PHOTOGRAPH

Google

PROCESS FLOW DIAGRAM

CES Environmental Services, Inc.
Process Flow Diagram
Oil Process Area
12/05/07



CONFIDENTIAL
EMPLOYEE HISTORY

Employee Name	Employee #	Employment Status	Security Clearance	
		☐ Full Time ☐ Part Time ☐ Temporary (Seasonal) ☐ On Call	Level	Date Granted

Social Security No.	Date of Birth	Marital Status	Sex	Employment Date	Prior Employment	I-9 Documentation Completed?
					☐ Yes ☐ No	☐ Yes ☐ No

Address		City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone

Years of Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

IN CASE OF EMERGENCY — CONTACT:

Name	Relationship	Telephone No.	Address
Name	Relationship	Telephone No.	Address
Doctor	Telephone No.		Address
Emergency Medical Information: Refer to employee's Confidential Medical Information File for emergency care information.			

TAX INFORMATION

	Federal (W-4) Exemptions				State/City Exemptions			
No.								
Date								

OTHER DEDUCTIONS

Type	Credit Union	Christmas Club	Additional Ins.	Other Medical	Employee Fund
Amt.					
Date					

HOURS WORKED PER PAY PERIOD

Daily:	Weekly:

BENEFITS INFORMATION

Insurance	Premium	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Medical - self						
Medical - family						
Dental						
Eyecare						
Disability						
Life						

Retirement	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Co. Pension					
Union Pension					
401(K)					
Other					
Options	**Employee Contribution**	**Employer Contribution**	**Date Eligible**	**Date Enrolled**	**Date Withdrawn**
Profit Sharing					
Stock Plan					
Union					
Credit Union					
Other					

HMO INFORMATION

Plan Name	Doctor	Co-Pay	Prescriptions	Co-Pay	Note

PRIOR HEALTH INSURANCE COVERAGE

❑ Certificate Requested	Comments:
❑ Certificate Presented	Such Certificates Should Be Kept in this File.

This file should be used in conjunction with the Medical Information File to maintain such information separately as required by the FMLA and ADA.

Employee Name Burnside, Jacob Employee Number

EPAHO043001837

CES Environmental Services, Inc.

Employee Training Record

Employee Name:	Jacob Burnside		
Driver	YES ☐	NO ☑	
Training Topic	Signature	Training Date	Trainers Initials
Respiratory Program (OSHA) ✓			
Respirator Fit Test (OSHA) ✓			
Haz-Com Right to Know ✓	Jacob Burnside	8-1-08	KAB
Confined Space (OSHA) ✓	Jacob Burnside	8-1-08	KAB
Personal Protective Equipment ✓	Jacob Burnside	8-1-08	KAB
RCRA job specific			
HAZMAT Training (Meets requirements of 49 CFR 172.704)			
DOT Hours of Service			
PMP; SWPPP; SPCC; Contingency Plan ✓			
Fork Lift (OSHA) ✓			
Emergency Evacuation Drills			
Fire Protection			
Driving Safety			
Contingency Plan ✓			
Storm Water Training			
Blood Boorne Pathogens ✓			
Temperture Stress			
HAZWOPER 40hr			
HAZWOPER 8 hr Refresher			
Lockout Tagout ✓			

EPAHO043001838

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

EMPLOYEE NAME: Jacob Burnside DATE: 8/1/08

Hazard Communications

1 **Material safety data sheets (MSDS) must be shipped:**

- [ ] With the initial shipment or at the same time as the chemical
- [ ] With the first shipment of a chemical after an MSDS is updated
- [x] With each chemical shipment
- [ ] Both A and B

2 **Labels must:**

- [ ] Clearly identify the chemical name and hazards
- [ ] Be printed in English, although labels in other languages may be added
- [ ] Use words, pictures and/or symbols
- [x] All of the above

3 If you handle hazardous chemicals, you should:

- [x] Refrain from eating where the chemical is present
- [ ] Remove jewelry

4 **The MSDS sheet will tell you what personal protection equipment is required when working around a specific chemical.**

- [x] True
- [ ] False

5 **The MSDS station for this facility is located at the tank wash office.**

- [x] True
- [ ] False

6 **Any unattended container with a substance shall have a label to identify the contents of the container.**

- [x] True
- [ ] False

CES Environmental Services, Inc.

Name: Jacob Burnside **Date:** 8/1/08

PPE Quiz

1. You are not required to wear PPE at the CES facility.
   True
   False
2. Eye and face protection must:
   A. Be appropriate for the hazard
   B. Fit snugly but not interfere with the wearer's movements
   C. Be easy to clean and kept in good repair
   D. All of the above
3. The shell of a helmet can be damaged by:
   A. Certain types of paint and cleaning solutions
   B. Drilling ventilation holes
   C. Continual exposure to sunlight and high temperature
   D. All of the above
4. Protective footwear is required to protect against electrical hazards or objects falling on, rolling over, or puncturing the foot.
   True
   False
5. When working with pressure washers the recommended eye and face protection is goggles and a face shield.
   True
   False
6. You should always wear metatarsal guards when you are working with or around a hydro blaster.
   True
   False
7. For a positive fit test for a half or full-face respirator you should place your palms over the exhalation valve, exhale into the mask, and feel the pressure in the mask.
   True
   False
8. Respirators should be cleaned regularly with alcohol.
   True
   False
9. Noise-induced hearing loss:
   A. Is irreversible
   B. Cannot be repaired with surgery or drugs
   C. Has a negative effect on interpersonal communication
   D. All of the above
10. PPE can help reduce accidents and injuries.
    True
    False

CES Environmental Services, Inc.

NAME Jacob Burnside DATE 8/1/08

OSHA Permit-Required Confined Space Training Quiz

1. **There is a danger of asphyxiation or suffocation if the oxygen level falls below:**
   a. 19.5%
   b. 20.9%
2. **The acceptable range of oxygen level in a confined space is:**
   a. 19.5% to 23.5%
   b. 17.5% to 23.5%
3. **When testing permit space atmospheres for hazardous substances:**
   a. Check all levels of the space, corners, and pocket areas
   b. Check all levels of the space
4. **As an entrant, you should know the following about the hazards of a given permit space:**
   a. What they are, how you can be exposed, signs, symptoms and consequences of exposure
   b. What they are and how you can eliminate them
5. **You should exit from a permit space:**
   a. When your work is complete or when an evacuation alarm is sounded
   b. As soon as your work is complete
6. **Permit-required confined space training is required for all:**
   a. Entrants, attendants, entry supervisors, and on-site rescue and emergency team members
   b. Entrants
7. **An entry supervisor must do which of these in regard to a rescue service:**
   a. Make sure it is available and there is a plan to summon it
   b. The entry supervisor has no responsibility for rescue services
8. **The worst that can happen if you inhale toxic substances in a confined space:**
   a. Suffocation or death
   b. Dizziness
9. **Attendants can enter a confined space only to check on or rescue authorized entrants**
   a. False
   b. True
10. **While employees are working in a confined space:**
    a. Instruments continue to test the atmosphere for hazards
    b. Atmospheric testing equipment is turned off

Concentra® Medical Centers

Employer's Authorization for Examination or Treatment

(MUST PRESENT PHOTO ID AT TIME OF SERVICE)

Patient Name: Jacob Burnside SSN: 630-28-6638

Company Name: C.E.S Environmental Services, Inc Date of Birth: 4/9/90

Location #/Street Address: 4104 Griggs Rd. Houston, TX 77021 Date of Injury: _____

Temporary Staffing Agency: _____

WORK-RELATED ____ INJURY ____ ILLNESS

Post-Accident Substance Abuse Testing:

____ Drug Screen
____ Breath Alcohol
____ Drug Screen and Breath Alcohol
____ Urine Collection Only

____ DOT Regulated
____ Non-regulated

DOT PHYSICAL

____ Preplacement
____ Recertification
____ Exit
____ Audiogram
____ Regulated Drug Screen
____ Urine Collection Only
____ Breath Alcohol

PRE-PLACEMENT EVALUATION

Job Title: Tech

✓ Physical Exam
____ HPE
____ Regulated Drug Screen
✓ Non-regulated Drug Screen
____ Urine Collection Only
____ Hair Collection
____ Audiogram

SUBSTANCE ABUSE TESTING

____ Regulated
____ Non-regulated
____ Urine Collection Only
____ Rapid Test
____ Pre-placement
____ Reasonable Suspicion
____ Random
____ Periodic
____ Post-accident
____ Follow-up
____ Breath Alcohol

SPECIAL PHYSICAL EXAMINATIONS

____ Asbestos
✓ Respirator 3M full face; Scott full face
____ Hazmat
____ Baseline
✓ Other PFT

BILLING

____ Employee to pay charges at time of service
____ Workers' Compensation
Insurance Co: _____
Policy #: _____
Phone #: _____

Authorized By: Karl Smiley Title: HSE MANAGER

Phone: 832-287-0862 Cell 713-676-4460 Office Date: 8-1-08

(copies of this form available at www.concentrahealth.com)

CONFIDENTIAL
EMPLOYEE HISTORY

Employee Name	Employee #	Employment Status ☐ Full Time ☐ Temporary (Seasonal) ☐ Part Time ☐ On Call	Security Clearance Level	Date Granted

Social Security No.	Date of Birth	Marital Status	Sex	Employment Date	Prior Employment ☐ Yes ☐ No	I-9 Documentation Completed? ☐ Yes ☐ No

Address		City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone
Change Date	Address Change	City	State	Zip	Telephone

Years of Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

IN CASE OF EMERGENCY — CONTACT:

Name	Relationship	Telephone No.	Address
Name	Relationship	Telephone No.	Address
Doctor	Telephone No.		Address

Emergency Medical Information: Refer to employee's Confidential Medical Information File for emergency care information.

TAX INFORMATION

	Federal (W-4) Exemptions				State/City Exemptions			
No.								
Date								

OTHER DEDUCTIONS

Type	Credit Union	Christmas Club	Additional Ins.	Other Medical	Employee Fund
Amt.					
Date					

HOURS WORKED PER PAY PERIOD

Daily:	Weekly:

BENEFITS INFORMATION

Insurance	Premium	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Medical - self						
Medical - family						
Dental						
Eyecare						
Disability						
Life						

Retirement	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Co. Pension					
Union Pension					
401(K)					
Other					
Options	**Employee Contribution**	**Employer Contribution**	**Date Eligible**	**Date Enrolled**	**Date Withdrawn**
Profit Sharing					
Stock Plan					
Union					
Credit Union					
Other					

HMO INFORMATION

Plan Name	Doctor	Co-Pay	Prescriptions	Co-Pay	Note

PRIOR HEALTH INSURANCE COVERAGE

❑ Certificate Requested	Comments:
❑ Certificate Presented	Such Certificates Should Be Kept in this File.

This file should be used in conjunction with the Medical Information File to maintain such information separately as required by the FMLA and ADA.

Employee Name Bimsich Kenny

Employee Number

EPAHO043001843

CES Environmental Services, Inc.

Employee Training Record

Employee Name:	Kenny Burnside		
Driver	YES ☐	NO ☑	

Training Topic	Signature	Training Date	Trainers Initials
Respiratory Program (OSHA) ✓			
Respirator Fit Test (OSHA) ✓			
Haz-Com Right to Know ✓	K. Burnside	8-1-08	KAG
Confined Space (OSHA) ✓	K. Burnside	8-1-08	KAG
Personal Protective Equipment ✓	K. Burnside	8-1-08	KAG
RCRA job specific			
HAZMAT Training (Meets requirements of 49 CFR 172.704)			
DOT Hours of Service			
PMP; SWPPP; SPCC; Contingency Plan ✓			
Fork Lift (OSHA) ✓			
Emergency Evacuation Drills			
Fire Protection			
Driving Safety			
Contingency Plan ✓			
Storm Water Training			
Blood Boorne Pathogens ✓			
Temperture Stress			
HAZWOPER 40hr			
HAZWOPER 8 hr Refresher			
Lock-out Tagout ✓			

Concentra® Medical Centers

Employer's Authorization for Examination or Treatment

(MUST PRESENT PHOTO ID AT TIME OF SERVICE)

Patient Name: Kenny Burnside SSN: 630-28-6640

Company Name: C & S Environmental Services, Inc Date of Birth: 4/8/1990

Location #/Street Address: 4904 Griggs Rd. Houston, TX 77021 Date of Injury: _____

Temporary Staffing Agency: _____

WORK-RELATED ____ **INJURY** ____ **ILLNESS**

Post-Accident Substance Abuse Testing:

- ____ Drug Screen
- ____ Breath Alcohol
- ____ Drug Screen and Breath Alcohol
- ____ Urine Collection Only

- ____ DOT Regulated
- ____ Non-regulated

DOT PHYSICAL

- ____ Preplacement
- ____ Recertification
- ____ Exit
- ____ Audiogram
- ____ Regulated Drug Screen
- ____ Urine Collection Only
- ____ Breath Alcohol

PRE-PLACEMENT EVALUATION

Job Title: Tech

- ✓ Physical Exam
- ____ HPE
- ____ Regulated Drug Screen
- ✓ Non-regulated Drug Screen
- ____ Urine Collection Only
- ____ Hair Collection
- ____ Audiogram

SUBSTANCE ABUSE TESTING

- ____ Regulated
- ____ Non-regulated
- ____ Urine Collection Only
- ____ Rapid Test
- ____ Pre-placement
- ____ Reasonable Suspicion
- ____ Random
- ____ Periodic
- ____ Post-accident
- ____ Follow-up
- ____ Breath Alcohol

SPECIAL PHYSICAL EXAMINATIONS

- ____ Asbestos
- ✓ Respirator 3M full face; Scott full face
- ____ Hazmat
- ____ Baseline
- ✓ Other PFT

BILLING

- ____ Employee to pay charges at time of service
- ____ Workers' Compensation

Insurance Co: _____

Policy #: _____

Phone #: _____

Authorized By: Kent Sunday Title: HSE MANAGER

Phone: 713-676-1460 office / 832-287-0862 Cell Date: 8-1-08

(copies of this form available at www.concentrahealth.com)

EPAHO043001845

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

EMPLOYEE NAME: Kenny Richards DATE: _____

Hazard Communications

1 **Material safety data sheets (MSDS) must be shipped:**

- [ ] With the initial shipment or at the same time as the chemical
- [ ] With the first shipment of a chemical after an MSDS is updated
- [x] With each chemical shipment
- [ ] Both A and B

2 **Labels must:**

- [ ] Clearly identify the chemical name and hazards
- [ ] Be printed in English, although labels in other languages may be added
- [ ] Use words, pictures and/or symbols
- [x] All of the above

3 If you handle hazardous chemicals, you should:

- [x] Refrain from eating where the chemical is present
- [ ] Remove jewelry

4 **The MSDS sheet will tell you what personal protection equipment is required when working around a specific chemical.**

- [x] True
- [ ] False

5 **The MSDS station for this facility is located at the tank wash office.**

- [x] True
- [ ] False

6 **Any unattended container with a substance shall have a label to identify the contents of the container.**

- [x] True
- [ ] False

CES Environmental Services, Inc.

Name: Kenny Burnside **Date:** Aug 1 2008

PPE Quiz

1. You are not required to wear PPE at the CES facility.
   True
   False
2. Eye and face protection must:
   A. Be appropriate for the hazard
   B. Fit snugly but not interfere with the wearer's movements
   C. Be easy to clean and kept in good repair
   D. All of the above
3. The shell of a helmet can be damaged by:
   A. Certain types of paint and cleaning solutions
   B. Drilling ventilation holes
   C. Continual exposure to sunlight and high temperature
   D. All of the above
4. Protective footwear is required to protect against electrical hazards or objects falling on, rolling over, or puncturing the foot.
   True
   False
5. When working with pressure washers the recommended eye and face protection is goggles and a face shield.
   True
   False
6. You should always wear metatarsal guards when you are working with or around a hydro blaster.
   True
   False
7. For a positive fit test for a half or full-face respirator you should place your palms over the exhalation valve, exhale into the mask, and feel the pressure in the mask.
   True
   False
8. Respirators should be cleaned regularly with alcohol.
   True
   False
9. Noise-induced hearing loss:
   A. Is irreversible
   B. Cannot be repaired with surgery or drugs
   C. Has a negative effect on interpersonal communication
   D. All of the above
10. PPE can help reduce accidents and injuries.
    True
    False

CES Environmental Services, Inc.

NAME Kenny Ruiz DATE _____

OSHA Permit-Required Confined Space Training Quiz

1. **There is a danger of asphyxiation or suffocation if the oxygen level falls below:**
   a. 19.5%
   b. 20.9%
2. **The acceptable range of oxygen level in a confined space is:**
   a. 19.5% to 23.5%
   b. 17.5% to 23.5%
3. **When testing permit space atmospheres for hazardous substances:**
   a. Check all levels of the space, corners, and pocket areas
   b. Check all levels of the space
4. **As an entrant, you should know the following about the hazards of a given permit space:**
   a. What they are, how you can be exposed, signs, symptoms and consequences of exposure
   b. What they are and how you can eliminate them
5. **You should exit from a permit space:**
   a. When your work is complete or when an evacuation alarm is sounded
   b. As soon as your work is complete
6. **Permit-required confined space training is required for all:**
   a. Entrants, attendants, entry supervisors, and on-site rescue and emergency team members
   b. Entrants
7. **An entry supervisor must do which of these in regard to a rescue service:**
   a. Make sure it is available and there is a plan to summon it
   b. The entry supervisor has no responsibility for rescue services
8. **The worst that can happen if you inhale toxic substances in a confined space:**
   a. Suffocation or death
   b. Dizziness
9. **Attendants can enter a confined space only to check on or rescue authorized entrants**
   a. False
   b. True
10. **While employees are working in a confined space:**
    a. Instruments continue to test the atmosphere for hazards
    b. Atmospheric testing equipment is turned off

CONFIDENTIAL
EMPLOYEE HISTORY

Employee Name	Employee #	Employment Status	Security Clearance
		☐ Full Time ☐ Part Time ☐ Temporary (Seasonal) ☐ On Call	Level / Date Granted

Social Security No.	Date of Birth	Marital Status	Sex	Employment Date	Prior Employment	I-9 Documentation Completed?
					☐ Yes ☐ No	☐ Yes ☐ No

Address	City	State	Zip	Telephone
Change Date / Address Change	City	State	Zip	Telephone
Change Date / Address Change	City	State	Zip	Telephone
Change Date / Address Change	City	State	Zip	Telephone

Years of Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37

IN CASE OF EMERGENCY — CONTACT:

Name	Relationship	Telephone No.	Address
Name	Relationship	Telephone No.	Address
Doctor	Telephone No.		Address

Emergency Medical Information: Refer to employee's Confidential Medical Information File for emergency care information.

TAX INFORMATION

	Federal (W-4) Exemptions				State/City Exemptions			
No.								
Date								

OTHER DEDUCTIONS

Type	Credit Union	Christmas Club	Additional Ins.	Other Medical	Employee Fund
Amt.					
Date					

HOURS WORKED PER PAY PERIOD

Daily:	Weekly:

BENEFITS INFORMATION

Insurance	Premium	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Medical - self						
Medical - family						
Dental						
Eyecare						
Disability						
Life						

Retirement	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Co. Pension					
Union Pension					
401(K)					
Other					

Options	Employee Contribution	Employer Contribution	Date Eligible	Date Enrolled	Date Withdrawn
Profit Sharing					
Stock Plan					
Union					
Credit Union					
Other					

HMO INFORMATION

Plan Name	Doctor	Co-Pay	Prescriptions	Co-Pay	Note

PRIOR HEALTH INSURANCE COVERAGE

❑ Certificate Requested	Comments:
❑ Certificate Presented	Such Certificates Should Be Kept in this File.

This file should be used in conjunction with the Medical Information File to maintain such information separately as required by the FMLA and ADA.

SAFETY

WARD, Sharon Rene

Employee Name

Employee Number

OTHER INFORMATION

SUBJECT	COMMENTS (DATE & SIGNATURE REQUIRED)
	office O-1

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CES Environmental Services, Inc.

Employee Training Record

Employee Name:	Ward Sharon Rene		
Driver	YES ☐	NO ☑	
Training Topic	Signature	Training Date	Trainers Initials
Respiratory Program (OSHA) ✓	SeRW	8-4-08	KAG
Respirator Fit Test (OSHA) ✓	SharRW	8-4-08	KAG
Haz-Com Right to Know ✓	SharRW	8-4-08	KAG
Confined Space (OSHA) ✓	SharRW	8-4-08	KAG
Personal Protective Equipment ✓	SharRW	8-4-08	KAG
RCRA job specific ✓	SharRW	8-4-08	KAG
HAZMAT Training (Meets requirements of 49 CFR 172.704) ✓	SharRW	8-4-08	KAG
DOT Hours of Service			
PMP; SWPPP; SPCC; Contingency Plan ✓	SharRW	8-4-08	KAG
Fork Lift (OSHA) ✓	SharRW	8-4-08	KAG
Emergency Evacuation Drills			
Fire Protection			
Driving Safety			
Contingency Plan			
Storm Water Training			
Blood Boorne Pathogens			
Temperture Stress			
HAZWOPER 40hr			
HAZWOPER 8 hr Refresher			
LOTO	SeRW	8-4-08	KAG

EPAHO043001851

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

EMPLOYEE NAME: Shannon Ward

RESPIRATORY PROGRAM

1. The CES Respiratory Protection Program was established to protect employees from possible respiratory hazards in their workplace.

X **True** ☐ **False**

2. Possible respiratory hazards found in the workplace are: inhalation of sprays, gases, vapors, and/or dusts.

X **True** ☐ **False**

3. Types of respiratory protection include Air Purifying Respirators, Air Supplied Respirators, and Filter Masks. ✓

X **True** ☐ **False**

4. Air Purifying Respirators can only be used in environments that have sufficient oxygen to breathe.

X **True** ☐ **False**

5. Filter cartridges for Air Purifying Respirators are color coded to identify the chemical(s) hazard from which they provide protection.

X **True** ☐ **False**

CES Environmental Services, Inc.

NAME Shannon Ward DATE 8/4/08

OSHA Permit-Required Confined Space Training Quiz

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CES Environmental Services, Inc.

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Houston, TX 77021
Tel. (713) 676-1460
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EMPLOYEE NAME: Shannon Ward DATE: 8/4/08

Hazard Communications

1 **Material safety data sheets (MSDS) must be shipped:**

- [X] With the initial shipment or at the same time as the chemical
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- [X] Clearly identify the chemical name and hazards
- [ ] Be printed in English, although labels in other languages may be added
- [X] Use words, pictures and/or symbols
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3 If you handle hazardous chemicals, you should:

- [ ] Refrain from eating where the chemical is present
- [X] Remove jewelry

4 **The MSDS sheet will tell you what personal protection equipment is required when working around a specific chemical.**

- [X] True
- [ ] False

5 **The MSDS station for this facility is located at the tank wash office.**

- [X] True
- [ ] False

6 **Any unattended container with a substance shall have a label to identify the contents of the container.**

- [X] True
- [ ] False

CES Environmental Services, Inc.

Name: Shannon Ward **Date:** 6/4/08

PPE Quiz

1. You are not required to wear PPE at the CES facility.
   True
   False
2. Eye and face protection must:
   A. Be appropriate for the hazard
   B. Fit snugly but not interfere with the wearer's movements
   C. Be easy to clean and kept in good repair
   D. All of the above
3. The shell of a helmet can be damaged by:
   A. Certain types of paint and cleaning solutions
   B. Drilling ventilation holes
   C. Continual exposure to sunlight and high temperature
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4. Protective footwear is required to protect against electrical hazards or objects falling on, rolling over, or puncturing the foot.
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5. When working with pressure washers the recommended eye and face protection is goggles and a face shield.
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   False
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   True
   False
8. Respirators should be cleaned regularly with alcohol.
   True
   False
9. Noise-induced hearing loss:
   A. Is irreversible
   B. Cannot be repaired with surgery or drugs
   C. Has a negative effect on interpersonal communication
   D. All of the above
10. PPE can help reduce accidents and injuries.
    True
    False

CES Environmental Services, Inc.

NAME Shannon Ward DATE 8/4/08

RCRA JOB SPECIFIC – CS/FS

1. **Hazardous waste drums do not require labels.**

   a. **True**

   (b.) **False**

2. **When you drum heel from a trailer, you should document it on the**

   Roll Off log **and** Drum Log **or** ~ **log.**

3. **A profile is like an MSDS for waste.**

   (a.) **True**

   b. **False**

   Codes (8 dig.#)

4. **What does DUCK stand for?**

   Distance
   Upwind
   Call for help
   Keep People Away

   spill →

5. **Drums can be left open until they are full.**

   a. **True**

   (b.) **False**

CES Environmental Services, Inc.

NAME Shannon Ward DATE 8/4/08

HAZMAT TRAINING QUIZ

1. **Hazmat training is required**
   a. Every two years
   b. Every three years
2. **Hazmat employees must receive General awareness Training, Function Specific Training, Safety Training, Security Awareness Training and In-Depth Security training.**
   a. True
   b. False
3. **Markings must be**
   a. In Spanish
   b. In English
4. **A placard must be displayed if the material transported is hazmat and it is done in compliance with the regulations**
   a. True
   b. False
5. **Security awareness training is required**
   a. For all drivers
   b. For all hazmat employees
6. **No person may smoke or carry a lighted cigarette**
   a. Within 10 feet of a vehicle containing flammable hazmat
   b. Within 25 feet of a vehicle containing flammable hazmat
7. **The tires of motor vehicle transporting hazmat:**
   a. Must be checked every 200 miles
   b. Must be checked at the beginning each trip
8. **The responsibility for packaging a hazmat rests with:**
   a. The driver
   b. The person offering the material for transport
9. **Why is it important to secure drums against movement?**
   a. It is easier to load more items that way
   b. It helps prevent an unwanted release of hazmat
10. **HMR refers to Hazardous Materials Regulations.**
    a. True
    b. False

11. Hazmat is the abbreviation for hazardous material.

a. True
b. False

12. HMR covers Hazardous Materials Table, Training Requirements, Shipping Papers Packaging, Marking, Labeling, Placarding, and Carriage by Public Highway

a. True
b. False

13. Safety training teaches you about emergency response information, how to avoid accidents with hazmat, and how to protect yourself from exposure to hazmat while on the job.

a. True
b. False

14. "Non-bulk" for a liquid means:

a. A maximum capacity greater than 119 gallons.
b. A maximum capacity equal to or less than 119 gallons.

15. Check each of the following topics that are required for training drivers who transport hazmat by highway

- ✓ Pre-trip inspections
- ✓ Vehicle operations
- ✓ Parking
- ✓ Smoking
- ✓ Incident reporting
- ✓ Loading/Unloading
- ✓ Use of vehicle controls/equipment
- ✓ Railroad crossings
- ✓ Bridges
- ✓ Tunnels
- ✓ Routing
- ✓ Vehicle attendance

16. When a driver is at the control of his/her motor vehicle, the hazmat shipping papers must be:

a. Within the driver's immediate reach in the driver's compartment and readily visible to a person entering the driver's compartment.
b. Hidden from sight

17. Hazmat packages that are broken or leaking must be repaired or placed in a salvage drum before they may be further transported.

a. True
b. False

18. What is the first challenge in the hazmat transportation process?

a. Determining how to ship a material
b. Determining whether a material is hazardous

19. Why is it important to include emergency response information with hazmat shipments?

a. So the driver doesn't have to buy an Emergency Response Guidebook.
b. So emergency personnel can react quickly when there is an accident/incident

20. The regulations in the HMR never change.

a. True
b. False

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

EMPLOYEE NAME: Shannon Ward **DATE:** 8/4/08

FORKLIFT

1. **You must be trained and authorized by your company to operate a forklift.**
   - (●) True
   - ( ) False

2. **A forklift must be inspected at the beginning of each shift.**
   - (●) True
   - ( ) False

3. **You can operate a forklift that is leaking liquids.**
   - ( ) **True**
   - (●) **False**

4. **It is acceptable to drill holes in the forklift's blades.**
   - ( ) True
   - (●) False

5. **When traveling down a ramp, the load should be pointed down ramp.**
   - ( ) True
   - (●) False

6. **Use of seatbelts is optional when operating a forklift.**
   - ( ) True
   - (●) False

7. Each model of forklift has a specific forklift capacity.
   - (●) True
   - ( ) False

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

EMPLOYEE NAME: SHANNON WARD

LOCKOUT / TAGOUT QUIZ

1. **A tag/lock can be removed by anyone, if the person who put the lockout device on the machine is at lunch.**
   - True
   - False

2. **Tags are essentially warning devices affixed to energy-isolating devices.**
   - True
   - False

3. **Before you remove your locks and tags and attempt to start-up a piece of equipment you should:**
   - **a.** Clear all tools from the equipment and notify the operator.
   - **b.** Tell your supervisor.
   - **c.** Sound the "all clear" air horn three times.

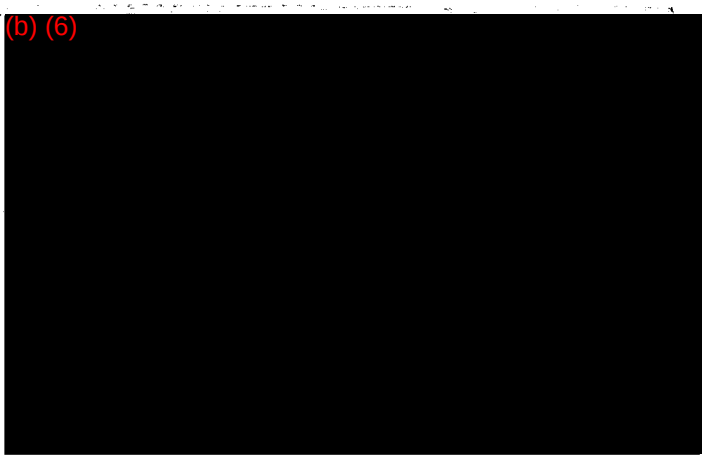
4. **Locks and tags must clearly identify the employee who applies them.**
   - True
   - False

5. **If your work shift is over and you have left locks and tags on a piece of equipment, you should:**
   - **a.** Remove your lock and tag when the next shift mechanic attaches their lock and tag.
   - **b.** Leave your lock and tag for the next shift to worry about.
   - **c.** Remove your lock and tag.

Thursday, April 26, 2007

(b) (6)

(b) (6)



H_2S Monitors & Sign In Sheet
for H_2S Training

EPAHO04300186 2

FDS office
0-5

H_2S Monitors

H_2S Monitors			
NAME	**SERIAL NUMBER**	**SIGNATURE**	**DATE**
Matt Bowman	HM08-H150965	Matt Bowman	6-11-09
Erik Brayden	HM08-H150966	Erik Brayden	06/11/09
Leroy Brown	11823503	Leroy Brown	6-11-09
Bo Cumberland	10816638	Bo	6-19-09
Juan Frias	HM09-H058300	J	6-19-09
Ricky Gall	11823404	Ricky Gall	6-11-09
Melisa Garza	HM09-H058301	Melisa Garza	06-19-2009
Jose Gonzalez	HM08-H128500		6-11-09
Jerry Honey	039396813	Jerry M Honey	06/11/09
Johnston Maleche	HM09-H058296		06/19/09
Jorge Martinez	F08974 23	Jorge	6-11-09
Jay Matlock	HM09-H058305	Jay Matlock	6-11-09
Juan Mendoza	10816647	J	6-11-09

EPAHO043001864

H_2S Monitors

H_2S Monitors			
NAME	**SERIAL NUMBER**	**SIGNATURE**	**DATE**
Suzi Mock	10816648	Suzi Mock	6/11/09
Glenn Olson	HM07-H094846	Glenn Olson	6/11/09
Mike Rudd	HM09-H058304		6/19/09
Dennette Sartin	HM09-H058299	Dennette Sartin	6-19-09
Chris Saylor	HM09-H058298	Chris Saylor	6-11-09
Dennis Shaddix	02936223		6-11-09
Steve Stricker	HM08-H150947		6/11/09
Kevin Wilson	10816650	Kevin Wilson	6-11-09

EPAHO043001865

H_2S Monitors

H_2S Monitors			
NAME	**SERIAL NUMBER**	**SIGNATURE**	**DATE**
Jose Acosta	HM09-H057726	J Acost	6/19/09

EPAHO043001866

H_2S Monitors

H_2S Monitors			
NAME	**SERIAL NUMBER**	**SIGNATURE**	**DATE**
Miguel Rodriguez	11823399	Miguel Rodriguez	06 22 09

EPAHO043001867

PERSONAL MONITORS: BW TECHNOLOGY - HONEYWELL - YELLOW MONITORS

If we have software and cable to download the data, we should start downloading as per the manual.

1. This monitor stores up to ten events. More than 10 events, the older events are replaced by the new events.

2. Down load can be to the PC or printer via IR data link.

3. The detector records maximum gas exposure that triggered an alarm condition and begins calculating the number of hours since the maximum exposure.

4. For each new exposure greater than the current maximum exposure, the detector resets the maximum gas exposure to the new level and resets the hours to 0.

5. After 24 hours of gas readings in the acceptable range, the detector resets both values to 0.

6. Each download process transmits Serial number, life remaining, self-test performed and total number and duration of all events encountered - last ten events like:

7. Maximum exposure, bump check, etc.

8. Data will show Gas type like - H2S and alarm level in PPM, time lapsed since last alarm occurred in days, hours, and minutes, duration of alarm in minutes and seconds.

9. Initially, we should start recording data on a daily basis to see how it works. It takes about 1 to 2 minutes to download the data, so it is not a very time consuming process.

Sign In Sheet for H2s Training Performed By Sudhir Desai

Printed Name	Signature	Date
Erik Braden	Erik Braden	6/11/09
JERRY Honey	Jerry Honey	06-11-09
Dennis Shaddix		6-11-09
Bo Cumberland	Bo	6-11-09
Dennette Santo	Dennette Santo	6-11-09
Jorge E Martinez		6-11-09
José M. González		6-11-09
JUAN MENDEZ		6-11-09
James W. Matlock (Jay)		6-11-09
Michael Rudd		6-11-09
LeRoy Brown Jr		6-11-09
Ricky J Gall		6-11-09
Chris Sayler		6-11-09
GLEN OLSON		6-11-09
Suz Mock	Suz Mock	6/11/09
Melisa Garza		6-11-09
JUAN TRIAS		6-11-09

EPAHO043001869

AERIAL VIEWPOINT

P.O. BOX 12289 SPRING, TX. 77391-2289
(281) 370-7502 FAX (281) 370-5189

DATE: 11-27-04

Scale: 1"=150'

Negative / frame #: 3-09

Area / subject: Jefferson Co., Tx.

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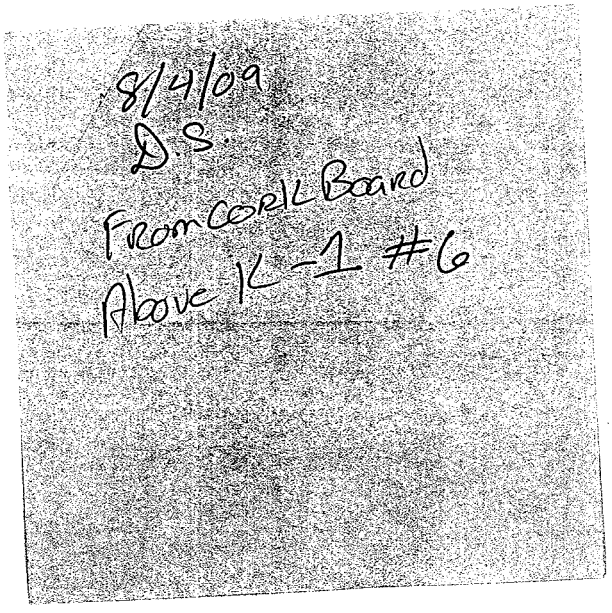
8/4/09
D.S.
From CORE Board
Above IL-1 #6

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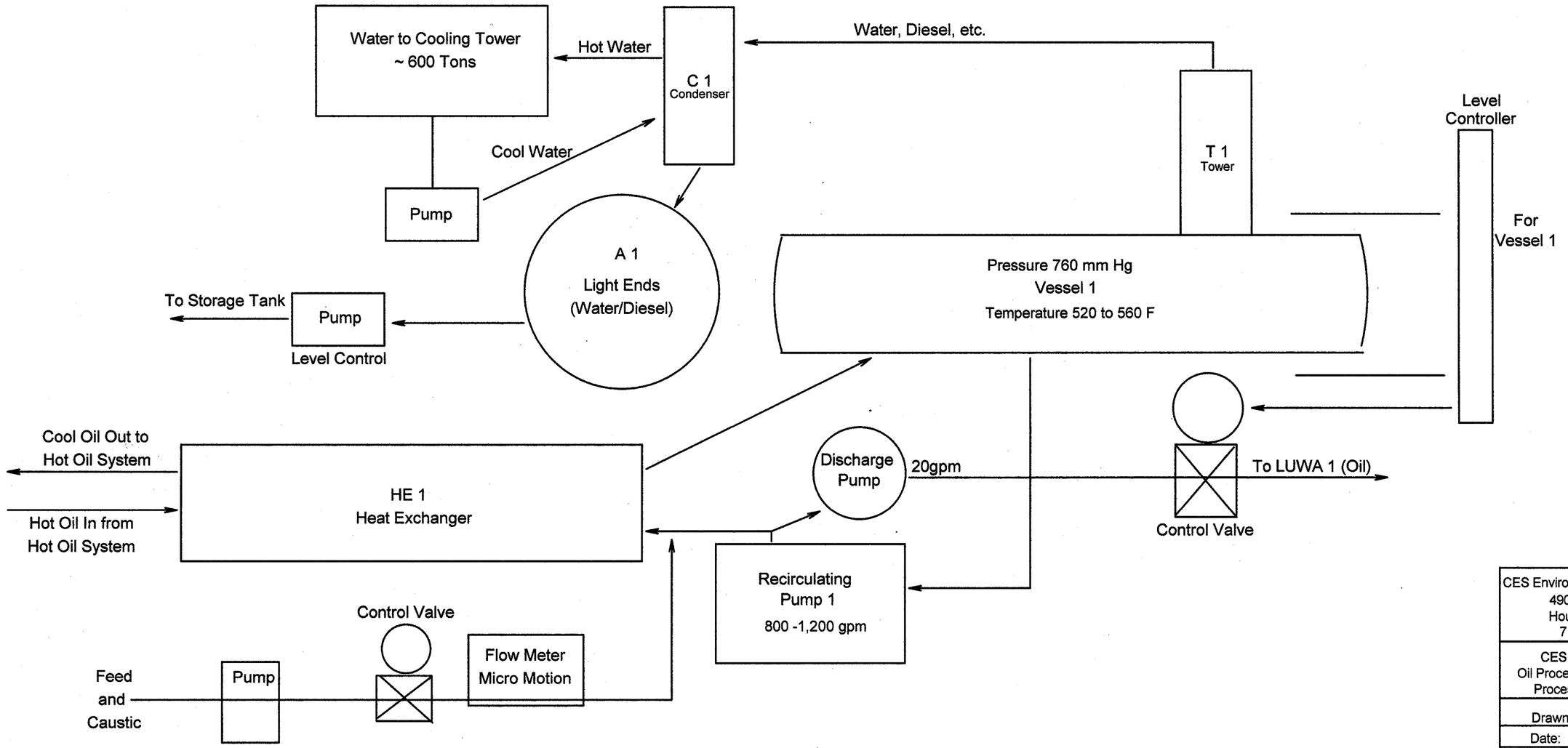
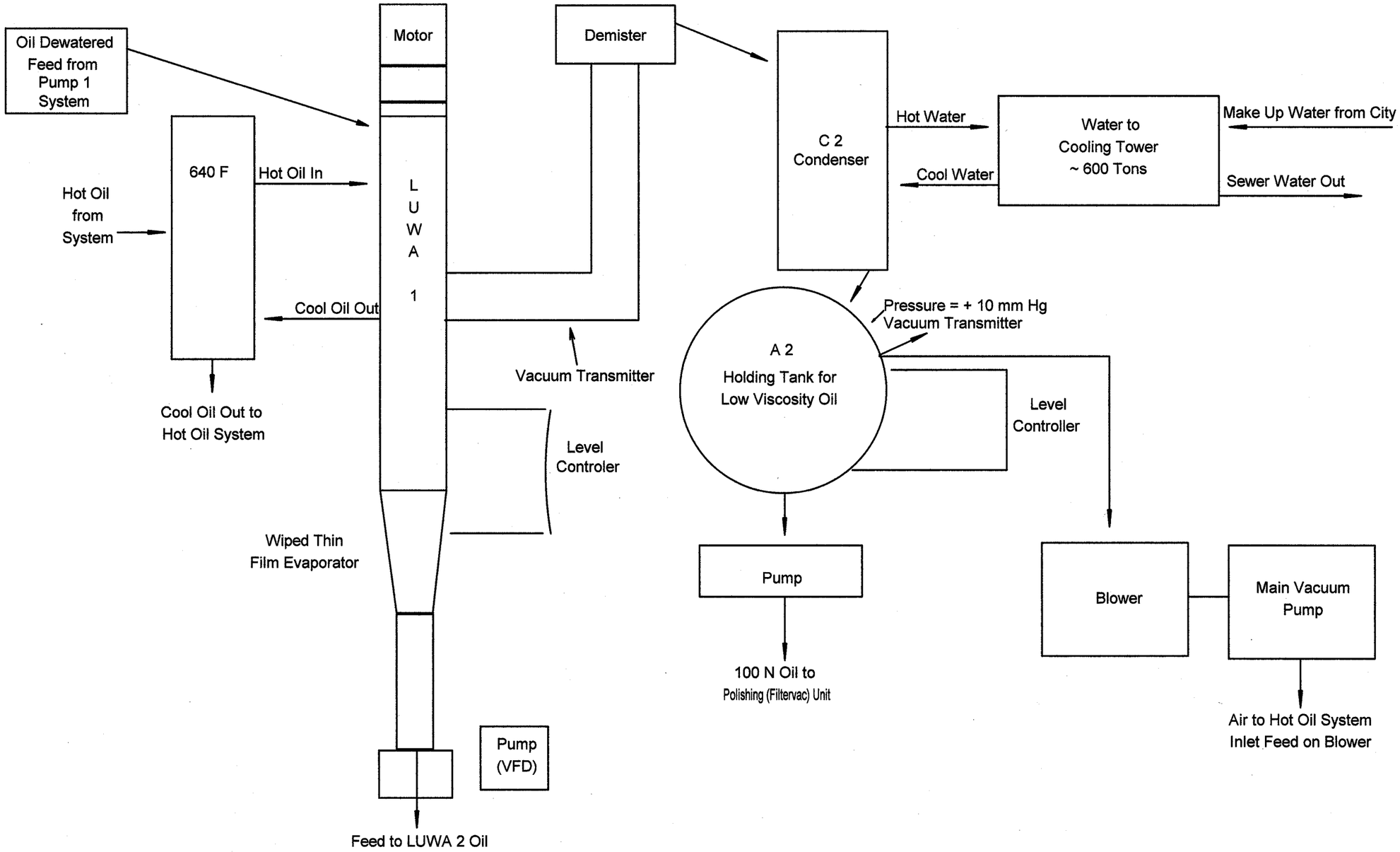


CES Environmental Services, Inc. 4904 Griggs Road Houston, TX 77021 713-676-1460	
CES Houston Facility Oil Processing System (Stage 1) Process Flow Diagram	
Drawn By:	CGH/clm
Date:	10/23/07
Scale:	NTS

EPAHO04400004

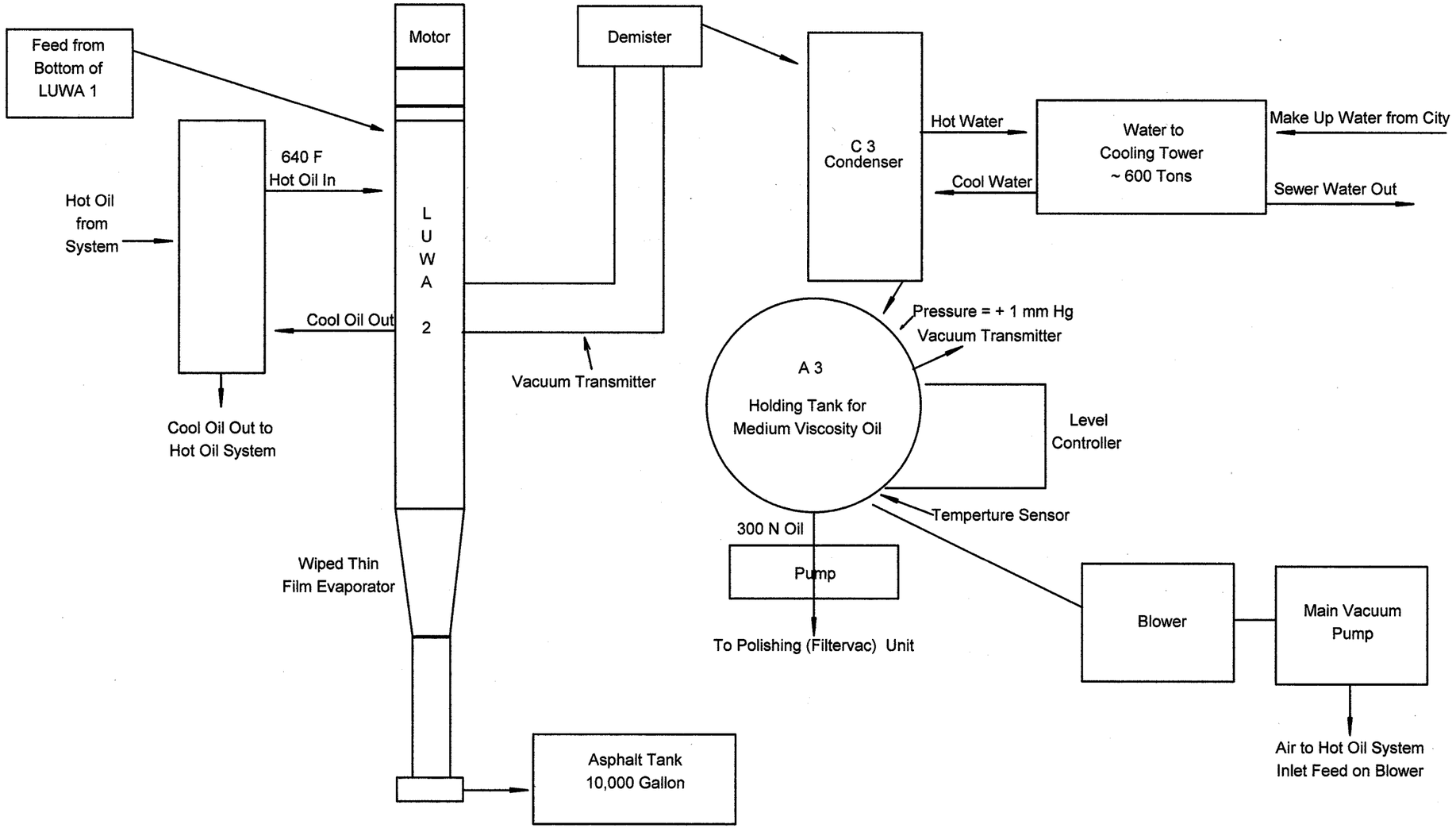
8-4-09
N-1
SLR



CES Environmental Services, Inc. 4904 Griggs Road Houston, TX 77021 713-676-1460	
Oil Processing System (Stage 2) Process Flow Diagram	
Drawn By:	CGH/clm
Date:	10/23/07
Scale:	NTS

EPAHO04400006

8-4-09
N-1
CLR



CES Environmental Services, Inc. 4904 Griggs Road Houston, TX 77021 713-676-1460	
CES Houston Facility Oil Processing System (Stage 3) Process Flow Diagram	
Drawn By:	CGH/clm
Date:	10/23/07
Scale:	NTS

EPAHO04400008

8-4-09
N-1
SZR

North Tank Farm
Existing Oil Processing Area

NOTES:
1. Pipe extends to north side of existing trailer unloading area.
2. Drops with check valves.
3. Four drops need bleeder valves.

NORTH

55'

Truck Loading Area
50' x 15' with 3" Curb

15'

Sump
4' X 4'
5' Deep

Slope

NOTE: 8" Thick Concrete 3000 PSI reinforced with one layer of No.4 rebar on 12" centers each way

Tank Area
Main Foundation
12" Reinforced
Concrete Area

8" Concrete Drive Way

27.5'

27.5'

Valve

3.5'

Pump

Tank 1
Inbound
14' dia

Tank 2
Inbound
14' dia

Tank 3
Inbound
14' dia

Tank Area Containment Wall
4 Side Areas, 30" High and 6" Wide

NOTE: 3000 PSI slab reinforced with two layers (top/bottom) of No.5 rebar tied on 12" centers each way

2.81'

2'

18.1'

Sump
1' X 2'
7" Deep

Inlets are on center of tank on top.
Four drop-downs to bottom valves.
Four lines will have check valves.
(can load inbound in this bay or the ones below with valve operation at ground level)
(will need header with pump)

Steam and condensate will run lower than pipe rack.
Steam and condensate return willl run from tie-in to Tanks 1, 4 and 9 (majority will hang under catwalk where available).
Steam Lines are 2" Pipe and Condensate Lines are 3/4" Pipe.

Outbound lines - connecte to bottom valves on tank.
Pipes will run 3" off the ground.
Valves will have long rods to reach the top of catwalk for operation on the catwalk discharge out of pump will go to catwalk by pass line on discharge side of pump to go back to tank.

Tank 4
Inbound
14' dia

Tank 5
Outbound
14' dia

3'

Tank 6
Outbound
14' dia

NOTE: Reinforced with No. 5 rebars (top/botom) with No. 5 rebars on 18" centers doweled for support

Tank Farm Area 22 Piers

18.1'

Slope

Sump
1' X 2'
6" Deep

Tank 7
Outbound
12' dia

Tank 8
Outbound
12' dia

Tank 9
10' dia

Asphalt Tank

18.1

Slope

Stairs

Pump

5'

Valve

Clay
System

Sump
1' X 2'
5" Deep

8" Concrete
Oil Process Area

16'

8'

14'

Slope

Scrubber
15' X 8'

3000 PSI 6" concrete pad reinforced with No.4 rebars on 12" centers each way

3000 PSI concrete pad reinforced with No. 4 rebar on 12" center each way

Stairs

Oil Processing
Equipment Area

30'

Sump
1' X 2'
4" Deep

Oil Processing Equipment
Containment Wall 8" High X 4" Wide

Process Area 8 Piers

Sump
1' X 2'
3" Deep

2" PVC Pipe in Concrete

38' X 30'

Control
Room
and
Motor
Control
Center
40' x 8'

Reinforced with No. 5 rebars top and bottom, with No. 5 rebars on 18" centers doweled for support

3000 PSI 6" concrete pad reinforced wiht No.4 rebars on 12" centers each way

16'

8'

14'

109'

8'

3000 PSI concrete pad reinforced with No. 4 rebar on 12" center each way

8" Concrete

Hot Oil
Heater System
25' X 12'

140'

Cooling Tower
20' X 15'

Bottom valves elevate to pipe rack on top of tanks

Tower and Heater Area 4 Piers

Motor Oil Processing Area Grade II

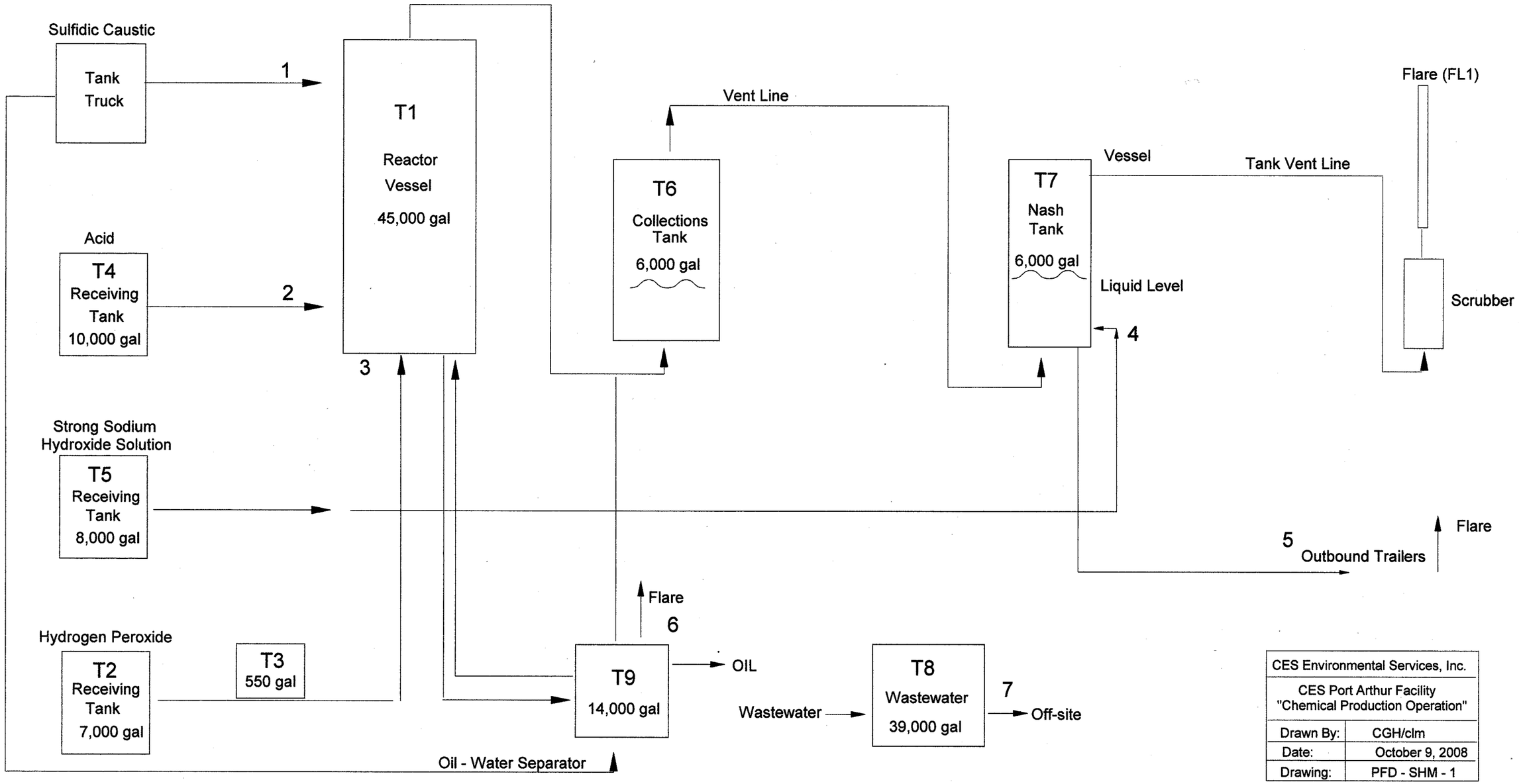
3/4" Nitrogen Line to run the length of the 2 Farms
2" Water to run the length of 1 Farm
(already have water to existing farm)
1" Air to run the length of 1 farm
3" Line to run from Unit to Bullet Trailers

Steam
x Valves
Inbound Tanks
Outbound
Top View of Straight Shaft Pier
Top View of Foundation Bell-Bottom Pier

CES Environmental Services, Inc.
Oil Processing Area Grade II
Date: 01/03/08
Version 18 B
Scale 1 Inch = 12.2 Feet
By: CLM Office Services

8-4-09
N-1
EJ

CES Port Arthur Inorganic Chemical Production Operation Process Flow Diagram



CES Environmental Services, Inc.	
CES Port Arthur Facility "Chemical Production Operation"	
Drawn By:	CGH/clm
Date:	October 9, 2008
Drawing:	PFD - SHM - 1

EPAHO04400012

8-4-09
N-1

EPAHO04400014

8-4-09
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ELR

American Chemistry Council

EPAHO0440000016

8/4/09
WEG
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NICHOLAS J. FULLER
SMALL BUSINESS COUNCIL

American® Chemistry Council

February 20, 2009

Mr. Matt Bowman
Port Arthur Chemical Environmental Services
4904 Griggs Road
Houston TX 77021

Dear Matt:

Thank you for your time on the phone yesterday. I am very pleased that you enjoyed the dinner with our president Cal Dooley a few weeks ago. I am also pleased that you are interested in joining the American Chemistry Council, even though it may not be immediately.

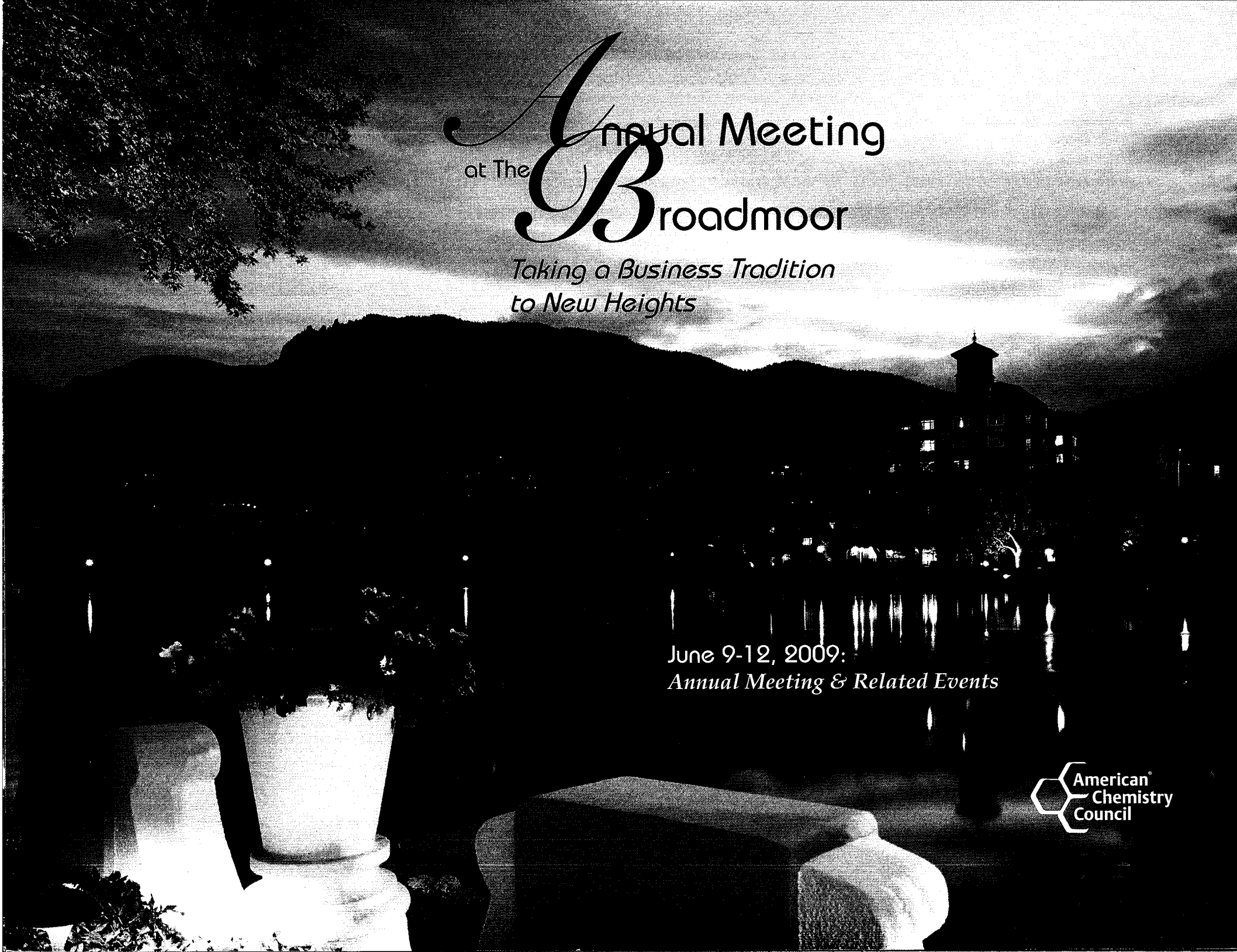
In my email message I said I would send you a copy of the ACC recruitment brochure that shows the benefits of membership to new members. It includes a DVD with testimonials from CEOs. ACC has been through a number of changes, not the least of which is a re-energized focus on our smaller members. That is now my full-time responsibility.

In our phone conversation we also spoke about our Annual Meeting. It is a great opportunity to meet senior executives from all across the chemical industry, from companies you sell to, companies you buy from, and companies from whom you might want buy or to whom you might want to sell a business. Many of my CEOs say that this is the single most valuable benefit of ACC membership. I have enclosed a brochure and a list of last year's attendees. If you or any of your staff decide to come, I would be delighted to help you set up meetings with other companies.

Please do not hesitate to call if you have any questions.

Sincerely,

Nick Fuller



EPAHO04400019

Annual Meeting at The Broadmoor

Taking a Business Tradition to New Heights

137 Years of Outstanding Business Tradition

The American Chemistry Council's Annual Meeting brings together senior executives from U.S. and international companies each June to discuss business issues affecting the industry. Given current economic challenges, ACC's Annual Meeting is the perfect opportunity to meet with existing customers and colleagues, and develop new business relationships. Participants in the Annual Meeting also have a unique ability to offer input into the Council's current activities. The ACC Annual Meeting is an event your company can't afford to miss!

Often referred to as one of the most important benefits of ACC membership, the Annual Meeting is an unmatched commercial business opportunity. Make sure your company is represented!

Customer development, networking, and time for private meetings are just a few of the highly valued aspects of the Annual Meeting. **Act today!** Send in your registration form to be a part of this important event.

Please mark your calendars now for 2010 and 2011 also being held at The Broadmoor:
Sunday, June 6 – Wednesday, June 9th, 2010
Sunday, June 5 – Wednesday, June 8th, 2011

Who Attends the Annual Meeting?

Attendance at the Annual Meeting is comprised of:

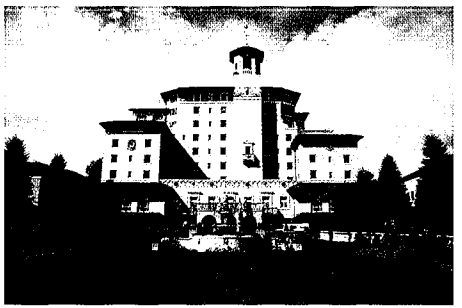
- Chief Executive Officers and Presidents
- Senior Executive Management from all business functions
- Corporate Development Executives and
- Executives from distribution partners in the value chains

Increase your business opportunities by ensuring your company has the right mix of representation!

EPAHO04400020

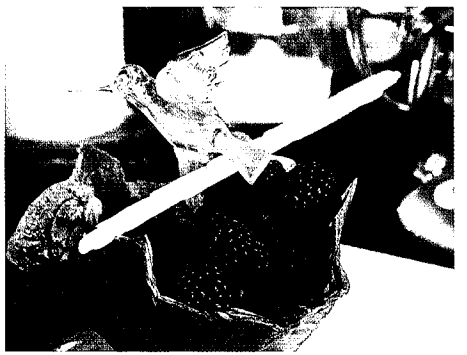
Introducing a New Tradition

Our New Annual Meeting Host — The Broadmoor Colorado Springs, CO



After much thought and consideration, the answer was clear. The Broadmoor is the ideal location to begin a new era in ACC history. Steeped in its own rich history of 90 years, The Broadmoor understands tradition, business and customer service — the perfect backdrop for ACC's Annual Meeting. We are very excited about our new host and look forward to the beginning of a wonderful meeting experience and continued tradition.

The Experience:
A hotel conveniently located just minutes from downtown Colorado Springs, The Broadmoor is the pinnacle of meeting locations in North America. Located on 3,000 acres under the shadow of Cheyenne Mountain, The Broadmoor hosts three championship golf courses, 18 restaurants, cafés and lounges and many other amenities. To its credit, it is the longest-running consecutive winner of both the AAA Five-Diamond and the Mobil Travel Guide Five-Star awards.



Location:
The Broadmoor is easily accessible, with non-stop flights directly to Colorado Springs Airport (15 minutes to the hotel), or from anywhere in the United States through Denver International Airport (90 minutes to the hotel). Please note: It is recommended that private planes fly in and out of Colorado Springs.
Resort Address – 1 Lake Avenue, Colorado Springs, CO 80906

Reservations and Accommodations:
The following rates are available to our Annual Meeting participants through May 19, 2009:

Standard Room $294
Intermediate $324
Superior $354
Suite Rates — Please call The Broadmoor for rates.

Reservation Contact:
Stacy Wallace – 800.634.7711 or swallace@broadmoor.com.

Private Meetings and Functions:
If you would like to reserve space at The Broadmoor for private meetings and/or functions, please contact Josh Ebaugh of The Broadmoor directly at 719.577.5811. He will be happy to assist with those arrangements.

The Broadmoor's Resort Fee
A daily resort fee of $16/room will be assessed. It covers the following items:

- Wireless and hard line Internet Access
- Fitness Center
- Daily newspaper
- All incoming faxes
- In-room coffee and tea service

For additional information on our host property, please visit them online at **www.thebroadmoor.com.**

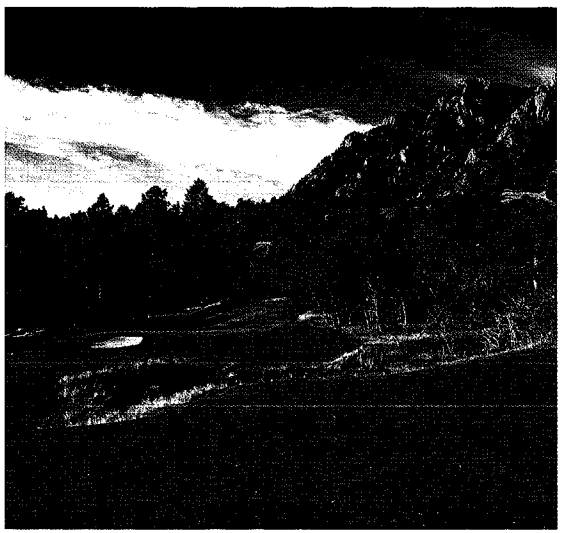
Helpful Hints for Attendees

Here are some helpful hints to help you prepare and make the most of your time at the Annual Meeting:

Schedule Business Meetings Now!
Most attendees schedule private business meetings while attending the Annual Meeting. Schedules fill rapidly so don't wait until you arrive at the Annual Meeting to schedule your meetings! If you would like to receive a list of registrants to date, please contact ACC's Meeting Services at 703.741.5131.

Banquet — How Does It Work?
The Annual Banquet is one of the most popular events at the Annual Meeting. Many companies host their own table. To do so, you should call Josh Ebaugh in advance of your arrival. Take this opportunity to invite your customers to share in business conversations and enjoy the evening's program. Open seating is also available for those that prefer not to reserve a table.

Golf Tournaments
If you are interested in participating in the golf tournaments, please complete the forms which will be e-mailed to you with your meeting confirmation packet. Tournament play counts on Wednesday and Thursday. Wednesday's shotgun starts at 8:00 a.m on the East Course, Thursday's shotgun starts at 12:30 p.m. on the Mountain and West Courses. Forms will be collected and pairings will be determined by the golf committee.



EPAHO04400021

Registration Form

137th Annual Meeting • June 10-12, 2009 • American Chemistry Council
Meeting Services: Phone (703) 741-5131 • Fax (703) 741-6085
To register, complete and fax this form or go online at **www.americanchemistry.com/events**.

Fee Schedule: ACC Member/Partner $825 • Prospective Member $1995

Registration/Payment: Pre-payment is required for all registrations. Credit card payment is preferred. To register for the ACC Annual Meeting and pay using a credit card, please complete this form and fax it to us at 703-741-6085. To register online, go to www.americanchemistry.com/events.

Cancellation Policy: Cancellations will be accepted, and refunds made (minus a $65 administrative fee), if ACC is notified on or before Friday, May 22, 2009. Because of commitments to the hotel, no refunds will be allowed after that date, although substitutions will be permitted. NOTE: Registrations received after May 22 may not be listed in the final meeting program.

Confirmation Information: All registrants (or their designated contact) will receive a confirmation email which will include details to register for the golf tournament. Please watch for this email and follow the instructions/forms included.

Questions? If you have any questions, please feel free to call us at 703-741-5131 during regular business hours (8:00 am – 5:00 pm EST).

REGISTRATION INFORMATION:

Full name for Program _____ Nickname for Badge_____

Company_____Title_____

Address_____

_____

Phone_____ Fax_____

Email (required)_____

Contact other than attendee(s) (if applicable):

Name_____

Phone/Email_____

ADDITIONAL REGISTRATION:

Full name for Program _____ Nickname for Badge_____

Company_____Title_____

Address_____

_____

Phone_____ Fax_____

Email (required)_____

Please duplicate for additional attendees.

REGISTRATION FEES: ACC Member/Partner $825 • ACC Prospective Member $1995

_____ x_____ = _____total due

Payment Method: ❑ American Express ❑ MasterCard ❑ Visa
Card Number _____Expiration Date_____

Card Holder's Name, as it appears on the card _____

Billing Card Address (if different from above) _____

_____

_____

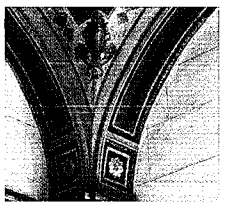
Card Holder's Signature _____Date_____

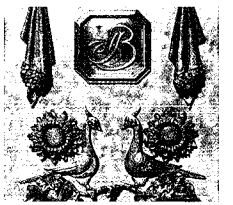
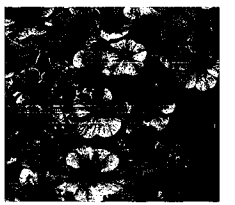
Phone Number_____
If payment must be made by check, please call ACC Meeting Services.

Names received after May 22 will not be listed in the meeting program.
Note: Golf tournament forms will be sent to each registrant with the confirmation email.

Register Online at www.americanchemistry.com/events

American® Chemistry Council



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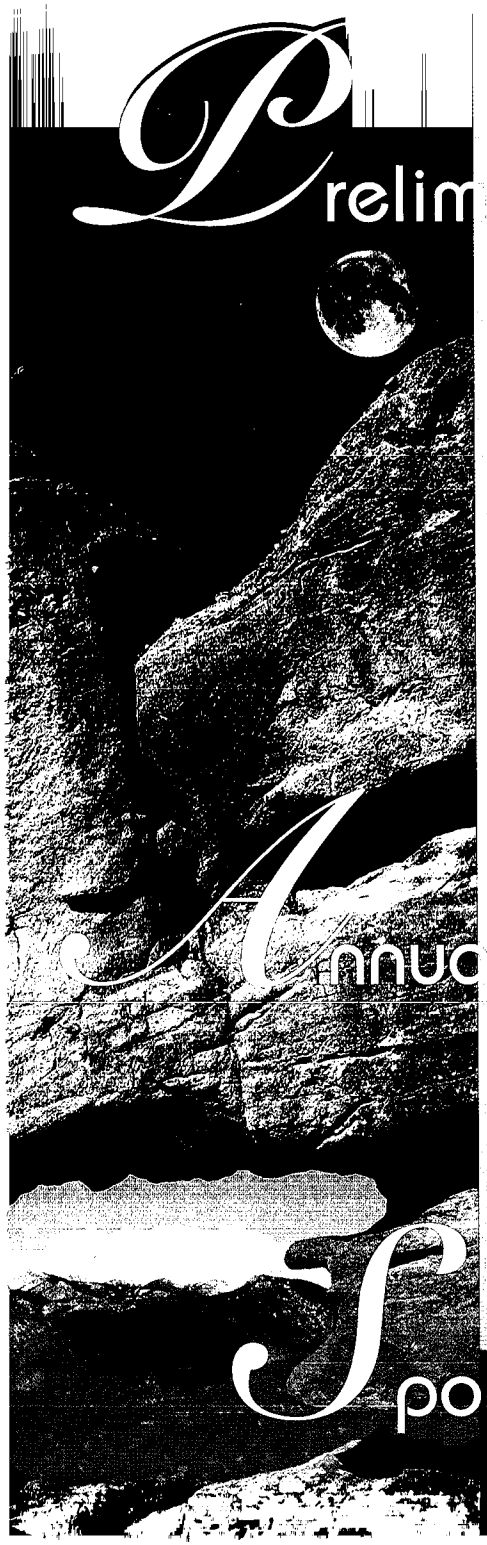

Preliminary Schedule At-a-Glance

*Agenda items marked by an * are open to all Annual Meeting registrants. All others are by invitation only.*

Tuesday, June 9

2:30 – 5:30 p.m.
Plastics Division
Operating Committee

Wednesday, June 10

8:00 a.m.
Shotgun Golf Tournament*
East Course

10:00 – 11:30 a.m.
Communications Committee

10:00 – 11:30 a.m.
Political Activities Committee

12:00 – 1:15 p.m.
Small Business Council
Leadership Committee

12:00 – 1:30 p.m.
Chemical Management
Committee

1:30 – 3:30 p.m.
Small Business Council

1:45 – 3:15 p.m.
Finance, Audit &
Membership Committee

2:15 – 3:15 p.m.
Responsible Care®
Partners Session

3:30 – 4:30 p.m.
Officers Meeting

3:30 – 5:00 p.m.
Global Strategy Committee

3:30 – 5:00 p.m.
Committee on
Responsible Care®

4:30 – 5:00 p.m.
Officers Press Briefing

5:00 –6:30 p.m.
Welcoming Reception*

7:00 p.m.
Sherpa Dinner

Thursday, June 11

8:00 – 9:30 a.m.
Annual Business Session
*(breakfast served)**
- Welcome
- Anti-Trust
- Election of 2010
  Board of Directors
- Chairman's Remarks
- CEO Business Panel
  sponsored by Accenture

12:30 p.m.
Shotgun Golf Tournament*
Mountain and West Course

6:00 p.m.
General Reception*

7:30 p.m.
Annual Meeting Banquet*
- Welcome
- Responsible Care® Awards
- Distinguished Leadership
  Awards
- Featured Speaker

Friday, June 12

8:00 – 9:00 a.m.
Executive Committee

9:15 –12:00 p.m.
Board of Directors*

Annual Meeting features

Program
The Annual Meeting will begin with a Welcome Reception on the evening of Wednesday, June 10. Golfers interested in an early round of play may participate in the Wednesday Shotgun Golf Tournament beginning at 8:00 a.m. On Thursday, we will begin with our Annual Business Session from 8:00 – 9:30 a.m. including breakfast, followed by our traditional Shotgun Golf Tournament at 12:30 p.m. The evening will conclude with the Annual Banquet.

Advance Attendee List
To help facilitate your commercial business networking at the Annual Meeting, an advance copy of the attendee list is available by calling ACC's Meeting Services Team at 703.741.5131. Take advantage of early access to these lists to schedule your meetings in advance of June.

Sponsors

ACC would like to thank the following companies for their support and sponsorship of the 2009 Annual Meeting:

accenture
High performance. Delivered.

CRA INTERNATIONAL

EPAHO04400023

ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Betty	Hawk	3M	Vice President and General Manager, Materials Reso
Jerry	Rudolph	3M	Sourcing Director
James	Dickey	Accenture	Senior Executive
Melanie	Ford Weir	Accenture	CNR Global Marketing Director
Scott	Hahn	Accenture	Senior Executive
Jerry	Palmer	Accenture	Senior Executive
Michael	Scimo	Accenture	Senior Executive
Theo Jan	Simons	Accenture	Senior Executive
Marcus	Huebel	Accenture GmbH	Senior Executive
A. Hameed	Bhombal	Aditya Birla Group	Sr. President & Chief Technology Officer
K.K.	Maheshwari	Aditya Birla Group	Business Director - Chemicals
Damian	Barnes	Afton Chemical Corporation	VP, Supply Chain
C.S. Warren	Huang	Afton Chemical Corporation	President
Andrew	Paxton	Afton Chemical Corporation	
Michael	Graff	Air Liquide USA LLC	President & CEO
Thomas	Hansen	Air Liquide USA LLC	Senior VP - Global Chemical Markets
Bryant	Jackson	Air Liquide USA LLC	Director, Chemical Market Group, Americas
Ron	LaBarre	Air Liquide USA LLC	Group VP, World Markets of Air Liquide Group
Roger	Perreault	Air Liquide USA LLC	President, Air Liquide Large Industries
Benoit	Potier	Air Liquide USA LLC	Chairman & CEO, Air Liquide Group
Doug	Hayes	Air Products and Chemicals, Inc.	Global Accounts Director
Patricia	Mattimore	Air Products and Chemicals, Inc.	VP - Energy and Materials
John	McGlade	Air Products and Chemicals, Inc.	Chairman, President and CEO
Wayne	Mitchell	Air Products and Chemicals, Inc.	VP, General Manager Performance Chemicals
Mark	Wydra	Air Products and Chemicals, Inc.	Director, Global Business Sourcing
Rob	Frohn	Akzo Nobel Chemicals Inc.	Board of Management, Member Chemicals
Ton	Geurts	Akzo Nobel Chemicals Inc.	
Alan	Kwek	Akzo Nobel Chemicals Inc.	President, General Manager - Polymer Chemicals
Robert	Margevich	Akzo Nobel Chemicals Inc.	President Polymer Chemicals
Paul	Radlinski	Akzo Nobel Chemicals Inc.	VP
Francis	Sherman	Akzo Nobel Chemicals Inc.	General Manager, Surface Chemistry
Niek	Stapel	Akzo Nobel Chemicals Inc.	General Manager, Surfactants America
Jan	Svard	Akzo Nobel Chemicals Inc.	BU Mgr. Pulp & Paper Chemicals
Luke	Kissam	Albemarle Corporation	Sr. VP, Mfg. & Law, and Corporate Secretary
Barbara	Little	Albemarle Corporation	Vice President, Government Relations
Tony	Parnell	Albemarle Corporation	VP
Mark	Rohr	Albemarle Corporation	President and CEO
John	Steitz	Albemarle Corporation	SVP
Yiel	Elhanany	AmeriBrom, Inc.	President
Richard	Hooper	Ameribrom, Inc.	President & CEO
Yosef	Shahar	Ameribrom, Inc.	Deputy President for M&A - ICL
Tina	Bahadori	American Chemistry Council	Managing Director, LRI
Garrity	Baker	American Chemistry Council	Senior Director, Global Affairs
Carmen	Benns	American Chemistry Council	Director, Marketing and Program Development
Tom	Carter	American Chemistry Council	Managing Director, Retail Sustainability
Anne	Darconte	American Chemistry Council	Director, Grassroots
Marty	Durbin	American Chemistry Council	Managing Director, Federal Affairs
Schubert	Fabros	American Chemistry Council	Manager, Program Development & Marketing

EPAHO044000024

ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Edie	Fleming	American Chemistry Council	Managing Director, Marketing and Meeting Serv.
Nicholas	Fuller	American Chemistry Council	Small Business Council
Jack	Gerard	American Chemistry Council	President & CEO
Tom	Gibson	American Chemistry Council	Senior Vice President, Advocacy
David	Gleason	American Chemistry Council	Senior Director - Responsible Care
Lisa	Harrison	American Chemistry Council	Vice President, Communications
Jessica	Hurwitz	American Chemistry Council	Administrative Assistant
Mary	Irace	American Chemistry Council	Managing Director, Global Affairs
Sharon H.	Kneiss	American Chemistry Council	Vice President, Products Divisions
Katrina	Kona	American Chemistry Council	Manager, Business Development
Andrew	MacCachran	American Chemistry Council	Director, Meetings
Shana	Myers	American Chemistry Council	PAC Director
Raymond	O'Bryan	American Chemistry Council	Vice President, CFO
Dell	Perelman	American Chemistry Council	General Counsel and Corporate Secretary
Debra	Phillips	American Chemistry Council	Managing Director, Responsible Care
Steve	Russell	American Chemistry Council	Managing Director, Plastics Division
Michael	Walls	American Chemistry Council	Managing Director, Regulatory & Technical Affairs
Sam	George	American Commercial Lines	Vice President
Joseph	Greulich	Anderson Development Company	President & CEO
Mark	Benson	APCO Insight	President
Barry	Siadat	Aristech Acrylics LLC	Chairman
Telly	Zachariades	Aristech Acrylics LLC	Financial Advisor
Ken	Blackburn	Arkema Inc.	General Manager
Goerge	Cornelius	Arkema Inc.	President & CEO
Jean-Marc	Espinosa	Arkema Inc.	Regional Group President, Functional Additives
Manny	Katz	Arkema Inc.	Group President, Fluorochemicals & CECA
Thierry	Le Henaff	Arkema Inc.	Chairman & CEO
Rich	Rowe	Arkema Inc.	Global Group President, Functional Additives
Marc	Schuller	Arkema Inc.	Executive VP - Industrial Chemicals
Scott	Schwartz	Arkema Inc.	General Manager, Thiochemicals
Ted	Harris	Ashland Inc.	President
Morris	Owen	Ashland Inc.	VP Global Sourcing
Elizabeth A.	Potts	Ashland Inc.	V. P. Purchasing
Mike	Shannon	Ashland Inc.	President Global Supply Chain
Heidi	Alderman	BASF Corporation	Senior Vice President, Procurement
Kurt	Bock	BASF Corporation	Chairman and CEO
Joseph	Breunig	BASF Corporation	President, Chemicals, Plastics & Performance Produ
Peter	Cella	BASF Corporation	Group Vice President, Petrochemicals, Plasticizers
Beate	Ehle	BASF Corporation	President, Chemical Intermediates Worldwide
John	Feldmann	BASF Corporation	Member of the Board of Executive Directors; Constr
Roberto	Gualdoni	BASF Corporation	Sr. Vice President, Procurement Raw Materials
Juergen	Hambrecht	BASF Corporation	Chairman
Albert	Heuser	BASF Corporation	President, Petrochemicals (BASF Aktiengesellschaft

EPAHO044000025

ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Markus	Kramer	BASF Corporation	President, Acrylics & Dispersions
Andreas	Kreimeyer	BASF Corporation	Member of the Board of Executive Directors; Inorganics; Petrochemicals; Intermediates; Chemical Research & Engineering; BASF Future Business
Eckhard	Mueller	BASF Corporation	President, global Procurement and Logistics
Teressa	Szelest	BASF Corporation	Group Vice President, Intermediates
Gregory	Babe	Bayer Corporation	President & CEO Bayer MaterialScience LLC
Attila	Molnar	Bayer Corporation	President and CEO
Julie	Van Egmond	Bayer Corporation	Director, Federal Government Relations
Richard	Bolte	BDP International	President/CEO
Michael	Ford	BDP International	VP Compliance
Mark	Kaifesh	BDP International	Sr. Vice President
Ken	Wensel	BDP International	Chief Sales Officer
Mark	Goldberg	Bluestar Silicones USA Corp.	Senior Counsel, North America
Ronald	Hanks	Bluestar Silicones USA Corp.	Business Director
Stephen	Clark	Brenntag North America, Inc.	CEO
William	Fidler	Brenntag North America, Inc.	President
Inga	Carus	Carus Corporation	President & CEO
Paul	Carus III	Carus Corporation	Treasurer
Gene	Rabent	Carus Corporation	VP & General Manager, Sales, Marketing & Comm. Dev
Alain	Perroy	Cefic	Director General
Chris	Hines	Celadon Trucking	President and COO
James	Alder	Celanese	VP, Operations & Technical
Sandy	Beach Lin	Celanese	EVP - President of Ticona
John	Gallagher	Celanese	EVP - President, Acetyls and Celanese Asia
Douglas	Madden	Celanese	EVP - President Acetate / Emulsions / PVOH
Rob	McArver	Celanese	Vice President, Global Public Affairs
John	O'Dwyer	Celanese	EVP - Supply Management
Steven	Sterin	Celanese	Senior Vice President & Chief Financial Officer
David	Weidman	Celanese	Chairman & CEO
Christopher	Lancaster	Champion Technologies, Inc.	VP Global Operations
Robert	Westervelt	ChemicalWeek	Senior Editor/News
Eric	Degoul	Chemtura	Vice President, Global Procurement
Lloyd	Moon	Chemtura	Vice President, Government Affairs
Anne	Noonan	Chemtura	Group President Polymer Additives
Paula	Paolino	Chemtura	Procurement VP, Performance Specialties
Lynn	Schefsky	Chemtura	Sr. VP, General Counsel & Secretary
Robert	Wedinger	Chemtura	Chief Business Officer
Robert	Wood	Chemtura	Chairman, President & CEO
Bruce	Bush	Chevron Phillips Chemical Company LP	Olefins and NGL Manager
Greg	Garland	Chevron Phillips Chemical Company LP	President & CEO
Mark	Haney	Chevron Phillips Chemical Company LP	Sr. Vice President, Specialties, Aromatics and Sty
Linda	Koenig	Chevron Phillips Chemical Company LP	Community and Government Affairs Manager
Tim	Taylor	Chevron Phillips Chemical Company LP	Sr. Vice President, Olefins and Polyolefins

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Jim	Telljohann	Chevron Phillips Chemical Company LP	Aromatics General Manager
Patrick	Fiedler	Church & Dwight Co., Inc.	
Roger	Madden	Church & Dwight Co., Inc.	V.P. & General Manager
Joseph	Sipia, Jr.	Church & Dwight Co., Inc.	
Brendan	Cummins	Ciba Specialty Chemicals Corporation	Chief Executive Officer
Eric	Marohn	Ciba Specialty Chemicals Corporation	President
Armin	Meyer	Ciba Specialty Chemicals Corporation	Dr.
Paul	Allen	Cognis Corporation	Executive Vice President Functional Products
Neil	Checker	CRA International	Vice President
Joseph	Coote	CRA International	Vice President
Rob	Henske	CRA International	Vice President
Jamie	O'Riordan	CRA International	Marketing Manager - Business Consulting Platform
Vijay	Sarathy	CRA International	Vice President
William	Avrin	Cytec Industries Inc.	VP, Corporate & Business Development
Shane	Fleming	Cytec Industries Inc.	President, Cytec Specialty Chemicals
Scott	Hain	Cytec Industries Inc.	VP, Global Procurement
David	Lilley	Cytec Industries Inc.	Chairman, President and CEO
Clifford	Adams	Daikin America, Inc.	Chairman & CEO
Satoshi	Doi	Daikin America, Inc.	President
Shigeru	Ushijima	Daikin America, Inc.	International Business Development Manager
Gary	Mossman	Dixie Chemical Company, Inc.	President & Chief Executive Officer
Carla	Doleman	DJG Chemical, Inc.	CEO
Dwain	Colvin	Dover Chemical Corporation	President
John	Farber	Dover Chemical Corporation	Chairman, ICC Industries Inc.
George	Biltz	Dow	Business Group President, Dow Portfolio Optimizati
Pat	Dawson	Dow	Business Group President, Polyurethanes
Julie	Fasone Holder	Dow	Senior Vice President, Chief Marketing & Sales and
Jim	Fitterling	Dow	President, Basic Plastics
Michael	Gambrell	Dow	Executive Vice President
Pat	Gottschalk	Dow	Commercial Vice President, North America Chemicals
Heinz	Haller	Dow	Executive Vice President, Performance Plastics and
Greg	Jozwiak	Dow	Sr Global Business Director, Solution Polyethylene
David	Kepler II	Dow	Executive Vice President, Chief Sustainability Off
Tim	King	Dow	Vice President, Global Purchasing
Andrew	Liveris	Dow	Chairman and Chief Executive Officer
Doug	May	Dow	Business Director, Chlorinated Organics
Jon	Pyper	Dow	Global Issues Manager
Vipul	Shah	Dow	Business Director, Chlor-Vinyl/Vinyl Acetate Monom
Earl	Shipp	Dow	Business Group President, Basic Chemicals
Theodore	Verheggen	Dow	Legislative Counsel

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Glenn	Wright	Dow	Commercial Vice President, Basic Plastics North Am
Jan	Botz	Dow Corning Corporation	Executive Director & Chief Communications Manager
Dr. Stephanie	Burns	Dow Corning Corporation	Chairman, President & CEO
Marie	Eckstein	Dow Corning Corporation	VP, Reputation Management & Administration
Faye	Graul	Dow Corning Corporation	U.S. Area Vice President, Government Relations
Robert	Hansen	Dow Corning Corporation	VP & General Manager, Core Products Business
E. Blair	Althouse	Dupont	Director - Strategic Sourcing
Hugh	Campbell	DuPont	Director, Chemical & Environmental Management Prog
Stacey	Mobley	DuPont	Senior Vice President, General Counsel, and Chief
Gary	Spitzer	DuPont	Vice President & General Manager, Chemical Solutio
Terry	Begley	Eastman Chemical Company	VP, Global Supply Chain & Quality
Michael	Berry	Eastman Chemical Company	VP, Global Chem & Energy Proc
Mark	Costa	Eastman Chemical Company	Sr. VP, Corporate Strategy & Marketing
Brian	Ferguson	Eastman Chemical Company	Chairman & Chief Executive Officer
Michael	Humby	Eastman Chemical Company	Director, Sales & Regional Business, PCI
Richard	Johnson	Eastman Chemical Company	Group VP, Chemicals & Fibers Businesses
Gregory	Riddle	Eastman Chemical Company	Director, Investor Relations
James	Rogers	Eastman Chemical Company	Pres & Chem-Fibers Bus Group Head
Thomas	Holleran	Emerald Performance Materials	President and CEO
Tim	Gatlin	Empire Express, Inc.	President & CEO
Don	Stroud	Empire Express, Inc.	VP, Business Development
Thomas	Bates	Evonik Degussa Corporation	President
Jack L.	Clem	Evonik Degussa Corporation	Senior Vice President NAFTA Inorganic Materials
Gerhard	Ellermann	Evonik Degussa Corporation	
Jonathan	Evans	Evonik Degussa Corporation	Director, Corporate Communications
Carlos	Gil Mast	Evonik Degussa Corporation	Vice President & General Manager
Peter	Knopf	Evonik Degussa Corporation	VP & Head Regional Services
Ted	Pettijohn	Evonik Degussa Corporation	VP
John	Rolando	Evonik Degussa Corporation	President of CYRO Industries
Patrik	Wohlhauser	Evonik Degussa GmbH	Member of the Executive Board
Reinhold	Brand	Evonik Goldschmidt Corporation	President
Claus	Rettig	Evonik Goldschmidt GmbH	President
Klaus	Engel	Evonik Industries AG	Member of the Executive Board
Gregory	Bialy	Evonik RohMax USA, Inc.	President and CEO
Matthew	Aguiar	ExxonMobil Chemical Company	V.P. Basic Chemical Global Bus. Unit
James	Harris	ExxonMobil Chemical Company	Senior Vice President
Myron	Harrison	ExxonMobil Chemical Company	
Karen	McKee	ExxonMobil Chemical Company	Vice President, Adhesive Industry Business
Neely	Nelson	ExxonMobil Chemical Company	Issues Advisor
Steve	Pryor	ExxonMobil Chemical Company	President
Elissa	Sterry	ExxonMobil Chemical company	Vice President, Intermediates
John	Verity	ExxonMobil Chemical Company	Vice President, Global Polyethylene
Theodore	Wojnar, Jr.	ExxonMobil Chemical Company	Sr. Vice President

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Edward	Flynn	FMC Corporation	General Manager, Alkali Chemicals
Bruce	Lerner	FMC Corporation	General Manager, FMC Peroxygens
William	Walter	FMC Corporation	Chairman, President and CEO
D. Michael	Wilson	FMC Corporation	Vice President & General Manager Industrial Chemic
Mark	Attwater	General Carbon Company	Business Manager
Grace	Attwater	General Carbon Company	Business Manager
Paul	Carrico	Georgia Gulf Corporation	President & CEO
Douglas	Shannon	Georgia Gulf Corporation	Vice President, Procurement
Nariman	Behravesh	Global Insight	
Mohammad	Hossain	Greif	Director of M&A and Corporate Development
Michael	Mapes	Greif	Vice President & General Manager
Hugh	Gallagher	H.P. Gallagher Ltd.	Vice President
Stephen	Maybaum	Harborchem	President
John	Panichella	Hercules Incorporated	VP Hercules & President Aqualon Company
Paul	Raymond	Hercules Incorporated	President, Paper Technology and Ventures
John	Riley	Hercules Incorporated	Director, Public Affairs
Craig	Rogerson	Hercules Incorporated	President & CEO
Allen	Spizzo	Hercules Incorporated	CFO
Sarah	Coffin	Hexion Specialty Chemicals, Inc.	President, Performance Products Division
Nathan	Fisher	Hexion Specialty Chemicals, Inc.	Executive Vice President, Global Procurement
Terrence	Hahn	Honeywell	Vice President and General Manager
Lawrence	Kast	Honeywell	
Andreas	Kramvis	Honeywell	President & CEO, Specialty Materials
Michael	Modak	Honeywell	VP Strategic Marketing & Bus. Development (Int'l)
Joseph	Chang	ICIS Chemical Business	Global Editor
Joe	Kamalick	ICIS News	Chief Correspondent - Americas
Richard	Kennedy	ICL Performance Products LP	CEO
James	Moffatt	ICL-PPLP	
Charles	Weidhas	ICL-PPLP	President & CEO
Steve	Harrington	INEOS NOVA LLC	VP Global Styrene Business
Kevin	McQuade	INEOS NOVA LLC	CEO
Ross	Wonnick	INEOS NOVA LLC	General Council
Kyle	Goodman	Inland Star Distribution Centers, Inc.	Director of Sales and Marketing
Vern	Grewal	Inland Star Distribution Centers, Inc.	Director, HR / EHS
Michael	Kelton	Inland Star Distribution Centers, Inc.	Chairman & CEO
John	Neale	Inland Star Distribution Centers, Inc.	Associate
Richard	Smith	Inland Star Distribution Centers, Inc.	Executive Vice President
Sunil	Kumar	ISP Chemco, Inc.	President and CEO
Fred	Koerwitz	Kao Specialties Americas LLC	Vice President Technology
Kazuhiro	Nakamura	Kao Specialties Americas LLC	President
Michael	Assaf	LANXESS Corporation	Director, International Trade & Compliance and Cor
Randall	Dearth	LANXESS Corporation	President & CEO
Rainer	Eischeid	LANXESS Corporation	Vice President Basic Chemicals
Frank	Lueckgen	LANXESS Corporation	Vice President Basic Chemicals
Thomas	O'Neill	LANXESS Corporation	Vice President, Chief Procurement Officer
Todd	Portzline	LANXESS Corporation	Counsel
Hans-Georg	Schmitt	LANXESS Corporation	Head of Basic Chemicals Worldwide
Angela	Wheland	LANXESS Corporation	Communication and Public Affairs
Raymond	Carr	Linde	V. P. Tonnage Business

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Stuart	Jara	Linde	VP Tonnage Americas
Kent	Masters	Linde	Member of the Executive Board
Raghu	Menon	Linde	Head of Business Development Americas
Patrick	Murphy	Linde	President North America
Karen	Oliver	Linde	Head of Business Development Global Tonnage
Randy	Lohoff	Marathon Petroleum LLC	Vice President, Corporate Responsibility
Jack	Ferrante	Merisol USA LLC	Managing Director, Merisol Ltd.
Joe	Makhoere	Merisol USA LLC	CEO, Managing Director MGT
Glenn	Strow	Merisol USA LLC	Mgr. Sales & Marketing, Americas
Bruce	Aitken	Methanex Corporation	President & CEO
John	Floren	Methanex Corporation	SVP, Global Marketing & Logistics
Ed	Ronsick	Milliken Chemical (ret.)	Business Manager
Kenny	Messer	Milliken Chemical, A Division of Milliken & Company	Business Manager
John	Rekers	Milliken Chemical, A Division of Milliken & Company	President
Hiroaki	ISHIZUKA	Mitsubishi Chemical USA Inc	COO Polymer Division
Yoshimitsu	Kobayashi	Mitsubishi Chemical USA, Inc.	President
Etsujiro	Koge	Mitsubishi Chemical USA, Inc.	Managing Executive office
Taku	Segawa	Mitsubishi Chemical USA, Inc.	General Manager
Hiroo	Tanaka	Mitsubishi Chemical USA, Inc.	President
Yuji	Kawase	Mitsui & Co. (USA), Inc.	Vice President, General Manager
Yoshi	Kawashima	Mitsui & Co. (USA), Inc.	Senior Advisor
Yoshio	Kinoshita	Mitsui & Co. (USA), Inc.	Vice President / General Manager
Katsunori	Mori	Mitsui & Co. (USA), Inc.	Senior Vice President
Bernt	Netland	Mitsui & Co. (USA), Inc.	Senior Advisor
Hiroshi	Ogawa	Mitsui & Co. (USA), Inc.	General Manager
Shinji	Tsuchiya	Mitsui & Co. (USA), Inc.	Divisional Operating Officer, Organic Chemical Div
Kevin	Lawrence	Monsanto Company	
Mark	Leidy	Monsanto Company	Executive Vice President, Manufacturing Operations
Robert	Beckler	MWV Specialty Chemicals	President
Edward	Rose	MWV Specialty Chemicals	VP, Performance Chemicals
Albert	Beninati	Nalco	Strategic Business Unit Leader
Terry	Burleson	Nalco	Strategic Business Leader
Erik	Fyrwald	Nalco	Chairman, President, and CEO
Scott	Mason	Nalco	Group VP, President, Alternate Channels & Global S
Kelly	Brannen	Niacet Corporation	Managing Director
Larry	Montani	Niacet Corporation	
Keith	Thomas	Northern Nanotechnologies	President
Marilyn	Horner	NOVA Chemicals, Inc.	VP of HR and Corporate Effectiveness
Jeffrey	Lipton	NOVA Chemicals, Inc.	CEO
Jack	Mustoe	NOVA Chemicals, Inc.	Senior VP, Chief Legal Officer and Corporate Secre
Avi	Nash	NOVA Chemicals, Inc.	Founder
Christopher	Pappas	NOVA Chemicals, Inc.	President & COO
Greg	Wilkinson	NOVA Chemicals, Inc.	Vice President, Public & Government Affairs
Joseph	Chiaroni	Nova Molecular Technologies, Inc.	President
Mike	Clumpner	Nova Molecular Technologies, Inc.	Chairman

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Lillian	Gregson	Nova Molecular Technologies, Inc.	
Kevin	Connors	Occidental Chemical Corporation	Corporate Account Manager
Helmut	Metzler	Occidental Chemical Corporation	Sr. Vice President, Basic Chemicals
Walter	Simer	Occidental Chemical Corporation	VP - Sales
Warren	Hoppmeyer	Odyssey Logistics & Technology, Inc.	
Robert	Shellman	Odyssey Logistics & Technology, Inc.	CEO
Chris	Cusick	Olin Corporation	Director of Marketing-Chlorine
Bruce	Greer	Olin Corporation	Vice President, Strategic Planning
John	McIntosh	Olin Corporation	President - Chlor Alkali Products
Joseph	Rupp	Olin Corporation	President & CEO
Jon	Thorstenson	Olin Corporation	V.P., Sales & Marketing, Chlor-Alkali Products
Gregory	Griffith	OM GROUP, INC.	VP - Strategic Planning, Development and Investor
Joseph	Scaminace	OM GROUP, INC.	Chairman & CEO
Toni	Del Bene	Perstorp Polyols, Inc.	Sales Manager
David	Wolf	Perstorp Polyols, Inc.	President
Mike	Verespej	Plastic News	
Wayne	Gasior	PPG Industries, Inc.	Director, Strategic Accounts
Michael H.	McGarry	PPG Industries, Inc.	Senior VP, Commodity Chemicals
Kevin	Sullivan	PPG Industries, Inc.	Sr. VP, Chemicals
Michael	Boyce	PQ Corporation	Chairman and CEO
Paul	Ferrall	PQ Corporation	President Chemicals for the Americas
Erwin	Goede	PQ Corporation	President Chemical Groups - Europe & Asia
John	Lau	PQ Corporation	Vice President Silica Catalysts
Scott	Randolph	PQ Corporation	President Potters Industries
Dave	Reilly	PQ Corporation	VP Strategic Planning
Jim	Fuchs	Praxair, Inc.	Senior Vice President & President North American I
Randy	Kramer	Praxair, Inc.	Senior Vice President, Global Sales
James	Regan	Praxair, Inc.	Executive Account Manager
Anne	Roby	Praxair, Inc.	Vice President - South
Thomas	Nelson	Procter & Gamble, Chemicals Division	Associate Director, Chemical Sales
Michael	Hutto	PVS Chemicals, Inc.	Director of Purchasing
James	Nicholson	PVS Chemicals, Inc.	President & CEO
David	Nicholson	PVS Chemicals, Inc.	Vice President
Allan	Schlumberger	PVS Chemicals, Inc.	Vice President
Scott	Trussell	PVS Chemicals, Inc.	Chloralkali President
Roger	Price	R. T. Vanderbilt Company, Inc.	President and COO
Hugh	Vanderbilt	R. T. Vanderbilt Company, Inc.	Chairman and CEO
Nitin	Dalal	Reliance Industries Limited	VP - BUSINESS DEVELOPMENT
Kishor	Jhalaria	Reliance Industries Limited	President, Cracker Business
Nikhil	Meswani	Reliance Industries Limited	Executive Director
Kamal	Nanavaty	Reliance Industries Limited	President, Cracker & Polymers Sector
Thakur	Sharma	Reliance Industries Limited	President - USA Operations
Mo	Beyad	Rhodia Inc.	Vice President, Novecare
Jean - Pierre	Clamadieu	Rhodia Inc.	CEO & Chairman
James	Harton	Rhodia Inc.	President
Pascal	Juery	Rhodia Inc.	President, Novecare
Pierre	Brondeau	Rohm and Haas Company	President & Chief Operating Officer
Neil	Carr	Rohm and Haas Company	VP, Director of Procurement
Carol	Eicher	Rohm and Haas Company	Vice President, Business Director

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ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Raj	Gupta	Rohm and Haas Company	Chairman & Chief Executive Officer
Geoffrey	Hurwitz	Rohm and Haas Company	Vice President, Gov't Relations
Philip	Lewis	Rohm and Haas Company	Vice President and Director, Global EHS&SD
Jessica	Torng	Rohm and Haas Company	Director, Global Chemicals
Ray	Stellenberg	Royal DSM N.V.	Vice President
Stephan	Tanda	Royal DSM N.V.	Managing Board of Directors
Charlie	Crew	SABIC Innovative Plastics	President and CEO
Keith	DuPont	SABIC Innovative Plastics	Manager, Sourcing Direct Materials
Jessine	Monaghan	SABIC Innovative Plastics	Manager and Senior Counsel - Government Relations
Patrick	Poljan	SABIC Innovative Plastics	General Manager, Global Sourcing
Scott	Telesz	SABIC Innovative Plastics	Vice President, Resins
Shelley	Losito	Sanosil USA, LLC	VP Marketing
Paul	Elias	Sartomer Company, Inc.	VP, Supply Chain
Bruce	Farina	Sartomer Company, Inc.	Global VP, Photocure
Bill	Wittig	Sartomer Company, Inc.	Director, Functional Additives
Tony	Trent	Sasol Chemicals North America	North American Sales/Marketing Manager
Reiner	Groh	Sasol Group Services Inc.	Group General Manager
Chris	Turner	Sasol North America inc.	President US CTL Ventures
John	Tancredi	Searles Valley Minerals	President
Robert	Chouffot	Shell Chemical LP	General Manager Higher Olefins & Derivatives
Claire	Habetz	Shell Chemical LP	Manager Meetings & Events
Stacy	Methvin	Shell Chemical LP	President & CEO
Sven	Royall	Shell Chemical LP	Vice President Customer Services & Intermediates
Elizabeth	Stolpe	Shell Chemical LP	Senior Counsel
Sheri	Updike	Shell Chemical LP	Americas Business Manager EOG
Stephen	Large	SI Group	President and CEO
Chris	Roberts	SI Group	Vice President Global Sourcing
D. Paul	Tilley	SI Group	Sr. Vice President
Peter	Nichols	SNF Holding Company	Vice President-General Manager
Arienne	Brint	Solvay North America, LLC	Government Affairs Manager
Rene	Degreve	Solvay North America, LLC	President & CEO
Virginia	Hubert	Solvay North America, LLC	VP HSE-RC
F.	Stepan	Stepan Company	President & CEO
John	Venegoni	Stepan Company	VP / GM - Surfactants
Hiromasa	Yonekura	Sumitomo Chemical America, Inc.	President
Bruce	Rubin	Sunoco Inc	VP Polymers
Thomas	Scargle	Sunoco Inc	VP Phenol & Related
Bruce	Fischer	Sunoco Inc.	SVP Chemicals
Alan	Vanacore	Sunoco Inc.	VP Transportation, Business Development and Capita
Isy	Goldwasser	Symyx Technologies, Inc.	CEO
Kevin	Smith	Symyx Technologies, Inc.	V.P., Strategic Account Management, Chemicals & En
Ernest	Ingham	Taminco	President, North America
Theodore	Grabowski	Texas Brine Co. LLC	President
Glenn	Bohny	Texas Petrochemicals	VP & General Manager C4 Processing
Sandra	Davis	Texas Petrochemicals	VP & General Manager Performance Products
Mark	Demetree	Texas Petrochemicals	Chairman of the Board
Charlie	Shaver	Texas Petrochemicals	President and CEO
John	Paro	The HallStar Company	President & Chief Executive Officer

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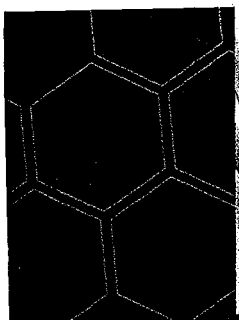
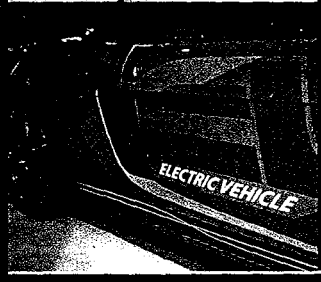
ACC Annual Meeting at The Desert Springs JW Marriott, Palm Desert

Attendees as of 5/27/08

First Name	Last Name	Company	Title
Donald W.	Bogus	The Lubrizol Corporation	President (Lubrizol Advanced Materials)
James	Hambrick	The Lubrizol Corporation	Chairman, President & CEO
Larry	Norwood	The Lubrizol Corporation	Vice President- Operations, Lubrizol Additives
Mike	Owen	The Lubrizol Corporation	GM North American Supply Chain
Val	Pakis	The Lubrizol Corporation	VP Driveline & Industrial Additives - Lubrizol Add
Greg	Taylor	The Lubrizol Corporation	VP Corporate Planning - Lubrizol Corporation
Gary	Conrad	The Shepherd Chemical Company	General Manager
Ali	Kerr	The Shepherd Chemical Company	Business Development Manager
Bob	Lane	The Shepherd Chemical Company	COO
Tom	Shepherd	The Shepherd Chemical Company	CEO
Allen	Blakey	The Vinyl Institute	Senior Director, Public Affairs
Bernard	Claude	TOTAL Petrochemicals USA, Inc.	President and CEO
Quentin	de Borrenkens	TOTAL Petrochemicals USA, Inc.	
Honn	Tudor	TOTAL Petrochemicals USA, Inc.	Account Manager - Propylene
Steve	Weber	TOTAL Petrochemicals USA, Inc.	Sr. Manager - Aromatics
John	Craun	Vertellus Specialties Inc.	Vice President
Salvatore	Gagliardo	Vertellus Specialties Inc.	Vice President, Business Development
Richard	Preziotti	Vertellus Specialties Inc.	President & CEO
Alex	Washington	Vertellus Specialties Inc.	Director
Shawn	Abrams	W. R. Grace & Co.	VP / GM - Refining Technologies
Robert	Bullard	W.R. Grace & Co.	VP Hydroprocessing Catalysts, Joint Ventures / Man
Anthony	Dondero	W.R. Grace & Co.	VP & GM Polyolefin Catalysts
Fred	Festa	W.R. Grace & Co.	President & CEO
Robin	Pearce	W.R. Grace & Co.	VP / GM Materials & Packaging Technologies - Grace
Gregory	Poling	W.R. Grace & Co.	President, Grace Davison
Ingomar	Kovar	Wacker Chemical Corporation	President & CEO
Arno	von der Eltz	Wacker Chemical Corporation	
Thomas	Woodson	WTS, Inc	Director Chemical and Refinery Services
Gary	Hall	WTS, Inc.	President
Michael	Oliver	WTS, Inc.	Executive Vice President
Mary	Greulich		Spouse

EPAHO044000033

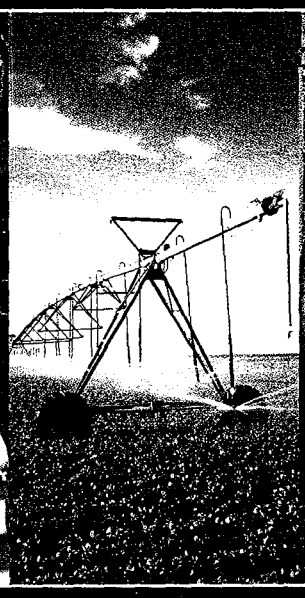




American® Chemistry Council

2009

membership directory
and report



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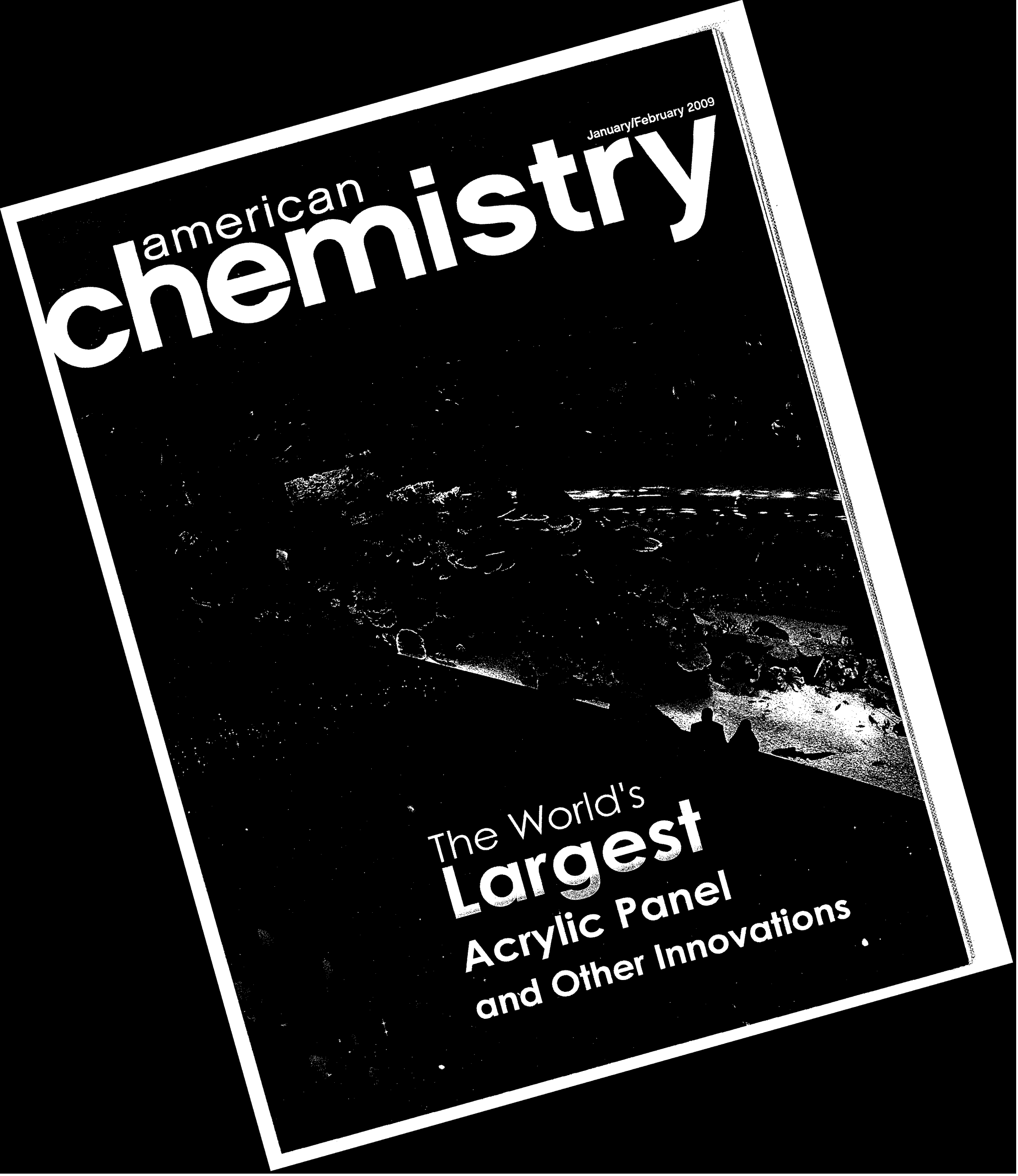
essential

EPAHO044000034

January/February 2009

american chemistry



The World's Largest Acrylic Panel and Other Innovations

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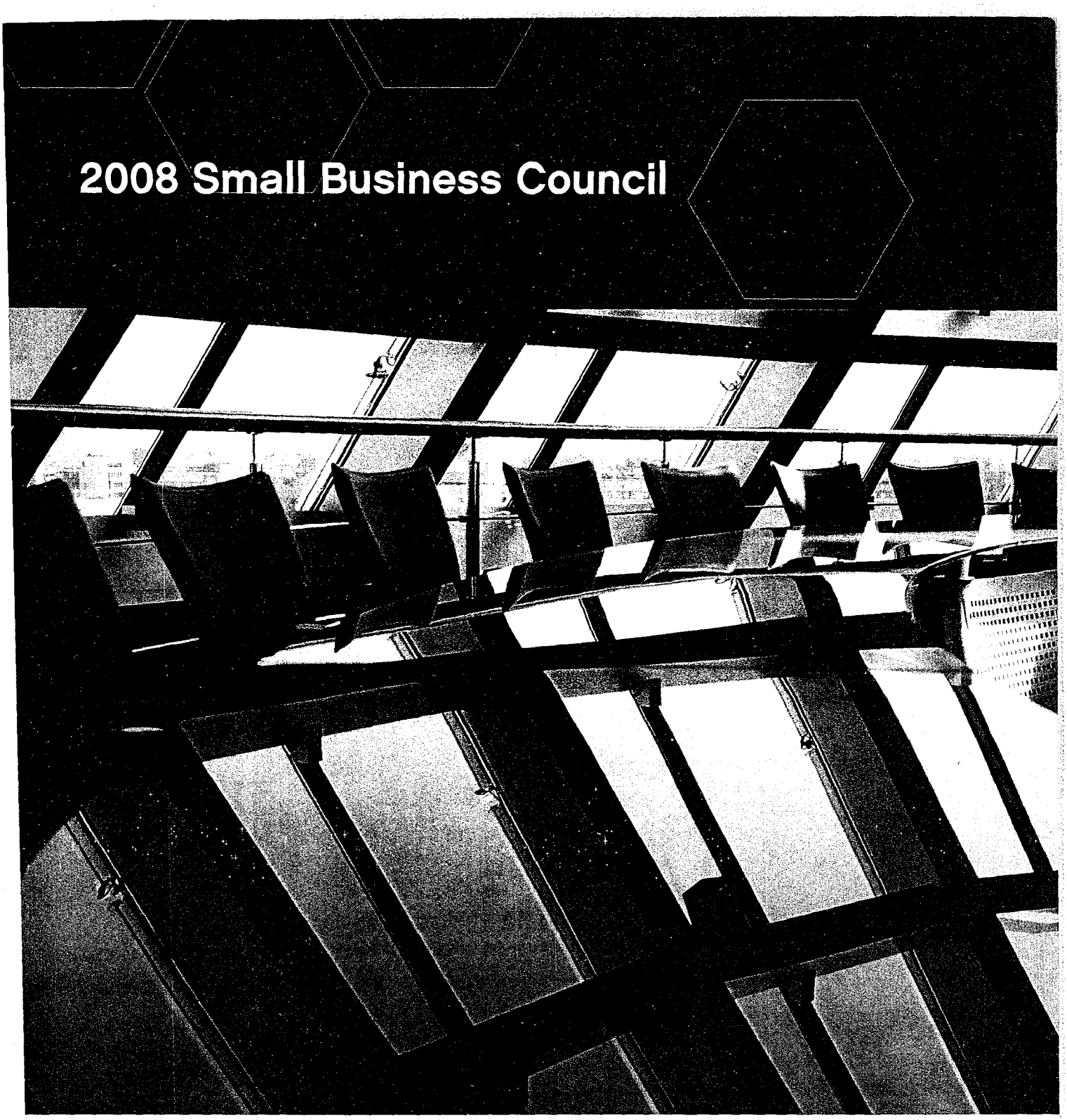
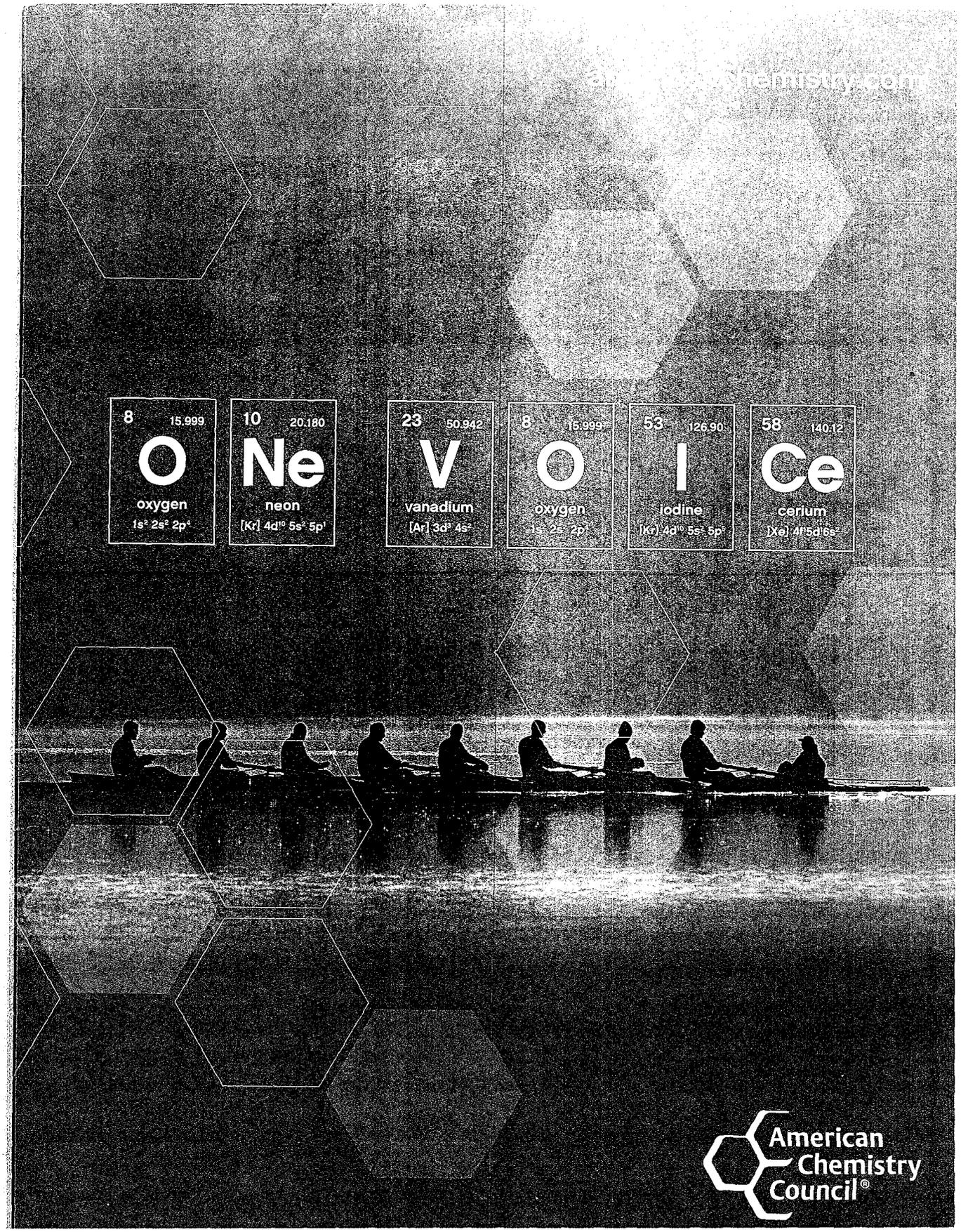
2008 Small Business Council



American Chemistry Council®



EPAHO044000037

Socfem / Shell D.P.

EPAHO04400038

6/4/09
WMS
T-3 ①

Shell Deer Park 7 Million Gallons

MATERIAL SAFETY DATA SHEET
EQUILON MSDS: R0900ET 01/04/99

BYPRODUCT- SOUR WATER
TELEPHONE NUMBER:
24 HOUR EMERGENCY ASSISTANCE
EQUIVA SERVICES: 877-276-7283
CHEMTREC: 800-424-9300
GENERAL MSDS ASSISTANCE
877-276-7285

NAME AND ADDRESS:
EQUILON ENTERPRISES LLC
PRODUCT STEWARDSHIP
P.O. BOX 674414
HOUSTON, TX 77267-4414

LEGEND:
N.D. - NOT DETERMINED N.A. - NOT APPLICABLE N.T- NOT TESTED
< - LESS THAN > - GREATER THAN

1.NAME

MATERIAL IDENTITY
Product Code and Name:
R0900 BYPRODUCT- SOUR WATER
Chemical Name and/or Family or Description:
Refining Byproduct / Waste Stream

2. COMPOSITION/INFORMATION ON INGREDIENTS

THE CRITERIA FOR LISTING COMPONENTS IN THE COMPOSITION SECTION IS AS FOLLOWS: CARCINOGENS ARE LISTED WHEN PRESENT AT 0.1 % OR GREATER; COMPONENTS WHICH ARE OTHERWISE HAZARDOUS ACCORDING TO OSHA ARE LISTED WHEN PRESENT AT 1.0 % OR GREATER; NON-HAZARDOUS COMPONENTS ARE LISTED AT 3.0 % OR GREATER. THIS IS NOT INTENDED TO BE A COMPLETE COMPOSITIONAL DISCLOSURE. REFER TO SECTION 14 FOR APPLICABLE STATES' RIGHT TO KNOW AND OTHER REGULATORY INFORMATION.
Product and/or Component(s) Carcinogenic According to:

OSHA	IARC	NTP	OTHER	NONE
				X

Composition: (Sequence Number and Chemical Name)

Seq.	Chemical Name	CAS Number	Range in %
01	Water	7732-18-5	80.00-94.99
02 *	Metallic sulfides		3.00-9.99
03 *	Ammonia	7664-41-7	3.00-9.99
04 *	Hydrogen sulfide	7783-06-4	3.00-9.99

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).
* COMPONENT IS HAZARDOUS ACCORDING TO OSHA.
Exposure Limits referenced by Sequence Number in the Composition Section

Seq.	Limit	
03	35	ppm STEL-OSHA
03	25	ppm TWA-ACGIH
03	35	ppm STEL-ACGIH
04	10	ppm TWA-OSHA
04	15	ppm STEL-OSHA
04	10	ppm TWA-ACGIH
04	15	ppm STEL-ACGIH

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW
Appearance:

Grey liquid
Odor:
Rotten egg odor

WARNING STATEMENT

CAUTION ! MAY CAUSE DIZZINESS AND DROWSINESS
CONTAINS OR MAY RELEASE HYDROGEN SULFIDE GAS (H2S)
H2S GAS IS HARMFUL OR FATAL IF INHALED
H2S GAS IS IRRITATING TO EYES AND RESPIRATORY TRACT
H2S GAS MAY ACCUMULATE IN CONFINED SPACES
MAY CAUSE EYE IRRITATION

HMIS			NFPA		
Health:	4	Reactivity: 0	Health:	4	Reactivity: 0
Flammability:	4	Special : -	Flammability:	4	Special : -

POTENTIAL HEALTH EFFECTS

	EYE	SKIN	INHALATION	INGESTION
Primary Route of Exposure:	X	X	X	
	-	-	-	-

EFFECTS OF OVEREXPOSURE

Acute:

Eyes:
May cause irritation, experienced as discomfort or pain, and seen as excess redness and swelling of the eye, and possible injury to the cornea.

Skin:
Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling.
Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact; see other effects, below, and Section 11 for information regarding potential long term effects.
Prolonged, widespread, or repeated skin contact may result in the absorption of potentially harmful amounts of material.

Inhalation:
Vapors or mist, especially as generated from heating the material or as from exposure in poorly ventilated areas or confined spaces, may be irritating and cause discomfort in nose and throat, nasal discharge, and coughing. Prolonged overexposure may cause difficulty breathing.
Contains or may release hydrogen sulfide (H2S) gas. H2S concentrations above permissible concentrations can cause irritation of the eyes and respiratory tract, headache, dizziness, nausea, vomiting, diarrhea, and pulmonary edema. At concentrations above 300 ppm, respiratory paralysis, causing unconsciousness and death, can occur

Ingestion:
If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.

Sensitization Properties:
Unknown.

Chronic:
Repeated inhalation may cause lung damage.

Medical Conditions Aggravated by Exposure:
Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).
Overexposure to vapor, dust or mist may aggravate existing respiratory conditions, such as asthma, bronchitis, and inflammatory or fibrotic respiratory disease.

Other Remarks:
None

4. FIRST AID MEASURES

EPAHO044000041

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.
Skin:
Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.
Ingestion:
If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.
Inhalation:
If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.
Other Instructions:
Inhalation exposure may result in respiratory tract injury, the delayed onset of pulmonary edema, and may predispose patient to secondary respiratory infection. Persons exposed to high concentrations should be hospitalized for observation. Contact a Poison Center for additional treatment information.
Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees F):
Not determined.
Flash Point (degrees F):
Not applicable.
Flammable Limits (%):
Lower: Not determined.
Upper: Not determined.
Recommended Fire Extinguishing Agents And Special Procedures:
Product is not combustible. Use agent suitable for surrounding fire. Use water spray to cool fire-exposed containers.
Unusual or Explosive Hazards:
Vapor space in closed container can contain hydrogen sulfide (H2S) in explosive concentrations. Hydrogen sulfide gas may be released when heated. Toxic vapors formed on burning.
Special Protective Equipment for Firefighters:
Do not attempt to fight a fire with normal protective clothing. Wear special chemical protective clothing and positive pressure breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Decontaminate or discard any clothing that may contain chemical residue.

6. ACCIDENTAL RELEASE MEASURES (Transportation Spills: CHEMTREC (800)424-9300)

Procedures in Case of Accidental Release, Breakage or Leakage:
Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.
If more than 3,333 pounds of product is spilled, then report spill according to SARA 304 and/or CERCLA 102(a) requirements, unless product

qualifies for the petroleum exemption (CERCLA Section 101(14)).

7. HANDLING AND STORAGE

Precautions to be Taken in Handling:

Minimum feasible handling temperatures should be maintained.

Storage:

Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:

Avoid eye contact. Chemical type goggles should be worn. Do not wear contact lenses.

Skin Protection:

Protective clothing such as coveralls or lab coats should be worn. Launder or dry-clean when soiled. Gloves and boots resistant to chemicals and petroleum distillates required.

Respiratory Protection:

When Hydrogen Sulfide (H2S) concentrations are unknown or are equal to or greater than 10 ppm, (as in such activities as: loading; unloading; guaging; cleaning large spills or upon entry into tanks, vessels, or other confined spaces; and during rescue of individuals suspected to be overexposed to H2S), use supplied-air (airline or self-contained breathing apparatus) respiratory protection (NIOSH/MSHA Approved). The respirators must be equipped with pressure-demand regulators and operated in the pressure-demand mode ONLY. If airline units are used, a 5-minute egress bottle MUST also be carried. GAS MASKS OR OTHER AIR-PURIFYING RESPIRATORS MUST NEVER BE USED FOR H2S DUE TO POOR WARNING PROPERTIES OF THE GAS.

Ventilation:

Adequate to meet component occupational exposure limits (see Section 2).

Exposure Limit for Total Product:

None established for product; refer to Section 2 for component exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Grey liquid

Odor:

Rotten egg odor

Boiling Point (degrees F):

212

Melting/Freezing point (degrees F):

Not applicable.

Specific Gravity (water=1):

1.0

pH of undiluted product:

7 - 10

Vapor Pressure:

Not determined.

Viscosity:

Not determined.

VOC Content:

100

Vapor Density (air=1):

Not determined.

EPAHO044000043

Solubility in Water (%):
Not determined.
Other: None

10. STABILITY AND REACTIVITY

This Material Reacts Violently With:
(If Others is checked below, see comments for details)

Air	Water	Heat	Strong Oxidizers	Others	None of These
					X
–	–	–	–	–	–

Comments:
None
Products Evolved When Subjected to Heat or Combustion:
Toxic and irritating levels of ammonia, nitrogen oxides, carbon monoxide, carbon dioxide, irritating aldehydes and ketones. May evolve hydrogen sulfide, sulfur oxides, and other sulfur containing compounds.
Hazardous Polymerizations: DO NOT OCCUR

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION(ANIMAL TOXICITY DATA)
Median Lethal Dose
Oral:
LD50 Believed to be > 5.00 g/kg (rat) practically non-toxic
Inhalation:
Not determined.
Dermal:
LD50 Believed to be > 2.00 g/kg (rabbit) practically non-toxic
Irritation Index, Estimation of Irritation (Species)
Skin:
(Draize) Believed to be > .50 - 3.00 /8.0 (rabbit) slightly irritating
Eyes:
(Draize) Believed to be 25.00 - 50.00 /110 (rabbit) moderately irritating
Sensitization:
Not determined.
Other:
None

12. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Remarks
None

13. TRANSPORT INFORMATION

Transportation
DOT:
Proper Shipping Name:
Toxic liquid, inorganic, N.O.S. (hydrogen sulfide)
Hazard Class:
6.1 (Inhalation hazard, Zone B)
Identification Number: UN3287

Packing Group: I
Label Required:
Toxic
This product contains a DOT Hazardous Substance or Substances, listed in Section 14 of the MSDS. If the product's shipping container holds at least 3,333 lbs, then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, unless the product qualifies for the petroleum exemption (49 CFR 171.8).

IMDG:
Proper Shipping Name:
Not evaluated

ICAO:
Proper Shipping Name:
Not evaluated

TDG:
Proper Shipping Name:
Not evaluated

14. REGULATORY INFORMATION

Federal Regulations:

SARA Title III:

Section 302/304 Extremely Hazardous Substances

Seq.	Chemical Name	CAS Number	Range in %
01	Ammonia	7664-41-7	3.00-9.99
02	Hydrogen sulfide	7783-06-4	3.00-9.99
03	Phenol	108-95-2	0.10-0.99

Section 302/304 Extremely Hazardous Substances (CONT)

Seq.	TPQ	RQ
01	500	100
02	500	100
03	500	1000

Section 311 Hazardous Categorization:

Acute	Chronic	Fire	Pressure	Reactive	N/A
X					

Section 313 Toxic Chemical

Chemical Name	CAS Number	Concentration
Ammonia	7664-41-7	3.00-9.99

CERCLA 102(a)/DOT Hazardous Substances: (+ indicates DOT Hazardous Substance)

Seq.	Chemical Name	CAS Number	Range in %
01+	Ammonia	7664-41-7	3.00-9.99
02+	Hydrogen sulfide	7783-06-4	3.00-9.99
03+	Phenol	108-95-2	0.10-0.99

CERCLA/DOT Hazardous Substances (Sequence Numbers and RQ's):

Seq.	RQ
01+	100
02+	100
03+	1000

TSCA Inventory Status:
Contact Texaco's Product Safety Office at (914) 838-7384 for TSCA inventory information on this product.

Other:
Although hydrogen sulfide and methyl mercaptan are on the SARA 313 TC list,

EPAHO044000045

no TRI reporting is required (EPA administrative stay, see 59 FR 43048).
State Regulations:
California Proposition 65:
The following detectable components of this product are substances, or belong to classes of substances, known to the State of California to cause cancer and/or reproductive toxicity..

Chemical Name	CAS Number
None	

International Regulations:
Export Notification (TSCA-12b):
This product may be subject to export notification under TSCA section 12(b); contains:
Phenol
WHMIS Classification:
Class D, Div 1, Subdiv A: Very toxic
Class D, Div 2, Subdiv B: Irritant
Canada Inventory Status:
Not determined.
EINECS Inventory Status:
Not determined.
Australia Inventory Status:
Not determined.
Japan Inventory Status:
Not determined.

15. ENVIRONMENTAL INFORMATION

Aquatic Toxicity:
Not determined.
Mobility:
Not determined.
Persistence and Biodegradability:
Not determined.
Potential to Bioaccumulate:
Not determined.
Remarks:
None

16. OTHER INFORMATION

Hazardous concentrations of hydrogen sulfide (H2S) gas can accumulate in storage and rundown tanks, marine vessel compartments, sump pits or other confined spaces. When opening valves, hatches and dome covers, stand upwind, keep face as far from the opening as possible and avoid breathing any gases or vapors. When exposure concentrations are unknown and respiratory protection is not used, personal H2S warning devices should be worn. These devices should not be relied on to warn of life threatening concentrations. H2S fatigues the sense of smell rapidly. The rotten egg odor of H2S disappears quickly, even though high concentrations are still present. The ACGIH TLV/TWA for H2S is 10 ppm; the ACGIH STEL is 15 ppm.
THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO US AT THIS TIME, AND IS BELIEVED TO BE ACCURATE BASED UPON THAT DATA. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT, FOR PURPOSE OF HAZARD COMMUNICATION. IT IS NOT INTENDED TO CONSTITUTE PRODUCT PERFORMANCE INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, UNDERLYING DATA OR THE INFORMATION CONTAINED HEREIN. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN.

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TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN. THE UNDERLYING DATA, AND THE INFORMATION PROVIDED HEREIN AS A RESULT OF THAT DATA, IS THE PROPERTY OF EQUIVA SERVICES, LLC AND IS NOT TO BE THE SUBJECT OF SALE OR EXCHANGE WITHOUT THE EXPRESS WRITTEN CONSENT OF EQUIVA SERVICES, LLC.

Date: 1999-01-04 New X Revised, Supersedes: 1998-08-04

Inquiries regarding MSDS should be directed to:
Equiva Services LLC
Manager Product Stewardship
P.O. Box 674414
Houston, TX 77267-4414

17. PRODUCT LABEL

Label Date: 1999-01-04

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

R0900 BYPRODUCT- SOUR WATER

WARNING STATEMENT

CAUTION ! MAY CAUSE DIZZINESS AND DROWSINESS
CONTAINS OR MAY RELEASE HYDROGEN SULFIDE GAS (H2S)
H2S GAS IS HARMFUL OR FATAL IF INHALED
H2S GAS IS IRRITATING TO EYES AND RESPIRATORY TRACT
H2S GAS MAY ACCUMULATE IN CONFINED SPACES
MAY CAUSE EYE IRRITATION

PRECAUTIONARY MEASURES

-Use only with adequate ventilation.
-H2S gas deadens sense of smell. Do not depend on odor to detect presence of gas.
-Use supplied air respiratory protection for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.
-Avoid breathing vapor, mist, or gas.
-Avoid contact with eyes.
-Rescue procedures should be attempted ONLY after notifying others of emergency and ONLY if appropriate personal equipment is available.
-Keep container closed.
-Wash thoroughly after handling.

FIRST AID

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.

Skin Contact:
Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Ingestion:
If more than several mouthfuls of this material are swallowed, give two

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glasses of water (16 oz.). Get medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.

Note to Physician:

Inhalation exposure may result in respiratory tract injury, the delayed onset of pulmonary edema, and may predispose patient to secondary respiratory infection. Persons exposed to high concentrations should be hospitalized for observation. Contact a Poison Center for additional treatment information.

FIRE

Product is not combustible. Use agent suitable for surrounding fire. Use water spray to cool fire-exposed containers.

If more than 3,333 pounds of product is spilled, then report spill according to SARA 304 and/or CERCLA 102(a) requirements, unless product qualifies for the petroleum exemption (CERCLA Section 101(14)).

	Chemical Name	CAS Number	Range in %
	Water	7732-18-5	80.00-94.99
*	Metallic sulfides		3.00-9.99
*	Hydrogen sulfide	7783-06-4	3.00-9.99
*	Ammonia	7664-41-7	3.00-9.99

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).

* COMPONENT IS HAZARDOUS ACCORDING TO OSHA.

Pennsylvania Special Hazardous Substance(s)	CAS Number	Range in %
None		

HMIS		NFPA	
Health: 4	Reactivity: 0	Health: 4	Reactivity: 0
Flammability: 4	Special : -	Flammability: 4	Special : -

Transportation

DOT:

Proper Shipping Name:

Toxic liquid, inorganic, N.O.S. (hydrogen sulfide)

Hazard Class:

6.1 (Inhalation hazard, Zone B)

Identification Number: UN3287

Packing Group: I

Label Required:

Toxic

This product contains a DOT Hazardous Substance or Substances, listed in Section 14 of the MSDS. If the product's shipping container holds at least 3,333 lbs, then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, unless the product qualifies for the petroleum exemption (49 CFR 171.8).

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

Name and Address:

Equilon Enterprises LLC
P.O. Box 674414
Houston ,TX 77267-4414

TRANSPORTATION EMERGENCY: (877)276-7283
CHEMTREC: (800)424-9300

EPAHO044000048

HEALTH EMERGENCY: (877)276-7283

}

ASCII LINK HTML LINK RTF LINK

- LIBYA WORK -

EPAHO04400051

Brent Kartchner (President)

FDC World.com

Dale Kartchner (Vice-President)

Earl (Veterans Administration)

NOC (National Oil Company) → Government Owned

Chairman told the govt. owned companies to clean up the oil mess

- [redacted] Shell (Shell-Yabucoa, Puerto Rico)
Spent Sulfidic Caustic

EPAHO04400054

SMEAD

No. 1531
UPC 10330

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9/4/08
WS
K-3
(3)

Service Agreement: Shell – Caustic

November 1, 2007

Customer: Shell Chemical Yabucoa Inc
Carr. 901, Km. 2.7 Bo. Camino Nuevo,
PO Box 186
Yabucoa, Puerto Rico 00767-0186
Tel: (787) 893-2424

Service Provider: CES Environmental Services, Inc.
4904 Griggs Rd.
Houston, Texas 77021
Tel: (713) 676-1460

Confirming this agreement made between CES Environmental Services (hereinafter CES), Inc., a Texas Corporation and Shell Chemical Yabucoa Inc. (hereinafter Shell). Whereas Shell agrees to produce and CES agrees to receive and accept spent caustic from production processes at Shell's facility located in Yabucoa Puerto Rico.

Term of Agreement: One (1) year – This agreement shall automatically renew for successive (1) year term. Pricing can be negotiated after the completion of the initial one year term with 90 day written notice.

Agreement Period: November 1, 2007 – November 1, 2010

Scope of Service: CES will provide product management of Shell's spent caustic stream generated from the neutralization and extraction of acidic species from light and middle distillates with virgin caustic. Any streams generated outside of these processes will require prior written approval by CES. The spent caustic will be managed as a product in accordance with US EPA RCRA part 261.2(e)(1)(ii).

Volume: Approximately 800,000 to 1,000,000 gal per year, the entire production from Shell.

Specifications: As attached in Exhibit A

Freight Terms: DDP, CES Terminal, Houston, Texas

Mode of Transportation: 20 MT ISO Containers

Terms of Payment: Net 30 days from receipt of invoice

Quantity Delivered: The quantity delivered for invoicing purposes will be determined by weight ticket provided by shipper (Shell) and converted to gallons using specific gravity as tested by CES.

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Price:

CES will charge Shell a product management fee based upon the sodium hydroxide concentration on a per gallon basis when the shipment is in accordance with specifications in Exhibit A.

Fee $/Gallon	Wt. % Sodium Hydroxide
$0.42	≥ 6.0wt.%
$0.48	4.0 ≤ NaOH < 6.0
$0.55	2.0 ≤ NaOH < 4.0

Sodium Hydroxide concentration will be determined per CES's lab method attached as Exhibit D. Each shipment will be analyzed separately. In case of dispute, a retain sample will be analyzed by a mutually agreed upon independent lab. Analysis costs will be shared equally by both parties.

Pricing is valid for shipments containing up to 1% by volume solids. Shipments received that containing solids level over 1% will be assessed surcharge of $0.02/gallon per percentage solids.

Caustics containing more than a sheen of hydrocarbon will be accepted, however, CES will charge the same rate for the hydrocarbon processing as the caustic portion.

Transfer of Title:

Title shall pass from Shell to CES upon discharge of ISO container into CES's designated equipment. Upon delivery, CES assumes full responsibility and liability for compliance with federal, state, and local regulations governing unloading, discharge, storage, handling and use of the product supplied by Shell under this contract.

Use of Product:

The product will be used as a direct substitute for a commercially available product (i.e. as a pulping agent in the delignification of wood chips for the manufacture of paper products)

MSDS:

Shell represents that it has provided or will provide CES with current Material Safety Data Sheets (MSDS), labels, and any updated information for the product in accordance with the applicable requirements of the Occupational Safety and Health Administration (OSHA) at or prior to the time of delivery.

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Force Majeure:

Neither Shell nor CES shall be liable in damages or otherwise for failure or delay in performance of any obligation hereunder other than the obligation to make payment, where such failure or delay is caused by Force Majeure, being any event, occurrence or circumstance reasonably beyond the control of that party, including without prejudice to the generality of the foregoing, failure or delay caused by or resulting from Acts of God, strikes or other labor disputes (whether or not Shell or CES is a party thereto or would be able to influence or procure the settlement thereof), fires, floods, wars (whether declared or undeclared), riots, delays of carriers due to breakdowns or adverse weather, perils of the seas, embargoes, accidents, disruptions or breakdowns of production, storage, pipeline, transportation or other refinery facilities, installations or machinery repairs, alterations, enlargements, or connections thereto or otherwise, restrictions imposed by any governmental authority (including allocations, priorities, requisitions, quotas, and price controls and environmental restrictions), inability to obtain necessary materials, supplies or permits. The time for Shell to make or CES to receive delivery hereunder shall be extended during any period in which delivery shall be delayed or prevented by reason of any of the foregoing causes up to a total of thirty (30) days. If any delivery hereunder shall be so delayed or prevented for more than 30 days, either party may terminate this contract with respect to such delivery upon written notice to the other Party.

Compliance:

CES and Shell will comply with all requirements of federal, state, and local laws, rules, regulations, and ordinances applicable to the handling, transportation, storage, and end use of the caustic product.

Law:

This Agreement and the right of the parties shall be governed by, construed and enforced in accordance with the laws of the State of Texas, U.S.A. The exclusive venue of any suites or causes of action arising directly or indirectly from this Agreement shall be in a federal or state court located in the State of Texas.

Indemnification:

Each party shall indemnify and hold the other party and each of its directors, officers, employees and agents free and harmless from all claims, liabilities, losses, demands, causes of action, suits and expenses (including attorney's fees) on account of any bodily injury, death or damage or destruction to property in any way, occurring incident to, arising out of, or in connection with its negligent actions or willful misconduct in the course of performance of this Agreement.

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Assignment: This Agreement constitutes the entire contract of service and payment of the product herein named. It is not assignable by either party without the written consent of the other party. No modification of this contract shall be of any force or effect unless in writing signed by the parties and no modification shall be effected by the acknowledgement or acceptance of purchase order forms containing different terms or conditions. If any provision of the contract is or becomes violative of any laws, or rule, order or regulation issued thereunder, either party shall have the right, upon notice given to other party, to cancel such provision, without affecting the other provisions of this contract, or to cancel this contract in its entirety

Waiver: Waiver by CES of any breach of these conditions shall not be construed as a waiver of any other breach.

Currency: The prices shall be paid in United States currency. CES reserves the right, among other remedies, either to cancel this contract or to suspend further deliveries under it in the event Shell fails to pay for any one shipment when payment becomes due. Should Shell's financial responsibility become unsatisfactory to CES, cash payments or satisfactory security may be required by CES. Payment shall be net thirty (30) days from date of invoice.

The parties have executed this Agreement the day and year first above written.

Shell Chemical Yabucoa Inc.

By:_____

Title: _____

CES Environmental Services, Inc.

By: _____

Title: _____

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Exhibit A

Spent Caustic Product General Specifications

Specification	Typical	Min	Max
% NaOH	6%	2%	-
Solids	none	-	1%
Hydrocarbon	none	-	sheen
Potassium	N/A	-	200 ppm
Chloride	N/A	-	5,000 ppm
Total Organic Carbon (TOC)	N/A	-	15,000 ppm
pH	13	12	14

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EPAHO044000060

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax. (713) 676-1676

To: Gary Lenertz
Cc: Gary Peterson

Date: 05/01/08

From: Miles Root

Lab Memo: 08-073

Subject: **Shell Yabucoa Caustic Evaluation 0408-88**

A sample of caustic from Shell, Yabucoa has been evaluated as a potential acquisition for CES. This sample is evaluation 0408-88 and is from the caustic extraction of light gasoline.

This sample is pale amber in appearance and is free of any particulates or oils. This material has a density of 1.235, has a NaOH value of 16.88 wt% and sulfide sulfur of 1.1 wt%. The sample was sent to Precision Labs for additional testing. A summary of all the analytical work done on this sample is found in the table below.

Shell Yabucoa	
Evaluation 0408-88	
Density	1.235
NaOH, wt%	16.88
Sulfide, as S, wt%	1.1
TOC, mg/L	15440
Inorganic Cl, ppm	851
Benzene, ppm	0.01
Metals, ppm	
Pb	<.390
Hg	36.585
K	501.800

- WYMAN GORDON -

EPAHO044000062

8/4/09
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CES Environmental Services, Inc.

4904 Griggs Rd.
Houston, TX 77021

Quotation Part 1

CES will provide complete and fully inclusive flat fee for industrial cleaning services at a weekly rate of $41,825. This service includes 21 hours of work Monday through Friday and 48 hours of work over the weekend. Work during the week will require 4 workers onsite (one supervisor and 3 operators/technicians). Weekend work will require 6 workers onsite (one supervisor and 5 opertors/technicians).

For each 7 day period, this rate will include the following labor, equipment, materials, maintenance, training, etc.:

Hours and Hourly Rates:	Item Subtotals
- Supervisor for at $30/man hour for 147 man hours	$4,410/wk.
- Operators/Technicians at $25/man hour for 483 man hours	$12,075/wk.
- Primary air machine at $35/hour for 147 operating hours	$5,145/wk.
- Back up air machine at $15/hour for 147 stand-by hours	$2,205/wk.
- Two diesel powered pressure at $3,200 for 147 hours each	$3,200/wl.
- Pick-up truck at $350	$350/wk.
- All 6 inch ADS Flex hose and piping required for 147 hours of operation on both air machines at $1,200	$1,000/wk.
- Portable building for break area for meals, training, clocking in, etc. at $200	$200/wk.
- All Person protective equipment required for all personnel at $600	$600/wk.
- All blowers, additional and incidental materials, tools, air monitoring devices, air/water hoses, lock-out tagout devices, etc. at $1,000	$800/wk.
Weekly Total:	$29,985

Thanks,

Matt Bowman
President – CES Environmental Services, Inc.

Matt Bowman

From: Matt Bowman
Sent: Friday, May 15, 2009 4:00 PM
To: 'mfowler@wyman.com'
Subject: new rate based on lower hours

Mark,

The new rate comes up to $29,950 per week based on the new operating hours you gave me. Again, we are very interested in the business. Please let me know if this is competitive.

Matt

EPAHO04400065

315

21 hrs. M-F. 4

21 hrs. 5

Fixed

Portable Bldg.	~~$350~~	$200
Pick up Truck	~~$500~~	$350
Pressure Washers	~~$4,200~~	$3,200
Flex Hose	~~$1,575~~	$1,200
PPE	~~$800~~	$6,00
Piping, Blowers, air monitor, Lockout/Tagout, tape, tools, Air/water hoses, etc.	~~$1,400~~	$1,000

(A) Total = $6,550

Variable

Supr. * 147 hrs. * 30/hr. = $4410

helpers * 433 hrs. * 25/hr = $12,075

Primary Air Machine * 147 hrs. * 50/hr. = $5,000

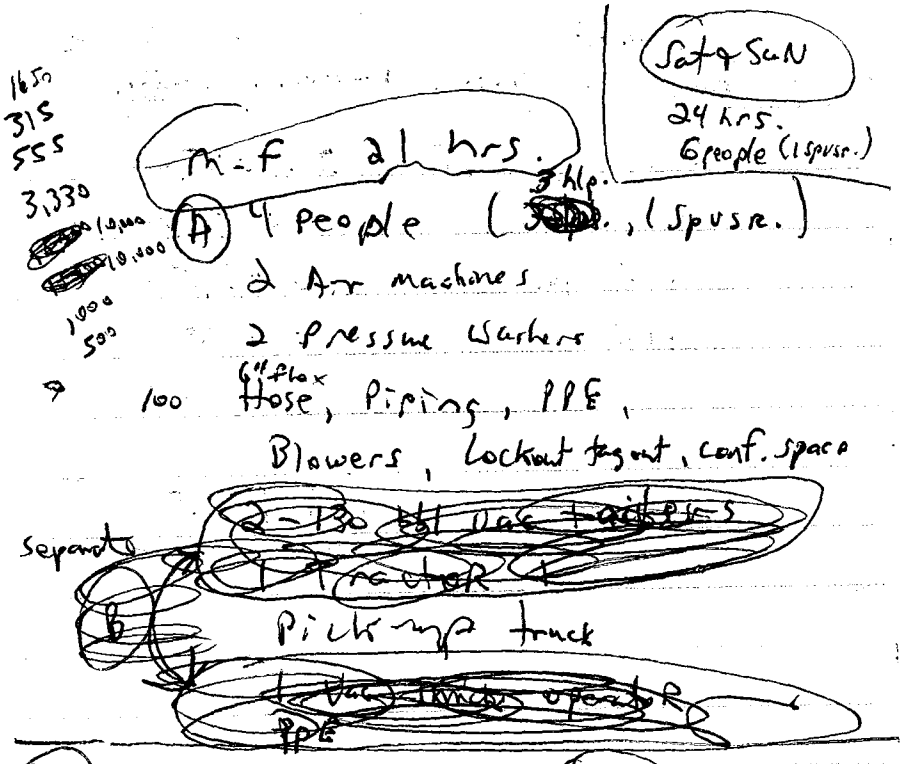
Back-up Air Machine * 147 hrs. * 15/hr. = $2,205

$23,690

(B) Totals @ high hrs. =

Total: $29,950

EPAHO044000066



(A) • ~~Portable~~ Bldg = $350
• Pick up truck = $500
• Spvsr. * 153 * 35/hr. = $5,355
• ~~Help~~ Helper hrs. * 555 * 25/hr. = $13,875
• Primary air machine * 153 * 65/hr. = $9,945
• Back up air machine * 153 * 25/hr. = $3,825
Pressure (2) washers * = $4,200
flex hose @ 1 spool per day * 7 days = $1575
PPE for all guys = $800
Piping, Blowers, air monitor, lockout tagout @ 200/day = $1400
tape, tools, air/water hoses

83,135

EPAHO044000067

(B) M-F 21 hrs. Sat + Sun (24 hrs)
1 op. , 2 vac. trks. , 1 tractor

1 operator 153 * 32 = $5,000
2 Vac trks = $1,200
1 Tractor = $3,500
PPE = $75

$9,775

EPAHO044000068

CES Environmental Services, Inc.

4904 Griggs Rd.
Houston, TX 77021

Quotation Part 1

CES will provide complete and fully inclusive flat fee for industrial cleaning services at a weekly rate of $41,825. This service includes 21 hours of work Monday through Friday and 48 hours of work over the weekend. Work during the week will require 4 workers onsite (one supervisor and 3 operators/technicians). Weekend work will require 6 workers onsite (one supervisor and 5 opertors/technicians).

For each 7 day period, this rate will include the following labor, equipment, materials, etc.:

- Supervisor for 153 man hours
- Operators/Technicians for 555 man hours
- Primary air machine for 153 hours
- Back up air machine for 153 hours
- Two diesel powered pressure washers for 153 hours each
- Pick-up truck for in plant use
- All 6 inch ADS Flex hose and piping required for 153 hours of operation on the air machines
- Portable building for break area for meals, training, clocking in, etc.
- All Person protective equipment required for all personnel
- All blowers, additional and incidental materials, tools, air monitoring devices, air/water hoses, lock-out tagout devices, etc.
- Maintenance on all equipment
- All required safety training, operational training, etc.

Quotation Part 2

CES will provide complete and fully inclusive weekly vacuum truck services to perform waste removal and transportation services. The following weekly labor, equipment, and materials will be included: 153 operator hours, 2- 130 bbl vacuum trailers, 1 tractor, all personal protective equipment and other tools and materials. The weekly rate for this service will be $9,775.

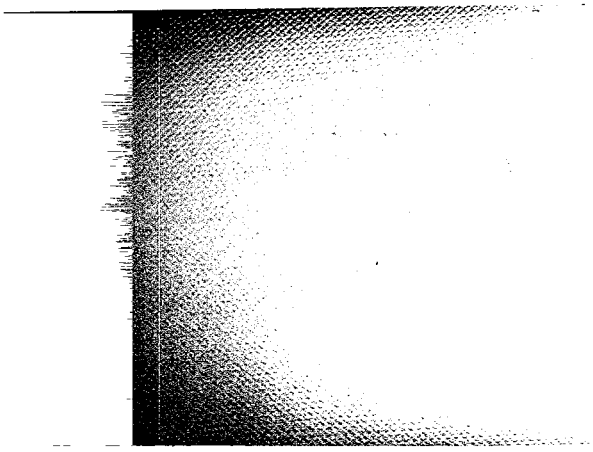
We appreciate the opportunity to bid this work. If you have any questions or wish to further discuss the quotation, please contact me at 713-826-1329.

Thanks,

Matt Bowman
President – CES Environmental Services, Inc.

Motor Oil Plant Sale

EPAHO04400070



9/4/09
K-3
(5)

CES Environmental Services, Inc.
4904 Griggs Road
Houston, Texas 77021
713-676-1460

July 6, 2009

Mr. David McNiel
CXI/Texmark, Inc.
P.O. Box 812
Houston, Texas 77001

Re: Confidentiality, Non-circumvent, and Non-Disclosure Agreement

Dear Mr. McNiel:

In connection with your consideration of a possible business opportunity concerning the processing and sale of used lubricating oils (a "Possible Transaction") with the Company and/or its subsidiaries, affiliates or divisions (collectively, with such subsidiaries, affiliates and divisions, the "Company"), the Company is prepared to make available to you and your Representatives (as hereinafter defined) certain information concerning the business, financial condition, operations, assets and liabilities of the Company. As a condition to such information being furnished to you and your Representatives (as herein defined), you agree that you will, and will cause your Representatives to, treat the Evaluation Material (as hereinafter defined) in accordance with the provisions of this letter agreement and take or abstain from taking certain other actions as set forth herein. The term "Representatives" shall include the members, directors, shareholders, managers, officers, employees, agents, affiliates (as such term is defined under the Securities Exchange Act of 1934, as amended (the "1934 Act")), partners and advisors of a party and those of its subsidiaries, affiliates and/or divisions (including, without limitation, attorneys, accountants, consultants, bankers, financial advisors). Notwithstanding any other provision hereof, the Company reserves the right not to make available hereunder any information, the provision of which is determined by it, in its sole discretion, to be inadvisable or inappropriate.

1. Evaluation Material. The term "Evaluation Material" shall mean all information relating, directly or indirectly, to the Possible Transaction which is delivered, disclosed or furnished by or on behalf of the Company to you or to your Representatives on or after the date hereof, regardless of the manner in which it is delivered, disclosed or furnished, or which you or your Representatives otherwise learn or obtain, through observation or through analysis of such information, data or knowledge, and shall also be deemed to include all notes, analyses, compilations, studies, forecasts, interpretations or other documents prepared by you or your Representatives that contain, reflect or are based upon, in whole or in part, the information

EPAHO044000072

delivered, disclosed or furnished to you or your Representatives pursuant hereto. To the extent practical, Confidential Information shall be disclosed in written form and marked or identified as being "Proprietary" or "Confidential". In the case of disclosure made orally or by visual inspection, the disclosing party shall indicate the confidential nature of the information at the time of disclosure and shall provide written or otherwise tangible summary thereof identifying such information as being confidential to CXI/Texmark within thirty (30) days of such oral or visual disclosure.

Notwithstanding any other provision hereof, the term Evaluation Material shall not include information which (i) is or becomes generally available to the public other than as a result of a disclosure by you or your Representatives, (ii) was within your possession and developed by you prior to its being furnished to you by or on behalf of the Company pursuant hereto, provided that you had no reasonable basis (after due inquiry) for concluding that the source of such information was bound by a confidentiality agreement with, or other contractual, legal or fiduciary obligation of confidentiality to, the Company or any other party with respect to such information or (iii) becomes available to you on a non-confidential basis from a source other than the Company or any of its Representatives, provided that you do not know or have reason to believe (after due inquiry) that the source is bound by a confidentiality agreement with, or other contractual, legal or fiduciary obligation of confidentiality to, the Company or any other party with respect to such information.

2. Use and Disclosure of Evaluation Material. You hereby agree that you and your Representatives shall use the Evaluation Material solely for the purpose of evaluating a Possible Transaction and for no other purpose, that the Evaluation Material will not be used in any way detrimental to the Company, that the Evaluation Material will be kept confidential and that you and your Representatives will not disclose any of the Evaluation Material in any manner whatsoever; *provided, however*, that (i) you may make any disclosure of the Evaluation Material to which the Company gives its prior written consent and (ii) any of the Evaluation Material may be disclosed to your Representatives who need to know such information for the purpose of evaluating a Possible Transaction, who are provided with a copy of this letter agreement and who agree to be bound by the terms hereof. You shall maintain a list of those Representatives to whom Evaluation Material has been disclosed (which list shall be presented to the Company upon request). You shall be responsible for any breach of this letter agreement by any of your Representatives. In any event, you agree to undertake reasonable precautions to safeguard and protect the confidentiality of the Evaluation Material and, at your sole expense, to take all reasonable measures (including, but not limited to, court proceedings) to restrain yourself and your Representatives from prohibited or unauthorized disclosure or uses of the Evaluation Material.

In addition, you agree that, without the prior written consent of the Company, you and your Representatives will not disclose to any other person the fact that you or your Representatives have received Evaluation Material or that Evaluation Material has been made available to you or your Representatives, that investigations, discussions or negotiations are taking place concerning a Possible Transaction or any of the terms, conditions or other facts with respect to any Possible Transaction, including the status thereof and the identity of the parties thereto (collectively, the "Discussion Information"). The term "person" as used in this letter

agreement shall be broadly interpreted to include the media and any corporation, partnership, limited liability company, group, individual or other entity.

In the event that you or any of your Representatives are requested or required (by oral questions, interrogatories, requests for information or documents in legal proceedings, subpoena, civil investigative demand or other similar process) to disclose any of the Evaluation Material or Discussion Information, you shall provide the Company with prompt written notice of any such request or requirement (unless prohibited by applicable law, rule or regulation) so that the Company may in its sole discretion seek a protective order or other appropriate remedy and/or waive compliance with the provisions of this letter agreement. If, in the absence of a protective order or other remedy or the receipt of a waiver by the Company, you or any of your Representatives are nonetheless, in the written opinion of outside legal counsel, legally compelled to disclose Evaluation Material or Discussion Information to any tribunal or else stand liable for contempt or suffer other censure or penalty, you or your Representatives may, without liability hereunder, disclose to such tribunal only that portion of the Evaluation Material or Discussion Information which such counsel advises you is legally required to be disclosed, *provided* that you use your best efforts to preserve the confidentiality of the Evaluation Material and the Discussion Information, including, without limitation, by cooperating with the Company to obtain an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Evaluation Material and the Discussion Information by such tribunal; and *provided further* that you shall promptly notify the Company of (i) your determination to make such disclosure and (ii) the nature, scope and contents of such disclosure.

3. Return and Destruction of Evaluation Material. In the event that you decide not to proceed with a Possible Transaction, you will promptly inform the Company of that decision. In that case, or at any time upon the request of the Company in its sole discretion and for any reason, you will as directed by the Company promptly deliver, at your expense, to the Company all Evaluation Material (and any copies thereof) furnished to you or your Representatives by or on behalf of the Company pursuant hereto. Notwithstanding the return or destruction of the Evaluation Material, you and your Representatives shall continue to be bound by your obligations of confidentiality and other obligations and agreements hereunder.

4. No Representations or Warranties. You understand, acknowledge and agree that neither the Company nor any of its Representatives makes any representation or warranty, express or implied, as to the accuracy or completeness of the Evaluation Material. You agree that neither the Company nor any of its Representatives shall have any liability to you or to any of your Representatives relating to or resulting from the use of the Evaluation Material or any errors therein or omissions therefrom. Only those representations or warranties which are made in a final definitive agreement regarding any transactions contemplated hereby, when, as and if executed and delivered, and subject to such limitations and restrictions as may be specified therein, will have any legal effect.

5. Non-circumvent. In consideration of the Evaluation Material being furnished to you, you hereby agree that, for a period of five years from the date hereof, you and your Representatives will not (i) solicit any of the officers or employees of the Company to terminate their employment with the Company, (ii) solicit any existing customers of the Company for purchases of products, information, or services that are within the scope of this

Agreement or (iii) take any other action that is reasonably likely to cause injury to the relationship between the Company, and its employees, customers, suppliers or other business associates.

6. Material Non-Public Information. This Section has been Deleted.

7. No Agreement. You understand and agree that no contract or agreement providing for any Possible Transaction shall be deemed to exist between you and the Company unless and until a final definitive agreement has been executed and delivered, and you hereby waive, in advance, any claims (including, without limitation, breach of contract) in connection with any Possible Transaction unless and until you and the Company shall have entered into a final definitive agreement. You also agree that unless and until a final definitive agreement regarding a Possible Transaction has been executed and delivered, neither the Company nor you will be under any legal obligation of any kind whatsoever with respect to such a Possible Transaction by virtue of this letter agreement except for the matters specifically agreed to herein. You further acknowledge and agree that the Company reserves the right, in its sole discretion, to reject any and all proposals made by you or any of your Representatives with regard to a Possible Transaction, to determine not to engage in discussions or negotiations and to terminate discussions and negotiations with you at any time, and to conduct, directly or through any of its Representatives, any process for any transaction involving the Company or any of its subsidiaries, if and as they in their sole discretion shall determine (including, without limitation, negotiating with any other interested parties and entering into a definitive agreement without prior notice to you or any other person).

8. No Waiver of Rights. It is understood and agreed that no failure or delay by the Company in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

9. Remedies. You recognize and acknowledge the competitive value and confidential nature of the Evaluation Material and the damage that could result to the Company if any information contained therein is disclosed to a third party. It is understood and agreed that money damages would not be a sufficient remedy for any breach of this letter agreement by you or any of your Representatives and that the Company shall be entitled to equitable relief, including, without limitation, injunction and specific performance, as a remedy for any such breach. Such remedies shall not be deemed to be the exclusive remedies for a breach by you of this letter agreement but shall be in addition to all other remedies available at law or equity to the Company. You further agree not to raise as a defense or objection to the request or granting of such relief that any breach of this letter agreement is or would be compensable by an award of money damages, and you agree to waive any requirements for the securing or posting of any bond in connection with such remedy. In the event of litigation relating to this letter agreement, if a court of competent jurisdiction determines in a final, nonappealable order that a party has breached this letter agreement, then such party shall be liable and pay to the non-breaching party the reasonable legal fees such non-breaching party has incurred in connection with such litigation, including any appeal therefrom.

10. Governing Law. This letter agreement is for the benefit of the Company (and its subsidiaries and affiliates) and its Representatives, and shall be governed by and construed in accordance with the laws of the State of Texas applicable to agreements made and to be performed entirely within the State of Texas, without regard to the conflict of law provisions thereof. You hereby irrevocably and unconditionally consent to submit to the exclusive jurisdiction of the courts of the State of Texas and of the United States of America located in the State of Texas for any actions, suits or proceedings arising out of or relating to this letter agreement and the transactions contemplated hereby (and you agree not to commence any action, suit or proceeding relating thereto except in such courts, and further agree that service of any process, summons, notice or document by U.S. registered mail to your address set forth above shall be effective service of process for any action, suit or proceeding brought against you in any such court). You hereby irrevocably and unconditionally waive any objection which you may now or hereafter have to the laying of venue of any action, suit or proceeding arising out of this letter agreement or the transactions contemplated hereby in the courts of the State of Texas or the United States of America located in the State of Texas, and hereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

11. Entire Agreement. This letter agreement contains the entire agreement between you and the Company regarding its subject matter and supersedes all prior agreements, understandings, arrangements and discussions between you and the Company regarding such subject matter.

12. No Modification. No provision in this letter agreement can be waived, modified or amended except by written consent of you and the Company, which consent shall specifically refer to the provision to be waived, modified or amended and shall explicitly make such waiver, modification or amendment.

13. Counterparts. This letter agreement may be signed by facsimile and in one or more counterparts, each of which shall be deemed an original but all of which shall be deemed to constitute a single instrument.

14. Severability. If any provision of this letter agreement is found to violate any statute, regulation, rule, order or decree of any governmental authority, court, agency or exchange, such invalidity shall not be deemed to affect any other provision hereof or the validity of the remainder of this letter agreement, and such invalid provision shall be deemed deleted herefrom to the minimum extent necessary to cure such violation.

15. Inquiries. All inquiries for information about the Company and its subsidiaries and communications with the Company shall be made through _____. Neither you nor any of your Representatives will contact any third party with whom the Company or any of its subsidiaries has a business or other relationship (including without limitation any director, officer, employee, customer, supplier, stockholder or creditor of the Company or any of its subsidiaries) in connection with a Possible Transaction without the Company's prior written consent.

16. Successors. This letter agreement shall inure to the benefit of, and be enforceable by, the Company and its successors and assigns.

17. Third Party Beneficiaries. You agree and acknowledge that this letter agreement is being entered into by and on behalf of the Company and its affiliates, subsidiaries and divisions and that they shall be third party beneficiaries hereof, having all rights to enforce this letter agreement. You further agree that, except for such parties, nothing herein expressed or implied is intended to confer upon or give any rights or remedies to any other person under or by reason of this letter agreement.

18. No License. Nothing herein shall be deemed to grant a license, whether directly or by implication, estoppel or otherwise, to any Evaluation Material disclosed pursuant to this letter agreement.

19. Term. This letter agreement will terminate five years from the date hereof.

[Signature page follows]

Please confirm your agreement with the foregoing by having a duly authorized officer of your organization sign and return one copy of this letter to the undersigned, whereupon this letter agreement shall become a binding agreement between you and the Company.

Very truly yours,

CES Environmental Services, Inc.

By: _____
Name: Matt Bowman
Title: President

CONFIRMED AND AGREED
as of the date written above:

CXI/Texmark, Inc.

By: _____
Name: David McNiel

EPAHO044000078

AET Environmental
A&A OIL RECOVERY, INC.
Austin Tindol
1805 Haversham Key
Virginia Beach, VA 23454
Cell: (757) 327-9141
Fax: (866)729-1963
Corporate Office: 14 Lakeside Lane
Denver, CO 80212
Office: (303) 333-8521
Fax: (303) 333-8517
UT, NV, GA, TX, FL, NH, CA, VA
austintindol@aetenvironmental.com

A&K Environmental
Austin Tindol
Cell: (757) 327-9141
Fax: (866) 729-1963
email: Austin.tindol@cox.net

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firm qualifications

AET Environmental at a Glance

President:
Lori DeVito, PhD

V.P. Marketing:
Frank Virginia, CEM

Company Name:
AET Environmental, Inc.

Corp. Address:
14 Lakeside Lane
Denver, CO 80212

EPA ID No. - COR 000 009 456

RSPA No. - 051 801 700020JK

Denver, CO Phone / Fax: (303) 333-8521 / (303) 333-8517

Regional Office:
AET Environmental, Inc.
3653 South 700 West-Unit B
Salt Lake City, UT 84119

EPA ID No. - UTR 000 000 505

Salt Lake City Phone/Fax: (801) 281-3507/ (801) 281-3551

Las Vegas, NV Phone: (702) 436-6228

Valdosta, GA Phone: (229) 247-6221

Panama City, FL Phone: (850) 873-8070

AET Environmental

303.333.8521 - phone
303.333.8517 - fax

14 Lakeside Lane
Denver, CO 80212

info@aetenvironmental.com

Additional Information:

8(a) Woman Owned Business: Yes

Small Business: Yes

Years in Business: 10+

Number of Employees: 20

Dun and Bradstreet No. - (b) (4)

Cage Code No. - (b) (4)

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qualifications

AET Environmental

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303.333.8517 - fax

14 Lakeside Lane
Denver, CO 80212

info@aetenvironmental.com

Click on any of the links below to access specific information from our Statement of Qualifications:

- Firm Qualifications
- Scope of Services
- Key Personnel

Firm Qualifications

- Introduction
- Service Overview
- Specialized Niche Services
- AET Environmental at a Glance
- AET Equipment
- Selected Recycling and Waste Treatment Facilities
- Client List/Past Performance
- Environmental Insurance

Scope of Services

- Additional Due Diligence Assistance Programs
- AET Disposal Options
- AET Recycling Programs
- AET Waste Management Tasks
- Engineering and Information Technology
- Environmental Compliance
- Facility Closures
- Facility Restoration
- Hazardous & Industrial Materials Management
- Industrial Cleaning
- Lab Packs
- Nuclear Materials Management
- Rapid Response
- Remediation

Key Personnel

AET Environmental maintains a highly trained team of professional and environmental specialists to provide technical and support services for environmental and hazardous materials projects. We provide clients with individual attention and the highest quality services, consulting and reporting with all projects completed on time and within budget.

Our talented and multi-disciplined staff of environmental professionals has the ability to assess and implement each assignment. They work directly with clients to develop project specifications, supervise field work, and review final report data.

Click on any of the links below to learn more about our team.

Lori DeVito, PhD	- President
Arthur F. Clark, PhD, CHMM	- Technical Director
Frank S. Virginia, CEM	- Vice President Sales & Marketing
Chris Allred, CHMM	- Operations Manager
Dan Landagora	- Logistics, Operations Manager
Frank Gines, CHMM	- Senior Field Chemist & Project Manager
Adam Kahn	- Senior Field Chemist & Project Manager
Kenneth Sorensen	- Field Chemist & Operations Supervisor

Wendy Johnson, CHMM, CIH, CSP	- Field Chemist & Operations Supervisor
Shane Brightwell	- Certified Health Physicist
Martin Buys	- NEPA Program Manager
Donald Robinson, PE	- Civil and Environmental Engineer
James Hamilton, PE	- Consulting Engineer
GW "Bill" Shearer, PhD	- NEPA Program Manager
Adam Kelly	- Project Manager Biologist - AHAS
Dan O'Connell	- Project Manager
Richard Wilcut	- Project Manager
Ronald Merritt	- Q/A, Q/C Biologist - AHAS

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AET Environmental

303.333.6521 - phone
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14 Lakeside Lane
Denver, CO 80212

info@aetenvironmental.com

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Dan Landagora	- Logistics, Operations Manager
Frank Gines, CHMM	- Senior Field Chemist & Project Manager
Adam Kahn	- Senior Field Chemist & Project Manager
Kenneth Sorensen	- Field Chemist & Operations Supervisor

EPAHO044000086

Wendy Johnson, CHMM, CIH, CSP	- Field Chemist & Operations Supervisor
Shane Brightwell	- Certified Health Physicist
Martin Buys	- NEPA Program Manager
Donald Robinson, PE	- Civil and Environmental Engineer
James Hamilton, PE	- Consulting Engineer
GW "Bill" Shearer, PhD	- NEPA Program Manager
Adam Kelly	- Project Manager Biologist - AHAS
Dan O'Connell	- Project Manager
Richard Wilcut	- Project Manager
Ronald Merritt	- Q/A, Q/C Biologist - AHAS

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services

AET offers a wide variety of environmental services to accommodate our client's changing needs. These services include:

- Compliance
- Decontamination and Demolition/Facility Closures
- Emergency Response
- Engineering and Information Technology
- Industrial Cleaning
- Lab Packing
- Remediation
- Transportation
- Waste Management

Please click on any of the links above for a more detailed description of each specific service offering.

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AET Environmental

303.333.8521 - phone
303.333.8517 - fax

14 Lakeside Lane
Denver, CO 80212

info@aetenvironmental.com

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profile

AET Environmental is an award winning 8a environmental services firm. Founded in 1993, AET is headquartered in Denver, CO, with offices in Utah, Nevada, Georgia, and Panama City. AET takes great pride in its established long-term relationships with clients founded on good communication, cooperation, and trust. The company provides cost effective and practical solutions to clients' environmental requirements.

AET's solutions to hazardous waste handling, industrial cleaning, remediation, emergency response, and federal regulatory compliance are provided to clients nationwide. We have over 2000 clients including federal state and municipal government as well as industry and manufacturing. We service the energy sector, utilities, printed circuit board manufacturers, metal refinishers, oil and gas industry, automotive industry, hospitals, analytical laboratories, and a host of other industries.

In addition, AET provides programmers to continue the development of specialized software integrating the Bird Avoidance Model and NEXRAD data into the Avian Hazard Advisory System for the Air Force Safety Center, Kirtland AFB, NM. AET's programmer engineers have also developed software programs for RCRA Manifesting, which can be utilized commercially, as well as for Waste Tracking for the Defense Reutilization and marketing Service. <see www.usahas.com>

AET augments its environmental services with vacuum tankers, box vans, soil excavation, wet/dry industrial cleaning (tank or pond sludge removal and steam cleaning), storm drain and sewer cleaning, treatment of heavy metal and petroleum contaminated soil, certified environmental management services, and certified

Click on images below to enlarge them.

Waste Management
<more>

Industrial Cleaning
<more>

Engineering & Information Technology
<more>

Lab Packing
<more>

Remediation

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hazardous materials management services.

In a competitive industry dominated by large businesses with huge overhead expenses, AET remains a small 8(a) certified firm with a competitive edge based on extensive technical and field expertise, cost-effective solutions, and timely accurate results.

<more>

Emergency Response

<more>

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Denver, CO 80212

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Serving Denver, Colorado and the Rocky Mountain Region.

AET Environmental is a leading Environmental and Remediation Services firm.

Please contact us to learn how we can serve you!

find out what our clients think of us

<click here>

AET Environmental

303.333.8521 - phone
303.333.8517 - fax

14 Lakeside Lane
Denver, CO 80212

info@aetenvironmental.com

welcome

Over 13 years of Environmental Excellence!

AET Environmental is a woman owned environmental firm that provides practical and timely solutions to waste management, remediation and compliance challenges for government and commercial clients. This expertise allows clients to focus on their core business, save money, and simplify the burden of ever changing regulatory requirements.

GSA

Multiple Award Schedule Contractor

Contract No. GS-10F-0361L

Schedule No. 899-1, 899-2 899-4, 899-5 899-6, 899-8

Mission Statement

To provide innovative and trustworthy environmental services, while being regionally recognized for our exceptional responsiveness and value to clients, employees and stakeholders.

What's new at AET Environmental?

AET Wins Contract to Build Radar Unit

AET is providing all materials to build a MERLIN Bird Detection radar System for the Central Science Laboratory in Great Britain.

AET Recognized in Colorado Biz Magazine.

AET is one of the top 100 women business enterprises in Colorado.

AET Receives award for outstanding compliance with DEA documentation requirements.

AET's emergency response services was rated best among DEA subcontractors during the initial performance period. Factors included response time, as well as accuracy in the field in haz-catting, the completion of manifests, land disposal restrictions (LDRs) and other regulatory paperwork.

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Businesses 1 - 3 of 3 results for **A E T Environmental** near **Denver, CO**.

ALL LISTINGS

1 Holme Roberts & Owen
1700 Lincoln St Ste 4100, Denver, CO 0.41mi
(303) 861-7000 Website
Category: Corporation, Banking & Business Attorneys **Neighborhood:** Five Points
Review it! 1-click directions Bird's eye

2 AET Source-Environmental Inc
14 Lakeside Ln, Denver, CO 4.65mi
(303) 333-8521 Website
Category: Hazardous Waste Control & Management
Review it! 1-click directions Bird's eye

3 E T Environmental
5690 Dtc Blvd # 515, Greenwood Village, CO 10.32mi
(303) 757-5046
Category: Environmental Conservation & Ecological Organizations
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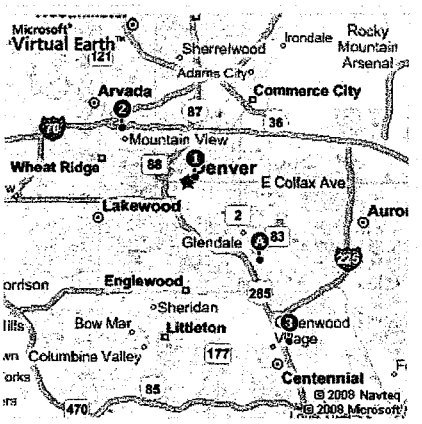

See location details on Live Search Maps

EPAHO044000093

scope of services

Hazardous and Industrial Materials Management

Since its inception, AET Environmental's primary expertise has been industrial, hazardous, toxic and nuclear materials management. Our private and government clients number in the thousands, and an indication of our success is the fact that the majority of our clients return to AET again and again for environmental friendly, compliant and economically sound options for their manufacturing and industrial waste. Pollution Prevention (P2) and Waste Minimization Plans have lead to sustainable environmental programs. Clients depend on AET for total waste management.

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scope of services

AET Waste Management Tasks

- Hazardous Materials Characterization
- Waste Minimization-Pollution Prevention (P2)
- Lab Packing Services
- Profiling
- Manifesting
- Labels and Markings
- Placarding
- Drum Consolidations
- Tanker Work
- Plant Clean-ups/Closures
- Unknown Identifications
- Work Plans
- Sampling
- Tank Cleaning
- Emergency Response

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scope of services

AET Disposal Options

- Fuels Substitution
- Incineration
- Treatment
- Waste Water Treatment
- Neutralization
- Stabilization
- Solidification
- Landfill

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scope of services

AET Recycling Programs

- Metals Reclamation (retorting and smelting programs)
- Co-generation of Energy
- Low grade marine bunker fuel
- Beneficial Reuse
- Waste To Energy
- Universal Waste recycling
- Computer Components (e-Waste) Recycling

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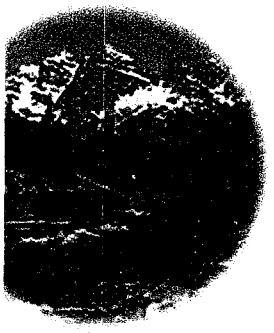

firm qualifications

Service Overview

AET Environmental is regionally recognized as a leading Environmental Services firm to over 2000 clients. Both commercial and government clients request our expertise on tasks that range from RCRA, TSCA, mixed, universal, industrial and low-level radioactive waste management, industrial cleaning services, and regulatory compliance to emergency and rapid response, sampling plans, removal actions, facility decontamination, decommission and demolition projects, facility closures, unknown and investigation derived waste (IDW) characterization, lab packing, and technical field and site services.

The company has in place required scientific, data management, health and safety, and quality control programs, and a library of the most current, applicable, and informative chemical and regulatory information, including an extensive database of material safety data sheets (MSDSs) for thousands of chemicals.

AET Environmental maintains a staff of scientists, project managers, safety managers, certified health physicists, industrial hygienists, regulatory compliance experts, experienced supervisors and field professionals whose collective 180 years of experience and expertise provide realistic diagnoses and resolutions to simple as well as complex tasks and challenges. Our approach from both management and operations is "results oriented" in order to satisfy both our clients and also the regulatory authorities.

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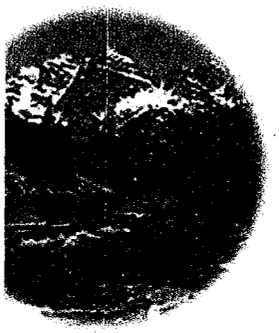

firm qualifications

Selected Recycling and Waste Treatment Facilities

- Alpha Omega, Dallas, TX
- Arvada Treatment, Arvada, CO
- Clean Harbors - various locations
- Duratek, Oakridge, TN
- ET Technologies, Salt Lake City, UT
- NSSI, Houston, TX
- Onyx Special Services - various locations
- Permafix-various locations
- Pollution Control Industries, Millington, TN
- Rineco, Benton AR
- SET Environmental, Houston, TX
- US Ecology - Beatty, NV

AET performs environmental audits of all its approved TSD facilities. These documents are available upon request.

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firm qualifications

Specialized Niche Services

AET Environmental provides specialized niche services geared toward sustainable environmental programming.

These services include RCRA, TSCA, and radiological waste management with an emphasis on "green management": product regeneration, recycling, waste to energy, co-generation of energy, surface decontamination and metals reclamation, marine bunker fuels blending, treatment, and beneficial reuse, as well as the traditional stabilization, landfill, and incineration.

AET's team has expertise in low-level nuclear and mixed waste management. Licensed by the State of Colorado, we prepare Work Plans that are reviewed and approved by the State Health Department, determine and in some cases provide specifications for appropriate packaging (Type A, IP-I, etc.), decontaminate surface contaminated objects (SCO), prepare import and export permits and facility use permits in accordance with State or compact requirements, calculate isotopic activities for preparation of low-level waste manifests (Forms 540, 541, and 542) and assume Broker of Record status.

AET's industrial cleaning service division works with utilities, mines, the oil and gas industry and chemical manufacturers, performing tank cleaning (including associated piping), trench and sand trap pump outs, emergency response and removal of contaminated ground water. AET owns and operates equipment including a rubber-lined tanker for transport of highly corrosive materials, vacuum tankers for transport of bulk liquids, roll-offs, box vans, and other utility vehicles for transportation and intra-facility movement.

AET's technical team provides timely and accurate emergency response services. We remove the hazardous material from the environment, deal with regulatory authorities and the media. We also review the site for restoration, implementing testing and if necessary, subsequent decontamination of a facility

AET performs Environmental Compliance audits to assist federal agencies, commercial, industrial, manufacturing, and health care clients in meeting today's ever changing and evolving world of land use, air, water, and waste regulations. Our program evaluates your facility or installation's operations and addresses areas that must be modified in order to comply with regulations. In conjunction with these reviews, AET can provide employee training if required.

AET prepares Environmental Assessments, Environmental Impact Statements, Biological Assessments, and other plans that comply with Land Use regulations including National Environmental Policy Act, Endangered Species Act, Clean Water Act, Clean Air Act, and wetlands.

Dedicated to applying sound management, scientific, and regulatory principles tempered with keen business judgment and common sense, AET is a unique single-source venue for your environmental challenges.

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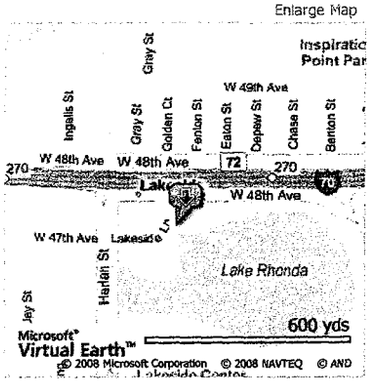
Company: *A E T Environmental*

Enlarge Map



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Louis Macey Investments

1717 St James Place Ste 118 **Houston, Texas 77056-3409**
(office)713-960-0690 **(fax)713-960-8374**

Fax Cover Sheet

To:	Matt Bowman	**With:**	CES Environmental
Fax:	713-748-8664	**Date:**	December 8, 2008
Phone:	713-676-1460	**Pages:**	8 (including cover page)
From:	Louis Macey		
Re:	Confidentiality Agreement	**CC:**	

☐ **Urgent** ☐ **For Review** ☐ **Please Comment** ☐ **Please Reply**

•Comments:

Matt,

Please call Mr. Harrison.

Louis

Bruce Harrison

Home: 713-960-0061

cell: 713-882-4008

CES Environmental Services, Inc.

[DATE]

12-05-08

[NAME OF ADDRESSEE]

A Bruce Harrison

[ADDRESS]

214 Sage Rd Houston, Texas 77056

Re: Confidentiality, Non-circumvent, and Non-Disclosure Agreement

Ladies and Gentlemen:

In connection with your consideration of a possible business opportunity of mutual interest (a "Possible Transaction") with the Company and/or its subsidiaries, affiliates or divisions (collectively, with such subsidiaries, affiliates and divisions, the "Company"), the Company is prepared to make available to you and your Representatives (as hereinafter defined) certain information concerning the business, financial condition, operations, assets and liabilities of the Company. As a condition to such information being furnished to you and your Representatives (as herein defined), you agree that you will, and will cause your Representatives to, treat the Evaluation Material (as hereinafter defined) in accordance with the provisions of this letter agreement and take or abstain from taking certain other actions as set forth herein. The term "Representatives" shall include the members, directors, shareholders, managers, officers, employees, agents, affiliates (as such term is defined under the Securities Exchange Act of 1934, as amended (the "1934 Act")), partners and advisors of a party and those of its subsidiaries, affiliates and/or divisions (including, without limitation, attorneys, accountants, consultants, bankers, financial advisors). Notwithstanding any other provision hereof, the Company reserves the right not to make available hereunder any information, the provision of which is determined by it, in its sole discretion, to be inadvisable or inappropriate.

1. Evaluation Material. The term "Evaluation Material" shall mean all information relating, directly or indirectly, to the Company or the business, products, processes, technology, markets, condition (financial or other), operations, assets, liabilities, results of operations, cash flows or prospects of the Company (whether prepared by the Company, its advisors or otherwise) which is delivered, disclosed or furnished by or on behalf of the Company

to you or to your Representatives, before, on or after the date hereof, regardless of the manner in which it is delivered, disclosed or furnished, or which you or your Representatives otherwise learn or obtain, through observation or through analysis of such information, data or knowledge, and shall also be deemed to include all notes, analyses, compilations, studies, forecasts, interpretations or other documents prepared by you or your Representatives that contain, reflect or are based upon, in whole or in part, the information delivered, disclosed or furnished to you or your Representatives pursuant hereto. Notwithstanding any other provision hereof, the term Evaluation Material shall not include information which (i) is or becomes generally available to the public other than as a result of a disclosure by you or your Representatives, (ii) was within your possession and developed by you prior to its being furnished to you by or on behalf of the Company pursuant hereto, provided that you had no reasonable basis (after due inquiry) for concluding that the source of such information was bound by a confidentiality agreement with, or other contractual, legal or fiduciary obligation of confidentiality to, the Company or any other party with respect to such information or (iii) becomes available to you on a non-confidential basis from a source other than the Company or any of its Representatives, provided that you do not know or have reason to believe (after due inquiry) that the source is bound by a confidentiality agreement with, or other contractual, legal or fiduciary obligation of confidentiality to, the Company or any other party with respect to such information.

2. Use and Disclosure of Evaluation Material. You hereby agree that you and your Representatives shall use the Evaluation Material solely for the purpose of evaluating a Possible Transaction and for no other purpose, that the Evaluation Material will not be used in any way detrimental to the Company, that the Evaluation Material will be kept confidential and that you and your Representatives will not disclose any of the Evaluation Material in any manner whatsoever; *provided, however*, that (i) you may make any disclosure of the Evaluation Material to which the Company gives its prior written consent and (ii) any of the Evaluation Material may be disclosed to your Representatives who need to know such information for the purpose of evaluating a Possible Transaction, who are provided with a copy of this letter agreement and who agree to be bound by the terms hereof. You shall maintain a list of those Representatives to whom Evaluation Material has been disclosed (which list shall be presented to the Company upon request). You shall be responsible for any breach of this letter agreement by any of your Representatives. In any event, you agree to undertake reasonable precautions to safeguard and protect the confidentiality of the Evaluation Material and, at your sole expense, to take all reasonable measures (including, but not limited to, court proceedings) to restrain yourself and your Representatives from prohibited or unauthorized disclosure or uses of the Evaluation Material.

In addition, you agree that, without the prior written consent of the Company, you and your Representatives will not disclose to any other person the fact that you or your Representatives have received Evaluation Material or that Evaluation Material has been made available to you or your Representatives, that investigations, discussions or negotiations are taking place concerning a Possible Transaction or any of the terms, conditions or other facts with respect to any Possible Transaction, including the status thereof and the identity of the parties thereto (collectively, the "Discussion Information"). The term "person" as used in this letter agreement shall be broadly interpreted to include the media and any corporation, partnership, limited liability company, group, individual or other entity.

In the event that you or any of your Representatives are requested or required (by oral questions, interrogatories, requests for information or documents in legal proceedings, subpoena, civil investigative demand or other similar process) to disclose any of the Evaluation Material or Discussion Information, you shall provide the Company with prompt written notice of any such request or requirement (unless prohibited by applicable law, rule or regulation) so that the Company may in its sole discretion seek a protective order or other appropriate remedy and/or waive compliance with the provisions of this letter agreement. If, in the absence of a protective order or other remedy or the receipt of a waiver by the Company, you or any of your Representatives are nonetheless, in the written opinion of outside legal counsel, legally compelled to disclose Evaluation Material or Discussion Information to any tribunal or else stand liable for contempt or suffer other censure or penalty, you or your Representatives may, without liability hereunder, disclose to such tribunal only that portion of the Evaluation Material or Discussion Information which such counsel advises you is legally required to be disclosed, *provided* that you use your best efforts to preserve the confidentiality of the Evaluation Material and the Discussion Information, including, without limitation, by cooperating with the Company to obtain an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Evaluation Material and the Discussion Information by such tribunal; and *provided further* that you shall promptly notify the Company of (i) your determination to make such disclosure and (ii) the nature, scope and contents of such disclosure.

3. Return and Destruction of Evaluation Material. In the event that you decide not to proceed with a Possible Transaction, you will promptly inform the Company of that decision. In that case, or at any time upon the request of the Company in its sole discretion and for any reason, you will as directed by the Company promptly deliver, at your expense, to the Company all Evaluation Material (and any copies thereof) furnished to you or your Representatives by or on behalf of the Company pursuant hereto. Notwithstanding the return or destruction of the Evaluation Material, you and your Representatives shall continue to be bound by your obligations of confidentiality and other obligations and agreements hereunder.

4. No Representations or Warranties. You understand, acknowledge and agree that neither the Company nor any of its Representatives makes any representation or warranty, express or implied, as to the accuracy or completeness of the Evaluation Material. You agree that neither the Company nor any of its Representatives shall have any liability to you or to any of your Representatives relating to or resulting from the use of the Evaluation Material or any errors therein or omissions therefrom. Only those representations or warranties which are made in a final definitive agreement regarding any transactions contemplated hereby, when, as and if executed and delivered, and subject to such limitations and restrictions as may be specified therein, will have any legal effect.

5. Non-circumvent. In consideration of the Evaluation Material being furnished to you, you hereby agree that, for a period of five years from the date hereof, you and your Representatives will not (i) solicit any of the officers or employees of the Company to terminate their employment with the Company, (ii) solicit any existing customers of the Company for purchases of products, information, or services that are within the scope of the business activities of the Company or (iii) take any other action that is reasonably likely to cause injury to the relationship between the Company, and its employees, customers, suppliers or other business associates.

Until the earliest of (i) the execution by you of a definitive agreement regarding a Possible Transaction with the Company or (ii) one year from the date of this letter agreement, you agree not to initiate or maintain any contact (except for those contacts made in the ordinary course of business) with any officer, director, manager, member, employee or client of the Company regarding the Company's business, operations, prospects or finances, except with the express permission of the Company.

6. Material Non-Public Information. You acknowledge and agree that you are aware (and that your Representatives are aware or, upon receipt of any Evaluation Information or Discussion Information, will be advised by you) that (i) the Evaluation Material being furnished to you or your Representatives contains material, non-public information regarding the Company and (ii) the United States securities laws prohibit any persons who have material, non-public information concerning the matters which are the subject of this letter agreement, including the Discussion Information, from purchasing or selling securities of a company which may be a party to a transaction of the type contemplated by this letter agreement or from communicating such information to any person under circumstances in which it is reasonably foreseeable that such person is likely to purchase or sell such securities in reliance upon such information.

7. No Agreement. You understand and agree that no contract or agreement providing for any Possible Transaction shall be deemed to exist between you and the Company unless and until a final definitive agreement has been executed and delivered, and you hereby waive, in advance, any claims (including, without limitation, breach of contract) in connection with any Possible Transaction unless and until you and the Company shall have entered into a final definitive agreement. You also agree that unless and until a final definitive agreement regarding a Possible Transaction has been executed and delivered, neither the Company nor you will be under any legal obligation of any kind whatsoever with respect to such a Possible Transaction by virtue of this letter agreement except for the matters specifically agreed to herein. You further acknowledge and agree that the Company reserves the right, in its sole discretion, to reject any and all proposals made by you or any of your Representatives with regard to a Possible Transaction, to determine not to engage in discussions or negotiations and to terminate discussions and negotiations with you at any time, and to conduct, directly or through any of its Representatives, any process for any transaction involving the Company or any of its subsidiaries, if and as they in their sole discretion shall determine (including, without limitation, negotiating with any other interested parties and entering into a definitive agreement without prior notice to you or any other person).

8. No Waiver of Rights. It is understood and agreed that no failure or delay by the Company in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

9. Remedies. You recognize and acknowledge the competitive value and confidential nature of the Evaluation Material and the damage that could result to the Company if any information contained therein is disclosed to a third party. It is understood and agreed that money damages would not be a sufficient remedy for any breach of this letter agreement by you or any of your Representatives and that the Company shall be entitled to equitable relief,

including, without limitation, injunction and specific performance, as a remedy for any such breach. Such remedies shall not be deemed to be the exclusive remedies for a breach by you of this letter agreement but shall be in addition to all other remedies available at law or equity to the Company. You further agree not to raise as a defense or objection to the request or granting of such relief that any breach of this letter agreement is or would be compensable by an award of money damages, and you agree to waive any requirements for the securing or posting of any bond in connection with such remedy. In the event of litigation relating to this letter agreement, if a court of competent jurisdiction determines in a final, nonappealable order that a party has breached this letter agreement, then such party shall be liable and pay to the non-breaching party the reasonable legal fees such non-breaching party has incurred in connection with such litigation, including any appeal therefrom.

10. Governing Law. This letter agreement is for the benefit of the Company (and its subsidiaries and affiliates) and its Representatives, and shall be governed by and construed in accordance with the laws of the State of Texas applicable to agreements made and to be performed entirely within the State of Texas, without regard to the conflict of law provisions thereof. You hereby irrevocably and unconditionally consent to submit to the exclusive jurisdiction of the courts of the State of Texas and of the United States of America located in the State of Texas for any actions, suits or proceedings arising out of or relating to this letter agreement and the transactions contemplated hereby (and you agree not to commence any action, suit or proceeding relating thereto except in such courts, and further agree that service of any process, summons, notice or document by U.S. registered mail to your address set forth above shall be effective service of process for any action, suit or proceeding brought against you in any such court). You hereby irrevocably and unconditionally waive any objection which you may now or hereafter have to the laying of venue of any action, suit or proceeding arising out of this letter agreement or the transactions contemplated hereby in the courts of the State of Texas or the United States of America located in the State of Texas, and hereby further irrevocably and unconditionally waive and agree not to plead or claim in any such court that any such action, suit or proceeding brought in any such court has been brought in an inconvenient forum.

11. Entire Agreement. This letter agreement contains the entire agreement between you and the Company regarding its subject matter and supersedes all prior agreements, understandings, arrangements and discussions between you and the Company regarding such subject matter.

12. No Modification. No provision in this letter agreement can be waived, modified or amended except by written consent of you and the Company, which consent shall specifically refer to the provision to be waived, modified or amended and shall explicitly make such waiver, modification or amendment.

13. Counterparts. This letter agreement may be signed by facsimile and in one or more counterparts, each of which shall be deemed an original but all of which shall be deemed to constitute a single instrument.

14. Severability. If any provision of this letter agreement is found to violate any statute, regulation, rule, order or decree of any governmental authority, court, agency or exchange, such invalidity shall not be deemed to affect any other provision hereof or the validity

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of the remainder of this letter agreement, and such invalid provision shall be deemed deleted herefrom to the minimum extent necessary to cure such violation.

15. Inquiries. All inquiries for information about the Company and its subsidiaries and communications with the Company shall be made through _____. Neither you nor any of your Representatives will contact any third party with whom the Company or any of its subsidiaries has a business or other relationship (including without limitation any director, officer, employee, customer, supplier, stockholder or creditor of the Company or any of its subsidiaries) in connection with a Possible Transaction without the Company's prior written consent.

16. Successors. This letter agreement shall inure to the benefit of, and be enforceable by, the Company and its successors and assigns.

17. Third Party Beneficiaries. You agree and acknowledge that this letter agreement is being entered into by and on behalf of the Company and its affiliates, subsidiaries and divisions and that they shall be third party beneficiaries hereof, having all rights to enforce this letter agreement. You further agree that, except for such parties, nothing herein expressed or implied is intended to confer upon or give any rights or remedies to any other person under or by reason of this letter agreement.

18. No License. Nothing herein shall be deemed to grant a license, whether directly or by implication, estoppel or otherwise, to any Evaluation Material disclosed pursuant to this letter agreement.

19. Term. This letter agreement will terminate five years from the date hereof.

[Signature page follows]

EPAHO044000116

Please confirm your agreement with the foregoing by having a duly authorized officer of your organization sign and return one copy of this letter to the undersigned, whereupon this letter agreement shall become a binding agreement between you and the Company.

Very truly yours,

CES Environmental Services, Inc.

By: _____
Name: Matt Bowman
Title: President

CONFIRMED AND AGREED
as of the date written above:

[COMPANY]

_____

By: A. Bruce Harrison
Name: A. BRUCE HARRISON
Title:

713-960-0061 (H)
713-882-4008 (C)

SD\657653.2

CONFIDENTIALITY
AND
NON-DISCLOSURE AGREEMENT

THIS AGREEMENT ("Agreement") is entered into this 18th day of July, 2008 by and between CES Environmental Services Inc. ("CES") having its principal address at 4904 Griggs Road, Houston, Texas 77021 and Sage Partners, Ltd. ("SPL") having its principal address at 1717 St James, Suite 400, Houston, Texas 77056 (CES and SPL individually referred to herein as a "Party" and collectively as the "Parties").

CES and SPL are investigating the possibility of entering into one or more transactions or business relationships (the "Transaction"). In order to pursue that possibility, it will be necessary for each of the Parties to receive and review certain information relating to the other Party's business and affairs, which such Party considers proprietary and confidential. It is understood that neither CES nor SPL has made a decision to enter into any Transaction and that either may elect, in its sole discretion, to not pursue any Transaction or to pursue a similar Transaction without the involvement of the other.

Each party is willing to disclose confidential information to the other for the purposes set forth above, subject to the following conditions and limitations:

1. As used herein, "Confidential Information" means this Agreement and all oral and written non-public, confidential or proprietary information concerning the possible Transaction, the fact that a possible Transaction is being discussed, or concerning CES or SPL, which either CES or SPL or any directors, officers, partners, employees, consultants, representatives, advisors, contractors or agents (collectively, the "Representatives") of either CES or SPL have provided or hereafter provide to the other Party or to any Representatives of the other Party at any time, together with analyses, compilations, studies, notes or other documents (collectively, "Analyses"), whether prepared by either Party or by others, which contain or otherwise reflect such Confidential Information. Any written Confidential Information will be clearly labeled "Confidential Information." Any Confidential Information transmitted orally will be clearly identified as such by the Party disclosing such information, ~~at the time it is disclosed.~~ M.B. "Confidential Information," as used herein, shall not include information which (a) is, or becomes, publicly known, otherwise than through an unauthorized disclosure by a Party or its Representative; (b) is independently developed by the other Party, provided that it was not derived from the Confidential Information; or (c) is approved in writing by a Party for disclosure.

2. The term "person" as used in this Agreement shall be interpreted broadly to include, without limitation, any corporation, company, entity, partnership, group, regulatory agency, or other governmental entity, or individual.

3. Each Party agrees that it will, in the same manner as it protects its own confidential information, hold in trust and confidence and not disclose any Confidential Information, including any Analyses, received by it from the other Party. Each Party shall have sole and exclusive ownership of all right, title, and interest in and to its own Confidential Information, including ownership of all patents, copyrights, and trade secrets pertaining thereto, subject only to the rights expressly granted to the other Party herein.

4. Each Party agrees that the Confidential Information will not be used for any purpose other than in connection with the evaluation of a possible Transaction. Each Party will restrict access to Confidential Information to such of its Representatives, entities controlling, controlled by or under common control with the Party ("Affiliates") and the Representatives of such Affiliates, in each case whose access is reasonably necessary for the purposes described herein. Each such recipient of Confidential Information shall be informed by the Party disclosing said Confidential Information of its confidential nature, and shall be directed to treat such information confidentially and shall agree to abide by the provisions of this Agreement. In any event, each Party shall be responsible for any breach of this Agreement by its Representative and/or any person to whom that Party or its Representative discloses Confidential Information.

5. Except as otherwise required by law, rules or regulations, and subject to paragraph 6, neither Party will, without the prior written consent of the other, disclose to any person not a Party to this Agreement or authorized in paragraph 4 any Confidential Information, the fact that Confidential Information has been provided to the Party, that discussions about a possible Transaction are taking place, or any of the terms, conditions or other facts with respect to any possible Transaction.

6. In the event that a Party is requested or required, by subpoena, oral deposition, interrogatories, request for production of documents, administrative order or otherwise, to disclose any Confidential Information, the fact that Confidential Information has been made available to the Party, or the fact or substance of any discussion about any possible Transaction, that Party shall provide the other Party with prompt notice of any such request so that it may seek, at its expense, an appropriate protective order or waiver of compliance with the terms of this Agreement. If, in the absence of a protective order or waiver, a Party is compelled, in the opinion of its counsel, to disclose any Confidential Information, that Party may make such disclosure after notice to the other Party.

7. Each Party further agrees that it will not solicit for employment any employees of the other Party, or any employee of any subsidiary or affiliate of the other Party, for a period of one (1) year after the date of this Agreement without the prior written consent of the other Party except through advertisements of general circulation that do not in any way identify the other Party or its Representatives.

8. Each Party will, promptly upon the request of the other, deliver to that Party any and all documents comprising the Confidential Information or any part thereof

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and will destroy any copies, notes, or extracts thereof, without retaining any copy thereof, except that any portion of the Confidential Information that consists of Analyses and any written Confidential Information not so requested and returned, shall be retained and kept subject to the terms of this Agreement, or upon the other Party's request destroyed (such destruction to be confirmed in writing). Notwithstanding the foregoing, neither Party shall be required to destroy or alter any computer archival or backup tapes/files, provided that such tapes/files shall be kept confidential in accordance with the terms of this Agreement.

9. Either Party may, in its sole discretion, without giving any reason therefore, terminate this Agreement and any discussions concerning any possible Transaction by written notice to the other Party at the address indicated in the first paragraph of this Agreement, or at such other address as a Party may by notice hereafter specify. In no event shall termination of this Agreement affect obligations under this Agreement already in effect. Neither Party is obligated by this Agreement to enter into any agreement or other arrangement concerning any possible Transaction. Each Party will bear its own costs and expenses, including legal fees and fees of other advisors, with respect to the possible Transaction and the development of appropriate documentation with respect thereto. The Parties agree that no joint venture, partnership or other fiduciary relationship shall be deemed to exist or arise between them with respect to this Agreement or any possible Transaction, except as may otherwise be agreed to in writing by the Parties.

10. It is understood and agreed that money damages would not be a sufficient remedy for any breach of this Agreement and that a Party may be entitled to injunctive relief as well as reimbursement by the other Party for legal and other expenses as a remedy for any such breach. Such remedy shall not be deemed to be the exclusive remedy for the breach of this Agreement but shall be in addition to all other remedies available at law or in equity. In the event of litigation concerning this Agreement, if a court of competent jurisdiction determines in a final, nonappealable order that a Party has breached this Agreement, then such Party shall be liable for and pay to the nonbreaching party the reasonable legal fees such nonbreaching Party has incurred in connection with such litigation, including any appeal therefrom or review thereof.

11. This Agreement shall create no relationship between the parties except as expressly stated herein. Neither Party nor any of their respective Representatives has made or makes any representation or warranty as to the accuracy or completeness of the Confidential Information. Each Party agrees that neither the other Party nor its Representatives shall have any liability to any person resulting from the provision or use of the Confidential Information in accordance with the terms of this Agreement.

12. Neither the holding of discussions between the Parties concerning a Transaction nor the disclosure of Confidential Information will be construed as limiting the right of the Parties or their affiliates to engage in similar discussions and to furnish like information to other potential parties interested in entering into a similar business relationship.

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13. It is understood and agreed that no failure or delay in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder.

14. This Agreement constitutes the entire agreement of the Parties with respect to a possible Transaction, and supersedes all prior understanding or agreements, written or oral, on these matters. No waiver or amendment of the Agreement shall be effective unless it is in writing and signed by both Parties.

15. Unless extended by written agreement of the Parties, the confidentiality provisions of this Agreement shall expire two (2) years from the date hereof.

16. Any notices to be delivered shall be in writing and shall be sufficiently given if delivered by hand, by courier service, sent by registered mail, postage prepaid, or sent by facsimile (with written confirmation of receipt) to a Party at the address listed below:

CES Environmental Services Inc.
Attn: Matt Bowman
4904 Griggs Road
Houston, Texas 77021
Fax: (713) 676-1676

Sage Partners, Ltd.
Attn: Will Wilson
1717 St. James, Suite 400
Houston, Texas 77056
Fax: (832) 369-7388

17. This Agreement shall be governed by and construed under the laws of the State of Texas without regard to conflicts of laws principles.

18. This Agreement may be executed in multiple counterparts and all such counterparts constitute one agreement, binding on the Parties hereto, notwithstanding that each of the Parties is not a signatory to the original or the same counterpart.

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IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first written above.

CES Environmental Services, Inc.

By: Matt Bowman
Name: Matt Bowman
Title: President

Sage Partners, Ltd

By: Will Allen
Name: Will Allen
Title: Partner

EPAHO044000122

Resumes / Job offers

EPAHO04400012 3

9/4/09
WBS
K-3 (6)

JAVAID VOHRA

(b) (6) [redacted]

USA Permanent Resident Work Status

OBJECTIVE

To have challenging position in the field of Process/Production/Manufacturing Engineering with dynamic company where I can utilize my professional experience.

QUALIFICATION

- Chemical Engineer with 28 years of polymer industry experience in Process, Production, Technical Support & Service, Product development, Quality control, Safety Health & Environment and Production planning area.
- Hands on experience of manufacturing specialty chemicals (Poly vinyl acetate emulsion, Poly ethylene emulsion, Silicon emulsion, Dye fixing agent, Carrier agent, Binders, Softeners, Acrylic sizing agent, Detergents and Adhesives.

EXPERIENCE

(UNIVERSAL CHEMICAL INDUSTRIES, KARACHI, PAKISTAN).
PRODUCTION MANAGER, Jul 1995 –Dec 2007

- Developed and implemented production plans and programs to reduce costs, improve quality and maximize manufacturing efficiencies.
- Ensured that stated and established standard for product quality and equipment performance are maintained.
- Managed two shift production operation which includes Engineering and industrial work force staffing, equipment budgets, production planning strategies and equipment maintenance support.
- Co-ordinate with marketing, procurement and maintenance department for smooth operation.
- Solved trouble shooting issues of polymerization units and production area.
- Developed new formulations to meet the market goals.

ASSISTANT PRODUCTION MANAGER, Jan 1985-Jun 1995

- Support day to day activities of production manager.
- Work with process Engineers and supervisors on polymerization units to optimize production facilities.
- Elaborated solutions for systematic operational and technical issues.
- To arrange raw material and packing material from stores.
- To improve working condition of production area.
- Effectively implemented Quality Management System and Environment Management System.

PROCESS ENGINEER, Jan 1980-Dec 1985

- Worked on polymerization units with experience supervisors and line personnel for trouble shooting issues.
- Focused on optimization of process conditions, process improvement, usage and yield improvement.
- Additional activities include material procurement, process safety management, analytical testing, manufacturing coordination and quality control.

EDUCATION

NED UNIVERSITY OF ENGINEERING AND TECNOLOGY, KARACHI, PAKISTAN
Bachelor of Engineering (**Chemical**)

MD APPEL MAHMUD

(b) (6) [redacted]

Seeking a full time Engineering position which will provide me a challenging opportunity.

SUMMARY

- Experienced in Caustic Soda production process
- Two years research experience in waste water treatment
- Acquainted with environmental regulation, biological, chemical, electrochemical & physical treatment methods.
- Basic knowledge of Cooling tower, boiler, heat exchanger
- Familiar in membrane separation, air flotation, evaporation & crystallization
- Conversant in fixed bed, fluidized bed system, ion exchange
- Adequate understanding of P&ID, PFD and Heat & Material Balance
- Decent competency in process simulation software such as Aspen, HYSYS & PRO II
- Good in basic engineering calculations and analysis, developing plans, communicating technical concepts
- Proficient in MS word, Excel, Power Point, Access

EDUCATION

- Masters in Chemical Engineering, Lamar University, Beaumont, TX **December 2008 GPA: 3.82**
- Bachelor in Chemical Engg, Bangladesh University of Engg & Tech **April 2002 GPA: 3.18**

WORK EXPERIENCE

Summer Intern, Bayer Material Science, Baytown, TX **May-Aug 2007**

- Resolved safety issues by determining dead head pressure & critical point, and comparing with vacuum rating of pipe network of Environmental Control, Development and Utilities (ECDU) unit.
- Resolved HaZops issues by calculating thermal expansion coefficients, pressure due to thermal expansion, and burst pressure of the lines of ECDU unit.
- Optimized condensate return system for the plant by identifying the pinch point and then minimizing the condensate loss
- Determined the important condensate streams through detailed study of P & ID, field surveys and calculating energy value
- Set up condensate monitoring system with PI software for the plant.

Process Engineer, Global Heavy Chemicals Ltd, Dhaka, Bangladesh **Sep -Dec.'04**

- Operated, monitored brine preparation, clarifier, caustic soda separation & purification unit.
- Operated, maintained Ion-exchangers, Candle filter, Membrane electrolyzer, Heat exchangers, compressors and pumps.
- Development of Safety Charts (HazOps), troubleshooting through Distributive Control System (DCS).

GRADUATE RESEARCH

Research Assistant, Lamar University, Beaumont, TX **Oct'06-December'08**

Project: Treatments of textile waste-water by Electrocoagulation & other electrochemical methods.

- Designing & performing bench scale set up and operation.
- Executing experiments, analyzing results and documenting research

GRADUATE PROJECT

Design & Optimization of Isopropanol Plant through Process Simulation Software Aspen.

RELEVENT COURSES

- Environmental Science, Electrochemical Engineering, Environmental Catalysis, Process Simulation, Reactor Design, Process Design, Unit operations, and Optimization of Chemical Process.

PUBLICATION

- J. A. Gomes, D. Cocke, **M. Mahmud**, Treatment Of Orange II Azo Dye Using Electrochemical And Photo-Oxidative Methods, Electrochemical Society Transactions, Physical and Analytical Electrochemistry ,*6(18)*, 29-41, **2008**

Shirley M. McDaniel

(b) (6) [redacted]

Summary

Efficient, detail-oriented Environmental Technician with training in most aspects of environmental compliance. Well organized waste management professional, experienced in the documentation of waste streams and coordinating with waste facilities for the best Profile management. Effective LDAR Coordinator in managing technicians and directing repairs leading to positive 3rd party audit and reducing the number of delay of repair items. Demonstrated compliance by numerous reports to TCEQ and internal organization filing within time restraints and no deviations. Articulate proven speaker during years of training in both large groups and one on one leading to well organized programs recognized during audits.

Employment

Sunoco Chemicals –
Previously owned by Lyondell Chemicals

Environmental Technician – 2007 - 2009

- Leader in projects to remediate waste and improve site drainage; coordinated with project representatives to bid jobs, choose contractor, and oversee through completion to satisfaction of all parties.
- Identification, profile and manifest waste for compliant disposal while staying within budget.
- Sampling potable and waste water and pellet headspace documented with chain of custody for representative analysis leading to required reports to State Agencies in a timely manner.
- Coordinating LDAR Compliance through Vendor Supervision and repair management with no deviations reports on annual third party audit.
- VPP audit assistance leading to continued Star rating.
- Representative to CAER line training for continued community awareness.
- Experienced in STEERS for both waste management and Air event input, leading to affective timely documentation.
- Leader in regulatory training for HES meetings with follow-up documentation easily available resulting in uneventful audits.
- Developed procedures and PowerPoint presentations for continued training for all skills within the EHS organization.
- Evaluated existing waste removal methods and formulated improved method with reduced cost, paperwork and ease of identification.

Laboratory Day Technician 1995 - 2007

- Software Administrator for LabSoft LIMS, and STARS e-Prism Computer Training Systems for efficient database and reports to required personnel and Certificates of Analysis for customers.
- Developed procedures, training and documentation of recertification testing of Laboratory Technicians as required for ISO9002 and Process Safety Management.
- Assisted and stand-in for Supervisor with Customer Complaints, and Product Classification investigations leading to best quality product delivery and contented customers.

- Was chosen to attend training at Penn State on the Liquid Chromatograph, resulting in method development to utilize a less toxic chemical as carrier liquid.
- Responsible for Method Development, Standard Preparation, cost-effective supply inventory and purchasing, SQC Excel spreadsheet development and implementation and timely calibrations resulting in an efficient laboratory demonstrating effective management.
- Preventive maintenance and trouble shooting on equipment and instruments keeping instrument reliability 99%.
- Participated as Internal ISO and VPP Auditor during two Lyondell Laboratory Audits recognizing improvements for better ISO and VPP compliance.
- Developed a Lab Safety program for new employees; aiding the Lab record of no lost time accidents since establishment.

Laboratory Vacation Relief Technician – 1993 – 1994

Lead Quality Control Technician –1983 – 1992

Education

San Jacinto College - Associates of Arts – Chemistry

- Apollo Root Cause Analysis - 16 hours
- RCRA and Texas Hazardous Waste Management - 48 hours
- Internet Course in ISO Internal Quality System - 3 credits
- Statistical Process Control – 16 hours
- Managing the Lyondell Way – 16 hours
- Interpersonal skills – 8 hours

Committees

- Participated with ISO 9002 implementation committee resulting in a system passing first audit and establishing certification.
- A member of the VPP Certification implementation committee establishing a STAR certification.
- Laboratory representative with plant wide Quality Process Control committee leading to several improvements in product quality.
- Requested by management to contribute to the Malcolm Baldridge Committee, first as a Trainer, then as part of the Host committee.
- Lyondell representative in Partners in Education of La Porte Schools, and Jennie Reid Liaison for Sunoco coordinating efforts with Mentoring and Volunteering for 6 years.

Certificate

TCEQ Certified Class D Water Technician

References

Don Empfield – (b) (6) [redacted]
General Manager Polymer Manufacturing for Sunoco Chemicals – I have worked with Don for six years on various activities such as: organizing CPR/First Aid training for all employees, and organizing mentors and volunteers for snow cone parties at Jennie Reid Elementary.

Marla Goodnight – (b) (6) [redacted]
Guidance Counselor at Jennie Reid Elementary – As the liaison between our plant and Jennie Reid for over 10 years I have worked with Marla as both Lyondell and Sunoco representative. I have been invited each year to attend the Volunteer lunch to acknowledge the accomplishments of each organization.

Steve Lowry – (b) (6) [redacted]
Laboratory Chemist with Lyondellbasell Polymers La Porte – Steve was my supervisor from 1998 till 2006. During this time the Laboratory had no recordable accidents and several audits with no findings. He chose me to administer our LIMS system and training systems.

Brad D. Donat

(b) (6) [redacted]

Professional Summary

Extensive experience in sales, managing direct sales, and distribution on a global basis. Sales and Profits driven with equal importance placed on the development of people.

Professional Experience

Nalco Chemical Company, Naperville, IL **2002-2008**

Regional Sales Manager **(Metalworking and Finishing Chemicals)**

- Managed 48 Sales and Service personnel
- Managed Southern half of United States and West Coast
- Developed new sales teams in China, Thailand, and India
- Developed formal technical training program
- Achieved sales growth in double-digits each year
- Conducted new sales rep training course (Counselor Salesperson, Versatile Salesperson, Target Account Selling, Value Selling, and ROI)
- Worked with large corporations (Briggs and Stratton, Boeing, TRW, Copeland Compressor , Emerson, Polaris, Flextronics)
- Managed distribution program in US, Mexico, and Asia

DA Stuart Company, Warrenville, IL (Acquisition from Nalco) **1999-2002**

National Sales Manager **(Steel Industry Chemicals)**

- Managed 42 Sales and Service personnel
- Was responsible for sales of $28MM
- Managed Chemical Management Programs (AK Steel, USS Posco Works)
- Managed both United States and Canada sales teams
- Worked with Major Steel Corporations (Nucor, USX, Wheeling Pitt)
- Was directly responsible for P & L of Steel Market

Nalco Chemical Company, Naperville, IL **1996-1999**

District Manager **(Steel Industry and Metalworking)**

- Managed 12 Sales and Service personnel
- Managed South of Indiana and everything west of the Mississippi
- Achieved sales growth by double-digits each year
- Developed Northern Mexico territory ($1MM increase in the first year)

Nalco Chemical Company, Naperville, IL **1990-1996**

Sales **(Steel Industry)**

- Responsibility included sales for Southeast United States
- Awarded multiple Chairman's Club winner
- Achieved plan every year
- Developed new hire as my replacement

Krizman Inc./Dana Corporation, Toledo, OH **1986-1990**

Sales **(After Market Auto)**

- Responsibility included sales for United States
- Developed Aftermarket Rack & Pinion sales
- Developed Sales and Marketing Campaign

Education/Training/Affiliations

Purdue University, West Lafayette, IN
Bachelor of Science Degree, Mechanical Engineering Tech.

Key Account Training – IMPAX
Corporate Storytelling – Articulus
Key Account Management and Planning – SAMA
Counselor Salesperson, Versatile Salesperson,
Target Account Selling, Negotiating
SAE member

Brad D. Donat

(b) (6) [redacted]

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Could get him for total comp. of start for 130K

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Counselor Salesperson, Versatile Salesperson,
Target Account Selling, Negotiating
SAE member

Plant Mgr. - Port Arthur

(b) (6)

Total Compensation

Timothy C. Avinger

(b) (6)

My objective is to share my experience, skills, talents, and knowledge in a team-oriented, expanding company. It is my desire to provide leadership in the areas of operational performance, P&L management, customer relations, continuous improvement, and associate development. My hands-on management approach encourages change and creative problem solving.

Work Summary 15+ years..

- Division Manager for worldwide industrial services company in full charge of a $30m division budget providing services to oil and chemical refineries.
- Managed industrial services operations for multiple refineries and chemical producers.
- Supply chain operations management experience in transportation, distribution, warehousing, production and repackaging.
- Experience in Inter-modal Operations: rail/barge/trucking.
- Experience managing full P&L including budgets and account reconciliation.
- Human Resource Department management for as many as 150 employees.
- Internal Quality Auditor for ISO 9001:2000 standards.
- TWIC and DISA certified 2008
- Project Management Group Leader. Currently pursuing PMP certification.
- Computer systems design and implementation, both hardware and software, as well as network improvement, management, and repair.
- Complete knowledge of MS Office Program Suite, Advanced Excel certified.
- Varying degrees of experience with Kronos, Oracle, Reveal, SAP, Theos, Packit & Seaware WMS, and many Windows based software applications.

Work History

Division Manager
Veolia ES Industrial Services, Inc (2007-present) Port Arthur, Texas
Industrial services for multiple oil and chemical companies, including hydro-blasting, vacuum truck operations, chemical cleaning, and roll-off transportation operations.

Primary management responsibilities:

- Accounting- Complete P&L, account reconciliation, and budgeting.
- Inventory reconciliation and control auditing.
- Daily, weekly, and monthly analysis of actual revenues to budget.
- Budget development.
- Project Management group leader planning for customer turn-arounds.
- Sales support for customer acquisition and retention.

- Departments managed onsite include Accounting, Sales, Equipment Maintenance, DOT, Safety, Industrial Services, and Planning.

Operations Manager
Exel, Inc. (formerly Seapac, Inc.) 1995-2007 Baytown, Texas
Chemical repackaging, warehousing, and distribution center for multiple international companies. All Supply Chain activities performed including logistics and transportation. Exel purchased Seapac in 2006.

Primary management responsibilities:

- Accounting- Complete P&L, account reconciliation, and budgeting.
- Inventory reconciliation and control auditing.
- Daily, weekly, and monthly analysis of actual revenues to budget.
- Human Resources- All reporting and tracking, benefits, and staffing requirements.
- Project Management group leader.
- Site Internal ISO auditor- ISO 9001-2000. Nine years with no major corrective actions.
- Government and corporate reporting, contracts, and purchasing.
- Ongoing safety training and tracking, new hire orientation, contract preparation, software development, and historical data reporting.
- IT department- Design, implementation, training, and maintenance of software and hardware. 45 local computers, 3 networks, RF scanning, 3 remote sites.
- Led senior management team in design, development, and implementation of a custom warehouse management system for Seapac, Inc. called Seaware. Designed and implemented a fiber optic network joining 7 site buildings including RF scanning for product tracking.
- As a member of the senior management team, directly involved in all aspects of daily operations and continuous improvement of business and staff. This improvement is validated by the fact that the site grew from 50K sq ft warehouse with 2 production lines to well over 1.3million sq ft and 12 production lines since 1995. Trucking operations were added in 2002 and barge-handling operations were implemented on site in 2004.

Controller
Alabama Credit Corporation. Mobile, Alabama
Hired as Systems Analyst and Programmer, promoted to Comptroller in 1985.

- Wrote and maintained software systems for corporation and several subsidiaries.
- Managed all accounting systems, government reporting, and personnel records.

Systems Analyst and Programmer
Gulf Transport Company (subsidiary of ICG RR) Mobile, Alabama

- Designed, programmed, maintained, and installed IBM computer systems for 6 national sites.

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- Software included Financial Accounting, Railroad Accounting, Railcar Repair, Piggy Back Operations, and Intermodal Operations Tracking.
- Responsibilities also included management of financial accounting staff and relative reporting and audits.

Education

University of South Alabama- Mobile Alabama
BS Mathematics / Computer Science
MBA curriculum – Accounting, Economics, Finance
IBM -Systems Engineer Certification Courses- Dallas/Atlanta
Experienced in MS Office Program Suite, particularly Excel, plus People Soft, Kronos, Oracle, Reveal, SAP, Theos, Packit & Seaware WMS, and many Windows software applications.
CompTIA Network+ Certification training.
Currently pursuing PMP certification.

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References for Timothy Avinger:

Chris Toney
General Manager
Exel, Inc – Baytown TX
(b) (6)

Larry Matthews
General Manager
Seapac, Inc. – Mobile AL
(b) (6)

H.B. "Rusty" Dumas
General Manager
Heniff Transportation – Mobile, AL
(b) (6)
(b) (6)

Eric Heater
General Manager
Packwell Inc. – Houston, TX
(b) (6)

Larry Colligan
Regional Safety Manager
Veolia ES – Port Arthur, TX
(b) (6)

LAURA J. PINZON U.
(b) (6)

Objective:

- Positions as an Environmental and Sanitary Engineer with emphasis in any of all facets of treatment, operations and distribution of clean water; disposition and treatment of sewer and drain water; conservation of hydrographic river basins; control of pollution resources, environmental impact studies, and environmental action and environmental educational programs; collection and elimination of solid waste; Phase I and II environmental site assessments; and chemical laboratory supervision.
- Interested in working in any field of environmental and sanitary engineering.
- To apply my knowledge's and skills in the field of engineering and to use my experience to achieve the company's objectives as well as to develop myself in a constantly growing area and keep up with the changing technologies.

Work Experience:

- Sept 2007 – Now: Delta Consultants
    - Conduct numerous Phase II environmental site assessments in accordance with ASTM and client requirements on undeveloped, commercial, and industrial properties.
    - Collect soil and groundwater samples to determine if chemicals of concern had been released as well as collected soil, groundwater, and solid waste samples to characterize materials for proper disposal.
    - Performed groundwater sampling and gauging events and soil sampling activities and assisted in the process of well gauging and product recovery.
    - Served as the health and safety officer at the sites and also ensured the scope of work was performed properly during the monitor well installation process.
    - Responsible for supervising local subcontractors during site activities.
    - Prepared Phase II ESA reports for each of the site projects.
    - Responsible for evaluating the adequacy of the Phase I ESA information provided to Delta in Spanish.
    - Translated that technical information provided into English in report format.
    - Collaborated with local subcontractors and assisted them with product recovery from recovery wells using bailing techniques.

- Nov 2005 – Sept 2007: Solvents and Chemical, Co & Packaging Service Company
    - Develop and maintain a proactive quality system to meet ISO standards.
    - Directly supervised and monitored all quality control functions for vendors, contractors and all company facilities.
    - Performed both internal and external Quality and Environmental Audits according ISO 9001 and 14000 standards.
    - Review and elaborate manuals according ISO 9000.
    - Manage packaging components retain samples.
    - Review incoming packaging components against specification.
    - Perform quality checks on charcoal.
    - Perform quality checks on production line.
    - Log test data and enter into database.
    - Perform quality checks on incoming packaging components, finished good - Muriatic Acid.
    - Log Quality issues (man hours, material cost) in database for credits.

- Dec 2003 – Jun 2004: Metropolitan Aqueduct of Bucaramanga.
  (Acueducto Metropolitano de Bucaramanga)
  Bosconia treatment plant.

  - Prepared and used of alumina sulphate solution as a helper of flocculation in the process of water treatment.
  - Made organic manure by compost process with vegetables waste.
  - Prepared manuals of processes and operations, for a treatment plant.
  - Qualification of supply and reactives used in the laboratory of the treatment plant.
  - Technical support for all departments.
  - Coordinated and conducted technical visits from other organizations.
  - Water and Chemical laboratory Supervisor.

Education:

- 2007-2008: Houston Area Safety Council (HASC)
  OSHA 29 CFR 1910.120 HAZWOPER
- 2005: Houston Community College.
  Chemical Laboratory Technician.
  Houston –Texas
- 2004–2005: Bilingual Institute.
  English as Second Language.
  (Levels 1-5)
  Houston – Texas
- 1999 – 2004: "Pontificia Bolivariana" University
  Bachelor Degree in Environmental and Sanitary Engineering.
  Bucaramanga – Colombia.

Professional Skills:

- Due diligence
- Phase I and II environmental site assessments
- Processes and operations for treatment plants
- Soil and groundwater sampling
- Fieldwork oversight
- Treatment, operations and distribution of clean water.
- Disposition and treatment of sewer and drain water.
- Conservation of hydrographic river basin.
- Control of pollution recourses.
- Studies of environmental impact and environmental action and environmental educational programs.
- Preparation, making, evaluation and execution of environmental and sanitary projects.
- Collecting and elimination of solid waste.
- 2+ years of experience in "Chempax" Chemical database, and OTIPS (One Team Incident Prevention System)
- Fundamentals of quality assurance ISO-9000 & ISO-4000.
- Microsoft Word, Excel, Outlook, Power Point, Access, Windows, Lotus, Internet Explorer and Netscape.
- Language skills: Spanish and English.

- MEMBER OF LIONS CLUB INTERNATIONAL "BUCARAMANGA DIAMANTE CLUB" 1999-2004.

Kelly Scientific®
RESOURCES

Sesha R. Konda

EXPERIENCE SUMMARY

- Served in various roles that included analytical instrument maintenance and calibration, analysis of various analytes in wastewater, oil, soils, sediments, industrial influents/effluents, and hazardous waste materials.
- Served as a technical resource for blending of oils, served as a technical point-of-contact for TCEQ audits.
- Provided compliance alternatives for potential wastewater and storm water violations.
- Trained/mentored junior staff in analytical methods of analysis and analytical method adaptation and implementation.
- Supervised technicians and part-time workers.

WORK EXPERIENCE

Laboratory Technician; **Intertek Caleb Brett,** Port Neches, TX; August 2008 – present
Laboratory Chemist; **SGS Oil, Gas & Chemicals (through Kelly Scientific),** Deer Park, TX; June 2008 – August 2008
Wastewater Treatment and Compliance; **Sunoco Logistics,** Nederland, TX; Aug 1988 – April 2008
Supervisor, **Chemtex Environmental Laboratory**, Port Arthur, TX; January 1987 – July 1988. Role: Lab Supervisor
Chief Chemist, **Texas Environmental Services**, Nederland, TX; May 1984 – December 1986. Role: Chief Chemist
Research Chemist, **Laboratory for Wetland Soils and Sediments**; LSU, Baton Rouge, LA; May 1980 – April 1984

EXPERIENCE DETAILS

- Hands-on working knowledge of calibration, maintenance, and analysis using the following instruments/methods and associated testing procedures for blending and testing lube and crude oils, wastewater, oil, soils, sediments, industrial influents/effluents, and hazardous waste materials:
  - Atomic Absorption (AA) Spectrophotometer
  - X-Ray Diffraction Sulfur machine
  - Cannon Viscometer and Densitometers
  - Pensky Martin Flashpoint meters
  - Refractivity meter
  - Liquid Scintillation counters
  - Total Organic Carbon analyzer
  - Inductively Coupled Argon Plasma
  - Gas Chromatograph (GC) with Electron capture, Flame Ionization, and N-P detectors
  - TOX Instrument
  - LEL, H2S, Benzene, and Total Hydrocarbon meters, pH and conductivity meters
- Working analytical knowledge of the following using appropriate procedures and standard test methods:
  - Dielectric testing
  - Claygel analysis
  - Elemental metals such as Zn, Ba, Ca, Mg, etc. according to ASTM
  - Demulsibility
  - Sulfur content
  - Water content by Karl Fisher & Centrifuge
  - Sediment by Extraction
  - Viscosity, Gravity; RVP, Refractive index, Flash point, and Pour point
  - Analysis of soils, sediments, industrial effluents, industrial influents, and hazardous waste materials for organic and inorganic pollutants and method development for Benzene, Toluene, and Xylene (BTX) analysis
  - Microbiological treatment of collected plant wastewater to reduce/remove pollutants in order to meet TCEQ discharge limits

  - Collection and testing of water samples from various plant outfalls to confirm compliance with NPDES permit limits.
- As part of storage tanks hydrotesting, analyzed the water for parameters such as pH, TSS, COD, conductivity, oil and grease, and submitted results to the Railroad Commission for certification of tanks to be used for storing petroleum oils.
- Technical point-of-contact for TCEQ audits related to stormwater and wastewater and for implementing compliance procedures for violations of permit and discharge limits.
- Advised on lube oil blending to ensure proper synthesis of the end-product for different clients.
- Arranged safety advisory team meetings every month for the terminal, and improved the safety record of the company by introducing the near-miss program for all employees.
- Trained workers in the laboratory in wet chemistry and handling instruments.
- Supervised technicians and part-time workers.
- As a Research Associate, worked on the following EPA funded projects:
  - Fate of Selected Toxic Organics under controlled Redox Potential and ph Conditions in Soil and Sediment Water Systems
  - Factors Affecting Attenuation of Hazardous Material in Land Fills

EDUCATION

M.S. Environmental Studies (Civil Engineering), May, 1992: Lamar University, Beaumont, Texas.

Master of Science in Agriculture, March, 1977; A. P. Agricultural University, Tirupati, India.

Bachelor of Science in Agriculture, August, 1974; A. P. Agricultural University, Tirupati, India.

TRAINING, SKILLS, AND HONORS

- Safety Training in Hydrogen Sulfide Training School, February, 1992.
- Proficient with all applications of Microsoft Office.
- Council of Agricultural Research Merit Scholarship (India) throughout undergraduate program.

PUBLICATIONS

- K.S. Reddy and R.P. Gambrell, 1985. "The Rate of Soil Reduction as affected by Levels of Methyl Parathion and 2, 4-D." Journal of Environmental Science Health, B.20 (3): 275-298.

- R.P. Gambrell, K.S. Reddy, B.A. Taylor, and W.H. Patrick Jr., 1984. "Sources, Transport, and Fate of DDT and Toxaphene in a Contaminated Watershed of the Lower Mississippi River Floodplain." Paper presented in the International Conference on Environment Contamination at Imperial College, London, July 10-13, 1984.

- K.S. Reddy, R.P. Gambrell, and W.H. Patrick Jr., 1983. "The Rate of Soil Reduction as Affected by levels of Methyl Parathion and 2, 4-D." Abstract submitted for American Society of Agronomy meetings, Washington, D.C., 1983.

- R.D. DeLaune, R.P. Gambrell, and K.S. Reddy, 1983. "Fate of Pentachlorophenol in Estuarine Sediment." Environmental Pollution (Series B) 6 (1983): 297-308

- K. Sesha Reddy, M. Nageshwara Reddy, and G.H. Sankara Reddi, 1975. "Effect of Indigenous Nitrification Inhibitors on transplanted rice." Food Farming and Agriculture. 9 (1): 7-10.

Resumé

for

David Reginald Carver, Ph.D.

Joy's Dad

Personal:

David R. Carver
(b) (6)
[redacted]

Education:

National Institute of Health Postdoctoral Fellow	**1979-1981**	Colorado State University Fort Collins, Colorado
Ph.D., Organic Synthetic Chemistry	**1979**	Organic Chemistry, Virginia Tech Blacksburg, Virginia (under direction of Professor James F. Wolfe)
B.A.	**1974**	Chemistry, McMurry University Abilene, Texas

Strengths: As an entrepreneur with over 27 years of experience in starting/managing small businesses, I have several "claims to fame" from start-up situations. The most notable accomplishment (to date) is the critical (some would say crucial) work I performed in the research and development of the anticancer drug Taxol™ (marketed as paclitaxel). As the first truly effective anticancer drug (based on the extension of life and quality of lifestyle) for the oncology market, it was a truly important contribution to the public welfare. Because of its efficacy, the drug has become the largest selling anti-cancer drug in the world. My contribution was enabled by my strong R&D capabilities in Chemistry coupled with well-rounded business abilities. The joint venture, NaPro, was formed to manufacture and market Taxol, and the technology of NaPro was that of MediMolecules, Inc (my second company). In the NaPro Partnership, I was the CEO initially until the company grew to approximately 15 employees. After another round of funding, I became the R&D director Subsequent to that position, I was the Chief Operating Officer until the company grew to approximately 55 employees. NaPro's technology has been used to facilitate production of the anticancer drug all over the world. The NaPro/MediMolecules technology was also used by other pharmaceutical companies without license. The successful litigation of patent infringements against other pharmaceutical companies was certainly a learning experience for me, and despite the antagonistic nature of litigation, good will was generated from the interactions. My "rating" with the pharmaceutical community is, of course, excellent due to the successful defenses of my patents against attacks from "big pharma" and subsequent payments from the "big pharma" for the infringements.

At the same time and in parallel to the Napro timeline, the product line from my first company (ChiraTech, Inc) was now under the direction of Linear Instruments, and it was undergoing rapid growth to become the leader in the field of UV detectors for Liquid chromatography. My designs for "UV detectors" are now the largest selling single brand of their type in the world, and they are mostly known under the Linear and Thermo brand names (although they are sold under many other brand names as private labels). Approximately 30 to 35% of the detectors in the world (approximately $700M total over the last years) are from the designs of ChiraTech with few if any changes to the fundamental electronic and optical designs. This has validated and enhanced my "rating" with the scientific communities in the field of analytical instrumentation.

One of my recent positions (as consultant to JMST Systems) is again in the field of UV detectors. JMST products are now part of Reflect Scientific (symbol RSCF), and those products will very likely undergo rapid growth of sales in the next few years due to their advanced technology. As a consultant my electronic skills were improved and refined to add even more technological tools to my repertoire. My expertise in digital and analog electronic design coupled with my advanced degree experience, knowledge of Chemistry, and business acumen has led to unexpected innovations in markets where these separate fields of Science rarely meet. The result of these innovations are found in the company ProDevo LLC (another recent enterprise).

It is clear that simply having a strong technological background is not enough for a new innovative company to survive. There must be administrative management of resources, good research project management, good production documentation, and attention to details in every product design and introduction. This is certainly more than mildly true in markets where there are governmental oversights and regulations (such as the FDA or even ISO certifications). In this respect, I have a great deal of experience and awareness of the problems and solutions that are necessary for success when moving a project or product from R&D into a market. Additional skills in accounting, marketing, and end user sales have been acquired and honed over the years as every small business owner must do.

Professional Experience:

October 2007 to Present
Chief Technological Officer, Director, and Founder
OceanStar Investments LDC (Belize) and OceanStar Equities (USA)
Laguna Niguel, CA
Duties: CTO, Oversight and evaluation of potential investments for OceanStar Investments' acquisitions and equity positions, management of the technological investment targets of the hedge fund (aggressive growth)

April 2006 to Present
President, Manager, and Founder
ProDevo LLC
4419 Centennial Blvd. #201
Colorado Springs, CO 80907
Duties: CEO, COO, Director of Research for manufacture and marketing of innovative technologies in the field of energy with an emphasis on the Chemical and Electronic hybrid solutions

September 2003 to April 2006
Consultant, JMST Systems (JMSciTech LLC)
4198 Center Park Drive
Colorado Springs, CO 80916
Duties: Development of Digital and Analog Electronics for HPLC (Liquid Chromatography) equipment, optical design, mechanical design. Operational duties were required in addition to the technical issues involved with the JMST products.

EPAHO044000145

December 1992 to September 2003
President, Director of Research, and Founder
Hyperquan, Inc/MediHerbs, Inc
3692 East Bijou Street
Colorado Springs, CO 80909
Duties: Research, development, manufacture and marketing of new instrumentation in the field of Chemical Analysis

September 1991 - November 1992
Director of Chemical Research; Acting Chief Operations Manager; Cofounder
NaPro Biotherapeutics, Inc
Boulder, CO 80301
Duties: Research and development of methods and processes for the isolation and synthesis of new taxanes and Taxol; installed systems of GMP management in company of over 50 employees; managed growth of company from 14 to over 50 employees

March 1991 - September 1991
Chief Executive Officer and Founder
NaPro Partnership
Boulder, CO 80301
Duties: Managed growth of start-up joint venture including design of new facilities and hiring employees from 4 to 14; research and development of new methods of taxane process manufacturing

March 1987 to March 1991
President and Founder
DC Solutions Limited d.b.a. MediMolecules, Inc
Boulder, CO 80301
Duties: Research and development of newer methods of phyto-pharmaceutical process manufacturing; performed over 12 research contracts involving chemical synthesis; Chief Executive Officer; formed joint venture with Pacific Biotechnology, Inc to create NaPro for the pharmaceutical manufacture of Taxol, performed basic research for the isolation of Taxol from renewable resources (Yew tree), setup joint venture to form Napro Biotherapeutics

May 1989 - March 1990
Senior Chemist
Hauser Chemical Research
Boulder, Colorado 80301
Duties: Performance of research contracts for clients

January 1987 - May 1988
Visiting Assistant Professor
Chemistry Department
Virginia Tech
Blacksburg, VA 24061
Duties: Instructing synthesis and technique laboratory for Chemistry majors, supervision of graduate student teachers of laboratory courses, performed multiple chemical research contracts for various pharmaceutical companies

EPAHO044000146

June 1986 - January 1987
Product Manager, LC Detectors
Linear Instruments Corporation
Reno, NV 89502
Duties: Definition and specification of new products related to LC detectors, interface and coordination of research, production and marketing, customer support of LC detectors (both OEM and end user), coordination of the ChiraTech acquisition with Linear Instruments

January 1982 - June 1986
President and Founder
ChiraTech, Inc.
Fort Collins, CO 80525
Duties: Founder and CEO of ChiraTech, Inc., a company devoted to the research and development of new LC detectors. In this small company of 2 to 14 employees, all phases of small company activities were performed including successful venture capital solicitations and seminars. The majority of the period was spent directing and managing the optical, electronic, firmware and software development of new liquid chromatography detectors. Significant time was devoted to interactive purchasing decisions at both the manufacturing and research levels to improve cost effectiveness and product lifetimes.

December 1979 - January 1982
NIH Postdoctoral Fellow
Chemistry Department
Colorado State University
Fort Collins, CO 80521
Duties: Organic synthesis research in the total synthesis of greisoviridin antibiotics.

Funding and Awards:

1978	Graduate Student Teaching Award for Excellence in Instruction
1979	National Institute of Health Postdoctoral Fellowship (Cancer Institute) based on an original proposal
1981	Formation/Funding of ChiraTech, Inc from private investors
1984	InMedica (Venture Capital funding of ChiraTech, Inc)
1986	Sale of ChiraTech Inc to Linear Instruments (merger into publicly traded company)
1987	Formation/Funding of MediMolecules, Inc
1990	Formation/funding joint venture of NaPro with Pacific BioTechnology and MediMolecules
1992	Formation/Funding of HyperQuan, Inc
2003	Sale of HyperQuan Inc technology to JMST Systems
2006	Formation/Funding of ProDevo, LLC
2007	Formation of OceanStar Investment and OceanStar Equities

EPAHO044000147

Research Interests and Professional Affiliations:

New Methods for Utilization and Production of Energy - Electronic/Chemistry unique cross-technological solutions for the production and saving of energy

Organic Synthesis - Indole alkaloids; terpene and terpene-derived natural products; various biologically interesting targets; surface bonding organics to inorganic and organic substrates; engineering problems with large scale preparative chromatography and other separation methods, biologically modified waste streams as organic synthetic precursors

Analytical Instrumentation - Ultraviolet and visible spectrophotometers; polarimetry; new methods of detection, separation and identification of organic compounds; expert systems; new methods of quantitative analysis

Natural Products - New cancer treatments from natural sources with potential for new structure/activity relationships in metabolic processes

Member of the American Chemical Society since 1968.

Published Articles: (Publication of scientific articles has caused problems with patent applications; so, I have ceased publications of this type.)

1. Carver, David R.; Weinberger, Scot R.; Hlousek, Louis, "Design of an LC Detector, Part Two" *Am. Lab.* **1987** 19(10), 57-64.

2. Carver, David R.; Weinberger, Scot R.; Hlousek, Louis, "Design of an LC Detector, Part One" *Am. Lab.* **1987** 19(5), 64-71.

3. Bell, Harold M.; Carver, David R.; Hubbard, James S.; Sachdeva, Yesh P.; Wolfe, James F., "Reaction of Ketone Enolates with 2,4-dichloropyrimidines. A novel Pyrimidine to Pyridine Conversion" *J. Org. Chem.* **1985** 50(19), 3442-4.

4. Carver, David R.; Greenwood, Thomas D.; Hubbard, James S.; Komin, Andrew P.; Sachdeva, Yesh P.; Wolfe, James F., "The SRN1 Mechanism in Heteroaromatic Nucleophilic Substitution. Reactions Involving Certain Dihalogenated Pi-deficient Nitrogen Heterocycles" *J. Org. Chem.* **1983** 48(8), 1180-5.

5. Carver, David R.; Hubbard, James S.; Wolfe, James F.; "SRN1 Mechanism in Heteroaromatic Nucleophilic Substitution Reactions of 2-chloroquinoxaline and 4-chloroquinazolines with Ketone Enolates" *J. Org. Chem.* **1982** 47(6), 1036-40.

6. Meyers, A.I,; Lawson, Jon P.; Carver, David R., "Highly Stereoselective Route to (E) Allylamines via Vinyltri-n-butylphosphonium salts (Schweizer Reaction)" *J. Org. Chem.* **1981** 46(15), 3119-23.

7. Wolfe, James F.; Carver, David R., "The SRN1 (RN = Radical Nucleophiles) Reaction in Organic Synthesis. A review." *Org. Prep. Proced. Int.*. **1978** 10(5), 225-53.

Pending Patents and Publications:

1. Several pending patent applications.

EPAHO044000148

Issued Patents:

Patents Issued for David R. Carver

1. United States Patent 6,770,670
***Carver*, et al. August 3, 2004**
Injectable composition

Abstract

A pharmaceutical formulation of paclitaxel and polyethoxylated castor oil is disclosed to be relatively acidified to a pH of less than 8.1 and preferably within a pH range of 5 to 7, inclusively. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment of cancer, A formulation method is disclosed and includes the step of mixing an acid with a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which paclitaxel is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the paclitaxel before mixing with the carrier solution. A variety of acidifying agents, a preferred one being anhydrous citric acid, are described.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Lanowarrin, **AU**), **Handreck; Paul** (Glen Iris, **AU**)
Assignee: **NaPro Biotherapeutics, Inc.** (Boulder, CO)
Appl. No.: **09/970,558**
Filed: **October 4, 2001**

2. United States Patent 6,530,286
***Carver*, et al. March 11, 2003**
Method and apparatus for measuring fluid flow

Abstract

The present invention relates to methods and apparatus useful for detecting and measuring flow of a fluid along a flow path. In a method according to the invention, the temperature of a flowing fluid is altered at a selected location for a selected duration so as to generate a pulse in the fluid moving in a downstream direction along a flow path, and the fluid is monitored at a sensing region to detect the pulse passing therethrough. An apparatus according to the present invention may comprise a conduit, a sensor element disposed therein, an energy source proximate to the conduit, and a controller operative to generate an on signal and an off signal respectively operative to activate and deactivate the energy source. The present invention also relates to a liquid chromatography device having a fluid flow detecting and measuring apparatus according to the present invention.

Inventors: ***Carver; David* R.** (Colorado Springs, CO), **Tait; Thomas A.** (Colorado Springs, CO)
Appl. No.: **09/568,871**
Filed: **May 9, 2000**

3. **United States Patent 6,306,894**
***Carver*, et al.** **October 23, 2001**
Injectable composition

Abstract

A pharmaceutical formulation of paclitaxel and polyethoxylated castor oil is disclosed to be relatively acidified to a pH of less than 8.1 and preferably within a pH range of 5 to 7, inclusively. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment of cancer. A formulation method is disclosed and includes the step of mixing an acid with a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which paclitaxel is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the paclitaxel before mixing with the carrier solution. A variety of acidifying agents, a preferred one being anhydrous citric acid, are described.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Langwarrin, **AU**), **Handreck; Paul** (Glen Iris, **AU**)
Assignee: **NaPro Biotherapeutics, Inc.** (Boulder, CO)
Appl. No.: **09/563,969**
Filed: **May 3, 2000**

4. **United States Patent 6,140,359**
***Carver*, et al.** **October 31, 2000**
Injectable composition

Abstract

A pharmaceutical formulation of paclitaxel (also known as taxol) and polyethoxylated castor oil is disclosed to be relatively acidified to a pH of less than 8.1 and preferably within a pH range of 5 to 7, inclusively. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment of cancer. A formulation method is disclosed and includes the step of mixing an acid with a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which taxol is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the paclitaxel before mixing with the carrier solution. A variety of acidifying agents, a preferred one being anhydrous citric acid, are described.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Victoria, **AU**), **Handreck; Paul** (Victoria, **AU**)
Assignee: **NaPro Biotherapeutics, Inc.** (Boulder, CO)
Appl. No.: **09/356,158**
Filed: **July 19, 1999**

5. **United States Patent 5,977,164**
***Carver*, et al.** **November 2, 1999**
Stabilized pharmaceutical composition

Abstract

A pharmaceutical formulation of taxol and polyethoxylated castor oil is disclosed to be relatively acidified to pH of less 8.1 and preferably within a pH range of 5 to 7, inclusively, by an acidifying agent. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment cancer. A formulation method is disclosed and includes the step of mixing an acid with a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which taxol is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the taxol before mixing with the carrier solution. A variety of acidifying agents, a preferred one being anhydrous citric acid, are described.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Langwarrin, **AU**), **Handreck; Paul** (Glen Iris, **AU**)
Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)
Appl. No.: **08/979,836**
Filed: **November 26, 199**

6. **United States Patent 5,972,992**
***Carver*, et al.** **October 26, 1999**
Injectable composition

Abstract

A pharmaceutical formulation of taxol and polyethoxylated castor oil is disclosed to be stabilized by reducing its pH to less than 8.1 and preferably within a pH range of 5 to 7, inclusively. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment of cancer. A formulation method is disclosed and includes the step of reducing the pH of a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which taxol is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the taxol before mixing with the carrier solution.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Lanctwarrin, **AU**), **Handreck; Paul** (Glen Iris, **AU**)
Assignee: **NaPro Biotherapeutics, Inc.** (Boulder, CO)
Appl. No.: **09/028,906**
Filed: **February 24, 1998**

7. **United States Patent 5,969,812**
Carver **October 19, 1999**

Spectrophotometer apparatus with dual concentric beams and fibe optic beam splitter

Abstract

A spectrophotometer measures optical absorption of light by a sample received in a sample cell. An array of optic l elements disperses the light over a spectral pattern, and a fiber optic beam splitter splits light at a selected spectral band into a reference component and a test component. Detectors measure the intensity of the reference component and the test component after the test component passes through the sample. The fiber optic beam splitter includes a plurality of strands arranged with first ends terminating in a common circular area. Opposite ends of peripheral strands are collected into a first set that transmits the test component while the remaining strands for a second set that transmits the reference component. Preferably, there is a single, central, large strand surrounded by smaller strands. Two emitters are provided for light of two different types, such as visible and UV. The optical array forms a collimated beam having an inner core of one type of light and an outer shell of the other. Specially constructed optical elements then reflect and refract the collimated beam. A motor drives a mirror to scan the beam across an optical slit positioned in front of the beam splitter to select a desired spectral band.

Inventors: ***Carver; David* R.** (Peyton, CO)
Appl. No.: **08/545,448**
Filed: **October 18, 1995**

8. **United States Patent 5,733,888**
***Carver*, et al.** **March 31, 1998**

Injectable composition

Abstract

A pharmaceutical formulation of taxol and polyethoxylated castor oil is disclosed to be relatively acidified to a pH of less than 8.1 and preferably within a pH range of 5 to 7, inclusively, by an acidifying agent. Ethanol is optionally included in the formulation which is adapted for use in a body for the treatment of cancer. A formulation method is disclosed and includes the step of mixing an acid with a carrier material, such as polyethoxylated castor oil, to form a carrier solution after which taxol is added in an amount such that the resulting pH is less than 8.1 and preferably in a pH range of 5 to 7. Ethanol may optionally be slurried with the taxol before mixing with the carrier solution. A variety of acidifying agents, a preferred one being anhydrous citric acid, are described.

Inventors: ***Carver; David*** (Boulder, CO), **Prout; Timothy** (Erie, CO), **Ewald; Hernita** (Denver, CO), **Elliott; Robyn** (Lanctwarrin, **AU**), **Handreck; Paul** (Glen Iriis, **AU**)
Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)
Appl. No.: **08/594,478**
Filed: **January 31, 199**

9. **United States Patent 5,699,156**
Carver **December 16, 1997**
Spectrophotometer apparatus with dual light sources and optical paths, fiber optic pick-up and sample cell therefor

Abstract

A spectrophotometer employs an array of optical elements to focus light from at least one, but preferably two light sources onto a fiber optic beam splitter that provides a pickup for a selected bandwidth of wavelengths of light in the spectral pattern. The spectral pattern can include wavelengths in the visible, near infrared and ultraviolet spectrum. To create the spectral pattern, two reflecting prisms having spherical surfaces are used, and the optical elements are arranged so that the two spectral bands from each prism are longitudinally aligned to create the spectral pattern. The prisms are on a motor driven pivot mount so that the spectral pattern may be swept across the pickup. The optical elements and the pickup are sized so that the selected bandwidth is less than twenty nanometers over the spectral pattern. The pickup is formed by a single row of the ends of fiber optic strands which are then collimated into two bundles to transmit a test component and a reference component of light. The sample cell is somewhat elongated, and a lens is interposed in the test component path before the sample cell, and this lens is sized to focus light axially through the sample cell without impinging on the sidewalls. Photodiode detectors, comparator circuitry and a controller are included.

Inventors: ***Carver; David* R.** (Englewood, CO)
Appl. No.: **08/344,209**
Filed: **November 23, 1994**

10. **United States Patent 5,694,215**
Carver **December 2, 1997**
Optical array and processing electronics and method therefor for use in spectroscopy

A sample cell assembly employs optics for focusing light though a sample cell, such as one used in electrophoresis. The optical array includes a first cylindrical lens having a central longitudinal axis in a common plane with the longitudinal axis of the sample cell. A second cylindrical lens has its central longitudinal axis oriented transversely to this common plane on another side of the sample cell from the first cylindrical lens. Preferably, a fiber optic beam splitter has a plurality of strands terminating in parallel second ends in the common plane so as to pass light at different longitudinally spaced locations through the sample cell cavity. Here, a plurality of second lenses receive the different light components to focus them respectively on different photodetectors each to create a sample data signal. Where a plurality of sample data signals are generated, processing electronics superimpose them to obtain an augmented signal of aggregate data. The invention further includes a method of measuring optical absorbance utilizing this technique and apparatus.

Inventors: ***Carver; David* R.** (Peyton, CO)
Appl. No.: **08/610,663**
Filed: **March 4, 1996**

11. **United States Patent 5,549,830**
Carver, **et al.** **August 27, 1996**
Reverse osmosis and ultrafiltration methods for solutions to solate desired solutes including taxane

A method of processing a feed liquid in the form of an extraction solution containing taxane solutes that is an extraction product of a biomass utilizes at least one semipermeable membrane to remove at least one taxane solute from the solvent by reverse osmosis. The feed liquid is placed in a first region on one side of the membrane and pressure is supplied to transport constitutes of the feed liquid across the membrane to a second region as a first permeate while retaining a first retentate in the first region. The taxane solute may be either retained or transported. Where the taxane solute is transported, the method can further include the use of a second semipermeable membrane of a pore size different from the first membrane and supplying a pressure to transport some of the first permeate across the second membrane as a second permeate while retaining a majority of the desired taxane solute as a second retentate. Here, the first membrane has a pore size which allows transport of the taxane solute while the second membrane has a pore size that retains the taxane solute. A variety of solvents and useable membranes is disclosed.

Inventors: ***Carver; David* R.** (Boulder, CO), **Prout; Timothy R.** (Boulder, CO), **Workman; Christopher T.** (Boulder, CO), **Hughes; Charles L.** (Boulder, CO)
Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)
Appl. No.: **08/203,653**
Filed: **February 28, 1994**

12. **United States Patent 5,350,425**
Carver **September 27, 1994**
Method of reducing vat dyes and the process of dyeing fabrics therein

Abstract

A process for reducing vat dyes, such as indigo, into their leuco form by placing a metal, such as aluminum, in water in the presence of a reduction facilitator to form a first solution after which a vat dye having the general structure O.dbd.C(--C.dbd.C--).sub.N C.dbd.O where N=1, 2 or 4 is mixed with the first solution to form a dye solution where substantially all of the vat dye is reduced to its soluble leuco form having the general structure HO--C.dbd.(C--C).sub.N .dbd.C--OH. The process includes dyeing fabric in the dye solution. the reduction facilitator may be a base, for example that produced hydroxide ions in water, and the first solution as well as the dye solution can be a basic solution. The soluble leuco can be isolated from the dye solution and dissolved in a non-aqueous solution. Prior to mixing the vat dye in water, it may first be dissolved in a solvent miscible with water.

Inventors: ***Carver; David* R.** (Boulder, CO)
Appl. No.: **08/104,492**
Filed: **August 9, 1993**

13. **United States Patent 5,281,727**

Carver, **et al.** **January 25, 1994**

Method of using ion exchange media to increase taxane yields

Abstract

The present invention is a method that uses an absorption column for the cleavage and recovery of taxanes, which are not normally detected as free taxanes. The method processes a first solution that contains standard detectable taxanes and other undetectable taxane compounds to generate a second solution that contains a higher percentage of detectable standard taxane then the first solution. The first step of this method is loading a column having a first opening and a second opening with an ion exchange media. The next step is placing the first solution in the first opening of the column so that the first solution passes through the ion exchange media in the column and flows to the second opening. Thus, the taxane compounds are converted to standard taxanes by an ion exchange reaction and the second solution is formed. Then the next step is collecting, from the second opening of the column, the second solution and recovering from the second solution a larger percentage of standard taxanes then was detectable in the first solution. The ion exchange media of the present solution is an ion exchange resin. The ion exchange resin can be a mixture of an anion exchange resin and a cation exchange resin. The anion exchange resin is in the OH-form. The cation exchange resin is in the H.sup.+ form. Preferably, the ion exchange resin is alumina.

Inventors: ***Carver; David* R.** (Boulder, CO), **Prout; Timothy R.** (Boulder, CO), **Workman; Christopher T.** (Boulder, CO), **Henderson; Donia L.** (Boulder, CO), **Hughes; Charles L.** (Boulder, CO)

Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)

Appl. No.: **07/982,391**

Filed: **November 27, 1992**

14. **United States Patent 5,256,801**

Carver, **et al.** **October 26, 1993**

Processes of converting taxanes into 10-deacetylbaccatin III

Abstract

A process for the preparation of a compound of formula (I) ##STR1## comprising contacting a mixture containing at least one taxane compound having an ester linkage at the C-13 position with at least one borohydride reducing salt in a reaction solvent in the presence of a Lewis acid.

Inventors: ***Carver; David* R.** (Boulder, CO), **Prout; Timothy R.** (Boulder, CO), **Ewald; Hernita A.** (Denver, CO), **Henderson; Donia L.** (Boulder, CO)

Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)

Appl. No.: **07/986,852**

Filed: **December 4, 1992**

15. **United States Patent 5,202,448**
***Carver*, et al.** **April 13, 1993**
Processes of converting taxanes into baccatin III

Abstract

The present invention relates to a process of converting partially purified taxane mixtures into Baccatin III. The process for the preparation of Baccatin III includes contacting a mixture containing at least one taxane compound having an ester linkage at the C-13 position with at least one borohydride reducing salt in a reaction solvent in the present of a Lewis acid.

Inventors: ***Carver; David* R.** (Boulder, CO), **Prout; Timothy R.** (Boulder, CO), **Ewald; Hernita A.** (Englewood, CO), **Henderson; Donia L.** (Boulder, CO)
Assignee: **NaPro BioTherapeutics, Inc.** (Boulder, CO)
Appl. No.: **07/930,840**
Filed: **August 14, 1992**

16. **United States Patent 4,589,776**
***Carver*, et al.** **May 20, 1986**
Method and apparatus for measuring optical properties of materials

Abstract

A method and apparatus for measuring optical properties of materials such as optical rotation, depolarization and absorption includes a light source emitting a primary beam of light that is monochromatic, collimated and plane-polarized and a sample cell through which this beam is passed. The primary beam is split into at least two components by a beam splitter and each component is passed through an analyzer, such as a prism. The two analyzers have polarizing axes oriented at a non-zero angle with respect to one another and at pre-selected angles with respect to the plane of polarization of the original beam. Signals corresponding to the intensities of the components are produced by detectors and then the signals are amplified, digitalized and processed to yield the optical properties. A third test component may alternately be split from the primary beam after it has been passed through the sample with this test component also being detected and processed. A reference component may be split from the primary beam before it is passed through the sample, and the reference component is detected and processed. Existing optical components are assembled to accomplish these steps, and a monochrometer may be used with a selected light source to vary the wavelength of the primary beam.

Inventors: ***Carver; David*** (Fort Collins, CO), **Tait; Thomas A.** (Fort Collins, CO)
Assignee: **Chiratech, Inc.** (Fort Collins, CO)
Appl. No.: **06/424,919**
Filed: **September 27, 1982**

Joe G. Greer

(b) (6) [redacted]

PROFESSIONAL PROFILE

Qualified for project manager or superintendent position where my 17 years of construction experience can enhance and improve operational efficiency. Possess in-depth knowledge and background in the commercial construction industry. Focus has been the team development of various types of multi-million dollar projects. Bilingual: English & Spanish. Expertise includes:

- Management & Supervisory
- Staff Training & Development
- Time Management & Organization
- Personnel/Human Resources
- Safety Coordinator
- Troubleshooter/Problem Solver
- Project Management
- Layout & Blueprint Interpretation
- Quality Control Management
- Materials Management

CAREER HIGHLIGHTS

Management/Supervisory — Managed and supervised foreman and crew of up to 65 while overseeing all phases of project site development. Planned and strategically implemented all stages of commercial construction including estimates, specifications, work schedules, equipment, and materials.

1 Saved various companies significant time and money by encouraging and motivating crew.

2 Successfully communicated with project managers, superintendents, foreman, planners, surveyors, subcontractors, crew, and clients.

- Consistently met or exceeded schedule requirements while staying within budget.

3 Efficiently maintained safe job site by meeting safety regulations and standards.

Quality Control Management — Supervised the coordination of site inspections that included checking equipment, tools, materials, measurements, and workmanship.

Personnel/Human Resources — Managed and coordinated recruitment of workers including interviewing, orientation, training, performance evaluations, and employee relations.

EDUCATION & CERTIFICATIONS

Certified — The Scaffold Training Partnership *(40 hour course)* Sylmar, CA 2004
• OSHA Training Institute • OSHA Directorate of Construction
• UBC Apprenticeship and Training Fund • UBC Health and Safety Fund

Certified — Adult CPR & AED — American Red Cross, Sylmar, CA 2003

Certified — Community First Aid & Safety — American Red Cross, Sylmar, CA 2003

Certified — Journeyman *(four year course)* 1997
United Brotherhood of Carpenters & Joiners of America
(Local 1506) Santa Ana, CA & *(Local 1)* Chicago, IL

Certified — Apprenticeship for Carpenter, Construction *(four year course)* 1997
The United States Department of Labor, Santa Ana, CA & Elk Grove Village, IL

Certified – OSHA *(10 hour course)* 1995
Chicagoland Construction Safety Counsil, Hillside, IL

Certified – Ergonomics Awareness Program 1995
UBC Health & Safety Fund of North America, Chicago, IL

EDUCATION & CERTIFICATIONS (continued...)

High School Diploma – Poly High School, Los Angeles, CA 1987

AFFILIATIONS • Union Member of United Brotherhood of Carpenters & Joiners of America Current

PROFESSIONAL EXPERIENCE

Foreman – Drake Interiors, Galleria, Houston, TX Current
Manage and supervise crew while overseeing all phases of construction site development and timely completion of assigned job including United Way, Shree Temple, and Neiman Marcus.

Project Manager – Joe Greer Construction *(owner)*, Los Angeles, CA 2003 – 2004
Managed and supervised foreman and crew of seven in various construction jobs including the ground-up operation of 5000 sq. ft. restaurant.

Assistant Superintendent – Robert Maron *(homeowner)*, Thousand Oaks, CA 2001 – 2003
Managed and supervised crew of 10 in the ground-up remodel operation of 15,000 sq. ft. custom six million dollar home.

General Carpenter – Martin Brothers Co., Toyota Headquarters, Los Angeles, CA
Martin Brothers Co., Disney Concert Hall, Los Angeles, CA
Insul Acoustics Inc., Northridge Mall, Northridge, CA
Burger Brothers, Galleria Mall, 16 Mann Theaters, Sherman Oaks, CA
Simon Construction Co., VA Hospital, Northridge, CA *(multi-million $ projects)*

Foreman – BRBG, Champagne Towers, Santa Monica, CA 1999 – 2001
Managed and supervised crew of 65 in the ground-up operation of 22-story high-rise. *(65 million $ project)*

General Carpenter – KHS & S, Hollywood Mall & Kodak Theater, Hollywood, CA *(50 million $ project)*
KHS & S Contractors., Casino, Santa Barbara, CA *(20 million $ project)*
PCI, American Airlines, LAX Terminal, Los Angeles, CA *(15 million $ project)*
John Jory Construction, 16 Edward Theaters, Irvine, CA *(multi-million $ project)*
John Jory Construction, Diamond Ranch High School, Pomona, CA *(multi-million $ projects)*

Lead Man – John Jory Construction, Orange County Metro, Orange County, CA

Foreman – Simcon LTD, Walgreens, Chicago, IL 1997 – 1999
Managed and supervised crew of five in the ground-up operation of Walgreens.

Foreman – Facilities Resource Group, Chicago, IL
Managed and supervised crew of 13 in remodel operation of 15-story high-rise.

Assistant Foreman – Fisher, Albright & Masters, Inc., Amtrak Head Quarters, Chicago, IL

EPAHO044000158

Assistant Labor Coordinator – Mota Construction, Chicago, IL 1995 – 1997

Team developed, Navy Pier, a major entertainment and attraction center located in downtown Chicago. *(20 million $ project)*

General Contractor – Various companies, Los Angeles, CA 1988 – 1995

Performed multiple and various contractor jobs specializing in construction of high-rise buildings up to 52 stories.

References available upon request

EPAHO044000159

Matt Bowman

From: Greg Bowman
Sent: Thursday, April 03, 2008 4:20 PM
To: Matt Bowman; Marlin Moser
Subject: RE: Job offer to Reuben Fernandez

Pls fwd Reuben's e-mail.

From: Matt Bowman
Sent: Tuesday, April 01, 2008 3:10 PM
To: Greg Bowman; Marlin Moser
Subject: Job offer to Reuben Fernandez

At this point, it appears that Reuben will be taking the job offer as follows:

Position: Processing Manager with opportunity to possibly move to Director of Processing in the future

Offer: (b) (6) per year plus either .5% or 1% monthly bonus

Benefits: health benefits package, cell phone, expense report, 401K as offered by CES currently

Vacation: 2 Weeks

Marlin,
Please speak to your brother and Reuben to see if there is a way to do this so as not to cause any harm or bad feelings with Ron Dana. Maybe you guys can come up with a "CES friendly" replacement for Reuben and give Reuben ample time (maybe 45 days to train the new guy) so that the transition for Ron would be seemless.

Greg,
Please type a formal offer for Reuben and get it to him. His cell number is (b) (6) 2. Please also start a personnel file for him.

Please let me know if you guys have any questions. This is a big hire for us and should really help us moving forward.

Matt

(b) (6) [redacted]

(b) (6) [redacted]

Jayren Muhammad

Objective

To obtain a Marketing Analyst position with this firm

Experience

2005–2008 On Point Student Services Long Beach, CA
Marketing Analyst I

- Presentation of Ideas to internal departments, supervisors, managers
- Media Presentation using multiple mediums
- Determines models for services
- Assist in implementation of marketing programs and promotions
- Develops marketing plans
- Develops communications for promotions
- Monitors inventory for promotions and materials
- Influential Decision maker for
- Responsible for sharing information Confidential, Internal and Public

2004–2005 On Point Student Services Long Beach, CA
Communications Assistant

- Dissemination of information through a variety of vehicles
- Create presentations for marketing advertising
- Communicate policy and procedures for company to clients
- Point of Contact for Communication Request

2003–2004 Pavillions Long Beach, CA
Data Entry Clerk

- Data Entry
- Stocking
- General Duties

Education

2004 – In Progress Prairie View University Prairie View, TX
Marketing Major

2003 Long Beach Polytechnic Long Beach, CA
High School Diploma

Skills

Microsoft Word, Excel, PowerPoint, Windows, Graphic Design

Interests

Writing & producing music, running, spoken word, computer games, web design

Simon G. Bott

Director of Undergraduate Affairs and Advising, Chemistry

Department of Chemistry
University of Houston
Houston, TX 77204-5003

Telephone: (713)743-2771
FAX: (713)743-2709
e-mail: sbott@uh.edu

EDUCATION:

1986	Ph. D.	Chemistry	University of Alabama
	Dissertation Title:	Structural and Theoretical Studies of the Complexation Properties of some Fundamental Host Compounds (under guidance of Prof. J. L. Atwood)	
1983	B.Sc.	Chemistry	Bristol University, UK

PROFESSIONAL EXPERIENCE:

Director of Undergraduate Affairs and Advising, Chemistry, UH	2003 - present
Undergraduate Advisor, Chemistry, University of Houston	2002 - 2003
Visiting Assistant Professor, University of Houston	1997 - present
Visiting Scientist, Rice University	1997 - present
Assistant Professor of Chemistry, University of North Texas	1990 - 1997
Visiting Assistant Professor of Chemistry, University of Alabama	1989 - 1990
Post-doctoral Research Associate, Massachusetts Institute of Technology	1988
Post-doctoral Research Associate, Oxford University	1987
Teaching Assistant, University of Alabama	1984 - 1986

AWARDS AND HONORS (UH only)

UH Delta Upsilon and Campus Activities, "Outstanding Faculty, 2000
UH George Magner Award for Excellence in Undergraduate Advising, 2003
Conference USA Award of Excellence, 2003
Houston Alumni Organization Outstanding Faculty, 2003
UH Student Government Association Faculty of the Year, 2004, 2008
UH Center for Students with DisAbilities, Outstanding Faculty, 2004
Named as having "Best Classes on UH Campus," Texas Monthly Magazine, 2004
UH Teaching Excellence Award for Non-Tenure Track Faculty, 2005
UH Campus Activities, Advisor of the Year Award, 2005
Cougar Cookers, Honorary Chef, 2006
Bill Yeoman, Special Contributions Award, 2007
Provost Award for Academic Advising, 2008

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TEACHING ACTIVITIES

Taught General Chemistry at the Universities of Alabama, North Texas and Houston for 18 years

Developed experiments and coordinated General Chemistry Laboratories at the Universities of North Texas and Houston for 12 years

Coordinated Organic Chemistry Laboratories at the University of Houston for 7 years (summer classes)

Taught Senior Undergraduate and Graduate Inorganic courses at the University of North Texas (4 years)

Taught sophomore level and graduate Organic Courses at Universities of Alabama, North Texas and Houston (10 years)

Taught graduate seminars on crystallography at Oxford University and Universities of Alabama, North Texas and Rice

Taught Managerial Chemistry (intensive course for senior-level executives) at Rice University (3 years)

CURRENT UNIVERSITY SERVICE

Orientation Task Force
University Admissions Appeal Committee
University Undergraduate Council
University Undergraduate Council Academic Policy Subcommittee (Chair)
University Undergraduate Council ad hoc By-Laws Subcommittee (Chair)
University Undergraduate Discovery Advisory Board
University Student Fee Advisory Committee
Houston Teachers Institute Faculty Advisory Board
TeachHouston Advisory Board
Classroom Taskforce Committee
College Curriculum Committee
Department Curriculum Committee
Department Undergraduate Committee (Chair)

Faculty Advisor, Student Alumni Connection, University of Houston
Faculty Advisor, American Chemical Society, Student Affiliate at UH
Faculty Advisor, National Society of Collegiate Scholars

PROFESSIONAL ACTIVITIES:

1992 - 1997	Treasurer of *The Aluminum Research Board*
1995 - 1997	President, University of North Texas Chapter, *Sigma Xi, The Scientific Research Society*
2002 - 2004	Chair-elect and Chair, Greater Houston Local Section, *American Chemical Society*
2005 -	National Councilor, *American Chemical Society*
2007 -	Associate Member, *American Chemical Society Society on Education*

Publications.

Over 350 publications in refereed journals; 200+ presentations at international, national and regional meetings; 5 books; 1 book chapter. Lists available upon request.

EPAHO044000163

Editorial Board, *Journal of Chemical Crystallography* 1994 – present
Editorial Board, *InChemistry* 2008 – 2009
Guest Editor, ***Special Issue of Structural Chemistry*** on Supramolecular Chemistry
Member, Local Organizing Committee for the "3rd International Calixarene Conference", Ft. Worth, TX (1995).
Chairman, Microsymposium on Organometallics and Coordination Compounds, *International Union of Crystallography,* XVIIth International Congress and General Assembly, Seattle, WA (1996).
Session Chair, Activation of Small Molecules, 31st International Conference on Coordination Chemistry, Vancouver, BC (1996)
Session Chair, Inorganic Gordon Conference, Summer, 1997.
Member, Organizing Committee for the "Southwest Regional meeting of the American Chemical Society", Houston, TX (2006). Responsible for Undergraduate Program.

Panelist, Two Joint High School College Symposia organized by the Dallas/Fort Worth Section of the American Chemical Society
Presented over 200 "Science Shows" and judged over 70 Science Fairs at schools in the Houston and DFW areas
Serving on testing boards for AP Chemistry and ACS General Chemistry Tests
Peer Review Board for *American Chemical Society* Student Affiliate Chapters

Freshman and Inorganic text reviewer for John Wiley and Sons, McGraw-Hill, Thompson, West, Saunders, Prentice-Hall, Houghton-Mifflin, W. H. Freeman and Benjamin-Cummings Publishers.

Software question developer for McGraw-Hill and W. H. Freeman Publishing Companies

Proposal referee for *American Chemical Society/Petroleum Research Foundation, Research Corporation, National Science Foundation*

Manuscript referee for: *Acta Crystallographica, Adv. Materials for Optics and Electronics, Inorganic Chem., Inorganica Chimica Acta, J. American Chemical Society, J. Chemical Crystallography, J. Chemical Society, Chemical Communications, J. Chemical Society, Dalton Transactions, J.Chemical Society, Perkin Transactions (I and II), J. Coordination Chemistry, J. Inclusion Phenomena and Molecular Recognition, J. Organometallic Chem., New J. of Chem., Organometallics, Supramolecular Chem., Synth. React. Inorg. Metal-Org. Chem., Tetrahedron Letters*

EPAHO044000164

AREAS OF EXPERTISE

Homogeneous catalysis	Biomimetic chemistry	Aluminum chemistry
Supramolecular Chemistry	X-ray crystallography	Crystallographic Instrumentation
Environmental Chemistry	General, Inorganic and Analytical Chemistry	

CONSULTING HISTORY

Air Products
Alcoa
Baker-Hughes
Chemicals Incorporated
Clausen-Miller PC
Conley, Rose and Tayon LLP
CSI: New York
Halliburton
Hill Rivkins & Hayden LLP
Hitchcock and Associates
Los Alamos Nat. Lab
OneChem
Rimkus Consulting
Sanchez, Betances and Sifre LLP
Separation Specialists
Sheinfeld, Maley and Kay LLP
Spectrum Chemicals

EPAHO044000165

Desired Salary

(b) (6) [redacted]

(b) (6) [redacted]

Diane Williams

Objective Sales Account Manager

Experience

2007-Present Digitex Corporation League City, TX

Account Manager, Copiers and Print Management

- Top salesperson 6 out of 15 total months.
- Exceeded monthly quotas 11 out of 15 total months.
- Received monthly bonuses 7 out of 9 eligible months.
- Won award for reaching $250K in first 6 months of employment.
- Received quarterly bonuses 3 out of 3 eligible quarters.
- Brought in 44% new business in first year, and an additional 13% new business YTD 2008.
- 121% YTD 2008 to quota; 114% to quota in 2007.
- Current territory includes Pasadena, Deer Park, La Porte, Houston and Baytown. Very well known in Pasadena and Deer Park chambers.

2005-2007 Stage Stores, Inc. Houston, TX

Asst. Buyer, Juniors and Cosmetics Analyst

- Purchased fall sweaters groups based on sales analysis.
- Analyzed Sales data for future buys, worked OTB weekly.
- In charge of Clinique/Lauder/Lancome allocations by item by store.
- Analyzed, recorded and distributed GWP promotions for 4 cosmetics lines.
- Cosmetics top division of 2006 in total company.

1998-2005 Foley's Corporate Office Houston, TX

Asst. Buyer and Analyst for Cosmetics Division

- Analyst/allocator for all cosmetics divisions.
- Implemented major GWP's seasonally.
- Daily/weekly sales analysis and OTB.

Education

1987-1991 University of Texas at Austin Austin, TX

- Bachelor of Business Administration-Marketing

Interests Running: Finisher in Aramco Half Marathon, Jan 2008

Desired Salary

(b) (6) [redacted]

James Brock Daugherty III

(b) (6) [redacted] (b) (6) [redacted] (b) (6) [redacted]

Sales, Marketing, Merchandising, and Business Development Representative

Personable and enthusiastic representative who consistently exceeds expectations. Twelve years of sales experience with industry leaders. Excellent closing and negotiating skills. Outstanding ability to obtain mutual beneficial solutions to complex problems. Proven ability to gain customer loyalty and provide the highest levels of customer service and support. Always maintain a high level of professional and ethical business practices.

- Results oriented
- Problem solving and resolution
- Personal drive and execution
- Public Speaking
- Confidence
- Multi-channel Distribution
- Time management
- Training and presentation
- Marketing and Branding
- Decision making
- Team builder
- Customer oriented
- New product launch
- B2B and B2C marketing
- Customer service

Professional sales experience:

National Account Sales Associate *Andersen Windows, Inc.* 5 years

Consistently exceeded sales goal with annual sales over 3.5 million in large geographic territory. Worked independently from home office with little management necessary. Regularly under budget for expenses and never reprimanded for any reason.

Job description:

- Developed and executed business plans within assigned accounts
- Provided resolution and support on open orders and quotes
- Trained on entire enterprise product line
- Provided on-site physical assistance with merchandising and stock
- Conducted advanced training sessions for internal and external customers
- Administered appropriate decisions on credit and returns
- Provided resolution for service and warranty on all enterprise products

Distributor Sales Representative *Black Millwork Company* 4 years

Provided an unprecedented level of service and expertise to dealers to help them grow their business. Grew sales from $500,000 to over $3,000,000 annually.

Job description:

- Developed and executed business plans for multiple channel partners
- Worked with channel partners at trade shows and product launches
- Launched training curriculum for electronic quoting utilities
- Built strong relationships with Builders and Architects (G.H.B.A / A.I.A) through client lunches, training seminars, and on site product demonstrations

Education:

Bachelor of **B**usiness **A**dministration — Sam Houston State University — 1996

Major: Management — Minor: Mathematics

Additional Sales experience:

Assistant Branch Manager *Enterprise Rent-a-Car* 2 years

Hired as a management trainee and rapidly advanced to assistant manager. Ran my own small office at a car dealership with exceptional customer satisfaction ratings and profitability. Five time "Heavy Hitter" award recipient for outstanding sales.

Job description:

- Delivered an excellent customer experience to all clients
- Sales calls on referral sources
- Motivated and trained management trainees

Client Marketing Representative *Universal Computer Systems, Inc.* 1 year

Recruited out of College to sell comprehensive Automobile Dealership Software. Sold computerized parts catalogs to parts departments in 12 states. Reynolds and Reynolds Company purchased U.C.S. in 2006.

- Diagnostic Sales to determine need for additional computer terminals

Additional work experience:

Field Technician *Gundle / SLT Environmental, Inc* 5 years

Seasonal Summer help and during breaks from school to pay for college expenses. Improved skill set from level III to Level I technician.

Job Description:

- Deployed and welded polyethylene liner to eliminate ground water contamination
- Conducted safety and regulatory tests on welded seams

Desired Salary

(b) (6) [redacted]

Priscilla A. Dethmann

(b) (6)

(b) (6)

(b) (6)

Profile

A graduate in Biochemistry with experience in hazardous materials and waste management, with emphasis in providing users with information, data collection, data entry, and validation. Experienced with data and report generation pertaining to the condition of organizational hazardous management operations.

Provided classroom instruction to users of the Environmental Management Information System. Maintained a fully-stocked inventory of hazardous materials. Provided technical assistance for users on proper handling, storing, transporting, and disposing of hazardous materials and hazardous waste. Assisted users in addressing day-to-day environmental compliance issues.

Oversaw the scoring and scored standardized tests in both English and Spanish. Using a computer, evaluated writing samples using defined criteria to determine correctness and quality of the responses. Analyzed writing samples for proper usage of grammar, sentence structure and how effectively the responses addressed the subject matter. Developed tests that ensured that all criteria for the subject were in compliance with state requirements. Trained over the subject matter. Using a computer, monitored the performance of fourteen individuals. Generated daily reports regarding reader performance.

Utilized a variety of data management tools to optimize sales, marketing and customer loyalty. Developed customer data bases, marketing materials, and maintained financial records using various computer applications. Increases efficiency, reduced expenses and inventory by utilizing organizational and time management skills.

Selected Accomplishments

- ABCD Award recipient for outstanding customer support while on site at Misawa on-site Air Force Base, Japan
- Reestablished fully functional hazardous material tracking system for Air force Bases both in the Pacific and in Europe
- Developed proficiency in the Spanish language, to include: reading and writing
- Developed working knowledge, on Windows and OSX platforms, of SPSS; Microsoft Word, Excel, Power Point, Outlook, Access; Corel Print Shop.
- Developed and Air Force Environmental Management Information System Stock Number database that will be used Air force wide as proper data entry procedures standard.

Work Experience

Room Director, Pearson Educational Assessment, Houston TX 2008

Responsible for overseeing team leaders and readers; training; complying materials for retraining; generating daily reports; answering questions; monitoring performance; addressing the concerns of team leaders and readers; and maintaining a n efficient work environment.

Reader, Harcourt Educational Assessment, San Antonio, TX 2001-2002, 2004-2007

Responsible for reading and scoring computer-based standardized tests, ranging from mathematics to English Composition; test development.

Office Manager, Aztec Studio, San Antonio, TX 1999-2007

Responsible for photographic lab upkeep; photo processing; photo production; clerical work; promotional material production; book-keeping; and customer service.

Environmental Specialist, Labat-Anderson, San Antonio, TX 2002-2003

Responsible for reestablishing functional hazardous material databases; administering support to Kelly 307th Red Horse Squadron as a hazardous material point of contact; maintaining and operating the Air force Environmental Management Information System; processing requests for hazardous material; researching and documenting environmental related material; providing instructional desk-side assistance; and customer service.

Priscilla A. Dethmann

(b) (6)

(b) (6)

(b) (6)

Education

BS Biochemistry, St. Mary's University – 2001
Related course work: Technical Writing, San Antonio College

Desired Salary

(b) (6) [redacted]

Melisa D. Garza

From: route@monster.com
Sent: Monday, July 14, 2008 11:51 AM
To: Melisa D. Garza
Subject: Roy Collins

This resume has been forwarded to you at the request of Monster User CESHR

This job seeker is applying to the following:
Job ID: 71805644 Job Title: Biotechnical Sales Representative

Match Criteria: Job Seeker meets all criteria view details

Quick View Links:
Resume Section Summary Section Match Criteria

CONTACT INFO

Roy C Collins
(b) (6)

Mobile: (b) (6)
Contact Preference: Email

RESUME ^BACK TO TOP

Resume Value: 56bj3h7q2dkesxcj Resume Headline: Environmental Specialist

EXPERIENCE: 5/2002 - Present Safety-Kleen Systems Inc. Houston, Texas
Industry: Chemicals/Petro-Chemicals
Account Manager

. Completion of necessary paperwork (waste profiling, quotations etc).
. Build relationships with key buyers in territory.
.Assess current/potential business in existing accounts and create strategy to grow business.
. Analyze customer needs and design sales, customer service and account management processes to acquire and retain accounts.
. Prepare and deliver customer quotes and identify new solutions for customers
. Provide technical and sales assistance to customers.
. Serve as interface between customers and company by ensuring that customer needs are met and by handling customer complaints.
. Prepare sales plans and future period forecast's.
. Monitor and track sales plan to ensure sales quota is met; prepare

regular status reports.
. Keep abreast of products, market conditions and competitive activities.

7/1995 - 3/2002 US ARMY Ft. Benning, Ga
Industry: Government and Military
NBC NCOIC

EDUCATION: University of Phoenix US-Tx-Houston
Bachelor's Degree
I'm currently enrolled in MBA program at the University of Phoenix.

SUMMARY ^BACK TO TOP

Desired Salary/Wage:	(b) (6) USD Per Year
Current Career Level:	Manager (Manager/Supervisor of Staff)
Years of relevant work experience:	2+ to 5 Years
Work Status:	US - I am authorized to work in this country for any employer.
Active Security Clearance:	No
US Military Service:	Yes

Target Job:	**Target Job Title:**	sales
	Alternate Target Job Title:	environmental
	Desired Job Type:	Employee
	Desired Status:	Full-Time
Target Company:	**Industry:**	Metals and Minerals Chemicals/Petro-Chemicals Waste Management
	Occupation:	Sales/Retail/Business Development Account Management (Commissioned)
Target Locations:	**Selected Locations:**	US-TX-Houston
	Relocate:	No

MATCH CRITERIA ^BACK TO TOP

Job Seeker meets all criteria:

FIELD	DESIRED RESPONSE	ACTUAL RESPONSE

ZIP Code Proximity	Up to 50	23
Work Authorization	US	I am authorized to work in this country for any employer.
Career Level	Experienced (Non-Manager)	Manager (Manager/Supervisor of Staff)
Education Level	Bachelor's Degree	Bachelor's Degree

EPAHO044000177

Desired Salary

(b) (6) [redacted]

Robert Pavlock

(b) (6)
(b) (6)

QUALIFICATIONS SUMMARY

Exceptional **Sales Manager** with a diverse background in and exceptional record in national and international:

Sales Management	**New Business Development**	**Key Relationships**
Account Management	**Project Management**	**Strategic Alliances**
Customer Service	**Prospecting**	**P&L**

Impressive record of top performance with the proven ability to achieve solid sales growth, strategic alliance contracts, pull-through sales via distributors and independent reps, achieving product specification, value added and solutions selling skills, motivational team building management style, and expanding company revenues up to **144%**. Develop objectives for field and distributorship sales activity. Working with all levels within the business cycle, including field personnel, procurement, stress, process, mechanical, electrical and civil engineers, architects, and upper management. Design and recommend operations and production changes. Skilled in standard concepts, practices, and procedures in the engineering, power, oil and gas, petrochemical, process, offshore, wastewater, municipal, fabrication, and machining industries. Formal education in environmental and industrial safety regulations.

PROFESSIONAL EXPERIENCE

Business Development Executive
Avineon, Inc. 2005 to Present

- New business development for an international engineering services firm.
- Establish and manage major national and international engineering, petrochemical and power accounts.

Director of Sales
J.F. Ahern Co, Fond du Lac, WI 2004 to 2005

- Devise and implement direct sales strategies that produce maximum quality sales at a minimum cost per unit sold. Direct and manage sales function. Develop commission plans for sales team to meet business goals.
- Direct and manage the sales of engineered products and fabrication. Oversee the preparation of sales plans and control expenditures consistent with plan.
- Establish **new business** in the oil & gas, pulp & paper, process, municipal, and power arena totaling **$1,500,000.00**.

Western Regional Sales Manager
Pipe Supports USA - Houston, TX 1997 to 2004

- Sales, new business development and customer service in the engineering, power, petrochemical and wastewater arena for a new US branch of a UK based manufacturer.
- Hire, train and guide distributors and manufacture reps.

- Increased company revenue over **$3,000,000.00 per year**.
- Hiring and supervision of 5 manufactures reps.
- Personal sales of over **$14,000,000.00** during tenure.

National / International New Business Development
Piping Technology, Sweco Fab and US Bellows – Houston, TX 1994 to 1997

- National and international sales and marketing activities and new business development for multi-million dollar worldwide engineered pipe support manufacturer, MRO specialties, specialty fabrication shop and engineering services provider, increasing revenue by **$13,000,000.00 in 3 years (144%).**
- Manage and direct pull through sales of 20 national and international representative agencies and distributorships, resulting in an increase of 30% in their revenue.
- Manage major engineering, petrochemical and power accounts, including Bechtel, Black & Veatch, Fluor, KBR, Foster Wheeler, Aker Kvaerner, and Parsons.
- Re-establish profitable relationships with 5 accounts previously lost by communication and manufacturing errors (valued at 18% of company revenues).

Sales
Kustom Krafts – Friendswood, TX 1985 to 1994

- New business development, sales, proposals, marketing and project management for medium sized commercial construction firm selling and managing construction projects, MRO and installation services in the chemical process, municipal and institutional sector, valued at over **$18,000,000.00.**
- Negotiate major sales contracts with key industrial and institutional accounts.
- Review costs, and operations data to determine department and division progress towards stated goals and objectives with total P&L, HR, safety, environmental and supplier responsibilities.

OTHER EXPERIENCE
Six years procurement of offshore oil rig components, steel, forgings and castings for NL Sheafer, Texas Coupling and Fitting and Pasadena Tank.
Six years machine shop management, tool and die maker and maintenance for Continental Can Co. and Crown Cork and Seal, and Texas Coupling and Fitting.
Two years Adjunct Professor (part time) at Alvin Community College teaching environmental, safety and business management courses.

EDUCATION
BS Environmental Management, University of Houston at Clear Lake, Licensed Texas Realtor

TOOLS
Microsoft Office, Excel, PowerPoint, Outlook, Act Contact Manager, and Internet Explorer.

CONTINUING EDUCATION
Various Sales and Management Seminars, Negotiation Skills Training, Relationship Building books and seminars. Licensed Real Estate Agent.

REFERENCES: Available upon request Available to travel up to 60%

Desired Salary

(b) (6) [redacted]

Christel Frantz

(b) (6)
[redacted]

Sales Professional / Account Manager

Results-driven professional with over 10 years of successful outside technical sales experience. Extensive experience in the industrial and transportation industries with a proven ability to increase sales.

Professional Sales Position Held

Technical Sales Representative, FugroGEOS, Houston, TX February 2008-Present

Represent technical and product solutions for metocean data analysis collection to offshore oil and gas industry. Assist with inside marketing dissemination to outside clients. Facilitate preparation of proposals and contracts. Represent company at trade shows and client presentations. Research competitive areas for new business opportunity and lay groundwork for new business development.

Sales Representative, Oilind Safety, Houston, TX February - November 2007
Actively selling technical services and products for this fully integrated industrial safety company. Personally responsible for building new and maintaining long term relationships with key safety decision makers within the petrochemical, refinery and construction industries.

- Increasing new accounts by 80% results in a 30% increase in revenue.
- Developing leads and maintaining a viable network of business contacts and prospective clients to consistently meet assigned sales quotas.

Account Executive, Union Switch & Signal, Inc. Pittsburgh, Pa March - December 2006
Union Switch & Signal is a global leader in the design and manufacture of automation systems for the freight and mass transit rail industries. Aggressively sold component products and dispatching systems within an assigned southeastern territory. Was responsible for large account strategic solutions. Also identifying, building, and maintaining long term relationships with key decision makers within leading transportation companies.

- Leveraged US&S products and solutions.
- Cross-sold to gain strategic growth opportunities.
- Actively advised cross-functional rail department teams
- Identified and developed strategic account plans for key growth.
- Drove initiatives that fostered growth opportunities.
- Created and nurtured strategic partnerships/alliances within growth accounts.

Independent Sales Consultant The Woodlands, TX 1996 - 2006
Developed and implemented asset sale process for 170 molten sulphur tank cars leased by Exxon Chemical. Targets were other chemical companies, rail leasing or rail car manufacturing

companies.

National Sales Manager, Empak, Inc. Houston, TX 1995 - 1996
Managed U.S. territory. launched sales programs, working with the president in ensuring that corporate sales objectives were met. Implemented various value-added programs which generated $3 Million sales for the company's three-plant locations within a nine-month period. Created 20% sales increase within first quarter through new accounts by attending technical professional organizations and functions. Developed new quotations and recommended technological treatment cleaning procedures for hazardous materials handling which lead to increase in company revenue.

District Sales Manager, ACF Industries, Inc. Houston, TX 1987 - 1995
Formed in 1899 and originally known as American Car and Foundry (ACF), they are the oldest builder of railcars in the United States. Headquartered in St. Charles, Missouri, ACF operates two manufacturing plants making specialty railroad tank and covered hopper cars. They also provide railcar leasing services.

- Successfully managed key accounts, launching new products, and exceeded $1 Million annual quota consistently for eight consecutive years.
- Expanded account base 30% within the first year by targeting new contacts and implementation of an effective follow-up program.
- Researched, analyzed and implemented new rail car product developments for use in field, testing and sales.
- Developed new market opportunities and identified customers for company's acquisition of steel foundry technology.

Regional Sales Representative, Salco Products Houston, TX 1986 -1987
Salco Products serve customers throughout North America in the railroad; chemical; petroleum; plastics; minerals; and food industries. Their specialty parts include vented and non-vented hatch covers, outlet gate replacement parts, loading/unloading adapters, gaskets, seals and filters for tank and hopper cars; and safety vent housings.

- Expanded client base for new branch office in Texas from owner's 26 to 60 accounts by year's end.
- Increased annual revenue to $750,000 via consistent sales contacts, promotions and good will efforts.
- Developed new rail car products and win-win solutions to client challenges through discussion, research, fact-finding and market identification.

Education & Training

Emory University, Atlanta, GA - Bachelor of Arts, International Studies
Houston Community College - Business and Transportation Courses
Union Pacific Railroad - Train Dispatcher Training Program
Computer Skills - ACT Sales and Goldmine Contact Management and Tracking, Microsoft Outlook, Power Point and Excel

Desired Salary
N/A

ALAN DRIGGERS

(b) (6)

EXECUTIVE PROFILE

SENIOR SALES EXECUTIVE

Solutions Sales • Increased Revenues • Expanded Market Share

Dynamic sales / business development strategist with exceptional record of driving initiatives to ensure optimized profitability for organizations ranging from start-up to Fortune 500 spanning several industries worldwide. Innovative, resourceful problem solver with expertise in negotiating contracts and developing c-level relationships to ensure long-term organizational prosperity. Proficient at developing new markets, forging strategic partnerships, and ensuring customer satisfaction. Proven ability to manage and lead cross-functional teams to peak performance levels and coordinating finances / budgets. Experienced in providing business development advice on a consultant basis.

Selected Achievements

- Closed $125M contract in Latin America
- Achieved $185M in consulting and software revenues with three-year pharmaceutical contracts within nine months.
- Managed $70M portfolio that netted over $1M in production.
- Consistently exceed quota on a monthly, quarterly and annual basis.
- Forged and maintain executive-level relationships within oil & gas and pharmaceutical companies nationwide.

Areas of Expertise

- New Business Acquisition / Closing
- Account Management
- Key Relationship Development
- Negotiations / Communications
- Sales Operations Oversight
- Networking
- Customer Relations
- Team Building / Coaching
- Strategic Planning
- New Market Development
- Market Analysis

PROFESSIONAL SUMMARY

ORDER CORNER — Houston, TX

Pharmaceutical operations and compliance consulting firm

Senior Business Development Executive — **2007 to current**

- Oversaw software implementation and all consulting initiatives; managed relationships after closing.
- Negotiated $250M in contracts with 16 of the world's Top 25 pharmaceutical companies, including Merck, Novartis, Eli Lilly, Takeda, Abbot Labs, and AstraZeneca; currently closed $185M.
- Collaborated with external pharmaceutical sales, operations, and legal executives to optimize Company sales.
- Secured contracts by developing relationships with executives through networking and cold calling.

SUPERALL NPG — Tomball, TX

$15M HSE risk and management consulting firm with focus on oil / gas and environmental industries

Senior Account Executive — **2004 to 2006**

- Developed business relationships in the Fortune 1000 market and delivered C- and E-level presentations, which facilitated achievement of $10M in sales.
- Implemented sales and marketing development plan that increased sales 45% by partnering with competitors.

(Continued, page two)

- Surpassed quota on an average of 133% on a monthly basis

SPEARHEAD STRATEGIES — Houston, TX
Start-up strategic business management firm
Senior Account Executive — **2002 to 2004**

- Provided financial, HR management, and organizational development expertise in the small to medium business market.
- Closed $125M environmental consulting project in Latin America working with domestic and international companies.
- Development and procured financing of $50M for a security software company, six physician-owned surgical centers, one hospital, an environmental service company, three apartment buildings, and five auto dealerships.
- Averaged 160% over quota on an annual basis

REGIONS BANK / MORGAN KEEGAN — Houston, TX
Financial holding company with banking, brokerage and investment services; assets of over $145B
Vice President — **1999 to 2002**

- Managed $70M portfolio and placed over $150M in private equity / private debt.
- Achieved status as Top 5 producer in insurance sales for 2000 and 2001.
- Generated production revenue of over $1M year.

MERRILL LYNCH — The Woodlands, TX
$68B provider of investment, financing, insurance and related services to individuals and institutions
Investment Representative — **1998 to 1999**

- Developed and gathered assets and new clients by leveraging community relationships.
- Secured and managed $20M portfolio within first year in the industry.
- Participated in Merrill Lynch IR Training Program.

INGRAM MICRO — Santa Ana, CA
$31B+ global information technology wholesale distributor
Senior Account Executive – South Texas — **1997 to 1998**

- Collaborated with channel representatives of Microsoft, McAfee, Oracle, Lotus, Apple, Sun, HP, Compaq, IBM, Cisco, 3Com and other high-profile clients to close large deals within territory.
- Consistently exceeded monthly quota of $7M by average of 125%

(Previous Positions include Corporate Sales Manager at CompUSA, and Store Manager at Radio Shack)

EDUCATION & MILITARY HISTORY

Master of Sports Science ♦ United States Sports Academy – Daphne, AL

Bachelor of Science ♦ American InterContinental University – Buckhead, GA

Mathematics Coursework ♦ Texas Wesleyan University – Fort Worth TX

Seaman / Electronic Technician ♦ U.S. Navy (Honorable Discharge)

KEN GREGG, CPA MBA

(b) (6) [redacted]

Professional Experience

Controller

***MPF Operating Company, LLC,* Houston, TX, September 2007 to present**

Supervise Accounting Manager and other staff in preparation of financial reports and billings to Norwegian parent and third party clients. Research, procure, and install global ERP system (Microsoft Dynamics AX) to support project accounting in China and Spain, and operations in Houston, Oslo, and aboard the initial MPF-01 drillship which is contracted to begin operations late in 2009.

International Accounting Manager

THE Offshore Drilling Company (TODCO), Houston, TX, March 2006 to July 2007

Support of the processes, methods, and standards established by TODCO for financial transactions, and reporting the results of operations for international operations and special projects using Lawson accounting software. Monitor accounting records of foreign operations for compliance with U.S. and foreign regulatory and statutory requirements. Monitor costs and timely billing of all contractual items, compliance with international tax requirements, inter-company invoices and balances, budgeting, Sarbanes-Oxley Section 404 compliance, international personnel movements and payroll, and assistance in preparation of AFE's and bids . Travel to review and assist District Controllers in Angola, Brazil, Colombia, Mexico, Trinidad, and Venezuela. Assist marketing, risk management, and legal departments with anticipated costs of operations and taxes for foreign bids. Project management accounting for rig maintenance and reactivations in Galveston and Singapore shipyards. TODCO sold to Hercules July 2007.

Division Controller, then VP-Finance & Administration

Sea Mar Division of Nabors Industries, Houston, TX, June 2003 to March 2006

Prepare all reports for Corporate including: Close, MD&A and SEC schedules using Oracle Financials 11i. Prepare Quarterly Forecasts and Annual Budget for $90 million marine transportation segment with operations in US, Mexico, Trinidad, and Middle East. Work with third party operator to verify performance according to contract. Sarbanes-Oxley Section 404 documentation, compliance, and maintenance. Interface with Internal and External Auditors. Supervise billing and collections. Ad hoc reporting to management and governmental reporting. Operational reports including: project analysis, bid preparation, and due diligence. Work with corporate tax department and outside firms for foreign tax and transfer pricing issues.

Initially worked offshore on platform supply vessels and anchor handling / towing supply vessel to learn about the business. Liaison with operations partner in New Iberia, Louisiana for billing, data, safety, U.S. Coast Guard documentation, and preparation of AFE's for dry dock maintenance and CapEx upgrades. Consolidated minority interest per FIN 46R beginning 2004. Division received an adverse opinion from the U.S. Coast Guard because of foreign ownership rules under the Jones Act that cancels a ruling issued in June 2002 after parent company inversion recharter in Bermuda. Sold to Hornbeck Offshore August 2007.

Global Controller

TOMCAT Global Corp., Midland, TX, November 2001 to June 2003

Oversee Controllers in West Texas, Guadalajara, Mexico, and the United Kingdom for a U.S. manufacturing company. Implemented reporting for international management and sales company after dissolution of Foreign Sales Corp. (FSC). Supervised the preparation of financial reports, tax returns, and reports to shareholders. Coordinated cash management, insurance placement, and borrowing for all companies. Audit visits to plants in Mexico and UK including a 4 month stay near Liverpool, England when local U.K. Controller resigned in May, 2002.

CFO, VP Finance
ESCO Transportation Co., Houston, November 2000 to October 2001

ESCO filed for Chapter 11 on September 25th, 2000. (Company was converted to Chapter 7 on October 12, 2001.) Prepared Monthly Operating Report for the Bankruptcy Court and creditors. Supervised preparation of: financial statements, SEC 10-Q's, budgets, collections, cash flow, cleanup and improvement of reports in MAS90. Interfaced with outside auditor. Upgraded to new Paychex system. Converted from FAS to Asset Keeper for fixed asset system. Coordinated communications with major lenders and attorneys. Pursued alternate financing and equity investors. Oversaw liquidation of $18 million in secured assets from unprofitable OTR segment.

Controller
Rampart Capital Corp., Houston, February 2000 through October 2000

Company went public in September, 1999. Assisted with year-end close, external audit, SEC 10K-SB & 10Q-SB's, payroll, A/P, computer and server installations, and fixed asset maintenance for 9 companies. Implemented new computer system for golf course subsidiary in Crosby, TX. Company has since gone private to avoid costs related to Sarbanes-Oxley.

Advanced Financial Analyst
EDS, Houston, September, 1998 through January, 2000

Supervised client reporting including: variance analysis, budgeting, forecasting, and coordination of monthly presentation to client. Reviewed other analysts' work, supported EDS corporate billing. Saved airline client $250,000 in first 6 months by finding data line contract billing errors.

Contract Accounting and Outside Sales
Houston, December 1997 through August 1998

Controller
Primary Medical Clinics, Odessa, TX, December 1996 through May 1997

Supervised 7 people in accounting, accounts payable, and payroll functions for multi-specialty healthcare company with 300+ employees and 50 physicians in 12 locations. Initiated first inventory of ambulatory surgery center and centralized purchasing & supply division that uncovered $200,000 shortage in medical supplies. Interacted with external and state auditors. Saved $30,000 in sales & use tax during Texas Comptroller audit.

Controller and Treasurer
NAPA Auto Parts, Odessa, TX, August 1980 through August 1996

Controller and Corporate Treasurer for 10 auto parts stores and a management group. Converted from manual to computerized financial statements that were prepared monthly at each location resulting in 50% time savings. Performed operational audit while on site. Administered all insurance including health, workers' compensation, property and general liability coverage. As

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Trustee, directed investments and reporting for employees' profit sharing plan. Supervised 10 bookkeepers in the preparation of daily reporting, accounts receivable, accounts payable, payroll, and Texas sales tax reporting. Developed and maintained employee manual that complied with state and federal laws. Prepared quarterly and annual tax reports for all corporations for state and federal taxing agencies. Maintained banking relationships. Provided support and maintenance for all computer systems that resulted in $35,000 annual savings.

Area Office / Inventory Control Manager

Dresser Industries-Security Drill Products Div., Odessa, TX, April 1978 through August 1980

Supervised 3 people in billing, inventory control, A/P, purchasing. Monthly reporting to corporate office in Houston as well as inventory needs forecasting to Dallas manufacturing plant. Internal audit of 13 offices in TX and New Mexico. Quarterly update of forecast and 5 year strategy plan.

Senior Production Accountant

Kewanee Oil Company, Odessa, TX, June 1976 through April 1978

Responsible for production reports, payroll, inventory control, and A/P for area office (TX & New Mexico). Filed state and Federal reports and prepared joint interest reports to partners. Prepared to transfer to Tulsa, OK office to become Kewanee's National Joint Interest Auditor when Kewanee was purchased by Gulf Oil Company. Gulf was then purchased by Chevron.

Manager Trainee

Grant Oil Tool Co.-Turbodrill Div., Odessa, TX, December 1975 through June 1976

Responsible for internal sales and maintenance of 5" Neyrpic Turbodrills for deep formation and directional drilling. Operator of Turbodrill and under-reamers on drilling and workover rigs in West Texas. Rebuilt reamers, stabilizers, and rotating drilling heads for drilling tools division.

Pipe Tester

Tuboscope, Heldie's Pipe Service, & Spinning Pipe Service, Odessa, TX, summers during college

Tested pipe and tubing using both hydrostatic and non-destructive methods in Texas and New Mexico. Also straightened and threaded pipe and tubing.

Education

Certified Public Accountant (CPA), Texas License No. 33908.
Master of Business Administration (32 hrs. of Accounting), Univ. of TX - Permian Basin
Bachelor of Science, Mathematics, minor in Physics, Univ. of TX - Permian Basin

Recent courses in GAAP, International Financial Accounting Standards and Tax.
Current U.S. Passports, including international vaccinations, and visa for India. Some proficiency in Spanish and introductory Portuguese.

Computer Skills

Microsoft Office (Word, Excel, Access), Financial Packages (Microsoft Dynamics AX, Oracle 11i, MAS90, Business Works, Peachtree, Lawson Version 8.4, QuickBooks, AIMS, Easy Acct, MIP (Non-Profit), TurboTax, Internet, networks, ADP, Paychex, FAS, Asset Keeper.

Larry Henson (b) (6) [redacted]

[Outside Sales] / [Operations Manager]

Summary

I am a hard working, self motivated, individual with the desire to help a company get a maximum return on investment. I have been in continued employment for the last twenty five years. I have held positions that range from truck driver, to operations manager for a fortune 500 company, to outside sales for two smaller companies. I have excelled in each job and have earned promotions and increased my salary based on work ethics and knowledge of my craft and profits for the companies I have worked for. I have been involved in industrial service type jobs for 17 years. I am a [people person] with an outgoing personality that has helped me be successful in all aspects of my life. I am looking for a company that is stable, offers a career challenge, and an opportunity for advancement. I have attended several classes that have helped me advance in my career, these include a three day course in Hazardous Waste Regulations at Texas A&M in 1992, Transportation Safety Institute US Department of Transportation CFR 100-185, this was a one week course in Oklahoma City Oklahoma 1997. I have also attended several one day classes that may be of interest, these are as follows; Valuing Differences, Supervisor Training 1&2, Sexual Harassment in the Workplace, Business Ethics, Fair Square & Legal.

Work History

Safety-Kleen, Missouri City, Tx. 2007 to Present
Outside Sales
Outside sales; duties included sales of parts washers, Safety-Kleen Pro Products, Total Project Management sales, Emergency Response sales, and specialty equipment sales

Eagle Construction & Environmental, La Porte, TX. 2005 to 2006
Outside Sales
Duties involved; account management, collections, business development
- Maintained and developed relations with several major industries in the Houston market area.
- I was responsible for 1,400,000 dollars worth of sales while at Eagle.

My reason for leaving Eagle, I no longer felt that Eagle as a company could or would meet my Commitments to my customer base. I will discuss this in detail if interviewed.

Baker Tanks, La Porte, TX. 2005 to 2005
Outside Sales
Duties involved; maintenance of high profile accounts such as Exxon - Mobil Baytown TX. Valero refinery, Texas City, RSC Texas City, Hydro-Chem Texas City, etc.
- I was able to maintain accounts in the very volatile petrochemical industry.

My reason for leaving Baker Tanks was that I was approached by Eagle Construction & Environmental under the pretense that I would be responsible for generating new Emergency Response Contracts in an area that stretched from Port Arthur TX. to Brownsville TX. with a significant pay increase and other compensatory benefits.

Eagle Construction & Environmental, La Porte, TX. 2003 to 2005

Outside Sales

Duties involved; account management, collections, business development

- I worked for Eagle for two years under the direction of Johnny Cagle. I, while under his direction, brought sales for Eagle from 100,000 to on average of 200,000 per month in their LaPorte branch. I raised my base salary from 55,000 to 65,000 in just under 2 years. I received a $5000 dollar bonus in my first year with Eagle for revenues sold and collected.

My reason for leaving Eagle Construction is that I was approached by Baker Tanks to take a sales position in their LaPorte location

US Filter, Baytown TX, Kilgore TX. 1990 to 2003

Operations Manager

Duties included; hiring, firing, P&L management, safety, oversight of maintenance on all company trucks, fleet management, regulatory compliance (DOT and Environmental) for facility, driver training.

- I began as a driver with Mobley Environmental in Kilgore TX. After three years I was promoted to Industrial supervisor (over seeing projects). US Filter bought Mobley and my job changed dramatically I became responsible for P&L, dispatch, training safety and equipment integrity, hiring and firing and evaluations of most personnel at our facility. I worked under 4 different managers at US Filter and had success with all of them.
- Eagerness to learn the business side and the challenges it provided were a great experience for me.
- Maintained the same core group of drivers for over 11 years by, working side by side with them and valuing them as the most important part of our business

Education

Graham High School, Graham TX. *1973*

Basic studies included; Math, Science, English, & Auto Mechanics

Skills

- Honesty, great work ethic, loyalty, integrity
- Computer skills, MS word, Excel
- Willingness to do what ever it takes to get the job done
- Personality that enables me to work with anyone and the ability to maintain long lasting relationships

- Class A CDL with Hazmat endorsement

Larry Henson

(b) (6) [redacted]

[Professional Reference List]

Kieran McGeagh
Territory Salesperson, Ashland Environmental

Relationship: Business Associate
5 years
Afternoons

Cellular: (b) (6) [redacted]
Home (b) (6) [redacted]

(b) (6) [redacted]

Bill Meyer
Project Manager, USA Environmental

Relationship: Previous Manager
5 years
Mornings

Cellular: (b) (6) [redacted] 5

Mike Brown
VP of Operations(Gulf South), Baker Tanks
101Old Underwood Rd.Bldg B LaPorte Texas
77571
Relationship: Previous Employer
7 years
Afternoons

Work (b) (6) [redacted]
(b) (6) [redacted]

(b) (6) [redacted]

Mike McDonald
EH&S Administrator, Nisseki Chemical of Texas
10500 Bay Area Blvd Pasadena Texas 77507
Relationship: Business Associate
3 years
Afternoons

Work: (b) (6) [redacted]
Cellular: (b) (6) [redacted]

(b) (6) [redacted]

Johnny Cagle
VP of Sales, Eagle Construction &Environmental

Relationship: Previous Manager
5 years
Afternoons

Cellular (b) (6) [redacted]
Main: (b) (6) [redacted]

(b) (6) [redacted]

M. NATHANIAL HAUBRICH

Controller - very sharp

OBJECTIVE

Obtain an Executive Management position in Finance / Business Analysis / Quality Systems Admin.

EXPERIENCE

03/2006–Current The Nopal Group Houston, TX
Controller
Database creation in Excel and Access for analysis of sales, margins, and forecasting.
Financial reporting for multiple entities as well as compilation of Due Diligence financials.
Writing Procedural Manual, SOP's and methodology scenarios.
Doing supplier and internal system audits.
Business analysis and ROI as well as CAPEX projections and Forward Cash Flows.
Control of Quality Records, Risk Analysis, Equipment R&D History Files, Design Review etc…

10/2005–03/2006 Tyrell, Inc. (contract) Houston, TX
V.P. Finance/Quality Systems Administrator
Database creation in Excel and Access for analysis of returns, sales, margins, and forecasting.
Financial reporting for both Cost and Statutory as well as compilation of Due Diligence financials.
Writing Quality Systems Manual, SOP's Forms for ISO13485 implementation. Passing ISO audit.
Doing supplier and internal system audits for compliance to ISO13485, MDD and CMDCAS
Regulatory compliance for FDA, ISO13485:2003, MDD, CMDCAS, CTPAT as well as licensing and export to Europe Asia and the Middle East.
Auditor and compliance certification for ISO, System, and Financial auditing.
Control of Quality Records, Risk Analysis, Device History Files, Design Review etc…

03/2004–12/2005 Performance Plastics Products (merger) Houston, TX
Controller/Business Analyst
Database creation for analysis of profit, margins, production, labor and materials.
Writing CAPEX and ROI models for business growth. SOX compliance.
Interim controller for subsidiary companies.
Implementation of inventory controls to reduce slow moving inventories.
SAP conversion project lead for transfer of data and structure modeling.
Writing reporting interfaces between 3 separate data systems.

08/2002–03/2004 Minute Maid Company (merger) Houston, TX
Sr. Business Analyst PPV and Cost Accounting Manager
Consolidated reporting for 46 plants, as well as invoicing and reconciliations.
General ledger and general ledger interface between 3 operating systems.
Invoicing for International, processing of SNB and customer credits.
Product coding and costing for all of the Minute Maid Brands and Customers.
Financial analysis and ad-hoc reporting, with the construction and implementation of analytical procedures and databases.

(b) (6)
[redacted]

M. NATHANIAL HAUBRICH

01/2000–07/2002 Ocean Energy Inc. (merger) Houston, TX
Sr. International Accountant
Consolidated financial reporting for multiple countries and projects.
Revenue accounting for several multi-million dollar drilling operations.
Financial modeling to increase reporting efficiency and accuracy in consolidations.
CAPEX, budgets, forecasting, cost accounting, general ledger and taxes
$12.3M dollar recovery on overcharges for well-site in Egypt

03/1999–01/2000 Texaco Global Aviation (merger) Houston, TX
Sr. Account Analyst
Pipeline accounting for a major broker with 60-70 million bbl's monthly.
Reconciliations for 300+ storage, pipeline, and transport facilities.
Billings/bookings of pipeline movements, tax, loss, special contracts.
Review and enforcement of multiple contracts for Av-jet fuel.

07/1998–03/1999 Grant Geophysical (contract) Houston, TX
Financial Reporting Accountant
Consolidated financial reporting for multiple International sites.
Corporate reporting, 10k's, 10q's for shareholders and auditors.
P&L's, capital expenses, consolidations, tax~GAAP, forecasting.

01/1996–07/1998 Parsons Energy & Chemical (downsize) Houston, TX
Assistant Controller International
Established billing procedures for a multi-billion dollar joint venture.
Payroll accounting for both US and Expatriate employees.
Contract implementation and billing for on and offshore divisions.
A/P, A/R, invoicing and taxes for multi-level contracts US and foreign.
International finance, cost and project accounting, general ledger account coding and set up, contract negotiation and legal issues.
$23M dollar recovery for tax fines and assessments in Caracas JV.

10/1986–12/1996 National Security Agency (contract) Washington, DC
Russian Cryptologist Special Operations attached to USAF 690th ESG (TSU Clearance)
Transcription of messages and documents pertaining to National Security.
Member of the Strategic Arms Limitation Treaty inspection group. (Multiple Access Levels)

EDUCATION

1982–1986 Lawrence University Appleton, WI
M.S.A., Business Administration and B.A., Economics. (Accounting, HR)
Graduated Summa Cum Laude: GPA 3.975
Certified Russian Linguist: NSA attached to USAF 1987-1996

INTERESTS.

Languages: Russian, Spanish, Italian, German, with cursory knowledge of several others.
Computer skills: Excel, Word, Power Point, Access, Lotus 1-2-3, Oracle, Libra, A/S400, SQL, Cyma, Cimpro, PPV, Gastracs, SAP, Quickbooks/Pro, Data General, HFM, F-9, Crystal, Essbase, HTML-Ease, Ideas, EDMS, Great Plains and Peachtree. Currently working towards CPA.

(b) (6) [redacted]

Barge PurcHASE

EPAHO044000195

8/4/09
WS
K-3 (1)

General #

202-475-3400

Cargo Division
Tank Vessel & Offshore Div.
202 475-3403

P.O. BOX 460461
HOUSTON, TEXAS
77056-8461

EARL HATFIELD MARINE SURVEYOR

OFFICE: 713-668-0554
FAX: 713-668-1368

1404V

REPORT NO.: 6821A

Beaumont, Texas

Re: Condition Survey
(06/01/09)

Official No.: 512933
Gross Tons: 1502

June 3, 2009

SINGLE SKIN STEEL TANK BARGE
"BUFFALO 404"

THIS IS TO CERTIFY that the undersigned Marine Surveyor attended survey of the aforementioned barge while located, afloat, empty, at Buffalo Fleet, Beaumont, Texas, at the request of Gulf Stream Tanker Chartering, LLC, with documented owner and operators being Buffalo Marine Service, Inc., in order to determine the present condition of the aforementioned barge.

BARGE DESCRIPTION

Barge is all steel welded type construction, single skin inland tank barge design, scow type, raked bow with normal sheer, boxed stern, flush main deck with 3" camber toward centerline, rounded gunwales and rounded bilge's.

Barge in longitudinally framed with transverse stiffening, sub-divided by eight (8) transverse watertight bulkheads along midbody with forward and aft collision bulkheads and one (1) longitudinal centerline watertight bulkhead, forming six (6) Port and Starboard cargo tanks and one (1) Port and Starboard cofferdam located separating nos. 3 and 4 cargo tanks. Bow rake buoyancy compartment forward, square stern buoyancy compartment aft.

Length Overall: 275.0" Breadth: 54'0" Depth: 12'6"

Built: 05 July 1968 at Nashville Bridge Company, Nashville, TN.

SERVICE: Barge cargoes of grade D & lower with restriction prohibition for carriage of "Benzene" and requirements per COI.

Barrel Capacity: 29,200

CERTIFICATE OF INSPECTION:

Issued: 02AUG06
Expires: 02AUG11

Routes permitted: Lakes, Bays and Sounds being unmanned, limited coastwise in fair weather voyages not more than 12 miles offshore between St. Marks and Carabelle, Fl. Granted status of fresh water examination intervals.

HULL EXAMS

EXAM TYPE	NEXT EXAM	LAST EXAM
DRYDOCK	02AUG11	02AUG06
INTERNAL STRUCTURAL	02AUG11	02AUG06
CARGO TANKS INTERNAL	02AUG11	02AUG06
ANNUAL		24OCT08

CERTIFICATE OF FINANCIAL RESPONSIBILITY:

Issued to Barge "BUFFALO 404" and Buffalo Marine Service, Inc., with certificate no. 814564-03, expires on 20 August 08.

STRAPPING TABLES:

Onboard.

CARGO PIPING:

As per onboard piping schematic.

CARGO SYSTEM:

Cargo system original fitted with two (2) General Motors Model 6-71, battery-start, Diesel engine, one (1) located atop No. 3 Starboard cargo tank and one (1) located atop No. 4 Port cargo tank. Engine are complete with top cowling, exhaust spark arresting muffler, rain cap, radiator, tachometer, oil pressure water temperature gauges and emergency shutdown. Each cargo pump engine is supplied by one (1) cylindrical fuel oil tank and estimated to be 500-gallon capacity each.

One (1) 8" deepwell cargo pump is driven off the aft end of the cargo pump engine and controlled by PTO clutch through drive shaft to Johnson right angle gear drive and.

Two (1) 8" transverse load/discharge pipe header piping located above No. 6 Port and Starboard cargo tank complete with 150 lb. rising stem gate valves at each end over adequate covered drip pan. One (1) 8" load/discharge pipe header running longitudinally along Port and Starboard sides of centerline to each cargo tank fitted with individual valves. Further reference to cargo piping is shown by onboard cargo transfer system diagram.

STEAM PIPING:

Fitted with one (1) 3" supply pipe header along centerline grated covered with 2" valve supply drops into each cargo tank to below deck steam pipe coils with one (1) 1" steam condensate along outboard deck of each cargo tank.

MISCELLEANOUS DECK:

Bow rake is fitted with one (1) 48" closed chock kevel at each forward corner, three (2) 10" deck coupling buttons along each forward outer corner, one (1) 48" cast steel closed chock kevel at centerline, two (2) 6" bitt and 10" button combination located forward on Bow deck, Port and Starboard manual deck winches, two (2) 15" x 23" 4-dog raised coaming manways, 6" high channel spill containment, located around entire outer perimeter of cargo tanks and piping system.

Port and Starboard outer walking decks consist of six (6) 48" cast steel closed chock kevels, five (5) 15" x 23" 4-dog raised coaming inspection manways.

Stern fitted with three (3) 10" deck coupling buttons, one (1) 8" deck coupling button and one (1) 10" double post bitt along each side, one (1) 6" bitt/12" deck coupling button combination located on stern deck, one (1) 48" cast steel closed chock kevel along centerline, Port and Starboard manual deck winches and two (2) 4-dog 15" x 23" manways, two (2) 20" OD 4-dog raised coaming manways to below deck void.

CARGO TANKS:

Fitted atop each cargo tank, with one (1) 42" expansion dome complete with one (1) 15" x 23" raised coaming 4-dog manway, one (1) 2" atmospheric gooseneck vent and reach rod atop expansion dome, one (1) 3" single dog ullage, one (1) "Midland" upper level gauging point and one (1) multi-bolted butterworth.

HULL CONDITION:

Bow rake bottom plate, headlog for width and Port and Starboard side plates with scattered normal indents, waving between frames, paint scuffing and scattered turtle metal rust areas.

Port and Starboard side plates coated with scattered rust and rust stained areas, moderate scattered indents and waving along upper and lower bumper split pipes.

Deck plating coated with scattered rust stained areas, sun bleached with scattered areas of primer showing.

Stern deck, sides and ends coated being sun bleached with scattered indents and rust stain areas mostly around deck fittings.

RECOMMENDATIONS:

1.) Renew plating below acceptable thickness criteria in no. 1 Port and Starboard cargo tanks. Crop and renew 48" x 5/16" x 20'0" long plate. Estimated $7,000.00

2.) Renew plating below acceptable thickness criteria in no. 3 Port cargo tank forward along centerline. Crop and renew 48" x 5/16" x 4'0" long plate. Estimated $3,000.00

3.) Renew plating below acceptable thickness criteria in no. 3 Port cargo tank aft along centerline. Crop and renew 48" x 5/16" x 4'0" long plate. Estimated $3,000.00

3.) Port Bow rake and No. 1 Port cargo tank deck gunwale heavily pitted and sighted with crust rust. Crop and renew one (1) 48" x ½" shaped plate approximately 80' long. Estimated $34,000.00

4.) Cut off fourteen (14) plate protectors over steam condensate valves, remove valves and install pipe plugs. Stencil and tag steam system "NOT IN SERVICE". Estimated $2,500.00.

5.) Renew valve packing in seven (7) 8" cargo valves and test above deck cargo pipe. Estimated $1,500.00

6.) Crop off and "Do Not Renew" deck button/single post bitt combination; four (4) on Bow and two (2) on stern. Estimated $600.00.

7.) Six (6) 8" flame screens in ullages missing and require renewal. Estimated $500.00

8.) Remove atmospheric vents from expansion domes and install twelve (12) 2-1/2" pressure vacuum valves. Estimated $15,000.00

9.) Upper transom deck gunwale heavily pitted and rusted. Crop and renew one (1) 48" x ½" shaped plate approximately 50' long. Estimated $17,000.00

TOTAL COST ITEMS ABOVE:	$67,000.00
CONTINEGY OF UNFORESEEN:	$15,000.00
TOTAL ESTIMATED	$82,000.00
PROJECTED RENEWALS:	$75,000.00

SCENERIO:

It is the opinion of the undersigned that this barge is the better of the two (2) barges with less repairs and cost sighted in the future. Please take into account estimates are at todays prices and may increase if recommended renewals are not performed immediately. Also after reviewing plate thickness readings, it is the opinion of the undersigned that additional plate will be required to renew in 2011, see readings high lighted in orange, and estimated additional $75,000.00 for these renewals to keep the barge in US Coast Guard requirement. This barge "As Is" requires no immediate renewals but dependent upon the US Coast Guard Inspector during each annual inspection can require additional items be performed. If no requirements are demanded by US Coast Guard then the annual estimated cost to be $7,000.00.

Continuing, it is the opinion of the undersigned that this barge life expectancy is ten (10) years with continued maintenance. Some of the additional projected cost can be defrayed by maintaining a nitrogen blanket over the spent caustic in the vapor space.

Although, the barge is certified for Grade "D" and lower you will be required to obtain services of qualified engineer to perform calculations for stability and if the barge is capable of spent caustic carriage. Estimated cost of the engineer is $7,000.00.

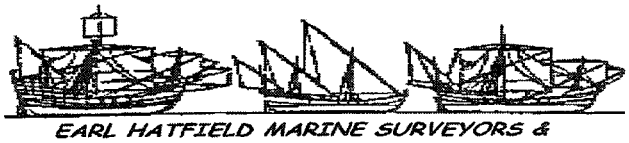
THIS SURVEY WAS MADE WITHOUT PREJUDICE FOR THE ACCOUNT "TO WHOM IT MAY CONCERN".

EARL HATFIELD MARINE SURVEYORS

Earl Hatfield
Principal Surveyor

Robert Reider
Marine Surveyor

P.O. BOX 460461
HOUSTON, TEXAS
77056-8461



EARL HATFIELD MARINE SURVEYORS &
ULTRASONIC GAUGING

OFFICE: 713-668-0
FAX: 713-668-1
ehatfield1@peoplepc

ULTRASONIC GAUGING

SINGLE SKIN TANK BARGE

GAUGING PERFORMED BY:

ROBERT REIDER

REPORT NO.: 6821A
BARGE "BUFFALO 404"
AFLOAT

20' BELTS		CENTERLINE							
		BOW RAKE							
1	NO. 1 PORT CARGO TANK	.342	.247	.207	.190	.194	.247	.245	.276 NO. 1 STARBOARD CARGO TANK
2		.295	.289	.246	.260	.275	.286	.294	.291
3	NO. 2 PORT CARGO TANK	.274	.272	.287	.283	.278	.306	.270	.298 NO. 2 STARBOARD CARGO TANK
4		308	.279	.274	.206	.231	.290	.274	.293
5	NO. 3. PORT CARGO TANK	.290	.287	.283	.231	.253	.286	.271	.298 NO. 3 STARBOARD CARGO TANK
6		.323	.296	.285	.292	.289	.274	.287	.292
7	NO. 4 PORT CARGO TANK	.307	.259	.252	.265	.268	.252	.272	.294 NO. 4 STARBOARD CARGO TANK
8		.327	.317	.316	.287	.296	.293	.298	.288
9	NO. 5 PORT CARGO TANK	.287	.303	.277	.283	.275	.303	.290	.256 NO. 5 STARBOARD CARGO TANK
10		.278	.275	.285	.273	.290	.293	.291	.278
11	NO. 6 PORT CARGO TANK	.283	.286	.284	.252	.296	.283	.289	.288 NO. 6 STARBOARD CARGO TANK
12		.297	.301	.284	.297	.302	.284	.278	.280
13		.304	.300	.285	.283	.277	.299	.289	.314
		STERN VOID							

P.O. BOX 460461
HOUSTON, TEXAS
77056-8461

EARL HATFIELD MARINE SURVEYOR

OFFICE: 713-668-0554
FAX: 713-668-1368

REPORT NO.: 6821B

Beaumont, Texas

Re: Condition Survey
(06/01/09)

Official No.: 512774
Gross Tons: 1506

June 3, 2009

SINGLE SKIN STEEL TANK BARGE
"BUFFALO 503"

THIS IS TO CERTIFY that the undersigned Marine Surveyor attended survey of the aforementioned barge while located, afloat, empty, at Buffalo Fleet, Beaumont, Texas, at the request of Gulf Stream Tanker Chartering, LLC, with documented owner and operators being Buffalo Marine Service, Inc., in order to determine the present condition of the aforementioned barge.

BARGE DESCRIPTION

Barge is all steel welded type construction, single skin inland tank barge design, scow type, raked bow with 2' sheer, boxed stern, flush main deck with 3" camber toward centerline, rounded gunwales and rounded bilge's.

Barge in longitudinally framed with transverse stiffening, sub-divided by seven (7) transverse watertight bulkheads along midbody with forward and aft collision bulkheads and one (1) longitudinal centerline watertight bulkhead, forming six (6) Port and Starboard cargo tanks and one (1) Port and Starboard cofferdam located separating nos. 3 and 4 cargo tanks. Bow rake buoyancy compartment forward, square stern buoyancy compartment aft.

Length Overall: 275.0" Breadth: 54'0" Depth: 12'6"

Built: December 31, 1968 at Nashville Bridge Company, Nashville, TN.

SERVICE: Barge cargoes of grade D & lower with restriction prohibition for carriage of "Benzene" and requirements per COI.

Barrel Capacity: 29,300

CERTIFICATE OF INSPECTION:

Issued: 20JAN06
Expires: 20JAN11

Routes permitted: Lakes, Bays and Sounds being unmanned, limited coastwise in fair weather voyages not more than 12 miles offshore between St. Marks and Carabelle, Fl. Granted status of fresh water examination intervals.

HULL EXAMS

EXAM TYPE	NEXT EXAM	LAST EXAM
DRYDOCK	20JAN11	20JAN06
INTERNAL STRUCTURAL	20JAN11	20JAN06
CARGO TANKS INTERNAL	20JAN11	20JAN06
ANNUAL		04MAR09

CERTIFICATE OF FINANCIAL RESPONSIBILITY:

Issued to Barge "BUFFALO 404" and Buffalo Marine Service, Inc., with certificate no. 814564-03, expires on 12 September 11.

STRAPPING TABLES:

Onboard.

CARGO PIPING:

As per onboard piping schematic.

CARGO SYSTEM:

Cargo system originally fitted with two (2) General Motors Model 6-71, (One (1) onboard presently) battery-start, Diesel engine, one (1) located atop No. 3 Starboard cargo tank and one (1) located atop No. 4 Port cargo tank. Engine are complete with top cowling, exhaust spark arresting muffler, rain cap, radiator, tachometer, oil pressure water temperature gauges and emergency shutdown. Each cargo pump engine is supplied by one (1) cylindrical fuel oil tank and estimated to be 500-gallon capacity each.

One (1) 8" deepwell pump controlled by PTO clutch through drive shaft to Johnson right angle gear drive from cargo pump engine and and.

One (1) 8" transverse load/discharge pipe header piping located above No. 5 Port and Starboard cargo tank complete with 150 lb. rising stem gate valves at each end over adequate covered drip pan. One (1) 8" load/discharge pipe header running longitudinally along Port and Starboard sides of centerline to each cargo tank fitted with individual valves. Further reference to cargo piping is shown by onboard cargo transfer system diagram.

STEAM PIPING:

Fitted with one (1) 3" supply pipe header along centerline grated covered with 2" valve supply drops into each cargo tank to below deck steam pipe coils with one (1) 1" steam condensate along outboard deck of each cargo tank.

MISCELLEANOUS DECK:

Bow rake is fitted with one (1) 48" closed chock kevel at each forward corner, three (2) 10" deck coupling buttons along each forward outer corner, one (1) 48" cast steel closed chock kevel at centerline, two (2) 6" bitt and 10" button combination located forward on Bow deck, Port and Starboard manual deck winches, two (2) 15" x 23" 4-dog raised coaming manways, 6" high channel spill containment, located around entire outer perimeter of cargo tanks and piping system.

Port and Starboard outer walking decks consist of six (6) 48" cast steel closed chock kevels, five (5) 15" x 23" 4-dog raised coaming inspection manways.

Stern fitted with three (3) 10" deck coupling buttons, one (1) 8" deck coupling button and one (1) 10" double post bitt along each side, one (1) 6" bitt/12" deck coupling button combination located on stern deck, one (1) 48" cast steel closed chock kevel along centerline, Port and Starboard manual deck winches and two (2) 4-dog 15" x 23" manways, two (2) 20" OD 4-dog raised coaming manways to below deck void.

CARGO TANKS:

Fitted atop each cargo tank, with one (1) 42" expansion dome complete with one (1) 15" x 23" raised coaming 4-dog manway, one (1) 2" atmospheric gooseneck vent and reach rod atop expansion dome, one (1) 3" single dog ullage, one (1) "Midland" upper level gauging point and one (1) multi-bolted butterworth.

HULL CONDITION:

Bow rake bottom plate, headlog for width and Port and Starboard side plates with scattered normal indents, waving between frames, paint scuffing and scattered turtle metal rust areas.

Port and Starboard side plates coated with scattered rust and rust stained areas, moderate scattered indents and waving along upper and lower bumper split pipes.

Deck plating coated with scattered rust stained areas, sun bleached with scattered areas of primer showing.

Stern deck, sides and ends coated being sun bleached with scattered indents and rust stain areas mostly around deck fittings.

RECOMMENDATIONS:

1.) Renew plating below acceptable thickness criteria in no. 1 Port and Starboard cargo tanks aft along centerline. Crop and renew 48" x 5/16" x 8'0" long plate. Estimated $3,500.00

2.) Renew plating below acceptable thickness criteria in no. 5 Port cargo tank forward along centerline. Crop and renew 48" x 5/16" x 8'0" long plate. Estimated $3,500.00

3.) Nos. 1 & 2 Port cargo tank deck gunwale heavily pitted and sighted with crust rust. Crop and renew one (1) 48" x ½" shaped plate approximately 100' long. Estimated $60,000.00

4.) Cut off twelve (12) plate protectors over steam condensate valves, remove valves and install pipe plugs. Stencil and tag steam system "NOT IN SERVICE". Estimated $2,000.00.

5.) Renew valve packing in nine (9) 8" cargo valves and test above deck cargo pipe. Estimated $2,000.00

6.) Crop off and "Do Not Renew" deck button/single post bitt combination; four (4) on Bow and two (2) on stern. Estimated $600.00.

7.) Twelve (12) 8" flame screens in ullages missing and require renewal. Estimated $1,500.00

8.) Remove atmospheric vents from expansion domes and install ten (10) 2-1/2" pressure vacuum valves. Estimated $12,500.00

9.) Upper transom deck gunwale heavily pitted and rusted. Crop and renew one (1) 48" x ½" shaped plate approximately 50' long. Estimated $17,000.00

TOTAL COST ITEMS ABOVE:	$102,600.00
CONTINEGY OF UNFORESEEN:	$ 25,000.00
TOTAL ESTIMATED	$ 127,600.00
PROJECTED RENEWALS:	$ 75,000.00

SCENERIO:

It is the opinion of the undersigned that this barge is the worts of the two (2) barges with more repairs and higher cost sighted in the future. Furthermore, this barge is hogged and previously was used in bunker service. Please take into account estimates are at todays prices and may increase if recommended renewals are not performed immediately. Also after reviewing plate thickness readings, it is the opinion of the undersigned that additional plate will be required to renew in 2011, see readings high lighted in orange, and estimated additional $75,000.00 for these renewals to keep the barge in US Coast Guard requirement. This barge "As Is" requires no immediate renewals but dependent upon the US Coast Guard Inspector during each annual inspection can require additional items be performed. If no requirements are demanded by US Coast Guard then the annual estimated cost to be $7,000.00.

Continuing, it is the opinion of the undersigned that this barge life expectancy is ten (10) years with continued maintenance. Some of the additional projected cost can be defrayed by maintaining a nitrogen blanket over the spent caustic in the vapor space.

Although, the barge is certified for Grade "D" and lower you will be required to obtain services of qualified engineer to perform calculations for stability and if the barge is capable of spent caustic carriage. Estimated cost of the engineer is $7,000.00.

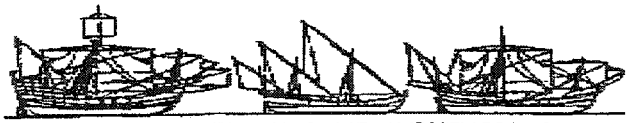
THIS SURVEY WAS MADE WITHOUT PREJUDICE FOR THE ACCOUNT "TO WHOM IT MAY CONCERN".

EARL HATFIELD MARINE SURVEYORS

Earl Hatfield
Principal Surveyor

Robert Reider
Marine Surveyor

P.O. BOX 460461
HOUSTON, TEXAS
77056-8461



EARL HATFIELD MARINE SURVEYORS &
ULTRASONIC GAUGING

OFFICE: 713-668-0
FAX: 713-668-1
ehatfield1@peoplepc

ULTRASONIC GAUGING

SINGLE SKIN TANK BARGE

GAUGING PERFORMED BY:

ROBERT REIDER

REPORT NO.: 6821B
BARGE "BUFFALO 503"
AFLOAT

20' BELTS		CENTERLINE							
		BOW RAKE							
1	NO. 1 PORT CARGO TANK	.329	.333	.344	.370	.326	.337	.338	.330 NO. 1 STARBOARD CARGO TANK
2		.269	.270	.258	.227	.195	.248	.254	.248
3	NO. 2 PORT CARGO TANK	.288	.370	.278	.280	.277	.261	.271	.281 NO. 2 STARBOARD CARGO TANK
4		.259	.278	.286	.237	.278	.269	.254	.244
5	NO. 3. PORT CARGO TANK	.269	.289	.264	.252	.239	.278	.271	.265 NO. 3 STARBOARD CARGO TANK
6		.300	.272	.254	.304	.236	.258	.254	.261
7		.246	.367	.306	.248	.247	.252	.257	.270
8	NO. 4 PORT CARGO TANK	.294	.308	.306	.280	.309	.294	.288	.273 NO. 4 STARBOARD CARGO TANK
9		.249	.303	.291	.265	.267	.333	.272	.269
10		.276	.289	.297	.265	.274	.267	.277	.266
11	NO. 5 PORT CARGO TANK	.270	.274	.287	.259	.282	.295	.283	.261 NO. 5 STARBOARD CARGO TANK
12		.249	.283	.272	.269	.308	.280	.276	.273
13		.269	.373	.286	.282	.175	.182	.253	.268
		STERN VOID							

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.com

FIRE CODE ISSUES

EPAHO04400213

8/4/09
WES
K-3 (B)

CES Environmental Services, Inc.
4904 Griggs Road
Houston, TX 77021
713-676-1460 Main
713-676-1676 Fax

May 28, 2009

APPROVED
HOUSTON FIRE DEPARTMENT
Hazmat / High Piled Inspection Team
Initial MAR Date 6-4-09
Comments:

Mr. Mark Ritchie
Chief Inspector
City of Houston Fire Department
1205 Dart Street
Houston, TX 77007

Re: NOV Project No.09017014
Date: 02/26/09
CES Environmental Services, Inc.
4904 Griggs Road
Houston, TX 77021

Dear Mr. Ritchie:

We have engaged Donald Corwin, P.E., of Therm-A-Cor Consulting to respond to NOV (02/26/09) Project No. 09017014.

Unfortunately, we have a number of outstanding issues which have delayed our timeline for getting the Thermal Oxidizer functional. These questions include the amount and timing of the insurance refund. At present we do not anticipate resolving these issues before the end of June.

The Thermal Oxidizer does not currently present health, safety, or fire risks, since it is red-tagged and non-operational. Therefore, we are requesting an extension (July 31, 2009) on the deadline to provide details as required in the NOV (09017014). Upon HFD review, acceptance, and approval of these submitted documents, we would move forward with repairs and upgrades necessary to bring the Thermal Oxidizer on-line.

Very truly yours,

Clark G. Hickman

CES Environmental Services, Inc.

May 1, 2009

Inspector Gerardo Rey
Hazardous Materials and High-Piled Inspection Team
Houston Fire Department
1205 Dart St.
Houston, TX 77007

Re: CES Environmental Services, Inc
Action Plan for Compliance

Dear Inspector Rey:

The purpose of this letter is to inform you of our commitment to ensure that all activities and structures on CES property are compliant with HFD regulations. We understand the importance of doing so and are eager to implement the required corrections. As we are in agreement with the proposed schedule submitted by Ed Cope (enclosed with this letter), we would like to request that Chief Richie's initial requirement to have all issues resolved within 45 days be modified accordingly. It is our hope that you find the adjusted time frame for completion to be satisfactory. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Greg Bowman
Vice President Finance & Administration
CES Environmental Services

Cope Engineering, PLLC

APPROVED
HOUSTON FIRE DEPARTMENT
Hazmat / High Piled Inspection Team
Initial MR Date 6-4-09
Comments:

June 2, 2009

Inspector Gerardo Rey
Hazardous Materials and High-Piled Inspection Team
Houston Fire Department
1205 Dart St.
Houston, TX 77007
Gerardo.Rey@cityofhouston.net

RE: CES Environmental
4904 Griggs Road, Houston, Texas
Action Plan to bring facility into compliance with City of Houston Fire Code

Dear Inspector Rey:

Per your request, this letter will serve as an action plan for the submittal of construction documents and the completion of any necessary improvements to bring the CES Environmental facility into compliance with the currently adopted City of Houston Fire Code. The tasks indicated below are based upon the deficiencies noted in the conclusion of the April 10, 2009 Code Evaluation Report. Please refer to the evaluation report for specific code references and more detailed explanation of the tasks listed below.

See cover letter attached from CES Environmental indicating their approval of this action plan.

Note that due to the variety of operations, it is possible that more than one project will be submitted to the City of Houston for this facility.

We propose the following eleven month schedule for completion of the project:

July 3, 2009
Install NFPA 704 placards on all bulk tanks and hazardous materials storage areas.

Provide portable fire extinguishers and a wheeled fire extinguisher for the bulk loading and unloading area in accordance with IFC Chapter 9 and NFPA 10.

Provide an "EMPTY CONTAINER" sign for all exterior areas where cleaned and empty totes and drums are to be stored.

July 17, 2009
A written evaluation of classified electrical areas to be completed by a qualified electrician.

August 7, 2009
The east storage area currently used for gasoline and diesel storage and fueling will be eliminated. Bulk gasoline and diesel will no longer be stored on the property.

September 4, 2009
Submit first quarterly report detailing completed tasks and progress made on outstanding tasks.

The previously full bulk totes stored the west of the facility to be cleaned and removed from the facility.

October 16, 2009
Submit second quarterly report detailing completed tasks and progress made on outstanding tasks.

October 30, 2009
Provide emergency venting in accordance with IFC Chapter 34 and NFPA 30 for bulk tanks OT 11, OT12 and T9.

November 27, 2009
Submit construction documents and revised Hazardous Materials Inventory Statement to the City of Houston Building Department detailing facility modifications and/or improvements to resolve the following items:

1. Reduce quantities, change concentrations or relocate the 55-gallon drum of sulfuric acid currently utilized in the wastewater treatment process to a code compliant exterior storage area. Building C will not be renovated to allow for a hazardous occupancy as would be required for the inside storage of a 55-gallon drum of concentrated sulfuric acid.

2. The provision of spill control and secondary containment in compliance with IFC Chapter 27 for all exterior hazardous material storage and loading/unloading areas.

3. The separation of all incompatible hazardous materials in accordance with IFC Chapter 27.

4. The relocation of the bulk sulfuric acid tank away from Building D to a storage location in compliance with IFC Chapter 27.

5. The modification or relocation of the bulk loading and unloading area to bring the area into compliance with IFC Chapters 27 and 34 and NFPA 30.

6. Changes necessary to bring all classified electrical areas into compliance with IFC Chapter 34, NFPA 30 and the National Electric Code.

7. The provision of a storage area in compliance with IFC Chapter 27 for the storage of previously full totes and drums that have not yet been fully cleaned.

8. The provision of on-site fire hydrants and/or water supplies to satisfy the requirements of IFC Chapter 5.

January 29, 2010
Submit third quarterly report and projected date for approval of construction documents by City of Houston.

EPAHO044000218

April 30, 2010
Construction complete, final inspections complete and all necessary Houston Fire Department permits obtained.

Please advise if this schedule is acceptable to your office. I can be reached at 713-722-3431 with any questions or concerns.

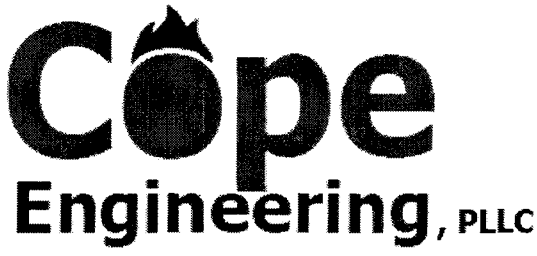
Sincerely,

Ed D. Cope, P.E.
Principal Engineer

cc: Greg Bowman, CES Environmental (gbowman@cesenvironmental.com)
Clark Hickman, CES Environmental (chickman@cesenvironmental.com)

CES Environmental

4904 Griggs Road
Fire Code Evaluation



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April 8, 2009

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4904 Griggs
Fire Code Evaluation

Introduction

This document is intended to provide a code evaluation of the hazardous materials and related operations located at CES Environmental's 4904 Griggs Road facility in Houston, Texas. In a Notice of Violations dated March 26, 2009, Inspector Gerardo Rey with the Houston Fire Department requested a technical report and Hazardous Materials Inventory Statement (HMIS) for the entire facility.

This report does not cover the thermal oxidizing, vacuum distillation or other vapor recovery processes. It is understood that these processes will be detailed in a separate report prepared by an approved consultant. This report does not detail operations or procedures that do not involve hazardous materials. This report is not intended as an evaluation of the code requirements that involve operational practices and procedures such as grounding and bonding. Procedures associated with the loading and unloading of tank cars or bulk storage tanks are therefore not detailed in this report.

This report is based upon the 2003 International Building Code (IBC) and 2000 International Fire Code (IFC), both as amended by City of Houston. These codes are the currently adopted codes in the City of Houston. It will also reference National Fire Protection Association (NFPA) 30 F*lammable and Combustible Liquids Code,* 2003 Edition.

The final determination of code requirements can only be made by the City of Houston Building Official and Fire Marshal. The Code Official's determination of code requirements may differ from that of Cope Engineering due to a number of factors. These factors include past practices, the application of prior codes and differences in perceived hazard.

Operations Descriptions

CES Environmental provides a variety of waste management services for their customers. Services include waste disposal, recycling and re-use, waste classification, non-hazardous waste treatment, waste packaging, waste transportation, tank wash services, tank cleaning services and remediation services. At this facility, their primary operations consist of non-hazardous waste treatment and disposal and the recycling of waste oils.

A diagram of the entire facility can be found in Appendix A. Building A is the main office building and is not included as a part of this report. Building B is the training center and locker room and is not included as a part of this report.

Building C is the wastewater treatment facility. It consists of wastewater treatment facility for the treatment of wastewater metals, wastewater organics and wastewater emulsions. Wastewater is treated in multiple metal and polypropylene tanks. The wastewater treated at this facility is non-hazardous. Chemicals used in the treatment process include a lime solution, sulfuric acid and ferric chloride. In addition, a solid distillation system is located in Building C for the separation of solid materials from wastewater. A filter press is used to separate the waste solids, which are stored for disposal in roll-off containers. Wastewater is received both in bulk containers and metal and plastic drums. There is some storage of waste oil drums also within this building.

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There is a small laboratory in Building C used for evaluating materials received. There are small quantities of lab gases and chemicals utilized within the laboratory. The quantities of these chemicals are under the Maximum Allowable Quantity permitted by IFC Tables 2703.1.1(1) and 2703.1.1(2). Due to the large number of chemicals and small quantities in storage, the laboratory operation is not included as a part of this report.

Building D is the truck maintenance building and tank truck cleaning building. The north half of the facility is utilized for the repair and maintenance of tanker trucks and other vehicles. It does not involve the storage or use of hazardous materials above the Maximum Allowable Quantities permitted by IFC Tables 2703.1.1(1) and 2703.1.1(2). The south half of the facility is used for the cleaning of empty tanker vehicles. The cleaning process involves the mitigation of vapors and residual quantities of materials from the inside of the bulk tanks. Residual waste, sludge and solids are first drained or removed from the tank from the bottom connection. The tank is then cleaned with a three step process that consists of flushing the tank with water, washing the tank using a detergent or diluted non-corrosive caustic solution and then rinsing the tank with water. Waste water from the cleaning process is collected and treated at the wastewater treatment building.

Building E is the equipment cleaning building and is used for the storage and maintenance of equipment and materials. It does not involve the storage or use of hazardous materials above the Maximum Allowable Quantities permitted by IFC Tables 2703.1.1(1) and 2703.1.1(2) and will not be included as a part of this report.

Building H is a maintenance and cleaning building. It is utilized primarily for the cleaning of roll-off boxes, trucks and various containers and equipment. It does not involve the storage or use of hazardous materials above the Maximum Allowable Quantities permitted by IFC Tables 2703.1.1(1) and 2703.1.1(2) and will not be included as a part of this report.

5910 Wayland, Building B is a welding, fabrication, repair and equipment storage facility. It does not involve the storage or use of hazardous materials above the Maximum Allowable Quantities permitted by IFC Tables 2703.1.1(1) and 2703.1.1(2) and will not be included as a part of this report.

There are 22 bulk tanks located in two tank farms: The South Tank Farm and the North Tank Farm. Tanks range in size from 5,800 gallons to 24,360 gallons. There nine tanks located in the South Tank Farm and 13 tanks located in the North Tank Farm. See attached diagrams in Appendix A for a tank farm layout.

The bulk tanks in the tank farms are all used for the storage of waste oil or oil/water mixtures. Water is separated from the oils typically using heat or an emulsifying agent. A single vacuum distillation tank is located in the tank farm when additional separation is necessary. Recovered wastewater is treated and disposed and recovered oil is loaded onto tanker vehicles and shipped to customers.

Tanks are loaded and unloaded from a common loading and unloading area located at the North Tank Farm . Flammable and combustible liquids are loaded and unloaded from bulk trucks at this station. They are transported by pump through flexible and rigid piping system to the various bulk tanks or other tanker vehicles.

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The yard area is used for the storage of totes, drums, tanker trucks, roll-off boxes and other bulk containers, both full and empty. The majority of storage is of empty containers or non-hazardous materials. There is a staging area located directly to the west of the North Tank Farm where full tanker trucks ready for over-the-road activity are stored prior to leaving the facility. In addition, empty totes and drums waiting for cleaning in Building E are stored in the yard area immediately to the west of the staging area.

Occupancy Classification

The International Fire Code groups hazardous materials into a number of different hazard classifications. The IFC further determines an occupancy classification for facilities where hazardous materials are stored and used based upon the volume of hazardous materials in storage. If storage is above the Maximum Allowable Quantity (MAQ) specified in the code for a given hazard class of chemical, then the facility is considered a hazardous occupancy. Table 1 below indicates the MAQ provided in IFC Tables 2703.1.1(1), 2703.1.1(2) 2703.1.1(3) and 2703.1.1(4) for the materials to be stored within this facility.

Table 1. 2000 IFC Maximum Allowable Quantities

Hazard Class	MAQ Inside Storage	MAQ Outside Storage
Flammable Class I-B	60 Gallons	0 Gallons
Combustible Class II	120 Gallons	0 Gallons
Combustible Class III-B	13,200 Gallons	0 Gallons
Oxidizer, Class 2	250 Pounds	1,000 Pounds
Water Reactive, Class 2	50 Pounds	200 Pounds
Toxic	500 Pounds	1,000 Pounds
Corrosive	500 Gallons	2,000 Gallons

The current quantities of hazardous materials stored within each of the buildings or storage areas is detailed in the Hazardous Materials Inventory Statement (HMIS) found in Appendix B.

The only building that has regular quantities of hazardous materials in storage and/or use is Building C, the wastewater treatment building. This building is not provided with sprinkler protection. The bulk lime solution has a pH low enough that it would not be considered a corrosive material. The waste oil is stored for testing within the building in steel drums. The maximum quantity of waste oil in storage is reported at 12, 375 gallons (225 drums). This is below the exempt limit of 13,200 gallons for a non-sprinklered building. A 55-gallon drum of sulfuric acid is used in the treatment process and is classified as corrosive, toxic and a class 2 water reactive. This amount will exceed the MAQ of 50 pounds for a class 2 water reactive.

In accordance with IFC Table 2703.1.1.(1), the wastewater treatment building would be classified as an H-3 occupancy given the storage of class 2 water reactives above MAQ. The wastewater treatment building has a certificate of occupancy for an S-1 occupancy classification with no high-pile or hazardous materials. If quantities of sulfuric acid can not be reduced, diluted, segregated or otherwise stored to bring the volume under the maximum allowable quantity, an H-3 hazardous occupancy would be required for Building C. See below for additional information on the design requirements associated with this occupancy classification.

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As no structures exist for the exterior storage areas, an occupancy classification would not be assigned for these areas. However, each of the exterior storage areas exceeds the Maximum allowable quantity of one or more hazardous materials listed in Table 1 above. Each of the areas would therefore be subject to design requirements associated with the storage of hazardous materials within the area. See below for additional information on each of the areas.

Building C – Wastewater Treatment

If the decision is made to continue the storage of sulfuric acid above exempt quantities, an H-3 occupancy classification will be necessary as detailed above. A summary of the basic design features associated with this occupancy is outlined in Table 2 below.

Table 2. H-3 Class 2 Water Reactive Summary of Design Features

Requirement	Reference
Provide rated occupancy separations between the H-3 area and the remainder of the facility in accordance with IBC Table 302.3.2.	IBC 302.3.2
Not less than 25% of the perimeter wall of the H-3 area shall be along an exterior wall.	IBC 415.3
Allowable area to be in accordance with IBC Table 503.	IBC 503
Provide rated exterior walls in accordance with Table 602.	IBC 602.1
Provide a minimum of two exits from H-3 area unless occupant load is 3 or less and the common path of egress travel does not exceed 25-feet.	IBC 1018
Distance to an exit must be no more than 150 feet per IBC Table 1015.1.	IBC 1015.1
Provide containment for 20-minutes of firewater flow plus the volume of the largest container.	IFC 2704.2
Provide mechanical ventilation at a rate of 1 CFM per square foot of floor area over the entire H-3 area. Provide manual shut-off control.	IFC 2704.3.1
An automatic sprinkler system is required.	IFC 2704.5
Provide standby power for mechanical ventilation system.	IFC 2704.7
An emergency alarm is required. Install pull-stations outside interior exits from room. Alarm should be centrally monitored.	IFC 2704.9 & IFC 2704.10
Floors in storage areas shall be of liquid-tight construction.	IFC 4404.1.2
Rooms used for the storage of water-reactives shall be constructed in a method which resists the penetration of water.	IFC 4404.1.3
Smoke and heat venting shall be provided.	IFC 4404.1.4
Provide explosion control in accordance with Section 911	IFC 4404.1.7

These improvements would require significant modifications to the facility. Alternatively, the quantities of sulfuric acid could be reduced, diluted or segregated to ensure that they do not exceed the maximum allowable quantity. An H-3 occupancy would not then be required and the existing S-1 occupancy class could be continued.

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Tank Farms

The bulk storage of flammable and combustible liquids is regulated by IFC Sections 3403 and 3404. The primary requirements of those sections are summarized in Table3 below.

Table 3. Tank Farm Primary Requirements

Requirement	Reference
Provide classified electrical locations when required for flammable and combustible liquids.	IFC 3403.1.2
Provide an approved piping system.	IFC 3403.6
Labeling and signs.	IFC 3404.2.3
Tank separation from incompatible materials.	IFC 3404.2.6
Tanks to be designed in accordance with an approved standard from NFPA 30.	IFC 3404.2.7
Provide tank vents for normal venting.	IFC 3404.2.7.3
Provide emergency venting when required.	IFC 3404.2.7.4
Provide overfill prevention.	IFC 3404.2.7.5.8
Provide 2-hour fire resistive rating on Class I, II or IIIA liquid tank supports.	IFC 3404.2.9.1.3
Location of tanks to be in accordance with NFPA 30, Table 2-1.	IFC 3404.2.9.5.1.1
Adequate separation to be provided between adjacent flammable and combustible liquid tanks.	IFC 3404.2.9.5.2
Provide drainage and diking.	IFC 3404.2.10

IFC 3403.1.2 only requires that a classified location for combustible liquids be provided when the liquids are heated above their flash point. There are no flammable liquids in storage within the tank farms and none of the liquids stored within the tank farms are heated above their flash points. Ten of the tanks are provided with steam jackets to heat the oil/water emulsions to a maximum temperature of 180°F. All of the materials are Combustible Class III-B liquids with flash points in excess of 200°F. As a result, a classified electrical area does not currently exist in either of the tank farms. Existing electrical service and equipment in the tank farms and consists of a mixture of classified and ordinary.

The piping system consists of both hard-piped loading connections to the bulk tanks and flexible hose connections for loading and unloading. Piping systems are primary located within the tank farms and are sufficiently protected in accordance with IFC 3403.6.4. The pipe rack at the loading and unloading area is within the tank farm and is protected by the containment curb from vehicular damage.

In accordance with IFC 3403.6.6, a sufficient number of manual control valves are provided for the piping systems to operate the facility and protect the plant under normal and emergency conditions. All bulk tanks have connections below the liquid level. All connections have an isolation valve located next the shell of the tank in accordance with IFC 3403.6.7. Pipe joints throughout the tank farms are threaded in accordance with IFC 3403.6.10.

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Overhead piping systems within the tank farms are supported with metal supports. They are protected against physical damage by drainage in accordance with IFC 3403.6.8.

Signs prohibiting smoking are provided in storage areas in accordance with IFC 3404.2.3.1. Only the bulk sulfuric acid tank is currently provided with a Hazard Identification placard (i.e. NFPA 704 Diamond) in accordance with NFPA 704 and IFC 3404.2.3.2.1. Hazard identification placards should be provided for all bulk tanks storing combustible liquids and all hazardous materials chemical storage areas.

There are no incompatible materials stored within any of the tank farms.

All of the 22 bulk tanks are provided with a permanent nameplate indicating the manufacturer, serial number and additional information. The tanks in the South tank farm were manufactured in 2007 by Lide Industries in Mexia, Texas and are labeled as being in compliance with API. This has been verified by the manufacturer to be API 12 F Specification for Shop Welded Tanks for Storage of Production Liquids (must verify this!!!!!). The tanks in the North tank farm were manufactured in 2005 by Permian Tank in Odessa, Texas and are labeled as being in compliance with API 12F. API 12F is an acceptable standard under NFPA 30, 2.2.3.1.1. A summary of tanks and the design standard used can be found in Appendix E.

Normal venting is required in atmospheric tanks to prevent the development of vacuum or pressure when filling or emptying the tank or due to temperature changes. All tanks are provided with normal pressure/vacuum vents. Due to the height of the tanks, the vent outlet is located not less than 12-feet above the adjacent ground level in accordance with IFC 3404.2.7.3.3. All vents are installed at the top of the tanks in accordance with IFC 3404.2.7.3.4. There is no manifolding of the pressure/vacuum vents.

Emergency venting is required to relieve excess internal pressure caused by exposure to fires. In accordance with IFC 3404.2.7.4, emergency venting is to be installed in accordance with NFPA 30. Per the exception to NFPA 30 Section 2.2.5.2.1, emergency venting is not required for tanks larger than 12,000 gallons in capacity storing Class III-B liquids which are not within the diked area or the drainage path of Class I or II liquids. None of the tanks in the tank farm are provided with an emergency vent. Eighteen of the 22 tanks are larger than 12,000 gallons in capacity and are not required to be provided with an emergency vent. Tanks OT11 and OT12 in the North tank farm and tank T9 in the South tank farm are all less than 12,000 gallons and are used for the storage of Combustible Class III-B liquids.

For these three tanks, the minimum venting capacity has been determined based upon the wetted area of the tank in accordance with NFPA 30, Section 2.2.5.2.3 and Table 2.2.5.2.3. The required vent opening size was determined based upon Table 10 from Handbook of Storage Tank Systems (Handbook of Storage Tank Systems, Wayne B. Geyer, Editor, 2000, Marcel Dekker, Inc.). See Appendix C. Each of these three tanks should be provided with emergency venting if they continue to be used for the storage of combustible liquids.

IFC 3404.2.9.2 requires that supports, foundations and anchorage shall be designed in accordance with NFPA 30 and the International Building Code. None of the bulk tanks are provided with structural supports that elevate the tank because they sit direct on the foundation of the containment area. Plans are not available for the foundation and anchorage of the tanks. A structural review of these items by a qualified structural engineer will need to be completed as part of the plan submittal process for the tank farms.

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IFC 3404.2.9.5.1.1 requires that tanks be located in relation to property lines and in accordance with NFPA 30, Table 2-1. The City of Houston has adopted the 2000 Edition of NFPA 30, which has renumbered Table 2-1 to Table 2.3.2.1.1(a). In accordance with Section 2.3.2.1.1, this table applies only to Class I, II or IIIA liquids. For tanks containing Class IIIB liquids, NFPA 30, Table 2.3.2.1.5 is applicable. For tanks 12,000 gallons or less, a minimum distance from property lines of 5-feet and a minimum distance to buildings and public ways of 5-feet is required. For tanks 12,001 gallons to 30,000 gallons, a minimum distance from property lines of 10-feet and a minimum distance to buildings and public ways of 5-feet is required. There are no tanks containing Class IIIB liquids greater than 30,000 gallons. All of the bulk storage tanks meet the spacing requirements of Table 2.3.2.1.5.

Per IFC 3404.2.9.5.2, the separation distance between adjacent tanks containing stable liquids shall be in accordance with NFPA 30, Table 2-7. The City of Houston has adopted the 2000 Edition of NFPA 30, which has renumbered Table 2-7 to Table 2.3.2.2.1. Per NFPA 30, Section 2.3.2.2.1, Exception 2, tanks within both tank farms contain only III-B liquids and require a separation distance of 3-feet. Tank separation in the south tank farm is three feet between tanks in both directions. Tank separation in the north tank farm is a minimum of 3-feet between tanks in both directions. As a result, all tanks in both tank farms have an adequate separation distance.

Containment calculations for the containment area of the tank farm have been completed and are included in Appendix D. The containment area for the tank farms is a minimum 24-inch high concrete retaining wall extending all the way around the tank farms. The North and South tank farms both have sealed metal removable sections All tanks rest on the foundation. All tank areas are of sufficient size to contain the volume of the largest tank as required by IFC Section 3404.2.10.1.

Per IFC 3404.2.10.2, diked areas containing two or more tanks shall be subdivided in accordance with NFPA 30. NFPA 30, 2.3.2.3 does not require control of spills for tank farms containing only III-B liquids. As a result, intermediate dike walls specified in NFPA 30, Section 4.3.2.3.2(f) would not be required for either tank farm.

IFC 3404.2.10.5 requires that pumps, manifolds and equipment in diked areas that are integral to the tanks being served be protected by intermediate diking, berms, drainage or other fire protection. Existing pumps and piping within diked areas are protected by drainage, which is sloped to a sump. The percent of slope is undocumented. No sprinkler protection, fire barriers or other fire protection is provided. Rainwater and other liquids collected in the drainage system are transferred to the wastewater treatment facility for treatment and disposal.

Outside Storage Areas

In addition to the tank farms, there are three exterior areas used for the storage of hazardous materials in bulk or portable containers. See the HMIS in Appendix B for a summary of hazardous materials in each area and the Facility diagram in Appendix A for the location of each storage area.

The primary code requirements for each of the storage areas are listed in Table 4 below.

Table 4. Outdoor Hazardous Materials Storage Requirements

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Requirement	Reference
Provide Spill Control and Secondary Containment.	IFC 2704.2
Separate incompatible materials by providing a 20-foot separation distance or a non-combustible barrier.	IFC 2703.9.8
Locate storage area in accordance with Table 3404.4.2.	IFC 3404.4.2
Provide security against tampering or trespassers by fencing or other measures.	IFC 3404.4.4
A clearance of 15-feet from combustibles should be maintained around the storage area.	IFC 3404.4.6
Separate corrosive storage from buildings, lot lines and streets by a distance of 20-feet.	IFC 3104.2.2
Separate Class 2 water reactive liquids from buildings, lot lines and streets by a distance of 20-feet.	IFC 4404.2.3
Separate Class 2 Oxidizers from from buildings, lot lines and streets by a distance of 35-feet.	IFC 4004.2.1

West Storage Area

The West storage area is used for the storage primarily of drums and totes of materials associated with the water treatment plant. Emulsifying agents for the tank farms area also stored within the area. The area consists of an elevated concrete area of approximately 20-feet by 20-feet with a 8-inch containment curb on three sides. The front of the area is ramped with no containment. There are four racks sections, each three tiers high, located within the area for material storage. Materials are stored both within the racks and on the ground.

Although a curb is provided for three sides of the West storage area, there is no containment on the front side. As a result, the spill control and secondary containment requirements of IFC 2704.2 are not satisfied.

There are a number of incompatible materials located within the West storage area. Examples include, but are not limited to, nitric acid and 2-propanol, sodium hydroxide and hydrochloric acid, and sulfuric acid and phosphoric acid. These materials should be separated by a minimum 20-foot distance or non-combustible barrier in accordance with IFC 2703.9.8. A complete incomparability evaluation should be completed for all chemicals within the storage area prior to determining separation requirements.

IFC Table 3404.4.2 requires separation distances for flammable and combustible liquids from property lines and streets. For the worst-case flammable Class I-B liquids in storage, this distance is required to be 50-feet from lot lines of properties that can be built upon and 10-feet to streets or public ways. In accordance with footnote d, this distance can be reduced by half due to the limited quantities in storage. The West storage area is more than 50-feet from lot lines of properties that can be built upon. It is located immediately next to Wayland Road, which is not developed and closed to the public. Likewise, the corrosive, water reactive and oxidizing materials are required to be separated by up to 35-feet from buildings, lot lines and streets. The West storage area is in compliance with these separation distance requirements.

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The facility if fully fenced with a access controlled security system in compliance with IFC Section 3404.4.4. There are no combustible materials located near the West storage area in accordance with IFC Section 3404.4.6.

East Storage Area

The East storage area is used for the storage of diesel and gasoline for use by on-site industrial trucks. It consists of a large metal container with an exposed front used to shelter the diesel and gasoline. Primary storage is in two 250-gallon metal tanks with pumps. There is also some storage of diesel within a tote and metal drum within the container.

There is no containment provided for the East storage area as required by IFC Section 2704.2.

There are no incompatible materials located within the East storage area.

IFC Table 3404.4.2 requires separation distances for flammable and combustible liquids from property lines and streets. For the worst-case flammable Class I-B liquids in storage, this distance is required to be 50-feet from lot lines of properties that can be built upon and 10-feet to streets or public ways. In accordance with footnote d, this distance can be reduced by half due to the limited quantities in storage. The East storage area is located approximately 5-feet from a fence which is assumed to be the property line with the residential neighborhood immediately to the East of the facility. The storage area should be located at least 25-feet from this fence.

There are no combustible materials located near the East storage area in accordance with IFC Section 3404.4.6.

Sulfuric Acid Tank

The Sulfuric Acid tank is used strictly for the storage of concentrated sulfuric acid solution. The tank is of polypropylene construction. The tank sits on a metal grate over a poured concrete containment curb. The tank is located immediately between Building D and the loading & unloading area.

Containment calculations for the containment area of the sulfuric acid tank farm are included in Appendix D. The containment area is adequate in accordance with IFC Section 3404.2.10.1. However, the tank is situated over the containment area such that the edge of the tank extends beyond the containment wall.

Sulfuric acid is incompatible with many of the hydrocarbon-based products that are loaded and unloaded in the tank vehicle loading area. It is located less than 20-feet from this area. There should be a greater than 20-foot separation between the sulfuric acid and the loading area.

IFC 3104.2.2 requires a 20-foot separation between the sulfuric acid tank and buildings, lot lines and streets. The tank is located approximately 1-foot from Building D but is not located in proximity to any streets or lot lines.

Staging of Full Tank Vehicles

Full tank vehicles are staged at the facility within a designated area immediately to the west of the tank farms. These vehicles will contain flammable and combustible liquids. They consist of

oils being loaded or unloaded from the tank farm or flammable liquids being received and/or shipped to and from customers. There are no bulk storage tanks for flammable liquids at the facility. The only bulk storage of flammables would be within the tank vehicles being staged at the facility under shipping papers.

Even if under shipping papers, the staging of full tank vehicles would be subject to local Fire Code requirements so long as those requirements do not provide an obstacle to federal DOT regulations in accordance with Pipeline and Hazardous Materials Safety Administration Docket No. PHMSA–03–16456.

IFC Section 3404.2.2 does not allow tank vehicles to be used as storage tanks. The International Fire Code does not specify the length of time which a tank vehicle can be staged before the condition would be considered storage.

In accordance with IFC Section 3406.6.2.1, tank vehicles shall not be left unattended at any time within 500-feet of a residential area. The staging area is within 200-feet of a residential area. CES has indicated that the facility is attended by personnel at all times. As the code does not define 'left unattended', it would be the decision of the Code Official to determine the extent of attendance required.

For durations exceeding 1 hour in length, the tank vehicles must be parked 25-feet or more from the nearest lot line in accordance with IFC 3406.6.2.3. The staging area is located adjacent to the portion of Wayland Road that is closed to the public. It is located more than 25-feet from the nearest lot line of any occupied property.

Tank vehicles located on property maintain certification in accordance with IFC 3406.5.1.15 and DOTn 49 CFR, Parts 100-178.

Loading & Unloading

Loading and unloading operations associated with tank cars and bulk vehicles is regulated by IFC Section 3406.5. There is a single loading and unloading area that services the tank farms. Materials may also be transferred between tank vehicles from the loading and unloading area. All bulk tanks are loaded from this area, which is located next to Building D just north of the North tank farm. An attendant is present during all transfer operations.

Per IFC 3406.5.1.1, tank car transfer facilities shall be separated from buildings, tanks, combustible materials, lot lines, streets and public ways by a distance of 25-feet measured from the nearest position of any loading or unloading valve for Class I liquids and 15-feet for Class II and III liquids. NFPA 30, Section 5.6.3 contains similar requirements and uses the term "transfer connection". The loading area is located approximately 10-feet from Building D and immediately adjacent to the North tank farm. Transfer connections for the bulk tanks are located at the containment wall off the loading area just inside the north tank farm. Adequate separation distances are maintained from combustible materials, lot lines, streets and public ways but tank valves and connections are within 25-feet of both building D and the North tank farm and within 15-feet of the north tank farm.

IFC 3406.5.1.5 requires spill control and secondary containment for loading and unloading areas. The capacity should be that of the largest tank compartment to be located in the loading area. The main loading and unloading area is surrounding on three sides by curbing ranging in height from 6-inches to 24-inches. The containment area slopes to a sump in the rear and has

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no containment curbing to the front. The amount of slope is unknown. Due to the lack of a containment curb to the front of the loading area, the amount of available containment would be minimal. The largest volume tank truck would be 4,500 gallons and could not be contained within this area.

IFC 3406.5.1.12 requires that loading racks, stairs or platforms be of noncombustible construction. There is no combustible construction in or around the loading and unloading area.

Portable fire extinguishers and hose lines are not provided for the loading and unloading area in accordance with IFC 3406.5.1.6 and Section 3403.2.1. Portable fire extinguishers are located within buildings throughout the facility. Hose lines are not provided as there is no firewater supply associated with the facility.

Security for the loading and unloading area is provided by a security fence surrounding the entire facility in accordance with IFC Section 3406.5.1.18.

IFC Section 3403.1.1 specifies classified electrical locations for areas where flammable liquids are handled. In accordance with Section 3403.1.2, a classified area would not be required for the transfer of combustible liquids. Although most of the materials handled in the loading and unloading area are combustible III-B liquids, there is some transfer of flammable liquids for which classified areas would be required. For tank vehicle and tank car loading and unloading, classified locations are detailed in Table 3403.1.1.

In accordance with Table 3403.1.1, for loading through closed domes, a Class I, Division 1 location would exist within 3-feet of of the open end of the vent, extending in all directions. A Class I, Division 2 location would exist in the area between 3 feet and 15 feet from the open end of the vent and within 3 feet of the edge of the dome, extending in all directions. For bottom loading, a Class I, Division 2 location would exist with 3 feet of the point of connection, extending in all directions and also up to 18 inches above grade within a horizontal radius of 10 feet from the point of connection. There is both rated an unrated electrical service and equipment located in and around the loading area. It is recommended that a qualified electrician be contracted to evaluate the area to determine if any unrated electrical equipment exists within a classified area.

Empty Portable Containers & Tank Vehicles

There are a substantial number of empty totes stored in a grassy area to the west side of the facility behind the tanker vehicle staging area. These totes are waiting to be cleaned in Building E. In accordance with IFC Section 3404.4.8, these containers must be considered as full unless and until they are free from explosive vapors.

The containers should be stored in an area that meets the requirements from Table 3 for outside flammable and combustible liquids storage prior to cleaning. Once cleaned, they should be visibly marked as empty and stored in an approved area marked for "Empty Containers" as required by Section 3404.4.8.

Empty tank vehicles are cleaned within one of two wash bays located in Building D. Tank vehicles that are cleaned include tanks that have been used for the transportation of flammable and combustible liquids. The tank cleaning manager has indicated that the volume of flammable or combustible liquids remaining that are drained from the tanks at the time of cleaning would be less than the maximum allowable quantity from IFC Table 2703.1.1(1). See

Table 1 above. As a result, a hazardous occupancy would not exist for the tank cleaning building. However, the hazard associated with residual materials and vapors within the tank must be addressed.

IFC Section 3403.1.1 specifies classified electrical locations for areas where flammable liquids are handled. The tank cleaning area would be considered a repair garage for tank vehicles. In accordance with Table 3403.1.1, a Class I, Division 1 area would exist in any pits or spaces below floor level. Areas up to 18 inches above floor level for the entire repair garage would be a Class I, Division 2 area. Any electrical equipment within these classified areas should be appropriately rated. It is recommended that a qualified electrician be contracted to evaluate the area to determine if any unrated electrical equipment exists within a classified area.

Fire Service

To allow adequate access and water supply, a number of fire service features are required for buildings, structures and premises by IFC Chapter 5.

A fire apparatus access road is required to within 150-feet of all portions of the facility in accordance with IFC Section 503.1.1. The facility is provided with paved access throughout and is approximately 1,150 feet deep. Due to the regular need for large vehicle traffic, this access is sufficient to allow a 26-foot wide access road and full turnaround at the rear of the facility as required by LSB Standard #03, Appendix C. An overhead walkway is provided over the access road at the rear of the facility. The walkway has a vertical clearance of approximately 20-feet in compliance with Section 503.2.1. It has not been determined if the paved surface is able to support the imposed load of a 90,000 pound fire apparatus as required by LSB Standard #03, Section 3.4.6.2. Fire lanes are not currently marked. Marking is only necessary if required by the Code Official.

The access control gate at the front of the facility is provided with an electronic means of access. A 911 lock box with automatic electronic opening of the gate is provided as required by IFC 503.5 and LSB Standard #04 Access Control Gates. The access gate is 17-feet in width. IFC Section 503.2.1 allows approved security gates to have an unobstructed width of less than 20-feet.

An approved water supply is required for the facility in accordance with IFC Section 508.1. The existing water supply consists of domestic water service along Griggs Road. The nearest hydrant is located at the front of the facility near the intersection of Griggs and Wayland Road. There are other nearby hydrants servicing adjacent residential areas but these hydrants are not provided with approved routes to the property. In accordance with Section 508.5.1, a hydrant must be located within 400-feet of unsprinklered buildings or portions of the facility. The South tank farm is the furthest exposure and is located approximately 960-feet from Griggs Road. Additional on-site fire hydrants, water monitors or other approved water supplies are required to satisfy IFC Section 508.

Conclusion

There are a number of concerns identified with the storage and handling of hazardous materials within the facility as a result of this code evaluation. These concerns are summarized as follows:

EPAHO044000233

Additional on-site fire hydrants, water monitors or other approved water supplies are required to satisfy IFC Section 508.

Conclusion

There are a number of concerns identified with the storage and handling of hazardous materials within the facility as a result of this code evaluation. These concerns are summarized as follows:

Use smaller drum

1. Sulfuric Acid storage within Building C should be reduced, diluted, segregated or otherwise stored to bring the volume under the maximum allowable quantity or an H-3 hazardous occupancy should be permitted.

place placeards

2. Hazard identification placards should be provided for all bulk tanks storing combustible liquids and all hazardous materials chemical storage areas.

put relief vents on these

3. Tanks OT11, OT12 and T9 should be provided with emergency venting if they continue to be used for the storage of combustible class III-B liquids.

Put front curb in and move out one row of closest Tanks

4. The spill control and secondary containment requirements of IFC 2704.2 are not satisfied for the loading and unloading area, west storage area, east storage area and sulfuric tank area.

figure this out

5. Incompatible materials located in the west storage area and sulfuric acid tank area should be segregated in accordance with IFC Section 2704.2.

move and put metal containment liner

6. The East storage area is located approximately 5-feet from a fence which is assumed to be the property line with the residential neighborhood immediately to the East of the facility. The storage area should be located at least 25-feet from this fence in accordance with IFC Table 3404.4.2 .

ok

Fueling activities at the East storage area should be in compliance with IFC Chapter 22.

See #4 above

8. The sulfuric acid tank should not be located any closer than 20-feet from Building D as required by IFC 3104.2.2.

See #8 and #4 above

9. The loading and unloading area is located closer to buildings and storage tanks than allowed by IFC 3406.5.1.1.

provide Extinguishers

10. Portable fire extinguishers and hose lines should be provided for the loading and unloading area in accordance with IFC 3403.2.1.

?

11. A qualified electrician should be contracted to evaluate the loading and unloading area and tank wash building to determine if unrated electrical equipment and service exists within a classified electrical area.

This is just housekeeping

12. Empty containers that previously contained hazardous materials and have not been cleaned that are in outside storage should be stored in a contained hazardous materials area. Cleaned containers should be stored in an approved area marked for "Empty Containers".

EPAHO044000234

Run Hose or pipe from Fire Hydrant

13. Additional on-site fire hydrants, water monitors or other approved water supplies are required to satisfy IFC Section 508.

For questions or comments regarding this report, please contact Ed Cope with Cope Engineering at 713-426-2326 or edcope@copeengineering.com.

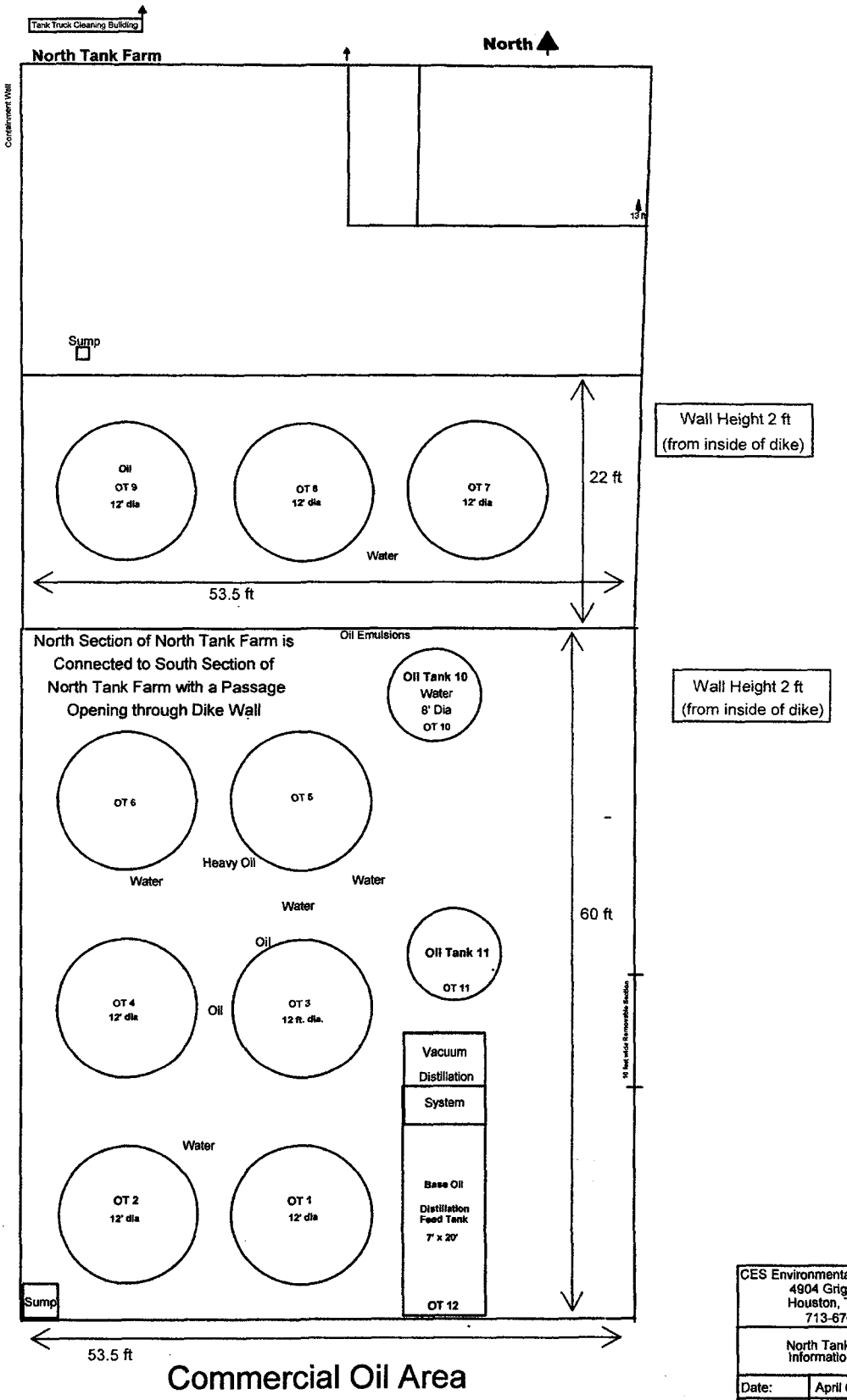
Prepared by,

Ed D Cope

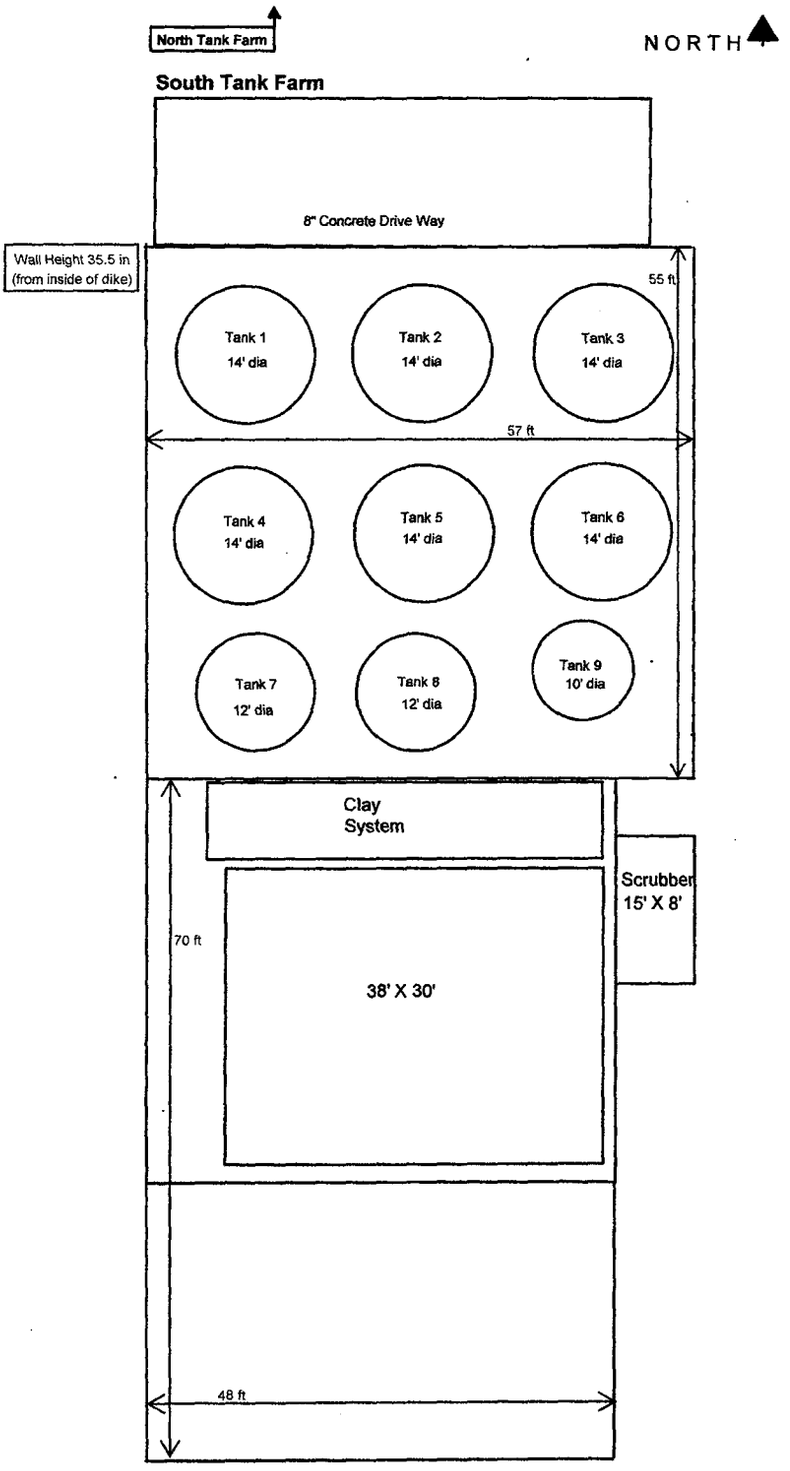
Ed D. Cope, P.E.
Principal Engineer

EPAHO044000235

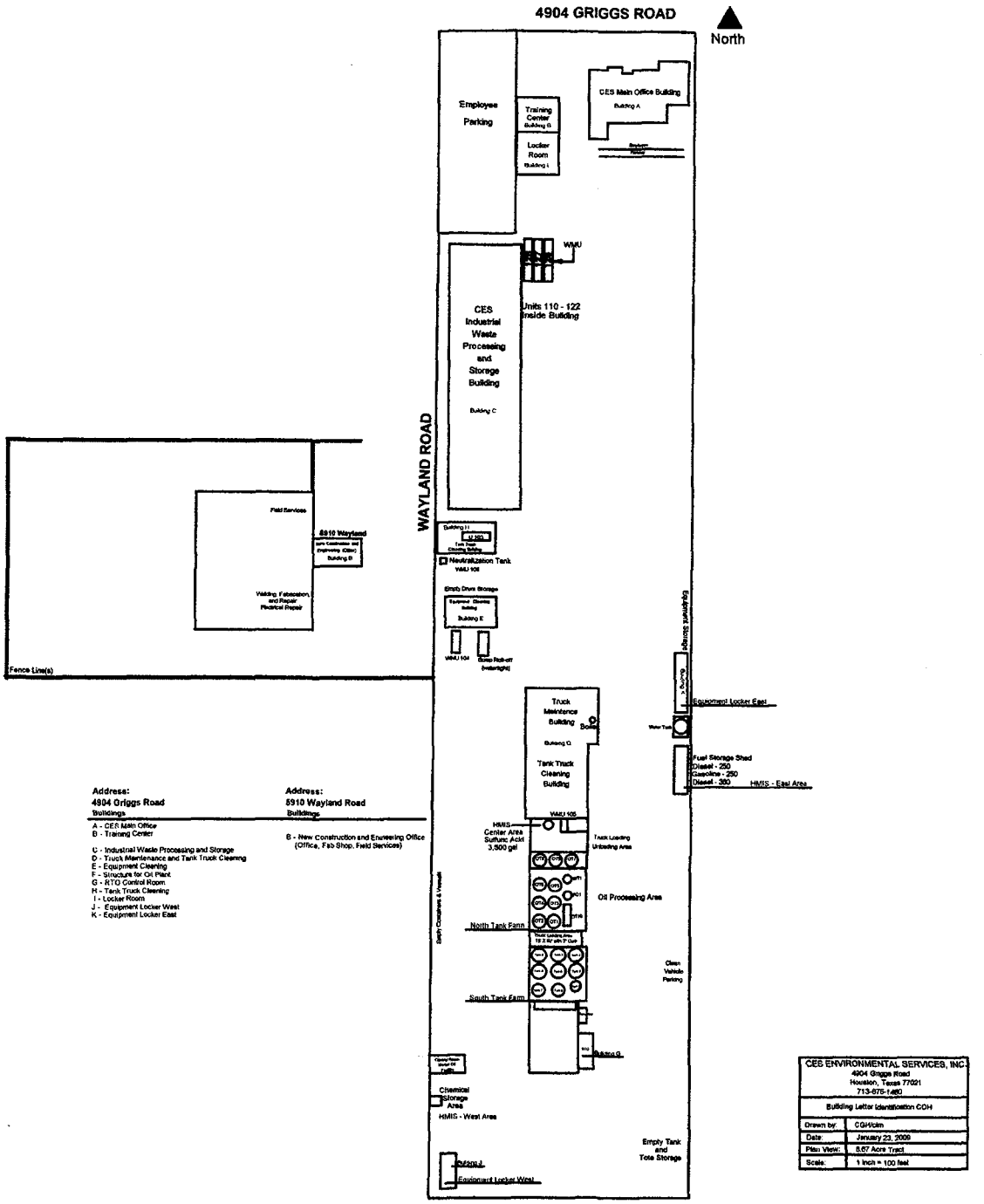
APPENDIX A
FACILITY DIAGRAMS



CES Environmental Services, Inc. 4904 Griggs Road Houston, TX 77021 713-676-1460	
North Tank Farm Information CoH	
Date:	April 6, 2009
Drawn By:	CGH/clm
Scale:	NTS



CES Environmental Services, Inc. 4904 Griggs Road Houston, TX 77021 713-676-1460	
South Tank Information CoH	
Date:	April 6, 2009
Drawn By:	CGH/clm
Scale:	NTS



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APPENDIX B
HMIS

Location of Chemicals:
Inside: _____
Outside: __X__

Applies To:
Use-Open: _____
Use-Closed: _____
Storage: __X___

HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)

Business Name: __CES Environmental_____
Address: ___4904 Griggs, Houston, TX_____
Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct.
Print Name: _____ Title: _____
Signature: _____ Date: _____

Indicate the chemical area, as designated on the site plan.

Area:
_South Tank Farm__

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Combustible Class III-B	Tank T1 – Oil/Water Mixture	Waste Oil	Varies	Liquid	24,360	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T2 – Oil	Waste Oil	Varies	Liquid	24,360	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T3 – Oil	Waste Oil	Varies	Liquid	24,360	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T4 – Oil/Water Mixture	Waste Oil	Varies	Liquid	24,360	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T5 – Oil	Waste Oil	Varies	Liquid	24,360	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T6 – Oil	Waste Oil	Varies	Liquid	24,360	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T7 – Oil	Waste Oil	Varies	Liquid	16,800	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T8 – Oil	Waste Oil	Varies	Liquid	16,800	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank T9 – Oil	Waste Oil	Varies	Liquid	9,400	GAL	A, 4, 1	H-1 F-1 R-0

EPAHO04400241

Location of Chemicals: Inside: _____ Outside: X Applies To: Use-Open: _____ Use-Closed: _____ Storage: X	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: CES Environmental Address: 4904 Griggs, Houston, TX Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: North Tank Farm

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Combustible Class III-B	Tank OT1 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT2 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT3 – Base Oil	Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT4 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT5 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT6 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT7 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT8 – Oil/Water Mixture	Waste Oil	Varies	Liquid	16,800	GAL	A, 5, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT9 – Oil	Oil	Varies	Liquid	16,800	GAL	A, 4, 1	H-1 F-1 R-0
Non-Hazardous	Tank OT10 – Water	Water	7732-18-5	Liquid	7518	GAL	A, 4, 1	H-0 F-0 R-0

EPAHO04400242

Location of Chemicals: Inside: _____ Outside: __X__ Applies To: Use-Open: _____ Use-Closed: _____ Storage: __X___	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: __CES Environmental_____ Address: ___4904 Griggs, Houston, TX_____ Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: _North Tank Farm__

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Combustible Class III-B	Tank OT11 – Oil	Oil	Varies	Liquid	7518	GAL	A, 4, 1	H-1 F-1 R-0
Combustible Class III-B	Tank OT12 – Base Oil	Oil	Varies	Liquid	5800	GAL	A, 4, 1	H-1 F-1 R-0
Corrosive Toxic Water Reactive Class 2	Sulfuric Acid Tank	Sulfuric Acid 100%	7664-93-9	Liquid	3500	GAL	A, 4, 1	H-3 F-0 R-2

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Location of Chemicals:
Inside: _____
Outside: X

Applies To:
Use-Open: _____
Use-Closed: _____
Storage: X

HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)

Business Name: CES Environmental
Address: 4904 Griggs, Houston, TX
Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct.
Print Name: _____ Title: _____
Signature: _____ Date: _____

Indicate the chemical area, as designated on the site plan.

Area:
West Storage Area

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Non-Hazardous	Commercial Bleach	Sodium Hyprochlorite 12.5%	7681-52-9	Liquid	500	GAL	O, 4, 1	H-2 F-0 R-0
Corrosive	Caustic Soda	Sodium Hydroxide 50%	1310-73-2	Liquid	110	GAL	D, 4, 1	H-3 F-0 R-1
Corrosive	Weak Caustic Solution	Sodium Hydroxide 15% Sulfurized Isobutylene 2% Sodium Hydrosulfide 5%	1310-73-2 68511-50-2 16721-80-5	Liquid	1,000	GAL	O, 4, 1	H-3 F-0 R-1
Non-Hazardous	Ferric Chloride Solution	Ferric Chloride 45%	7705-08-0	Liquid	4,350	GAL	O, 4, 1	H-3 F-0 R-0
Corrosive Oxidizer Class 2	Nitric Acid	Nitric Acid 50-70%	7697-37-2	Liquid	300	GAL	O, 4, 1	H-3 F-0 R-0
Corrosive	Phosphoric Acid	Phosphoric Acid 55-95%	7664-38-2	Liquid	55	GAL	D, 4, 1	H-3 F-0 R-0
Corrosive Toxic Water Reactive Class 2	Sulfuric Acid	Sulfuric Acid 52-100%	7664-93-9	Liquid	850	GAL	O, 4, 1	H-3 F-0 R-2
Corrosive	Aluminum Chloride	Aluminum Chloride 69%	7784-13-6	Liquid	1,000	GAL	O, 4, 1	H-3 F-0 R-0
Corrosive	Hydrochloric Acid	Hydrochloric Acid	7647-01-0	Liquid	55	GAL	D, 4, 1	H-3 F-0 R-0

(b) (4)

[redacted]

EPAHO04000244

Location of Chemicals: Inside: _____ Outside: X Applies To: Use-Open: _____ Use-Closed: _____ Storage: X	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: CES Environmental Address: 4904 Griggs, Houston, TX Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: West Storage Area

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Flammable Class I-B	Isopropyl Alcohol	2-Propanol	767-63-0	Liquid	55	GAL	D, 4, 1	H-2 F-3 R-0
(b) (4)								
Combustible Class II	Dyna Strip 777	Aromatic Hydrocarbons 50% Napthalene 6% 1,2,4 Trimethylbenzene 1.5%	64742-94-5 91-20-3 95-63-6	Liquid	110	GAL	D, 4, 1	H-2 F-2 R-0

EPAHO04000245

Location of Chemicals: Inside: _____ Outside: __X__ Applies To: Use-Open: _____ Use-Closed: _____ Storage: __X__	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: __CES Environmental_____ Address: ___4904 Griggs, Houston, TX_____ Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: _East Storage Area__

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Flammable Class I-B	Gasoline	Unleaded Gasoline 100%	86290-81-5	Liquid	250	GAL	A, 4, 1	H-1 F-3 R-0
Combustible Class II	Diesel Fuel	Diesel Fuel No. 2	68476-34-6	Liquid	610	GAL	A, 4, 1	H-0 F-2 R-0

EPAHO04000246

Location of Chemicals: Inside: _____ Outside: __X__ Applies To: Use-Open: _____ Use-Closed: _____ Storage: __X___	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: __CES Environmental_____ Address: ___4904 Griggs, Houston, TX_____ Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: _Sulfuric Acid Tank__

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Corrosive Toxic Water Reactive Class 2	Sulfuric Acid Tank	Sulfuric Acid 100%	7664-93-9	Liquid	3500	GAL	A, 4, 1	H-3 F-0 R-2
Flammable Class I-B	Waste material	waste liquids	Not Applicable	Liquid	1,500	GAL	O, 4, 1	H-3 F-3 R-0

EPAHO04000247

Location of Chemicals: Inside: __X__ Outside: ____ Applies To: Use-Open: _____ Use-Closed: _____ Storage: __X___	**HAZARDOUS MATERIALS INVENTORY STATEMENT(IFC)** Business Name: __CES Environmental_____ Address: ___4904 Griggs, Houston, TX_____ Declaration: Under Penalty of Perjury, I declare the above and subsequent information, provided as part of the hazardous materials inventory statement, is true and correct. Print Name: _____ Title: _____ Signature: _____ Date: _____	Indicate the chemical area, as designated on the site plan. Area: __Bldg. C – Wastewater__

Hazard Class	Common/ Trade Name	Hazardous Ingredients and Concentration	Chemical Abstract Service No.	Physical State	Quantity on Hand	Units (Gal, Lbs)	Storage Code (Type, Temp, Pressure)	NFPA Code (H, F, R)
Combustible Class III-B	Waste Oil or Oil/Water Mixtures	Waste Oil	Varies	Liquid	12,375	GAL	D, 4, 1	H-1 F-1 R-0
Corrosive Toxic Water Reactive Class 2	Sulfuric Acid	Sulfuric Acid 100%	7664-93-9	Liquid	55	GAL	D, 4, 1	H-3 F-0 R-2
Non-Hazardous	Ferric Chloride Solution	Ferric Chloride 45%	7705-08-0	Liquid	55	GAL	O, 4, 1	H-3 F-0 R-0
Non-Hazardous	Lime Solution	Calcium Oxide Solution <12.5 pH	1305-78-8	Liquid	4,000	GAL	A, 4, 1	H-2 F-0 R-0

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APPENDIX C
VENT OPENINGS

Table 10 Emergency Venting Capacity for Primary Tanks and the Interstitial Space of Secondary Containment Tanks

Wetted area (ft^2)[a,b]	Venting capacity (ft^3/hr)[c,d]	Minimum opening (nominal pipe size, in.)[e]
20	21,100	2
30	31,600	2
40	42,100	3
50	52,700	3
60	63,200	3
70	73,700	4
80	84,200	4
90	94,800	4
100	105,000	4
120	126,000	5
140	147,000	5
160	168,000	5
180	190,000	5
200	211,000	6
250	239,000	6
300	265,000	6
350	288,000	8
400	312,000	8
500	354,000	8
600	392,000	8
700	428,000	8
800	462,000	8
900	493,000	8
1,000	524,000	10
1,200	557,000	10
1,400	587,000	10
1,600	614,000	10
1,800	639,000	10
2,000	662,000	10
2,400	704,000	10
2,800 and over	742,000	10

Note: Emergency venting capacity is based on atmospheric pressure of 14.7 psi and 60°F.

[a]Interpolate for intermediate values.

[b]For SI units, $m^2 = ft^2 \times 0.093$.

[c]These values are taken from NFPA 30. See NFPA 30, Section 1.2.

[d]For SI units, $m^3/s = ft^3/hr \times 0.03$.

[e]These pipe sizes apply only to open vent pipes of the speciÆc diameter not more than 12 in. long and a gage pressure in the tank of not more than 2.5 psi. If a tank is to be equipped with a venting device or Øame arrestor, the vent opening is to accommodate the venting device or Øame arrestor sized in accordance with Column 2 of this table.

Source: Ref. 2.

Figure 17 This 12,000-gal abovegrou ondary containment. The tank has two e

ceeding across the row, the third colu ing to safely discharge 433,100 ft^3/h

Listed aboveground storage ta ings for emergency vents (Fig. 17). with only one emergency vent. Abo ary containment commonly use two in the primary tank and the other co secondary containment tank has a lar volume is provided so that the entire c Therefore, the emergency-vent disch will be at least as large as the primar

Different types of emergency v aboveground storage tanks. Many ma Their principle of operation is based the pressure on the seat of the pallet will begin to open. The emergency v After the excess pressure is relieved, ically set at the factory to operate at sure is not adjustable in the field. Th must be higher than the operating pre

APPENDIX D
CONTAINMENT

CONTAINMENT CALCULATIONS

SOUTH TANK FARM
LARGEST TANK IS 24,360 GALLONS
HEIGHT OF CONTAINMENT WALL = 2'-11"
CONTAINMENT AREA = 55' X 57' = 3,135 SQUARE FEET
SUBTRACTIONS FOR TANK VOLUME = (154 SF X 6) + (113 SF X 2) + (78 SF) = 1,228 SQUARE FEET
AVAILABLE CONTAINMENT AREA = 3,135 SF – 1,228 SF = 1,907 SQUARE FEET
LARGEST TANK = 24,360 GAL / 7.48 GAL/FT3 = 3,257 CUBIC FEET
3,257 CF / 1,907 SF = 1.71 FEET X 12 INCHES/FT = 21-INCHES OF CONTAINMENT REQUIRED.

THE CONTAINMENT VOLUME IN THE SOUTH TANK FARM IS ADEQUATE.

NORTH TANK FARM
LARGEST TANK IS 16,800 GALLONS
HEIGHT OF CONTAINMENT WALL = 2'-0"
CONTAINMENT AREA = 72' X 53.5' = 3,852 SQUARE FEET
SUBTRACTIONS FOR TANK VOLUME = (113 SF X 9) + (50 SF X 2) = 1,117 SQUARE FEET
AVAILABLE CONTAINMENT AREA = 3,852 SF – 1,117 SF = 2,735 SQUARE FEET
LARGEST TANK = 16,800 GAL / 7.48 GAL/FT3 = 2,246 CUBIC FEET
2,246 CF / 2,735 SF = 0.82 FEET X 12 INCHES/FT = 10" OF CONTAINMENT REQUIRED.

THE CONTAINMENT VOLUME IN THE NORTH TANK FARM IS ADEQUATE.

SULFURIC ACID TANK
TANK IS 4,500 GALLONS
HEIGHT OF CONTAINMENT WALL = 4'-2"
CONTAINMENT AREA = 7'-4" X 26'-6" = 194 SQUARE FEET
NO SUBTRACTIONS FOR TANK VOLUME AS TANK SITS ON TOP OF METAL GRATE
LARGEST TANK = 4,500 GAL / 7.48 GAL/FT3 = 602 CUBIC FEET
602 CF / 194 SF = 3.1 FEET = 3'-2" OF CONTAINMENT REQUIRED.

THE CONTAINMENT VOLUME FOR THE SULFURIC ACID TANK IS ADEQUATE.

APPENDIX E
TANK SUMMARY

CES Environmental Tank Farm Summary

Tank #	Tank Farm	Size (Gallons)	Product In Storage	Name of Mfg	Design Standard	Date of Manufacture	Normal Vent	Emergency Vent Required	Diameter (feet)	Height (feet)
OT1	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT2	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT3	North	16,800	Base Oil	Permian Tank	API 12F	2005	Yes	No	12	20
OT4	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT5	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT6	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT7	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT8	North	16,800	Oil/Water	Permian Tank	API 12F	2005	Yes	No	12	20
OT9	North	16,800	Oil	Permian Tank	API 12F	2005	Yes	8-inch	12	20
OT10	North	7,518	Water	Permian Tank	API 12F	2005	Yes	No	8	20
OT11	North	7,518	Oil	Permian Tank	API 12F	2005	Yes	8-inch	8	20
OT12	North	5,800	Base Oil	Permian Tank	API 12F	2005	Yes	8-inch	7	21.5
T1	South	24,360	Oil/Water	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T2	South	24,360	Oil	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T3	South	24,360	Oil	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T4	South	24,360	Oil/Water	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T5	South	24,360	Oil	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T6	South	24,360	Oil	Lide Ind.	Unknown	2007	Yes	No	14.5	20
T7	South	16,800	Oil	Lide Ind.	Unknown	2007	Yes	No	12	20
T8	South	16,800	Oil	Lide Ind.	Unknown	2007	Yes	No	12	20
T9	South	9,400	Oil	Lide Ind.	Unknown	2007	Yes	No	10	16

EPAHO04400254

Clark Hickman

From: Ed Cope [edcope@copeengineering.com]
Sent: Thursday, January 22, 2009 12:03 PM
To: Clark Hickman
Subject: Cope Engineering Proposal attached
Attachments: Proposal - CES Environmental.pdf

--
Ed Cope, P.E.
Cope Engineering
Voice: 713-426-2326
Cell: 832-689-3607
Fax: 713-264-8644
Email: edcope@copeengineering.com
Web: www.copeengineering.com

EPAHO044000255

Cope Engineering, PLLC

October 17, 2008

Marlin Moser
CES Environmental Services, Inc.
4909 Griggs Rd.
Houston, TX 77021
mmoser@cesenvironmental.com

RE: Proposal for Engineering Services
4909 Griggs Rd.

Dear Mr. Moser:

I am submitting this proposal for Engineering Services for your 4909 Griggs Street facility in Houston, Texas. This letter will document information relevant to the project including scope of work, clarifications and terms and conditions.

Scope of Work

Cope Engineering will provide fire protection engineering support for the following tasks:

1. Complete site visits as necessary to review conditions and gather information. (Estimated 4 hours)
2. Develop a Hazardous Materials Inventory Statement (HMIS) detailing the hazard classes of the materials to be stored within the tank farm. This statement will meet City of Houston reporting requirements. (Estimated 3 hours)
3. Complete a technical evaluation report of the tank farm and loading/unloading area. The report is to be based upon the currently adopted 2000 International Fire Code, as amended by the City of Houston. (Estimated 18 hours)

Clarifications

Activities such as the submittal of plans or the completion of architectural or MEP drawings, if necessary, are not included.

Pricing and Billing

1. The estimated price for the full scope of work is $4,400. This price is based upon an hourly rate of $175.00/hour and $25.00 in travel, reproduction and other expenses.
2. All work is to be completed on a time and materials basis.
3. Travel expenses are charged at actual cost. Automobile mileage is charged at the current IRS rate.

4. The cost of printing and reproducing drawings larger than 13"x19" are charged to the client at actual cost.
5. Modifications or expansion to the above scope of work are to be approved before proceeding.

Summary

I am ready to begin work if the above proposal is acceptable. Please fill out the last page of the attached term and conditions and return via email to edcope@copeengineering.com or fax to 713-264-8644. If there are any questions or if additional information is needed, please contact me at 713-426-2326.

Sincerely,

Ed D. Cope, P.E.
Principal Engineer

CITY OF HOUSTON

Fire Marshal, Life Safety Bureau

Houston Fire Department

2931 W 12th Street, Houston, Texas 77008
713-865-7100 / fax: 713-865-7177

CES ENVIRONMENTAL SERVICES INC
4904 GRIGGS RD
HOUSTON, TX 77021

26-MAR-2009

Project No: **09016194**

<< NOTICE OF VIOLATION >>

Your attention is respectfully called to the violation of the provisions of the City of Houston Fire Code as indicated herein, on the premises located at:

4904 GRIGGS RD

GENERAL

GERARDO A. REY-INSPECTOR
HOUSTON FIRE DEPARTMENT
FIRE MARSHAL'S OFFICE
OFFICE# 713-247-4113
FAX# 713-247-8968
E-MAIL: gerardo.rey@cityofhouston.net

Status _____ **Date** _____ **Inspector's ILMS-ID** _____

2) HFC 104.7.2 - Technical assistance
To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to the inspection of the department, the code official is authorized to require the owner or agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the code official and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The code official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

COMMENTS:
CES Environmental Services, Inc. shall provide a technical report and HMIS for the entire facility. The report shall be prepared by a qualified

<< NOTICE OF VIOLATION CONTINUED >>

professional acceptable to the code official. The technical report and HMIS must be delivered to this office by March 25, 2009.

Compliance by March 25, 2009

Status _____ Date _____ Inspector's ILMS-ID _____

3) HFC 2701.4.2 - Hazardous Materials Inventory Statement (HMIS)
Where required by the code official, an application for a permit shall include a HMIS, such as SARA Title III, Tier II Report, or other approved statement. The HMIS shall include the following information: 1. Manufacturer's name. 2. Chemical name, trade names, hazardous ingredients. 3. Hazard classification. 4. MSDS or equivalent. 5. United Nations (UN), North America (NA) or the Chemical Abstract Service (CAS) identification number. 6. Maximum quantity stored or used on-site at one time. 7. Storage conditions related to the storage type, temperature and pressure.

COMMENTS:
The previously submitted HMIS (Hazardous Materials Inventory Statement) and Response Document submitted by CES Environmental Services, Inc. failed to provide necessary information to demonstrate accurate accounting of operations or storage, handling and use of hazardous materials at this facility.
The following are some examples of inaccurate or incomplete information that was provided in report.
* No information was provided for tanks and hazardous materials contained in Building C (CES Industrial Waste Processing and Storage Building). On two (2) previous visits to this facility inspection personnel observed and documented tanks and hazardous materials containers being stored, used or handled in this building.
* No information was provided for hazardous materials present in trailer trucks which were being stored on two (2) previous occasions when inspectors visited the facility.
* Information provided in the HMIS was incomplete and improperly classified for a number of materials. In example, materials reported in the HMIS to have a classification of Flammable & Combustible Liquid (Flammable liquids include Class I Liquids - IA, IB or IC, Combustible liquids include Class II and IIIA or IIIB liquids). There were several columns of information that were missing for all of materials in addition to being misclassified. The correct HMIS form with declaration signature space and proper designation for areas, type of storage or use and all required columns of information can be accessed at http://www.houstontx.gov/fire/forms/hazmatinventorystatement.xls.
* There was no technical evaluation by a qualified engineer, specialist, and laboratory or fire safety specialty organization acceptable to the code official to address storage, handling and use of hazardous materials at this facility. This report should have included an analysis of the fire safety

<< NOTICE OF VIOLATION CONTINUED >>

properties of the design, operation or use of buildings or premises and the facilities and appurtenances situated thereon, to recommend necessary changes.

The HMIS and technical report requirement have not been satisfied.

Compliance by March 25,2009

Status _____ Date _____ Inspector's ILMS-ID _____

4) HFC 105.8.2 - INFORMATION FOR COMPLIANCE.

Violations not corrected by the re-inspection date will subject the owner, operator, lessee, to a re-inspection fee of $270.00 for each additional inspection, as well as disapproval of permits, issurance of citations for uncorrected violations, and citations for invalid permits, and require the resubmittal of application fees for such permits.

Failure on your part to comply with the indicated violations will subject you to the penalties prescribed by law for such violations. A follow-up Inspection will be made on or after:

Inspecting Officer Signature _____ Date _____

Copy Received By Signature _____ Date _____

Scheduled Reinspection Date _____ Reinspection Date _____ R9 __

Scheduled Reinspection Date _____ Reinspection Date _____ R9 __

Scheduled Reinspection Date _____ Reinspection Date _____ R9 __

Matt
Your
Copy

CES Environmental Services, Inc.
4904 Griggs Road
Houston, Texas 77021
FAX: (713) 676-1676

FACSIMILE COVER PAGE

(58 pages including cover page)

TO: Donald Corwin 610-935-5467

FROM: Clark Hickman

DATE: 1/21/09

SUBJECT: See Attached

Outline to Respond to CoH FM Request

To: Donald Corwin

From: Clark Wickman 281-488-0848

Date: 1/21/09

Re: Response to CofH Notice of Violation 12/18/08

Discussion

This outline of what I think the CofH Fire Marshal is asking for CES to respond / cover in a Report to FM is furnished for your guidance.

If the RTO has equipment, controls or systems that provide evidence of proper precautions, This is good. The Technical Report should identify evidence of proper precaution If NOT produce a draft recommendation list. — See Next Page.

Call me with questions — NO e Mail

281-488-0848.

Recommendations

The following recommendations are made to minimize the potential of a deflagration in the RTO or the attendant fume piping.

Centrifuge is being removed as of 1/20/04.

1. A separate fume line be installed from the centrifuge fume source to the RTO. This line is to carry only the fumes from the centrifuge room to the inlet of the RTO ID fan.
2. The tank farm vent line should capable of being completely isolated from the centrifuge fume line. The interconnection to the centrifuge line is to be immediately upstream of the RTO ID fan.
3. The tank farm vent line should have an automatic isolation valve and a flame arrester where it interconnects to the centrifuge vent line . ← yes
4. The RTO controls should be revised to perform control actions prior to self sustain mode and to limit restart controls to assure the proper organic loading to the RTO. ← yes how?

FC 102.2.1 Existing Buildings — Tech Report Red Tagged RTO
See NOV C of H Attached

<< NOTICE OF VIOLATION CONTINUED >>

Standards Commission under the applicable provisions of Chapter 10 of the City Code.

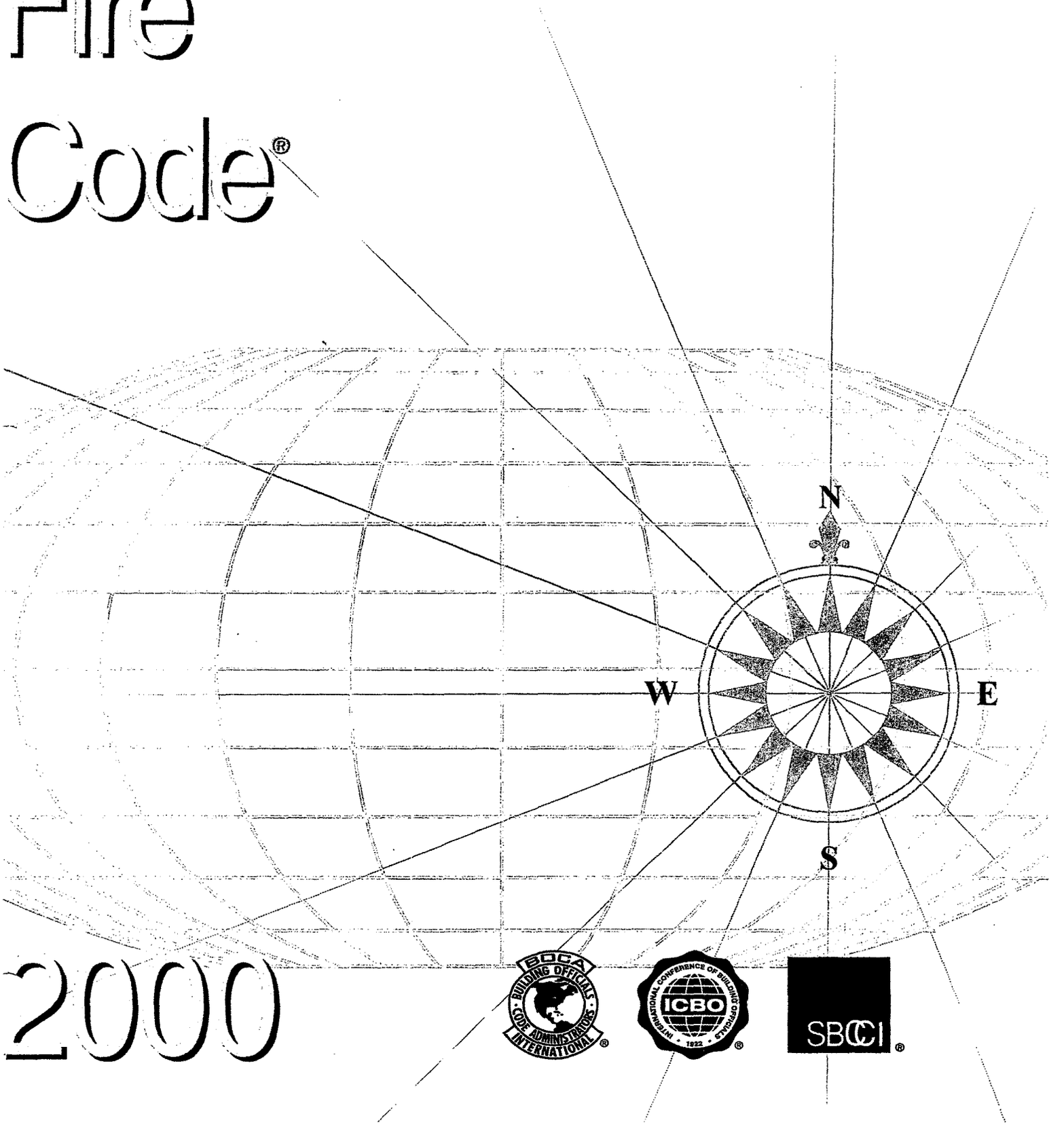
COMMENTS:

EQUIPMENT HAS BEEN RED TAGGED BY THE FIRE MARSHAL'S OFFICE. UNTIL A TECHNICAL REPORT HAS BEEN PERFORMED BY A QUALIFIED INDIVIDUAL AND SUBMITTED TO THE OFFICIAL HAVING JURISDICTION, THE EQUIPMENT SHALL NOT BE OPERATED IN ANY MANNER. ALL OPERATIONS, EQUIPMENT, PROCESSES AND REPAIRS SHALL REMAIN SUSPENDED UNTIL SUCH TIME THAT A TECHNICAL REPORT HAS BEEN PROVIDED THAT SATISFACTORILY DEMONSTRATES COMPLIANCE WITH APPLICABLE STANDARDS AND CODES AND PROVIDES EVIDENCE OF PROPER PRECAUTIONS BEING UNDERTAKEN.

*****COMPLIANCE WITHIN 30 DAYS*****

The attached IFC 2000 (C of H uses this 2000) with NFPA 86 Sections - applicable lists the applicable Stds/Codes. It would be best to address item for item the applicable Stds/Codes

International Fire Code®



2000

ICC
INTERNATIONAL CODE COUNCIL®

BOCA BUILDING OFFICIALS CODE ADMINISTRATORS INTERNATIONAL®

ICBO INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS 1922®

SBCCI®

EPAHO044000265

CHAPTER 21

INDUSTRIAL OVENS

SECTION 2101
GENERAL

2101.1 Scope. This chapter shall apply to the installation and operation of industrial ovens and furnaces. Industrial ovens and furnaces shall comply with the applicable provisions of NFPA 86, the *International Fuel Gas Code*, *International Mechanical Code*, and this chapter. The terms "ovens" and "furnaces" are used interchangeably in this chapter.

2101.2 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7.

SECTION 2102
DEFINITIONS

2102.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

FURNACE CLASS A. An oven or furnace that has heat utilization equipment operating at approximately atmospheric pressure wherein there is a potential explosion or fire hazard that could be occasioned by the presence of flammable volatiles or combustible materials processed or heated in the furnace.

NOTE: Such flammable volatiles or combustible materials can, for instance, originate from the following:

1. Paints, powders, inks, and adhesives from finishing processes, such as dipped, coated, sprayed, and impregnated materials.
2. The substrate material.
3. Wood, paper, and plastic pallets, spacers, or packaging materials.
4. Polymerization or other molecular rearrangements.

Potentially flammable materials, such as quench oil, water-borne finishes, cooling oil, or cooking oils, that present a hazard are ventilated according to Class A standards.

FURNACE CLASS B. An oven or furnace that has heat utilization equipment operating at approximately atmospheric pressure wherein there are no flammable volatiles or combustible materials being heated.

FURNACE CLASS C. An oven or furnace that has a potential hazard due to a flammable or other special atmosphere being used for treatment of material in process. This type of furnace can use any type of heating system and includes a special atmosphere supply system. Also included in the Class C classification are integral quench furnaces and molten salt bath furnaces.

FURNACE CLASS D. An oven or furnace that operates at temperatures from above ambient to over 5,000°F (2760°C) and at pressures normally below atmospheric using any type of heating system. These furnaces can include the use of special processing atmospheres.

SECTION 2103
LOCATION

2103.1 Ventilation. Enclosed rooms or basements containing industrial ovens or furnaces shall be provided with combustion air in accordance with the *International Mechanical Code* and the *International Fuel Gas Code*, and with ventilation air in accordance with the *International Mechanical Code*.

2103.2 Exposure. When locating ovens, oven heaters and related equipment, the possibility of fire resulting from overheating or from the escape of fuel gas or fuel oil and the possibility of damage to the building and injury to persons resulting from explosion shall be considered.

2103.3 Ignition source. Industrial ovens and furnaces shall be located so as not to pose an ignition hazard to flammable vapors or mists or combustible dusts.

2103.4 Temperatures. Roofs and floors of ovens shall be insulated and ventilated to prevent temperatures at combustible ceilings and floors from exceeding 160°F (71°C).

SECTION 2104
FUEL PIPING

2104.1 Fuel-gas piping. Fuel-gas piping serving industrial ovens shall comply with the *International Fuel Gas Code*. Piping for other fuel sources shall comply with this section.

2104.2 Shutoff valves. Each industrial oven or furnace shall be provided with an approved manual fuel shutoff valve in accordance with the *International Mechanical Code* or the *International Fuel Gas Code*.

2104.2.1 Fuel supply lines. Valves for fuel supply lines shall be located within 6 feet (1829 mm) of the appliance served.

Exception: When approved and the valve is located in the same general area as the appliance served.

2104.3 Valve position. The design of manual fuel shutoff valves shall incorporate a permanent feature which visually indicates the open or closed position of the valve. Manual fuel shutoff valves shall not be equipped with removable handles or wrenches unless the handle or wrench can only be installed parallel with the fuel line when the valve is in the open position.

SECTION 2105
INTERLOCKS

2105.1 Shut down. Interlocks shall be provided for Class A ovens so that conveyors or sources of flammable or combustible materials shall shut down if either the exhaust or recirculation air supply fails.

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SECTION 2106
FIRE PROTECTION

2106.1 Required protection. Class A and B ovens which contain, or are utilized for the processing of, combustible materials shall be protected by an approved automatic fire-extinguishing system complying with Chapter 9.

2106.2 Fixed fire-extinguishing systems. Fixed fire-extinguishing systems shall be provided for Class C or D ovens to protect against such hazards as overheating, spillage of molten salts or metals, quench tanks, ignition of hydraulic oil, and escape of fuel. It shall be the user's responsibility to consult with the code official concerning the necessary requirements for such protection.

2106.3 Fire extinguishers. Portable fire extinguishers complying with Section 906 shall be provided not closer than 15 feet (4572 mm) or a maximum of 50 feet (15 240 mm) or in accordance with NFPA 10. This shall apply to the oven and related equipment.

SECTION 2107
OPERATION AND MAINTENANCE

2107.1 Furnace system information. An approved, clearly worded, and prominently displayed safety design data form or manufacturer's nameplate shall be provided stating the safe operating condition for which the furnace system was designed, built, altered or extended.

2107.2 Oven nameplate. Safety data for Class A solvent atmosphere ovens shall be furnished on the manufacturer's nameplate. The nameplate shall provide the following design data:

1. The solvent used.
2. The number of gallons (liters) used per batch or per hour of solvent entering the oven.
3. The required purge time.
4. The oven operating temperature.
5. The exhaust blower rating for the number of gallons (liters) of solvent per hour or batch at the maximum operating temperature.

   Exception: For low-oxygen ovens, the maximum allowable oxygen concentration shall be included in place of the exhaust blower ratings.

2107.3 Training. Operating, maintenance and supervisory personnel shall be thoroughly instructed and trained in the operation of ovens or furnaces.

2107.4 Equipment maintenance. Equipment shall be maintained in accordance with the manufacturer's instructions.

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NFPA 86 NFPA 86 2007 OVENS & FURNACES NFPA
1 FIR 4253402Y NFPA 0805

NFPA 86

Standard for Ovens and Furnaces

2007 Edition

NFPA 1 Batterymarch Park, Quincy, MA 02169-7471
An International Codes and Standards Organization

EPAHO044000268

back-up circuit protection to equipment and to persons servicing the equipment.

8.18.1.2 The disconnecting device(s) required by 8.18.1.1 shall be capable of interrupting maximum available fault current as well as rated load current.

8.18.1.3 Shutdown of the heating power source shall not affect the operation of equipment such as conveyors, ventilation or recirculation fans, cooling components, and other auxiliary equipment, unless specifically designed to do so.

8.18.1.4 Resistance heaters larger than 48 amperes shall not be required to be subdivided into circuits of 48 amperes or less.

8.18.1.5* The capacity of all electrical devices used to control energy for the heating load shall be selected on the basis of continuous duty load ratings where fully equipped for the location and type of service proposed.

8.18.1.6 All controls using thermal protection or trip mechanisms shall be located or protected to preclude faulty operation due to ambient temperatures.

8.18.2* Excess Temperature Limit Controller.

8.18.2.1 Excess temperature limit controllers shall be installed in accordance with one of the following:

(1) An excess temperature limit controller shall be installed and interlocked into the safety circuitry.
(2) Class B, Class C, or Class D furnaces shall not be required to have an excess temperature where it can be demonstrated that the maximum temperature limit specified by the furnace manufacturer cannot be exceeded.

8.18.2.2 Operation of the excess limit controller shall shut off the heating system before the oven's maximum temperature, as specified by the oven manufacturer, is exceeded.

8.18.2.3 Operation of the excess temperature limit controller shall require manual reset before restart of the furnace or affected furnace zone.

8.18.2.4 Open circuit failure of the temperature-sensing components of the excess temperature limit controller shall cause the same response as an excess temperature condition.

8.18.2.5* Excess temperature controllers shall be equipped with temperature indication.

8.18.2.6* The temperature-sensing components of the excess temperature limit controller shall be rated for the temperature and atmosphere to which they are exposed.

8.18.2.7* The temperature-sensing element of the excess temperature limit controller shall be located where recommended by the oven manufacturer or designer.

8.18.2.8* The excess temperature limit controller shall indicate its set point in temperature units that are consistent with the primary temperature indicating controller.

8.18.2.9 The operating temperature controller and its temperature-sensing element shall not be used as the excess temperature limit controller.

8.19* Fluid-Heated Systems — Excess Temperature Limit Controller.

8.19.1 Excess temperature limit controllers shall be installed in accordance with one of the following:

(1) An excess temperature limit controller shall be installed and interlocked into the safety circuitry.
(2) Class B, Class C, or Class D furnaces shall not be required to have an excess temperature where it can be demonstrated that the maximum temperature limit specified by the furnace manufacturer cannot be exceeded.

8.19.2* Interrupting the supply of heat transfer fluid shall not cause damage to the remainder of the heat transfer system.

8.19.3 Operation of the excess temperature limit controller shall shut off the heating system before the oven's maximum temperature, as specified by the oven manufacturer, is exceeded.

8.19.4 Operation of the excess temperature limit controller shall require manual reset before re-establishing the flow of heat transfer fluid.

8.19.5 Open circuit failure of the temperature-sensing components of the excess temperature limit controller shall cause the same response as an excess temperature condition.

8.19.6* Excess temperature controllers shall be equipped with temperature indication.

8.19.7* The temperature-sensing components of the excess temperature limit controller shall be rated for the temperature and atmosphere to which they are exposed.

8.19.8* The temperature-sensing element of the excess temperature limit controller shall be located where recommended by the oven manufacturer or designer.

8.19.9* The excess temperature limit controller shall indicate its set point in temperature units that are consistent with the primary temperature indicating controller.

8.19.10 The operating temperature controller and its temperature-sensing element shall not be used as the excess temperature limit controller.

Chapter 9 Thermal Oxidizer

9.1 Scope. This chapter shall apply to all thermal oxidizers, including the following:

(1) Afterburners
(2) Direct thermal oxidizers
(3) Direct catalytic oxidizers
(4) Fume incinerators
(5) Recuperative thermal oxidizers
(6) Recuperative catalytic oxidizers
(7) Regenerative thermal oxidizers
(8) Regenerative catalytic oxidizers
(9) Flameless thermal oxidizers
(10) Other devices that can restrict ventilation of ovens

9.2 General.

9.2.1* The design and construction of fume incinerators shall comply with all requirements for Class A ovens in this standard, except for the requirements for explosion relief.

9.2.2 Precautions shall be taken to reduce fire hazards where the relative location of equipment or the type of fumes generated are such that combustible liquids can condense or solids can be deposited between the generating process and the afterburner.

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9.2.3* Thermal oxidizers shall not reduce the required safety ventilation specified in this standard.

9.3* Direct-Fired Fume Incinerators.

9.3.1* The design and operation of combustion systems and controls shall comply with all parts of this standard pertaining to direct-fired ovens.

9.3.2* An excess temperature limit controller shall be installed to prevent the uncontrolled temperature rise in the fume incinerator, and its operation shall cause the following:

(1) Interruption of fuel to the fume incinerator burner
(2) Interruption of the source of fumes to the incinerator

9.4 Direct Heat Recovery Systems.

9.4.1 Proved fresh air shall be introduced into the system to provide the oxygen necessary for combustion of hydrocarbons as well as primary burner fuel.

9.4.2 Fresh air shall be introduced through openings that supply air directly to each zone circulating system.

9.4.3 Where direct heat recovery systems are employed and portions of the incinerator exhaust gases are utilized as the heat source for one or more of the zones of the fume-generating oven, special precautions shall be taken to prevent recycling unburned solvent vapors.

9.5* Catalytic Fume Incinerators.

9.5.1 The requirements in Section 9.3 for direct-fired fume incinerators shall apply to catalytic fume incinerators.

9.5.2* An additional excess temperature limit controller shall be located downstream from the discharge of the catalyst bed for thermal protection of the catalyst elements, and its operation shall cause the following:

(1) Interruption of fuel to the burner
(2) Interruption of the source of fumes

9.5.3* Process exhaust ventilation shall be provided to maintain vapor concentrations that cannot generate temperatures at which thermal degradation of the catalyst can occur.

9.5.4* A differential pressure (P) high limit switch, measuring across the catalyst bed, shall be used to detect particulate contamination, and its operation shall cause the following:

(1) Interruption of fuel to the fume incinerator burner
(2) Interruption of the source of fumes to the incinerator

9.5.5* Where catalysts are utilized with direct heat recovery, a maintenance program shall be established, and frequent tests of catalyst performance shall be conducted so that unburned or partially burned vapors are not reintroduced into the process oven.

Chapter 10 Class A Ovens and Furnaces

10.1 Safety Ventilation for Class A Ovens.

10.1.1 General Safety Ventilation Requirements.

10.1.1.1 Air circulation shall be used to minimize the volume of flammable concentration regions that are present at the point of evaporation within the oven.

10.1.1.2 Combustible solids or substrate material shall not require safety ventilation unless flammable constituents are evolved in the process of heating.

10.1.1.3 The determination of safety ventilation shall be based on all of the following:

(1) Volume of products of combustion entering the oven heating chamber
(2) Weight or volume of flammable or combustible constituents released during the heating process, based on maximum loading
(3) Solvent that requires the greatest amount of ventilation air per gallon (liter) when a combination of solvents is used
(4) Design of the oven heating and ventilation system with regard to all of the following:
   (a) Materials to be processed
   (b) Temperature to which processed materials are raised
   (c) Method of heating with regard to direct or indirect venting of combustion products vs. alternate use of steam or electrical energy
   (d) General design of the oven with regard to continuous or batch-type operation
   (e) Type of fuel and chemicals to be used and any by-products generated in the heating chamber

10.1.1.4 On completion of an oven installation, airflow tests shall be conducted on the ventilation systems under the oven operating conditions, with flow control devices at their minimum setting.

10.1.1.5 The airflow tests required by 10.1.1.4 shall be repeated when the flammable or combustible vapor loadings are increased or when modifications are made to the ventilation system.

10.1.1.6 Safety ventilation shall be maintained until all flammable vapors are removed or have been released from the oven and other associated equipment.

10.1.1.7 Class A ovens shall be mechanically ventilated.

10.1.1.8* If reduction of safety ventilation by accumulation of deposits is possible for the oven's intended use, the fan design shall be selected to prevent this accumulation.

10.1.1.9 Class A ovens shall be ventilated directly to outdoor atmosphere or indirectly to outdoor atmosphere through a fume incinerator in accordance with Chapter 9 or through other approved volatile organic compound (VOC) or particulate pollution control devices.

10.1.1.10 Exhaust duct openings shall be located in the areas of greatest concentration of vapors within the oven enclosure.

10.1.1.11* A single fan shall not be used for both recirculation and exhaust.

10.1.1.12 Where used, multiple exhaust fans, manifolded together, shall be designed so that the operation of one or more exhaust fans does not result in backflow to an idle oven or reduced exhaust flow due to increased manifold pressure.

10.1.1.13 Ovens in which the temperature is controlled by varying airflow shall be designed so that the air required for safety ventilation is maintained during all operating conditions.

10.1.1.14 A separate exhaust system shall be used for exhausting the products of combustion from indirect-fired heating

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systems or indirect-fired internal heating systems, unless otherwise permitted by 10.1.1.15.

10.1.1.15 All indirect fired ovens shall be equipped with one of the following:

(1) Separate exhaust systems for removing the products of combustion and the process stream
(2) A single exhaust system for removing both the products of combustion and the process stream, when the temperature of the products of combustion is reduced by the addition of fresh air to a point where it is insufficient to cause ignition of any combustible fumes in the oven exhaust system and with approval from the AHJ

10.1.1.16* Air supplied into the oven shall be circulated to produce a uniform distribution and movement in all parts of the oven and through the work in process.

10.1.2 Interlocks.

10.1.2.1 Interlocks for exhaust and recirculation fans shall be installed in accordance with Sections 8.5 and 8.6.

10.1.2.2 Electrical interlocks obtained through interconnection with a motor starter shall be provided for exhaust and recirculation fans.

10.1.2.3 Conveyors or sources of flammable or combustible material shall be interlocked to shut down upon the occurrence of excess temperature or if either the exhaust or recirculation system fails.

10.1.3 Heat Recovery and Pollution Control Devices.

10.1.3.1* If the installation of heat recovery devices and pollution control devices reduces the combustion airflow or exhaust flow below that required for purge or safety ventilation, the purge flow rate or purge time shall be increased to compensate for the reduction.

10.1.3.2 Heat recovery devices and pollution control devices shall be designed and maintained to prevent reduction or loss of safety ventilation due to such factors as the condensation of flammable volatiles and foreign materials.

10.1.3.3 Heat recovery devices and pollution control devices shall be designed to minimize fire hazards due to the presence of combustible products or residue.

10.1.4 Fresh Air Supply and Exhaust.

10.1.4.1 Ovens in which flammable vapors are being produced or are combined with the products of combustion shall be exhausted.

10.1.4.2 All ovens shall have the exhaust fan motor starter and airflow switch interlocked to prevent operation of the heating units unless the exhaust fans are running.

10.1.4.3 Devices that control the volume of fresh air admitted to, and the vapors or gases exhausted from, the oven shall be designed so that when at the minimum setting they exceed the volume required for safety ventilation.

10.1.5 Corrections for Temperature and Altitude.

10.1.5.1* Temperature Correction Factor.

(A) Temperature correction factors for volume shall be applied because the volume of gas varies in direct proportion to its absolute temperature.

(B) Volume correction factors shall be determined in accordance with the following relationship or by using Table 10.1.5.1(B):

$$\frac{t°F + 460°F}{70°F + 460°F} = \text{correction factor (U.S. customary units) or}$$

$$\frac{t°C + 273°C}{21°C + 273°C} = \text{correction factor (SI units)}$$

where:
t = exhaust temperature

Table 10.1.5.1(B) Temperature–Volume Conversion Table (at Sea Level)

Temperature			Temperature			Temperature		
°F	°C	Factor	°F	°C	Factor	°F	°C	Factor
70	21	1	300	149	1.43	950	510	2.66
100	38	1.06	350	177	1.53	1000	538	2.75
110	43	1.075	400	204	1.62	1050	566	2.85
120	49	1.09	450	232	1.72	1100	593	2.94
130	54	1.11	500	260	1.81	1150	621	3.04
140	60	1.13	550	288	1.90	1200	649	3.13
150	66	1.15	600	316	2.00	1250	677	3.23
175	79	1.20	650	343	2.09	1300	704	3.32
200	93	1.24	700	371	2.19	1350	732	3.42
225	107	1.29	750	399	2.28	1400	760	3.51
250	121	1.34	850	454	2.47			
275	135	1.38	900	482	2.57			

10.1.5.2* LEL Correction Factor.

(A) The LEL value for continuous process ovens shall be corrected for the oven operating temperature in accordance with the following formula or by using Table 10.1.5.2(A):

$$LEL_t = LEL_{77°F}\,[1 - 0.000436\,(t°F - 77°F)] \text{ or}$$

$$LEL_t = LEL_{25°C}\,[1 - 0.000784\,(t°C - 25°C)]$$

where:
t = oven temperature, °F or °C

(B) For batch process ovens, the temperature multiplier specified in 10.1.7.4 shall be used.

Table 10.1.5.2(A) Oven Temperature Correction Factors

Oven Temperature		LEL Correction Factor
°F	°C	
77	25	1.00
212	100	0.94
300	149	0.90
400	204	0.86
500	260	0.81

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10.1.5.3 Altitude Correction Factor.

(A)* The altitude correction factors for volume in Table 10.1.5.3(A) shall be applied, unless otherwise permitted by 10.1.5.3(B).

Table 10.1.5.3(A) Altitude Correction Factors

Altitude		Correction Factor
ft	m	
0	0	1.00
1,000	305	1.04
2,000	610	1.08
3,000	915	1.12
4,000	1,220	1.16
5,000	1,524	1.20
6,000	1,829	1.25
7,000	2,134	1.30
8,000	2,438	1.35
9,000	2,743	1.40
10,000	3,048	1.45

(B) Correction factors shall not be required at altitudes lower than 1000 ft (305 m) above sea level.

10.1.6* Continuous Process Oven.

10.1.6.1* Rate of Solvent Vapor Ventilation.

(A) The safety ventilation rate of continuous process ovens shall be designed, maintained, and operated to do either of the following:

(1) Prevent the vapor concentration in the oven exhaust from exceeding 25 percent of the LEL
(2) Operate at a safety ventilation rate lower than that specified in 10.1.6.1(A)(1) where a continuous solvent vapor concentration indicator and controller meeting the criteria of 10.1.6.1(B) is provided in accordance with 10.2.8

(B) Where a continuous solvent vapor indicator and controller is provided, it shall be arranged to do either of the following:

(1) Alarm and shut down the oven heating systems
(2) Operate additional exhaust fans at a predetermined vapor concentration not exceeding 50 percent of the LEL

10.1.6.2 Method for Determining Solvent Safety Ventilation Rate.

Applicable?

(A)* In continuous process ovens, the rate of safety ventilation air shall be either calculated using 10.1.6.2(B) or 10.1.6.2(C) or estimated using 10.1.6.2(D). The values determined shall be corrected for the exhaust stream temperature and altitude to determine the actual flow.

(B) Method A shall be calculated as follows:

(1) Determine the cubic feet of vapor per gallon of solvent using the following equation:

$$\frac{\text{ft}^3 \text{ vapor}}{\text{gal solvent}} = \left(\frac{8.328}{0.075}\right)\left(\frac{SpGr}{VD}\right)$$

or

$$\frac{\text{m}^3 \text{ vapor}}{\text{L solvent}} = \left(\frac{0.998}{1.200}\right)\left(\frac{SpGr}{VD}\right)$$

where:
1 gal water = 8.328 lb at 70°F, or 1 L water = 0.998 kg at 21°C
Dry air at 70°F = 0.075 lb/ft^3 and 29.9 in. Hg, or

Dry air at 21°C = 1200 kg/m^3 and 0.76 m Hg
$SpGr$ = specific gravity of solvent (water = 1.0)
VD = vapor density of solvent vapor (air = 1.0)

(2) Determine the cubic feet of barely explosive mixture per gallon of solvent using the following equation:

$$\frac{\text{ft}^3 \text{ barely explosive mixture}}{\text{gal solvent}} = \left(\frac{\text{ft}^3 \text{ mixture}}{\text{gal solvent}}\right)\left(\frac{100 - LEL_T}{LEL_T}\right)$$

or

$$\frac{\text{m}^3 \text{ barely explosive vapor}}{\text{L solvent}} = \left(\frac{\text{m}^3 \text{ mixture}}{\text{L solvent}}\right)\left(\frac{100 - LEL_T}{LEL_T}\right)$$

where:
LEL_T = lower explosive limit expressed in percent by volume in air, corrected for temperature

(3) Determine the cubic feet of diluted mixture at 25 percent LEL per gallon of solvent evaporated in the process using the following equation:

$$\frac{\text{ft}^3 \text{ diluted mixture @ 25\% } LEL}{\text{gal solvent evaporated}} = 4\left(\frac{\text{ft}^3 \text{ mixture}}{\text{gal solvent}}\right)$$

or

$$\frac{\text{m}^3 \text{ diluted mixture @ 25\% } LEL}{\text{L solvent evaporated}} = 4\left(\frac{\text{m}^3 \text{ mixture}}{\text{L solvent}}\right)$$

(C) Method B shall be calculated by determining the cubic feet of vapor per gallon of solvent using the following equation:

$$\frac{\text{ft}^3 \text{ diluted mixture @ 25\% } LEL}{\text{gal solvent evaporated}} = 4\left(\frac{8.329}{0.075}\right)\left(\frac{SpGr}{VD}\right)\left(\frac{100 - LEL_T}{LEL_T}\right)$$

or

$$\frac{\text{m}^3 \text{ diluted mixture @ 25\% } LEL}{\text{L solvent evaporated}} = 4\left(\frac{0.998}{1.200}\right)\left(\frac{SpGr}{VD}\right)\left(\frac{100 - LEL_T}{LEL_T}\right)$$

(D)* Method for Estimating Solvent Safety Ventilation Rate. Continuous process ovens shall have a rate of safety ventilation for volatile materials of 12,000 ft^3 (340 m^3) of fresh air referred to 70°F (21°C) (at sea level) per gallon (3.8 liter) of solvent evaporated in the oven, where all the following conditions are met:

(1) The elevation is below 1000 ft (305 m).
(2) The oven operating temperature is at or below 350°F (177°C).
(3) The volume of air rendered barely flammable for the solvent used is less than 2640 standard ft^3/gal (19.75 standard m^3/L).
(4) The rate of safety ventilation is corrected for the temperature of the exhaust stream exiting the oven.

10.1.6.3 Method for Calculating Ventilation Rate for Products of Combustion. The method for calculating ventilation rate for products of combustion shall be as follows:

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(1) The minimum oven exhaust volume for safety ventilation in continuous process ovens, including powder coating ovens, where a direct-fired combustion system (within or remote from the oven chamber) is used shall include the volume of combustion products from burners.
(2) The value used for the products of combustion shall be 183 scfm (5.18 standard m^3/min) per 1,000,000 Btu/hr (293.1 kW) burner rating.
(3) The products of combustion shall be adjusted for oven operating temperature and altitude.
(4) The adjusted value shall be added to the value determined from 10.1.6.2.

10.1.6.4* Method for Calculating Ventilation Rate for Powder Curing Ovens. The method for calculating ventilation rate for powder curing ovens shall be as follows:

(1) The safety ventilation required for powder curing ovens shall be calculated by assuming that 9 percent of the mass of the powder is xylene and the remaining mass is inert.
(2) The safety ventilation shall then be determined for xylene in accordance with 10.1.6.2 and 10.1.6.3.

10.1.7* Batch Process Ovens.

10.1.7.1* Published chemical properties shall be used where chemical manufacturer's data are not available.

10.1.7.2* Method for Estimating Rate of Ventilation. Batch ovens shall have a minimum safety ventilation rate of that given in either 10.1.7.2(A) or 10.1.7.2(B).

(A) The safety ventilation rate of batch ovens shall be designed and maintained to provide 440 scfm of air per gal (3.29 standard m^3/min of air per L) of flammable volatiles in each batch.

(B) Where the solvent used has a quantity of air necessary to render 1 gal (1 L) of solvent barely explosive exceeding 2640 ft^3 (19.75 m^3), safety ventilation shall be adjusted in proportion to the ratio of the actual volume of air necessary to render 1 gal (1 L) of these solvents barely explosive to 2640 ft^3 (19.75 m^3).

CAUTION: Caution shall be used where applying this method to products of low mass that can heat up quickly (such as paper or textiles) or materials coated with very highly volatile solvents. Either condition can produce too high a peak evaporation rate for this method to be used.

10.1.7.3 Method for Calculating Ventilation Rate. The minimum safety ventilation rate shall be one of the following:

(1) 440 scfm of air per gal (3.29 standard m^3/min of air per L) of solvent
(2) Other than 440 scfm where ventilation is provided, with exhaust fans and other devices to prevent average concentration in the oven from exceeding 25 percent of the LEL
(3) A continuous vapor concentration high limit controller meeting one of the following criteria is provided:
   (a) The controller is arranged to alarm and shut down the oven heating system.
   (b) The controller is arranged to operate additional exhaust fans at a predetermined vapor concentration not exceeding 50 percent of the LEL. The amount of ventilation air in standard cubic feet (standard cubic meters) that is rendered barely flammable by the vapor generated in gallons per hour (liters per hour) of solvent in use is determined, and the determined value then is multiplied by an empirical factor of 10 and divided by 60 minutes/hour to obtain the safety ventilation in standard cubic feet per minute (standard cubic meters per minute).

10.1.7.4* Correction Factors. Volumes of air specified or calculated in accordance with 10.1.7.2 or 10.1.7.3 shall be corrected for operating temperature in accordance with 10.1.5.1, for altitude in accordance with 10.1.5.3, and for products of combustion in accordance with 10.1.6.3.

(A) Batch ovens operating at temperatures from 250°F to 500°F (121°C to 260°C) shall have the volume increased by a multiplier of 1.4.

(B) Batch ovens operating above 500°F (260°C) shall have the volume of air increased by a multiplier determined by test.

10.1.7.5 Method for Calculating Ventilation Rate for Powder Curing Ovens. The safety ventilation required for powder curing ovens shall be calculated by assuming that 9 percent of the mass of the powder is xylene and the remaining mass is inert.

10.1.8 Continuous Vapor Concentration High Limits and Controllers.

10.1.8.1 Where the safety ventilation rate in the oven has been designed to provide vapor concentrations between 25 percent and 50 percent of the LEL, a continuous vapor concentration high limit controller shall be provided.

10.1.8.2* The continuous vapor concentration high limit controller shall be capable of detecting and responding to process upset conditions to initiate reduction of the vapor concentration before the concentration exceeds 50 percent of the LEL.

10.1.8.3* Where an oven having multiple heating zones and at least one heating zone operating at or above 25 percent of the LEL, all other heating zones shall be equipped with either of the following:

(1) A continuous vapor concentration high limit controller
(2) Without a continuous vapor concentration high limit controller where it can be demonstrated that a heating zone cannot exceed 25 percent of the LEL in the case of an accidental increase in solvent input

10.1.8.4* Where a continuous vapor concentration controller is used to modulate the flow of fresh air or exhaust from an oven or zone, the following criteria shall apply:

(1) A secondary protection system shall be required to prevent an analyzer failure from causing a hazardous condition.
(2) The secondary protection system shall have a separate continuous vapor concentration high limit controller for each zone.
(3) Limits on damper travel (set for 50 percent LEL for the highest design solvent input) for each zone shall be permitted in lieu of the requirement of 10.1.8.3(2).

10.1.8.5 The continuous vapor concentration controller and the continuous vapor concentration high limit controller shall be calibrated for the application and solvents used.

10.1.8.6 Where a variety of solvents are used, the solvent to which the controller is least sensitive shall be the primary calibration reference.

10.1.8.7 A record of primary and subsequent calibrations shall be maintained and reviewed for drift in the controller response.

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10.1.8.8 Alarms shall be provided to indicate any sample, flow, circuit, or controller power failures.

(A) Activation of an alarm shall initiate action to reduce the solvent concentration to a minimum.

(B) The activation of the malfunction alarm shall require operator intervention in accordance with 10.1.8.10.

10.1.8.9* Activation of the continuous vapor concentration high limit controller shall alarm and initiate the automatic reduction of the solvent concentration to a minimum.

10.1.8.10 When the continuous vapor concentration high limit controller alarm (required by 10.1.8.9) is activated, the process shall be prevented from restarting until the vapor concentration is below the limit level and the operator has manually reset the system.

10.1.8.11 Continuous vapor alarms shall be calibrated and maintained in accordance with the following:

(1) The sensor and the sample system shall be maintained at a temperature that prevents condensation, and sampling lines shall be clean and airtight.
(2) The system shall be secured against unauthorized adjustment.
(3) Maintenance shall be performed in accordance with manufacturer's instructions.
(4) Calibration shall be performed in accordance with manufacturer's instructions and shall be performed at least once per month.

10.2 Low-Oxygen Atmosphere Class A Ovens with Solvent Recovery.

10.2.1 General.

10.2.1.1 Where low-oxygen atmosphere Class A ovens with solvent recovery limiting oxygen concentration, oxygen concentration shall be maintained by the addition of inert gas.

10.2.1.2* The equipment, including fans and web seals, shall be gas-tight in order to avoid admission of air.

10.2.2* An oxygen analyzer and controller shall be installed to limit oxygen concentration to below the value where no mixture is flammable (limiting oxidant concentration) by increasing the flow of inert gas or reducing flammables into the oven.

10.2.2.1 During start-up and shutdown, sufficient inert gas flow shall be provided to be outside the flammable region.

10.2.2.2* Solvent shall be recovered and sent to a solvent storage system.

10.2.3 Oven Design. The oven shall be designed to accommodate the performance of the following procedures for system operation:

(1) Operational procedures to avoid solvent flammable region at all times
(2) Starting and purging of the oven with inert gas to lower the oxygen content to a predetermined level
(3) Heating of the recirculating oven atmosphere to the required process temperature
(4) Introduction of the workload into the oven enclosure
(5) Continuous operation
(6) Shutdown procedures to avoid the flammable region of the solvent
(7) Emergency shutdown procedures

10.2.4 Oven Construction and Location. The following requirements shall be met:

(1) Explosion relief shall not be required for low-oxygen atmosphere Class A ovens with solvent recovery.
(2) The oven enclosure and any ductwork to and from the enclosure shall be gas-tight, and access doors shall meet the following criteria:
   (a) They shall be gasketed to minimize leakage.
   (b) They shall be designed to prevent opening during operation.
(3)*The oven and oven end openings shall be designed to minimize the entrance of air and the exit of solvent vapors.
(4) The oven atmosphere circulation system shall be designed to provide sufficient flow throughout the entire oven and ductwork system to minimize condensation of the flammable solvent.

10.2.5* Inert Gas Generation and Storage Systems. The oven system shall have an inert gas supply for oxygen control and purging.

10.2.5.1 Inert gas for reduction and control of oxygen within the oven enclosure and associated equipment shall be nitrogen, carbon dioxide, or other inert gas.

10.2.5.2 Vessels, controls, and piping that maintain their integrity at the maximum/minimum design pressures and temperatures shall be provided.

10.2.5.3 ASME tank relief devices shall be provided and sized, constructed, and tested in accordance with ASME *Boiler and Pressure Vessel Code*, Section VIII, Division 1.

10.2.5.4 Bulk storage systems shall be rated and installed to ensure reliable and uninterrupted flow of inert gas to the user equipment as necessary.

10.2.5.5 Where inert gases are used as safety purge media, the following criteria shall be met:

(1) The minimum volume stored is sufficient to purge all connected low-oxygen atmosphere ovens with a minimum of five oven volumes *(see 10.2.6.1)*, unless otherwise permitted by 10.2.6.2.
(2) The recirculating fans are kept operating during the purge.

10.2.5.6 The stored volume shall be permitted to be reduced, provided that both of the following conditions are met:

(1) Mixing is adequate.
(2) The stored volume is sufficient to reduce the concentration in the oven to the LEL in air.

10.2.6 Vaporizers Used for Liquefied Purging Fluids.

10.2.6.1 Vaporizers utilized to convert cryogenic fluids to the gas state shall be ambient air-heated units so that their flow is unaffected by a loss of power, unless otherwise permitted by 10.2.6.2.

10.2.6.2 Where powered vaporizers are used, one of the following conditions shall be met:

(1) The vaporizer has a reserve heating capacity sufficient to continue vaporizing at least five oven volumes at the required purge flow rate following power interruption.
(2) Reserve ambient vaporizers are piped to the source of supply and meet the following criteria:

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(a) The vaporizers are not affected by a freeze-up or flow stoppage of gas from the power vaporizer.
(b) The vaporizers are capable of evaporating at least five oven volumes at the required purge flow rate.

(3) Purge gas is available from an alternate source that fulfills the requirements of 10.2.5.4, 10.2.5.5, 10.2.6.3, and 10.2.6.6.

10.2.6.3 Vaporizers shall be rated by the industrial gas supplier or the owner to vaporize at 150 percent of the highest purge gas demand for all connected equipment.

10.2.6.4 Winter temperature extremes in the locale shall be taken into consideration by the agency responsible for rating the vaporizers specified in 10.2.6.3.

10.2.6.5 It shall be the user's responsibility to inform the industrial gas supplier of additions to the plant that materially increase the inert gas consumption rate, so that vaporizer and storage capacity can be enlarged in advance of plant expansion.

10.2.6.6* The vaporizer shall be protected against flow demands that exceed its rate of capacity when such demands can cause closure of a low-temperature shutoff valve.

10.2.6.7 A temperature indicator shall be installed in the vaporizer effluent piping.

10.2.6.8 An audible or visual low-temperature alarm shall be provided to alert oven operators whenever the temperature is in danger of reaching the set point of the low-temperature flow shutoff valve so that they can begin corrective actions in advance of the flow stoppage.

10.2.7 Inert Gas Flow Rates.

10.2.7.1* Inert gas shall be provided to dilute air infiltration to prevent the creation of a flammable gas–air mixture within the oven.

10.2.7.2 Means shall be provided for metering and controlling the flow rate of the inert gas.

10.2.7.3 The flow control shall be accessible and located in an illuminated area or illuminated so that an operator can monitor its operation.

10.2.7.4 Where an inert gas flow control unit is equipped with an automatic emergency inert purge, a manually operated switch located on the face of the unit and a remote switch that activates the purge shall be provided.

10.2.7.5 The pressure of the inert gas system shall be regulated to prevent overpressurizing components in the system, such as glass tube flowmeters.

10.2.8 Inert Gas Piping System.

10.2.8.1 The piping system for inert gas shall be sized to allow the full flow of inert gas to all connected ovens at the maximum demand rates.

10.2.8.2 Solders that contain lead shall not be used to join pipes.

10.2.8.3* Piping that contains cryogenic liquids, or that is installed downstream of a cryogenic gas vaporizer, shall be constructed of metals that retain strength at cryogenic temperatures.

10.2.8.4 Piping and piping components shall be in accordance with ASME B31.3, *Process Piping*.

10.2.9 Safety Equipment and Application.

10.2.9.1* The oven shall be analyzed continuously and controlled for oxygen content by modulating the addition of inert gas.

(A) The sample point shall be in the condensing system for each zone or multiple zones.

(B) The oven shall have a minimum of two analyzers to provide redundancy.

10.2.9.2 Provision shall be made for power outages by one of the following:

(1) An emergency standby power generator is provided for emergency shutdown during a power failure.
(2) Alternate safety shutdown procedures for power failure are employed.

10.2.9.3* Provisions shall be made to restrict entry into the oven where the atmosphere could be hazardous to human health.

10.2.10 Inert Gas Introduction and Starting the Production Line.

10.2.10.1 The following procedures shall be accomplished for inert gas introduction and starting the production line:

(1) Verify that all personnel are out of the oven enclosure, all guards are in place, and all doors are closed.
(2) Verify that the volume of inert gas is in storage and that the inert gas supply and solvent recovery systems are operational and ready to start production.
(3) The solvent recovery system interfaced with the oven is operational and prepared to receive solvent-laden gas prior to starting production.
(4) The recirculation fans are started in the oven enclosure prior to introduction of inert gas to ensure that effective oxygen purging occurs once inert gas enters the enclosure.
(5)*The oven enclosure is purged with inert gas until the enclosure oxygen concentration is three percentage points below the limiting oxidant concentration (LOC) that is able to support combustion of the solvents used.
(6) The recirculating oven gas is heated to the required operating temperature.

10.2.11* Production Running.

10.2.11.1 The oven enclosure oxygen concentration shall be maintained at least three percentage points below the LOC of the solvent during normal operation.

10.2.11.2 If it is not possible to maintain the oxygen concentration at least one percentage point below the LOC, the emergency purge shall be activated and the solvent input shall be stopped.

10.2.11.3 If the oven temperature is not above the solvent dew point, the oven shall be purged and shut down, and corrective action shall be taken.

10.2.12 Oven Shutdown and Entry. When an oven is shut down, and it is necessary to enter, the following steps shall be taken:

(1)*Flow to and from the solvent recovery system shall be continued, and the system shall be purged with inert gas until the solvent vapor concentration in the oven enclosure is no greater than the solvent concentration at the LOC.

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(2) Flow to and from the solvent recovery system shall be discontinued, and oven heaters shall be de-energized.
(3) Air shall be introduced into the oven enclosure until the oxygen level reaches a minimum of 19.5 percent.

10.2.13 Emergency Procedures.

10.2.13.1 In the event of electrical power failure, the equipment or procedures required by 10.2.13.2 shall be operated.

10.2.13.2 The oven shall shut down automatically when the emergency purge cycle is initiated.

10.2.13.3 The oxygen analyzer that initiates the emergency purge cycle shall be hard-wired to bypass all other process control instrumentation.

10.2.13.4 The oven enclosure shall have a vent line that does the following:

(1) Opens automatically when the emergency purge cycle is initiated in order to avoid pressurizing the oven enclosure
(2) Discharges to an approved location away from building makeup air and ignition sources

10.2.14* Training and Maintenance. Operation and maintenance of a low-oxygen oven and its associated recovery equipment shall be performed by the user in accordance with the manufacturer's recommendations.

Chapter 11 Class B Ovens and Furnaces

11.1 General. The requirements of Chapters 1 through 8 and Chapters 11 and 14 shall apply to Class B ovens and furnaces.

11.2* Ventilation of Class B Ovens and Furnaces. Where the installation of heat recovery devices and pollution control devices reduce the combustion airflow or exhaust flow below that required for purge, the purge flow rate or purge time shall be increased to compensate for the reduction.

11.3 Safety Devices for Arc Melting Furnaces.

11.3.1* General. Safety controls for arc melting furnaces shall meet the following criteria:

(1) They shall be designed to prevent operating the furnace, unless operating conditions that are within design parameters for the furnace have been established.
(2) They shall be designed to shut down the furnace if operating conditions outside of the design parameters occur.
(3) Their safety controls shall be accessible at all times.

11.3.2 Safety Devices.

11.3.2.1 The furnace main disconnect shall be either a circuit breaker or fused switch equipped with all of the following accessories:

(1) Overcurrent relays with inverse time and instantaneous trips
(2) Overcurrent ground-fault relays with inverse time and instantaneous relays
(3) Undervoltage trip relay
(4) Surge protection
(5) Local and remote close/trip switches interlocked by a common key so that only one location is capable of being operated at any time

11.3.2.2 A master lockout switch with a key shall be located at the furnace operator's panel.

(A) The switch shall be connected to a circuit breaker by cables that are separated completely from any other wiring.

(B) The switch shall provide a positive lockout and isolation of the circuit breaker, thereby preventing accidental closure of the breaker by grounds in the closing circuit.

(C) The key shall be trapped when the switch is in the on position and shall be free when in the off position.

(D) The key shall be kept under the supervision of the authorized operator.

11.3.2.3 Interlocks. Interlocks shall be provided to ensure that all of the following conditions are satisfied before the main disconnect can be closed:

(1) Furnace transformer heat exchangers are operating.
(2) Oil is flowing to furnace heat exchangers (if fitted).
(3) Water is flowing to furnace transformer heat exchangers (flow or pressure-proving switch).
(4) Transformer tap changer is on the tap position (if off-load tap changer fitted).
(5) Furnace transformer oil temperature is within operating limits.
(6) Furnace transformer winding temperature is within operating limits.
(7) Gas detector is registering no gas in transformer tank.
(8) Furnace electrode drive control gear is on.
(9) All supply voltages are on and within operating limits.
(10) Furnace roof and electrode swing are within operating limits.
(11) Furnace is within specified limits of forward and backward tilt.
(12) Master lockout switch is on.
(13) Safety shutoff valves on oxygen and fuel lines supplying burners are proved closed.

11.3.2.4 Interlocks for Main Furnace Structure.

(A) The main furnace structure shall be interlocked where the arc furnace operation includes tilting of the furnace to remove molten metal at the end of the furnace heat, and the following criteria also shall be met:

(1) The furnace shall not be tilted during the melt operation, and interlocks shall be provided to prevent furnace tilting until furnace controls have been proved in the correct position.
(2) Interlocks shall be fitted to prevent tilting of the furnace unless both of the following conditions are satisfied:
   (a) The roof is down.
   (b) The limit switches are at forward and backward limits of travel.

(B) Interlocks shall be fitted to prevent swinging of the roof and electrodes unless the following three conditions are satisfied:

(1) The electrode arms are up and clear of shell.
(2) The furnace tilt platform is normal and locked (if fitted).
(3) The roof is raised.

11.3.2.5 A compressed air line supply for unclamping electrodes shall be fitted with a solenoid valve interlocked with the furnace circuit breaker to ensure that the electrodes cannot be released unless the furnace power is off.

11.3.2.6* For burner ignition with the arc, oxy-fuel and oxygen-enriched air burner controls shall be interlocked with the furnace controls, and the following criteria also shall apply:

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Status _____ Date _____ Inspector's ILMS-ID _____

3) FC 104.7.2 - Technical assistance

To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to the inspection of the department, the code official is authorized to require the owner or agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the code official and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The code official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

COMMENTS:

A TECHNICAL REPORT, CONCERNING THE THERMAL OXIDIZING PROCESS, SHALL BE SUBMITTED TO THE AHJ. THE REPORT SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL, PREFERABLY A FIRE PROTECTION ENGINEER. IF CES ENVIRONMENTAL CHOOSES TO CEASE THE OPERATION, AN ACTION PLAN SHALL BE SUBMITTED TO THE AHJ. THE PLANS SHALL GIVE SPECIFIC TIME FRAMES OF WHEN AND WERE IT WILL BE MOVED.

COMPLIANCE WITHIN 30 DAYS

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Regenerative Thermal Oxidizer (RTO)

The Anguil Regenerative Thermal Oxidizer destroys Hazardous Air Pollutants (HAPs), Volatile Organic Compounds (VOCs) and odorous emissions that are often discharged from industrial processes. The RTO achieves emission destruction through the process of high temperature thermal or catalytic oxidation, converting the pollutants to carbon dioxide and water vapor while reusing the thermal energy generated to reduce operating costs.

How the RTO Works
VOC and HAP laden process gas enters the oxidizer through an inlet manifold to flow control, poppet valves that direct this gas into energy recovery chambers where it is preheated. The process gas and contaminants are progressively heated in the ceramic media beds as they move toward the combustion chamber.

Once oxidized in the combustion chamber, the hot purified air releases thermal energy as it passes through the media bed in the outlet flow direction. The outlet bed is heated and the gas is cooled so that the outlet gas temperature is only slightly higher than the process inlet temperature. Poppet valves alternate the airflow direction into the media beds to maximize energy recovery within the oxidizer. The high energy recovery within these oxidizers reduces the auxiliary fuel requirement and saves operating cost. The Anguil oxidizer achieves high destruction efficiency and self-sustaining operation with no auxiliary fuel usage at low concentrations.

Learn More
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» RTO for Printing Emissions
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» Recuperative Thermal Oxidizer
» Rotor Concentrator / Oxidizer

Contact a sales engineer
» Call 800-488-0230
» Submit project specs

This ↑ info will answer
3) FC 104.7.2. — Tech Report
on Thermal Oxidizing Process

EPAHO044000278

CITY OF HOUSTON

Fire Marshal, Life Safety Bureau
Houston Fire Department
2931 W 12th Street, Houston, Texas 77008
713-865-7100 / fax: 713-865-7177

CES ENVIRONMENTAL SERVICES INC
4904 GRIGGS RD
HOUSTON, TX 77021

17-JAN-2009

Project No: **08105623**

<< NOTICE OF VIOLATION >>

Your attention is respectfully called to the violation of the provisions of the City of Houston Fire Code as indicated herein, on the premises located at:

4904 GRIGGS RD

GENERAL

GERARDO A. REY-INSPECTOR
HOUSTON FIRE DEPARTMENT
FIRE MARSHAL'S OFFICE
OFFICE# 713-247-4113
FAX#713-247-8968
E-MAIL: gerardo.rey@cityofhouston.net

Status _____ **Date** _____ **Inspector's ILMS-ID** _____

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2) FC 102.2.1 - Existing buildings
Buildings or structures in existence at the time of the passage of this code may have their existing use or occupancy continued if the buildings or structures comply with the standards established in Article IX of Chapter 10 of the City Code, Section 102.6 and Chapter 34 of the Building Code and Appendix "L" of the Building Code (Life Safety Requirements for Existing Buildings). Determination of compliance shall be under the primary jurisdiction of the building official. Whenever the code official determine, pursuant to inspection of such a building or structure, that there exists therein a fire hazard that causes the building or structure to be dangerous to life, the code official shall initiate proceedings under Article VIII of Chapter 10 of the City Code, including the placarding of buildings as authorized therein. The code official shall notify the building official, and if the building official determines that the building or structure constitutes a dangerous building as defined in Article IX of Chapter 10 of the City Code, then the building official shall initiate dangerous building abatement proceedings before the hearing official or the Building and

<< NOTICE OF VIOLATION CONTINUED >>

Standards Commission under the applicable provisions of Chapter 10 of the City Code.

COMMENTS:
EQUIPMENT HAS BEEN RED TAGGED BY THE FIRE MARSHAL'S OFFICE. UNTIL A TECHNICAL REPORT HAS BEEN PERFORMED BY A QUALIFIED INDIVIDUAL AND SUBMITTED TO THE OFFICIAL HAVING JURISDICTION, THE EQUIPMENT SHALL NOT BE OPERATED IN ANY MANNER. ALL OPERATIONS, EQUIPMENT, PROCESSES AND REPAIRS SHALL REMAIN SUSPENDED UNTIL SUCH TIME THAT A TECHNICAL REPORT HAS BEEN PROVIDED THAT SATISFACTORILY DEMONSTRATES COMPLIANCE WITH APPLICABLE STANDARDS AND CODES AND PROVIDES EVIDENCE OF PROPER PRECAUTIONS BEING UNDERTAKEN.

*****COMPLIANCE WITHIN 30 DAYS*****

Status _____ **Date** _____ **Inspector's ILMS-ID** _____

3) FC 104.7.2 - Technical assistance
To determine the acceptability of technologies, processes, products, facilities, materials and uses attending the design, operation or use of a building or premises subject to the inspection of the department, the code official is authorized to require the owner or agent to provide, without charge to the jurisdiction, a technical opinion and report. The opinion and report shall be prepared by a qualified engineer, specialist, laboratory or fire safety specialty organization acceptable to the code official and shall analyze the fire safety properties of the design, operation or use of the building or premises and the facilities and appurtenances situated thereon, to recommend necessary changes. The code official is authorized to require design submittals to be prepared by, and bear the stamp of, a registered design professional.

COMMENTS:
A TECHNICAL REPORT, CONCERNING THE THERMAL OXIDIZING PROCESS, SHALL BE SUBMITTED TO THE AHJ. THE REPORT SHALL BE PERFORMED BY A QUALIFIED INDIVIDUAL, PREFERABLY A FIRE PROTECTION ENGINEER. IF CES ENVIRONMENTAL CHOOSES TO CEASE THE OPERATION, AN ACTION PLAN SHALL BE SUBMITTED TO THE AHJ. THE PLANS SHALL GIVE SPECIFIC TIME FRAMES OF WHEN AND WERE IT WILL BE MOVED.

*****COMPLIANCE WITHIN 30 DAYS*****

tatus _____ **Date** _____ **Inspector's ILMS-ID** _____

) FC 2701.4.2 - Hazardous Materials Inventory Statement (HMIS)
here required by the code official, an application for a permit shall nclude a HMIS, such as SARA Title III, Tier II Report, or other approved tatement. The HMIS shall include the following information: 1.

<< NOTICE OF VIOLATION CONTINUED >>

Manufacturer's name. 2. Chemical name, trade names, hazardous ingredients. 3. Hazard classification. 4. MSDS or equivalent. 5. United Nations (UN), North America (NA) or the Chemical Abstract Service (CAS) identification number. 6. Maximum quantity stored or used on-site at one time. 7. Storage conditions related to the storage type, temperature and pressure.

COMMENTS:
A HAZARDOUS MATERIAL INVENTORY STATEMENT SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION.
OUTSIDE STORAGE AREA FOR HAZARDOUS MATERIALS WAS NOT ROUTED TO THE FIRE MARSHAL'S OFFICE ROUTE #180 FOR REVIEW BY HAZARDOUS MATERIAL/HIGH-PILE INSPECTORS. PLANS MUST BE SUBMITTED TO COMMERCIAL PLANS CHECKING SECTION AND ROUTED TO FM 180 FOR PROPER REVIEW. THIS INCLUDES 4 SETS OF PLANS, 2 SETS WILL BE GIVEN TO THE BUILDING DEPARTMENT AND 2 SETS TO FM 180. YOU MAY SUBMIT THE PLANS AT 3300 MAIN STREET.

COMPLIANCE WITHIN 30 DAYS

Status _____ Date _____ Inspector's ILMS-ID _____

5) FC 105.8.2 - INFORMATION FOR COMPLIANCE.

Violations not corrected by the re-inspection date will subject the owner, operator, lessee, to a re-inspection fee of $150.00 for each additional inspection, as well as disapproval of permits, issurance of citations for uncorrected violations, and citations for invalid permits, and require the resubmittal of application fees for such permits.

Failure on your part to comply with the indicated violations will subject you to the penalties prescribed by law for such violations. A follow-up Inspection will be made on or after:

Inspecting Officer Signature Chief Mark Ratkin for Insp. Gerardo Rey Date 12-19-08

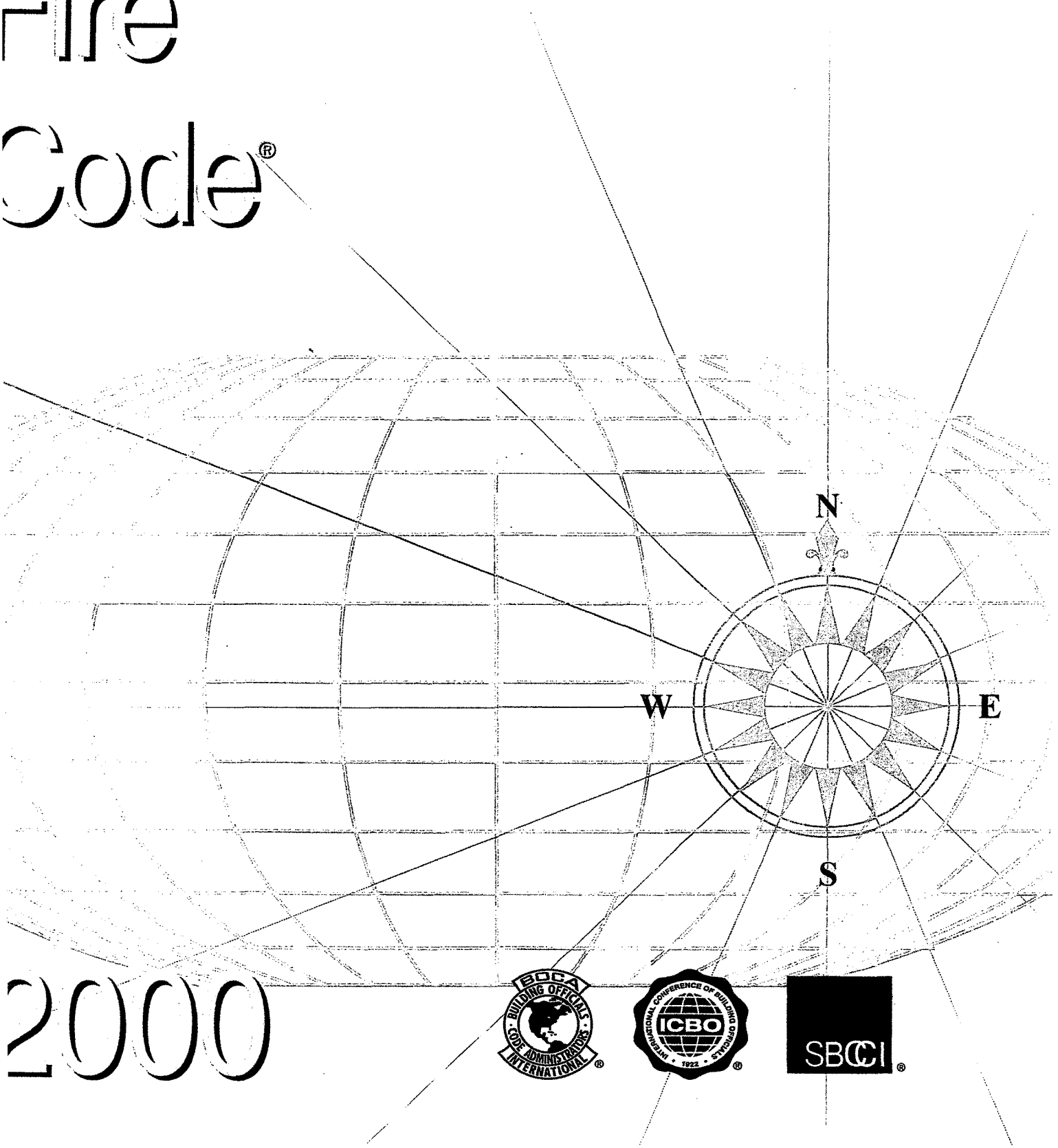
Copy Received By Signature _____ Date 12-19-08

Scheduled Reinspection Date 1-20-09 mw Reinspection Date _____ R9 __

Scheduled Reinspection Date _____ Reinspection Date _____ R9 __

Scheduled Reinspection Date _____ Reinspection Date _____ R9 __

International Fire Code®



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CHAPTER 9

FIRE PROTECTION SYSTEMS

SECTION 901
GENERAL

901.1 Scope. The provisions of this chapter and the *Building Code* shall specify where fire protection systems are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all fire protection systems.

901.2 Construction documents. The code official shall have the authority to require construction documents and calculations for the installation, rehabilitation or modification of any fire protection system. Construction documents for fire protection systems shall be submitted for review and approval in accordance with the *Building Code* prior to system installation.

901.3 Permits. Permits shall be required as set forth in Section 105.6.

901.4 Installation. Fire protection systems shall be maintained in accordance with the original installation standards for that system. Required systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be done in accordance with applicable standards.

901.4.1 Required fire protection systems. Fire protection systems required by this code or the *International Building Code* shall be installed, repaired, operated, tested and maintained in accordance with this code.

901.4.2 Nonrequired fire protection systems. Any fire protection system or portion thereof not required by this code or the *International Building Code* shall be allowed to be furnished for partial or complete protection provided such installed system meets the requirements of this code and the *International Building Code*.

901.4.3 Additional fire protection systems. In occupancies of a hazardous nature, where special hazards exist in addition to the normal hazards of the occupancy, or where the code official determines that access for fire apparatus is unduly difficult, the code official shall have the authority to require additional safeguards. Such safeguards include, but shall not be limited to, the following: automatic fire detection systems, fire alarm systems, automatic fire-extinguishing systems, standpipe systems, or portable or fixed extinguishers. Fire protection equipment required under this section shall be installed in accordance with this code and the applicable referenced standards.

901.4.4 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but that does not perform that life safety or fire protection function, shall be prohibited. Systems or devices that are permanently out of service or any non-required life safety system or fire protection system that no longer functions as originally installed shall be removed or the appearance changed so as not to be mistaken for functioning life safety or fire protection equipment.

901.5 Installation acceptance testing. Fire detection and alarm systems, fire-extinguishing systems, fire hydrant systems, fire standpipe systems, fire pump systems, private fire service mains and all other fire protection systems and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as approved by the code official.

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until the required fire detection, alarm and suppression systems have been tested and approved.

Exception: See Section 105.3.3.

901.6 Inspection, testing and maintenance. Fire detection, alarm and extinguishing systems shall be maintained in an operative condition at all times, and shall be replaced or repaired where defective. Nonrequired fire protection systems and equipment shall be inspected, tested and maintained or removed.

901.6.1 Standards. Fire protection systems shall be inspected, tested and maintained in accordance with the referenced standards listed in Table 901.6.1 and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment" and LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers".

TABLE 901.6.1
FIRE PROTECTION SYSTEM MAINTENANCE STANDARDS

SYSTEM	STANDARD
Portable fire extinguishers	NFPA 10
Carbon dioxide fire-extinguishing system	NFPA 12
Halon 1301 fire-extinguishing systems	NFPA 12A
Dry-chemical extinguishing systems	NFPA 17
Wet-chemical extinguishing systems	NFPA 17A
Water-based fire protection systems	NFPA 25
Fire alarm systems	NFPA 72
Clean-agent extinguishing systems	NFPA 2001
Water-mist systems	NFPA 750

901.6.2 Records. Records of all system inspections, tests, and maintenance required by the referenced standards in Table 901.6.1, and of all major repairs to the life safety and fire protection equipment systems, shall be maintained on the premises for not less than 3 years and made available to the code official upon request.

Exception: Where inspection or testing may be on a 4- or 5- year cycle, the records shall be maintained until the next testing cycle has been completed.

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901.6.3 Systems in high-rise buildings. The owner of a high-rise building shall be responsible for assuring that the life safety and fire systems required by the *Building Code* are maintained in an operable condition at all times. Life safety and fire protection equipment shall be tested and inspected in accordance with Section 901.6.1.

901.7 Systems out of service. Where a required life safety or fire protection system is out of service, the fire department and the code official shall be notified immediately in accordance with Section 901.9 and, where required by the code official, the building shall either be evacuated or an approved fire watch or standby inspector, in accordance with Section 112, shall be provided for all occupants left unprotected by the shut down until the life safety or fire protection system has been returned to service.

Where utilized, fire watches shall be provided with at least one approved means for notification of the fire department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

901.7.1 Impairment coordinator. The building owner shall assign an impairment coordinator to comply with the requirements of this section. In the absence of a specific designee, the owner shall be considered the impairment coordinator.

901.7.2 Tag required. A 'red' tag shall be used to indicate that a system, or portion thereof, has been removed from service. The 'red' tag shall indicate the nature of the problem, the date, time and location, and the name of the person or service company applying the tag.

901.7.3 Placement of tag. The tag shall be posted at each fire department connection, system control valve, fire alarm control unit, fire alarm annunciator and fire command center, indicating which system, or part thereof, has been removed from service. The code official shall specify where the tag is to be placed.

901.7.4 Preplanned impairment programs. Preplanned impairments shall be authorized by the impairment coordinator. Before authorization is given, a designated individual shall be responsible for verifying that all of the following procedures have been implemented:

1. The extent and expected duration of the impairment have been determined.
2. The areas or buildings involved have been inspected and the increased risks determined.
3. Recommendations have been submitted to management or building owner/manager.
4. The fire department has been notified.
5. The insurance carrier, the alarm company, building owner/manager, and other authorities having jurisdiction have been notified.
6. The supervisors in the areas to be affected have been notified.
7. A tag impairment system has been implemented.
8. Necessary tools and materials have been assembled on the impairment site.

901.7.5 Emergency impairments. When unplanned impairments occur, appropriate emergency action shall be taken to minimize potential injury and damage. The impairment coordinator shall implement the steps outlined in Section 901.7.4.

901.7.6 Restoring systems to service. When impaired equipment is restored to normal working order, the impairment coordinator shall verify that all of the following procedures have been implemented:

1. Necessary inspections and tests have been conducted to verify that affected systems are operational.
2. Supervisors have been advised that protection is restored.
3. The fire department has been advised that protection is restored.
4. The building owner/manager, insurance carrier, alarm company, and other involved parties have been advised that protection is restored.
5. The impairment tag has been removed.

901.8 Removal of or tampering with equipment. It shall be unlawful for any person to remove, tamper with or otherwise disturb any fire hydrant, fire detection and alarm system, fire suppression system, or other fire appliance required by this code except for the purpose of extinguishing fire, training purposes, recharging or making necessary repairs, or when approved by the code official.

901.8.1 Removal of or tampering with appurtenances. Locks, gates, doors, barricades, chains, enclosures, signs, tags or seals which have been installed by or at the direction of the code official shall not be removed, unlocked, destroyed, tampered with or otherwise vandalized in any manner.

901.9 Notification of fire department. The Houston Fire Department Office of Emergency Communications shall be immediately notified by telephone, at (713) 884-3143, whenever the required fire protection or life safety system is placed out of service for emergency or non-scheduled repairs, replacements, or service. The Fire Department shall be provided with the following information:

1. Correct street address and name of the building or structure.
2. The caller's name and contact phone number.
3. The identity of system that is impaired or shut down, and if known, the nature of impairment or failure.
4. Estimated length of time system is to be out of service for repairs.

The Fire Department Office of Emergency Communications shall again be notified when the system is restored to normal operational status.

SECTION 902
DEFINITIONS

902.1 Definitions. The following words and terms shall, for the purposes of this chapter and as used elsewhere in this code, have the meanings shown herein.

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ALARM NOTIFICATION APPLIANCE. A fire alarm system component such as a bell, horn, speaker, light, or text display that provides audible, tactile, or visible outputs, or any combination thereof.

ALARM SIGNAL. A signal indicating an emergency requiring immediate action, such as a signal indicative of fire.

ALARM VERIFICATION FEATURE. A feature of automatic fire detection and alarm systems to reduce unwanted alarms wherein smoke detectors report alarm conditions for a minimum period of time, or confirm alarm conditions within a given time period, after being automatically reset, in order to be accepted as a valid alarm-initiation signal.

ANNUNCIATOR. A unit containing one or more indicator lamps, alphanumeric displays, or other equivalent means in which each indication provides status information about a circuit, condition or location.

AUDIBLE ALARM NOTIFICATION APPLIANCE. A notification appliance that alerts by the sense of hearing.

AUTOMATIC. As applied to fire protection devices, is a device or system providing an emergency function without the necessity for human intervention and activated as a result of a predetermined temperature rise, rate of temperature rise, or combustion products.

AUTOMATIC FIRE-EXTINGUISHING SYSTEM. An approved system of devices and equipment which automatically detects a fire and discharges an approved fire-extinguishing agent onto or in the area of a fire.

AUTOMATIC SPRINKLER SYSTEM. A sprinkler system, for fire protection purposes, is an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The system includes a suitable water supply. The portion of the system above the ground is a network of specially sized or hydraulically designed piping installed in a structure or area, generally overhead, and to which automatic sprinklers are connected in a systematic pattern. The system is usually activated by heat from a fire and discharges water over the fire area.

AVERAGE AMBIENT SOUND LEVEL. The root mean square, A-weighted sound pressure level measured over a 24-hour period.

CARBON DIOXIDE EXTINGUISHING SYSTEM. A system supplying carbon dioxide (CO_2) from a pressurized vessel through fixed pipes and nozzles. The system includes a manual- or automatic-actuating mechanism.

CLEAN AGENT. Electrically nonconducting, volatile, or gaseous fire extinguishant that does not leave a residue upon evaporation.

CONSTANTLY ATTENDED LOCATION. A designated location at a facility staffed by trained personnel on a continuous basis where alarm or supervisory signals are monitored and facilities are provided for notification of the fire department or other emergency services.

DELUGE SYSTEM. A sprinkler system employing open sprinklers attached to a piping system connected to a water supply through a valve that is opened by the operation of a detection system installed in the same area as the sprinklers. When this valve opens, water flows into the piping system and discharges from all sprinklers attached thereto.

DETECTOR, HEAT. A fire detector that senses heat produced by burning substances. Heat is the energy produced by combustion that causes substances to rise in temperature.

DRY-CHEMICAL EXTINGUISHING AGENT. A powder composed of small particles, usually of sodium bicarbonate, potassium bicarbonate, urea-potassium-based bicarbonate, potassium chloride or monoammonium phosphate, with added particulate material supplemented by special treatment to provide resistance to packing, resistance to moisture absorption (caking) and the proper flow capabilities.

EMERGENCY ALARM SYSTEM. A system to provide indication and warning of emergency situations involving hazardous materials.

EMERGENCY VOICE/ALARM COMMUNICATIONS. Dedicated manual or automatic facilities for originating and distributing voice instructions, as well as alert and evacuation signals pertaining to a fire emergency, to the occupants of a building.

FIRE ALARM BOX, MANUAL. A manual operated device used to initiate an alarm signal.

FIRE ALARM CONTROL UNIT. A system component that receives inputs from automatic and manual fire alarm devices and is capable of supplying power to detection devices and transponder(s) of off-premises transmitter(s). The control unit is capable of providing a transfer of power to the notification appliances and transfer of condition to relays of devices.

FIRE ALARM SIGNAL. A signal initiated by a fire alarm-initiating device such as a manual fire alarm box, automatic fire detector, water-flow switch, or other device whose activation is indicative of the presence of a fire or fire signature.

FIRE ALARM SYSTEM. A system or portion of a combination system consisting of components and circuits arranged to monitor and annunciate the status of fire alarm or supervisory signal-initiating devices and to initiate the appropriate response to those signals.

FIRE AREA. The aggregate floor area enclosed and bounded by fire walls, fire barriers, exterior walls, or fire-resistance-rated horizontal assemblies of a building.

FIRE DETECTOR, AUTOMATIC. A device designed to detect the presence of a fire signature and to initiate action.

FIRE PROTECTION SYSTEM. Approved devices, equipment and systems or combinations of systems used to detect a fire, activate an alarm, extinguish or control a fire, control or manage smoke and products of a fire or any combination thereof.

FIRE SAFETY FUNCTIONS. Building and fire control functions that are intended to increase the level of life safety for occupants or to control the spread of the harmful effects of fire.

FOAM-EXTINGUISHING SYSTEM. A special system discharging a foam made from concentrates, either mechanically or chemically, over the area to be protected.

HALOGENATED EXTINGUISHING SYSTEM. A fire-extinguishing system using one or more atoms of an element

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from the halogen chemical series: fluorine, chlorine, bromine and iodine.

IMPAIRMENT COORDINATOR. The person responsible for the maintenance of a particular fire protection system.

INITIATING DEVICE. A system component that originates transmission of a change-of-state condition, such as in a smoke detector, manual fire alarm box, or supervisory switch.

MANUAL FIRE ALARM BOX. A manually operated device used to initiate an alarm signal.

MULTIPLE-STATION ALARM DEVICE. Two or more single-station alarm devices that can be interconnected such that actuation of one causes all integral or separate audible alarms to operate. It also can consist of one single-station alarm device having connections to other detectors or to a manual fire alarm box.

MULTIPLE-STATION SMOKE ALARM. Two or more single-station alarm devices that are capable of interconnection such that actuation of one causes all integral or separate audible alarms to operate.

NUISANCE ALARM. An alarm caused by mechanical failure, malfunction, improper installation, or lack of proper maintenance, or an alarm activated by a cause that cannot be determined.

RECORD DRAWINGS. Drawings ("as builts") that document the location of all devices, appliances, wiring, sequences, wiring methods, and connections of the components of a fire alarm system as installed.

SINGLE-STATION SMOKE ALARM. An assembly incorporating the detector, the control equipment, and the alarm-sounding device in one unit, operated from a power supply either in the unit or obtained at the point of installation.

SMOKE ALARM. A single- or multiple-station alarm responsive to smoke and not connected to a system.

SMOKE DETECTOR. A listed device that senses visible or invisible particles of combustion.

STANDPIPE SYSTEM, CLASSES OF. Standpipe classes are as follows:

Class I system. A system providing 2.5-inch (64 mm) hose connections to supply water for use by fire departments and those trained in handling heavy fire streams.

Class II system. A system providing 1.5-inch (38 mm) hose stations to supply water for use primarily by the building occupants or by the fire department during initial response.

Class III system. A system providing 1.5-inch (38 mm) hose stations to supply water for use by building occupants and 2.5-inch (64 mm) hose connections to supply a larger volume of water for use by fire departments and those trained in handling heavy fire streams.

STANDPIPE, TYPES OF. Standpipe types are as follows:

Automatic wet. A wet standpipe system that has a water supply that is capable of supplying the system demand automatically.

Manual wet. A wet standpipe system connected to a water supply for the purpose of maintaining water within the system but which does not have a water supply capable of delivering the system demand attached to the system. Manual wet standpipe systems require water from a fire department pumper (or the like) to be pumped into the system in order to supply the system demand.

SUPERVISING STATION. A facility that receives signals and at which personnel are in attendance at all times to respond to these signals.

SUPERVISORY SERVICE. The service required to monitor performance of guard tours and the operative condition of fixed suppression systems or other systems for the protection of life and property.

SUPERVISORY SIGNAL. A signal indicating the need of action in connection with the supervision of guard tours, the fire suppression systems or equipment, or the maintenance features of related systems.

SUPERVISORY SIGNAL-INITIATING DEVICE. An initiating device such as a valve supervisory switch, water level indicator, or low-air pressure switch on a dry-pipe sprinkler system whose change of state signals an off-normal condition and its restoration to normal of a fire protection or life safety system; or a need for action in connection with guard tours, fire suppression systems or equipment, or maintenance features of related systems.

TIRES, BULK STORAGE OF. Storage of tires where the area available for storage exceeds 20,000 cubic feet (566 m^3).

TROUBLE SIGNAL. A signal initiated by the fire alarm system or device indicative of a fault in a monitored circuit or component.

VISIBLE ALARM NOTIFICATION APPLIANCE. A notification appliance that alerts by the sense of sight.

WET-CHEMICAL EXTINGUISHING AGENT. A solution of water and potassium-carbonate-based chemical, potassium-acetate-based chemical or a combination thereof, forming an extinguishing agent.

WIRELESS PROTECTION SYSTEM. A system or a part of a system that can transmit and receive signals without the aid of wire.

ZONE. A defined area within the protected premises. A zone can define an area from which a signal can be received, an area to which a signal can be sent, or an area in which a form of control can be executed.

SECTION 903
AUTOMATIC SPRINKLER SYSTEMS

903.1 General. Automatic sprinkler systems shall comply with this section.

903.1.1 Alternative protection. Alternative automatic fire-extinguishing systems complying with Section 904 shall be permitted in lieu of automatic sprinkler protection where recognized by the applicable standard and approved by the code official.

903.1.2 Residential systems. Unless specifically allowed by this code or the *International Building Code*, residential sprinkler systems installed in accordance with NFPA 13D or

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NFPA 13R shall not be recognized for the purposes of exceptions or reductions permitted by other requirements of this code.

903.2 Where required. Approved automatic sprinkler systems in new buildings and structures shall be provided in the locations described in this section.

903.2.1 Group A. An automatic sprinkler system shall be provided throughout buildings and portions thereof used as Group A occupancies as provided in this section. The automatic sprinkler system shall be provided throughout the floor area where the Group A occupancy is located, and in all floors between the Group A occupancy and the level of exit discharge.

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided for Group A-1 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.
4. The fire area contains a multi-theater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (45 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided for Group A-4 occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sport areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.1.5 Group A-5. An automatic sprinkler system shall be provided in concession stands, retail areas, press boxes, and other accessory use areas in excess of 1,000 square feet (93 m²).

903.2.2 Group E. An automatic sprinkler system shall be provided throughout all Group E fire areas greater than 20,000 square feet (1858 m²) in area. An automatic sprinkler system shall also be provided for every portion of educational buildings below the level of exit discharge.

Exception: Where each classroom has at least one exterior exit door at ground level.

903.2.3 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. Where a Group F-1 fire area occupancy exceeds 12,000 square feet (1115 m²), or
2. Where a Group F-1 fire area is located more than three stories above grade, or
3. Where the combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.3.1 Woodworking operations. An automatic sprinkler system shall be provided throughout all Group F-1 occupancy fire areas that contain woodworking operations in excess of 2,500 square feet in area (232 m²) which generate finely divided combustible waste or which use finely divided combustible materials.

903.2.4 Group H. Automatic sprinkler systems shall be provided in high-hazard occupancies as required in Sections 903.2.4.1 through 903.2.4.3.

903.2.4.1 General. An automatic sprinkler system shall be installed in Group H occupancies.

903.2.4.2 Group H-5 occupancies. An automatic sprinkler system shall be installed throughout buildings containing Group H-5 occupancies. The design of the sprinkler system shall not be less than that required under the *International Building Code* for the occupancy hazard classifications in accordance with Table 903.2.4.2.

Where the design area of the sprinkler system consists of a corridor protected by one row of sprinklers, the maximum number of sprinklers required to be calculated is 13.

TABLE 903.2.4.2
GROUP H-5 SPRINKLER DESIGN CRITERIA

LOCATION	OCCUPANCY HAZARD CLASSIFICATION
Fabrication areas	Ordinary Hazard Group 2
Service corridors	Ordinary Hazard Group 2
Storage rooms without dispensing	Ordinary Hazard Group 2
Storage rooms with dispensing	Extra Hazard Group 2
Corridors	Ordinary Hazard Group 2

903.2.4.3 Pyroxylin plastics. An automatic sprinkler system shall be provided in buildings, or portions thereof, where cellulose nitrate film or pyroxylin plastics are manufactured, stored or handled in quantities exceeding 100 pounds (45 kg).

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903.2.5 Group I. An automatic sprinkler system shall be provided throughout buildings with a Group I fire area.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group I-1 facilities.

903.2.6 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. Where a Group M fire area exceeds 12,000 square feet (1115 m²), or
2. Where a Group M fire area is located more than three stories above grade, or
3. Where the combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.6.1 High-piled storage. An automatic sprinkler system shall be provided as required in Chapter 23 in all buildings of Group M where storage of merchandise is in high-piled or rack storage arrays.

903.2.7 Group R-1. An automatic sprinkler system shall be provided throughout buildings containing a Group R-1 fire area where the building is three or more stories in height or contain 20 or more sleeping units.

Exception: A residential sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in buildings, or portions thereof, of Group R-1.

903.2.8 Group R-2. An automatic sprinkler system shall be provided throughout all buildings with a Group R-2 fire area where more than two stories in height, including basements, or where having more than 16 dwelling units.

Exception: A residential sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in buildings, or portions, thereof of Group R-2.

903.2.9 Group R-4. An automatic sprinkler system shall be provided throughout all buildings with a Group R-4 fire area with more than eight occupants.

Exception: An automatic sprinkler system installed in accordance with Section 903.3.1.2 or 903.3.1.3 shall be allowed in Group R-4 facilities.

903.2.10 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. Where a Group S-1 area exceeds 12,000 square feet (1115 m²), or
2. Where a Group S-1 fire area is located more than three stories above grade, or
3. Where the combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.10.1 Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with the *Building Code*, as follows:

1. Buildings two or more stories in height, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m²).
2. One-story buildings with a fire area containing a repair garage exceeding 12,000 square feet (1115 m²).
3. Buildings with a repair garage servicing vehicles parked in the basement.

903.2.10.2 Bulk storage of tires. Buildings and structures where the area for the storage of tires exceeds 20,000 cubic feet (566 m³) shall be equipped throughout with an automatic fire sprinkler system in accordance with Section 903.3.1.1.

903.2.11 Group S-2. An automatic sprinkler system shall be provided throughout buildings classified as an enclosed parking garage in accordance with the *International Building Code* or where located beneath other groups.

Exception: Enclosed parking garages located beneath Group R-3 occupancies.

903.2.11.1 Commercial parking garages. An automatic sprinkler system shall be provided throughout buildings used for storage of commercial trucks or buses where the fire area exceeds 5,000 square feet (464 m²).

903.2.12 All occupancies except Groups R-3 and U. An automatic sprinkler system shall be installed in the locations set forth in Sections 903.2.12.1 through 903.2.12.1.3.

Exception: Group R-3 and Group U.

903.2.12.1 Stories and basements without openings. An automatic sprinkler system shall be installed in every story or basement of all buildings where the floor area exceeds 1,500 square feet (139.4 m²) and there is not provided at least one of the following types of openings:

1. An exterior stairway that conforms to the requirements of Section 1003.3.3 or an outside ramp that conforms to the requirements of Section 1003.3.4, leading directly to grade in each 50 linear feet, or fraction thereof, of exterior wall in the story on at least one side.
2. Openings entirely above the adjoining ground level totaling at least 20 square feet in each 50 linear feet, or fraction thereof, of exterior wall in the story on at least one side.

903.2.12.1.1 Opening dimensions and access. Openings shall have a minimum dimension of not less than 30 inches (762 mm). Such openings shall be accessible to the fire department from the exterior and shall not be obstructed in a manner that fire fighting or rescue cannot be accomplished from the exterior.

903.2.12.1.2 Openings on one side only. Where openings in a story are provided on only one side and the opposite wall of such story is more than 75 feet (22 860 mm) from such openings, the story shall be equipped throughout with an approved automatic sprinkler system or openings as specified above shall be provided on at least two sides the story.

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903.2.12.1.3 Basements. Where any portion of a basement is located more than 75 feet (22 860 mm) from openings required by Section 903.2.12.1, the basement shall be equipped throughout with an approved automatic sprinkler system.

903.2.12.2 Rubbish and linen chutes. An automatic sprinkler system shall be installed at the top of rubbish and linen chutes and in their terminal rooms. Chutes extending through three or more floors shall have additional sprinkler heads installed within such chutes at alternate floors. Chute sprinklers shall be accessible for servicing.

903.2.12.3 Buildings over 55 feet in height. An automatic sprinkler system shall be installed throughout buildings with a floor level having an occupant load of 30 or more that is located 55 feet (16 764 mm) or more above the lowest level of fire department vehicle access.

Exceptions:

1. Airport control towers.
2. Open parking structures.
3. Occupancies in Group F-2.

903.2.13 Reserved.

903.2.14 Other hazards. Automatic sprinkler protection shall be provided for the hazards indicated in Sections 903.2.14.1 and 903.2.14.2.

903.2.14.1 Ducts conveying hazardous exhausts. Where required by the *International Mechanical Code*, automatic sprinklers shall be provided in ducts conveying hazardous exhaust, flammable or combustible materials.

Exception: Ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).

903.2.14.2 Commercial cooking operations. An automatic sprinkler system shall be installed in a commercial kitchen exhaust hood and duct system where an automatic sprinkler system is used to comply with Section 904.

903.2.15 Other required suppression systems. In addition to the requirements of Section 903.2, the provisions indicated in Table 903.2.15 also require the installation of a suppression system for certain buildings and areas.

TABLE 903.2.15
ADDITIONAL REQUIRED FIRE-EXTINGUISHING SYSTEMS

SECTION	SUBJECT
1008.5.2.3	Smoke-protected seating
1208.2	Dry cleaning plants
1208.3	Dry cleaning machines
1504.1	Spray finishing in Group A, E, I or R
1504.6	Spray booths and rooms
1505.1	Dip-tank rooms
1505.6.1	Dip tanks
1505.8.4	Hardening and tempering tanks
1803.10	HPM facilities
1803.10.1.1	HPM work station exhaust
1803.10.2	HPM gas cabinets
1803.10.3	HPM corridors
1803.10.4	HPM exhaust
1803.10.4.1	HPM noncombustible ducts
1803.10.4.2	HPM combustible ducts
1907.3	Lumber production conveyor rooms
1908.7	Recycling facility conveyor rooms
2106.1	Class A and B ovens
2106.2	Class C and D ovens
Table 2306.2	Storage fire protection
2306.4	Storage
2703.8.3.1	Gas rooms
2703.8.4.3	Exhausted enclosures
2704.5	Indoor storage of hazardous materials
2705.1.8	Indoor dispensing of hazardous materials
2904.4.1	Aerosol warehouses
3306.5.2.1	Storage of smokeless propellant
3306.5.2.3	Storage of small arms primers
3704.1.2	Gas cabinets for highly toxic and toxic gas
3704.1.3	Exhausted enclosures for highly toxic and toxic gas
3404.3.7.5.1	Flammable and combustible liquid storage rooms
3404.3.8.4	Flammable and combustible liquid storage warehouses
3405.3.7.3	Flammable and combustible liquid Group H-2 or H-3 areas
3704.2.2.6	Gas rooms for highly toxic and toxic gas
3704.3.3	Outdoor storage for highly toxic and toxic gas
4106.2.2	Exhausted enclosures or gas cabinets for silane gas
4204.1.1	Pyroxylin plastic storage cabinets
4204.1.3	Pyroxylin plastic storage vaults
4204.2	Pyroxylin plastic storage and manufacturing
International Building Code	Sprinkler requirements as set forth in Section 903.2.15 of the *International Building Code*

903.3 Installation requirements. Automatic sprinkler systems shall be designed and installed in accordance with Sections 903.3.1 through 903.3.7.

903.3.1 Standards. Sprinkler systems shall be designed and installed in accordance with Sections 903.3.1.1, 903.3.1.2 or 903.3.1.3.

903.3.1.1 NFPA 13 sprinkler systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system, sprinklers shall be installed throughout in

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accordance with NFPA 13 except as provided in Sections 903.3.1.1.1, 903.3.1.2 and 903.3.1.3.

903.3.1.1.1 Exempt locations. Automatic sprinklers shall not be required in the following rooms or areas where such rooms or areas are protected with an approved automatic fire detection system in accordance with Section 907.2 that will respond to visible or invisible particles of combustion. Sprinklers shall not be omitted from any room merely because it is damp, of fire-resistance rated construction or contains electrical equipment.

1. Any room where the application of water, or flame and water, constitutes a serious life or fire hazard.
2. Any room or space where sprinklers are considered undesirable because of the nature of the contents, when approved by the code official.
3. Generator and transformer rooms separated from the remainder of the building by walls and floor/ceiling or roof/ceiling assemblies having a fire-resistance rating of not less than 2 hours.
4. Spaces or areas in telecommunications buildings used exclusively for telecommunications equipment, associated electrical power distribution equipment, batteries and standby engines, provided those spaces or areas are equipped throughout with an automatic fire alarm system and are separated from the remainder of the building by a wall with a fire-resistance rating of not less than 1 hour and a floor/ceiling assembly with a fire-resistance rating of not less than 2 hours.
5. In rooms or areas that are of noncombustible construction with wholly noncombustible contents.

903.3.1.2 NFPA 13R sprinkler systems. Where allowed in buildings of Group R, up to and including four stories in height, automatic sprinkler systems shall be installed throughout in accordance with NFPA 13R.

903.3.1.3 NFPA 13D sprinkler systems. Where allowed, automatic sprinkler systems installed in one- and two-family dwellings shall be installed throughout in accordance with NFPA 13D.

903.3.2 Quick-response and residential sprinklers. Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing patient sleeping rooms in Group I-2 in accordance with the *Building Code*.
2. Dwelling units and sleeping units in Group R and I-1 occupancies.
3. Light-hazard occupancies as defined in NFPA 13.

903.3.3 Obstructed locations. Automatic sprinklers shall be installed with due regard to obstructions that will delay activation or obstruct the water distribution pattern. Automatic sprinklers shall be installed in or under covered kiosks, displays, booths, concession stands, or equipment that exceeds 4 feet (1219 mm) in width. Not less than a 3-foot (914 mm) clearance shall be maintained between automatic sprinklers and the top of piles of combustible fibers.

Exception: Kitchen equipment under exhaust hoods protected with a fire-extinguishing system in accordance with Section 904.

903.3.4 Actuation. Automatic sprinkler systems shall be automatically actuated unless specifically provided for in this code.

903.3.5 Water supplies. Water supplies for automatic sprinkler systems shall comply with this section and the standards referenced in Section 903.3.1. The potable water supply shall be protected against backflow in accordance with the requirements of this section and the *International Plumbing Code*.

903.3.5.1 Domestic services. Where the domestic service provides the water supply for the automatic sprinkler system, the supply shall be in accordance with this section.

903.3.5.1.1 Limited area sprinkler systems. Limited area sprinkler systems serving fewer than 20 sprinklers on any single connection are permitted to be connected to the domestic service where a wet automatic standpipe is not available. Limited area sprinkler systems connected to domestic water supplies shall comply with each of the following requirements:

1. Valves shall not be installed between the domestic water riser control valve and the sprinklers.

   Exception: An approved indicating control valve supervised in the open position in accordance with Section 903.4.

2. The domestic service shall be capable of supplying the simultaneous domestic demand and the sprinkler demand required to be hydraulically calculated by NFPA 13, NFPA 13R or NFPA 13D.

903.3.5.1.2 Residential combination services. A single combination water supply shall be permitted provided that the domestic demand is added to the sprinkler demand as required by NFPA 13R.

903.3.5.2 Secondary water supply. A secondary on-site water supply equal to the hydraulically calculated sprinkler demand, including the hose stream requirement, shall be provided for high-rise buildings in Seismic Design Category C, D, E or F as determined by the *International Building Code*. The secondary water supply shall have a duration not less than 30 minutes.

Exception: Existing buildings.

903.3.6 Hose threads. Fire hose threads used in connection with automatic sprinkler systems shall be approved, and shall be compatible with fire department hose threads.

903.3.7 Fire department connections. The location of fire department connections shall be approved by the code official.

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903.4 Sprinkler system monitoring and alarms. All valves controlling the water supply for automatic sprinkler systems and water-flow switches on all sprinkler systems shall be electrically supervised.

Exceptions:

1. Automatic sprinkler systems protecting one- and two-family dwellings.
2. Limited area systems serving fewer than 20 sprinklers.
3. Automatic sprinkler systems installed in accordance with NFPA 13R where a common supply main is used to supply both domestic and automatic sprinkler system and a separate shutoff valve for the automatic sprinkler system is not provided.
4. Jockey pump control valves that are sealed or locked in the open position.
5. Control valves to commercial kitchen hoods, paint spray booths or dip tanks that are sealed or locked in the open position.
6. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.
7. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.

903.4.1 Signals. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved central station, remote supervising station or proprietary supervising station as defined in NFPA 72 or, when approved by the code official, shall sound an audible signal at a constantly attended location.

Exceptions:

1. Underground key or hub valves in roadway boxes provided by the municipality or public utility are not required to be monitored.
2. Backflow prevention device test valves, located in limited area sprinkler system supply piping, shall be locked in the open position. In occupancies required to be equipped with a fire alarm system, the backflow preventer valves shall be electrically supervised by a tamper switch installed in accordance with NFPA 72 and separately annunciated.

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.

903.4.3 Floor control valves. Approved supervised indicating control valves shall be provided at the point of connection to the riser on each floor in high-rise buildings.

903.5 Testing and maintenance. Sprinkler systems shall be tested and maintained in accordance with Section 901.

903.6 Existing buildings. The provisions of this section are intended to provide a reasonable degree of safety in existing structures not complying with the minimum requirements of the *International Building Code* by requiring installation of an automatic fire-extinguishing system.

903.6.1 Pyroxylin plastics. All structures occupied for the manufacture or storage of articles of cellulose nitrate (pyroxylin) plastic shall be equipped with an approved automatic fire-extinguishing system. Vaults located within buildings for the storage of raw pyroxylin shall be protected with an approved automatic sprinkler system capable of discharging 1.66 gallons per minute per square foot (68 L/min/m^2) over the area of the vault.

SECTION 904
ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS

904.1 General. Automatic fire-extinguishing systems, other than automatic sprinkler systems, shall be designed, installed, inspected, tested and maintained in accordance with the provisions of this section and the applicable referenced standards.

904.2 Where required. Automatic fire-extinguishing systems installed as an alternative to the required automatic sprinkler systems of Section 903 shall be approved by the code official. Automatic fire-extinguishing systems shall not be considered alternatives for the purposes of exceptions or reductions permitted by other requirements of this code.

904.2.1 Hood system suppression. Each required commercial kitchen exhaust hood and duct system required by Section 609 to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code.

904.3 Installation. Automatic fire-extinguishing systems shall be installed in accordance with this section.

904.3.1 Electrical wiring. Electrical wiring shall be in accordance with ICC *Electrical Code*.

904.3.2 Actuation. Automatic fire-extinguishing systems shall be automatically actuated and provided with a manual means of actuation in accordance with Section 904.11.1.

904.3.3 System interlocking. Automatic equipment interlocks with fuel shutoffs, ventilation controls, door closers, window shutters, conveyor openings, smoke and heat vents, and other features necessary for proper operation of the fire-extinguishing system shall be provided as required by the design and installation standard utilized for the hazard.

904.3.4 Alarms and warning signs. Where alarms are required to indicate the operation of automatic fire-extinguishing systems, distinctive audible, visible alarms and warning signs shall be provided to warn of pending agent discharge. Where exposure to automatic-extinguishing agents poses a hazard to persons and a delay is required to ensure the evacuation of occupants before agent discharge, a separate warning signal shall be provided to warn occupants once agent discharge has begun. Audible signals shall be in accordance with Section 907.10.2.

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904.3.5 Monitoring. Where a building fire alarm system is installed, automatic fire-extinguishing systems shall be monitored by the building fire alarm system in accordance with NFPA 72.

904.4 Inspection and testing. Automatic fire-extinguishing systems shall be inspected and tested in accordance with the provisions of this section prior to acceptance.

904.4.1 Inspection. Prior to conducting final acceptance tests, the following items shall be inspected:

1. Hazard specification for consistency with design hazard.
2. Type, location and spacing of automatic- and manual-initiating devices.
3. Size, placement and position of nozzles or discharge orifices.
4. Location and identification of audible and visible alarm devices.
5. Identification of devices with proper designations.
6. Operating instructions.

904.4.2 Alarm testing. Notification appliances, connections to fire alarm systems, and connections to approved supervising stations shall be tested in accordance with this section and Section 907 to verify proper operation.

904.4.2.1 Audible and visible signals. The audibility and visibility of notification appliances signaling agent discharge or system operation, where required, shall be verified.

904.4.3 Monitor testing. Connections to protected premises and supervising station fire alarm systems shall be tested to verify proper identification and retransmission of alarms from automatic fire-extinguishing systems.

904.5 Wet-chemical systems. Wet-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17A and their listing.

904.5.1 System test. Systems shall be inspected and tested for proper operation at 6-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

904.5.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

904.6 Dry-chemical systems. Dry-chemical extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 17 and their listing.

904.6.1 System test. Systems shall be inspected and tested for proper operation at 6-month intervals. Tests shall include a check of the detection system, alarms and releasing devices, including manual stations and other associated equipment. Extinguishing system units shall be weighed, and the required amount of agent verified. Stored pressure-type units shall be checked for the required pressure. The cartridge of cartridge-operated units shall be weighed and replaced at intervals indicated by the manufacturer.

904.6.2 Fusible link maintenance. Fixed temperature-sensing elements shall be maintained to ensure proper operation of the system.

904.7 Foam systems. Foam-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 11, NFPA 11A and NFPA 16 and their listing.

904.7.1 System test. Foam-extinguishing systems shall be inspected and tested at intervals in accordance with NFPA 25.

904.8 Carbon dioxide systems. Carbon-dioxide extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12 and their listing.

904.8.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.8.2 High-pressure cylinders. High-pressure cylinders shall be weighed and the date of the last hydrostatic test shall be verified at 6-month intervals. Where a container shows a loss in original content of more than 10 percent, the cylinder shall be refilled or replaced.

904.8.3 Low-pressure containers. The liquid-level gauges of low-pressure containers shall be observed at one-week intervals. Where a container shows a content loss of more than 10 percent, the container shall be refilled to maintain the minimum gas requirements.

904.8.4 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At five-year intervals, all hoses shall be tested.

904.8.4.1 Test procedure. Hoses shall be tested at not less than 2,500 pounds per square inch (psi) (17 238 kPa) for high-pressure systems and at not less than 900 psi (6206 kPa) for low-pressure systems.

904.8.5 Auxiliary equipment. Auxiliary and supplementary components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure that such components are in proper operating condition.

904.9 Halon systems. Halogenated extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 12A and listing.

904.9.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.9.2 Containers. The extinguishing agent quantity and pressure of containers shall be checked at 6-month intervals. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure (adjusted for temperature) of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.9.3 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. At 5-year intervals, all hoses shall be tested.

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904.9.3.1 Test procedure. For Halon 1301 systems, hoses shall be tested at not less than 1,500 psi (10 343 kPa) for 600 psi (4137 kPa) charging pressure systems and not less than 900 psi (6206 kPa) for 360 psi (2482 kPa) charging pressure systems. For Halon 1211 hand-hose line systems, hoses shall be tested at 2,500 psi (17 238 kPa) for high-pressure systems and 900 psi (6206 kPa) for low-pressure systems.

904.9.4 Auxiliary equipment. Auxiliary and supplementary components, such as switches, door and window releases, interconnected valves, damper releases and supplementary alarms, shall be manually operated at 12-month intervals to ensure such components are in proper operating condition.

904.10 Clean-agent systems. Clean-agent fire-extinguishing systems shall be installed, maintained, periodically inspected and tested in accordance with NFPA 2001 and their listing.

904.10.1 System test. Systems shall be inspected and tested for proper operation at 12-month intervals.

904.10.2 Containers. The extinguishing agent quantity and pressure of the containers shall be checked at 6-month intervals. Where a container shows a loss in original weight of more than 5 percent or a loss in original pressure, adjusted for temperature, of more than 10 percent, the container shall be refilled or replaced. The weight and pressure of the container shall be recorded on a tag attached to the container.

904.10.3 System hoses. System hoses shall be examined at 12-month intervals for damage. Damaged hoses shall be replaced or tested. All hoses shall be tested at 5-year intervals.

904.11 Commercial cooking systems. The automatic fire-extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Preengineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire-extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire-extinguishing systems of the following types shall be installed in accordance with NFPA 96 and the referenced standard indicated, as follows:

1. Carbon dioxide extinguishing systems, NFPA 12.
2. Automatic sprinkler system, NFPA 13.
3. Foam-water sprinkler system or foam-water spray systems, NFPA 16.
4. Dry-chemical extinguishing systems, NFPA 17.
5. Wet-chemical extinguishing systems, NFPA 17A.

Exception: Commercial cooking equipment recirculating systems that are tested in accordance with UL 197, listed, labeled and installed in accordance with the *Mechanical Code*.

904.11.1 Manual system operation. A manual actuation device shall be located at or near a means of egress from the cooking area, a minimum of 10 feet (3048 mm) and a maximum of 20 feet (6096 mm) from the kitchen exhaust system. The manual actuation device shall be located a minimum of 4.5 feet (1372 mm) and a maximum of 5 feet (1524 mm) above the floor. The manual actuation shall require a maximum force of 40 pounds (178 N) and a maximum movement of 14 inches (356 mm) to actuate the fire suppression system.

Exception: Automatic sprinkler systems shall not be required to be equipped with manual actuation means.

904.11.2 System interconnection. The actuation of the fire suppression system shall automatically shut down the fuel or electrical power supply to all cooking equipment and electrical receptacles and devices that are located under the hood. The fuel and electrical supply reset shall be manual.

904.11.3 Carbon dioxide systems. When carbon dioxide systems are used, there shall be a nozzle at the top of the ventilating duct. Additional nozzles that are symmetrically arranged to give uniform distribution shall be installed within vertical ducts exceeding 20 feet (6096 mm) and horizontal ducts exceeding 50 feet (15 240 mm). Dampers shall be installed at either the top or the bottom of the duct and shall be arranged to operate automatically upon activation of the fire-extinguishing system. When the damper is installed at the top of the duct, the top nozzle shall be immediately below the damper. Automatic carbon dioxide fire-extinguishing systems shall be sufficiently sized to protect all hazards venting through a common duct simultaneously.

904.11.3.1 Ventilation system. Commercial-type cooking equipment protected by an automatic carbon dioxide extinguishing system shall be arranged to shut off the ventilation system upon activation.

904.11.4 Special provisions for automatic sprinkler systems. Automatic sprinkler systems protecting commercial-type cooking equipment shall be supplied from a separate, readily accessible, indicating-type control valve that is identified.

904.11.4.1 Listed sprinklers. Sprinklers used for the protection of fryers shall be listed for that application and installed in accordance with their listing.

904.11.5 Commercial cooking equipment. Portable fire extinguishers shall be provided within a 30-foot (9144 mm) travel distance of commercial-type cooking equipment. Cooking equipment involving vegetable or animal oils and fats shall be protected by a Class K rated portable extinguisher.

904.11.6 Operations and maintenance. Commercial cooking systems shall be operated and maintained in accordance with this section.

904.11.6.1 Ventilation system. The ventilation system in connection with hoods shall be operated at the required rate of air movement, and classified grease filters shall be in place when equipment under a kitchen grease hood is used.

904.11.6.2 Grease extractors. Where grease extractors are installed, they shall be operated when the commercial-type cooking equipment is used.

904.11.6.3 Cleaning. Hoods, grease-removal devices, fans, ducts and other appurtenances shall be cleaned at intervals necessary to prevent the accumulation of

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grease. Cleanings shall be recorded, and records shall state the extent, time and date of cleaning. Such records shall be maintained on the premises.

904.11.6.4 Extinguishing system service. Automatic fire-extinguishing systems shall be serviced and tagged at least every 6 months and after activation of the system. Inspection shall be by qualified individuals, and a record of the service and inspection maintained on premises and made available to the code official upon request. See Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment".

904.11.6.5 Fusible link and sprinkler head replacement. Fusible links and automatic sprinkler heads shall be replaced at least annually, and other protection devices shall be serviced or replaced in accordance with the manufacturer's instructions.

Exception: Frangible bulbs are not required to be replaced annually.

SECTION 905
STANDPIPE SYSTEMS

905.1 General. Standpipe systems shall be provided in new buildings and structures in accordance with this section. Fire hose threads used in connection with standpipe systems shall be approved and shall be compatible with fire department hose threads. The location of fire department hose connections shall be approved. In buildings used for high-piled combustible storage, fire protection shall be in accordance with Chapter 24.

905.2 Installation standards. Standpipe systems shall be installed in accordance with this section and NFPA 14.

905.3 Required installations. Standpipe systems shall be installed where required by Sections 905.3.1 through 905.3.6 and in the locations indicated in Sections 905.4, 905.5 and 905.6. Standpipe systems are permitted to be combined with automatic sprinkler systems.

Exception: Standpipe systems are not required in Group R-3 occupancies.

905.3.1 Building height. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9144 mm) above grade, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below grade.

Exceptions:

1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.

905.3.2 Reserved.

905.3.3 Group A. Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000 persons.

Exception: Open-air-seating spaces without enclosed spaces.

905.3.4 Covered mall buildings. Covered mall buildings shall be equipped throughout with a standpipe system where required by Section 905.3. Covered mall buildings that are not required to be equipped with a standpipe system by Section 905.3 shall be equipped with Class I hose connections connected to a system sized to deliver 250 gallons per minute (946 L/min) at the most hydraulically remote outlet. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each exit passageway or exit.
2. At each floor-level landing within enclosed stairways opening directly to the mall.
3. At exterior public entrances to the mall.

905.3.5 Stages. Stages greater than 1,000 square feet in area (93 m^2) shall be equipped with a Class II wet standpipe system with 1.5-inch (38 mm) hose connections on each side of the stage.

Exception: Where the building or area is equipped throughout with an automatic sprinkler system, the hose connections are allowed to be supplied from the automatic sprinkler system.

905.3.5.1 Hose and cabinet. The 1.5-inch (38 mm) hose connections shall be equipped with sufficient lengths of 1.5-inch (38 mm) hose to provide fire protection for the stage area. Hose connections shall be equipped with an approved adjustable fog nozzle and be mounted in a cabinet or on a rack.

905.3.6 Underground buildings. Underground buildings shall be equipped throughout with a Class I automatic wet standpipe system.

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at each floor level landing, unless otherwise approved by the code official.
2. On each side of the wall adjacent to the exit opening of a horizontal exit.
3. In every exit passageway at the entrance from the exit passageway to other areas of a building.
4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an exit passageway or exit corridor to the mall.
5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), each standpipe shall be provided with a hose connection located either on the roof or at the highest landing of stairways with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.
6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60 960 mm) from a hose con-

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nection, the code official is authorized to require that additional hose connections be provided in approved locations.

905.4.1 Protection. Risers and laterals of Class I standpipe systems not located within an enclosed stairway or pressurized enclosure shall be protected by a degree of fire resistance equal to that required for vertical enclosures in the building in which they are located.

Exception: In buildings equipped throughout with an approved automatic sprinkler system, laterals that are not located within an enclosed stairway or pressurized enclosure are not required to be enclosed within fire-resistance-rated construction.

905.4.2 Interconnection. In buildings where more than one standpipe is provided, the standpipes shall be interconnected in accordance with NFPA 14.

905.5 Location of Class II standpipe hose connections. Class II standpipe hose connections shall be accessible and shall be located so that all portions of the building are within 30 feet (9144 mm) of a variable nozzle attached to 100 feet (30480 mm) of hose.

905.5.1 Groups A-1 and A-2. In Group A-1 and A-2 occupancies with occupant loads of more than 1,000, hose connections shall be located on each side of any stage, on each side of the rear of the auditorium, on each side of the balcony, and on each tier of dressing rooms.

905.5.2 Protection. Fire-resistance-rated protection of risers and laterals of Class II standpipe systems is not required.

905.5.3 Class II system 1 inch hose. A minimum 1-inch (25 mm) hose shall be allowed to be used for hose stations in light hazard occupancies where investigated and listed for this service and where approved by the code official.

905.6 Location of Class III standpipe hose connections. Class III standpipe systems shall have hose connections located as required for Class I standpipes in Section 905.4 and shall have Class II hose connections as required in Section 905.5.

905.6.1 Protection. Risers and laterals of Class III standpipe systems shall be protected as required for Class I systems in accordance with Section 905.4.1.

905.6.2 Interconnection. In buildings where more than one Class III standpipe is provided, the standpipes shall be interconnected at the bottom.

905.7 Cabinets. Cabinets containing fire-fighting equipment, such as standpipes, fire hose, fire extinguishers or fire department valves, shall not be blocked from use or obscured from view.

905.7.1 Cabinet equipment identification. Cabinets shall be identified in an approved manner by a permanently attached sign with letters not less than 2 inches (51 mm) high in a color that contrasts with the background color, indicating the equipment contained therein.

Exceptions:

1. Doors not large enough to accommodate a written sign shall be marked with a permanently attached pictogram of the equipment contained therein.
2. Doors that have either an approved visual identification clear glass panel or a complete glass door panel are not required to be marked.

905.7.2 Locking cabinet doors. Cabinets shall be unlocked.

Exceptions:

1. Visual identification panels of glass or other approved transparent frangible material that is easily broken and allows access.
2. Approved locking arrangements.
3. Use Group I-3.

905.8 Design pressure. Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psig (241 kPa).

905.9 Valve supervision. Valves controlling water supplies shall be supervised in the open position so that a change in the normal position of the valve will generate a supervisory signal at the supervising station required by Section 903.4. Where a fire alarm system is provided, a signal shall also be transmitted to the control unit.

Exceptions:

1. Valves to underground key or hub valves in roadway boxes provided by the municipality or public utility do not require supervision.
2. Valves locked in the normal position and inspected as provided in this code in buildings not equipped with a fire alarm system.

905.10 During construction. Standpipe systems required during construction, alteration and demolition operations shall be provided in accordance with Section 1412.

905.11 Existing buildings. Existing structures not complying with the minimum requirements of the *International Building Code* with occupied floors located more than 50 feet (15 240 mm) above or below the lowest level of fire department access shall be equipped with standpipes installed in accordance with Section 905. The standpipes shall have an approved fire department connection with hose connections at each floor level above or below the lowest level of fire department access. The code official is authorized to approve the installation of manual standpipe systems to achieve compliance with this section where the responding fire department is capable of providing the required hose flow at the highest standpipe outlet.

SECTION 906
PORTABLE FIRE EXTINGUISHERS

906.1 Where required. Portable fire extinguishers shall be installed in the following locations.

1. In all Group A, B, E, F, H, I , M, R-1, R-2, R-4 and S occupancies.

   Exception: In all Group A, B and E occupancies equipped throughout with quick response sprinklers, fire extinguishers shall be required only in special-hazard areas.
2. Within 30 feet (9144 mm) of commercial cooking equipment.
3. In areas where flammable or combustible liquids are stored, used or dispensed.
4. On each floor of structures under construction, except Group R-3 occupancies, in accordance with Section 1514.1.

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5. Where required by the sections indicated in Table 906.1.
6. Special-hazard areas, including but not limited to laboratories, computer rooms, and generator rooms where required by the code official.

TABLE 906.1
ADDITIONAL REQUIRED PORTABLE FIRE EXTINGUISHERS

SECTION	SUBJECT
303.5	Asphalt kettles
307.4	Open burning
308.4	Open flames
309.4	Powered industrial trucks
1105.2	Aircraft towing vehicles
1105.3	Aircraft welding apparatus
1105.4	Aircraft fuel-servicing tank vehicles
1105.5	Aircraft hydrant fuel-servicing vehicles
1105.6	Aircraft motor vehicle fuel-dispensing stations
1107.7	Heliports and helistops
1208.4	Dry cleaning plants
1414.1	Buildings under construction or demolition
1416.3	Roofing operations
1504.6.4	Spray-finishing operations
1505.5	Dip-tank operations
1904.2	Lumberyards/woodworking facilities
1908.8	Recycling facilities
1909.5	Exterior lumber storage
2003.5	Organic-coating areas
2106.3	Industrial ovens
2205.5	Service stations
2209.6.4	Marine service stations
2210.6	Repair garages
2306.10	Rack storage
2407.1	Tents and membrane structures
2508.2	Tire rebuilding/storage
2604.2.6	Welding and other hot work
2903.6	Combustible fibers
3308.11	Fireworks
3403.2.1	Flammable and combustible liquids, general
3404.3.3.1	Indoor storage of flammable and combustible liquids
3404.3.7.5.2	Liquid storage rooms for flammable and combustible liquids
3405.4.9	Solvent distillation units
3406.2.7	Farms and construction sites—flammable and combustible liquids storage
3406.4.10.1	Bulk plants and terminals for flammable and combustible liquids
3406.6.5	Tank vehicles for flammable and combustible liquids
3606.5.7	Flammable solids
3808.2	LP-gas

906.2 General requirements. Fire extinguishers shall be selected, installed and maintained in accordance with this section, NFPA 10, and Houston Fire Department LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers".

Exception: The travel distance to reach an extinguisher shall not apply to the spectator seating portions of Group A-5 occupancies.

906.3 Size and distribution. For occupancies that involve primarily Class A fire hazards, the minimum sizes and distribution shall comply with Table 906.3(1). Fire extinguishers for occupancies involving flammable or combustible liquids with depths of less than or equal to 0.25-inch (6.35 mm) shall be selected and placed in accordance with Table 906.3(2). Fire extinguishers for occupancies involving flammable or combustible liquids with a depth of greater than 0.25-inch (6.35 mm) or involving combustible metals shall be selected and placed in accordance with NFPA 10. Extinguishers for Class C fire hazards shall be selected and placed on the basis of the anticipated Class A or Class B hazard.

TABLE 906.3(1)
FIRE EXTINGUISHERS FOR CLASS A FIRE HAZARDS

	LIGHT (Low) HAZARD OCCUPANCY	ORDINARY (Moderate) HAZARD OCCUPANCY	EXTRA (High) HAZARD OCCUPANCY
Minimum Rated Single Extinguisher	2-A[c]	2-A	4-A[a]
Maximum Floor Area Per Unit of A	3,000 square feet	1,500 square feet	1,000 square feet
Maximum Floor Area For Extinguisher[b]	11,250 square feet	11,250 square feet	11,250 square feet
Maximum Travel Distance to Extinguisher	75 feet	75 feet	75 feet

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 gallon = 3.785 L.

a. Two 2.5-gallon water-type extinguishers shall be deemed the equivalent of one 4-A rated extinguisher.

b. NFPA 10 Appendix E-3-3 provides more details concerning application of the maximum floor area criteria.

c. Two water-type extinguishers each with a 1-A rating shall be deemed the equivalent of one 2-A rated extinguisher for Light (Low) Hazard Occupancies.

TABLE 906.3(2)
FLAMMABLE OR COMBUSTIBLE LIQUIDS WITH DEPTHS OF LESS THAN OR EQUAL TO 0.25-INCH

TYPE OF HAZARD	BASIC MINIMUM EXTINGUISHER RATING	MAXIMUM TRAVEL DISTANCE TO EXTINGUISHERS (feet)
Light (Low)	5-B 10-B	30 50
Ordinary (Moderate)	10-B 20-B	30 50
Extra (High)	40-B 80-B	30 50

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

NOTE. For requirements on water-soluble flammable liquids and alternative sizing criteria, see NFPA 10, Sections 3-3 and 3-4.

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906.4 Cooking grease fires. Fire extinguishers provided for the protection of cooking grease fires shall be of an approved type compatible with the automatic fire-extinguishing system agent and in accordance with Section 904.11.5.

906.5 Conspicuous location. Extinguishers shall be located in conspicuous locations where they will be readily accessible and immediately available for use. These locations shall be along normal paths of travel, unless the code official determines that the hazard presented indicates the need for placement away from normal paths of travel.

906.6 Unobstructed and unobscured. Fire extinguishers shall not be obstructed or obscured from view. In rooms or areas in which visual obstruction cannot be completely avoided, means shall be provided to indicate the locations of extinguishers.

906.7 Hangers and brackets. Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on the hangers or brackets supplied. Hangers or brackets shall be securely anchored to the mounting surface in accordance with the manufacturer's installation instructions.

906.8 Cabinets. Cabinets used to house fire extinguishers shall not be locked.

Exceptions:

1. Where fire extinguishers subject to malicious use or damage are provided with a means of ready access.
2. In Group I-3 occupancies and in mental health areas in Group I-2 occupancies, access to portable fire extinguishers shall be permitted to be locked or to be located in staff locations provided the staff has keys.

906.9 Height above floor. Portable fire extinguishers having a gross weight not exceeding 40 pounds (18 kg) shall be installed so that its top is not more than 5 feet (1524 mm) above the floor. Hand-held portable fire extinguishers having a gross weight exceeding 40 pounds (18 kg) shall be installed so that its top is not more than 3.5 feet (1067 mm) above the floor. The clearance between the floor and the bottom of installed hand-held extinguishers shall not be less than 4 inches (102 mm).

906.10 Wheeled units. Wheeled fire extinguishers shall be conspicuously located in a designated location.

SECTION 907
FIRE ALARM AND DETECTION SYSTEMS

907.1 General. This section covers the application, installation, performance and maintenance of fire alarm systems and their components in new and existing buildings and structures. The requirements of Section 907.2 are applicable to new buildings and structures. The requirements of Section 907.3 are applicable to existing buildings and structures.

907.1.1 Construction documents. Construction documents for fire alarm systems shall be submitted for review and approval prior to system installation. Construction documents shall include, but not be limited to, all of the following:

1. A floor plan.
2. Locations of alarm-initiating and notification appliances.
3. Alarm control and trouble signaling equipment.
4. Annunciation.
5. Power connection.
6. Battery calculations.
7. Conductor type and sizes.
8. Voltage drop calculations.
9. Manufacturers, model numbers and listing information for equipment, devices and materials.
10. Details of ceiling height and construction.
11. The interface of fire safety control functions.

907.1.2 Equipment. Systems and their components shall be listed and approved for the purpose for which they are installed.

907.1.3 State smoke alarm requirements for dwellings. Installation, inspection, and repair of smoke alarms in certain dwellings is governed by Subchapter F of Chapter 92 of the Texas Property Code. No provision of this section or other provision of this Code shall be deemed to excuse compliance with the subject state law, and to the extent of any inconsistency, the state law shall control.

907.2 Where required—new buildings and structures. An approved manual, automatic, or manual and automatic fire alarm system shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.23. Where automatic sprinkler protection installed in accordance with Section 903.3.1.1 or 903.3.1.2 is provided and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall comply with Section 907.1.2. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

907.2.1 Group A. A manual fire alarm system shall be installed in accordance with NFPA 72 in Group A occupancies having an occupant load of 300 or more. Portions of Group E occupancies occupied for assembly purposes shall be provided with a fire alarm system as required for the Group E occupancy.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

907.2.1.1 System initiation in Group A occupancies with an occupant load of 1,000 or more. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more shall initiate a signal using an emergency voice/alarm communications system in accordance with NFPA 72.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed 3 minutes, for the sole

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purpose of allowing a live voice announcement from an approved, constantly attended location.

907.2.1.2 Emergency power. Emergency voice/alarm communications systems shall be provided with an approved emergency power source.

907.2.2 Group B. A manual fire alarm system shall be installed in Group B occupancies having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

907.2.3 Group E. A manual and automatic fire alarm system shall be installed in Group E occupancies. If an automatic sprinkler system is installed, such system shall be connected to the building fire alarm system. Smoke detectors, connected to the fire alarm system, shall be installed in each interior corridor serving as an exit and in storerooms, mechanical rooms, janitorial rooms and similar areas. Smoke detectors shall not be required in toilet rooms, class rooms or offices.

Exceptions:

1. Manual fire alarm boxes are not required in Group E occupancies where the building is protected throughout by an approved supervised automatic sprinkler system having a local alarm to notify occupants.
2. Where required in a Group E Occupancy, manual fire alarm boxes shall be located in accordance with Section 907.4.
3. Approved heat detectors may be installed in lieu of smoke detectors in mechanical rooms, janitorial rooms and similar areas.

907.2.3.1 Group E childcare facilities with an occupant load of 50 or more. Smoke detectors shall be provided in corridors, in common areas, and in each room that exceeds 20 square feet in floor area.

Exception: Approved heat detectors may be installed in lieu of smoke detectors in mechanical rooms, janitorial rooms and similar areas.

907.2.3.2 Group E childcare facilities with an occupant load of less than 50. Smoke detectors shall be provided in each occupiable area. Each of the detectors shall be interconnected so that activation of any detector shall automatically activate the alarm of all detectors, unless provided with a fire alarm system in accordance with Section 907.2.3.1.

907.2.4 Group F. A manual fire alarm system shall be installed in Group F occupancies that are two or more stories in height and have an occupant load of 500 or more above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

907.2.5 Group H. A manual fire alarm system shall be installed in Group H-5 occupancies and in occupancies used for the manufacture of organic coatings. An automatic smoke detection system shall be installed for highly toxic gases, organic peroxides and oxidizers in accordance with Chapters 37, 39 and 40, respectively.

907.2.6 Group I. A manual fire alarm system and an automatic fire detection system shall be installed in Group I occupancies. An electrically supervised, automatic smoke detection system shall be provided in waiting areas that are open to corridors.

Exception: Manual fire alarm boxes in patient sleeping areas of Group I-1 and I-2 occupancies shall not be required at exits if located at all nurse's control stations or other constantly attended staff locations, provided such stations are visible and continuously accessible and that travel distances required in Section 907.4.1 are not exceeded.

907.2.6.1 Patient rooms. Patient rooms within Group I-1 and I-2 occupancies shall be provided with UL 268-type smoke detectors. The detectors shall provide a visual display on the corridor side of each patient sleeping room and shall provide an audible and visual alarm at the nursing station attending each sleeping unit. In patient sleeping rooms equipped with automatic door closures having integral smoke detectors on the room side, the integral detector may be substituted for the room smoke detector, provided that it performs the required alerting functions.

907.2.6.2 Group I-3 occupancies. Group I-3 occupancies shall be equipped with a manual and automatic fire alarm system installed for alerting staff.

907.2.6.2.1 System initiation. Actuation of an automatic fire-extinguishing system, a manual fire alarm box or a fire detector shall initiate an approved fire alarm signal which automatically notifies staff. Presignal systems shall not be used.

907.2.6.2.2 Manual fire alarm boxes. Manual fire alarm boxes are not required to be located in accordance with Section 907.4 where the fire alarm boxes are provided at staff-attended locations having direct supervision over areas where manual fire alarm boxes have been omitted.

Manual fire alarm boxes are allowed to be locked in areas occupied by detainees, provided that staff members are present within the subject area and have keys readily available to operate the manual fire alarm boxes.

907.2.6.2.3 Smoke detectors. An approved automatic smoke detection system shall be installed throughout resident housing areas, including sleeping areas and contiguous day rooms, group activity spaces and other common spaces normally accessible to residents.

Exception: Other approved smoke detection arrangements providing equivalent protection including, but not limited to, placing detectors in exhaust ducts from cells or behind protective

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guards listed for the purpose are allowed when necessary to prevent damage or tampering.

907.2.7 Group M. A manual fire alarm system shall be installed in Group M occupancies, other than covered mall buildings complying with Section 402 of the *Building Code*, having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

907.2.7.1 Occupant notification. During times that the building is occupied, in lieu of the automatic activation of alarm notification appliances, the manual fire alarm system shall be allowed to activate an alarm signal at a constantly attended location from which evacuation instructions shall be initiated over an emergency voice/alarm communication system installed in accordance with Section 907.2.12.2.

The emergency voice/alarm communication system shall be allowed to be used for other announcements provided the manual fire alarm use takes precedence over any other use.

907.2.8 Group R-1. A manual fire alarm system and an automatic fire detection system shall be installed in Group R-1 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not over two stories in height where all individual sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each individual sleeping units has an exit directly to a public way, exit court or yard.
2. An automatic fire detection system is not required in buildings that do not have interior corridors serving sleeping units and where sleeping units have a means of egress door opening directly to an exterior exit access that leads directly to the exits.
3. A separate fire alarm system is not required in buildings which have a local fire alarm that meets the notification requirements of Section 907.10.2.

907.2.8.1 Fire detection system. System smoke detectors are not required in sleeping units provided that the single-station smoke alarms required by Section 907.2.10 are connected to the emergency electrical system and are annunciated by sleeping units at a constantly attended location from which the fire alarm system is capable of being manually activated.

907.2.8.2 Manual fire alarm boxes. Manual fire alarm boxes are not required for interior corridors having smoke detectors as specified in Section 907.2.8.3.

907.2.8.3 Smoke detectors. Smoke detectors shall be provided in all common areas and interior corridors serving as a required means of egress for an occupant load of 10 or more.

907.2.8.4 Heat detectors. Heat detectors shall be provided in common areas such as recreational rooms, laundry rooms, furnace rooms, and similar areas.

907.2.8.5 Visual signaling devices. Sleeping units for persons with hearing impairments shall be provided with visible and audible alarm-indicating appliances, activated by both the in-room smoke detector and the fire alarm system as specified in Section 907.10.1.2.

907.2.9 Group R-2. A fire alarm system shall be installed in Group R-2 occupancies where:

1. Any dwelling unit is located three or more stories above the lowest level of exit discharge;
2. Any dwelling unit is located more than one story below the highest level of exit discharge of exits serving the dwelling unit; or
3. The building contains more than 16 dwelling units.

Exceptions:

1. A fire alarm system is not required in buildings not over two stories in height where all dwelling units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each dwelling unit has an exit directly to a public way, exit court or yard.
2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and which have a local alarm that meets the notification requirements of Section 907.10.2.

907.2.10 Single- and multiple-station smoke alarms. Listed single- and multiple-station smoke alarms shall be installed in accordance with the provisions of this code and the household fire-warning equipment provisions of NFPA 72.

907.2.10.1 Where required. Single- or multiple-station smoke alarms shall be installed in the locations described in Sections 907.2.10.1.1 through 907.2.10.1.4.

907.2.10.1.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the sleeping units or suite.
3. In each story within the sleeping units or suite, including basements. For sleeping units or suites with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

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907.2.10.1.2 Groups R-2, R-3, R-4 and I-1. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and I-1 regardless of occupant load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
2. In each room used for sleeping purposes.
3. In each story within a dwelling unit, including basements and cellars but not including crawl spaces and uninhabitable attics. In dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.10.1.3 Group I-1. Single- or multiple-station smoke alarms shall be installed and maintained in sleeping areas in occupancies in Group I-1. Single- or multiple-station smoke alarms shall not be required where the building is equipped throughout with an automatic fire detection system in accordance with Section 907.2.6.

907.2.10.1.4 Additions, alterations or repairs to Group R. Where an addition, alteration or repair to an individual dwelling unit or guestroom in Group R requires a permit, smoke alarms shall be installed within that individual dwelling unit or guestroom in accordance with this section. Where one or more sleeping rooms are added or created in an existing Group R, smoke alarms shall be installed in accordance with this section.

Exception: Repairs to the exterior surfaces of occupancies in Group R are exempt from the requirements of this section.

907.2.10.2 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

Exceptions:

1. Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.
2. Smoke alarms are allowed to be solely battery operated in existing buildings, buildings not served from a commercial power source and in existing areas where alterations or repairs regulated by Section 907.2.10.1.4 do not result in the removal of interior wall or ceiling finishes exposing the structure.

907.2.10.3 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual sleeping unit or suite in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Smoke alarms that are permitted to be solely battery operated in accordance with Section 907.2.10.2 are not required to be interconnected.
2. Smoke alarms in existing areas are not required to be interconnected where alterations or repairs regulated by Section 907.2.10.1.4 do not result in the removal of interior wall or ceiling finishes exposing the structure.

907.2.10.4 Acceptance testing. When the installation of the alarm devices is complete, each detector and interconnecting wiring for multiple-station alarm devices shall be tested in accordance with the household fire warning equipment provisions of NFPA 72.

907.2.11 Special amusement buildings. An approved automatic smoke detection system shall be provided in special amusement buildings in accordance with this section.

Exception: In areas where ambient conditions will cause a smoke detection system to alarm, an approved alternative type of automatic detector shall be installed.

907.2.11.1 Alarm. Activation of any single smoke detector, the automatic sprinkler system or any other automatic fire detection device shall immediately sound an alarm at the building at a constantly attended location from which emergency action can be initiated, including the capability of manual initiation of requirements in Section 907.2.11.2.

907.2.11.2 System response. The activation of two or more smoke detectors, a single smoke detector with alarm verification, the automatic sprinkler system or other approved fire detection device shall automatically:

1. Cause illumination of the means of egress with light of not less than 1 foot-candle (11 lux) at the walking surface level;
2. Stop any conflicting or confusing sounds and visual distractions; and
3. Activate an approved directional exit marking that will become apparent in an emergency.

Such system response shall also include activation of a prerecorded message, clearly audible throughout the special amusement building, instructing patrons to proceed to the nearest exit. Alarm signals used in conjunction with the prerecorded message shall produce a sound which is distinctive from other sounds used during normal operation.

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The wiring to the auxiliary devices and equipment used to accomplish the above fire safety functions shall be monitored for integrity in accordance with NFPA 72.

907.2.11.3 Emergency voice/alarm communication system. An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with NFPA 72 and be audible throughout the entire special amusement building. The installed address system may also serve as an alarm.

Exception: In buildings that are not provided with an approved automatic sprinkler system, the public address system is not permitted to serve as the alarm communication system.

907.2.12 High-rise buildings. Buildings having floors used for human occupancy located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access shall be provided with an automatic fire alarm system and an emergency voice/alarm communication system in accordance with Section 907.2.12.2.

Exceptions:

1. Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the *International Building Code.*
2. Open parking garages in accordance with Section 406.3 of the *International Building Code.*
3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the *International Building Code.*
4. Low-hazard special occupancies in accordance with Section 503.1.2 of the *International Building Code.*
5. Buildings with an occupancy in Group H-1, H-2 or H-3 in accordance with Section 415 of the *International Building Code.*

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system in accordance with NFPA 72-1996. The activation of any detector required by this section shall operate the emergency voice/alarm communication system and shall place into operation all stair pressurization and atria fans to restrict the recirculation of smoke. Activation of any detector or any flow detector shall initiate the designed function of smoke dampers, fans, and other components of the smoke-control system unless the smoke-control system is designed or required to be manually operated only. Rate of rise detectors may be used in lieu of smoke detectors in parking garages. Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment, central control station, or similar room which is not provided with sprinkler protection, elevator machine rooms, and in elevator lobbies.
2. In either the return-air plenum or main supply air duct of every air conditioning and mechanical ventilating system with fans having a rated capacity of 2,200 cfm (1 m^3/s) or greater. Activation of the products of combustion detector shall cut off electric current to the fan and shall operate the voice alarm signaling system of the required automatic fire alarm system.

   Exception: If air movement provided by the air conditioning system or mechanical ventilating system is a designed component of the smoke-control system, the smoke detector need not shut off the electric current to the fan.
3. At each connection to a duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system having an air volume of 2,200 cfm (1 m^3/s) or greater.
4. In each exit corridor within 3 feet (910 mm) of each exit-access door to a stair. When exit corridors are not clearly defined, they shall be assumed to be 8 feet (2.4 m) wide connecting exit stairways.
5. In commercial kitchens.

   Exception: Rate of rise detectors may be installed in lieu of smoke detectors, with spacing every 500 sq. ft. (47 m^2).

907.2.12.2 Emergency voice/alarm communication system. The operation of any automatic fire detector or sprinkler water-flow device shall automatically sound an alert tone followed by voice instructions giving appropriate information and directions, as approved by the code official, on a general or selective basis to the following terminal areas in accordance with the building's fire safety and evacuation plans required by Section 404:

1. Elevator lobbies.
2. Corridors.
3. Rooms and tenant spaces exceeding 1,000 square feet (93 m^2) in area.
4. Dwelling units in Group R-2 occupancies.
5. Hotel sleeping units or suites in Group R-1 occupancies.
6. Areas of refuge as defined in the *Building Code.*
7. Elevators.
8. Exit stairways.

The alarm shall be designed to be heard by all occupants within the building or designated portions thereof as is required for the public address system. The alarm shall sound on the floor of incidence, the floor above and the floor below.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.2.12.2.1 Manual override. A manual override for emergency voice communication shall be provided for all paging zones.

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907.2.12.2.2 Live voice messages. The emergency voice/alarm communication system shall also have the capability to broadcast live voice messages through speakers located in elevators, exit stairways, and throughout a selected floor or floors.

907.2.12.2.3 Standard. The emergency voice/alarm communication system shall be designed and installed in accordance with NFPA 72.

907.2.12.3 Fire department communication system. An approved two-way, fire department communication system designed and installed in accordance with NFPA 72 shall be provided for fire department use. It shall operate between a fire command center complying with Section 509 and elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways. The fire department communication device shall be provided at each floor level within the enclosed exit stairway.

907.2.13 Buildings with an atrium. In buildings with an atrium, smoke detectors shall be installed in accordance with this section and one or both of the following methods.

1. Spot-type detectors shall be installed at the atrium ceiling spaced in accordance with their listing, on the underside of projections into the atrium spaced in accordance with their listing, and around the perimeter of the atrium opening on all floors open to the atrium. The detectors shall be spaced not more than 30 feet (9144 mm) on center and shall be located within 15 feet (4572 mm) of the atrium opening.
2. Projected beam-type smoke detection shall be installed and spaced in accordance with its listing.

907.2.13.1 System response. The activation of two spot-type detectors or a single beam-type detector shall activate the atrium smoke removal system. The activation of any one detector shall cause an alarm to be sounded at a constantly attended location. All smoke detectors shall be accessible for maintenance and testing.

907.2.13.2 Atriums connecting more than two stories. A fire alarm system shall be installed in occupancies with an atrium that connects more than two stories. The system shall be activated in accordance with Section 907.7. Such occupancies in Group A, E or M shall be provided with an emergency voice/alarm communication system complying with the requirements of Section 907.2.12.2.

907.2.14 High-piled combustible storage areas. An automatic fire detection system shall be installed throughout high-piled combustible storage areas where required by Section 2406.5.

907.2.15 Special egress-control devices. Where special egress-control devices are installed on means of egress doors in accordance with Chapter 10, an automatic smoke or heat detection system shall be installed as required by Chapter 10.

907.2.16 Aerosol storage uses. Aerosol storage rooms and general-purpose warehouses containing aerosols shall be provided with an approved manual fire alarm system where required by this code.

907.2.17 Lumber, plywood and veneer mills. Lumber, plywood and veneer mills shall be provided with a manual fire alarm system.

907.2.18 Underground buildings with smoke exhaust systems. Where a smoke exhaust system is installed in an underground building in accordance with the *International Building Code*, automatic fire detectors shall be provided in accordance with this section.

907.2.18.1 Smoke detectors. A minimum of one smoke detector listed for the intended purpose shall be installed in the following areas:

1. Mechanical equipment, electrical, transformer, telephone equipment, elevator machine or similar rooms.
2. Elevator lobbies.
3. The main return and exhaust air plenum of each air-conditioning system serving more than one story and located in a serviceable area downstream of the last duct inlet.
4. Each connection to a vertical duct or riser serving two or more floors from return air ducts or plenums of heating, ventilating and air-conditioning systems, except that in Group R occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m^3/s) and serving not more than 10 air inlet openings.

907.2.18.2 Alarm required. Activation of the smoke exhaust system shall activate an audible alarm at a constantly attended location.

907.2.19 Underground buildings. Where the lowest level of a structure is more than 60 feet (18 288 mm) below the lowest level of exit discharge, the structure shall be equipped throughout with a manual fire alarm system, including an emergency voice/alarm communication system installed in accordance with Section 907.2.12.2.

907.2.19.1 Public address system. Where a fire alarm system is not required by Section 907.2, a public address system shall be provided which shall be capable of transmitting voice communications to the highest level of exit discharge serving the underground portions of the structure and all levels below.

907.2.20 Covered mall buildings. Covered mall buildings exceeding 50,000 square feet (4645 m^2) in total floor area shall be provided with an emergency voice/alarm communication system. An emergency voice/alarm communication system serving a mall, required or otherwise, shall be accessible to the fire department. The system shall be provided in accordance with Section 907.2.12.2.

907.2.21 Residential aircraft hangars. A minimum of one listed smoke alarm shall be installed within a residential aircraft hangar as defined in the *International Building Code* and shall be interconnected into the residential smoke alarm or other sounding device to provide an alarm which will be audible in all sleeping areas of the dwelling.

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907.2.22 Airport traffic control towers. An automatic fire detection system shall be provided in airport traffic control towers.

907.2.23 Battery rooms. An approved automatic smoke detection system shall be installed in areas containing stationary lead-acid battery systems having a liquid capacity of more than 50 gallons (189 L). The detection system shall be supervised by an approved central, proprietary, or remote station service or a local alarm which will sound an audible signal at a constantly attended location.

907.3 Where required—retroactive in existing buildings and structures. An approved manual, automatic or manual and automatic fire alarm system shall be installed in existing buildings and structures in accordance with Sections 907.3.1 through 907.3.1.9. Where automatic sprinkler protection is provided in accordance with Section 903.3.1.1 or 903.3.1.2 and connected to the building fire alarm system, automatic heat detection required by this section shall not be required.

An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except an approved alternative type of detector shall be installed in spaces such as boiler rooms where, during normal operation, products of combustion are present in sufficient quantity to actuate a smoke detector.

907.3.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 907.3.1.1 through 907.3.1.9.

Exception: Occupancies with an existing, previously approved fire alarm system.

907.3.1.1 Group E. A fire alarm system shall be installed in existing Group E occupancies in accordance with Section 907.2.3.

Exceptions:

1. A building with a maximum area of 1,000 square feet (93 m^2) that contains a single classroom and is located no closer than 50 feet (15 240 mm) from another building.
2. Group E with an occupant load less than 50.

907.3.1.2 Group I-1. A fire alarm system shall be installed in existing Group I-1 residential care/assisted living facilities.

Exception: Where each sleeping room has a means of egress door opening directly to an exterior egress balcony that leads directly to the exits in accordance with Section 1004.3.4, and the building is not more than three stories in height.

907.3.1.3 Group I-2. A fire alarm system shall be installed in existing Group I-2 occupancies in accordance with Section 907.2.6.

907.3.1.4 Group I-3. A fire alarm system shall be installed in existing Group I-3 occupancies in accordance with Section 907.2.6.2.

907.3.1.5 Group R. A fire alarm system shall be installed in existing Group R occupancies in accordance with Sections 907.3.1.5.1 through 907.3.1.5.3.

907.3.1.5.1 General. Existing Group R occupancies not already provided with single-station smoke alarms shall be provided with approved single-station smoke alarms. Installation shall be in accordance with Section 907.2.10.

907.3.1.5.2 Installation. Approved single-station smoke alarms shall be installed in existing dwelling units, congregate residences, and hotel and lodging house guestrooms.

907.3.1.5.3 Power source. In Group R occupancies, single-station smoke alarms shall be either battery operated or allowed to receive their primary power from the building wiring provided that such wiring is served from a commercial source. Where power is provided by the building wiring, the wiring shall be permanent and without a disconnecting switch other than as required for overcurrent protection.

907.3.1.6 Group R-1. A fire alarm system shall be installed in existing Group R-1 hotels and motels more than three stories or with more than 20 guestrooms.

Exception: Building less than two stories in height where all guestrooms, attics and crawl spaces are separated by 1-hour fire-resistance-rated construction and each guestroom has direct access to a public way, exit court or yard.

907.3.1.7 Group R-1. A fire alarm system shall be installed in existing Group R-1 boarding and rooming houses.

Exception: Buildings that have single-station smoke alarms meeting or exceeding the requirements of Section 907.2.10.1 and where the fire alarm system includes at least one manual fire alarm box per floor arranged to initiate the alarm.

907.3.1.8 Group R-2. A fire alarm system shall be installed in existing Group R-2 apartment buildings with more than three stories or with more than 16 dwelling units.

Exceptions:

1. Where each living unit is separated from other contiguous living units by fire barriers having a fire-resistance rating of not less than $^3/_4$ hour, and where each living unit has either its own independent exit or its own independent stairway or ramp discharging at grade.
2. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2 and having a local alarm to notify all occupants.

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907.3.1.9 Group R-4. A fire alarm system shall be installed in existing Group R-4 residential care/assisted living facilities.

Exceptions:

1. Where there are interconnected smoke alarms meeting the requirements of Section 907.2.10 and there is at least one manual fire alarm box per floor arranged to sound continuously the smoke alarms.
2. Other manually activated continuously sounding alarms approved by the code official.

907.3.2 Group R owner and tenant duties. The owner or manager of a residential building shall ensure that the smoke detector(s) required by Section 907.3 of this code are installed and operational when the tenant first occupies the unit. After the tenant takes possession of the unit, it shall be the duty of the tenant to regularly test the smoke detector(s) in the unit, and the tenant shall notify the owner immediately in writing of any problem, defect, malfunction or failure of any detector in the unit. Upon notification by the tenant, or upon notification by an inspector of the jurisdiction, that a smoke detector in the residential unit is not in proper working order, the owner shall have the detector(s) repaired or replaced.

Exception: The provisions of this section do not apply to dwelling units governed by Subchapter F of Chapter 92 of the Texas Property Code.

907.4 Manual fire alarm boxes. Manual fire alarm boxes shall be installed in accordance with Sections 907.4.1 through 907.4.5.

907.4.1 Location. Manual fire alarm boxes shall be located not more than 5 feet (1524 mm) from the entrance to each exit. Additional manual fire alarm boxes shall be located so that travel distance to the nearest box does not exceed 200 feet (60 960 mm).

Exception: Manual fire alarm boxes shall not be required in Group E occupancies where the building is equipped throughout with an approved automatic sprinkler system, the notification appliances will activate on sprinkler water flow and manual activation is provided from a normally occupied location.

907.4.2 Height. The height of the manual fire alarm boxes shall be a minimum of 42 inches (1067 mm) and a maximum of 48 inches (1372 mm) measured vertically, from the floor level to the activating handle or lever of the box.

907.4.3 Color. Manual fire alarm boxes shall be red in color.

907.4.4 Signs. Where fire alarm systems are not monitored by a supervising station, an approved permanent sign that reads: WHEN ALARM SOUNDS—CALL FIRE DEPARTMENT. Such sign shall be installed adjacent to each manual fire alarm box.

Exception: Where the manufacturer has permanently provided this information on the manual fire alarm box.

907.4.5 Protective covers. The code official is authorized to require the installation of listed manual fire alarm box protective covers to prevent malicious false alarms or provide the manual fire alarm box with protection from physical damage. The protective cover shall be transparent or red in color with a transparent face to permit visibility of the manual fire alarm box. Each cover shall include proper operating instructions. A protective cover that emits a local alarm signal shall not be installed unless approved.

907.5 Power supply. The primary and secondary power supply for the fire alarm system shall be provided in accordance with NFPA 72.

907.6 Wiring. Wiring shall comply with the requirements of the ICC *Electrical Code* and NFPA 72. Wireless protection systems utilizing radio-frequency transmitting devices shall comply with the special requirements for supervision of low-power wireless systems in NFPA 72.

907.7 Activation. Where an alarm notification system is required by another section of this code, it shall be activated by:

1. Required automatic fire alarm system.
2. Sprinkler water-flow devices.
3. Required manual fire alarm boxes.

907.8 Presignal system. Presignal systems shall not be installed unless approved by the code official and the fire department. Where a presignal system is installed, 24-hour personnel supervision shall be provided at a location approved by the fire department, in order that the alarm signal can be actuated in the event of fire or other emergency.

907.9 Zones. Each floor shall be zoned separately and a zone shall not exceed 22,500 square feet (1860 m^2). The length of any zone shall not exceed 300 feet (91 440 mm) in any direction.

Exception: Automatic sprinkler system zones shall not exceed the area permitted by NFPA 13.

907.9.1 Zoning indicator panel. A zoning indicator panel and the associated controls shall be provided in an approved location. The visual zone indication shall lock in until the system is reset and shall not be canceled by the operation of an audible-alarm silencing switch.

907.9.2 High-rise buildings. In buildings that have floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access that are occupied for human occupancy, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:

1. Smoke detectors.
2. Sprinkler water-flow devices.
3. Manual fire alarm boxes.
4. Other approved types of automatic fire detection devices or suppression systems.

907.10 Alarm notification appliances. Alarm notification appliances shall be provided and shall be listed for their purpose.

907.10.1 Visible alarms. Visible alarm notification appliances shall be provided in accordance with Sections 907.10.1.1 through 907.10.1.3.

Exceptions:

1. Visible alarm notification appliances are not required in alterations, except where an existing fire

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alarm system is upgraded or replaced, or a new fire alarm system is installed.

2. Visible alarm notification appliances shall not be required in exits as defined in Section 1002.1.

907.10.1.1 Public and common areas. Visible alarm notification appliances shall be provided in public and common areas.

907.10.1.2 Groups I-1 and R-1. Group I-1 and R-1 sleeping units in accordance with Table 907.10.1.2 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.

907.10.1.3 Group R-2. In Group R-2 occupancies required by Section 907 to have a fire alarm system, all dwelling units shall be provided with the capability to support visible alarm notification appliances in accordance with ICC A117.1.

TABLE 907.10.1.2
VISIBLE AND AUDIBLE ALARMS

NUMBER OF SLEEPING ACCOMMODATIONS	SLEEPING ACCOMMODATIONS WITH VISIBLE AND AUDIBLE ALARMS
6 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1,000	5% of total
1,001 and over	50 plus 3 for each 100 over 1,000

907.10.2 Audible alarms. Audible alarm notification appliances shall be provided and sound a distinctive sound that is not to be used for any purpose other than that of a fire alarm. The audible alarm notification appliances shall provide a sound pressure level of 15 decibels (dBA) above the average ambient sound level or 5 dBA above the maximum sound level having a duration of at least 60 seconds, whichever is greater, in every occupied space within the building. The minimum sound pressure levels shall be: 70 dBA in occupancies in Groups R and I-1; 90 dBA in mechanical equipment rooms; and 60 dBA in other occupancies. The maximum sound pressure level for audible alarm notification appliances shall be 120 dBA at the minimum hearing distance from the audible appliance. Where the average ambient noise is greater than 105 dBA, visible alarm notification appliances shall be provided in accordance with NFPA 72 and audible alarm notification appliances shall not be required.

Exception: Visible alarm notification appliances shall be allowed in lieu of audible alarm notification appliances in critical care areas of Group I-2 occupancies.

907.11 Fire safety functions. Automatic fire detectors utilized for the purpose of performing fire safety functions shall be connected to the building's fire alarm control panel where a fire alarm system is required by Section 907.2. Detectors shall, upon actuation, perform the intended function and activate the alarm notification appliances or activate a visible and audible supervisory signal at a constantly attended location. In buildings not required to be equipped with a fire alarm system, the automatic fire detector shall be powered by normal electrical service and, upon actuation, perform the intended function. The detectors shall be located in accordance with NFPA 72.

907.12 Duct smoke detectors. Duct smoke detectors shall be connected to the building's fire alarm control panel when a fire alarm system is provided. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location. Duct smoke detectors shall not be used as a substitute for required open area detection.

Exceptions:

1. The supervisory signal at a constantly attended location is not required where duct smoke detectors activate the building's alarm notification appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

907.13 Access. Access shall be provided to each detector for periodic inspection, maintenance and testing.

907.14 Fire-extinguishing systems. Automatic fire-extinguishing systems shall be connected to the building fire alarm system where a fire alarm system is required by another section of this code or is otherwise installed.

907.15 Monitoring. Where required by this chapter, an approved supervising station in accordance with NFPA 72 shall monitor fire alarm systems.

Exception: Supervisory service is not required for automatic sprinkler systems in one- and two-family dwellings.

907.16 Automatic telephone-dialing devices. Automatic telephone-dialing devices used to transmit an emergency alarm shall not be connected to any fire department telephone number unless approved by the fire chief.

907.17 Acceptance tests. Upon completion of the installation of the fire alarm system, alarm notification appliances and circuits, alarm-initiating devices and circuits, supervisory-signal initiating devices and circuits, signaling line circuits, and primary and secondary power supplies shall be tested in accordance with NFPA 72.

907.18 Record of completion. A record of completion in accordance with NFPA 72 verifying that the system has been installed in accordance with the approved plans and specifications shall be provided.

907.19 Instructions. Operating, testing and maintenance instructions and record drawings ("as builts") and equipment specifications shall be provided at an approved location.

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907.20 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with this section and Chapter 7 of NFPA 72.

907.20.1 Maintenance required. Whenever or wherever any device, equipment, system, condition, arrangement, level of protection, or any other feature is required for compliance with the provisions of this code, such device, equipment, system, condition, arrangement, level of protection, or other feature shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the code official.

907.20.2 Testing. Testing shall be performed in accordance with the schedules in Chapter 7 of NFPA 72 or more frequently where required by the code official. Where automatic testing is performed at least weekly by a remotely monitored fire alarm control unit specifically listed for the application, the manual testing frequency shall be permitted to be extended to annual.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the code official, but not less than every 18 months.

907.20.3 Detector sensitivity. Detector sensitivity shall be checked within 1 year after installation and every alternate year thereafter. After the second calibration test, where sensitivity tests indicate that the detector has remained within its listed and marked sensitivity range (or 4-percent obscuration light grey smoke, if not marked), the length of time between calibration tests shall be permitted to be extended to a maximum of 5 years. Where the frequency is extended, records of detector-caused nuisance alarms and subsequent trends of these alarms shall be maintained. In zones or areas where nuisance alarms show any increase over the previous year, calibration tests shall be performed.

907.20.4 Method. To ensure that each smoke detector is within its listed and marked sensitivity range, it shall be tested using either a calibrated test method, the manufacturer's calibrated sensitivity test instrument, listed control equipment arranged for the purpose, a smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where its sensitivity is outside its acceptable sensitivity range or other calibrated sensitivity test method acceptable to the code official. Detectors found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or replaced.

Exceptions:

1. Detectors listed as field adjustable shall be permitted to be either adjusted within the listed and marked sensitivity range and cleaned and recalibrated or they shall be replaced.
2. This requirement shall not apply to single-station smoke alarms.

907.20.4.1 Testing device. Detector sensitivity shall not be tested or measured using a device that administers an unmeasured concentration of smoke or other aerosol into the detector.

907.20.5 Maintenance, inspection and testing. The building owner shall be responsible for ensuring that the fire and life safety systems are maintained in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for maintaining, inspecting and testing such systems. A written record shall be maintained and shall be made available to the code official.

SECTION 908
EMERGENCY ALARM SYSTEMS

908.1 Group H occupancies. Emergency alarms for the detection and notification of an emergency condition in Group H occupancies shall be provided as required in Chapter 27.

908.2 Group H-5 occupancy. Emergency alarms for notification of an emergency condition in an HPM facility shall be provided as required in Section 1803.12. A continuous gas detection system shall be provided for HPM gases in accordance with Section 1803.13.

908.3 Highly toxic and toxic materials. Where required by Section 3804.2.2.10, a gas detection system shall be provided for indoor storage and use of highly toxic and toxic compressed gases.

908.4 Ozone gas-generator rooms. A gas detection system shall be provided in ozone gas-generator rooms in accordance with Section 3805.3.3.

908.5 Repair garages. A flammable-gas detection system shall be provided in repair garages for vehicles fueled by nonodorized gases in accordance with Section 2210.7.2.

908.6 Refrigeration systems. Refrigeration system machinery rooms shall be provided with a refrigerant detector in accordance with Section 606.8.

SECTION 909
SMOKE CONTROL SYSTEMS

[B] 909.1 Scope and purpose. This section applies to mechanical or passive smoke control systems when they are required for new buildings or portions thereof by provisions of the *International Building Code* or this code. The purpose of this section is to establish minimum requirements for the design, installation and acceptance testing of smoke control systems that are intended to provide a tenable environment for the evacuation or relocation of occupants. These provisions are not intended for the preservation of contents, the timely restoration of operations, or for assistance in fire suppression or overhaul activities. Smoke control systems regulated by this section serve a different purpose than the smoke- and heat-venting provisions found in Section 910. Mechanical smoke control systems shall not be considered exhaust systems under Chapter 5 of the *International Mechanical Code*.

[B] 909.2 General design requirements. Buildings, structures, or parts thereof required by the *International Building Code* or this code to have a smoke control system or systems shall have such systems designed in accordance with the applicable requirements of Section 909 and the generally accepted and well-established principles of engineering relevant to the design. The construction documents shall include sufficient in-

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formation and detail to describe adequately the elements of the design necessary for the proper implementation of the smoke control systems. These documents shall be accompanied with sufficient information and analysis to demonstrate compliance with these provisions.

[B] 909.3 Special inspection and test requirements. In addition to the ordinary inspection and test requirements to which buildings, structures and parts thereof are required to undergo, smoke control systems subject to the provisions of Section 909 shall undergo special inspections and tests sufficient to verify the proper commissioning of the smoke control design in its final installed condition. The design submission accompanying the construction documents shall clearly detail procedures and methods to be used and the items subject to such inspections and tests. Such commissioning shall be in accordance with generally accepted engineering practice and, where possible, based on published standards for the particular testing involved. The special inspections and tests required by this section shall be conducted under the same terms as in the *International Building Code*.

[B] 909.4 Analysis. A rational analysis supporting the types of smoke control systems to be employed, the methods of their operations, the systems supporting them, and the methods of construction to be utilized shall accompany the construction documents submission and include, but not be limited to, the items indicated in Sections 909.4.1 through 909.4.6.

[B] 909.4.1 Stack effect. The system shall be designed such that the maximum probable normal or reverse stack effect will not adversely interfere with the system's capabilities. In determining the maximum probable stack effect, altitude, elevation, weather history and interior temperatures shall be used.

[B] 909.4.2 Temperature effect of fire. Buoyancy and expansion caused by the design fire in accordance with Section 909.9 shall be analyzed. The system shall be designed such that these effects do not adversely interfere with the system's capabilities.

[B] 909.4.3 Wind effect. The design shall consider the adverse effects of wind. Such consideration shall be consistent with the wind-loading provisions of the *International Building Code*.

[B] 909.4.4 Systems. The design shall consider the effects of the heating, ventilating and air-conditioning (HVAC) systems on both smoke and fire transport. The analysis shall include all permutations of systems status. The design shall consider the effects of the fire on the heating, ventilating and air-conditioning systems.

[B] 909.4.5 Climate. The design shall consider the effects of low temperatures on systems, property and occupants. Air inlets and exhausts shall be located so as to prevent snow or ice blockage.

[B]909.4.6 Duration of operation. All portions of active or passive smoke control systems shall be capable of continued operation after detection of the fire event for not less than 20 minutes.

[B] 909.5 Smoke barrier construction. Smoke barriers shall comply with the *International Building Code*. Smoke barriers shall be constructed and sealed to limit leakage areas exclusive of protected openings. The maximum allowable leakage area shall be the aggregate area calculated using the following leakage area ratios:

1. Walls: $A/A_w = 0.001\ 00$
2. Exit enclosures: $A/A_w = 0.00035$
3. All other shafts: $A/A_w = 0.00150$
4. Floors and roofs: $A/A_F = 0.00050$

where:

A = Total leakage area, square feet (mm^2).

A_F = Unit floor or roof area of barrier, square feet (m^2).

A_w = Unit wall area of barrier, square feet (m^2).

The leakage area ratios shown do not include openings due to doors, operable windows or similar gaps. These shall be included in calculating the total leakage area.

[B] 909.5.1 Leakage area. Total leakage area of the barrier is the product of the smoke barrier gross area monitored by the allowable leakage area ratio, plus the area of other openings such as gaps and operable windows. Compliance shall be determined by achieving the minimum air pressure difference across the barrier with the system in the smoke control mode for mechanical smoke control systems. Passive smoke control systems tested using other approved means such as door fan testing shall be as approved by the code official.

[B] 909.5.2 Opening protection. Openings in smoke barriers shall be protected by automatic-closing devices actuated by the required controls for the mechanical smoke control system. Door openings shall be protected by door assemblies complying with the requirements of the *International Building Code* for doors in smoke barriers.

Exceptions:

1. Passive smoke control systems with automatic-closing devices actuated by spot-type smoke detectors listed for releasing service installed in accordance with Section 907.11.
2. Fixed openings between smoke zones which are protected utilizing the airflow method.
3. In Group I-2 where such doors are installed across corridors, a pair of opposite-swinging doors without a center mullion shall be installed having vision panels with approved fire-rated glazing materials in approved fire-rated frames, the area of which shall not exceed that tested. The doors shall be close fitting within operational tolerances, and shall not have undercuts, louvers or grilles. The doors shall have head and jamb stops, astragals or rabbets at meeting edges and automatic-closing devices. Positive-latching devices are not required.
4. Group I-3.
5. Openings between smoke zones with clear ceiling heights of 14 feet (4267 mm) or greater and bank down capacity of greater than 20 minutes as determined by the design fire size.

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[B] 909.5.2.1 Ducts and air transfer openings. Ducts and air transfer openings are required to be protected with a minimum Class II, 250°F (121°C) smoke damper complying with the *International Building Code*.

[B] 909.6 Pressurization method. The primary mechanical means of controlling smoke shall be by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.

[B] 909.6.1 Minimum pressure difference. The minimum pressure difference across a smoke barrier shall be 0.05-inch water gage (0.0124) in fully sprinklered buildings.

In buildings allowed to be other than fully , the smoke control system shall be designed to achieve pressure differences at least two times the maximum calculated pressure difference produced by the design fire.

[B] 909.6.2 Maximum pressure difference. The maximum air pressure difference across a smoke barrier shall be determined by required door-opening or closing forces. The actual force required to open exit doors when the system is in the smoke control mode shall be in accordance with Section 1003.3.1.2. Opening and closing forces for other doors shall be determined by standard engineering methods for the resolution of forces and reactions. The calculated force to set a side-hinged, swinging door in motion shall be determined by:

$$F = F_{dc} + K(WA\Delta P)/2(W- d) \quad \textbf{(Equation 9-1)}$$

where:

A = Door area, square feet (m^2).

d = Distance from door handle to latch edge of door, feet (m).

F = Total door opening force, pounds (N).

F_{dc} = Force required to overcome closing device, pounds (N).

K = Coefficient 5.2 (1.0).

W = Door width, feet (m).

ΔP = Design pressure difference, inches of water (Pa).

[B] 909.7 Airflow design method When approved by the code official, smoke migration through openings fixed in a permanently open position, which are located between smoke-control zones by the use of the airflow method, shall be permitted. The design airflows shall be in accordance with this section. Airflow shall be directed to limit smoke migration from the fire zone. The geometry of openings shall be considered to prevent flow reversal from turbulent effects.

[B] 909.7.1 Velocity. The minimum average velocity through a fixed opening shall not be less than:

$$v = 217.2\,[h\,(T_f - T_o)/(T_f + 460)]^{1/2} \quad \textbf{(Equation 9-2)}$$

For SI: $v = 119.9\,[h\,(T_f - T_o)/T_f]^{1/2}$

where:

h = Height of opening, feet (m).

T_f = Temperature of smoke, °F (°K).

T_o = Temperature of ambient air, °F (°K).

v = Air velocity, feet per minute (m/minute).

[B] 909.7.2 Prohibited conditions. This method shall not be employed where either the quantity of air or the velocity of the airflow will adversely affect other portions of the smoke control system, unduly intensify the fire, disrupt plume dynamics or interfere with exiting. In no case shall airflow toward the fire exceed 200 feet per minute (1.02 m/s). Where the formula in Section 909.7.1 requires airflows to exceed this limit, the airflow method shall not be used.

[B] 909.8 Exhaust method. When approved by the code official, mechanical smoke control for large enclosed volumes, such as in atriums or malls, shall be permitted to utilize the exhaust method. The design exhaust volumes shall be in accordance with this section.

[B] 909.8.1 Exhaust rate. The height of the lowest horizontal surface of the accumulating smoke layer shall be maintained at least 10 feet (3048 mm) above any walking surface which forms a portion of a required egress system within the smoke zone. The required exhaust rate for the zone shall be the largest of the calculated plume mass flow rates for the possible plume configurations. Provisions shall be made for natural or mechanical supply of air from outside or adjacent smoke zones to make up for the air exhausted. Makeup airflow rates, when measured at the potential fire location, shall not exceed 200 feet per minute (60 960 mm per minute) toward the fire. The temperature of the makeup air shall be such that it does not expose temperature-sensitive fire protection systems beyond their limits.

[B] 909.8.2 Axisymmetric plumes. The plume mass flow rate (m_p), shall be determined by placing the design fire center on the axis of the space being analyzed. The limiting flame height shall be determined by:

$$z_l = 0.533Q_c^{2/5} \quad \textbf{(Equation 9-3)}$$

For SI: $z_l = 0.166Q_c^{2/5}$

where:

m_p = Plume mass flow rate, pounds per second (kg/s).

Q = Total heat output.

Q_c = Convective heat output, British thermal units per second (kW).

(The value of Q_c shall not be taken as less than 0.70 Q.)

z = height from top of fuel surface to bottom of smoke layer, feet (m).

z_l = limiting flame height, feet (m). The z_l value must be greater than the fuel equivalent diameter (see Section 909.9).

for $z > z_l$

$$m_p = 0.022Q_c^{1/3}z^{5/3} + 0.0042Q_c$$

For SI: $m_p = 0.071\,Q_c^{1/3}z^{5/3} + 0.0018Q_c$

for $z = z_l$

$$m_p = 0.011\,Q_c$$

For SI: $m_p = 0.035Q_c$

for $z < z_l$

$$m_p = 0.0208Q_c^{3/5}z$$

For SI: $m_p = 0.032Q_c^{3/5}z$

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To convert m_p from pounds per second of mass flow to a volumetric rate, the following formula shall be used:

$V=60\ m_p/\rho$ **(Equation 9-4)**

where:

V = Volumetric flow rate, cubic feet per minute (m^3/s).

ρ = Density of air at the temperature of the smoke layer, pounds per cubic feet (T: in °F) [kg/m^3 (T: in °C)].

[B] 909.8.3 Balcony spill plumes. The plume mass flow rate (m_p) for spill plumes shall be determined using the geometrically probable width based on architectural elements and projections in the following formula:

$m_p = 0.124(QW^2)^{1/3}(z_b + 0.25H)$ **(Equation 9-5)**

For SI: $m_p=0.36(QW^2)^{1/3}(z_b + 0.25H)$

where:

H = Height above fire to underside of balcony, feet (m).

m_p = Plume mass flow rate, pounds per second (kg/s).

Q = Total heat output.

W = Plume width at point of spill, feet (m).

z_b = Height from balcony, feet (m).

[B] 909.8.4 Window plumes. The plume mass flow rate (m_p) shall be determined from:

$m_p = 0.077(A_w H_w^{1/2})^{1/3}(z_w+a)^{5/3} + 0.18A_w H_w^{1/2}$

(Equation 9-6)

For SI: $m_p = 0.68(A_w H_w^{1/2})^{1/3}(z_w + a)^{5/3} + 1.5A_w H_w^{1/2}$

where:

A_w = Area of the opening, square feet (m^2).

H_w = Height of the opening, feet (m).

m_p = Plume mass flow rate, pounds per second (kg/s).

z_w = Height from the top of the window or opening to the bottom of the smoke layer, feet (m).

a = $2.4A_w^{2/5}H_w^{1/5} - 2.1H_w$

[B] 909.8.5 Plume contact with walls. When a plume contacts one or more of the surrounding walls, the mass flow rate shall be adjusted for the reduced entrainment resulting from the contact provided that the contact remains constant. Use of this provision requires calculation of the plume diameter, that shall be calculated by:

$d = 0.48\ [(T_c + 460)/(T_a + 460)]^{1/2}z$ **(Equation 9-7)**

For SI: $d = 0.48\ (T_c/T_a)^{1/2}z$

where:

d = Plume diameter, feet (m).

T_a = Ambient air temperature, °F (°K).

T_c = Plume centerline temperature, °F (°K).

= $0.60\ (T_a + 460)\ Q_c^{2/3}\ z^{-5/3} + T_a$

z = Height at which T_c is determined, feet (m).

For SI: $T_c = 0.08\ T_a Q_c^{2/3}\ z^{-5/3} + T_a$

[B] 909.9 Design fire. The design fire shall be based on a Q of not less than 5,000 Btu/s (5275 kW) unless a rational analysis is performed by the registered design professional and approved by the code official. The design fire shall be based on the analysis in accordance with Section 909.4 and this section.

[B] 909.9.1 Factors considered. The engineering analysis shall include the characteristics of the fuel, fuel load, effects included by the fire, and whether the fire is likely to be steady or unsteady.

[B] 909.9.2 Separation distance. Determination of the design fire shall include consideration of the type of fuel, fuel spacing and configuration. The ratio of the separation distance to the fuel equivalent radius shall not be less than 4. The fuel equivalent radius shall be the radius of a circle of equal area to floor area of the fuel package. The design fire shall be increased if other combustibles are within the separation distance as determined by:

$R = [Q/(12\pi q'')]^{1/2}$

(Equation 9-8)

where:

q'' = Incident radiant heat flux required for nonpiloted ignition, $Btu/ft^2{\cdot}s$ (W/m^2).

Q = Heat release from fire, Btu/s (kW).

R = Separation distance from target to center of fuel package, feet (m).

[B] 909.9.3 Heat-release assumptions. The analysis shall make use of best available data from approved sources and shall not be based on excessively stringent limitations of combustible material.

[B] 909.9.4 Sprinkler effectiveness assumptions. A documented engineering analysis shall be provided for conditions that assume fire growth is halted at the time of sprinkler activation.

[B] 909.10 Equipment. Equipment such as, but not limited to, fans, ducts, automatic dampers and balance dampers, shall be suitable for their intended use, suitable for the probable exposure temperatures that the rational analysis indicates, and as approved by the code official.

[B] 909.10.1 Exhaust fans. Components of exhaust fans shall be rated and certified by the manufacturer for the probable temperature rise to which the components will be exposed. This temperature rise shall be computed by:

$T_s = (Q_c/mc) + (T_a)$ **(Equation 9-9)**

where:

c = Specific heat of smoke at smokelayer temperature, Btu/lb°F. (kJ/kg·K).

m = Exhaust rate, pounds per second (kg/s).

Q_c = Convective heat output of fire, Btu/s (kW).

T_a = Ambient temperature, °F (°K).

T_s = Smoke temperature, °F (°K).

Exception: Reduced T_s as calculated based on the assurance of adequate dilution air.

[B] 909.10.2 Ducts. Duct materials and joints shall be capable of withstanding the probable temperatures and pressures to which they are exposed as determined in accordance with Section 909.10.1. Ducts shall be constructed and supported

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in accordance with the *International Mechanical Code*. Ducts shall be leak tested to 1.5 times the maximum design pressure in accordance with nationally accepted practices. Measured leakage shall not exceed 5 percent of design flow. Results of such testing shall be a part of the documentation procedure. Ducts shall be supported directly from fire-resistance-rated structural elements of the building by substantial, noncombustible supports.

Exception: Flexible connections (for the purpose of vibration isolation) complying with the *International Mechanical Code* and which are constructed of approved fire-resistance-rated materials.

[B] 909.10.3 Equipment, inlets and outlets. Equipment shall be located so as to not expose uninvolved portions of the building to an additional fire hazard. Outside air inlets shall be located so as to minimize the potential for introducing smoke or flame into the building. Exhaust outlets shall be so located as to minimize reintroduction of smoke into the building and to limit exposure of the building or adjacent buildings to an additional fire hazard.

[B] 909.10.4 Automatic dampers. Automatic dampers, regardless of the purpose for which they are installed within the smoke control system, shall be listed and conform to the requirements of approved recognized standards.

[B] 909.10.5 Fans. In addition to other requirements, belt-driven fans shall have 1.5 times the number of belts required for the design duty with the minimum number of belts being two. Fans shall be selected for stable performance based on normal temperature and, where applicable, elevated temperature. Calculations and manufacturer's fan curves shall be part of the documentation procedures. Fans shall be supported and restrained by noncombustible devices in accordance with the structural design requirements of the *International Building Code*. Motors driving fans shall not be operating beyond their nameplate horsepower (kilowatts) as determined from measurement of actual current draw. Motors driving fans shall have a minimum service factor of 1.15.

[B] 909.11 Power systems. The smoke control system shall be supplied with two sources of power. Primary power shall be the normal building power systems. Secondary power shall be from an approved standby source complying with the ICC *Electrical Code*. The standby power source and its transfer switches shall be in a separate room from the normal power transformers and switch gear and shall be enclosed in a room of not less than 1-hour fire-resistance-rated construction, ventilated directly to and from the exterior. Power distribution from the two sources shall be by independent routes. Transfer to full standby power shall be automatic and within 60 seconds of failure of the primary power. The systems shall comply with the ICC *Electrical Code*.

[B] 909.11.1 Power sources and power surges. Elements of the smoke management system relying on volatile memories or the like shall be supplied with uninterruptable power sources of sufficient duration to span 15-minute primary power interruption. Elements of the smoke management system susceptible to power surges shall be suitably protected by conditioners, suppressors or other approved means.

[B] 909.12 Detection and control systems. Fire detection systems providing control input or output signals to mechanical smoke control systems or elements thereof shall comply with the requirements of Chapter 9 and NFPA 72. Such systems shall be equipped with a control unit complying with UL 864 and listed as smoke control equipment.

Control systems for mechanical smoke control systems shall include provisions for verification. Verification shall include positive confirmation of actuation, testing, manual override, the presence of power downstream of all disconnects and, through a preprogrammed weekly test sequence report, abnormal conditions audibly, visually and by printed report.

[B] 909.12.1 Wiring. In addition to meeting requirements of the ICC *Electrical Code*, all wiring, regardless of voltage, shall be fully enclosed within continuous raceways.

909.12.2 Activation. Smoke control systems shall be activated in accordance with this section.

909.12.2.1 Pressurization, airflow or exhaust method. Mechanical smoke control systems using the pressurization, airflow or exhaust method shall have completely automatic control.

909.12.2.2 Passive method. Passive smoke control systems actuated by approved spot-type detectors listed for releasing service shall be permitted.

909.12.3 Automatic control. Where completely automatic control is required or used, the automatic-control sequences shall be initiated from an appropriately zoned automatic sprinkler system complying with Section 903.3.1.1 or from an appropriately zoned, total-coverage smoke-detection system complying with NFPA 72.

[B] 909.13 Control air tubing. Control air tubing shall be of sufficient size to meet the required response times. Tubing shall be flushed clean and dry prior to final connections. Tubing shall be adequately supported and protected from damage. Tubing passing through concrete or masonry shall be sleeved and protected from abrasion and electrolytic action.

[B] 909.13.1 Materials. Control air tubing shall be hard drawn copper, Type L, ACR in accordance with ASTM B 42, ASTM B 43, ASTM B 68, ASTM B 88, ASTM B 251 and ASTM B 280. Fittings shall be wrought copper or brass, solder type, in accordance with ASME B 16.18 or ASME B 16.22. Changes in direction shall be made with appropriate tool bends. Brass compression-type fittings shall be used at final connection to devices; other joints shall be brazed using a BCuP5 brazing alloy with solidus above 1,100°F (593°C) and liquids below 1,500°F (816°C). Brazing flux shall be used on copper-to-brass joints only.

Exception: Nonmetallic tubing used within control panels and at the final connection to devices, provided all of the following conditions are met:

1. Tubing shall be listed by an approved agency for flame and smoke characteristics.
2. Tubing and the connected device shall be completely enclosed within a galvanized or paint-grade

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steel enclosure of not less than 0.030 inch (0.76 mm) (No. 22 galvanized sheet gage) thickness. Entry to the enclosure shall be by copper tubing with a protective grommet of neoprene or teflon or by suitable brass compression to male-barbed adapter.

3. Tubing shall be identified by appropriately documented coding.
4. Tubing shall be neatly tied and supported within enclosure. Tubing bridging cabinet and door or moveable device shall be of sufficient length to avoid tension and excessive stress. Tubing shall be protected against abrasion. Tubing serving devices on doors shall be fastened along hinges.

[B] 909.13.2 Isolation from other functions. Control tubing serving other than smoke control functions shall be isolated by automatic isolation valves or shall be an independent system.

[B] 909.13.3 Testing. Control air tubing shall be tested at three times the operating pressure for not less than 30 minutes without any noticeable loss in gauge pressure prior to final connection to devices.

[B] 909.14 Marking and identification. The detection and control systems shall be clearly marked at all junctions, accesses and terminations.

909.15 Control diagrams. Identical control diagrams showing all devices in the system and identifying their location and function shall be maintained current and kept on file with the code official, the fire department and in the fire command center in format and manner approved by the fire chief.

909.16 Fire-fighter's smoke control panel. A fire-fighter's smoke control panel for fire department emergency response purposes only shall be provided and shall include manual control or override of automatic control for mechanical smoke control systems. The panel shall be located in a fire command center complying with Section 509 and shall comply with Sections 909.16.1 through 909.16.3.

909.16.1 Smoke control systems. Fans within the building shall be shown on the fire-fighter's control panel. A clear indication of the direction of airflow and the relationship of components shall be displayed. Status indicators shall be provided for all smoke control equipment, annunciated by fan and zone and by pilot-lamp-type indicators as follows:

1. Fans, dampers and other operating equipment in their normal status—WHITE.
2. Fans, dampers and other operating equipment in their off or closed status—RED.
3. Fans, dampers and other operating equipment in their on or open status—GREEN.
4. Fans, dampers and other operating equipment in a fault status—YELLOW/AMBER.

909.16.2 Smoke control panel. The fire-fighter's control panel shall provide control capability over the complete smoke-control system equipment within the building as follows:

1. ON-AUTO-OFF control over each individual piece of operating smoke control equipment that can also be controlled from other sources within the building. This includes stairway pressurization fans; smoke exhaust fans; supply, return and exhaust fans; elevator shaft fans; and other operating equipment used or intended for smoke control purposes.
2. OPEN-AUTO-CLOSE control over individual dampers relating to smoke control and that are also controlled from other sources within the building.
3. ON-OFF or OPEN-CLOSE control over smoke control and other critical equipment associated with a fire or smoke emergency and that can only be controlled from the fire-fighter's control panel.

Exceptions:

1. Complex systems, where approved, where the controls and indicators are combined to control and indicate all elements of a single smoke zone as a unit.
2. Complex systems, where approved, where the control is accomplished by computer interface using approved, plain English commands.

909.16.3 Control action and priorities. The fire-fighter's control panel actions shall be as follows:

1. ON-OFF, OPEN-CLOSE control actions shall have the highest priority of any control point within the building. Once issued from the fire-fighter's control panel, no automatic or manual control from any other control point within the building shall contradict the control action. Where automatic means are provided to interrupt normal, nonemergency equipment operation or produce a specific result to safeguard the building or equipment (i.e., duct freezestats, duct smoke detectors, high-temperature cutouts, temperature-actuated linkage and similar devices), such means shall be capable of being overridden by the fire-fighter's control panel. The last control action as indicated by each fire-fighter's control panel switch position shall prevail. In no case shall control actions require the smoke control system to assume more than one configuration at any one time.

   Exception: Power disconnects required by the ICC *Electrical Code*.

2. Only the AUTO position of each three-position fire-fighter's control panel switch shall allow automatic or manual control action from other control points within the building. The AUTO position shall be the NORMAL, nonemergency, building control position. Where a fire-fighter's control panel is in the AUTO position, the actual status of the device (on, off, open, closed) shall continue to be indicated by the status indicator described above. When directed by an automatic signal to assume an emergency condition, the NORMAL position shall become the emergency condition for that device or group of devices within the zone. In no case shall control actions require the smoke control system to assume more than one configuration at any one time.

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909.17 System response time. Smoke-control system activation shall be initiated immediately after receipt of an appropriate automatic or manual activation command. Smoke control systems shall activate individual components (such as dampers and fans) in the sequence necessary to prevent physical damage to the fans, dampers, ducts and other equipment. For purposes of smoke control, the fire-fighter's control panel response time shall be the same for automatic or manual smoke control action initiated from any other building control point. The total response time, including that necessary for detection, shut down of operating equipment and smoke control system startup, shall allow for full operational mode to be achieved before the conditions in the space exceed the design smoke condition. The system response time for each component and their sequential relationships shall be detailed in the required rational analysis and verification of their installed condition reported in the required final report.

909.18 Acceptance testing. Devices, equipment, components and sequences shall be individually tested. These tests, in addition to those required by other provisions of this code, shall consist of determination of function, sequence and, where applicable, capacity of their installed condition.

909.18.1 Detection devices. Smoke or fire detectors that are a part of a smoke control system shall be tested in accordance with Chapter 9 in their installed condition. When applicable, this testing shall include verification of airflow in both minimum and maximum conditions.

909.18.2 Ducts. Ducts that are part of a smoke control system shall be traversed using generally accepted practices to determine actual air quantities.

909.18.3 Dampers. Dampers shall be tested for function in their installed condition.

909.18.4 Inlets and outlets. Inlets and outlets shall be read using generally accepted practices to determine air quantities.

909.18.5 Fans. Fans shall be examined for correct rotation. Measurements of voltage, amperage, revolutions per minute and belt tension shall be made.

909.18.6 Smoke barriers. Measurements using inclined manometers or other approved calibrated measuring devices shall be made of the pressure differences across smoke barriers. Such measurements shall be conducted for each possible smoke control condition.

909.18.7 Controls. Each smoke zone, equipped with an automatic-initiation device, shall be put into operation by the actuation of one such device. Each additional device within the zone shall be verified to cause the same sequence without requiring the operation of fan motors in order to prevent damage. Control sequences shall be verified throughout the system, including verification of override from the fire-fighter's control panel and simulation of standby power conditions.

909.18.8 Special inspections for smoke control. Smoke control systems shall be tested by a special inspector.

909.18.8.1 Scope of testing. Special inspections shall be conducted in accordance with the following:

During erection of ductwork and prior to concealment for the purposes of leakage testing and recording of device location.

Prior to occupancy and after sufficient completion for the purposes of pressure-difference testing, flow measurements, and detection and control verification.

909.18.8.2 Qualifications. Special inspection agencies for smoke control shall have expertise in fire protection engineering, mechanical engineering and certification as air balancers.

909.18.8.3 Reports. A complete report of testing shall be prepared by the special inspector or special inspection agency. The report shall include identification of all devices by manufacturer, nameplate data, design values, measured values and identification tag or mark. The report shall be reviewed by the responsible registered design professional and, when satisfied that the design intent has been achieved, the responsible registered design professional shall seal, sign and date the report.

909.18.8.3.1 Report filing. A copy of the final report shall be filed with the code official and an identical copy shall be maintained in an approved location at the building.

909.18.9 Identification and documentation. Charts, drawings and other documents identifying and locating each component of the smoke control system, and describing their proper function and maintenance requirements, shall be maintained on file at the building as an attachment to the report required by Section 909.18.8.3. Devices shall have an approved identifying tag or mark on them consistent with the other required documentation and shall be dated indicating the last time they were successfully tested and by whom.

909.19 System acceptance. Buildings, or portions thereof, required by this code to comply with this section shall not be issued a certificate of occupancy until such time that the code official determines that the provisions of this section have been fully complied with, and that the fire department has received satisfactory instruction on the operation, both automatic and manual, of the system.

Exception: In buildings of phased construction, a temporary certificate of occupancy, as approved by the code official, shall be permitted provided that those portions of the building to be occupied meet the requirements of this section and that the remainder does not pose a significant hazard to the safety of the proposed occupants or adjacent buildings.

[B] 909.20 Underground building smoke exhaust system. Where required by the *International Building Code* for underground buildings, a smoke exhaust system shall be provided in accordance with this section.

[B] 909.20.1 Exhaust capability. Where compartmentation is required, each compartment shall have an independent, automatically activated smoke exhaust system capable of manual operation. The system shall have an air supply and smoke exhaust capability that will provide a minimum of six air changes per hour.

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909.20.2 Operation. The smoke exhaust system shall be operated in the compartment of origin by the following, independently of each other:

1. Two cross-zoned smoke detectors within a single protected area or a single smoke detector monitored by an alarm verification zone or an approved equivalent method.
2. The automatic sprinkler system.
3. Manual controls that are readily accessible to the fire department.

909.20.3 Alarm required. Activation of the smoke exhaust system shall activate an audible alarm at a constantly attended location.

909.21 Maintenance. Smoke control systems shall be maintained to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required. The system shall be maintained in accordance with the manufacturer's instructions and Sections 909.21.1 through 909.21.5, and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment".

909.21.1 Schedule. A routine maintenance and operational testing program shall be initiated immediately after the smoke control system has passed the acceptance tests. A written schedule for routine maintenance and operational testing shall be established.

909.21.2 Written record. A written record of smoke control system testing and maintenance shall be maintained on the premises. The written record shall include the date of the maintenance, identification of the servicing personnel and notification of any unsatisfactory condition and the corrective action taken, including parts replaced.

909.21.3 Testing. Operational testing of the smoke control system shall include all equipment such as initiating devices, fans, dampers, controls, doors and windows.

909.21.4 Dedicated smoke control systems. Dedicated smoke control systems shall be operated for each control sequence semiannually. The system shall also be tested under standby power conditions.

909.21.5 Nondedicated smoke control systems. Nondedicated smoke control systems shall be operated for each control sequence annually. The system shall also be tested under standby power conditions.

SECTION 910
SMOKE AND HEAT VENTS

910.1 General. Where required by this code smoke and heat vents or mechanical smoke exhaust systems and curtain boards shall conform to the requirements of this section.

Exceptions:

1. Warehouses used solely for storage of Class I and Class II commodities where protected by an approved automatic sprinkler system.
2. Group S-1 aircraft hangers.

910.2 Where required. Approved smoke and heat vents shall be installed in the roofs of one-story buildings or portions thereof occupied for the uses set forth in Sections 910.2.1 through 910.2.4.

910.2.1 Groups F-1 and S-1. Buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m^2) in undivided area.

Exceptions:

1. Group S-1 aircraft repair hangers.
2. Buildings protected by an automatic sprinkler system.

910.2.2 Group H. Buildings and portions thereof used as a Group H occupancy as follows:

1. In Group H-2 or H-3, any of which are more than 15,000 square feet (1394 m^2) in single floor area.
2. In areas of buildings in Group H used for storing Class 2, 3 and 4 liquids, Class 1 and unclassified detonable organic peroxides, Class 3 and 4 unstable (reactive) materials, or Class 2 or 3 water-reactive materials as required for a high-hazard commodity classification.

Exception: Buildings containing only noncombustible materials.

910.2.3 High-piled combustible storage. Buildings and portions thereof containing high-piled combustible stock or rack storage in any occupancy group when required by Section 2306.7.

910.2.4 Exit access travel distance increase. Buildings and portions thereof used as a Group F-1 or S-1 occupancy where the maximum exit access travel distance is increased with Section 1004.2.4.1.

910.3 Design and installation. The design and installation of smoke and heat vents and curtain boards shall be as specified in this section and Table 910.3. The requirements of Table 910.3 shall be applied separately over each high-piled storage area for portions of storage areas having different requirements because of commodity classification or storage height.

910.3.1 Vent operation. Smoke and heat vents shall be approved and labeled and shall be capable of being operated by approved automatic and manual means. Automatic operation of smoke and heat vents shall conform to the provisions of this section.

910.3.1.1 Gravity-operated drop out vents. Automatic smoke and heat vents containing heat-sensitive glazing designed to shrink and drop out of the vent opening when exposed to fire shall fully open within 5 minutes after the vent cavity is exposed to a simulated fire represented by a time-temperature gradient that reaches an air temperature of 500°F (260°C) within 5 minutes.

910.3.1.2 Sprinklered buildings. Where installed in buildings equipped with an approved automatic sprinkler system, smoke and heat vents shall be designed to operate automatically.

910.3.1.3 Nonsprinklered buildings. Where installed in buildings not equipped with an approved automatic sprinkler system, smoke and heat vents shall operate automati-

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cally by actuation of a heat-responsive device rated at between 100°F (56°C) and 220°F (122°C) above ambient.

Exception: Gravity-operated drop out vents complying with Section 910.3.1.1.

910.3.2 Vent dimensions. The effective venting area shall not be less than 16 square feet (1.5 m^2) with no dimension less than 4 feet (1219 mm), excluding ribs or gutters having a total width not exceeding 6 inches (152 mm).

910.3.3 Vent locations. Smoke and heat vents shall be located 20 feet (6096 mm) or more from lines of adjacent property lines and fire walls, and 10 feet (3048 mm) or more from fire barrier walls. Vents shall be uniformly located within the roof area above high-piled storage areas, with consideration given to roof pitch, draft curtain location, sprinkler head location and structural members.

910.3.4 Draft curtains. Where required, draft curtains shall be provided in accordance with this section.

Exception: Areas of buildings that are equipped with an automatic sprinkler system.

910.3.4.1 Construction. Draft curtains shall be constructed of sheet metal, lath and plaster, gypsum board, or other approved materials which provide equivalent performance that will resist the passage of smoke. Joints and connections shall be smoke tight.

910.3.4.2 Location and depth. The location and minimum depth of draft curtains shall be in accordance with Table 910.3.

910.4 Mechanical smoke exhaust Where approved by the code official, engineered mechanical smoke exhaust shall be an acceptable alternative to smoke and heat vents.

910.4.1 Location. Exhaust fans shall be uniformly spaced within each draft-curtained area and the maximum distance between fans shall not be greater than 100 feet (30 480 mm).

910.4.2 Size. Fans shall have a maximum individual capacity of 30,000 cfm (14.2 m^3/s). The aggregate capacity of smoke exhaust fans shall be determined by the formula:

$$V = A \times 300 \qquad \textbf{(Equation 9-10)}$$

where:

V = Volume of mechanical ventilation required, in cfm (m^3/s).

A = Area of roof vents provided in square feet (m^2) in accordance with Table 910.3.

910.4.3 Operation. Mechanical smoke exhaust fans shall be automatically activated by the automatic sprinkler system or by heat detectors having operating characteristics equivalent to those described in Section 910.3.1. Individual manual controls of each fan unit shall also be provided.

TABLE 910.3
REQUIREMENTS FOR DRAFT CURTAINS AND SMOKE VENTING[a]

OCCUPANCY GROUP AND COMMODITY CLASSIFICATION	DESIGNATED STORAGE HEIGHT (feet)	MINIMUM DRAFT CURTAIN DEPTH (feet)	MAXIMUM AREA FORMED BY DRAFT CURTAINS (square feet)[b]	VENT AREA TO FLOOR AREA RATIO[d, e, f]	MAXIMUM SPACING OF VENT CENTERS (feet)	MAXIMUM DISTANCE TO VENTS FROM WALL OR DRAFT CURTAINS[c] (feet)
Group F-1	–	0.2 × H but > 4	50,000	1:100	120	60
Group S-1 I-IV (Option 1)	≤ 20	6	10,000	1:100	100	60
	> 20 ≤ 40	6	8,000	1:75	100	55
Group S-1 I-IV (Option 2)	≤ 20	4	3,000	1:75	100	55
	> 20 ≤ 40	4	3,000	1:50	100	50
Group S-1 High hazard (Option 1)	≤ 20	6	6,000	1:50	100	50
	> 20 ≤ 30	6	6,000	1:40	90	45
Group S-1 High hazard (Option 2)	≤ 20	4	4,000	1:50	100	50
	> 20 ≤ 30	4	2,000	1:30	75	40

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2.

a. Requirements for rack storage heights in excess of those indicated shall be in accordance with Chapter 23. For solid-piled storage heights in excess of those indicated, an approved engineered design shall be used.

b. When required by this table, draft curtains are required in nonsprinklered facilities; and also in sprinklered facilities, separating automatic sprinkler systems having different response time indices (RTI).

c. The distance specified is the maximum distance from any vent in a particular curtained area to walls or draft curtains which form the perimeter of the curtained area.

d. Vent ratio for standard sprinklers is 1:100.

e. Vent ratio for ELO and ESFR sprinklers is 1:200.

f. Vent ratio for high-hazard uses, sprinklered with any type of sprinkler is 1:50.

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910.4.4 Wiring and control. Wiring for operation and control of smoke exhaust fans shall be connected ahead of the main disconnect and protected against exposure to temperatures in excess of 1,000°F (538°C) for a period of not less than 15 minutes. Controls shall be located so as to be immediately accessible to the fire service from the exterior of the building and protected against interior fire exposure by fire barriers having a fire-resistance rating not less than 1 hour.

910.4.5 Supply air. Supply air for exhaust fans shall be provided at or near the floor level and shall be sized to provide a minimum of 50 percent of required exhaust. Openings for supply air shall be uniformly distributed around the periphery of the area served.

910.4.6 Interlocks. On combination comfort air-handling/smoke removal systems or independent comfort air-handling systems, fans shall be controlled to shut down in accordance with the approved smoke control sequence.

SECTION 911
EXPLOSION CONTROL

911.1 General. Explosion control shall be provided in the following locations:

1. Where a structure, room or space is occupied for purposes involving explosion hazards as identified in Table 911.1.
2. Where quantities of hazardous materials specified in Table 911.1 exceed the maximum allowable quantities in Table 2703.1.1(1).

Such areas shall be provided with explosion (deflagration) venting, explosion (deflagration) prevention systems, or barricades in accordance with this section and NFPA 69, or NFPA 495 as applicable. Deflagration venting shall not be utilized as a means to protect buildings from detonation hazards.

911.2 Required deflagration venting. Areas that are required to be provided with deflagration venting shall comply with the following:

1. Walls, ceilings and roofs exposing surrounding areas shall be designed to resist a minimum internal pressure of 100 pounds per square foot (psf) (4788 Pa). The minimum internal design pressure shall not be less than five times the maximum internal relief pressure specified in Section 911.2, Item 5.
2. Deflagration venting shall be provided only in exterior walls and roofs.

   Exception: Where sufficient exterior wall and roof venting cannot be provided because of inadequate exterior wall or roof area, deflagration venting shall be allowedby specially designed shafts vented to the exterior of the building.
3. Deflagration venting shall be designed to prevent unacceptable structural damage. Where relieving a deflagration, vent closures shall not produce projectiles of sufficient velocity and mass to cause life threatening injuries to the occupants or other persons on the property or adjacent public ways.
4. The aggregate clear area of vents and venting devices shall be governed by the pressure resistance of the construction assemblies specified in Item 1 of this section and the maximum internal pressure allowed by Item 5 of this section.
5. Vents shall be designed to withstand loads in accordance with the *International Building Code*. Vents shall consist of any one or any combination of the following to relieve at a maximum internal pressure of 20 pounds per square foot (958 Pa), but not less than the loads required by the *International Building Code*:
   5.1. Exterior walls designed to release outward.
   5.2. Hatch covers.
   5.3. Outward swinging doors.
   5.4. Roofs designed to uplift.
   5.5. Venting devices listed for the purpose.
6. Vents designed to release from the exterior walls or roofs of the building when venting a deflagration shall discharge directly to the exterior of the building where an unoccupied space not less than 50 feet (15 240 mm) in width is provided between the exterior walls of the building and the property line.

   Exception: Vents complying with Item 7 of this section.
7. Vents designed to remain attached to the building when venting a deflagration shall be so located that the discharge opening shall not be less than 10 feet (3048 mm) vertically from window openings and exits in the building and 20 feet (6096 mm) horizontally from exits in the building, from window openings and exits in adjacent buildings on the same property, and from the property line.
8. Discharge from vents shall not be into the interior of the building.

911.3 Explosion prevention systems. Explosion prevention systems shall be of an approved type and installed in accordance with the provisions of this code and NFPA 69.

911.4 Barricades. Barricades shall be designed and installed in accordance with NFPA 495.

SECTION 912
FIRE DEPARTMENT CONNECTIONS

912.1 Installation. Fire department connections shall be installed in accordance with the NFPA standard applicable to the system design.

912.2 Location. With respect to hydrants, driveways, buildings and landscaping, fire department connections shall be so located that fire apparatus and hose connected to supply the system will not obstruct access to the buildings for other fire apparatus. The location of fire department connections shall be approved.

912.2.1 Visible location. Fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise approved by the code official.

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TABLE 911.1
EXPLOSION CONTROL REQUIREMENTS

MATERIAL	CLASS	EXPLOSION CONTROL METHODS	
		Barricade construction	Explosion (deflagration) venting or explosion (deflagration) prevention systems
Hazard Category			
Combustible dusts[a]	–	Not required	Required
Cryogenic fluids	Flammable	Not required	Required
Explosives	–	Required	Not permitted
Flammable gas	Gaseous Liquefied	Not required Not required	Required Required
Flammable liquids	IA[b] IB[c]	Not required Not required	Required Required
Organic peroxides	U I	Required Required	Not permitted Not permitted
Oxidizer liquids and solids	4	Required	Not permitted
Pyrophoric	Gases	Not required	Required
Unstable (reactive)	4 3 detonable 3 nondetonable	Required Required Not required	Not permitted Not permitted Required
Water reactive liquids and solids	3 2[e]	Not required Not required	Required Required
Special Uses			
Acetylene generator rooms	–	Not required	Required
Grain processing	–	Not required	Required
Liquefied petroleum gas distribution facilities	–	Not required	Required
Where explosion hazards exist[d]	Detonation Deflagration	Required Not required	Not permitted Required

a. Combustible dusts that are generated during manufacturing or processing. See definition of Combustible Dust in Chapter 2.
b. Storage or use.
c. In open use or dispensing.
d. Rooms containing dispensing and use of hazardous materials when an explosive environment can occur because of the characteristics or nature of the hazardous materials or as a result of the dispensing or use process.
e. A method of explosion control shall be provided when Class 2 water-reactive materials can form potentially explosive mixtures.

912.2.2 Existing buildings. On existing buildings, wherever the fire department connection is not visible to approaching fire apparatus, the fire department connection shall be indicated by an approved sign mounted on the street front or on the side of the building. Such sign shall have the letters "FDC" at least 6 inches (152 mm) high and words in letters at least 2 inches (51 mm) high or an arrow to indicate the location. All such signs shall be subject to the approval of the code official.

912.3 Access. Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other object for a minimum of 3 feet (914 mm).

912.4 Signs. A metal sign with raised letters at least 1 inch (25 mm) in size shall be mounted on all fire department connections serving fire sprinklers, standpipes or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION or a combination thereof as applicable. See Section 510.1.1 for additional identification signs requirements.

[P] 912.5 Backflow protection. The potable water supply to automatic sprinkler and standpipe systems shall be protected against backflow as required by the *International Plumbing Code*.

912.6 Inspection, testing and maintenance. All fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25 25 and Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment".

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SECTION 913
FIRE PUMPS

913.1 General. Where provided, fire pumps shall be installed in accordance with this section and NFPA 20.

913.2 Protection against interruption of service. The fire pump, driver, and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

913.3 Temperature of pump room. Suitable means shall be provided for maintaining the temperature of a pump room or pump house, where required, above 40°F (5°C).

913.3.1 Engine manufacturer's recommendation. Temperature of the pump room, pump house or area where engines are installed shall never be less than the minimum recommended by the engine manufacturer. The engine manufacturer's recommendations for oil heaters shall be followed.

913.4 Valve supervision. Where provided, the fire pump suction, discharge and bypass valves, and the isolation valves on the backflow prevention device or assembly shall be supervised open by one of the following methods.

1. Central-station, proprietary, or remote-station signaling service.
2. Local signaling service that will cause the sounding of an audible signal at a constantly attended location.
3. Locking valves open.
4. Sealing of valves and approved weekly recorded inspection where valves are located within fenced enclosures under the control of the owner.

913.4.1 Test outlet valve supervision. Fire pump test outlet valves shall be supervised in the closed position.

913.5 Testing and maintenance. Fire pumps shall be inspected, tested and maintained in accordance with the requirements of this section and NFPA 25.

913.5.1 Acceptance test. Acceptance testing shall be done in accordance with the requirements of NFPA 20.

913.5.2 Generator sets. Engine generator sets supplying emergency or standby power to fire pump assemblies shall be periodically tested in accordance with NFPA 110.

913.5.3 Transfer switches. Automatic transfer switches shall be periodically tested in accordance with NFPA 110.

913.5.4 Pump room environmental conditions. Tests of pump room environmental conditions, including heating, ventilation and illumination shall be made to ensure proper manual or automatic operation of the associated equipment.

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EPAHO044000318

[redacted]

SUZI MOCK

EPAHO04400319

8/14/09
WBS
K-3 (9)

General Affidavit

State of Texas

County of Jefferson

Before me, the undersigned Notary, Juanita Thomas, on this 31 day of July, 2009, personally appeared Juan Frias known to me to be a credible person and lawful age, who being by me duly sworn, on this oath, deposes and says:

My name is Juan Frias. I am over 21 years of age. I am a truck driver for CES Environmental Services (CES) and Port Arthur Chemical and Environmental Services, L.L.C. (PACES). I have been approached by Suzi Mock in regard to filing suit against customers of Port Arthur Chemical and Environmental Services, L.L.C. (PACES) for damages to personal health. I personally attended a meeting with the attorneys and Suzi Mock. In the meeting, Suzi presented materials that were stolen from PACES. These materials included profiles, customer information, etc. This appeared to be about an inch thick stack of materials. While Suzi was still employed at PACES, she had told me that she had stolen this type of information from the company. I assume that this was the information that had been stolen. This information was also given to Suzi Mock's attorneys. I also voice recorded both the conversation Suzi had in asking me to attend the meeting with the attorneys as well as the meeting itself.

(Signature of Affiant)

JUAN M. FRIAS

(Printed Name of Affiant)

(b) (6) [redacted]

(Address of Affiant)

State of Texas

County of Jefferson

Sworn to and subscribed before me on this _____ day of _____, 2009,

By _____.

(Notary Public Signature)

Matt Bowman

From: Melisa D. Garza
Sent: Friday, July 31, 2009 7:48 AM
To: Matt Bowman
Subject: RE: Suzi Mock
Attachments: image001.gif

Importance: High

Based on her Employee File:

Address:

(b) (6) [redacted]

[redacted]

Phone Number:

(b) (6) [redacted]

Emergency Contact Number:

(b) (6) [redacted] (Carolyn Hartsfield)

Melisa D. Garza
CES Environmental Services, Inc.
4904 Griggs Road
Houston, TX 77021
713-676-1460 Ext. 126 (Office)
832-646-8111 (Mobile)
713-676-1676 (Fax)

EPAHO04400322

From: Matt Bowman
Sent: Thursday, July 30, 2009 9:46 PM
To: Melisa D. Garza
Subject: RE: Suzi Mock

I need another number and i need her address

From: Melisa D. Garza <mgarza@cesenvironmental.com>
Sent: Thursday, July 30, 2009 7:52 PM
To: Matt Bowman <mbowman@cesenvironmental.com>
Subject: Suzi Mock

Matt,

Suzi Mock's number is (b) (6) [redacted]

Melisa D. Garza
CES Environmental Services, Inc.
4904 Griggs Road
Houston, TX 77021
713-676-1460 Ext. 126 (Office)
832-646-8111 (Mobile)
713-676-1676 (Fax)

EPAHO04400323

- CES / AKD -
Joint Venture

EPAHO04000324

Summary of CES Proposal to AKD for development and formation of a Joint Venture for waste management and recycling services in RasLaffan Industrial City

Background:
CES has been in discussion with Mr. Stephan Mahieu for several months concerning the joint efforts of CES and AKD to form a joint venture or partnership to develop a waste and chemical processing, recycling, and disposal plant in RasLaffan Industrial City, Qatar (RLIC). CES would be the technical and managing partner, providing technical "know-how", equipment sourcing/construction/supply, and turnkey operation. AKD to be the local partner, providing the industrial license, project approvals and permitting, land allocation, logistics and marketing, local manpower, other local arrangements, and local financing (including working capital).

Objective:
CES would like to formalize a letter of intent with AKD for a mutually exclusive arrangement to initiate, invest, develop, build, and operate such a processing and disposal facility. Such arrangement to be relegated to RLIC.

Key Proposed Terms:
Open/valid for only a short period of one month (letter of intent must be finalized and signed by both parties). Intent is that partnership to be consummated quickly and project would be built on a fast track.
Proposed ownership/equity would be split 50/50.
Capital input will 50/50 (not inclusive of the premium discounted to the technical partner for supply of technology, operational expertise, construction, management, and operation).

Immediate, Mid-range, and Long-term Collaborative Objectives:
- Consummate terms of agreement via formal letter of intent and officially form the joint venture as a new company.
- Provide MEG recycling services to RasGas…see **CES/AKD proposal for MEG management for RasGas** (already developed).
- Provide logistics, transportation, and disposal of approximately 2,000 cubic meters of chemical cleaning waste from QatarGas (proposal currently under development).
- Provide onsite treatment of approximately 40,000 metic tons of chemical cleaning waste from QatarGas (proposal currently under development)
- Continue to jointly sell and market projects in such capacity until final construction of plant in RLIC
- Invest, build, develop, and operate plant in RLIC

[redacted]

Ras Gas
Glycol Recycling

EPAHO04400326

for

repurchase 8,500
tons @
.37/#

-≈6,931,580 repurchase cost
- storage & freight ≈3,500,000

≈$10,500,000
cost

1,350,000
1,050

Sparco™
File Folders
SP111-1/3

8,500 Metric tons
worth
$13,500,000

costs to inject
@ $1,500,000

≈$5,000,000

≈

$4,500,000

Savings to
Ras Gas

3/4/09
WG
K-3 (3)

CES/AKD Comprehensive Proposal for Glycol Recycling

This Year's Plan

Basic plan and Description of Work:
CES Environmental Services, Inc. and Al Khor & Dakira QCS (hereinafter "CES/AKD") will store, accept, transport, and manage Glycol Condensate product from your facility in Raslafan Qatar. The product itself is produced by the interaction of ethylene glycol with water (in a natural gas pipeline) to remove water and prevent the precipitation of hydrates in the pipeline. Based on previous experience processing this mixture, it contains approximately 25 to 30 weight percent ethylene glycol as well as traces of impurities (methanol, chlorides, salts, etc.). The balance of the composition is water. The quantity of this product is estimated to be approximately 18,000 to 30,000 metric tons (of which approximately 4 to 9,000 metric tons is ethylene glycol). CES/AKD will provide a 6 to 7 thousand ton floating chemical tanker to store the glycol/water mixture. Material would be loaded from a shore tank at RasGas to the static storage vessel provided by CES. CES would also provide shipping of the material to a port in Albania. The product will then be unloaded into storage tanks in Albania. The water will be separated (producing greater than 98% e.g.) and the resulting glycol will be purified further to remove salts. The de-watered and purified ethylene glycol will then be stored in Albania and shipped back to RasGas, Qatar when needed. CES/AKD will follow all environmental rules and regulations concerning proper management of the wastes derived from the process.

Assumptions:
CES/AKD assume a small storage space is available (in RasLaffan Port) for the floating storage vessel(s), that a small shore tank is available to consolidate the glycol/water mixture, and that the shore tank can load into the static storage vessel provided by CES/AKD.

Economics:
The price to store, transport, process, and handle the mixture as well as re-ship the purified glycol back to RasGas will depend upon the quantities of glycol/water mixture handled by CES/AKD. CES/AKD have developed a spreadsheet showing the approximate overall costs for logistics and processing of 18,000 metric tons, 24,000 metric tons, and 30,000 metric tons (see attached document). We have also detailed the approximate savings to be accrued by RasGas for each case. In estimating accrued savings, CES/AKD have assumed an overall recovery of 23 weight percent glycol (based on our prior experience with this material), a variable virgin glycol price (delivered to RasGas), and estimates for deepwell injection performed by RasGas. The prices as listed in the spreadsheet are to be used for budgetary purposes, but can be finalized and made firm if RasGas has further interest in pursuing the project.

Strategic and ancillary benefits realized by RasGas:
Environmentally, this is a much better use of natural resources as well as a much more "geo-friendly" approach than deepwell injection. The project also assures RasGas a large portion of its required glycol supply for next year at a fixed and competitive price. Additionally, RasGas will have secured storage for the glycol product until it is required for next year's injection. **Finally, through the performance of this work, RasGas will gain a technical partner who is willing to re-invest profits and assets developed from this project (and others) into infrastructure and development in Qatar for the same process next year and in the future.**

Next Year's Approach

Basic plan and Description of Work:
CES/AKD use assets developed/procured from previous processing and set up processing on a Barge, in the Port of RasLaffan. One 20,000 bbl barge to be used as storage and processing barge. A second barge to be used to shuttle material from RasGas to the processing barge. Dewatered and purified glycol to be returned to RasGas as required for use in winter 2008-2009.

Assumptions:
CES/AKD to use the shuttle barge to ship the material to the local storage and processing barge. CES/AKD will receive and process approximately 50,000 cubic meters of glycol and water mixture. Mixture would be expected to contain between 25 and 30 weight percent glycol concentration. All recovered and purified glycol to be returned to the process for immediate re-injection. CES/AKD also assume a small storage space is available (in RasLaffan Port) for the floating storage of the two barge vessel(s), that a small shore tank is available to consolidate the glycol/water mixture, and that the shore tank can load into the shuttle barge. CES also assues it can get permission to discharge purified water from the process either on land (for irrigation) or into the Port of RasLaffan.

Econonics:
This approach will minimize logistic and processing costs as well as minimize the necessary quantity of glycol required by returning it immediately to the process. Also secures supply of glycol commodity with fluctuates greatly in price and available supply. Avoidance of costs associated with onsite injection and disposal as well as assets associated with storage of used and unused material. Avoids the costs of manpower and assets to manage the glycol.

Strategic and ancillary benefits realized by RasGas:
Environmentally, this is a much better use of natural resources as well as a much more geo-friendly approach than deepwell injection. The project also assures RasGas a large portion of its required glycol supply for the following year at a fixed price. Additionally, RasGas will have secured storage for the glycol product until it is required for next year's injection. Processing vessel may be used by other companies in Qatar for the same process. The vessel may also be used to handle other wastes produced by the oil and gas industry in Qatar.
As mentioned above, CES/AKD will re-invest profits and assets developed from this project into infrastructure and development in Qatar for the same process, and others, next year and in the future.

Long Term Approach

CES/AKD to develop a muti-purpose, on-shore waste management, recycling, processing, and disposal facility. Facility could be used by all five operators as well as RasLaffan City Management. This approach continues to build and supply the necessary infrastructure to the State of Qatar, making it much more self-reliant. The project would also help minimize the costs and shorten the supply chain for such required services.

Please feel free to talk to contact me at any time by email (mbowman@cesenvironmental.com) or telephone 713-826-1329. You may also contact Ramiz Tafilaj by email ramiz@tafilajgroup.com) or by phone (281-300-5322). We appreciate the continued opportunity to work with RasGas Qatar.

Recycling Alternative				
Metric Tones Spent Glycol		**18,000**	**24,000**	**30,000**
Floating Storage Costs (120 days) - **Note: All port fees associated with static storage to be for RasGas Account		1,500,000	1,500,000	1,500,000
Transportation to Albania (6,000 metric ton shipments)		1,000,000	1,333,333	1,666,667
Processing in Albania		3,798,500	4,298,000	4,797,500
Return of reprocessed Glycol		264,960	353,280	441,600
Estimated Project Cost:		**6,563,460**	**7,484,613**	**8,405,767**
Quantity of Glycol Returned (in metric tons) based on 23 weight percent recovery:	**23%**	4,140	5,520	6,900
Cost Glycol Per Metric Ton (delivered)		1585.38	1355.91	1218.23
Cost Reprocessed Glycol per pound (delivered)		$ 0.719	$ 0.615	$ 0.553
Disposal and purchase of Virgin Glycol				
Estimated Costs for RasGas Deepwell Injection		1,300,000	1,500,000	1,700,000
Purchase of new Glycol (delivered)	**$ 0.65**	5,930,964	7,907,952	9,884,940
Estimated savings to RasGas (Value of Glycol plus deepwell injection costs avoided minus project costs		**667,504**	**1,923,339**	**3,179,173**

Note: all port costs associated with static storage for RasGas account
Note: all port costs for RasGas account

EPAHO04400332

18,000 metric tons feed

Processing

Albania - Smaller Volume

Product made 9,124,560 or 4,140 tons

—	$500,000	(Albania)
—	$400,000	CES to build units
—	$300,000	Shipping to Albania
—	$400,000	other set up fees
—	$1,000,000	Processing
—	$100,000	Port fees (Albania)
—	$200,000	Misc.
—	$300,000	Tank cleaning & disposals
—	$225,000	Residue Disposal
—	$300,000	Return Product
—	$300,000	CES manpower & logistics

$4,025,000 cost

Sell product back at
$.45/# = $4,106,052

18,000 Metric tons feed

Total Costs (Shipping & Processing)

Product made 9,124,560

- Storage for 4 months 7k vessel ≈ $1.5 M
- Transportation of 3 - 6k Loads ≈ $1.0 M
- Addl. Logistics ≈ $300,000

* No costs included for port costs of storage vessel *

- Processing (sell back glycol) @ .45/# 4,106,052

= $6,906,042

- 4,140 Metric ton sacks at Today's market ≈ .65/# [repurchase costs] = $5,930,964
- Estimated Handling and injection costs ≈ 1.3 M

Total savings to Rasgas : $324,922

Total Costs

24,000 tons

extra processing + 250,000
maintenance manpower + 100,000 ≈ processing
extra shipping + 350,000

12,166,080 #s or 5,520 tons

18K #s + 6,906,042
Total

= $7,606,042

Sell-back processing costs are .37/#

- 5,520 tons to sell back @ .65/# = $7,907,952
  (Repurchase costs)

+

- Estimated Injection costs = $1,500,000

Total saving to Ross Gas $1,801,910

Total Costs

30,000 tons

processing + $500,000
CES manpower + $200,000 } processing
Shipping + $700,000
18k #s + 6,906,042

= 8,306,042

6,900 tons
15,207,600 #

Repurchase price: for processing: .31/#

- 6,900 tons to sell back
  @ .65/# = $9,884,940
  [Re-purchase Costs]

- Processing / Deepwell costs = 1,700,000

Total savings to RusGas : $3,278,898

CES Environmental Services, Inc
4904 Griggs Rd.
Houston, TX 77021
Phone: (713) 676-1460
Fax: (713) 676-1676

Proposal

For:
RasGas - Qatar

Date: December 6, 2007

Description of work to be performed:

CES Environmental Services, Inc. (hereinafter "CES") will accept and manage Glycol Condensate product from your facility in Raslafan Qatar. The quantity of this product shall be approximately 30,000 metric tons (of which approximately 8 to 9,000 metric tons is ethylene glycol). RasGas will work closely with CES Environmental Services to find ,schedule, and pay for a ship to provide transportation of the product to a port in Albania. The product will then be unloaded into storage tanks in Albania. The water will be separated (producing greater than 98% e.g.) and the resulting glycol will be purified further to remove salts. The de-watered and purified ethylene glycol will then be shipped back to RasGas, Qatar.

The product itself is produced by the interaction of ethylene glycol with water (in a natural gas pipeline) to remove water and prevent the precipitation of hydrates in the pipeline. Based on information and samples provided to CES, this product contains approximately 25 to 30 weight percent ethylene glycol as well as traces of impurities (methanol, chlorides, salts, etc.). The balance of the composition is water. If the product arrives and is not as above specified, CES and RasGas will work closely to find a solution and negotiate any additional expenses.

The price to process , handle, and re-ship this material back to RasGas would be approximately $35/pound of returned glycol. RasGas must only pay for shipment to Albania. This price is not exact but can be finalized and made firm if RasGas has further interest in pursuing the project. Please feel free to talk to contact me at any time by email (mbowman@cesenvironmental.com) or telephone 713-826-1329. You may also contact Ramiz Tafilaj by email ramiz@tafilajgroup.com) or by phone (281-300-5322). We appreciate the continued opportunity to work with RasGas Qatar.

Best Regards,

Matt Bowman
President – CES Environmental Services, Inc.

Albania

30,000 m3

Gallons: 8,466,000

Pounds: 66,130,000

return = 8-9,000 tons

- $1,000,000 (Albania)
- $500,000 CES ~~[illegible]~~ build units to denote
- $500,000 Ship units for plant
- $400,000 Other set up
- $1,300,000 Processing
- ~~$300,000 Ship to US~~ CES Manpower & Loading
- $150,000 Port fees (Albania)
- ~~84,000 load in/out~~
- ~~760,000 KMTEX Storage~~
- ~~160,000 KMTEX In/out~~
- ~~600,000 KMTEX Processing~~
- $360,000 MISC
- $300,000 Tank cleaning
- $300,000 Disposal of Residues
- $500,000 Return Product

$5,610,000

6,523,840

3,500,000 storage & Logistics

.37/#

1,350,000

13,000

2,000,000

$11,000,000

8,466,000

66,120,000 Pounds Gallons 7,500,000

2	—	$1,400,000	Storage (8 months)	280,000
1	—	$340,000	In-out	40,000
3	—	$405,000	Barge Rent (9 months)	
7	—	[redacted] $795,000	Wastewater out	120,000
5	—	$300,000	In/out @ KMTEX	
8	—	$600,000	Product Storage	
9	—	$150,000	Tank Cleaning	
4	—	$400,000	Barging to KMTEX (Includes fleeting)	100,000
6	—	[redacted] $3,767,000	Processing @ KMTEX (Fuel)	367,000
6	—	[redacted] $550,000	Processing @ KMTEX (Glycol)	50,000
6.5	—	$400,000	Storage fees @ KMTEX	
10	—	$75,000	Carbon	

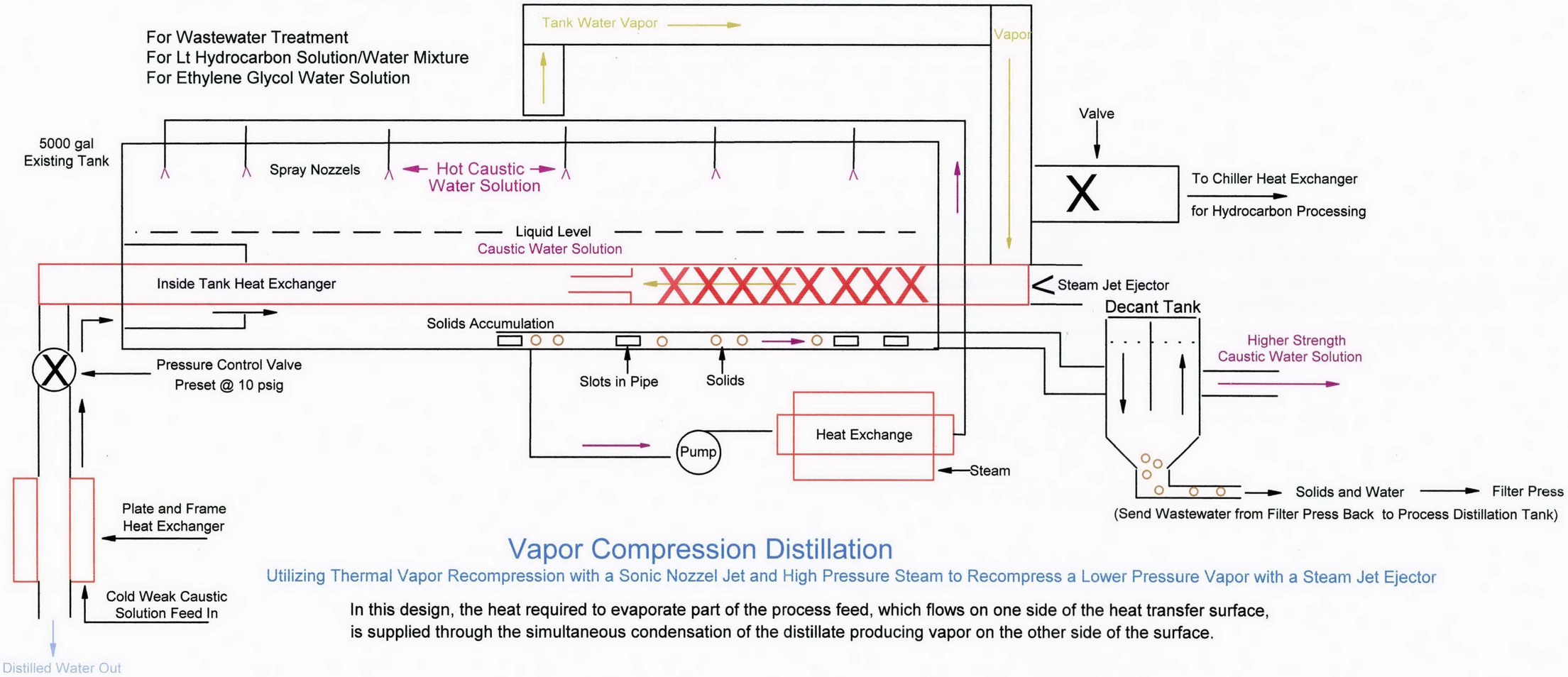
[redacted] 9,377,000

6,390,

EPAHO044000340

CES ENVIRONMENTAL
LIQUID CONCENTRATOR

Multi Liquid Concentrator
for
Caustic Water Solution
November 5, 2007



Vapor Compression Distillation

Utilizing Thermal Vapor Recompression with a Sonic Nozzel Jet and High Pressure Steam to Recompress a Lower Pressure Vapor with a Steam Jet Ejector

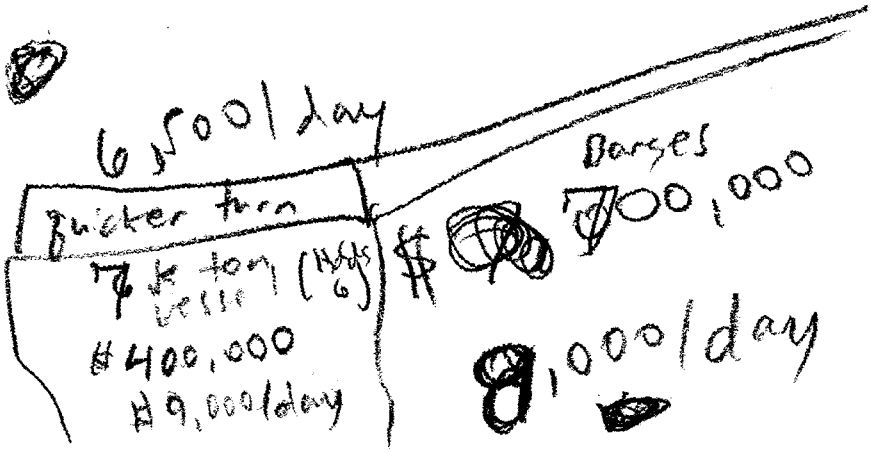
In this design, the heat required to evaporate part of the process feed, which flows on one side of the heat transfer surface, is supplied through the simultaneous condensation of the distillate producing vapor on the other side of the surface.

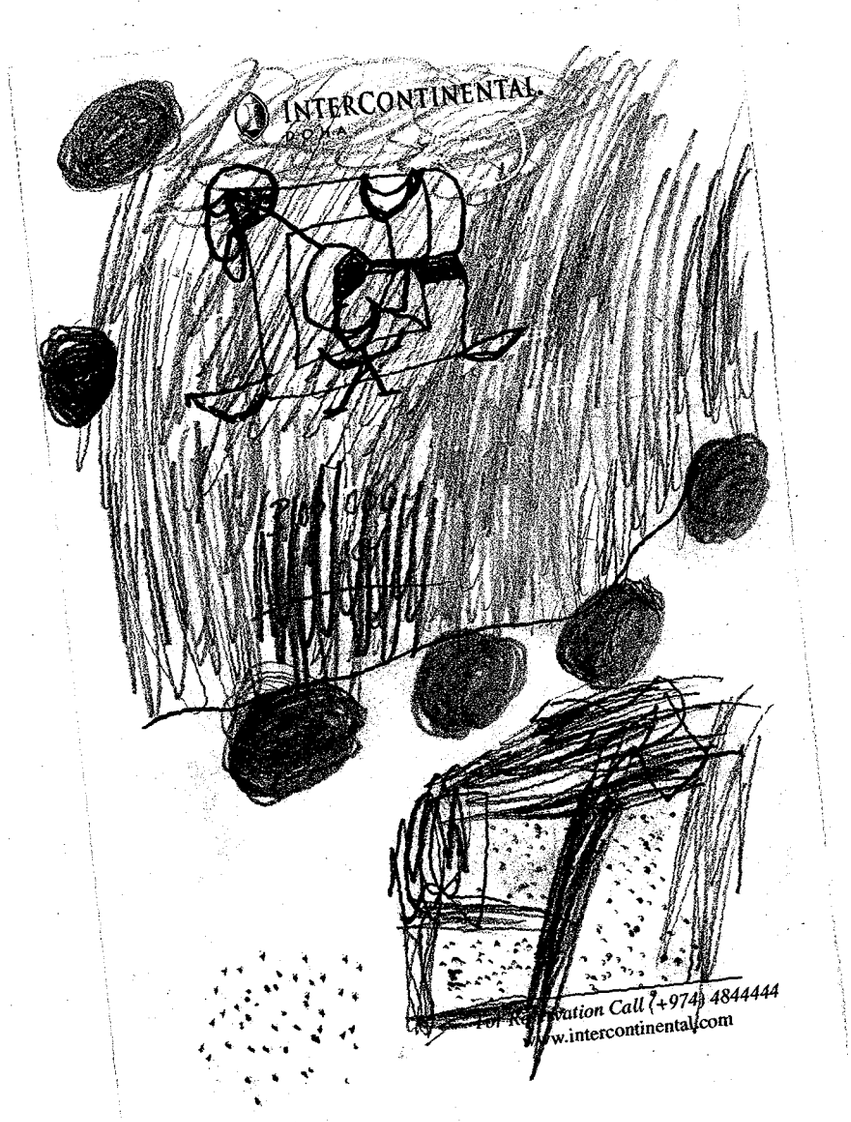
CES Environmental Services
Caustic Distillation System

Drawing by: CLM
Date: November 5, 2007

$600,000

1,000,000





EPAHO044000342

[redacted]
Lubrizol (Bayport)
A-208 Light oils & Toluene

* Lubrizol has taken the stance that the Toluene is not a solvent. So we need to re-do the profile....

D001 only to be reclaimed is not a waste.

EPAHO04400343

Oyuka
K-3
5

EPAHO044

CES Environmental Services, Inc.

CONFIDENTIAL **Profit & Loss Sheet** CONFIDENTIAL

Billing/AP Information	
Name:	LUBRIZOL (BAYPORT)
Contact:	JAN OR FRANK
Address:	12801 BAY AREA BLVD
	PASADENA TX 77507
Phone:	832-260-7601
Fax:	832-260-7701

Salesperson:	
Assigned:	Unassigned:
Folder I.D.#	
Job Contact:	
Phone:	
Fax:	

P.O Required:	Y:	N:	Fuel Surcharge:	Y:	N:
City of Houston:	Y:	N:	4-hour Minimum:	Y:	N:

Base Oils **Black Oils** **Light Ends** **Glycols** **Emulsion Oils (>70% oil)** **Emulsion Oils (50%-70% oil)**

Job Estimate

Item	Vendor	Profile #	CES Cost	Customer Charge
TRANS				$ 69 + FSC
TRAILER RENTAL				$100/DAY
PER GALLON				.25/gallon

Customer Special Request/Requirement

CONFIDENTIAL

EPAHO044000345

Frank,

As discussed earlier this week, CES is very interested in handling the material from tank A-208. This stream is comprised of neutral oil mixed with toluene. CES would like to receive this material as a product, separate the toluene and neutral oil (by distillation), and then sell the two components. CES currently blends base oils (purchased from several different clients) and sells them to customers that blend and package motor oils. The neutral oil recovered would be a great candidate for this process. CES also currently has several buyers of toluene (which we purchase from customers and also recover from hazardous waste recycling operations). This toluene is used as solvents (mainly in the oilfield to cut paraffins).

CES already has a profile in its files to handle this material. In fact, the profile has already been reviewed and updated by Patty. The material is only carrying a code for D001 (ignitability) and CES would be reclaiming the material components. Consequently, I believe this material can be managed as a product rather than a waste (per 40 CFR 261.2 (c) (3), "Byproducts exhibiting a characteristic of hazardous waste are not wastes when reclaimed").

Alternately, CES could still process this material (in the same manner), but receive it as a hazardous waste for recycling. This process involves the submission of TQEQ Forms 0524 and 0525. To me, this is the less desirable way to manage the product as CES would be required to immediately process the material rather than storing 3-4 loads and doing one batch distillation. Additionally, as you know, the material would be shipped as a hazardous waste and would still be required for STEERS reporting.

Please let me know what you think of the aforementioned. Have a great weekend!

Thanks,
Matt

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*

RECEIVED
DEC 19 2007
BY:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 13, 2007

Mr. Matt Bowman
CES Environmental Services
4904 Griggs Road
Houston, TX 77021-3208

Re: I&HW Solid Waste Registration Number 30900
Central Registry Customer Number CN600618946
Central Registry Reference Number RN100693282
Mail Log Number: 8012

Dear Mr. Bowman:

This letter is in response to correspondence dated December 6, 2007 notifying the Texas Commission on Environmental Quality (TCEQ) that your facility intends to receive and recycle a light neutral oil and toluene solution through a distillation process. The TCEQ appreciates your notification

The information contained in the notification satisfies the notification requirements in 30 Texas Administrative Code (TAC) Section (§)335.6. The notification has been forwarded to the Industrial and Hazardous Waste Section of Record Services.

The TCEQ would like to remind you that your facility is responsible for insuring that:

- The subject waste is managed in accordance with 30 TAC §335.4 (General Prohibitions) and §26.121 of the Texas Water Code; and

- Should any changes occur or additional information comes to light concerning:
(1) the composition of the waste
(2) the process by which the waste is generated
(3) the manner in which the waste is managed or
(4) any other information referenced in 30 TAC §335.6 is provided to the TCEQ

Please note that this letter is not an approval of the subject recycling activity. It is only an acknowledgment of the notification to the TCEQ of that activity

If you have any questions regarding this matter please contact me at (512) 239-6412. If responding by letter please use Mail Code (MC-130) in the address

Sincerely,

M. Scott Green

Scott Green, Project Manager
Industrial & Hazardous Waste Permits Section
Waste Permits Division

MSG/ff

Summary of new Lubrizol Streams

B-485 Alkylated Phenols:

MUST BE TRANSPORTED IN AN INSULATED TRAILER. MUST STAY HOT. Jack will take this stream. Goes in the job write-up...

We will pay Lubrizol $45 off Platts #6 fuel oil and deduct for BS&W as per the ROS spreadsheet. We will charge 0.14/gallon for water if the load is less than 50% water. If the load is more than 50% water, we will not pay for oil at all and will charge 0.14/gallon for the entire load.

We will test for specific gravity, ash, flash and water. These are going to Jack as diesel fuel extender.

H-73 Diluent Oil:

This STINKS and will absolutely be a problem if it gets opened. Jack wants this as well.

PFI: We will pay Lubrizol $45 off Platts #6 fuel oil and deduct for BS&W as per the ROS spreadsheet. We will charge 0.14/gallon for water if the load is less than 50% water. If the load is more than 50% water, we will not pay for oil at all and will charge 0.14/gallon for the entire load. Must scrub vapors from trailer before pulling sample.

PFI: We will test for specific gravity, ash, flash and water. Diesel fuel extender.

A-208 Light Oils and Toluene:

Charge $69 + FSC; charge $100 for trailers rental per day; charge 0.25/gallon

PFI: Filter and then distill to separate toluene from neutral oil. Flash on oil must be over 200°F; be sure to boil off all toluene or flash will be too low. Toluene can be sold as unrestricted light ends/solvents; oil can go into diesel fuel extender if it doesn't make it into base oil. (Note: Diesel fuel extender must be over 150°)

Drummed Line Flush:

Jack says these are cats and dogs; 1000 different products mixed together. The way he and Lubrizol worked it out is that Tim from Delta (they package it) would call and let Jack know they were bringing a load of the drums. Jack would offload pallets of drums. As drums were used he would save both pallets and drums; drums would be recycled (taken to Clute) and Lubrizol got credit for recycling. Pallets would go back to Delta when they had enough. Jack paid for all trans.

We will charge Lubrizol $500 per load plus FSC and charge $25/drum.

PFI: DO NOT put our stickers over Lubrizol stickers or the drums CANNOT be recycled. Very high ash! We will bring to CES and terminate manifest.

OUTBOUND PRODUCTS:

Lube Oil Additive:

PFI: Charge 1.00 per gallon; weigh trucks heavy and light and subtract; then deduct 30 pounds per drum and 40 pounds per pallet to determine weight of product. Then use 8.5 lbs/gallon to convert to gallons. (we will pull samples and get a composite to determine what specific gravity really is).

Cutter Stock:

PFI: Test for ash (less than 0.5%), flash above150), and water (less than 1%). Water must be removed if over 1%. Must test to be sure it will blend with diesel. Check Jack for 1.50/gallon.

NOTIFICATION FORM FOR RECEIVING AND RECYCLING HAZARDOUS OR INDUSTRIAL WASTE

The Texas Solid Waste Disposal Act Authorized the Texas Commission on Environmental Quality (TCEQ) to regulate all industrial solid waste and municipal hazardous waste activities in Texas. Use this form to notify the TCEQ of wastes which are to be received for recycling by your facility. **This form is not appropriate for generators of materials to be recycled. Generators should use Form #TCEQ-0525.**

All information is required for a complete notification, unless otherwise indicated.

TCEQ ID: 3 0 9 0 0 *(if assigned)*

INDUSTRIAL OR HAZARDOUS WASTE PERMIT NUMBER: 3 0 9 0 0 *(if assigned)*

COMPANY NAME: CES Environmental Services, Inc.

CONTACT PERSON: Matt Bowman TELEPHONE NUMBER: 713-826-1329 (cell)
713-676-1460 (office)

Skip to **1** if a TCEQ ID, or Permit Number has been assigned to your facility.

PHYSICAL ADDRESS: _____
_____ TX _____

MAILING ADDRESS: _____
_____ TX _____

1. **Describe the type of material to be recycled.**
Light neutral oils (approx. 80%) and Toluene (approx. 20%). This material is a light distillate from the manufacturing of methacrylate copolymer viscocity improvers

2. **Describe any storage of the material prior to recycling. If no storage occurs, write "none."**
NONE

3. **A. Describe how the material will be recycled.**
The material will be brought in by tank trailer and loaded directly into a simple still/distillation unit. The toluene will be boiled away into a receiving tank. The light neutral oils will be separated.

B. Describe what purpose/function the material serves in the recycling activity.
The toluene will be sold into the solvent market for cutting parraffins. The light neutral oils will be sold into the base oil market to be used in manufacturing of motor oil.

Storage of material prior to recycling may require a permit as described in Title 30 Texas Administrative Code (TAC) Section (§)335.2 For more information on permitting requirements you may contact the Industrial and Hazardous Waste Permits Section at (512) 239-6595.

Any waste generated from recycling processes which involve industrial and/or hazardous waste is subject to all applicable requirements of 30 TAC Chapter 335. For information on waste notification forms, you may contact the Industrial and Hazardous Waste Permits Section at (512) 239-6412.

Please note that deed recordation as outlined in 30 TAC 335.5 is **not** required for the legitimate reuse/recycling of nonhazardous materials, even if land applied.

For additional information on recycling, please refer to 30 TAC 335.24 and/or Subchapter H.

Materials which are recycled remain subject to the General Prohibitions of 30 TAC 335.4. As described in this Section, recyclable materials may not

1) threaten the waters of the state, or

2) cause a nuisance, or

3) endanger human health and/or welfare.

Sign each form submitted or you may submit a cover letter with an original signature.

Authorized Representative:

Name: Matt Bowman
PLEASE TYPE OR PRINT

Signature: Matt Bowman Date: 12-6-07

Telephone Number: 713-826-1329 (cell) Fax Number: 713-676-1676
713-676-1760 (off)

Return this form to:

TCEQ,
Industrial and Hazardous Waste Permits Division
Waste Permits Section, MC 130
P.O. Box 13087
Austin, Texas 78711-3087

Please be aware that the TCEQ may or may not require additional information after this form has been reviewed. TCEQ will contact you if additional information is needed.

- Scan & email to Franks. He must fill in the blanks and submit to the TCEQ.

GENERATOR NOTIFICATION FORM FOR RECYCLING HAZARDOUS OR INDUSTRIAL WASTE

Use this form to comply with requirements found in 30 TAC 335.6 to notify the TCEQ of hazardous or industrial solid waste stream recycling activities by your facility. This form is not appropriate for notification of wastes which you receive and recycle. Receivers should use Form TCEQ-0524.

TCEQ ID: 3 0 3 9 5 **COMPANY NAME:** The Lubrizol Corporation

1. If the material is already on your Notice of Registration (NOR), please indicate the Texas waste code below. If the material is not on your NOR, please add the waste code to your NOR. If you are a large Quantity Generator, please do this using STEERS - State of Texas Environmental Electronic Reporting System. Small quantity generators may either use STEERS or attach Form TCEQ 0002.

WASTE CODE: ☐☐☐☐☐☐☐☐

2. Update NOR to reflect any on-site storage of the material to be recycled using either STEERS or Form TCEQ-0002. If the storage unit is already on your facility's NOR, indicate the unit sequence number and do not attach Form TCEQ-0002. If no storage occurs, skip to 3.

UNIT SEQUENCE NUMBER: ☐☐☐

3. DESCRIBE THE RECYCLING PROCESS

A. Will the material be recycled ☐ On-site ? ☑ Off-site?

B. List on-site units(s) where waste is recycled: _/_/_, _/_/_, _/_/_ N/A

C. Describe the recycling method:

☑ Solvent Recovery	☐ Feedstock/Ingredient	☐ Asphalt Batching
☐ Metals Recovery	☐ Compost*	☐ Alternate Daily Cover
☑ Oil Recovery*	☐ Smelting	☐ Soil Amendment*
☐ Energy Recovery*	☐ Fuel Blending*	☐ Fertilizer*
☐ Catalyst Recovery	☐ Other*	☐ Container Reconditioning*
☐ Acid Regeneration	☐ Road Base*	

D. *Please provide detailed information: (Required for oil recovery, energy recovery, fuel blending, container reconditioning, feedstock/ingredient, compost, road base, soil amendment, fertilizer and other.) The material contains toluene and light neutral oils. These two components will be separated. The toluene will be sold into a market to be used as a solvent to cut paraffins. The neutral oils will be sold into a market and used as base stocks to produce motor oils.

TCEQ-0525 (Rev.1/2005)

E. If the material is recycled off-site, please provide the following information:

Receiver's (Recycler's) Name: CES Environmental Services, Inc.
TCEQ ID (if registered): 30900
Telephone Number: 713-676-1460

Please note that deed recordation as outlined in Title 30 Texas Administrative Code (TAC) Section (§)335.5 is not required for the legitimate reuse/recycling of materials, even if land applied. For additional information on recycling, refer to 30 TAC §335.24 and/or Subchapter H.

Please sign each form submitted or you may submit a cover letter with an original signature. Enclose any other forms you may have completed as part of this notification. Please attach any supplemental information necessary to completely describe the recycling process.

Authorized Representative:
Name: _____ Telephone Number: _____
Signature: _____ Date: _____

Return this form to: *TCEQ I&H Waste Permits Section, Waste Permits Division, MC130, P.O. Box 13087, Austin, Texas 78711-3087.*

FOR TCEQ USE ONLY

Acknowledgment of Recycling Notification

The TCEQ ***acknowledges*** the receipt of your notification pursuant to the requirements in 30 TAC §335.6. **Please note that this is *not an approval* of your recycling activity/ies.** The requirements for industrial and/or hazardous wastes which are recycled are found at Title 30 TAC Section §335.24. As a reminder, your facility is responsible for insuring that:

- The subject wastes(s) is/are managed in accordance with §335.4 (General Prohibitions) and §26.121 of the Texas Water Code; and
- Should any changes occur or additional information come to light concerning: (A) the composition of the waste(s), (B) the process by which the waste(s) is/are generated, (C) the manner in which the waste(s) is/are managed including recycling) or (D) any other information referenced in §335.6, this information is to be immediately provided to the TCEQ.

Your notification has been forwarded to the Industrial and Hazardous Waste Section of Record Services.

Signed: _____ *Title:* _____
Industrial and Hazardous Waste Permits Section, MC 130 •Waste Permits Div.
Phone (512) 239-6412 • Fax (512) 239-6383

PLEASE NOTE:
A copy of your recycling notification must also be sent to the TCEQ Regional Office listed below. If you have not sent a copy of this notification, you may do so by mailing this to:

TCEQ Region _____, Office of the Waste Program _____
_____
_____ TX _____

(*Print your name, address, and ZIP Code in this box*)

_____
_____
_____
_____, _____

CES Environmental Services, Inc.
4904 Griggs Rd.
Houston, TX 77021
Phone: (713) 676-1460
Fax: (713 676-1676

Fax Transmittal

Total Number of Pages (Including cover sheet): 11

Date: 12-27-07

To: Frank Hejtmanek

832-260-7847

From: **Matt Bowman**
CES Environmental Services, Inc.
Mobile Phone: (713) 826-1329

Notes:

CES Environmental Services, Inc.

4904 Griggs Road Houston, TX 77021
Phone: (713) 676-1460 Fax: (713) 676-1676
http://www.cesenvironmental.com
TCEQ Industrial Solid Waste Permit No: 30948
U.S. EPA ID No: TXD008950461 ISWR No: 30900

SECTION 1: Generator Information

Company:	The Lubrizol Corporation		
Address:	12801 Bay Area Blvd.		
City, State, Zip:	Pasadena, TX 77507		
Contact:	Jan McClain	**Title:**	EH&S Coordinator
Phone No:	832-260-7601	**Fax No:**	832-260-7701
24/hr Phone:	same		
U.S. EPA I.D. No:	TXD000642348		
State I.D.	30325	**SIC Code:**	N/A

SECTION 2: Billing Information – ☒ Same as Above

Company:			
Address:			
City, State, Zip:			
Contact:		**Title:**	
Phone No:		**Fax No:**	

SECTION 3: General Description of the Waste

Name of Waste: A-208 Light Oils and Toluene
Detailed Description of Process Generating Waste: Light end distillates from manufacturing of Methacrylate copolymer viscosity improvers / pour point depressors

Physical State: ☑ Liquid ☐ Sludge ☐ Powder ☐ Solid ☐ Filter Cake ☐ Combination

Color: Light yellow **Odor:** Toluene

Specific Gravity (water=1): ≈.95 **Density:** 7.9 lbs/gal

Layers: ☑ Single-phase ☐ Multi-phase

Container Type: ☐ Drum ☐ Tote ☑ Truck ☐ Other (explain)

Container Size:

Frequency: ☐ Weekly ☑ Monthly ☐ Quarterly ☐ Yearly
4-8 loads per month

Number of Units (containers): 4-8 **Other:**

Texas State Waste Code No: This material is not a waste: Waste are not wastes when reclaimed. per 40 CFR 261.2(c)(3) – By products exhibiting a characteristic of haz.

Proper U.S. DOT Shipping Name: Waste flammable liquids, n.o.s.

Class: 3 **UN/NA:** UN1993 **PG:** II **RQ:**

Flash Point 70-135 °F	**pH** 3-11	**Reactive Sulfides** NA mg/l	**Reactive Cyanides** NA mg/l	**Solids** 0-1 %
Oil&Grease NA mg/l	**TOC** NA mg/l	**Zinc** NA mg/l	**Copper** NA mg/l	**Nickel** NA mg/l

EPAHO044000356

SECTION 4: Physical and Chemical Data

COMPONENTS TABLE The waste consists of the following materials	Concentration Ranges are acceptable	Units or %
Toluene	15-20	%
Light Neutral Oils (50-100 N)	75-85	%
Methacrylate copolymers	1-2	%

SECTION 5: Safety Related Data

If the handling of this waste requires the use of special protective equipment, please explain.

—— gloves, goggles, half-face respirator

SECTION 6: Attached Supporting Documents

List all documents, notes, data, and/or analysis attached to this form as part of the waste approval package.

—— NONE

SECTION 7: Incompatibilities

Please list all incompatibilities (if any):

—— oxidizers

SECTION 8: Generator's Knowledge Documentation

Laboratory analysis of the hazardous waste characteristics, listed below, WAS NOT PERFORMED based upon the following generator knowledge:

TCLP Metals: ✓
TCLP Volatiles: ✓
TCLP Semi-Volatiles: ✓
Reactivity: ✓
Corrosivity: ✓
Ignitability: ✓

SECTION 9: Generator's Certification

The information contained herein is based on ☑ generator knowledge and/or ☑ analytical data. I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine that no deliberate or willful omissions of composition properties exist and that all known or suspected hazards have been disclosed. I certify that the materials tested are representative of all materials described by this document.

Authorized Signature: _____ **Date:** ____

Printed Name/Title: _____

CES USE ONLY (DO NOT WRITE IN THIS SPACE)	**Process Facility Information:**
Compliance Officer: _____ Date: _____ Approved Rejected Approval Number: _____	material will be brought in on a bill of lading to CES to be reclaimed.

SECTION 10: Waste Receipt Classification Under 40 CFR 437

Is this material a wastewater or wastewater sludge? ☐ YES ☐ NO

If 'Yes', complete this section.

PLEASE CHECK THE APPROPRIATE BOX. IF NO APPROPRIATE CATEGORY, GO TO THE NEXT PAGE.

Metals Subcategory: Subpart A

- ☐ Spent electroplating baths and/or sludges
- ☐ Metal finishing rinse water and sludges
- ☐ Chromate wastes
- ☐ Air pollution control blow down water and sludges
- ☐ Spent anodizing solutions
- ☐ Incineration wastewaters
- ☐ Waste liquid mercury
- ☐ Cyanide-containing wastes greater than 136 mg/l
- ☐ Waste acids and bases with or without metals
- ☐ Cleaning, rinsing, and surface preparation solutions from electroplating or phosphating operations
- ☐ Vibratory deburring wastewater
- ☐ Alkaline and acid solutions used to clean metal parts or equipment

Oils Subcategory: Subpart B

- ☐ Used oils
- ☐ Oil-water emulsions or mixtures
- ☐ Lubricants
- ☐ Coolants
- ☐ Contaminated groundwater clean-up from petroleum sources
- ☐ Used petroleum products
- ☐ Oil spill clean-up
- ☐ Bilge water
- ☐ Rinse/wash waters from petroleum sources
- ☐ Interceptor wastes
- ☐ Off-specification fuels
- ☐ Underground storage remediation waste
- ☐ Tank clean-out from petroleum or oily sources
- ☐ Non-contact used glycols
- ☐ Aqueous and oil mixtures from parts cleaning operations
- ☐ Wastewater from oil bearing paint washes

Organics Subcategory: Subpart C

- ☐ Landfill leachate
- ☐ Contaminated groundwater clean-up from non-petroleum sources
- ☐ Solvent-bearing wastes
- ☐ Off-specification organic product
- ☐ Still bottoms
- ☐ Byproduct waste glycol
- ☐ Wastewater from paint washes
- ☐ Wastewater from adhesives and/or epoxies formulation
- ☐ Wastewater from organic chemical product operations
- ☐ Tank clean-out from organic, non-petroleum sources

EPAHO044000358

(1) If the waste contains oil and grease at or in excess of 100 mg/L, the waste should be classified in the oils subcategory.

(2) If the waste contains oil and grease less than 100 mg/L, and has any of the pollutants listed below in concentrations in excess of the values listed below, the waste should be classified in the metals subcategory.

Cadmium: 0.2 mg/L
Chromium: 8.9 mg/L
Copper: 4.9 mg/L
Nickel: 37.5 mg/L

(3) If the waste contains oil and grease less than 100 mg/L, and does not have concentrations of cadmium, chromium, copper, or nickel above any of the values listed above, the waste should be classified in the organics subcategory.

☐ Metals Subcategory

☐ Oils Subcategory

☐ Organics Subcategory

SECTION 11: Additional Instructions

If you cannot determine the correct subcategory in Section 9 and you did not furnish data for the concentration of Cadmium, Chromium, Copper, Nickel, and Oil and Grease, CES will send offsite to a commercial laboratory a sample to determine these concentrations. This will be prior to acceptance. The generator will be responsible for the cost of the analysis.

EPAHO044000359

ENVIRON EXPRESS LABORATORIES, INC.
401 N. 11th. St.
La Porte, TX 77571
281.471.0951 FAX:281.471.5821

CERTIFICATE OF ANALYSIS NO: 99194.05 1of 1

Customer: Texas Oil & Gathering
Project ID:
Project Loc:
Charge/P.O.:

Sample ID: 2257-2004
Matrix: Liquid
Type:
RECEIVED BASIS

Environ ID: 99194.05
Sampled: 08-11-04
Received: 08-12-04
Reported: 11-18-04

ANALYTE / PARAMETER	RESULT	UNITS	MQL	TEST METHOD	ANALYST	DATE	TIME
TOTAL ORGANIC HALIDES							
TOX	< 100	mg/kg	1000	SW846.9020A	DB	08-16-04	9:00
METALS (TOTAL)							
Arsenic	< 0.9	mg/kg	0.9	SW846.6010B	DB	08-13-04	13:00
Cadmium	< 0.2	mg/kg	0.2	SW846.6010B	DB	08-13-04	13:00
Chromium	< 0.1	mg/kg	0.1	SW846.6010B	DB	08-13-04	13:00
Lead	< 0.2	mg/kg	0.2	SW846.6010B	DB	08-13-04	13:00

Definitions: RBQ - Regulatory Limit (User Should Confirm Limits)
MQL - Method Quantitation Limit
PPM - Parts Per Million
mg/l - PPM by Volume, mg/kg - PPM by Weight

John Keller
John Keller, Ph.D
Laboratory Director

A-208 : for moving viscosity improver + pour point depressor MA & copolymer

20% Toluene & Light ends as solvent

80% off oil

ENVIRON EXPRESS LABORATORIES, INC.

401 N. 11th. St.
La Porte, TX 77571
281.471.0951 FAX:281.471.5821

CERTIFICATE OF ANALYSIS NO: 99194.05

Customer: Texas Oil & Gathering
Project ID:
Project Loc:
Analyst: CR

Sample ID: 2257-2004
Matrix: Liquid
Analyzed: 09/10/04 11:37

Environ ID: 99194.05
Sampled: 08-11-04
Received: 08-12-04
Reported: 11-23-04

GAS CHROMATOGRAPHY

ANALYTE / PARAMETER	RESULT Wt. %
cyclopentane,	0.01
t-hexene-2,	0.01
5-methylhexene-1,	0.03
Olefin 1	0.01
2,3,3-trimethylpentane	4.55
2,3,3-trimethylhexene	0.02
1,3-dimethylbenzene,	1.13
2,3-dimethylheptane,	0.32
1c,2t,3-trimethylcyclopentane	1.15
3-methyloctane,	0.12
1c,2t,4c-trimethylcyclohexane	0.39
Isoparaffin 1	0.62
naphthalene,	0.32
Naphthene 1	0.39
Isoparaffin 2	0.18
Isoparaffin 3	0.26
Naphthene 2	0.64
n-nonane,	0.47
1,1-methylethylcyclohexane	0.32
t-2,2,5,5-tetramethylhexene-3	0.48
i-propylcyclohexane,	0.19
Isoparaffin 4	0.19
2,4-dimethyloctane,	0.29
Naphthene 3	0.34
2,6-dimethyloctane,	0.12
2,5-dimethyloctane,	0.21
n-butylcyclopentane,	0.44
3,3-dimethyloctane,	0.21
Naphthene 4	0.32
n-propylbenzene,	0.14
3,6-dimethyloctane,	0.87
3-methyl-5-ethylheptane	0.14
1,3-methylethylbenzene	0.44
1,4-methylethylbenzene	0.39
1,3,5-trimethylbenzene	0.34
Naphthene 5	0.24
Isoparaffin 5	0.23
5-methylnonane,	0.19
Isoparaffin 6	0.31
3-ethyloctane,	0.65
3-methylnonane,	0.13
Isoparaffin 7	0.50
1,2,4-trimethylbenzene	0.21
i-butylcyclohexane,	0.27
Isoparaffin 8	0.23

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CERTIFICATE OF ANALYSIS NO: 99194.05

Customer: Texas Oil & Gathering
Project ID:
Project Loc:
Analyst: CR

Sample ID: 2257-2004
Matrix: Liquid
Analyzed: 09/10/04 11:37

Environ ID: 99194.05
Sampled: 08-11-04
Received: 08-12-04
Reported: 11-23-04

GAS CHROMATOGRAPHY

ANALYTE / PARAMETER	RESULT Wt. %
Naphthene 6	0.16
2,3-dimethyloctane-2	0.79
sec-butylbenzene,	0.14
n-decane,	0.18
Isoparaffin 9	0.32
1,2,3-trimethylbenzene	0.26
1,3-methyl-i-propylbenzene	0.16
1,4-methyl-i-propylbenzene	0.25
Isoparaffin 10	0.36
Isoparaffin 11	0.35
2-3-dihydroindene,	0.26
sec-butylcyclohexane	0.18
Isoparaffin 12	0.20
1,2-methyl-i-propylbenzene	0.29
Naphthene 7	0.23
Isoparaffin 13	0.23
1,3-diethylbenzene,	0.12
1,3-methyl-n-propylbenzene	0.23
1,4-methyl-n-propylbenzene	0.16
1,3-dimethyl-5-ethylbenzene	0.31
t-decahydronaphthalene	0.07
Naphthene 8	0.14
1,2-methyl-n-propylbenzene	0.40
Isoparaffin 14	0.10
Isoparaffin 15	0.14
Isoparaffin 16	0.20
1,4,dimethyl-2-ethylbenzene	0.09
Alkane 1	0.40
1,3-dimethyl-4-ethylbenzene	0.27
Isoparaffin 17	0.16
Isoparaffin 18	0.13
1,2-dimethyl-4-ethylbenzene	0.35
Isoparaffin 19	0.22
1,3-dimethyl-2-ethylbenzene	0.31
undecene-1,	0.12
1,4-methyl-t-butylbenzene	0.27
1,2-dimethyl-3-ethylbenzene	0.19
1,2-ethyl-i-propylbenzene	0.26
n-undecane,	0.72
1,4-ethyl-i-propylbenzene	0.26
1,2,4,5-tetramethylbenzene	0.16
1,2,3,5-tetramethylbenzene	0.21
5-methylindan,	0.27
Isoparaffin 20	0.38
4-methylindan,	0.32

EPAHO044000362

ENVIRON EXPRESS LABORATORIES, INC.
401 N. 11th. St.
La Porte, TX 77571
281.471.0951 FAX:281.471.5821

CERTIFICATE OF ANALYSIS NO: 99194.05

Customer: **Texas Oil & Gathering** | Sample ID: **2257-2004** | Environ ID: **99194.05**
Project ID: | | Sampled: **08-11-04**
Project Loc: | Matrix: **Liquid** | Received: **08-12-04**
Analyst: **CR** | Analyzed: **09/10/04 11:37** | Reported: **11-23-04**

GAS CHROMATOGRAPHY

ANALYTE / PARAMETER	RESULT Wt. %
1,2-ethyl-n-propylbenzene	0.48
2-methylindan,	0.82
1,3-methyl-n-butylbenzene	0.18
1,3-di-i-propylbenzene	0.35
s-pentylbenzene,	0.54
n-pentylbenzene,	0.81
1,2-di-i-propylbenzene	0.65
1,4-di-i-propylbenzene	0.65
tetrahydronaphthalene	1.18
naphthalene,	1.70
1,4-ethyl-t-butylbenzene	0.80
Isoparaffin 21	0.70
Isoparaffin 22	0.78
Isoparaffin 23	1.56
1,3-di-n-propylbenzene	0.89
Alkane 2	0.65
Alkane 3	1.25
n-dodecane,	1.39
1,3,5-triethylbenzene	1.18
1,2,4-triethylbenzene	0.91
1,4-methyl-n-pentylbenzene	1.43
n-hexylbenzene,	2.74
Isoparaffin 24	3.63
1,2,3,4,5-pentamethybenzene	1.32
2-methylnaphthalene,	0.32
1-methylnaphthalene,	3.80
n-tridecane,	1.88
C14+,	0.32
Unknown	36.91
TOTAL:	100.00

Lubrizol

Mr. Matt Bowman
CES Environmental Services, Inc.
4904 Griggs Road
Houston, Texas 77021

December 26, 2007

Re: Correction of Lubrizol DRAFT Material Profile -A-208

Dear Mr. Bowman,

As we discussed on December 19, 2007 Lubrizol believes that CES Environmental Services, Inc.'s recently-issued DRAFT Profile of Lubrizol's A-208 stream misclassifies the material as an F005 waste. This letter will confirm our conversation and outline the reasons that Lubrizol believes that the CES draft is in error.

In late November Lubrizol's Frank Hejtmanek contacted CES to inquire about its capability to receive and recycle or reclaim a material stream known as A-208 that is generated by Lubrizol's Bayport facility. The material was described as a stream generated from a copolymer production unit and consisting of approximately 80% light neutral oils and 20% toluene. Based on additional information provided by Lubrizol, CES developed a DRAFT profile that indicated that the material would carry an F005 waste code – implying that the toluene in the A-208 stream was a "spent solvent." This DRAFT profile was sent to Mr. Hejtmanek for his review on December 6, 2007 and was subsequently forwarded to me on December 10, 2007.

Because the A-208 stream has never historically been characterized as an F005 waste, I immediately re-examined the purpose and use of toluene in the copolymer production process. I have confirmed that the primary role of the toluene in the copolymer production process relates to toluene's chemical and physical properties *other than* its solvent properties. The copolymer material being produced is, in fact, insoluble in toluene. The toluene also is incorporated into the final product at a concentration of 2%.

Based on Lubrizol's understanding of the United States Environmental Protection Agency guidance for solvent-like materials being used for properties other than their solvent properties, and Lubrizol's understanding of the process by which the A-208 stream is produced, Lubrizol does not believe that the A-208 stream should carry an F005 waste code. This is primarily because the toluene used in the Bayport copolymer production process is not used for its solvent properties. The toluene in the A-208 stream therefore is not a "spent solvent."

The Lubrizol Corporation
29400 Lakeland Boulevard
Wickliffe, OH 44092-2298
Telephone: 440.943.4200
www.lubrizol.com

EPAHO044000364

As a result, Lubrizol respectfully requests that CES revise the DRAFT profile for the A-208 stream based on generator knowledge and understanding of the production process, and place the revised profile with this letter in its files. Lubrizol appreciates your attention to this matter. Please feel free to contact me if you have any further questions.

Patty Maloyan

Patty Maloyan
Environmental Manager
The Lubrizol Corporation
9911 Brecksville Road
Cleveland, OH 44141
216-447-6362
216-447-5925
Patty.maloyan@lubrizol.com

Cc: Frank Hejtmanek

EPAHO044000365

Phillipines Project

EPAHO04400366

6/4/09
WM
K-3
(1)

Rates wanted
up 15%

FORM FIN-4 BREAKDOWN OF REMUNERATION[1]

(This Form FIN-4 shall only be used when the Time Based Form of Contract has been included in the RFP)

Group of Activities (Phase): 1, 2, 3, 4, 6, 8, 11, 12, 13,15

Name[2]	Position[3]	Staff-month Rate[4]	Input[5] (Staff-months)	[Indicate Foreign Currency #1][6]	[Indicate Foreign Currency #2][6]	[Indicate Foreign Currency #3][6]	[Indicate Local Currency][6]
Foreign Staff							
		[Home]					
		[Field]					
Local Staff							
Louis (Eddie) Kirst	Environmental Engineer	22,000.00	12	US			
John (Mike) Harju	Environmental Engineer	22,000.00	12	US			
			Total Costs				

[1] Form FIN-4 shall be filled for each of the Forms FIN-3 provided.
[2] Professional Staff should be indicated individually; Support Staff should be indicated per category (e.g.: draftsmen, clerical staff)
[3] Positions of Professional Staff shall coincide with the ones indicated in Form TECH-5
[4] Indicate separately staff-month rate and currency for home and field work
[5] Indicate, separately for home and field work, the total expected input of staff for carrying out the group of activities
[6] Indicate between brackets the name of the foreign currency. Use the same columns and currencies of Form FIN-2. For each staff indicate the remuneration in the column of the relevant currency, separately for home and field work. Remuneration = Staff-month Rate x Input.

EPAHO04400369

FORM FIN-5 BREAKDOWN OF REIMBURSABLE EXPENSES[1]

(This Form FIN-5 shall only be used when the Time-Based Form of Contract has been included in the RFP)

Group of Activities (Phase): 1, 2, 3, 4, 6, 8, 11, 12, 13,15

No.	Description[2]	Unit	Unit Cost[3]	Quantity	[Indicate Foreign Currency #1][4]	[Indicate Foreign Currency #2]	[Indicate Foreign Currency #3]	[Indicate Local Currency]
	Miscellaneous travel (USA)	Each	$800.00	48	$38,400.00 US			
	Communication costs between Client and Consultant	Month	$1000.00	12	$12,000.00 US			
	Reproduction of reports 8"x11" color 3-ring bound	Page	$1.20	10,000	$12,000.00 US			
	Reproduction of reports 11"x17" color 3-ring bound	Page	$2.90	10,000	$29,000.00 US			
	Use of computers, software	Month	$6000.00	12	$72,000.00 US			
	Local transportation costs	Mile	$0.50					
	Office rent, clerical assistance	Month	$13,800.00	12	$165,600.00 US			
				Total Costs	$329,000.00 US			

[1] Form FIN-5 should be filled for each of the Forms FIN-3 provided, if needed
[2] Delete items that are not applicable or add other items according to Paragraph Reference 3.6 of the Data Sheet
[3] Indicate unit cost and currency
[4] Indicate between brackets the name of the foreign currency. Use the same columns and currencies of Form FIN-2. Indicate the cost of each reimbursable item in the column of the relevant currency. Cost = Unit Cost x Quantity.

EPAHO04400370

FORM TECH-5 TEAM COMPOSITION AND TASK ASSIGNMENTS

PROFESSIONAL STAFF				
Name of Staff	Firm	Area of Expertise	Position Assigned	Task Assigned
Louis (Eddie) Kirst	CES Environmental	Environment	Environmental Engineer	1, 4, 6, 8, 11, 12, 17
John (Michael) Harju	CES Environmental	Environment	Environmental Engineer	2, 3, 12, 13, 15, 17

EPAHO04400037

Product SALES

EPAHO04000372

8/4/09
(3)

BASE OIL					
Buyer / Broker	**Smitty's**	**Warren**	**Four-R Marketing**	**Hydrocarbon Resource**	**PetroTech**
Contact Info	Matt Saragusa 985-748-5485 matt@smittysinc.net		Jeff West 409-594-6705 jeff.west@fourrmarketing.com	Scott Rainey 713-724-8595 Srams@aol.com	Augie Salas 713-859-6686 asalas@petrotechenergyllc.com
Color	5.5 or lighter	5.5 or lighter	5.5 or lighter	up to 8	?
Water Content	500ppm or less	500ppm or less	500ppm or less	1000ppm or less	?
Clarity	can't be too hazy	preferably not hazy	preferably not hazy	doesn't matter	?
Odor	low	low	low	flexible (preferably not	?
Comments	end user that will pay well, especially for Shell, currently paying $1.35/gal for non Shell base oil and $1.80/gal for Shell	haven't done business with them in a while, had a falling out with Kim, used to pay very well	broker that sells a lot to Smitty's and Latch Oil (do not try to go around him), can currently pay up to around $1.35/gal	broker that can move almost anything, can pay $.50 to $.65/gal for very dark base oil	have recently purchased Rohmax (light in color, heavy viscosity) material from us for $1.35/gal
***if base oil is too dark, hazy, or odorous it can sometimes be sold as low ash / low water / high flash point black oil					
BLACK OIL / BURNER FUEL					
Buyer / Broker	**Midstate**	**Alamo**	**Hydrocarbons Engineering**		
Contact Info	Lloyd Cook 361-438-1311	Charlie or Irvin 979-542-9400	Ralph Jenkins 832-514-9959		
Water Content	10% or less	2% or less	2% or less (total BS&W)		
Ash	doesn't matter	doesn't matter	doesn't matter		
API	15 and above	25 and above	ideally 30 to 35		
Flash Point	doesn't matter	doesn't matter	doesn't matter		
Comments	pays the least but can take lower quality material, currently paying $.30/gal for material that is too heavy and/or too dirty for Alamo and Hydrocarbons Engineering	pays a little bit more than Midstate, but they can be fussy about the loads when they pick up, sometimes slow at paying bills, has been paying $.40/gal but had to pay $.50/gal for last load (continue this trend if possible)	pay the most and pay their bills on time, they are not fussy when they pick up, but they can only take quality material (higher API and very low BS&W), currently paying $.50/gal		
***black oil that is very low in water and solids content and that is really light (API 30 or above) can be sold directly into the burner fuel market					
UNRESTRICTED LIGHT ENDS					
Buyer / Broker	**Hydrocarbon Resource**	**Petroleum Express**	**Alamo**	**Midstate**	K-Solve

Low Ash

Vertex Intergulf
Kerri Peace
Baily Kirks
Eric Duke

Rio Energy

Approved Oil

Phoenix Oil
Scott Bosard
281-446-5029

EPAHO044000374

Contact Info	Scott Rainey 713-724-8595 Srams@aol.com	Eric McCallum 281-202-8727	Charlie or Irvin 979-542-9400	Lloyd Cook 361-438-1311	
API	over 40	over 40	over 40	over 40	
Comments	we haven't had any of this material to sell in months	we haven't had any of this material to sell in months	we haven't had any of this material to sell in months	we haven't had any of this material to sell in months	
***should have virtually no solids or water (odor will sometimes be pretty bad) - common sources are Kinder Morgan feedstock oil and KMTEX gassy water					
RESTRICTED LIGHT ENDS					
Buyer / Broker	**Hydrocarbons Engineering**	**Chemorph**	**K-Solv**	Scott Rainey	
Contact Info	Ralph Jenkins 832-514-9959	Carolyn Yatsu 281-543-6510	Gary or Beau 281-493-6200	713-784-9010	
API	over 45	over 45	over 45		
Color	doesn't matter	preferably water white	flexible		
Clarity	doesn't matter	preferably not hazy	flexible		
Comments	buys this material from us regularly, currently paying $.60/gal	will buy this material from us if clarity is good and pH is between 5 and 9	have purchased this material from us in the past, these guys can be hard to deal with		
***should have no solids or water, color will vary from water white (clear) to yellow - common source is Zach Stream 3					
BASE OIL ADDITIVES					
Buyer / Broker	**Allied Petrochemical**	**Four-R Marketing**	**Coco Industries**	**PetroTech**	Smitty's / Cross Oil
Contact Info	Jack Kessel 281-808-6226 jkessel@alliedpetrochem.com	Jeff West 409-594-6705 jeff.west@fourrmarketing.com	John Coco 225-933-4094	Augie Salas 713-859-6686 asalas@petrotechenergyllc.com	
Comments	this guys knows A LOT about base oil related products and who to sell them to, he will either buy it himself or tell you who you might be able to sell it to, he recently purchased 40 drums of a specialty alkylate from us	purchased 76 drums of HiTec 5715 from us recently, he buys and sells to a blender	have not had a chance to contact this guy yet, but supposedly he is Augie Salas' outlet so we might be able to remove the "middle man"	have not sold him any additives yet, but we know that he is interested (we are waiting on an accurate product drum inventory)	
METHANOL / CHEMICALS					
Buyer / Broker	**Skyhawk Chemical**	**Hydrocarbon Resource**	**Ryke Anderson**	**MRC Corporation**	

EPAHO04400375

Contact Info	Mark Speets 713-459-8052 speets@sbcglobal.net	Scott Rainey 713-724-8595 Srams@aol.com	Ryke Anderson 337-304-5672 ryke.anderson@rykeanderson-inc.com	John Turner 704-280-5158 jatmrc@gmail.com	
Comments	might purchase 2 loads of off color methanol from us, will also purchase various other chemicals	has purchased various chemicals from us in the past, recently purchased 92 drums of ethoxylated alcohol	broker who has been helping us try to find a home for methanol, works hard but hasn't produced results yet	recently purchased 1 load of off-spec methanol (had some methylene chloride in it)	
ORGANO-SULFUR FEEDSTOCK / CRUDE ACIDS					
Buyer / Broker	**Chemtrade**	**Rhodia**	**Pete Alford**		
Contact Info	Andy Andersen 409-504-5767 Aandersen@chemtradelogistics.com	Armond Johnson 214-578-6179 armond.johnson@us.rhodia.com	Pete Alford 832-721-1611		
Comments	currently working on getting organo-sulfur feedstock in to this buyer	currently working on getting organo-sulfur feedstock in to this buyer	this guy is supposed to be helping us find a home for our crude cresyllic acid and crude napthenic acid		

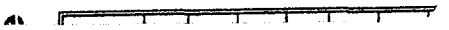
EPAHO04400376

International Paper

Material	Plant		Qty (Dry Tons)	Notes
SODIUM HYDROSULFIDE	Valliant Mill	OK ✓	2,885	
SODIUM HYDROSULFIDE	Mansfield Mill	LA *	2,678	Mostly Weak Material → Meri chem
SODIUM HYDROSULFIDE	Prattville Mill	AL	2,474	
SODIUM HYDROSULFIDE	Pine Hill Mill	AL	2,113	
SODIUM HYDROSULFIDE	Pineville Mill	LA *	1,577	Mostly Weak Material → Meri chem
SODIUM HYDROSULFIDE	Pensacola Mill	FL	1,048	
SODIUM HYDROSULFIDE	Vicksburg Mill	MS X	815	
SODIUM HYDROSULFIDE	Texarkana Mill	TX X	762	
SODIUM HYDROSULFIDE	Riverdale Mill	AL	689	Bleached
SODIUM HYDROSULFIDE	Savannah Mill	GA	670	
SODIUM HYDROSULFIDE	Courtland Mill	AL	610	Bleached
SODIUM HYDROSULFIDE	Augusta Mill	GA	365	Bleached
SODIUM HYDROSULFIDE	Red River Mill	LA	261	
SODIUM HYDROSULFIDE	Georgetown Mill	SC	111	Bleached
SODIUM HYDROSULFIDE	Eastover Mill	SC	75	Bleached
SODIUM HYDROSULFIDE	Franklin Paper Mill	VA	51	Bleached
SODIUM HYDROSULFIDE	Riegelwood Mill	NC	44	Bleached
		Totals:	**17,228**	

East Coast Facilities

- Naphthenic & Phenolic Acids -
to Geocycle



EPAHO04400378

8/4/09
WAS
R-3
(D)

geocycle

Material Profile Sheet

A. GENERATOR INFORMATION ☐ **Check if Billing Information is same as Generator Information**

*Generator Name: CES ENVIRONMENTAL
Billing Company: CES
*Facility Address (No P.O. Box): 2420 S. GULFWAY DR.
Billing Address: 4904 GRIGGS RD.
*City/State/Zip: PORT ARTHUR, TX 77641
City/State/Zip: HOUSTON, TX 77021
*Technical Contact: MILES ROOT
Billing Contact: JUANITA THOMAS
*Phone: 832-607-6678 Fax:
Phone: 713-676-1460 Fax:
*Generator Location (If different from Facility Address):
NAICS Code: CESQG SQG * US EPA ID # *State Generating ID #

B. SHIPPING INFORMATION

*US DOT Proper Shipping Name: NON REG - NON HAZ
*Hazard Class / Division # — *ID # (UN / NA) — *Packing Group (PG) — RQ ? ☐Yes ☐No If yes lbs:

Non-Bulk Shipping Containers						Bulk Shipping Containers	
Size		Steel	Poly	Fiber	Quantity & Frequency	Container Type	Size, Quantity, & Frequency
	Gal					Yd.³ Box *or* Super Sack	
	Gal					Hard Top *or* Tarped Bin	
	Gal					End Dump (Tarped) Trailer	
	Gal					Tank *or* Vacuum Trailer	5000 GAL

C. * GENERAL MATERIAL & REGULATORY INFORMATION

Name of Waste Material: CRESYLIC ACID; NAPHTHENIC ACID
Process Generating The Material: NEUTRALIZATION OF SPENT CAUSTICS FROM OIL REFINING
Odor: ☐None ☐Mild ☒Strong Describe odor: CRESYLIC AND NAPHTHENIC

Yes	No	Does this waste contain the following :	Yes	No	
☐	☒	Radioactive Waste	☐	☒	Concentrated Mineral acid
☐	☒	Infectious, or Biologically active Waste	☐	☒	Electronic waste
☐	☒	Explosives	☐	☒	Batteries
☐	☒	Asbestos	☐	☒	Pesticides/Herbicides
☐	☒	Unsorted Municipal waste (household refuse etc)	☐	☒	CERCLA Regulated (Superfund) Waste
☐	☒	TSCA PCB waste **(List any PCB level in Sec.D)**	☐	☒	Regulated under RMP (Toxic Chemicals Section 112 (r)
☐	☒	Regulated Benzene NESHAP Waste	☐	☒	Exempt Waste; If Yes, list reference 40 CFR
☐	☒	Regulated Subpart CC Waste (VOs ≥ 500 ppm)	☐	☒	State Hazardous Waste Codes:
☐	☒	Regulated Ozone Depleting Substance	☐	☒	EPA Hazardous Waste
☐	☒	Does this waste contain, or is it derived from, dioxin-listed wastes with F020-F023, F026 or F027 waste codes?	EPA Waste Codes (including any LDR subcategories, e.g., D003 Water Reactive):		

EPA Haz Waste Only Origin Code: 1☐ 2☐ 3☐ 4☐ 5☐ Source Code: **G** Form Code: **W** System Code: **H**

D. * MATERIAL COMPOSITION

1. Chemical/Physical Constituents: List all detectable components **by chemical name**, including physical materials (e.g., sorbent, debris, etc.)

Material Components & Materials	Typical	☐ wt % Low ☐ vol % High	Material Components & Materials	Typical	☐ wt % Low ☐ vol % High
CRUDE NAPHTHENIC ACID	95%		~2-8% WATER		
CRUDE CRESYLIC ACID	90%		~10% WATER, LOW% SULFUR		

Add attachment if necessary. **Range Total ≥ 100 %**

EPAHO044000380

geocycle

D. * MATERIAL COMPOSITION *(Continued)*

1. Elemental Constituents ☒ **Check if this waste contains No Detectable Elements / Metals, unless listed below.**

Check either; ☐ Total Analysis *or* ☐ TCLP Method *or* ☐ Generator Knowledge, and then enter data below.

Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	ppm	Constituent	ppm
Aluminum		Cadmium		Fluorine		Nickel		Iron	
Antimony		Chlorine		Lead		Phosphorous		Sulfur	
Arsenic		Chromium		Lithium		Potassium		Thallium	
Barium		Cobalt		Manganese		Selenium		Titanium	
Beryllium		Copper		Mercury		Silicon		Vanadium	
Bromine		Iodine		Molybdenum		Silver		Zinc	

E. *REACTIVE CHARACTERISTICS ☒ **Check if this waste exhibits No Reactive Characteristics**

	Yes	No		Yes	No		Yes	No	ppm (if Yes)
Explosive	☐	☐	Oxidizer	☐	☐	Reactive Cyanide	☐	☐	
Shock Sensitive	☐	☐	Water Reactive	☐	☐	Reactive Sulfide	☐	☐	
Pyrophoric	☐	☐	Air Reactive	☐	☐	Polymerizable	☐	☐	Inhibited? Yes:☐ No:☐

Other incompatibles or storage requirements:

F. *MATERIAL PHYSICAL CHARACTERISTICS @ 70°F.

# of Phases: 1	Color: DARK BROWN	Flash Point: °F (if < 73°F)	☐ Liquids >20% H_2O *or* ☐ Non-aqueous
Liquid %: 100	Specific Gravity: ~1	73 - <100°F ☐ 100 - 141°F ☐	☐ ≤ 2 pH ☐ 2 - <4 pH ☒ 4 -10 pH
Sludge %: 0	Viscosity (cps):	142°F - <200°F ☐ >200°F ☒	☐ >10 - 12.5 pH ☐ ≥ 12.5 pH
Solid %: 0	Density: ~1	Boiling Point (if < 130°F):	BTU's / lb. or Range: ~ 10 - 15,000
Powder %: 0	☐ lbs/gal. ☐ lbs./ cu. ft.	Ash % : <1	
Gas %: 0	Comments:		

G. GENERATOR PROFILE CERTIFICATION

I hereby certify that I am an authorized agent of the generator, and warrant on behalf of the generator that the information supplied on this form and on any attachments or supplements hereto is complete and accurate, and that all known or suspected hazards of the material(s) described herein have been disclosed. I agree that if the sample test results indicate a discrepancy with any information supplied on this form, that either Geocycle or the generator may initiate further testing and evaluation in accordance with the terms and conditions of the contract between Geocycle and the generator and that this profile certification may be amended accordingly.

Generator's Authorized Signature	Name & Title (Printed or Typed)	Date
	MILES ROOT - LAB MGR	7 / 1 / 09

Geocycle & Laboratory Use Only

PCS Code:

Sales Rep. Name: _____ Phone #: _____ Facility: _____

EPAHO044000381

Targets (caustic)

* Eveddle (10/week of ~~concentrated~~)
* Pineville
* Mansfield
— Derrider — We have now
* Orangel

* future Targets

- Product Sales -

8/4/09
WD
E-3
(8)

Action plan for Enterprise, Citgo, and Outer Caustics

Step 1/2 : Strictly Abide by Citgo Caustic Distribution Schedule

Step 1 : Get Enterprise Splitters 1, 2, 3 KOH KOH NaOH
Homes somewhere → Splitter 3 should be easy (strong NaOH)
Splitters 1 + 2 maybe to somewhere needing neutralization

Step 2 : Set up to treat Enterprise caustic (weak) at CES (West Texas + MTBE)

Step 3 : Get 1 barge out ~~for~~ next ASAP → CES to do cleaning

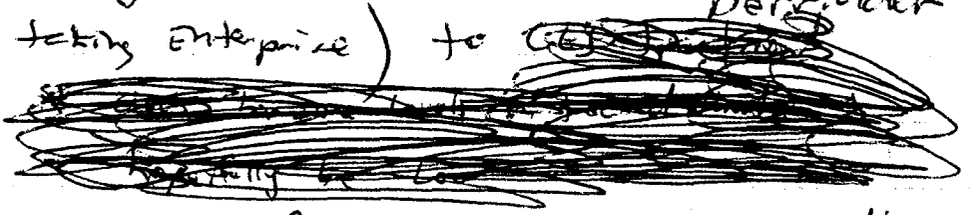
Step 4 : find one more plant within 170 miles (important, not critical) to distribute Citgo caustic. Then use Mansfield (3 per day), ~~extra~~ extra plant, and Berridder (4 per day) to get at least one barge of caustic per month picked up, taken to Intrex (by barge) and delivered by CES trucking

Step 5 : Use 2nd barge to do trips back and forth from Citgo to Pine Bluff (taking 1/3 phenolic each time) every 6 weeks

Step 6 : Truck balance of caustic out of Citgo at a rate of 3 per day (M-Thurs) directly to outlets listed on Citgo Caustic distribution schedule

Step 7 : Get permits from State of Texas for CES trucks to haul more weight. Get contractors to load max. weight (80,000 lbs.)

Step 8: As soon as CES is taking Enterprise Empty tank 606 first (before taking Enterprise) to Perridder



* This frees up 606 to handle material coming from overseas or use Stolt Tank in New Orleans if available (See expanded Caustic Business Plan) *

Step 9: Get out of Rental on small tanks at KMTEX. Decide weather to keep Tank 606 after overseas business from Qatar ends (based on additional distribution points near KMTEX and/or use of railcars to reach further away paper mills)

** Priority of Steps not necessarily in order **

Pineville - 155 miles

240 Miles — West Monroe (3 per day) — • Rail from KMTEX
• Straight from Citgo

220 miles — Hodge (3 per day) — • Rail from KMTEX
• Straight from Citgo

175 miles — Mansfield (3 per day) — • Rail from KMTEX
• Straight from Citgo
• Truck from KMTEX

Long Way — Potlatch (3 per day) — • Rail from KMTEX
• straight from Citgo

100 miles — DeRidder (4-5 per day) — • Truck from KMTEX

250 Miles — Texarkana (3 per day) — • Rail from KMTEX
• Straight from Citgo

Close — Evedale (3-6 per day) — • Truck from KMTEX

Long Way — Pine Bluff (1-2 barges per month) — • Barge directly from Citgo

Citgo Caustic Distribution Schedule

Expanded Caustic Business Plan

- Rent 1 tank (for starters) in New Orleans from Stolt. Tank should be available sometime in June for approximately $11-12,000 per month

- Get customer Caustics approved into plants on second Distribution Network List as we develop customer business → Qatar caustic might be a good start, could even strengthen w/ Enterprise (splitter 3)
(Focuses on distribution to mills in East Louisiana, Southern Mississippi, and Western Alabama)

- Use rail at Both kmTBX and Stolt to reach paper Mills in Northern Louisiana and Southern Mississippi (Start by renting 20 railcars)

- Can also receive overseas, large ships, into tank at Stolt

EPAHO04000388

Proposed Caustic Action Plan

May 6, 2008

Action Plan for Citgo, Enterprise and, Qatar Caustic

Step ½: Strictly abide by Citgo Caustic Distribution Schedule

Step 1: Get Enterprise Splitters 1 (K0H), 2 (KOH), 3 (NaOH), homes somewhere > Splitter 3 should be easy (strong NaOH), Splitters 1 & 2 may be placed somewhere needing neutralization.

Step 2: Set-up to treat Enterprise weak caustic (West Texas and MTBE) at CES.

Step 3: Take one barge off rent now, ASAP. CES will do the cleaning.

Step 4: Find one more plant within 170 miles to distribute Citgo Caustic (important, but not critical). Then use Mansfield (3/day), extra plant, and DeRidder (9/day) to get at least one barge of caustic per month picked-up and taken to KMTEX (by barge) and to be delivered by CES trucks.

Step 5: Use a second barge to move from Citgo to Pine Bluff (AR) (with 1/3 phenolic caustic each time) every 6 weeks.

Step 6: Truck balance of caustic out of Citgo at a rate of 3 per day (Monday – Thursday) directly to outlets listed on Citgo Caustic Distribution Schedule.

Step 7: Get permits from the States' of Texas and Louisiana for CES trucks to haul more weight. Have contractors and CES trucks to load max weight (80,000 pounds).

Step 8: As soon as CES is taking Enterprise at 4904 Griggs Rd, (Houston, TX), empty Tank 606. This will allow Tank 606 to receive caustic from overseas, or use Stolt tank (New Orleans).

Step 9: Take off rent small tanks at KMTEX. Decide the future of Tank 606 after overseas business from Qatar ends. This will be based on additional distribution points near KMTEX and/or use of railcars that can reach paper mills farther away.

*** * Priority of Steps not necessarily in order * ***

Citgo Lake Charles (LA)
Caustic Distribution Schedule

Miles from KMTEX	City, State	Loads per Day	Travel
240	West Monroe, LA	3	• Rail from KMTEX (Port Arthur) • Straight from Citgo (Lake Charles)
220	Hodge, LA	3	• Rail from KMTEX • Straight from Citgo
175	Mansfield, LA	3	• Rail from KMTEX • Straight from Citgo • Truck from KMTEX
350	Potlatch Corp. 5082 Highway 4N Arkansas City, AR	3	• Rail from KMTEX • Straight from Citgo
100	DeRidder, LA	4 - 5	• Trucks from KMTEX
250	Texarkana, TX	3	• Rail from KMTEX • Straight from Citgo
46	Evadale, TX	3 - 6	• Trucks from KMTEX
435	Pine Bluff, AR	1 - 2 Barges Per/Month	• Barge directly from Citgo
21	Orange, TX	3	• Trucks from KMTEX

NOTE:

Pineville, LA is 155 miles from KMTEX, Port Arthur, TX.

EPAHO044000391

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Corrugated Packaging

- Overview
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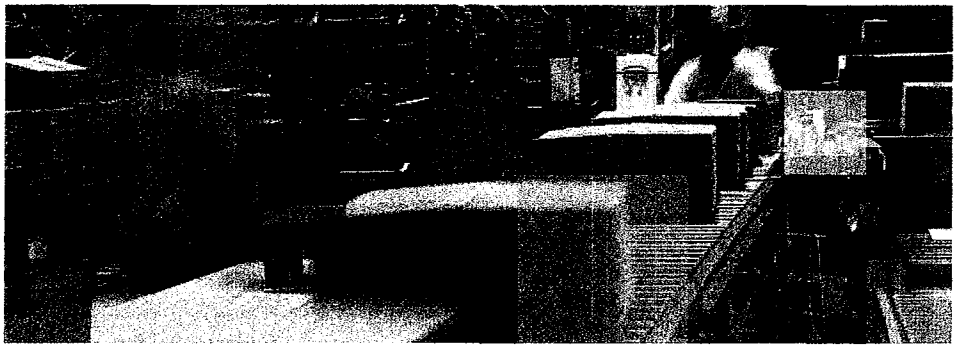
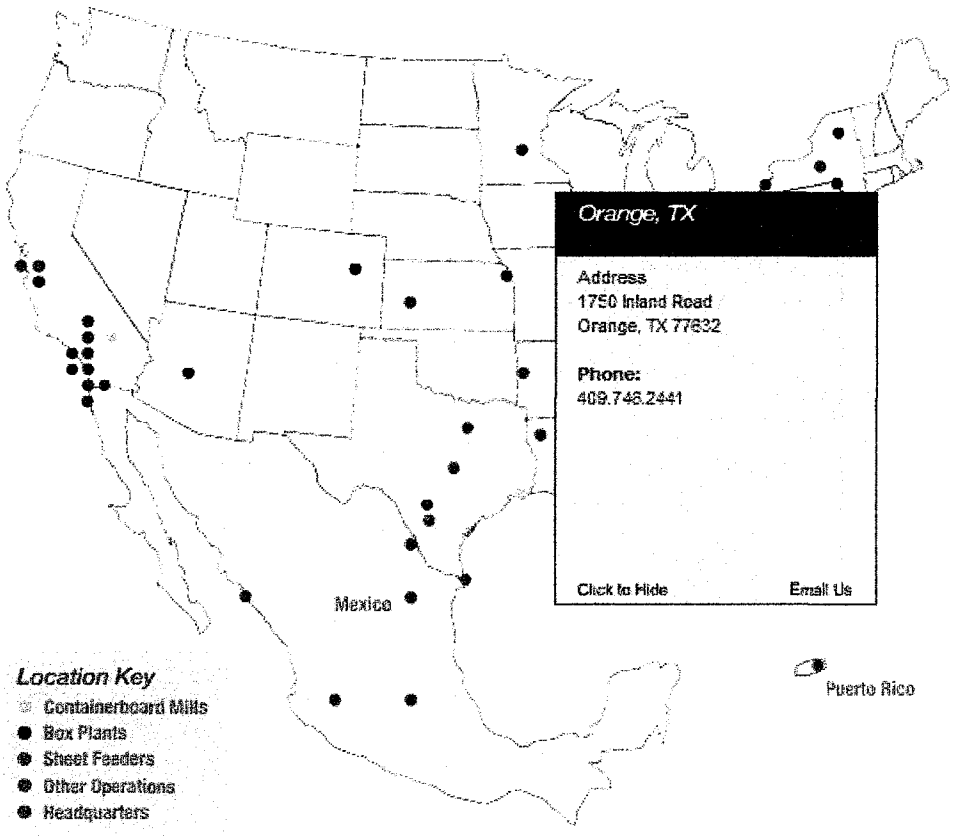
- Display
- Agricultural
- Industrial
- Linerboard
- Specialty Products
- RFID
- **Facilities**



Corrugated Packaging

There's a Temple-Inland Facility Near You

With dozens of facilities in more than 20 states, Mexico and Puerto Rico, Temple-Inland facilities are strategically located to deliver the products and services you need. We not only bring you the best packaging, but we bring jobs, opportunities and support to the communities where we operate.



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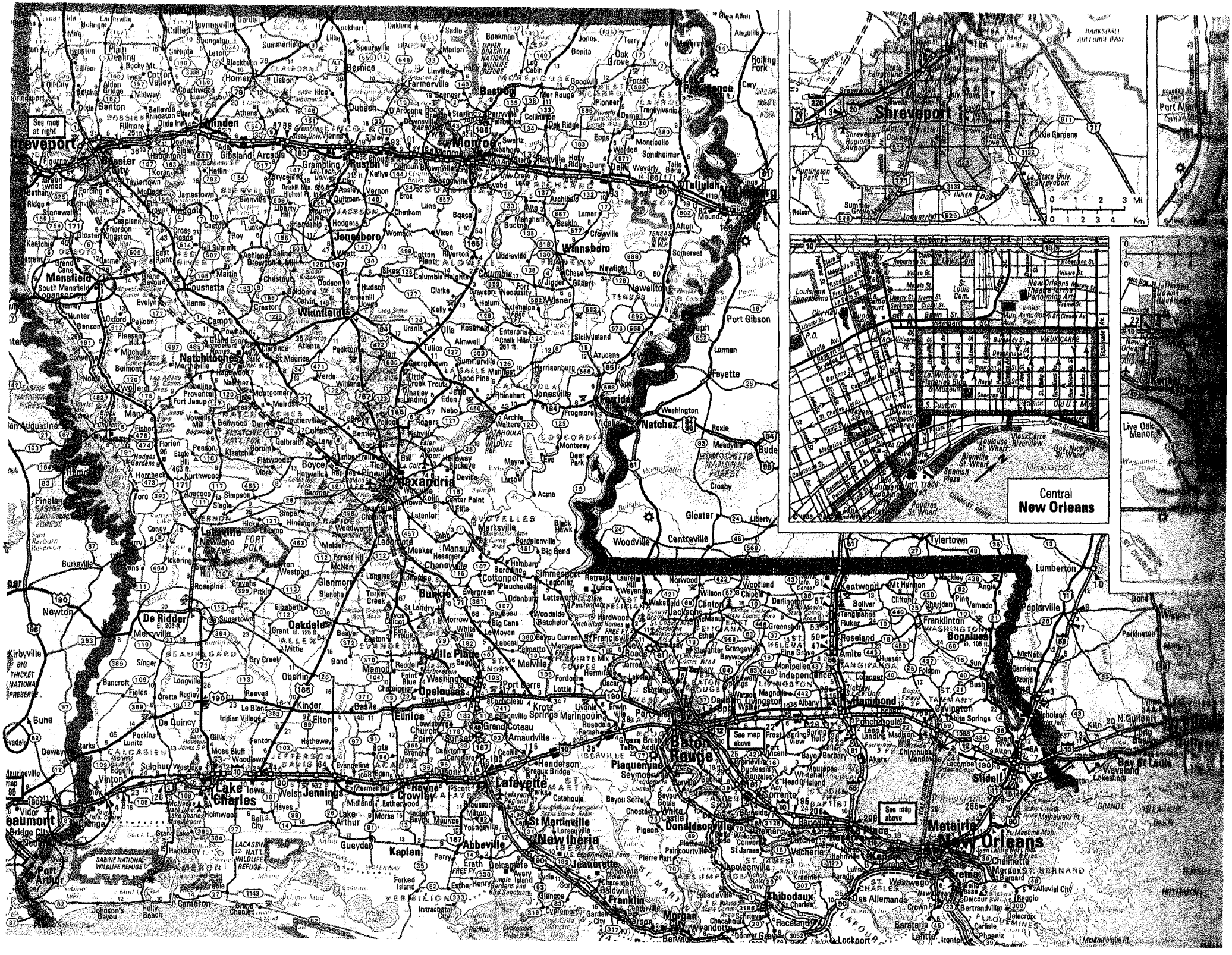


EPAHO04000393

Expanded Caustic Business Plan

May 6, 2008

EPAHO044000394

Expanded Caustic Business Plan

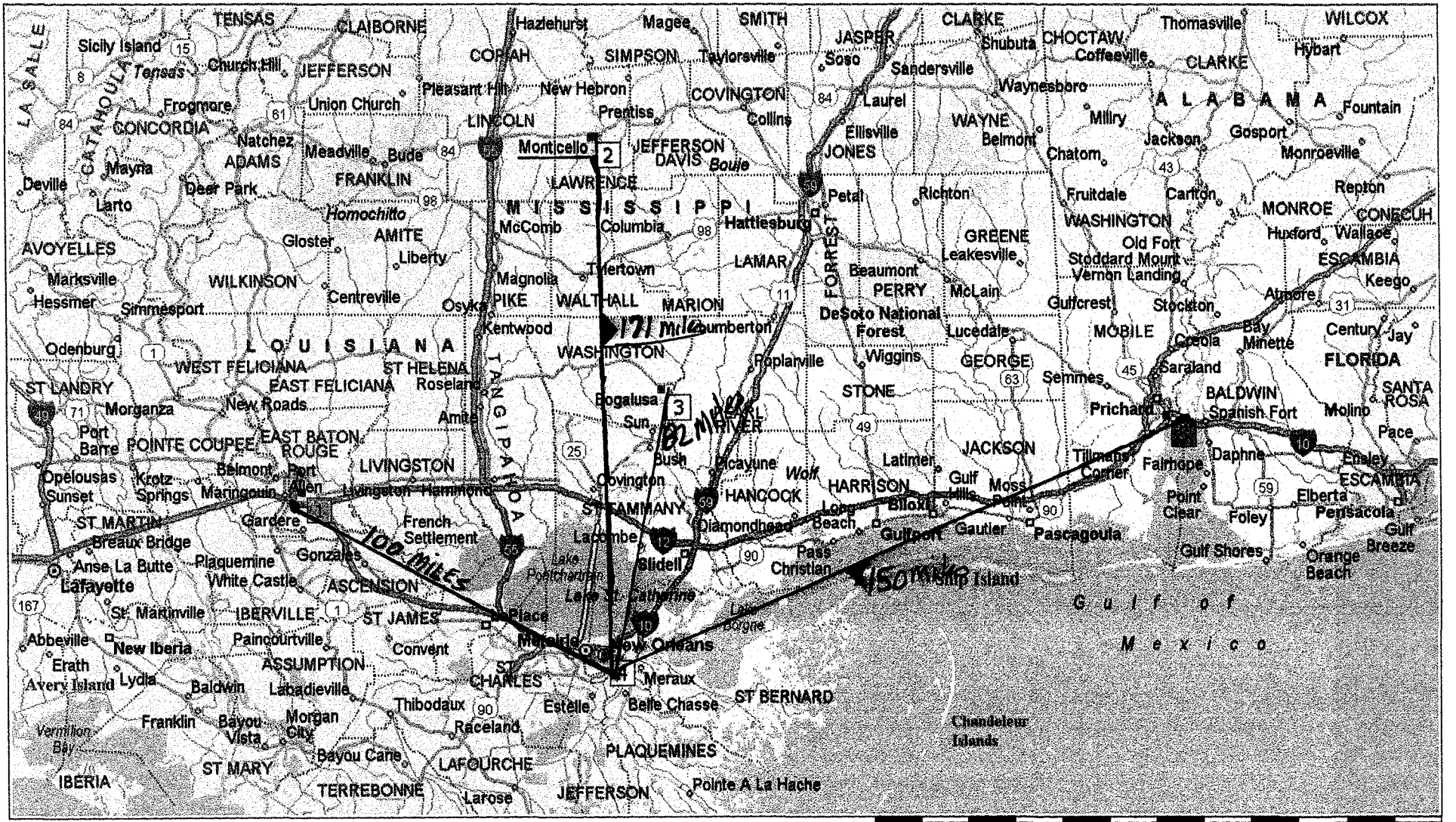
- **Rent one tank (for starters) in New Orleans from Stolt. The tank should be available sometime in June for an amount of approximately $12,000 per month.**

- **Get customers' caustics approved into the plants on a Second Distribution Network List as we develop a Customer Business. Qatar caustic might be a good start, could even strengthen with Enterprise's (Splitter 3), (focus on distribution to mills in East Louisiana, Southern Mississippi and, Western Alabama).**

- **Use rail at both KMTEX and Stolt to reach paper mills in Northern Louisiana and, and Southern Mississippi (start by renting 10 rail-cars).**

- **Can also receive overseas shipments in large ships, into tanks at Stolt.**

EPAHO044000395



Second Distribution Network List

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EPAHO04000396

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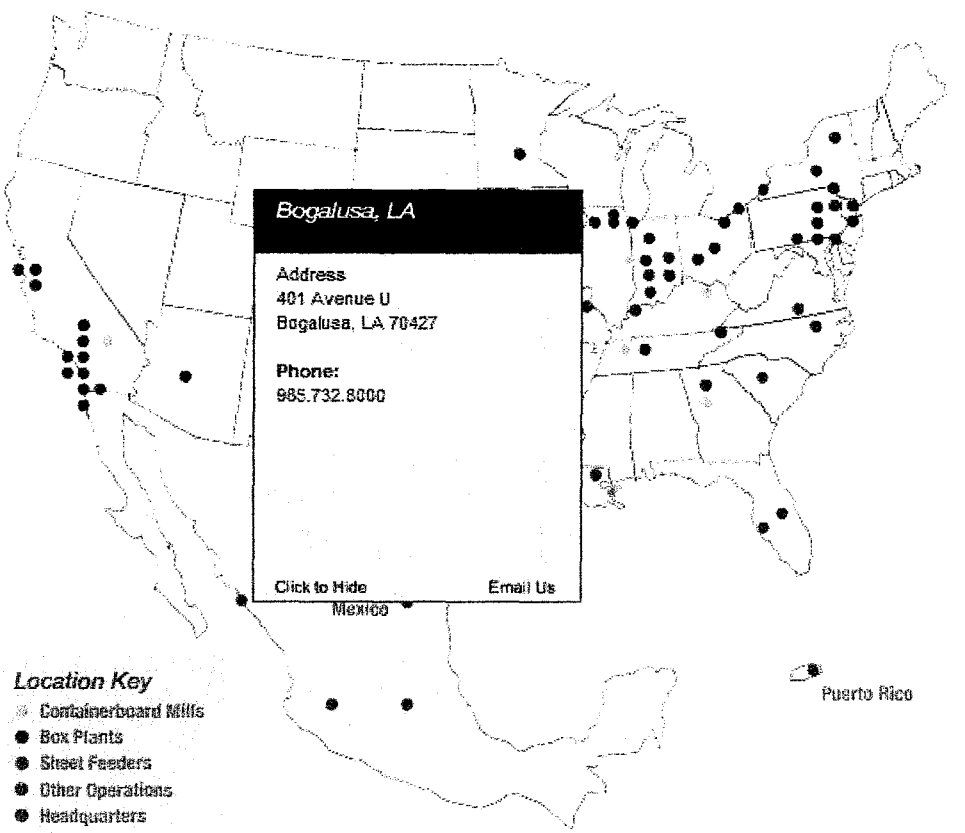
- *Thinking Inside the Box*
- Services & Solutions
- Display
- Agricultural
- Industrial
- Linerboard
- Specialty Products
- RFID
- Facilities

Corrugated Packaging

There's a Temple-Inland Facility Near You

With dozens of facilities in more than 20 states, Mexico and Puerto Rico, Temple-Inland facilities are strategically located to deliver the products and services you need. We not only bring you the best packaging, but we bring jobs, opportunities and support to the communities where we operate.



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BOISE®

List of Locations

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Paper Manufacturing
Jackson, Alabama
DeRidder, Louisiana
International Falls, Minnesota
St. Helens, Oregon
Wallula, Washington

Paper Distribution
Pico Rivera, California
Bensenville, Illinois

Corrugated Sheet Manufacturing
Waco, Texas

Corrugated Containers
Burley, Idaho
Nampa, Idaho
Salem, Oregon
Salt Lake City, Utah
Wallula, Washington

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Driving directions (abbreviated) : New Orleans, Louisiana, United States to Jackson, Alabama, United States

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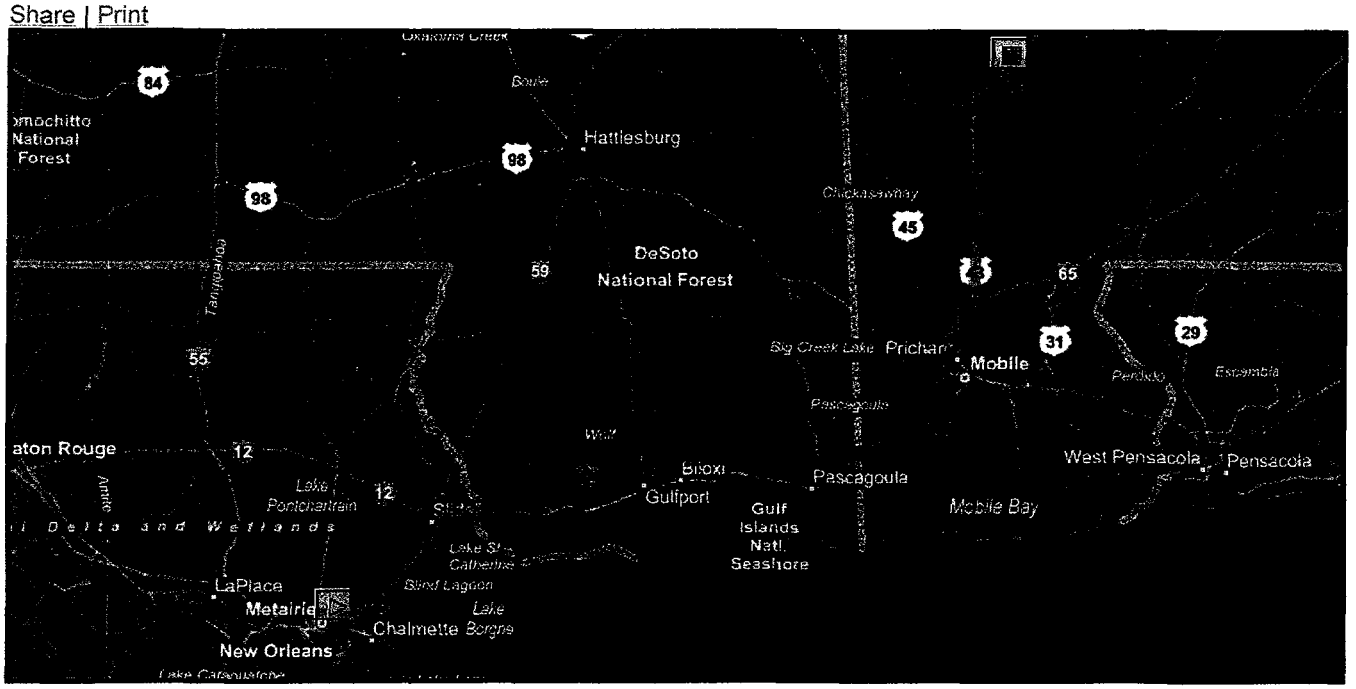

Start: New Orleans, Louisiana, United States

Trip: 208.4 mi, 3 hr 18 min

1.	Depart **La Salle St**hide start details	0.1 mi
2.	Turn **left** onto **Tulane Ave**	0.1 mi
3.	Take ramp **right** for **I-10 East** toward **Slidell** *Entering Mississippi* *Entering Alabama*	136.1 mi
4.	At exit **20**, take ramp **left** for **I-65 North** toward **Montgomery**	19.2 mi
5.	At exit **19**, take ramp **right** for **US-43 North** toward **Creola**	51.2 mi
6.	Turn **right** and then bear **right** onto **SR-69 / Coffeeville Rd**	0.6 mi
7.	Bear **right** onto **SR-177 / College Ave**	0.9 mi
8.	Arrive at **Jackson, Alabama, United States**hide end details *The last intersection is Broad St* *If you reach Magnolia Dr, you've gone too far*	

End: Jackson, Alabama, United States

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About Us / Locations

Results of Search (18 results)

You searched for: **Alabama**

Facility	Facility Address	Facility Type	City	State	Phone/Fax
Athens - Treating	19560 Alabama Highway 127	Pressure Treating	Athens	Alabama	256-233-0256 (V) 256-230-0822 (F)
Brewton Bleach Board	32224 Highway 31	Corrugated Box	Brewton	Alabama	(251) 251-3621 (V)
Fayette - CNS	Highway 96 West	S/P Sawmill	Belk	Alabama	205-932-3243 (V) 205-932-4206 (F)
Fayette - Procurement	Highway 96 West	Procurement Office	Belk	Alabama	205-932-3246 (V)
Huntsville - Packaging	3420 Stanwood Boulevard, NE	Brown Box	Huntsville	Alabama	256-859-5770 (V)
Brewton Procurement	32088 Highway 31 S.	Containerboard Mill	Brewton	Alabama	(V)
Peterman - Plywood	Highway 21 North	Plywood	Monroeville	Alabama	251-575-2770 (V) 251-575-3435 (F)
Peterman - Procurement	Highway 21 North	Procurement Office	Monroeville	Alabama	251-575-2778 (V)
Talladega - Plywood	400 Ironaton Road, Highway 21	Plywood	Talladega	Alabama	256-362-8810 (V) 256-362-2879 (F)
Talladega - Procurement	400 Ironaton Road, Highway 21	Procurement Office	Talladega	Alabama	256-362-9008 (V)
Cullman - Container - Warehouse	315 Fifth Street, SW	Warehouse	Cullman	Alabama	205-739-8175 (V)
Montgomery - Treating	3077 Carter Hill Road	Office	Montgomery	Alabama	334-269-9663 (V)

Tarrant City - Gemini Corrugated	777 Clow Road	Sheet Feeder	Tarrant City	Alabama	205-841-4200 (V)
Nauvoo - Treated Lumber	2247 Prospect Road	Pressure Treating	Nauvoo	Alabama	205-924-4462 (V)
CP - Naheola Mill	7530 Highway 114	Paperboard	Pennington	Alabama	205-459-1900 (V) 205-459-1303 (F)
CP - Ohatchee Chipmill	7178 Highway 77	Chipmill	Ohatchee	Alabama	256-892-2093 (V)
Huntsville - Packaging - Warehouse and Truck Stop	2386 Dughill Road	Warehouse		Alabama	(V)
Thorsby Laminated Lumber	19953 US Hwy. 31	Laminated Veneer Lumber	Thorsby	Alabama	(V)

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Driving directions: New Orleans, Louisiana, United States to Brewton, Alabama, United States

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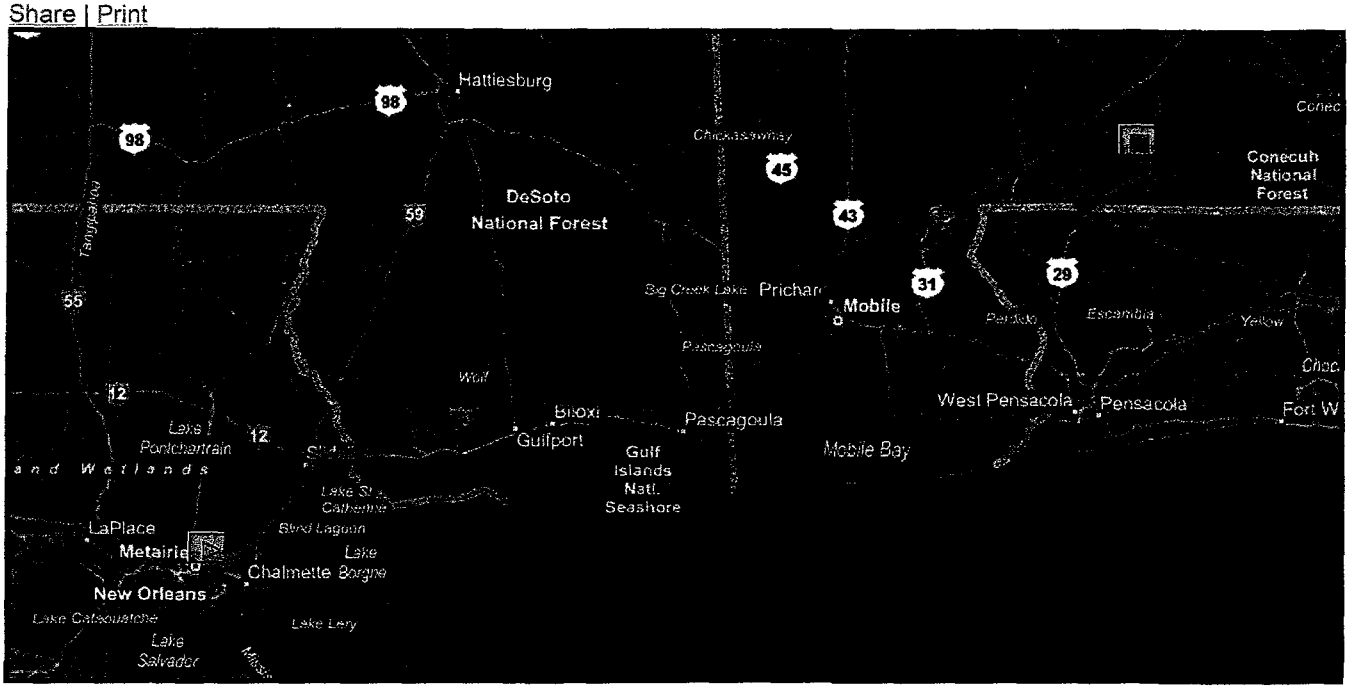

Start: New Orleans, Louisiana, United States

Trip: 232.2 mi, 3 hr 36 min

1.	Depart **La Salle St**	0.1 mi
2.	Turn **left** onto **Tulane Ave**	0.1 mi
3.	Take ramp **right** for **I-10 East** toward **Slidell** *Entering Mississippi* *Entering Alabama*	136.1 mi
4.	At exit **20**, take ramp **left** for **I-65 North** toward **Montgomery**	69.2 mi
5.	At exit **69**, take ramp **right** for **Al-113** toward **Flomaton / Wallace**	0.3 mi
6.	Turn **right** onto **SR-113**	13.5 mi
7.	Turn **left** onto **US-29 / US-31**	12.8 mi
8.	Arrive at **Brewton, Alabama, United States** *The last intersection is SR-41 / St Nicholas Ave* *If you reach Belleville Ave, you've gone too far*	

End: Brewton, Alabama, United States

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Company History

Paper and Forestry

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Albany International Corporation

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Asplundh Tree Expert Co.

Badger Paper Mills, Inc.

Beckett Papers

Bohemia, Inc.

Boise Cascade Corporation

Canfor Corporation

Caraustar Industries, Inc.

Carter Lumber Company

Cascades Inc.

Champion International Corporation

Chesapeake Corporation

Consolidated Papers, Inc.

Crane & Co., Inc.

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Daishowa Paper Manufacturing Co., Ltd.

Deltic Timber Corporation

Dillard Paper Company

Doman Industries Limited

Ds Smith Plc

Empresas CMPC S.A.

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Gould Paper Corporation

Grupo Portucel Soporcel

Guilbert S.A.

Hampton Affiliates, Inc.

Holmen Ab

International Paper Company

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Kimberly Clark De MéXico, S.A. De C.V.

Klabin S.A.

Kruger Inc.

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Louisiana Pacific Corporation

M-real Oyj

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Mercer International Inc.

Miquel y Costas Miquel S.A.

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Westvaco Corporation

Weyerhaeuser Company

Wickes Inc.

Willamette Industries, Inc.

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Matt Bowman

From: Thad Woodward [twoodward@sochem.com]
Sent: Tuesday, July 15, 2008 4:23 PM
To: Matt Bowman
Cc: Sal Amato; Kevin Sterling
Subject: Mansfield

Mansfield

Matt,
I just finished a long call with Mansfield. I was talking to Jessica Hornsby (Pulp Mill Area Manager) and James Strange (Enviromental Manager).

Points of the discussion were:
1. A sample they had tested by SPL labs in Lafayette, LA. which had hits of benzene, silvex (a band pesticide), and other unusal hydrocarbons.
2. A resample of material which had no hits of these materials.
3. The political issues with employees about the smell, the bad analysis, and the truck driver who said it was a waste from over seas.
4. The lack of a permanent system and the cost of putting one in. The time factor of months before putting one in
5. Would we be able to help with the cost of a permanent system?
6. A penalty clause in a contract that would establish a fine if they found any of these bad chemicals again.
7. They are sending of these analysis to me for further review.
8. Their discussions with Merichem about supplying this material to them.

The issues are serious and they will not be resoved in a short time period. When I get the analysis I will get with you to discuss the above issues and how to resolve this.

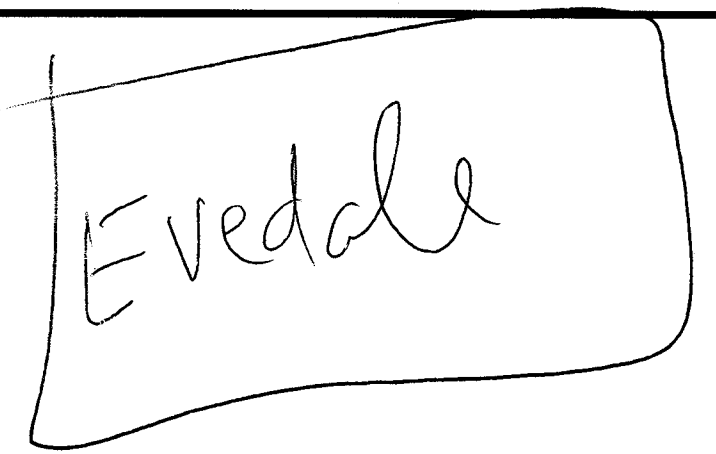
Thad Woodward
President
Sochem Solutions, Inc.
phone 225-644-3180
Fax 225-644-3785
Cell 225-413-3264

I am using the free version of SPAMfighter for private users.
It has removed 7015 spam emails to date.
Paying users do not have this message in their emails.
Try SPAMfighter for free now!

EPAHO0440040 8

Matt Bowman

From: Thad Woodward [twoodward@sochem.com]
Sent: Tuesday, July 15, 2008 9:55 AM
To: Matt Bowman
Subject: FW: Materail for Ph adjustment of effluent.



Thad Woodward
President
Sochem Solutions, Inc.
phone 225-644-3180
Fax 225-644-3785
Cell 225-413-3264

From: Gary W Colson [mailto:gwc13@meadwestvaco.com]
Sent: Sunday, July 13, 2008 1:22 PM
To: Thad Woodward
Cc: Katherine S Davis
Subject: Materail for Ph adjustment of effluent.

Katherine status she is still waiting on information on the ph control material for some environmental needs. I will also need the same information for the product stewardship group to submit for getting the effluent material approved. You will need to sign the chemical analysis report for Sochem on this material for the product stewart ship group. I also need a signed copy of the Lo Grade Caustic chemical analysis to process product Stewart ship paper work.

Katherine has doubts about using the your product for the bark boiler. Could you supply phone contacts of people that are using it so she and I can discuss any environmental concerns???

Still looking at your acid.

I will put Lo Grade caustic on a lower priority

Gary Colson
Phone: (409)276-3463

EPAHO04400409

"Thad Woodward" <twoodward@sochem.com>

07/07/2008 08:51 AM

To "'Gary W Colson'" <gwc13@meadwestvaco.com>
cc "Sal Amato" <salamato@sochem.com>
Subject RE: Status

Gary,

We need to unload in less than 2 hours.

The ph control on the effluent and boiler scrubber needs to be of higher importance. I have plenty of this material.

I have lots of pressure on my lo grade caustic. Prices on the material have risen to the $400 range and I don't have enough material to ful fill demand.

In hopes of being 1 of your largest suppliers,
Thanks,
Thad Woodward
President
Sochem Solutions, Inc.
phone 225-644-3180
Fax 225-644-3785
Cell 225-413-3264

-----Original Message-----
From: Gary W Colson [mailto:gwc13@meadwestvaco.com]
Sent: Wednesday, July 02, 2008 9:32 PM
To: Thad
Subject: Status

Lo strenght caustic. I have operations signed off on the concept. I plan to dilute your stuff as I unload it to match our 18 percent tank and will pass it through 50 micron filter. Need to know what unload time I need to plan for so I can size a pump. Will meet with product stewart manager next week to complete paperwork.

I have made no progress on boiler scrubber concept.

We completed estimate for ph effluent system and management did not like installed cost. Have plan 2 which looks a lot cheaper and will complete

EPAHO0400410

estimate in 2 weeks to go back to management.

Did you ever find any waste sulfuric acid streams?

Sorry it has taken so long to communicate but they have been running me like a dog.

Your best future customer!

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EPAHO04400411

S/W

Refinery Caustic- I could write a book. This first section will deal primarily with caustics from light end treating and from chemical plants. The caustic generated from kerosene and jet fuel treating (naphthenic) will be discussed separately later. Note that most caustics if let sit for long periods of time often have fine black particles that will settle out.

Caustic Approval Process

Please keep in mind that for us to take caustic to the paper mills, we have agreements with the mills to get the caustic approved before shipping.

To get this accomplished, we will need the following:

(1) Receive a Process Description from the producer on how the caustic was generated. Answer the following questions (this step will be done by the account manager):
   - What is the primary composition?
   - Is there any potentially dangerous or hazardous compounds that would be released in processing?
   - If there is color, what causes the color?
   - If there is odor, what causes the odor?

(2) Receive a representative sample at CES and test for the following(this step will be done by the account manager):
   - Sodium Hydroxide (or Potassium Hydrozxide)
   - Sulfide
   - TOC
   - SG
   - Solids
   - Visual
   - Odor

(3) If the sample looks to be a good candidate, a sample should be sent to an outside lab for the following (this step will be done by the Sales Director):
RCRA 8 Metal Scan (be sure to have potassium)

Total Chlorides

Phenol

Benzene

(4) Sales Director will provide a sample, analysis, and MSDS to Sochem for approval. They will work on getting it approved with the mill. Assuming the caustic is "typical", the process should not take more than a week.

Sources- Ask sales person for more details, I will briefly detail each source

Citgo- Large supplier. Caustic usually ~6.5% sodium hydroxide and les than 0.1% sodium sulfide. Produces > 600,000 gallons per month. See numerous test data for full analysis. Generally a tea colored caustic with no

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oils or significant solids. By most criteria, Citgo caustitc is as good as your going to get from a large refinery. Some mills have complained that Citgo's caustic has a hydrocarbon smell. Not much we can do about it. Clark is our main contact to Citgo. Citgo's main person is Mike Robinson. Citgo would prefer to load all the caustic by barge. At this time they only provide truck loaders from M- Thursday, but this is subject to weekly change. My advise is to pin down Clark on what the loading schedule is every chance you get. Do not assume nothing.

Concerns: Historically Citgo has put all of their caustics into their waste water treating plant (WWTP). It has always been poorly understood by us and Citgo, what their capabilities are. They fluctuate between being able to handle internally and having to send out the caustics. Obviously, if Citgo was to start taking the caustic into their WWTP again, it would have a major impact on our caustic business. Most every mill we service with the sole exception of De Ridder is dependent on this caustic.

Enterprise – Complicated. Has several distinctly different streams

Stream 1- Primary component is Potassium hydroxide. Usually running 25 to 40% as KOH. Be careful, we often report the concentration as NaOH. To covert, you must multiply by 40/23 to get to KOH. Volume is ~1 per week. We can send this to Magpro in Camden TN via Sochem. They pay us $1600 per load. Often Ryan sends to haz. Disposal. Can go to De Ridder, but they usually do not like the strong concentration. As Adam noted, if it does go, we should send on the weekend if possible, also it needs to go to the back tank so it has a chance to be diluted before going to the scrubber.

Stream 2 – Similar to Stream 1, different color. We do not get in very often. Also can go to magpro as does stream 1. Ditto haz waste and DeRidder.

FROM TREATING (REMOVING SULFIDES FROM NATURAL GAS)

Stream 3 – We do not get a lot of this stream. It can be very high in sodium hydroxide, but also has ~500 ppm potassium. As long as we don't get very many of them, they can either go to the Citgo Tank (Currently 606), or deRidder

West Texas – This is the "sloppiest" stream. Typically low sodium (<5%), tends to have black solids both floating and on bottom. I think a lot of the initial problems we had at De Ridder was due to this stream. Also, we receive more of this stream than the others. West Texas is VERY high in Chlorides. Make sure it ONLY goes to De Ridder or is sent out as haz waste.

MTBE – Moderately high in Potassium and Chlorides. It should only go to De Ridder. We may have put this material in the citgo tank in the past when De Ridder was down, but I do not recommend it ongoing.

Methanol – At one time we were taking a stream from Enterprise that had up to 40% methanol. I am not sure if we are still taking, and if so, where it is going. Ask Dana, it is her account.

Targa- I don't have any data on this from the top of my head. This material goes into our citgo caustic.

Enterprise Port Allen – New account from Dana. Caustic is pretty strong (sample has ~26%). However, it has a moderately strong ammonia smell. Thad suggested to have total nitrogen run on the sample before moving forward.

Arkema- Bright cherry red to cloudy red. Musky mercaptan odor. I would be very careful about sending this to any mill but De Ridder, even then, I would put it into the KMTEX tank and circulate before sending. This

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would be a good candidate to treat at CES as a haz wastewater. The color and odor have caused us problems at Pineville, possibly one of the reasons we are no longer shipping there.

RasGas – New supplier of caustic. Their analysis shows the caustic strength to be ~4%. In my prior dealings with this caustic, it tended to have a strong mercaptan odor. Some thought will have to go into where this caustic is used. De Ridder is likely OK. I would be careful not to give a slug to a papermill, it will likely be too weak, and the odor is a question mark. It would be nice to get a sample before the boat comes in. Matt noted that some of the caustic may be treated as waste water at CES.

Shell Yabacoa- Puerto Rico- Potential new account. Sample was given to thad. The analysis looks good, almost too good. I would not plan on the caustic always containing 16% NaOH. I would think it will more likely be +/- 10%. We need to get a contract in place, but once done, they will ship ~20 to 30 -20MT ISO containers per month. Historically, they overloaded the trailers which made it difficult to move them from the port. Make sure you correspond with them that they cannot overload. The trailer and truck total wt. cannot be over 80,000 lbs.

Citgo Naphthenate- This caustic is loaded from frac tanks. Volume is 10 to 20 per month. This caustic is sprung with sulfuric acid at CES to a pH of 2, to recover the naphthenic acid. This acid could possibly be sold to Merichem or other foreign interests. I would value the material at no less than $0.30 per pound. It may be worth as much as $0.60 per pound. Whoever is buying will want the following analysis:

TAN- Total Acid Number- expressed in mgKOH/g sample. This is a basic titration

Unsaponifiables- Measures the amount of neutral oils in the acid (i.e. kerosene). This test is usually done by distillation.

Phenolics- Total Phenolics by 4 amino pyrene method (check spelling, ask Miles).

%Water- By KF

Each customer may have specific requirements. Best to provide on a as needed basis.

Sochem-

Paper Mills

De Ridder- Typcally 3 -5 loads per day. Can take high chlorides and potassium. Do not send high sulfides (greater than ~1%). On a regular basis, should be less than 0.1% sulfides. They like lower strength caustics ~4 to 7%. Have trouble when we send them caustic with big swings in concentration. Can use Citgo caustic as is if needed. Likes to receive caustic 7 days per week.

Mansfield- Newer outlet. Takes 3 loads per day total (Sochem sends them one load per day M-Th). We send them 2 loads per day M-Th, and 3 loads per day F-Su if possible). They need to have the third load arrive at LEAST 8 hrs after the first load. They have limited storage. Takes primarily Citgo Caustic. NO Chlorides, potassium. Sulfides OK.

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Hodge – Currently down, but expected to be back up in Mid May. Will take 2 -3 loads per day. Weekend is possible. Citgo preferred. NO potassium or high chlorides.

Potlatch- One of the furthest mills. Can take 3 loads per day /7 days per week of Citgo type caustic. NO potassium, high chlorides.

Pine Bluff- Can take several barges per month. River conditions can be a liability. Only mill to have agreed to take cresylic caustic. They agreed to take a Citgo blend of 2/3 citgo sulfidic caustic, 1/3 citgo cresylic. They like the sodium hydroxide concentration to be over 10%. Main contact is Chuck Seal. NO high potassium/high chlorides. Higher sulfide OK.

Pineville- Used to be our largest outlet taking 6 loads per day. 2 episodes with odor (phenols) got us kicked out. One time, phenolic (aka cresylic) caustic was the culprit, the second time happened when we sent them some Arkema caustic. Not sure if it was coincidence or not. We are hopeful that they will start taking caustic again in the future. However, the volume will likely be less (~2 loads per day??). Pineville used to take cresylic caustic, that will most likely not happen again.

Texarcanna- Keep talking about taking, but never has given the official go ahead. One mill that would take rail if made available. Consumption is expected to be ~2-3 loads per day. Prefers the Citgo type caustic. No high potassium/chlorides.

Evadale- Used to be a big consumer, but ran into chloride problems. Now can not take caustic as a result. They are in the process of putting in some technology that will allow them to remove the chlorides from their caustic. Once this is in place (~1Q,2009), they expect to consume ~20 trucks per day. While entirely possible, seeing is believing. Like most mills, they want low chlorides, low potassium caustic. i.e. citgo.

West Monroe – Newest mill that we are to send to. Initially wants 2 -3 loads per day of citgo type caustic. Could take 7 days per week. They make food grade products, so we will see if they can use our caustic long term.

Monticello – On again , off again mill. Likes citgo type of caustic. Long distance combined with inconsistent usuage has made them a secondary if not third-ary option.

Bogaloosa- Sochem sells to this mill. They use Chalmette and motiva caustic. Citgo caustic is not qualified due to relative weakness and odor.

Black Oil- Two different markets depending on ash content. If ash is below 1.0%, Carrie (vertex) or Scott Rainey usually offer the best price. Carrie usually requires a sample. She can be slow to work with. For oil with higher ash, we have sold almost exclusively to either Midstate or Alamo. Midstate (Lloyd) always wants the gravity in API, usually over 20. Alamo (Charlie) filters all of his oil at loading, so it has happened on a semi regular basis, he will reject our oil due to waxes and or solids. Both Midstate and Alamo can be a little unpredictable in their pickups. Alamo is probably worse. Both Alamo and Midstate use the oil (and light ends) to make paving asphalt . When the temperatures get lower than 40 F, road crews can't lay pavement. As such, during cold spells, we may have difficulty moving to these markets.

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Right now most black oil is being produced by Lubrizol recovered oil skimmings. This feedstock is extremely variable in quality and can vary by a large amount in frequency. What we look for in order of significance; ash (less than 1% good, over 2% means only going to Alamo or Midstate), solids, the lower the better (if it clogs a small filter, Alamo will not take it), gravity (either API or SG, the heavier it is (gravity less than 20, makes it hard to sell), flash (under ~135F is considered high flash, over 135, low flash chloride levels (chlor-d-tect) should be less than 1000. Odor should not be especially bad. Strong ammonia smells or dead something smells can be a deal breaker. Vertex has been able to handle the strong smell if the solids are not too high. You do want to make sure you don't mix the strong smell with high ash if at all possible.

Pricing- High ash to Alamo and Midstate- pretty standard $0.85 per gallon. May be some room to move up, I would only do it after we send them some good loads for a while.

Low Ash (and typically low flash)- Vertex and HRR (Scott). They will pay off plats. Vertex should give you a price, typically after looking at a sample and taking a few days, Scott will also usually require a sample and take a day or two. Prices range from $1.05 to $1.40 /gallon.

Ash – Under 0.7 wt % is good. Up to 1% OK, over that, options start narrowing, over 2.5%, likely only going to go to Alamo or Midstate

Flash – A flash of greater than 135F is good. Not a limiting factor. If the flash is less than 135F, then you need to convey the information to the customer. This will be case by case if they can take. If the flash is 100F or less, this can become a difficult problem to move

Gravity- Typical is 0.85 to 0.92. API ~21 – 30. If the gravity gets over 0.92 g/ml or drops below 20 API, the material is pretty thick and can be hard to place (even more so in the winter). We could add some light ends, but that will drop the flash quickly and may cause another problem. Thick oil will have to be managed on a case by case basis.

Odor- Should not have a strong smell. Typical musty hydrocarbon smell. If has strong odor, this will affect where it can go. In strong odor cases, it is best to have customer have sample before shipping. Alamo is good in this respect, since their driver (alfredie, sp?) will QC before he leaves.

Choride / Halogens- The oil should have pass our chor –d- tect test. If it is over 1000 ppm, need to convey to customer.

Amines – We should not mix amines or other non hydrocarbon based material in black oil at any significant amount.

Solids- Typically, the solids should be less than a half of a percent. Much more than than, look to have problems. We should have decent solids levels unless we are having some processing difficulties.

Color- This product is typically black. If it is lighter and has some clarity, try to segregate if possible. Lighter oils with decent color could have better pricing.

Water- The less water the better. Over 2 to 3% starts to cause problems. Generally this is not much of a problem.

LIGHT ENDS- Must be separated into groups-

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Unrestricted Light ends from Kinder Morgan (Lance Wiley)- We get this material in slugs. It comes from line flushes at KM's terminal where they handle various fuels such as gasoline, kerosene, diesel, bio-diesel. The material usually has a gravity of ~0.8, amber color, somewhat opaque, hydrocarbon smell, chlorides from 5 to 200 ppm, sulfur from 50 to ~300 ppm. The lower the chloride levels, the better the price. This material is "Unrestricted Light Ends" meaning that it can be sold into markets where it can be burned as a fuel. This allows us to get a better price than we could if it was "restricted Light Ends". We can sell to a variety of places. In almost all cases, the first thing we need to do with the KM light ends is get a sample as soon as we know they want to send. Test the sample for SG, color, odor (whatever the profile says), and send to an external lab for organic chlorides and total sulfur. Hope that the chlorides are less than 10 ppm for best price. A sulfur number under a 100 is desirable. A couple of hundred OK, more than that, pricing will suffer.

Lancer- Thuy- Lancer usually pays at the higher end of the spectrum based upon a formula on published pricing. They also like us to deliver to various parts of Oklahoma, AR, etc. Need low Sulfur and Cl- content.

Scott Rainey (Hydrocarbon Resource and Recovery (HRR) – Scott has been paying better recently. I would give him a chance on most all KM light ends to see where he is at.

Hutchinson & Hays – Jason Hemsley- Just recently took sample for ASTM D86 distillation. They are interested in buying ALL of the material. I told him we would consider a contract that gives them some large percentage, but pricing needs to be at or better than our current options. I told him that price now was $1.50 per gallon. Jason wants to fix the price with Platts. That is reasonable to me.

Alamo & Midstate would love to have it, but usually do not want to pay more than ~$0.85 per gallon. Use them as a backup

Jack Kessel – He can sometimes be quite competitive. Ususally requires samples. I had a dirty Toluene stream from KMCO that he paid us $1.75 per gallon on, much better than any others offer.

Chemorph – Carolyn may be able to sell, but historically has not been involved in this product.

Southeaster Chemicals –Louis Mattice – If you have no other outlets, may be worth a phone call.

Other Unrestricted Light Ends – CES generates ~1 – 4 truck loads per week of unrestreicted light ends. This material is generated from various processes. Typically the material has an amber to brown color. Cloudy, with typical hydrocarbon odor. This product goes to Midstate and Alamo. Pricing is $0.85 per gallon. We may have some room to raise the price. This material can change in composition dramatically from load to load, as such, we do not usually do any outside analysis on it. We test for , SG (or API), chor-d-tech, solids, and sometimes flash.

Restricted light ends- This material comes from either ZaCh or PPG La Porte. These solvent streams must be used as a solvent and not burned as fuel. If we develop any new customers to buy the solvent, we need to get them to sign a letter (on shared) that states they will not use the material in those ways.

Stream 3 – ZaCH- John Parker- We are taking this material as hazardous waste and then terminating the manifest at CES by recycling. This is typically done by removing the water, adjusting the pH, filtering, possibly distillation etc. After processing, it is sold as a product. This material contains primarily heptanes and toluene. Appearance is water white with a solvent odor. We currently sell to:

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Carolyn: She is selling to a company in Mexico. They have some pretty tight requirements. Toluene content must be LESS than 35%. pH to be between 5 and 9. Color and odor must be good. Carolyn sell the high strength toluene (greater than 50% but likes 70%) to another customer. They look for toluene content, color, and pH. pH less than 4 or over 10 needs to be communicated before shipment.

Southeastern Chemical- Louis sells to a Houston location. Wants good color. Specifies which name must be on our B/L. Requires a COA for each load. I just take ZaCh's analysis and put into a word document that has CES's logo.

PAR- Wendy is interested in this product. I have put off this customer until we get the stream back going smoothly. This should happen by mid may.

Methylene Chloride (MC or MeCl2)-

PAR- We currently sell most loads to PAR (North Carolina). They arrange for the pickup. The sales price is $0.06 per pound. We then provide the wt. tickets to Sochem and pay them a $300 commission per load. (Orig. Sochem was the one who provided this account). PAR seems to be the most flexible and efficient company to work with. My main contact is Wendy Herendeen. She is very easy to work with. Note we have non-competes in place with Sochem/PAR for MC

Besway- Mark Faulker- We sell via Scott Rainey. Scott sell to another broker who sells to Besway. Besway is the company that threatened to sue us for not selling distilled methylene chloride to them for an unprocessed price. We ended up with an agreement that we would offer them at least one load of MC per month (provided we have at least one to sell, they would have rights if we just produced one). The price for the first thee loads would be at the old price, from that point on, it would be at the lowest spot price we are selling to other customers. This is in effect through 2008, after which, we can sell or not sell to them. (see signed agreement to make sure all is being followed). My personal suggestion for working with this group is to be very careful and document any correspondences you have with them. Note that we have non competes in place with Scott for Besway and MC.

MRC (Montgomery-Rinehardt Corp)- Gary Leopard- This is a company that Carolyn found for us. It seems they continually try to go around her even though they should not. In addition, they are very difficult to work with, often setting up trucks, even loading, then backing out for one reason or another. My advice would be to only use them in absolutely necessary. Then if you must, make sure you have a full analysis and you make the terms very clear. Historically, they have agreed to $0.06 per pound, but we never actually have sold them anything. They are apparently interested in methanol and our stream 3. My opinion of this company is they are used to working with prime chemicals and have difficulty in our secondary market. They are not a great fit, but I would not rule them out if needed.

Southeastern Chemical – Louis Mattice, Jim Mylan. Louis bought one load of MC to sell to someone in Chicago. They would not accept due to claimed water and cloudiness. Retain showed water, cloudiness was to be argued due to the fact our MC is cloudy after pouring, but clears within 30 minutes. We are still working out who pays what for that load. The end result was we sent the

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load to Safety Clean in Ohio via Carolyn Yatsu. We lost potential revenue, but Mattice was glad we were able to find a home. I think he will be reasonable.

Base Oils- These primarily come from Shell (Joy Baker's account). When looking at base oils, the following is important:

Color- The lighter the better. The lab has a color wheel tester. Light amber (with no cloudiness) brings in the most money.

Gravity- Good to know, in the absence of a viscosity reading, this will have to do. FYI, the lab is in the process of setting up a viscometer. Once we have that, I expect all base oil loads will be tested. In general, they like viscocity similar to motor oil. Too thick is bad, too thin is bad.

Viscosity- Miles is working on getting our viscosity measurement apparatus in place. For base oils, a viscosity of 11 -12 is considered ideal, 8 -12 is good, less desirable is viscosities between 4-8. I believe the units are mm_2/s Think of over the counter motor oil. That is the target.

Water- The lower the better. Generally, if the oil is opaque, it has water. A quick test is to put a small amount of oil in a beaker and heat to see if it improves cloudiness. If it does, I often send the customer a picture of what it looks like after driving off the water. I would say that while the water content in itself is bad, what the customers are more worried about is the cloudiness.

Odor- Base oil should smell like motor oil. That is a mild hydrocarbon odor. Any amine, sulfur, alcohol, or any strong chemical smell can make it difficult to sell.

Color- From Amber to brown is good. That usually means it does not have a lot of additives or dyes. Color can range to about anything you have seen. Dark Green/Blue oils have been the most difficult to place. Right now if you have a green oil, try Smitties, then H&H.

Solids- Base oils need to be low in solids. High solids indicate the oil has other contaminants. Likely a dirty trailer.

Also keep in mind, that all oils are not base oils. Base oils have been processed more thoroughly than heavy oils from the Crude tower. When selling a base oil, it is good to know as much as you can about where it came from (a base oil suppier??), if not, the more information the better. There are some other chemical/ hydrocarbon mixes that look like base oils, but are not.

Who do you call to sell base oils:

Southcoast Terminals: Arsenio Garcia- They are a good customer and will likely be a bigger customer when we get our oil plant running. They will always check the oil before accepting. Any free water, solids, or differences than expected will result in a return. Arsenio is good to work with, and their location is close. The last load we sold to them was $2.50 per gallon delivered. Historically

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they have paid between $2.00 and $2.30 per gallon. But with oil prices going up, so does the price of our oils. Arsenio sells this product to a company in Mexico. Their specs are a little looser than what the US has, so he can sell a little wider range of materials.

Hutchinson & Hays- Jason- H&H process the base oils to upgrade. They have the most problems with very dark oils. They are located in Baytown, so it is easy to get the oil to them. They would like us to sell more to them. Historically, they are a little picky, and have not paid as much as Southcoast or Smitties. H&H is a big buyer in our Viscoplex viscosity modifiers. Typical prices to H&H is $1.80 to $2.30 per gallon.

Smitties: Smitties is an end user and buys oils from a variety of plants and brokers. They make a two cycle oil which allows them to take some of the green/blue oils. Smitties seem to be able to take a wider range of oils than most. The problem is we have to ship to their plant which is in Florida?? Anyways, it is a long ways away. My recommendation is to send some oil to them when you don't need them, because in the end you will need them.

Acetic Acid- Right now the only company I know that sends us Acetic acid is ZaCh. The material is ~50% acetic acid and is tea colored. The last load had white floaties in it. We had to sit on the load a while since no one wanted it due to the conc. and solids. We originally offered to Carolyn, but in the end only Scott Rainey was able to move. The price was only $0.01 per pound. For future shipments, make sure you have a home before accepting as a product. The acetic acid from ZaCh has been accepted and profiled to PSC so we can always send there (trans only, PSC bills ZaCh).

This "product" is only generated on a batch basis. According to conversations with Ron and John, they may not make any more acetic acid for some time.

Glycol (not RasGas)- We typically get in drums. The lab will test the glycol content by a special indicator strip. Saber has been the main purchaser, however, they are selective. They only want used ethylene glycols. If it is a mixed glycol, get as much information you can from supplier before committing to buy. Run by Saber first. They do not like solids. For example if the drums have butylene glycol, they will not want. Pricing is based on concentration. I believe the price is ~$0.80 per gallon for 50% material (check file for exact number).

Ethylene Glycol (RasGas)- At last check we had 2 to 3 truck loads of a 99.7% glycol that was water white. However, it had a hydrocarbon smell. To this point the only person we sold the hydrocarbon smelling glycol to was Mark Speets (Skyhawk) at $0.40 per gallon.

Hydrochloric Acid- Last sold to Skyhawk. However, they came to our offices to complain about the last loads we sent them. For future loads, they want us to have the drums of roughly equal wt. and the s.g. of each drum. They also noted, in the past we did not label the drums in a way that met minimum DOT and industry requirements.

THF- ZaCH will be making some stream 3 with THF in it in the near future. I never sold this product, but think that Chemorph and Southeastern would be interested. Others as well.

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Viscosity improver-

Ethanol

Butanol

Recovered Oil Skimmings-

CES Fuel-(DSO)-

Chemorph-

Skyhawk

Hyrocarbon Resources & Recovery

Gulf Stream Tanker Chartering

Alamo-

Midstate-

Smitties-

Hutchinson & Hayes-

Southcoast- Arsenio Garcia

Petroleum Express-

Sochem

4 R Marketing-

Dave Alberts-

Saber-

Rampac-

T&H Plastics- Tony Mendoza (Owner)

EPAHO044000421

Refinery Caustic- I could write a book. This first section will deal primarily with caustics from light end treating and from chemical plants. The caustic generated from kerosene and jet fuel treating (naphthenic) will be discussed separately later. Note that most caustics if let sit for long periods of time often have fine black particles that will settle out.

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EPAHO044000422

oils or significant solids. By most criteria, Citgo caustitc is as good as your going to get from a large refinery. Some mills have complained that Citgo's caustic has a hydrocarbon smell. Not much we can do about it. Clark is our main contact to Citgo. Citgo's main person is Mike Robinson. Citgo would prefer to load all the caustic by barge. At this time they only provide truck loaders from M- Thursday, but this is subject to weekly change. My advise is to pin down Clark on what the loading schedule is every chance you get. Do not assume nothing.

Concerns: Historically Citgo has put all of their caustics into their waste water treating plant (WWTP). It has always been poorly understood by us and Citgo, what their capabilities are. They fluctuate between being able to handle internally and having to send out the caustics. Obviously, if Citgo was to start taking the caustic into their WWTP again, it would have a major impact on our caustic business. Most every mill we service with the sole exception of De Ridder is dependent on this caustic.

Enterprise – Complicated. Has several distinctly different streams

Stream 1- Primary component is Potassium hydroxide. Usually running 25 to 40% as KOH. Be careful, we often report the concentration as NaOH. To covert, you must multiply by 40/23 to get to KOH. Volume is ~1 per week. We can send this to Magpro in Camden TN via Sochem. They pay us $1600 per load. Often Ryan sends to haz. Disposal. Can go to De Ridder, but they usually do not like the strong concentration. As Adam noted, if it does go, we should send on the weekend if possible, also it needs to go to the back tank so it has a chance to be diluted before going to the scrubber. Too high for De Ridder (& fluctuates)

Stream 2 – Similar to Stream 1, different color. We do not get in very often. Also can go to magpro as does stream 1. Ditto haz waste and DeRidder. Too high for De Ridder (& fluctuates)

Stream 3 – We do not get a lot of this stream. It can be very high in sodium hydroxide, but also has ~500 ppm potassium. As long as we don't get very many of them, they can either go to the Citgo Tank (Currently 606), or deRidder

West Texas – This is the "sloppiest" stream. Typically low sodium (<5%), tends to have black solids both floating and on bottom. I think a lot of the initial problems we had at De Ridder was due to this stream. Also, we receive more of this stream than the others. West Texas is VERY high in Chlorides. Make sure it ONLY goes to De Ridder or is sent out as haz waste.

MTBE – Moderately high in Potassium and Chlorides. It should only go to De Ridder. We may have put this material in the citgo tank in the past when De Ridder was down, but I do not recommend it ongoing.

Dana's getting for 2-3 mos.

Methanol – At one time we were taking a stream from Enterprise that had up to 40% methanol. I am not sure if we are still taking, and if so, where it is going. Ask Dana, it is her account.

Targa- I don't have any data on this from the top of my head. This material goes into our citgo caustic.

Enterprise Port Allen – New account from Dana. Caustic is pretty strong (sample has ~26%). However, it has a moderately strong ammonia smell. Thad suggested to have total nitrogen run on the sample before moving forward. → TEST FOR TOTAL NITROGENS (NH_4) → CAN'T GO STRAIGHT!!! IT DOESN'T MAGICALLY MIX!!!

Arkema- Bright cherry red to cloudy red. Musky mercaptan odor. I would be very careful about sending this to any mill but De Ridder, even then, I would put it into the KMTEX tank and circulate before sending. This

would be a good candidate to treat at CES as a haz wastewater. The color and odor have caused us problems at Pineville, possibly one of the reasons we are no longer shipping there.

RasGas – New supplier of caustic. Their analysis shows the caustic strength to be ~4%. In my prior dealings with this caustic, it tended to have a strong mercaptan odor. Some thought will have to go into where this caustic is used. De Ridder is likely OK. I would be careful not to give a slug to a papermill, it will likely be too weak, and the odor is a question mark. It would be nice to get a sample before the boat comes in. Matt noted that some of the caustic may be treated as waste water at CES. NO SAMPLE (GET A SAMPLE FROM TANK AS AN IDEA) *PUSH RAMIZ

TOO WEAK- WILL HAVE ODOR.

Shell Yabacoa- Puerto Rico- Potential new account. Sample was given to thad. The analysis looks good, almost too good. I would not plan on the caustic always containing 16% NaOH. I would think it will more likely be +/- 10%. We need to get a contract in place, but once done, they will ship ~20 to 30 -20MT ISO containers per month. Historically, they overloaded the trailers which made it difficult to move them from the port. Make sure you correspond with them that they cannot overload. The trailer and truck total wt. cannot be over 80,000 lbs. = PUT SOMETHING IN CONTRACT ABOUT NOT OVERLOADING US!

Citgo Naphthenate- This caustic is loaded from frac tanks. Volume is 10 to 20 per month. This caustic is sprung with sulfuric acid at CES to a pH of 2, to recover the naphthenic acid. This acid could possibly be sold to Merichem or other foreign interests. I would value the material at no less than $0.30 per pound. It may be worth as much as $0.60 per pound. Whoever is buying will want the following analysis:

CHECK TO SEE IF PUMP HAS BEEN REPAIRED. (CARLA KNOWS.)

•30¢lb for crude naphthenic acid

GORDON – MERICHEM'S UP OVER CHEMICALS; IT WILL GO THROUGH THIS GUY NO MATTER WHAT – SUGGEST GOING THRU CAROLYN.

TAN- Total Acid Number- expressed in mgKOH/g sample. This is a basic titration

Unsaponifiables- Measures the amount of neutral oils in the acid (i.e. kerosene). This test is usually done by distillation.

Phenolics- Total Phenolics by 4 amino pyrene method (check spelling, ask Miles).

%Water- By KF

Each customer may have specific requirements. Best to provide on a as needed basis.

THIS IS CURRENTLY IN AN ISOCONTAINER... WE ARE MAKING PRODUCT... NAPTHENIC ACID SEND IT IN AN ISOCONTAINER

Sochem-

Paper Mills Come from

De Ridder- Typcally 3 -5 loads per day. Can take high chlorides and potassium. Do not send high sulfides (greater than ~1%). On a regular basis, should be less than 0.1% sulfides. They like lower strength caustics ~4 to 7%. Have trouble when we send them caustic with big swings in concentration. Can use Citgo caustic as is if needed. Likes to receive caustic 7 days per week.

Mansfield- Newer outlet. Takes 3 loads per day total (~~Sochem sends them one load per day M-Th~~). We send them 2 loads per day M-Th, and 3 loads per day F-Su if possible). They need to have the third load arrive at LEAST 8 hrs after the first load. They have limited storage. Takes primarily Citgo Caustic. NO Chlorides, potassium. Sulfides OK.

DOWN NEXT TWO. 5/13

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Hodge – Currently down, but expected to be back up in Mid May. Will take 2 -3 loads per day. Weekend is possible. Citgo preferred. NO potassium or high chlorides.

Potlatch- One of the furthest mills. Can take 3 loads per day /7 days per week of Citgo type caustic. NO potassium, high chlorides. Want to have rail cars

Pine Bluff- Can take several barges per month. River conditions can be a liability. Only mill to have agreed to take cresylic caustic. They agreed to take a Citgo blend of 2/3 citgo sulfidic caustic, 1/3 citgo cresylic. They like the sodium hydroxide concentration to be over 10%. Main contact is Chuck Seal. NO high potassium/high chlorides. Higher sulfide OK.

Pineville- Used to be our largest outlet taking 6 loads per day. 2 episodes with odor (phenols) got us kicked out. One time, phenolic (aka cresylic) caustic was the culprit, the second time happened when we sent them some Arkema caustic. Not sure if it was coincidence or not. We are hopeful that they will start taking caustic again in the future. However, the volume will likely be less (~2 loads per day??). Pineville used to take cresylic caustic, that will most likely not happen again.

Texarcanna- Keep talking about taking, but never has given the official go ahead. One mill that would take rail if made available. Consumption is expected to be ~2-3 loads per day. Prefers the Citgo type caustic. No high potassium/chlorides.

Evadale- Used to be a big consumer, but ran into chloride problems. Now can not take caustic as a result. They are in the process of putting in some technology that will allow them to remove the chlorides from their caustic. Once this is in place (~1Q,2009), they expect to consume ~20 trucks per day. While entirely possible, seeing is believing. Like most mills, they want low chlorides, low potassium caustic. i.e. citgo. Robert Sasser

West Monroe – Newest mill that we are to send to. Initially wants 2 -3 loads per day of citgo type caustic. Could take 7 days per week. They make food grade products, so we will see if they can use our caustic long term.

Monticello – On again , off again mill. Likes citgo type of caustic. Long distance combined with inconsistent usuage has made them a secondary if not third-ary option.

Bogaloosa- Sochem sells to this mill. They use Chalmette and motiva caustic. Citgo caustic is not qualified due to relative weakness and odor.

Black Oil- Two different markets depending on ash content. If ash is below 1.0%, Carrie (vertex) or Scott Rainey usually offer the best price. Carrie usually requires a sample. She can be slow to work with. For oil with higher ash, we have sold almost exclusively to either Midstate or Alamo. Midstate (Lloyd) always wants the gravity in API, usually over 20. Alamo (Charlie) filters all of his oil at loading, so it has happened on a semi regular basis, he will reject our oil due to waxes and or solids. Both Midstate and Alamo can be a little unpredictable in their pickups. Alamo is probably worse. Both Alamo and Midstate use the oil (and light ends) to make paving asphalt . When the temperatures get lower than 40 F, road crews can't lay pavement. As such, during cold spells, we may have difficulty moving to these markets.

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Right now most black oil is being produced by Lubrizol recovered oil skimmings. This feedstock is extremely variable in quality and can vary by a large amount in frequency. What we look for in order of significance; ash (less than 1% good, over 2% means only going to Alamo or Midstate), solids, the lower the better (if it clogs a small filter, Alamo will not take it), gravity (either API or SG, the heavier it is (gravity less than 20, makes it hard to sell), flash (under ~135F is considered high flash, over 135, low flash chloride levels (chlor-d-tect) should be less than 1000. Odor should not be especially bad. Strong ammonia smells or dead something smells can be a deal breaker. Vertex has been able to handle the strong smell if the solids are not too high. You do want to make sure you don't mix the strong smell with high ash if at all possible.

Pricing- High ash to Alamo and Midstate- pretty standard $0.85 per gallon. May be some room to move up, I would only do it after we send them some good loads for a while.

Low Ash (and typically low flash)- Vertex and HRR (Scott). They will pay off plats. Vertex should give you a price, typically after looking at a sample and taking a few days, Scott will also usually require a sample and take a day or two. Prices range from $1.05 to $1.40 /gallon.

Ash – Under 0.7 wt % is good. Up to 1% OK, over that, options start narrowing, over 2.5%, likely only going to go to Alamo or Midstate

Flash – A flash of greater than 135F is good. Not a limiting factor. If the flash is less than 135F, then you need to convey the information to the customer. This will be case by case if they can take. If the flash is 100F or less, this can become a difficult problem to move

Gravity- Typical is 0.85 to 0.92. API ~21 – 30. If the gravity gets over 0.92 g/ml or drops below 20 API, the material is pretty thick and can be hard to place (even more so in the winter). We could add some light ends, but that will drop the flash quickly and may cause another problem. Thick oil will have to be managed on a case by case basis.

Odor- Should not have a strong smell. Typical musty hydrocarbon smell. If has strong odor, this will affect where it can go. In strong odor cases, it is best to have customer have sample before shipping. Alamo is good in this respect, since their driver (alfredie, sp?) will QC before he leaves.

Choride / Halogens- The oil should have pass our chor –d- tect test. If it is over 1000 ppm, need to convey to customer.

Amines – We should not mix amines or other non hydrocarbon based material in black oil at any significant amount.

Solids- Typically, the solids should be less than a half of a percent. Much more than than, look to have problems. We should have decent solids levels unless we are having some processing difficulties.

Color- This product is typically black. If it is lighter and has some clarity, try to segregate if possible. Lighter oils with decent color could have better pricing.

Water- The less water the better. Over 2 to 3% starts to cause problems. Generally this is not much of a problem.

LIGHT ENDS- Must be separated into groups-

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Unrestricted Light ends from Kinder Morgan (Lance Wiley)- We get this material in slugs. It comes from line flushes at KM's terminal where they handle various fuels such as gasoline, kerosene, diesel, bio-diesel. The material usually has a gravity of ~0.8, amber color, somewhat opaque, hydrocarbon smell, chlorides from 5 to 200 ppm, sulfur from 50 to ~300 ppm. The lower the chloride levels, the better the price. This material is "Unrestricted Light Ends" meaning that it can be sold into markets where it can be burned as a fuel. This allows us to get a better price than we could if it was "restricted Light Ends". We can sell to a variety of places. In almost all cases, the first thing we need to do with the KM light ends is get a sample as soon as we know they want to send. Test the sample for SG, color, odor (whatever the profile says), and send to an external lab for organic chlorides and total sulfur. Hope that the chlorides are less than 10 ppm for best price. A sulfur number under a 100 is desirable. A couple of hundred OK, more than that, pricing will suffer.

Lancer- Thuy- Lancer usually pays at the higher end of the spectrum based upon a formula on published pricing. They also like us to deliver to various parts of Oklahoma, AR, etc. Need low Sulfur and Cl- content.

Scott Rainey (Hydrocarbon Resource and Recovery (HRR) – Scott has been paying better recently. I would give him a chance on most all KM light ends to see where he is at.

Hutchinson & Hays – Jason Hemsley- Just recently took sample for ASTM D86 distillation. They are interested in buying ALL of the material. I told him we would consider a contract that gives them some large percentage, but pricing needs to be at or better than our current options. I told him that price now was $1.50 per gallon. Jason wants to fix the price with Platts. That is reasonable to me.

Alamo & Midstate would love to have it, but usually do not want to pay more than ~$0.85 per gallon. Use them as a backup

Jack Kessel – He can sometimes be quite competitive. Ususally requires samples. I had a dirty Toluene stream from KMCO that he paid us $1.75 per gallon on, much better than any others offer.

Chemorph – Carolyn may be able to sell, but historically has not been involved in this product.

Southeaster Chemicals –Louis Mattice – If you have no other outlets, may be worth a phone call.

Other Unrestricted Light Ends – CES generates ~1 – 4 truck loads per week of unrestreicted light ends. This material is generated from various processes. Typically the material has an amber to brown color. Cloudy, with typical hydrocarbon odor. This product goes to Midstate and Alamo. Pricing is $0.85 per gallon. We may have some room to raise the price. This material can change in composition dramatically from load to load, as such, we do not usually do any outside analysis on it. We test for , SG (or API), chor-d-tech, solids, and sometimes flash.

Restricted light ends- This material comes from either ZaCh or PPG La Porte. These solvent streams must be used as a solvent and not burned as fuel. If we develop any new customers to buy the solvent, we need to get them to sign a letter (on shared) that states they will not use the material in those ways.

Stream 3 – ZaCH- John Parker- We are taking this material as hazardous waste and then terminating the manifest at CES by recycling. This is typically done by removing the water, adjusting the pH, filtering, possibly distillation etc. After processing, it is sold as a product. This material contains primarily heptanes and toluene. Appearance is water white with a solvent odor. We currently sell to:

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Carolyn: She is selling to a company in Mexico. They have some pretty tight requirements. Toluene content must be LESS than 35%. pH to be between 5 and 9. Color and odor must be good. Carolyn sell the high strength toluene (greater than 50% but likes 70%) to another customer. They look for toluene content, color, and pH. pH less than 4 or over 10 needs to be communicated before shipment.

Southeastern Chemical- Louis sells to a Houston location. Wants good color. Specifies which name must be on our B/L. Requires a COA for each load. I just take ZaCh's analysis and put into a word document that has CES's logo.

PAR- Wendy is interested in this product. I have put off this customer until we get the stream back going smoothly. This should happen by mid may.

Methylene Chloride (MC or MeCl2)- Send Analysis to ongoing customers & samples to new...

PAR- We currently sell most loads to PAR (North Carolina). They arrange for the pickup. The sales price is $0.06 per pound. We then provide the wt. tickets to Sochem and pay them a $300 commission per load. (Orig. Sochem was the one who provided this account). PAR seems to be the most flexible and efficient company to work with. My main contact is Wendy Herendeen. She is very easy to work with. Note we have non-competes in place with Sochem/PAR for MC

Besway- Mark Faulker- We sell via Scott Rainey. Scott sell to another broker who sells to Besway. Besway is the company that threatened to sue us for not selling distilled methylene chloride to them for an unprocessed price. We ended up with an agreement that we would offer them at least one load of MC per month (provided we have at least one to sell, they would have rights if we just produced one). The price for the first thee loads would be at the old price, from that point on, it would be at the lowest spot price we are selling to other customers. This is in effect through 2008, after which, we can sell or not sell to them. (see signed agreement to make sure all is being followed). My personal suggestion for working with this group is to be very careful and document any correspondences you have with them. Note that we have non competes in place with Scott for Besway and MC.

MRC (Montgomery-Rinehardt Corp)- Gary Leopard- This is a company that Carolyn found for us. It seems they continually try to go around her even though they should not. In addition, they are very difficult to work with, often setting up trucks, even loading, then backing out for one reason or another. My advice would be to only use them in absolutely necessary. Then if you must, make sure you have a full analysis and you make the terms very clear. Historically, they have agreed to $0.06 per pound, but we never actually have sold them anything. They are apparently interested in methanol and our stream 3. My opinion of this company is they are used to working with prime chemicals and have difficulty in our secondary market. They are not a great fit, but I would not rule them out if needed.

Southeastern Chemical – Louis Mattice, Jim Mylan. Louis bought one load of MC to sell to someone in Chicago. They would not accept due to claimed water and cloudiness. Retain showed water, cloudiness was to be argued due to the fact our MC is cloudy after pouring, but clears within 30 minutes. We are still working out who pays what for that load. The end result was we sent the

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load to Safety Clean in Ohio via Carolyn Yatsu. We lost potential revenue, but Mattice was glad we were able to find a home. I think he will be reasonable.

Base Oils- These primarily come from Shell (Joy Baker's account). When looking at base oils, the following is important:

Color- The lighter the better. The lab has a color wheel tester. Light amber (with no cloudiness) brings in the most money.

Gravity- Good to know, in the absence of a viscosity reading, this will have to do. FYI, the lab is in the process of setting up a viscometer. Once we have that, I expect all base oil loads will be tested. In general, they like viscocity similar to motor oil. Too thick is bad, too thin is bad.

Viscosity- Miles is working on getting our viscosity measurement apparatus in place. For base oils, a viscosity of 11 -12 is considered ideal, 8 -12 is good, less desirable is viscosities between 4-8. I believe the units are mm_2/s Think of over the counter motor oil. That is the target.

Water- The lower the better. Generally, if the oil is opaque, it has water. A quick test is to put a small amount of oil in a beaker and heat to see if it improves cloudiness. If it does, I often send the customer a picture of what it looks like after driving off the water. I would say that while the water content in itself is bad, what the customers are more worried about is the cloudiness.

Odor- Base oil should smell like motor oil. That is a mild hydrocarbon odor. Any amine, sulfur, alcohol, or any strong chemical smell can make it difficult to sell.

Color- From Amber to brown is good. That usually means it does not have a lot of additives or dyes. Color can range to about anything you have seen. Dark Green/Blue oils have been the most difficult to place. Right now if you have a green oil, try Smitties, then H&H.

Solids- Base oils need to be low in solids. High solids indicate the oil has other contaminants. Likely a dirty trailer.

Also keep in mind, that all oils are not base oils. Base oils have been processed more thoroughly than heavy oils from the Crude tower. When selling a base oil, it is good to know as much as you can about where it came from (a base oil suppier??), if not, the more information the better. There are some other chemical/ hydrocarbon mixes that look like base oils, but are not.

Who do you call to sell base oils:

Southcoast Terminals: Arsenio Garcia- They are a good customer and will likely be a bigger customer when we get our oil plant running. They will always check the oil before accepting. Any free water, solids, or differences than expected will result in a return. Arsenio is good to work with, and their location is close. The last load we sold to them was $2.50 per gallon delivered. Historically

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they have paid between $2.00 and $2.30 per gallon. But with oil prices going up, so does the price of our oils. Arsenio sells this product to a company in Mexico. Their specs are a little looser than what the US has, so he can sell a little wider range of materials.

Hutchinson & Hays- Jason- H&H process the base oils to upgrade. They have the most problems with very dark oils. They are located in Baytown, so it is easy to get the oil to them. They would like us to sell more to them. Historically, they are a little picky, and have not paid as much as Southcoast or Smitties. H&H is a big buyer in our Viscoplex viscosity modifiers. Typical prices to H&H is $1.80 to $2.30 per gallon.

Smitties: Smitties is an end user and buys oils from a variety of plants and brokers. They make a two cycle oil which allows them to take some of the green/blue oils. Smitties seem to be able to take a wider range of oils than most. The problem is we have to ship to their plant which is in Florida?? Anyways, it is a long ways away. My recommendation is to send some oil to them when you don't need them, because in the end you will need them.

Acetic Acid- Right now the only company I know that sends us Acetic acid is ZaCh. The material is ~50% acetic acid and is tea colored. The last load had white floaties in it. We had to sit on the load a while since no one wanted it due to the conc. and solids. We originally offered to Carolyn, but in the end only Scott Rainey was able to move. The price was only $0.01 per pound. For future shipments, make sure you have a home before accepting as a product. The acetic acid from ZaCh has been accepted and profiled to PSC so we can always send there (trans only, PSC bills ZaCh).

This "product" is only generated on a batch basis. According to conversations with Ron and John, they may not make any more acetic acid for some time.

Glycol (not RasGas)- We typically get in drums. The lab will test the glycol content by a special indicator strip. Saber has been the main purchaser, however, they are selective. They only want used ethylene glycols. If it is a mixed glycol, get as much information you can from supplier before committing to buy. Run by Saber first. They do not like solids. For example if the drums have butylene glycol, they will not want. Pricing is based on concentration. I believe the price is ~$0.80 per gallon for 50% material (check file for exact number).

Ethylene Glycol (RasGas)- At last check we had 2 to 3 truck loads of a 99.7% glycol that was water white. However, it had a hydrocarbon smell. To this point the only person we sold the hydrocarbon smelling glycol to was Mark Speets (Skyhawk) at $0.40 per gallon.

Hydrochloric Acid- Last sold to Skyhawk. However, they came to our offices to complain about the last loads we sent them. For future loads, they want us to have the drums of roughly equal wt. and the s.g. of each drum. They also noted, in the past we did not label the drums in a way that met minimum DOT and industry requirements.

THF- ZaCH will be making some stream 3 with THF in it in the near future. I never sold this product, but think that Chemorph and Southeastern would be interested. Others as well.

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Viscosity improver-

Ethanol

Butanol

Recovered Oil Skimmings-

CES Fuel-(DSO)-

Chemorph-

Skyhawk

Hyrocarbon Resources & Recovery

Gulf Stream Tanker Chartering

Alamo-

Midstate-

Smitties-

Hutchinson & Hayes-

Southcoast- Arsenio Garcia

Petroleum Express-

Sochem

4 R Marketing-

Dave Alberts-

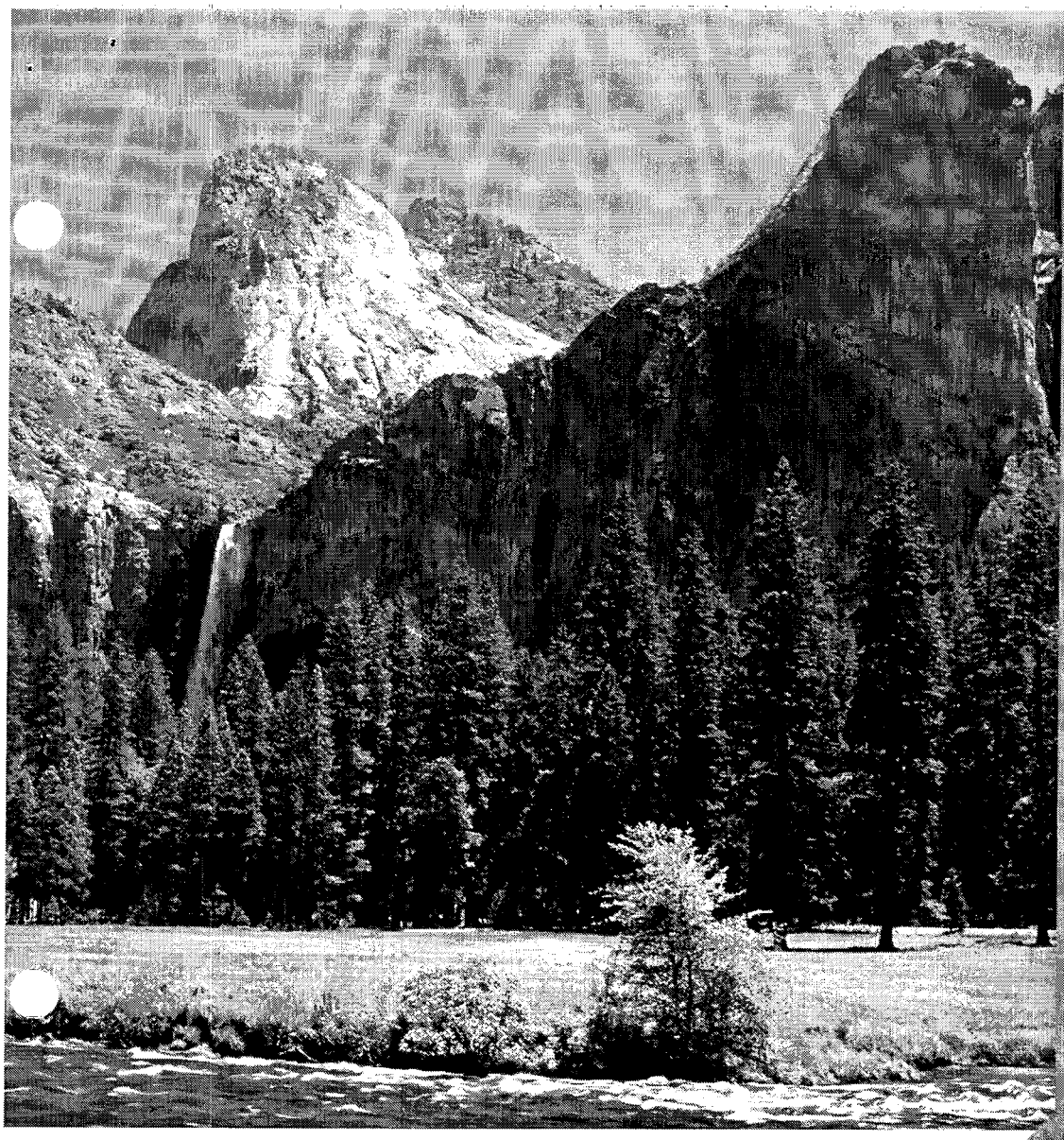
Saber-

Rampac-

T&H Plastics- Tony Mendoza (Owner)

EPAHO044000431

#3



CAUSTIC MANAGEMENT SERVICES

MERICHEM

EPAHO044000432

CAUSTIC MANAGEMENT SERVICES

A RESPONSIBLE AND RELIABLE SOLUTION TO SPENT CAUSTIC HANDLING

Disposition of spent caustics, a product of caustic treating, requires safe, responsible handling to meet environmental requirements and avoid environmental liabilities and regulatory compliance violations. For over 60 years, Merichem has provided technical, economical, and environmentally responsible caustic handling solutions to the refining and petrochemical industries around the world.

Caustic treating is an effective, economical, and proven means of removing hydrogen sulfide, mercaptans, organic acids, and other impurities from hydrocarbons in the refining, petrochemical, and natural gas industries. And in Merichem's manufacturing plants, spent caustics are used either as feedstocks or as a substitute for other commercial products and thus do not constitute hazardous wastes.

CATAGORIES OF SPENT CAUSTICS

Merichem handles three categories of spent caustics: sulfidic, naphthenic and cresylic.

- **Sulfidic Caustics** typically include sodium sulfide, sodium hydrosulfide, and sodium mercaptides and are produced from caustic treating of fuel gas, liquefied petroleum gas (LPG) and gasoline as well as various hydrocarbon and gas streams in petrochemical and natural gas plants.

- **Naphthenic Caustics** are produced from the weak caustic washing of crude oil middle distillate fractions to remove the naturally occurring naphthenic acids. Sources include jet fuels, kerosene, diesel, furnace oils and lubricating oils.

- **Cresylic Caustics** are characterized by the presence of aromatic acid oils and typically are produced by caustic washing FCC heavy cracked naphtha streams. They are also produced in coal coking operations and synthetic fuel plants.

Below is an overview of a typical refinery operation illustrating the production of spent caustics from various hydrocarbon fractions.

SOURCE	STREAM	CAUSTIC PRODUCED
Crude Distillation Unit	Off Gas	Sulfidic Caustic
	Saturated LPG	
	LSR Naphtha	
	Kerosene	Naphthenic Caustic
	Diesel	
FCC	Unsaturated LPG	Sulfidic Caustic
	Light FCC Naphtha	
	Heavy FCC Naphtha	Cresylic Caustic
Coker	Coker Off Gas	Sulfidic Caustic
	Light Coker Naphtha	

HOW WE USE YOUR SPENT CAUSTICS

If spent caustics are disposed of (or held with the intention of ultimate disposal), then they are considered waste materials. But when recycled as feedstocks to make a product, or used as a substitute for other commercially available products, these spent caustics are excluded from regulation as hazardous waste.

Spent caustics represent feedstocks for our two manufacturing plants. Our manufacturing facility at Greens Bayou in Houston, Texas, uses the cresylic caustics in the production of high purity cresylic acid and derivative products used in applications such as:

- Phenolic Resins
- Herbicides
- Wire Enamel Solvents
- Antioxidants

Our manufacturing facility in Tuscaloosa, Alabama, utilizes the naphthenic caustics in the production of a wide range of high quality naphthenic acids and derivative products used in a variety of applications such as:

- Tire Cord Adhesion Promoters
- Wood Preservatives
- Paint and Ink Driers
- Fuel Additives
- Metalworking and Lubricant Additives

Merichem's proprietary manufacturing process in Houston, Texas uses sulfidic caustic as a substitute for other commercially available chemical products such as caustic soda, sodium carbonate solutions and brine. Substitution for other commercially available products is also considered a non-waste by the EPA.

RECYCLING PROVIDES NON-WASTE STATUS

The U.S. Environmental Protection Agency (EPA) has recognized that the use of cresylic and naphthenic caustics as feedstocks to produce cresylic and naphthenic acids is a non-waste activity and therefore has excluded these spent caustic streams from the definition of hazardous waste.

Worldwide, spent caustics as they are used by Merichem are not wastes under the Basel Convention in that "disposal" does not include resource recovery recycling, reclamation, direct re-use or alternative uses of such materials.

DEPENDABLE, RISK-FREE HANDLING OF SPENT CAUSTICS

Merichem provides a unique service to the industry through our extensive transportation and terminalling infrastructure. Our years of experience and expertise are crucial in developing a supply chain model that meets your needs. We can safely and responsibly transport your spent caustics via tank truck, iso-container, rail car, barge, or ocean-going tanker to ensure you receive the most cost-effective solution.

We are available to answer any questions regarding your specific need in handling your spent caustics or other products produced at your facility. We look forward to working with you in developing a responsible and reliable solution in handling your spent caustics.

FIVE REASONS TO CONTACT US TODAY

1 - To have a more cost-effective means of handling your spent caustics.

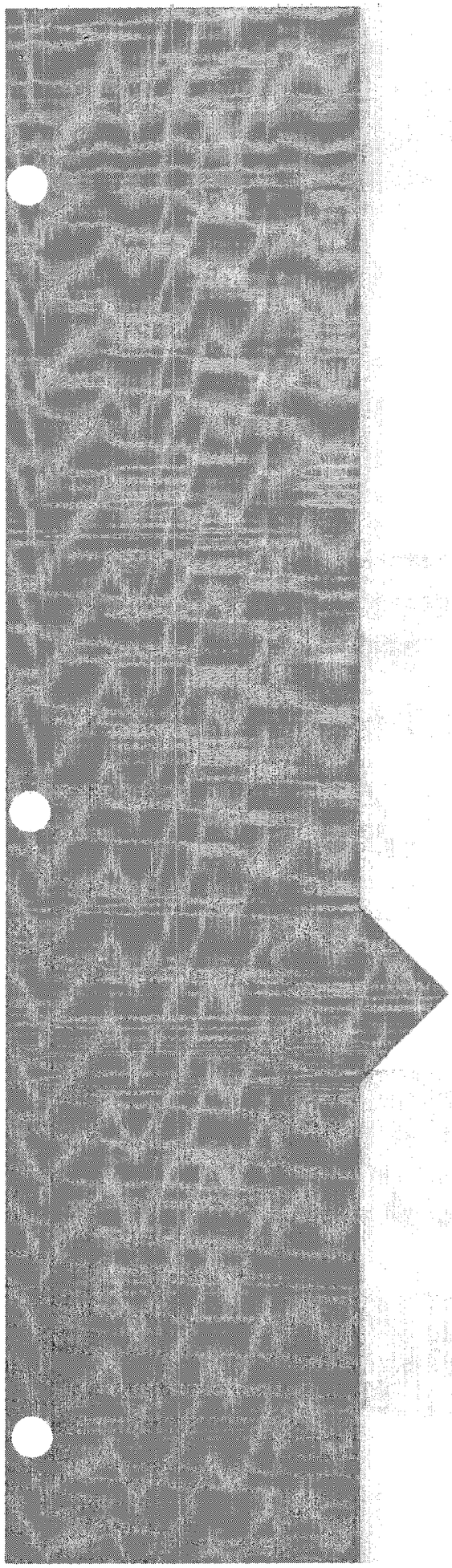
2 - To minimize your spent caustic operating and permitting concerns due to environmental risks associated with regulatory compliance.

3 - To have a reliable outlet for handling your spent caustics.

4 - To have assurances that your spent caustics are handled in a responsible and lawful manner.

5 - To benefit from our superior technical service and spent caustic treating expertise.

For more information call us today at (713) 428-5027 or email us at causticservices@merichem.com.



MERICHEM

5455 Old Spanish Trail, Houston, Texas 77023
Telephone: (713) 428-5027
Fax: (713) 926-3617
E-mail: causticservices@merichem.com
Website: www.merichem.com

Proposed Caustic Action Plan

May 6, 2008

Ask Gary - Any reason CITGO can't
go for neutralization?

Action Plan for Citgo, Enterprise and, Qatar Caustic

- Bring up Arkema

Step ½: Strictly abide by Citgo Caustic Distribution Schedule

Step 1: Get Enterprise Splitters 1 (K0H), 2 (KOH), 3 (NaOH), homes somewhere > Splitter 3 should be easy (strong NaOH), Splitters 1 & 2 may be placed somewhere needing neutralization.

Step 2: Set-up to treat Enterprise weak caustic (West Texas and MTBE) at CES. (We treat it here...)

Step 3: Take one barge off rent now, ASAP. CES will do the cleaning.

Step 4: Find one more plant within 170 miles to distribute Citgo Caustic (important, but not critical). Then use Mansfield (3/day), extra plant, and DeRidder (9/day) to get at least one barge of caustic per month picked-up and taken to KMTEX (by barge) and to be delivered by CES trucks.

Step 5: Use a second barge to move from Citgo to Pine Bluff (AR) (with 1/3 phenolic caustic each time) every 6 weeks.

Step 6: Truck balance of caustic out of Citgo at a rate of 3 per day (Monday – Thursday) directly to outlets listed on Citgo Caustic Distribution Schedule.

Step 7: Get permits from the States' of Texas and Louisiana for CES trucks to haul more weight. Have contractors and CES trucks to load max weight (80,000 pounds). 3 Axle Trailers

Step 8: As soon as CES is taking Enterprise at 4904 Griggs Rd, (Houston, TX), empty Tank 606. This will allow Tank 606 to receive caustic from overseas, or use Stolt tank (New Orleans).

Step 9: Take off rent small tanks at KMTEX. Decide the future of Tank 606 after overseas business from Qatar ends. This will be based on additional distribution points near KMTEX and/or use of railcars that can reach paper mills farther away.

*** * Priority of Steps not necessarily in order * ***

- QATAR CAUSTIC is 50% & can go to further away distribution points.

Citgo Lake Charles (LA)
Caustic Distribution Schedule

If Potlatch takes a barge, will they take trucks.

Miles from KMTEX	City, State	Loads per Day	Travel
240	West Monroe, LA Rail T.	3	• Rail from KMTEX (Port Arthur) • Straight from Citgo (Lake Charles)
220	Hodge, LA T.	3	• Rail from KMTEX • Straight from Citgo
175	Mansfield, LA No Loads Next two.	3	• Rail from KMTEX • Straight from Citgo • Truck from KMTEX
350	Potlatch Corp. 5082 Highway 4N Arkansas City, AR 20 rail cars	3	• Rail from KMTEX • Straight from Citgo Yellow Band
100	DeRidder, LA	4 - 5	• Trucks from KMTEX
250	Texarkana, TX	3	• Rail from KMTEX • Straight from Citgo
46	Evadale, TX	3 - 6	• Trucks from KMTEX
435	Pine Bluff, AR	1 - 2 Barges Per/Month	• Barge directly from Citgo
21	Orange, TX	3	• Trucks from KMTEX

NOTE: West Monroe

Pineville, LA is 155 miles from KMTEX, Port Arthur, TX.

Late - outbound Neutralization

607 - Inbound only for liquor / digestion

2

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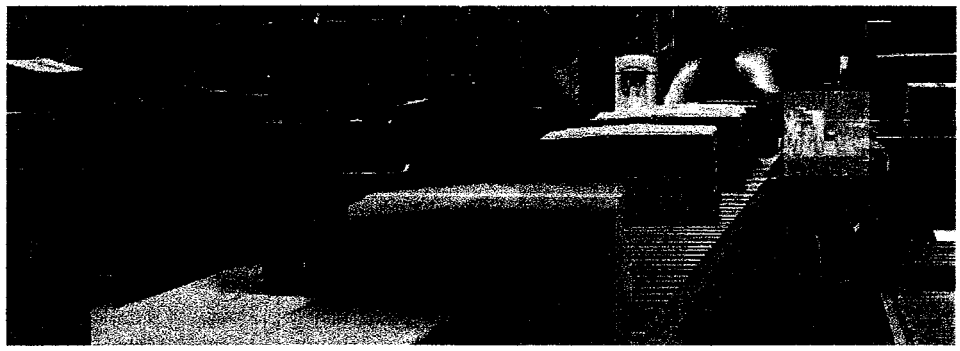
- Industrial
- Linerboard
- Specialty Products
- RFID
- **Facilities**



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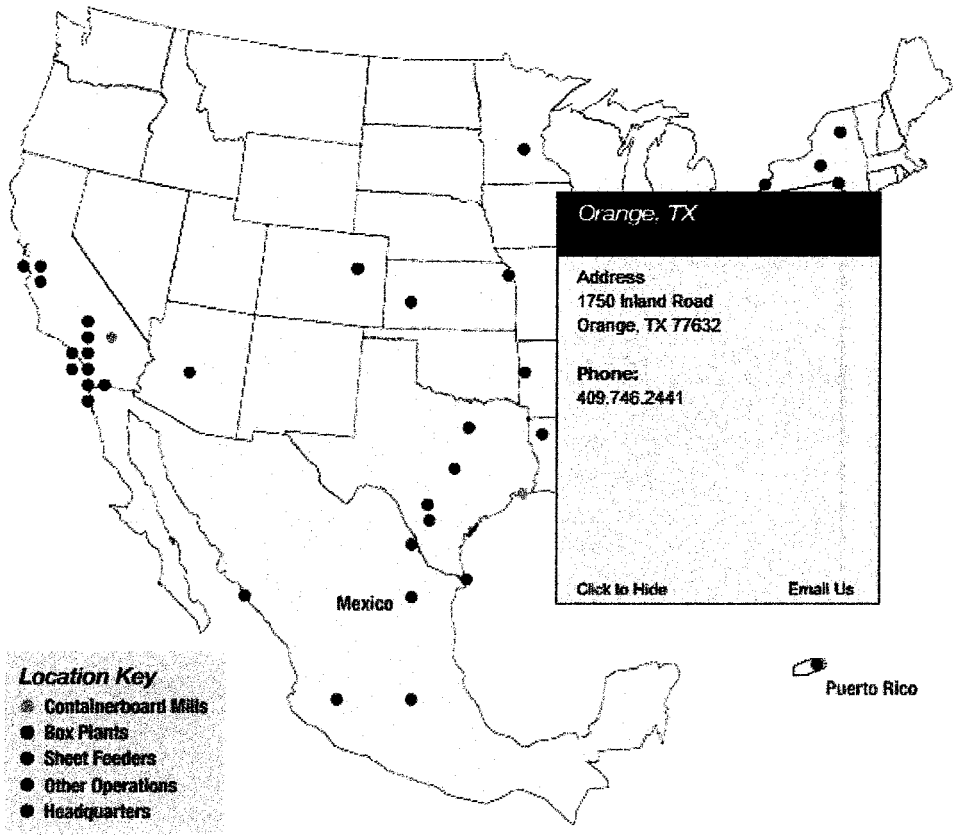
With dozens of facilities in more than 20 states, Mexico and Puerto Rico, Temple-Inland facilities are strategically located to deliver the products and services you need. We not only bring you the best packaging, but we bring jobs, opportunities and support to the communities where we operate.



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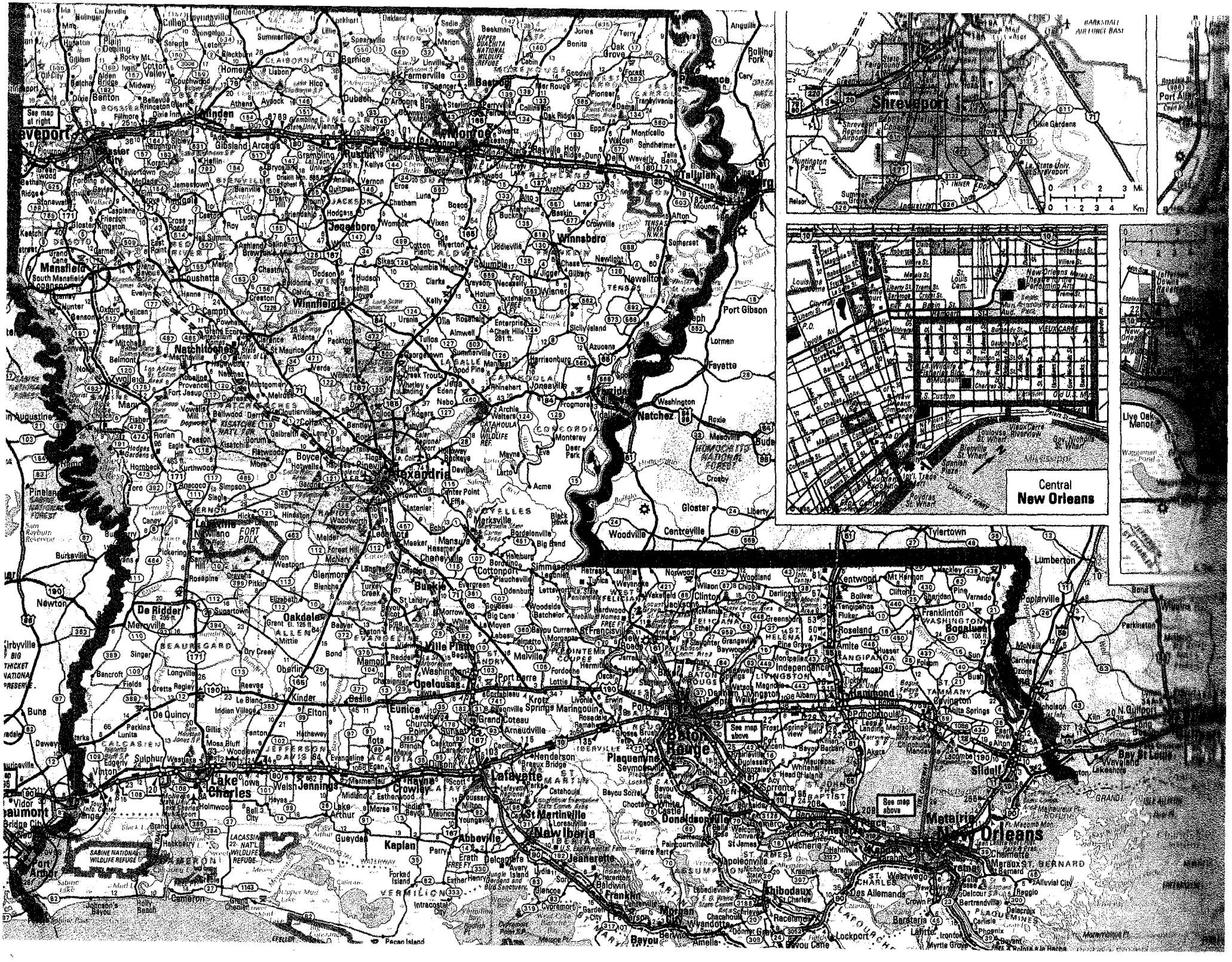


EPAHO04400440

Expanded Caustic Business Plan

May 6, 2008

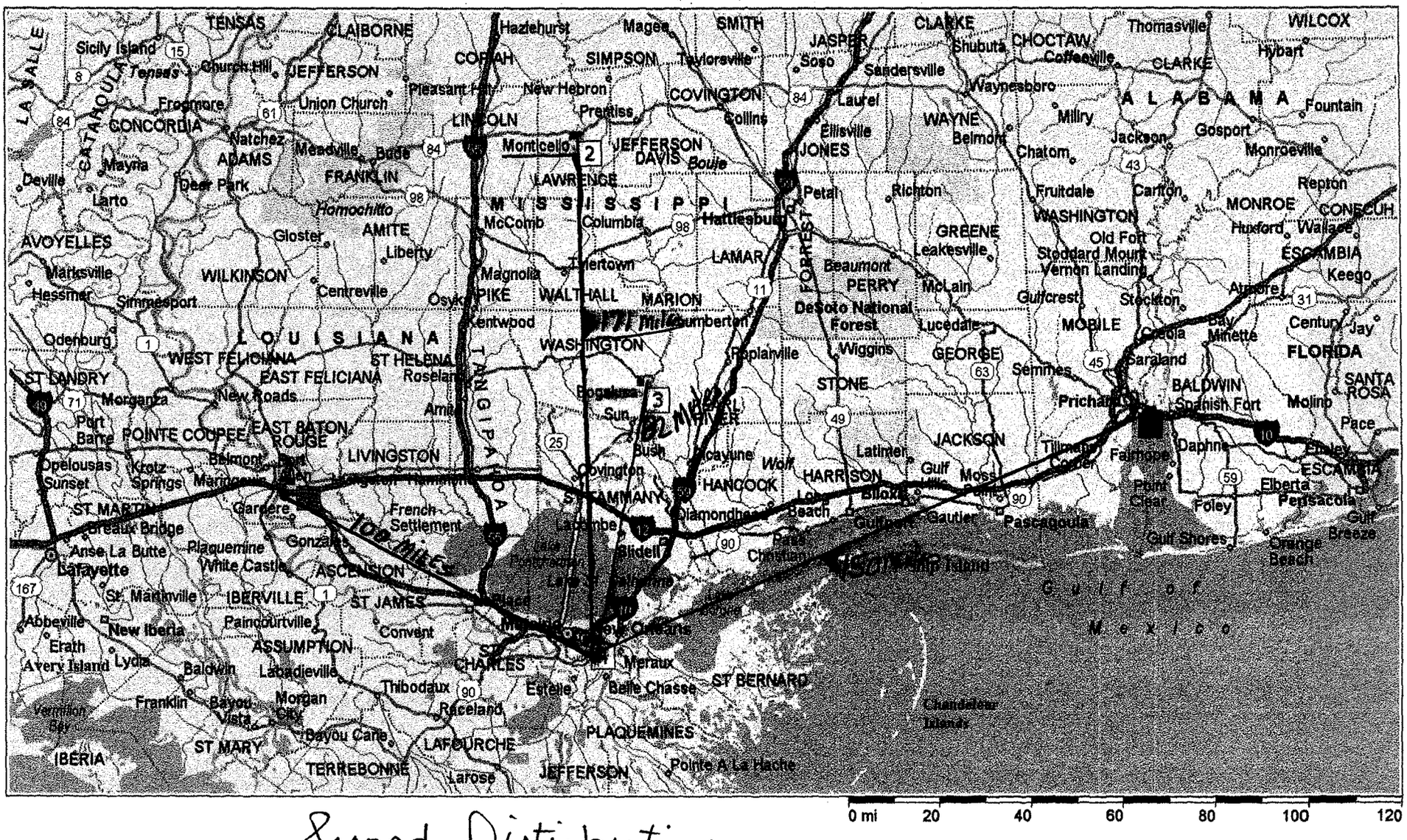
Expanded Caustic Business Plan

- **Rent one tank (for starters) in New Orleans from Stolt. The tank should be available sometime in June for an amount of approximately $12,000 per month.**

- **Get customers' caustics approved into the plants on a Second Distribution Network List as we develop a Customer Business. Qatar caustic might be a good start, could even strengthen with Enterprise's (Splitter 3), (focus on distribution to mills in East Louisiana, Southern Mississippi and, Western Alabama).**

- **Use rail at both KMTEX and Stolt to reach paper mills in Northern Louisiana and, and Southern Mississippi (start by renting 10 rail-cars).**

- **Can also receive overseas shipments in large ships, into tanks at Stolt.**



Second Distribution Network List

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EPAHO04400443

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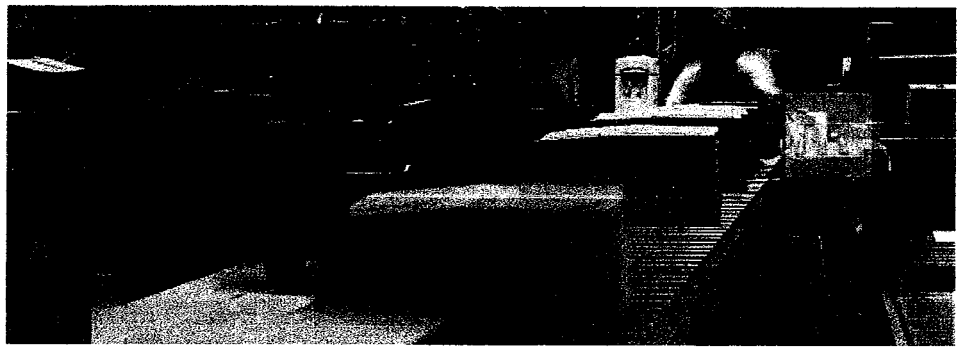
- Facilities



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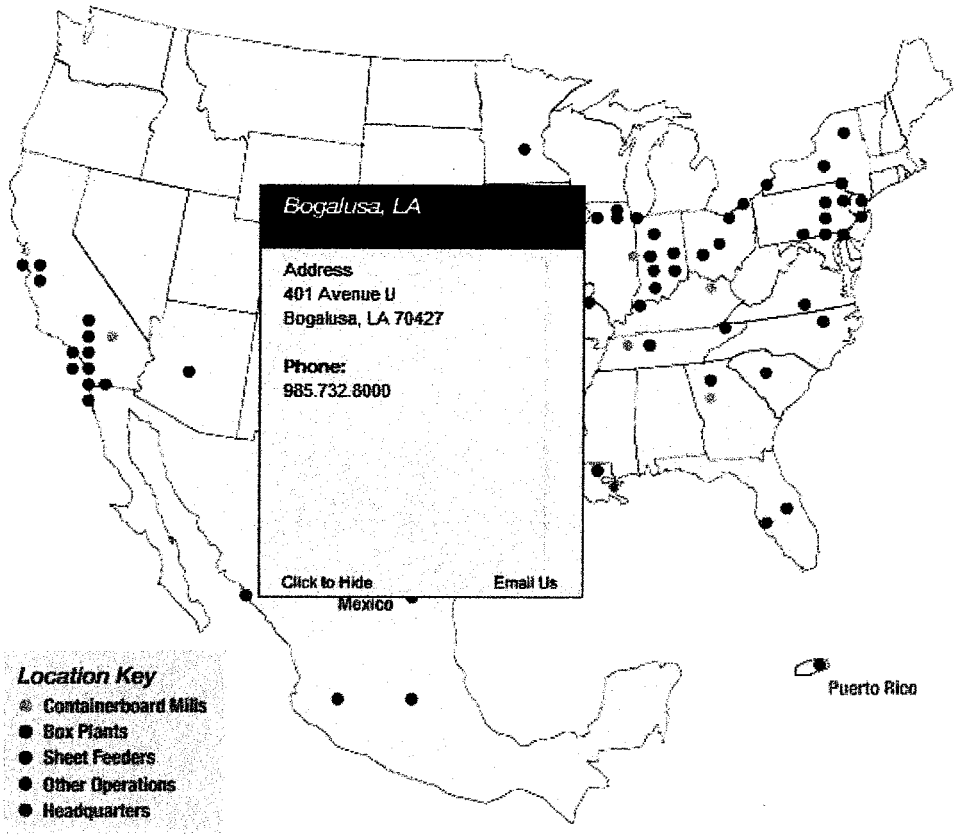

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Jackson, Alabama
DeRidder, Louisiana
International Falls, Minnesota
St. Helens, Oregon
Wallula, Washington

Paper Distribution
Pico Rivera, California
Bensenville, Illinois

Corrugated Sheet Manufacturing
Waco, Texas

Corrugated Containers
Burley, Idaho
Nampa, Idaho
Salem, Oregon
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Driving directions (abbreviated) : New Orleans, Louisiana, United States to Jackson, Alabama, United States

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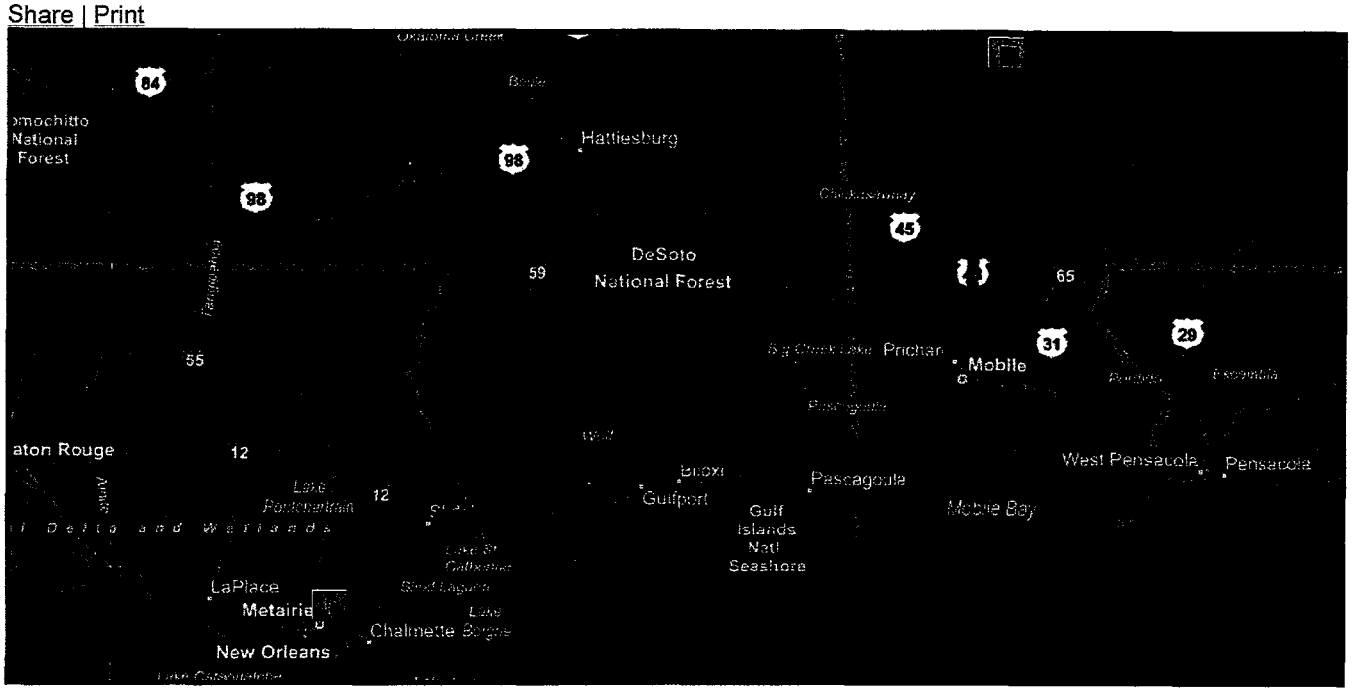

Start: New Orleans, Louisiana, United States

Trip: 208.4 mi, 3 hr 18 min

1.	Depart **La Salle St**hide start details	0.1 mi
2.	Turn **left** onto **Tulane Ave**	0.1 mi
3.	Take ramp **right** for **I-10 East** toward **Slidell** *Entering Mississippi* *Entering Alabama*	136.1 mi
4.	At exit **20**, take ramp **left** for **I-65 North** toward **Montgomery**	19.2 mi
5.	At exit **19**, take ramp **right** for **US-43 North** toward **Creola**	51.2 mi
6.	Turn **right** and then bear **right** onto **SR-69 / Coffeeville Rd**	0.6 mi
7.	Bear **right** onto **SR-177 / College Ave**	0.9 mi
8.	Arrive at **Jackson, Alabama, United States**hide end details *The last intersection is Broad St* *If you reach Magnolia Dr, you've gone too far*	

End: Jackson, Alabama, United States

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Results of Search (18 results)

You searched for: **Alabama**

Facility	Facility Address	Facility Type	City	State	Phone/Fax
Athens - Treating	19560 Alabama Highway 127	Pressure Treating	Athens	Alabama	256-233-0256 (V) 256-230-0822 (F)
Brewton Bleach Board	32224 Highway 31	Corrugated Box	Brewton	Alabama	(251) 251-3621 (V)
Fayette - CNS	Highway 96 West	S/P Sawmill	Belk	Alabama	205-932-3243 (V) 205-932-4206 (F)
Fayette - Procurement	Highway 96 West	Procurement Office	Belk	Alabama	205-932-3246 (V)
Huntsville - Packaging	3420 Stanwood Boulevard, NE	Brown Box	Huntsville	Alabama	256-859-5770 (V)
Brewton Procurement	32088 Highway 31 S.	Containerboard Mill	Brewton	Alabama	(V)
Peterman - Plywood	Highway 21 North	Plywood	Monroeville	Alabama	251-575-2770 (V) 251-575-3435 (F)
Peterman - Procurement	Highway 21 North	Procurement Office	Monroeville	Alabama	251-575-2778 (V)
Talladega - Plywood	400 Ironaton Road, Highway 21	Plywood	Talladega	Alabama	256-362-8810 (V) 256-362-2879 (F)
Talladega - Procurement	400 Ironaton Road, Highway 21	Procurement Office	Talladega	Alabama	256-362-9008 (V)
Cullman - Container - Warehouse	315 Fifth Street, SW	Warehouse	Cullman	Alabama	205-739-8175 (V)
Montgomery - Treating	3077 Carter Hill Road	Office	Montgomery	Alabama	334-269-9663 (V)

EPAHO044000447

Tarrant City - Gemini Corrugated	777 Clow Road	Sheet Feeder	Tarrant City	Alabama	205-841-4200 (V)
Nauvoo - Treated Lumber	2247 Prospect Road	Pressure Treating	Nauvoo	Alabama	205-924-4462 (V)
CP - Naheola Mill	7530 Highway 114	Paperboard	Pennington	Alabama	205-459-1900 (V) 205-459-1303 (F)
CP - Ohatchee Chipmill	7178 Highway 77	Chipmill	Ohatchee	Alabama	256-892-2093 (V)
Huntsville - Packaging - Warehouse and Truck Stop	2386 Dughill Road	Warehouse		Alabama	(V)
Thorsby Laminated Lumber	19953 US Hwy. 31	Laminated Veneer Lumber	Thorsby	Alabama	(V)

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Driving directions: New Orleans, Louisiana, United States to Brewton, Alabama, United States

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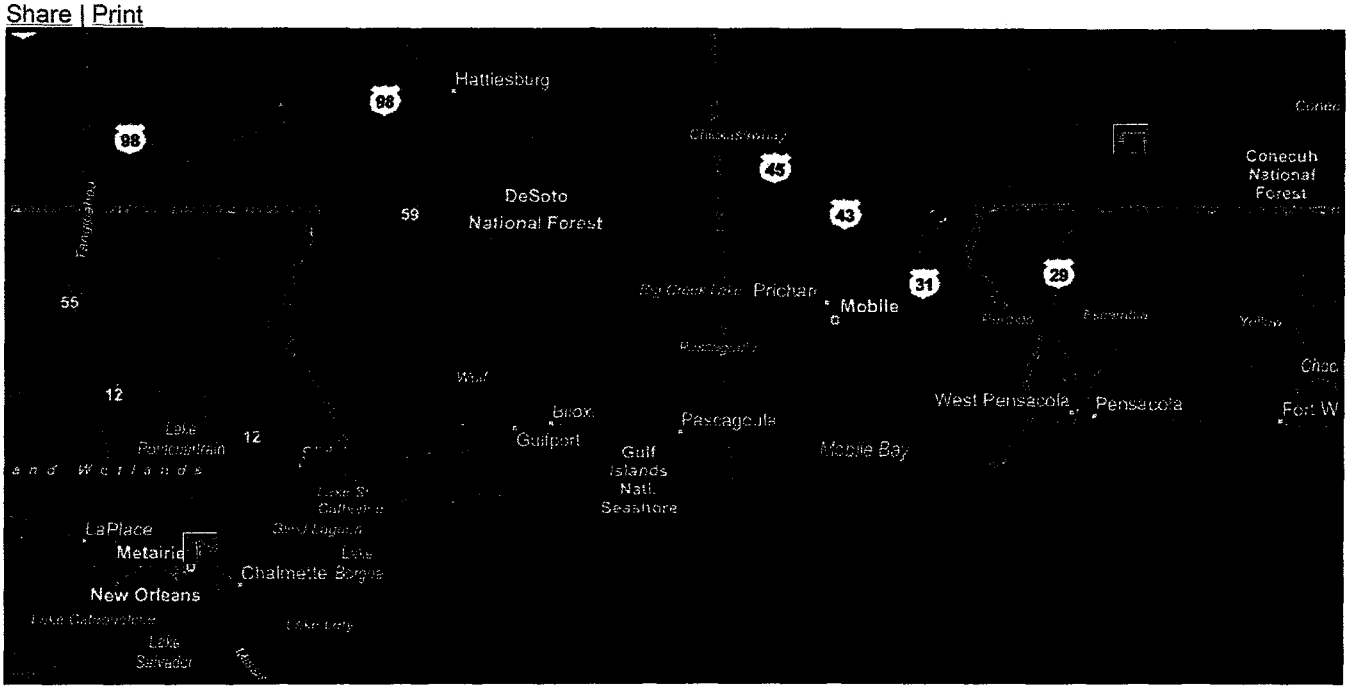

Start: New Orleans, Louisiana, United States

Trip: 232.2 mi, 3 hr 36 min

1.	Depart **La Salle St**	0.1 mi
2.	Turn **left** onto **Tulane Ave**	0.1 mi
3.	Take ramp **right** for **I-10 East** toward **Slidell** *Entering Mississippi* *Entering Alabama*	136.1 mi
4.	At exit **20**, take ramp **left** for **I-65 North** toward **Montgomery**	69.2 mi
5.	At exit **69**, take ramp **right** for **Al-113** toward **Flomaton / Wallace**	0.3 mi
6.	Turn **right** onto **SR-113**	13.5 mi
7.	Turn **left** onto **US-29 / US-31**	12.8 mi
8.	Arrive at **Brewton, Alabama, United States** *The last intersection is SR-41 / St Nicholas Ave* *If you reach Belleville Ave, you've gone too far*	

End: Brewton, Alabama, United States

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Company History

Paper and Forestry

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Amcor Ltd.

American Pad & Paper Company

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Arjo Wiggins Appleton p.l.c.

Asplundh Tree Expert Co.

Badger Paper Mills, Inc.

Beckett Papers

Bohemia, Inc.

Boise Cascade Corporation

Canfor Corporation

Caraustar Industries, Inc.

Carter Lumber Company

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Cascades Inc.

Champion International Corporation

Chesapeake Corporation

Consolidated Papers, Inc.

Crane & Co., Inc.

Crown Vantage Inc.

Css Industries, Inc.

Daishowa Paper Manufacturing Co., Ltd.

Deltic Timber Corporation

Dillard Paper Company

Doman Industries Limited

Ds Smith Plc

Empresas CMPC S.A.

Esselte Pendaflex Corporation

FiberMark, Inc.

Fort James Corporation

Georgia Pacific Corporation

Gould Paper Corporation

Grupo Portucel Soporcel

Guilbert S.A.

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Hampton Affiliates, Inc.

Holmen Ab

International Paper Company

Kimberly Clark Corporation

Kimberly Clark De MéXico, S.A. De C.V.

Klabin S.A.

Kruger Inc.

Longview Fibre Company

Louisiana Pacific Corporation

M-real Oyj

Meadwestvaco Corporation

Mercer International Inc.

Miquel y Costas Miquel S.A.

Monadnock Paper Mills, Inc.

Mosinee Paper Corporation

National Envelope Corporation

Norske Skogindustrier ASA

P.H. Glatfelter Company

Packaging Corporation of America

Papeteries de Lancey

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Plum Creek Timber Company, Inc.

Pope & Talbot, Inc.

Pope And Talbot, Inc.

Potlatch Corporation

Rayonier Inc.

Reno De Medici S.P.A.

Rexam PLC

Riverwood International Corporation

Rock-Tenn Company

Rogers Corporation

Schweitzer-Mauduit International, Inc.

Scott Paper Company

Sealed Air Corporation

Sierra Pacific Industries

Simpson Investment Company

Stimson Lumber Company Inc.

Stora Enso Oyj

Svenska Cellulosa Aktiebolaget Sca

TJ International, Inc.

Tapemark Company Inc.

EPAHO044000453

Tembec Inc.

Temple Inland Inc.

The Mead Corporation

Thomsen Greenhouses And Garden Center, Incorporated

U.S. Timberlands Company, L.P.

UPM-Kymmene Corporation

Universal Forest Products Inc.

Universal Forest Products, Inc.

WTD Industries, Inc.

Wausau-Mosinee Paper Corporation

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Willamette Industries, Inc.

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EPAHO044000454

To: Refinery Management

From: Clark Hickman

Date: 3/03/08

Re: Spent Caustic Solutions

CES Environmental Services, Inc. of Houston places spent caustic solutions from refinery operations with various end users that reuse the caustic solutions with, or without sulfides as an effective substitute for commercial products.

This placement is accomplished by the use of a network of end users, an array of transportation systems, and interim storage locations. CES tests or evaluates the caustic before and during shipment, takes ownership at the refinery, manifests the material to the new location, places the caustic in locations that facilitate the transfer, blends the material if necessary, and if possible places shipments directly to user locations by barge, or tanker.

CES has under its control for spent caustic movements barges for shipment, tankers, rail, multiple storage locations, on site lab facilities, and off site contract labs.

CES recycles other materials such as oil, chemicals, ethylene glycol, and light ends. CES has a TCEQ approved waste disposal site in Houston, which has wastewater treatment, solid waste facilities, distillation equipment, tank truck cleaning, lab facilities, and drum processing equipment.

For additional information, or information on the cost of services, contact me at 281-488-0848(cell), 713-676-1460(office), or chickman@cesenvironmental.com (email address).

The mailing address, or location of the main office is CES Environmental Services, Inc. ,4904 Griggs Road, Houston, TX 77021.

CES Environmental Services, Inc.

4904 Griggs Road
Houston, Texas 77021
Ph: (713) 676-1460
Fax (713) 676-1676

CES Overview and Spent Caustic Summary

CES has been providing quality, cost effective environmental services to the chemical and refining industry since 1999. CES is now providing economical pulping chemicals to the paper industry that are produced from refineries, gas and chemical plants that is in full compliance with all Federal, State, and local laws.

SPENT CAUSTIC CLASSIFICATION: Spent Caustics are produced from the contacting sodium hydroxide with hydrocarbons, gasses or chemical streams. The caustic is typically used to extract acidic species to meet quality specifications or emissions. Once the caustic has been used in the initial process, it still has usefulness in certain industries for the residual chemicals contained. The spent caustic when used directly as received, without reclamation, is a product and is ***not*** classified as a waste by the U.S. EPA. Specifically, under RCRA part 261.2(e)(1)(ii) "Materials that are not solid waste when … Used or reused as effective substitutes for commercial products".

PARTNERSHIP: CES has partnered with several large consumers in the paper industry which utilize the spent caustic as a direct substitute for other commercially available products. Namely, sodium hydroxide, potassium hydroxide, and or sodium sulfide. For years the paper industry has utilized spent caustic as an economical alternative to pulping chemicals. The biggest challenge has always been is to match the highly variable production volume and quality from the producers with the highly variable requirements of the consumer. CES's network of suppliers, terminals, owned and operated equipment, and consumers are instrumental in matching supplies with demand. The end result is a cost effective solution for both suppliers and consumers.

ASSETS: CES owns and operates an extensive transportation and terminal infrastructure. Our current fleet consists of over 40 tractors and 70 trailers each equipped with the latest in GPS tracking and monitoring. We can safely and responsibly transport your all type of spent caustics via CES owned and operated tank trucks. By owning our own equipment, and utilizing our own employees, we insure that all of the drivers/operators receive are properly trained and have all the required safety certification for the transportation and safe loading and unloading of spent caustic. For shipments by other modes, we provide transport by third party rail car, barge, or ocean-going tanker.

SERVICE FIRST: CES has built its reputation on providing excellent services and chemicals to the chemical, refining, and pulping industries. We are driven to provide outstanding service and pricing to all of our customers.

United States Environmental Protection Agency | Solid Waste and Emergency Response (5305W) | EPA530-K-02-007I October 2001

RCRA, Superfund & EPCRA Call Center Training Module

Introduction to:

Definition of Solid Waste and Hazardous Waste Recycling
(40 CFR §§261.2 and 261.9)

Updated October 2001

EPAHO044000457

DEFINITION OF SOLID WASTE AND HAZARDOUS WASTE RECYCLING

CONTENTS

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EPAHO044000458

1. INTRODUCTION

As mandated by Subtitle C of the Resource Conservation and Recovery Act (RCRA), EPA promulgated hazardous waste regulations in 1980 to ensure that wastes which pose a threat to human health and the environment would be managed safely. In order to be regulated as a hazardous waste under RCRA, a material must first be classified as a solid waste. After confirming that a material is a solid waste, the generator of the solid waste must determine if it is a hazardous waste. The important concept to remember is that hazardous wastes are a subset of solid wastes. In other words, a material cannot be classified as a hazardous waste if it is not within the universe of solid wastes.

This module explains the statutory and regulatory definitions of solid waste, including the standards governing the recycling and management of specific types of waste.

When you have completed this module, you will be able to explain the definition of solid waste in 40 CFR §261.2, as well as its relationship to the definition of hazardous waste in §261.3. You will also become familiar with the regulations governing the recycling of hazardous wastes, found in §261.6 and Parts 266, 273, and 279.

Use the following list of objectives to check your knowledge of this topic after you complete the training session:

- Explain and cite the regulatory and statutory definitions of solid waste
- Cite and use the table in §261.2 and the preamble to the January 4, 1985, Federal Register (50 FR 614)
- List and cite three use/reuse scenarios where the materials are not solid wastes and state the requirement for documentation
- List the conditions under which hazardous waste-derived products may be excluded from regulation
- Discuss the special recycling standards for use constituting disposal, precious metal recovery, and spent lead-acid batteries
- Discuss potential regulatory developments affecting the definition of solid waste and hazardous waste recycling.

The information in this document is not by any means a complete representation of EPA's regulations or policies, but is an introduction used for Call Center training purposes.

2. REGULATORY SUMMARY

Under RCRA Subtitle C, Congress granted EPA the authority to regulate hazardous wastes. The principle objective of hazardous waste regulation is the protection of human health and the environment. RCRA regulation is also intended to encourage the conservation and recovery of valuable materials. The definition of solid waste under RCRA, which serves as the starting point for the hazardous waste management system, reflects EPA's effort to obtain the proper balance between these two underlying objectives.

According to RCRA regulations, a material must be defined as a solid waste before it can be considered a hazardous waste. The regulatory definition of solid waste, found in §261.2(a), encompasses the following materials: (1) materials that are abandoned; (2) materials that are recycled; (3) materials that are inherently waste-like; and (4) waste military munitions. Materials that do not fall within one of these categories are not subject to Subtitle C regulation.

Materials that are recycled are a special subset of the solid waste universe. When recycled, some materials may qualify for an exclusion from the definition of solid waste and fall out of RCRA regulation or be subject to less-stringent regulatory controls. Based on the material and the type of recycling, the generator of a recyclable solid waste must determine if it is subject to reduced requirements or full regulation.

This module discusses the criteria found in the §261.2 definition of solid waste. It also explains the range of RCRA Subtitle C management standards for different types of hazardous waste recycling, as dictated by §261.6 and Parts 266, 273, and 279. This range of management — from no regulation to full regulation — is essentially based on the type of recycling activity involved and the hazards posed, and demonstrates EPA's intent to encourage recycling while still protecting human health and the environment.

2.1 SOLID WASTE DEFINITION

The statutory definition of a solid waste is not based on the physical form of the material, (i.e., whether or not it is a solid as opposed to a liquid or gas), but on the fact that the material is a waste. RCRA §1004(27) defines solid waste as:

> Any garbage, refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, commercial, mining, and agricultural operations and from community activities.

The information in this document is not by any means a complete representation of EPA's regulations or policies, but is an introduction used for Call Center training purposes.

The regulatory definition of solid waste, found in §261.2, is narrower than the statutory definition. Under §261.2(a), a solid waste is any discarded material that is not excluded by §261.4(a) or that is not excluded by a regulatory variance.

Section 261.4(a) specifically excludes certain materials from the definition of solid waste, such as domestic sewage and special nuclear material covered by the Atomic Energy Act (see the module entitled Solid and Hazardous Waste Exclusions). Materials listed in §261.4(a) are not solid wastes and so cannot be further classified as hazardous waste. Other materials that would normally be classified as solid wastes may qualify for exclusions from regulation if a generator petitions for a variance from classification as a solid waste.

If a discarded material is not excluded by §261.4 or by a variance, it may meet the definition of a solid waste. The basis of the solid waste definition is set forth in §261.2, which defines a solid waste as a material that is discarded by being abandoned, inherently waste-like, recycled, or a military munition identified as a solid waste in §266.202.

ABANDONED

The term abandoned simply means thrown away. Under §261.2(b), a material is abandoned if it is disposed of, burned, or incinerated. In addition, a material that is stored prior to, or in lieu of, one of these activities, is also considered to be abandoned. In addition to obvious examples of abandonment, such as land disposal, EPA also includes activities such as incineration within the definition of the term (50 FR 627; January 4, 1985).

INHERENTLY WASTE-LIKE

Some materials are always considered solid wastes under §261.2(d), even if they are recycled in some manner (i.e., they are considered to be inherently waste-like). Because these materials may pose a threat to human health and the environment when they are recycled, they do not qualify for any recycling exemptions. Examples of inherently waste-like materials are the dioxin-containing listed wastes F020, F022, F023, F026 and F028. Hazardous waste meeting the F021 listing is also considered inherently waste-like unless it is used at the site of generation as an ingredient in a product.

In addition, any secondary materials that are characteristic or listed hazardous wastes are considered to be inherently waste-like when they are fed to a halogen acid furnace. This provision was added to ensure that halogen acid furnaces, which burn some of the most toxic wastes generated in this country, would be regulated when burning any type of hazardous waste (56 FR 7141; February 21, 1991). Note, there is an exception for certain highly brominated materials burned in halogen acid furnaces under certain conditions (§261.2(d)(2)).

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RECYCLING

A material is recycled if it is used, reused, or reclaimed (§261.1(c)(7)). These three terms have specific regulatory definitions. A material is reclaimed if it is processed to recover a usable product or if it is regenerated (e.g., regeneration of spent solvents) (§261.1(c)(4)). A material is used or reused if it is either employed as an ingredient in an industrial process to make a product (e.g., distillation bottoms from one process used as feedstock in another process) or if it is employed as an effective substitute for a commercial product (e.g., spent pickle liquor used as a sludge conditioner in wastewater treatment) (§261.1(c)(5)).

Some materials that are recycled are classified as solid wastes, while others are exempt from regulation. Section 261.2(c) designates as solid wastes certain materials that are recycled in particular manners (i.e., used in a manner constituting disposal, burned for energy recovery, reclaimed, and speculatively accumulated). Other materials that are recycled through use or reuse of the material may qualify for exemptions from the solid waste definition under §261.2(e).

MILITARY MUNITIONS

Over the years, the applicability of RCRA to military munitions has been the subject of some controversy. On February 12, 1997, EPA finalized a rule that specified when unused and used military munitions are considered discarded and become solid wastes (62 FR 6622). Unused military munitions become solid wastes when the munitions are removed from storage for disposal or treatment prior to disposal; when the munitions are leaking or deteriorated so that they cannot be recycled or reused; or when declared a solid waste by an authorized military official. Unused munitions that are repaired, recycled, or reclaimed, are not considered solid wastes, nor are they considered solid wastes while in storage in demilitarization accounts (e.g., scheduled for treatment or disposal). Only when these munitions are finally removed from storage for the purposes of disposal do they become solid wastes.

Used military munitions become solid wastes when they are buried or landfilled on-site, or when they are removed from their landing spot for subsequent management (storage, reclamation, treatment, or disposal) off-range. Note that munitions that have been used for their intended purpose (e.g., fired munitions or munitions used in training exercises) are not considered solid wastes when they land on a firing range, because landing on the ground is part of their intended use (rather than disposal). Once these military munitions are collected and sent off-site for further management, however, they become solid and potentially hazardous wastes. Standards applicable to military munitions are codified in Part 266, Subpart M.

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2.2 CLASSIFICATION OF RECYCLED MATERIALS

As stated above, one way a material may meet the definition of a solid waste in §261.2 is if it is recycled in a certain manner. When a material is recycled, its regulatory classification (i.e., whether or not it is a solid waste, and potentially a regulated hazardous waste) depends on two factors: first, what type of secondary material is being recycled; and second, what type of recycling is occurring. The following discussion describes the three types of recycling regulated in §261.2(c), and notes the various exclusions associated with specific types of secondary materials when they are recycled in certain ways. Depending on these determinations, a waste destined for recycling may or may not be regulated.

SECONDARY MATERIALS

A secondary material is a material that potentially can be a solid and hazardous waste when recycled (50 FR 616; January 4, 1985). Used or residual waste-like materials are called secondary materials and are divided into five groups. Table 1 of §261.2(c) lists five types of secondary materials: spent materials, sludges, by-products, commercial chemical products, and scrap metal. All waste-like materials fit into one of these five secondary material categories, which are discussed below.

Spent Materials

Spent materials, as defined in §261.1(c)(1), are those used materials that can no longer serve the purpose for which they were produced without undergoing regeneration, reclamation, or reprocessing. Examples include spent solvents, spent activated carbon, spent catalysts, and spent acids (50 FR 624; January 4, 1985).

Sludges

A sludge is any solid, semisolid, or liquid waste generated from a wastewater treatment plant, water supply treatment plant, or air pollution control device (e.g., baghouse dust). Table 1 contains two sludge categories: those sludges listed on the F or K lists (e.g., F037 petroleum refinery oil/water/solids separation sludge), and those exhibiting a hazardous characteristic under Part 261, Subpart C.

By-Products

A by-product as defined in §261.1(c)(3) is a material that is not one of the primary products of a production process and is not solely or separately produced by the production process. An example is a distillation column bottom. A by-product is a catch-all term, and includes most wastes that are not spent materials or sludges (50 FR 618; January 4, 1985). There are two types of by-product categories in Table 1: those listed (e.g., wood preserving wastewaters -- K001), and those exhibiting a hazardous characteristic.

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Commercial Chemical Products

Commercial chemical products (CCPs) include unused chemical intermediates, off-specification variants, and spill or container residues, as defined in §261.33 (e.g., unused sodium cyanide). The definition of CCP, which is also part of the hazardous waste identification process for P- or U-listed wastes, is expanded for the purposes of defining a material as a solid waste. For this purpose, the term CCP also includes chemicals that are not listed in §261.33 but exhibit a hazardous characteristic (e.g., off-specification jet fuel) (50 FR 14219; April 11, 1985), as well as other unused commercial products that exhibit a characteristic of hazardous waste, even though they are not commonly considered chemicals (e.g. unused circuit boards, unused batteries).

Scrap Metal

Scrap metal is defined as bits and pieces of metal parts that are worn or superfluous (e.g., scrap turnings and wire) (§261.1(c)(6)). This term also includes products made of metal that become worn out such as scrap automobiles and radiators (50 FR 624; January 4, 1985). Excluded scrap metal (processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) is not a secondary material because it is excluded from the definition of solid waste under §261.4(a)(13).

TYPES OF RECYCLING

There are three types of recycling activities over which EPA currently asserts jurisdiction: use constituting disposal, burning waste fuels, and reclamation. As stated previously, to determine whether a material is a solid waste, you must determine what kind of material is being recycled. Once the type of secondary material (e.g., spent material, sludge, or scrap metal) is known, the manner in which it is recycled will determine whether or not the material is a solid waste and therefore potentially regulated as a hazardous waste. A fourth type of recycling, direct use/reuse, is not regulated under RCRA.

Use Constituting Disposal

Directly placing wastes or products containing wastes on the land is considered to be use constituting disposal (§261.2(c)(1) and 50 FR 627; January 4, 1985). If, however, direct placement of a CCP on the land is consistent with its normal use (e.g., pesticides), then the material is not regulated as a solid waste (§261.2(c)(1)(ii)). For example, heptachlor can potentially be a P-listed waste. This pesticide is not regulated as a solid waste, however, when it is used as a pesticide.

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Burning Waste Fuels

Burning hazardous waste for energy recovery and using waste to produce a fuel are both covered under burning waste fuels (§261.2(c)(2) and 50 FR 630; January 4, 1985). CCPs that are themselves fuels are not considered solid wastes when burned, however, since burning is consistent with the product's intended use §261.2(c)(2)(ii)). For example, off-specification jet fuel is not a solid waste when it is burned for energy recovery because it is itself a fuel.

Reclamation

As discussed above, reclamation is the regeneration of wastes or recovery of usable materials from wastes (e.g., regenerating spent solvents in a solvent still). Wastes are regenerated when they are processed to remove contaminants in a way that restores them to their usable condition (50 FR 633; January 4, 1985).

Use/ Reuse

The direct use or reuse of a secondary material without prior reclamation is also a form of recycling. Section 261.2(e)(1) provides exclusions from the definition of solid waste for materials that are directly used or reused in one of the following ways: used or reused as an ingredient, used or reused as a product substitute, or returned to the production process.

- **Used As An Ingredient**

  If a secondary material is directly used as an ingredient in a production process without first being reclaimed (e.g., carbon tetrachloride still bottoms used in producing tetrachloroethylene), then that material is not a solid waste (§261.2(e)(1)(i)).

- **Used As A Product Substitute**

  If a secondary material is used as an effective substitute for a commercial product without first being reclaimed (e.g., hydrochloric acid by-product from chemical manufacturing used by the steel industry for pickling steel), it is exempt from the definition of solid waste (§261.2(e)(1)(ii)).

- **Returned To The Production Process**

  When a material is returned to the original production process from which it was generated, it is not a solid waste (§261.2(e)(1)(iii)). This exclusion only applies if the material is used as a raw material or feedstock in the production process and if it is not reclaimed prior to its reintroduction into the system (e.g., emission control dust returned directly to a primary zinc smelting furnace). The

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(2) Secondary materials fed to a halogen acid furnace that exhibit a characteristic of a hazardous waste or are listed as a hazardous waste as defined in subparts C or D of this part, except for brominated material that meets the following criteria:

(i) The material must contain a bromine concentration of at least 45%; and

(ii) The material must contain less than a total of 1% of toxic organic compounds listed in Appendix VIII; and

(iii) The material is processed continually on-site in the halogen acid furnace via direct conveyance (hard piping).

(3) The Administrator will use the following criteria to add wastes to that list:

(i)(A) The materials are ordinarily disposed of, burned, or incinerated; or

(B) The materials contain toxic constituents listed in Appendix VIII of Part 261 and these constituents are not ordinarily found in raw materials or products for which the materials substitute (or are found in raw materials or products in smaller concentrations) and are not used or reused during the recycling process; and

(ii) The material may pose a substantial hazard to human health and the environment when recycled.

(e) *Materials that are not solid waste when recycled.*

◆ OSWER—19, 59 RDB—See CFR Index in Chapter 21.

(1) Materials are not solid wastes when they can be shown to be recycled by being:

◆ RDB—5471, 6913, 6916, 7050

(i) Used or reused as ingredients in an industrial process to make a product, provided the materials are not being reclaimed; or

◆ RCRA—38 OSWER—39, 69 RDB—5461, 5643, 6509, 6620, 6879, 6884, 6933, 6982

(ii) Used or reused as effective substitutes for commercial products; or

◆ RCRA—49, 81, 276 OSWER—59 RDB—5662, 5888, 6058, 7046

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph.

◆ OSWER—1

(2) The following materials are solid wastes, even if the recycling involves use, reuse, or return to the original process (described in paragraphs (e)(1)(i) through (iii) of this section):

◆ RDB—6982

(i) Materials used in a manner constituting disposal, or used to produce products that are applied to the land; or

◆ RDB—5662, 6407

(ii) Materials burned for energy recovery, used to produce a fuel, or contained in fuels; or

◆ RDB—6879

(iii) Materials accumulated speculatively; or

(iv) Materials listed in paragraphs (d)(1) and (d)(2) of this section.

(f) *Documentation of claims that materials are not solid wastes or are conditionally exempt from regulation.* Respondents in actions to enforce regulations implementing Subtitle C of RCRA who raise a claim that a certain material is not a solid waste, or is conditionally exempt from regulation, must demonstrate that there is a known market or disposition for the material, and that they meet the terms of the exclusion or exemption. In doing so, they must provide appropriate documentation (such as contracts showing that a second person uses the material as an ingredient in a production process) to demonstrate that the material is not a waste, or is exempt from regulation. In addition, owners or operators of facilities claiming that they actually are recycling materials must show that they have the necessary equipment to do so.

◆ RCRA—64, 262 RDB—5127, 5195, 5272, 5281, 5282, 5325, 5383, 5422

[50 FR 664, Jan. 4, 1985, as amended at 50 FR 33542, Aug. 20, 1985; 56 FR 7206, Feb. 21, 1991; 56 FR 42512, Aug. 27, 1991; 57 FR 38564, Aug. 25, 1992; 59 FR 48041, Sept. 19, 1994; 62 FR 6651, Feb. 12, 1997; 62 FR 26018, May 12, 1997; 63 FR 28636, May 26, 1998; 64 FR 25413, May 11, 1999; 67 FR 11253, Mar. 13, 2002]

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Refinery Caustic- I could write a book. This first section will deal primarily with caustics from light end treating and from chemical plants. The caustic generated from kerosene and jet fuel treating (naphthenic) will be discussed separately later. Note that most caustics if let sit for long periods of time often have fine black particles that will settle out.

Caustic Approval Process

Please keep in mind that for us to take caustic to the paper mills, we have agreements with the mills to get the caustic approved before shipping.

To get this accomplished, we will need the following:

(1) Receive a Process Description from the producer on how the caustic was generated. Answer the following questions (this step will be done by the account manager):
   - What is the primary composition?
   - Is there any potentially dangerous or hazardous compounds that would be released in processing?
   - If there is color, what causes the color?
   - If there is odor, what causes the odor?

(2) Receive a representative sample at CES and test for the following(this step will be done by the account manager):
   - Sodium Hydroxide (or Potassium Hydrozxide)
   - Sulfide
   - TOC
   - SG
   - Solids
   - Visual
   - Odor

(3) If the sample looks to be a good candidate, a sample should be sent to an outside lab for the following (this step will be done by the Sales Director):
RCRA 8 Metal Scan (be sure to have potassium) - But once you know...
& Chlorides

Total Chlorides

Phenol

Benzene

(4) Sales Director will provide a sample, analysis, and MSDS to Sochem for approval. They will work on getting it approved with the mill. Assuming the caustic is "typical", the process should not take more than a week.

Sources- Ask sales person for more details, I will briefly detail each source

Citgo- Large supplier. Caustic usually ~6.5% sodium hydroxide and les than 0.1% sodium sulfide. Produces > 600,000 gallons per month. See numerous test data for full analysis. Generally a tea colored caustic with no

oils or significant solids. By most criteria, Citgo caustitc is as good as your going to get from a large refinery. Some mills have complained that Citgo's caustic has a hydrocarbon smell. Not much we can do about it. Clark is our main contact to Citgo. Citgo's main person is Mike Robinson. Citgo would prefer to load all the caustic by barge. At this time they only provide truck loaders from M- Thursday, but this is subject to weekly change. My advise is to pin down Clark on what the loading schedule is every chance you get. Do not assume nothing.

Concerns: Historically Citgo has put all of their caustics into their waste water treating plant (WWTP). It has always been poorly understood by us and Citgo, what their capabilities are. They fluctuate between being able to handle internally and having to send out the caustics. Obviously, if Citgo was to start taking the caustic into their WWTP again, it would have a major impact on our caustic business. Most every mill we service with the sole exception of De Ridder is dependent on this caustic.

Enterprise – Complicated. Has several distinctly different streams

Stream 1

Stream 2

Stream 3

Stream 4

West Texas

MTBE

Targa

PPG

Arkema

Sochem-

Paper Mills

De Ridder

Mansfield

Hodge

Potlatch

PineBluff

Pineville

Texarcanna

Evadale

West Monroe

Monticello

Bogaloosa

Black Oil- Two different markets depending on ash content. If ash is below 1.0%, Carrie (vertex) or Scott Rainey usually offer the best price. Carrie usually requires a sample. She can be slow to work with. For oil with higher ash, we have sold almost exclusively to either Midstate or Alamo. Midstate (Lloyd) always wants the gravity in API, usually over 20. Alamo (Charlie) filters all of his oil at loading, so it has happened on a semi regular basis, he will reject our oil due to waxes and or solids. Both Midstate and Alamo can be a little unpredictable in their pickups. Alamo is probably worse. Both Alamo and Midstate use the oil (and light ends) to make paving asphalt . When the temperatures get lower than 40 F, road crews can't lay pavement. As such, during cold spells, we may have difficulty moving to these markets.

Right now most black oil is being produced by Lubrizol recovered oil skimmings. This feedstock is extremely variable in quality and can vary by a large amount in frequency. What we look for in order of significance; ash (less than 1% good, over 2% means only going to Alamo or Midstate), solids, the lower the better (if it clogs a small filter, Alamo will not take it), gravity (either API or SG, the heavier it is (gravity less than 20, makes it hard to sell), flash (under ~135F is considered high flash, over 135, low flash chloride levels (chlor-d-tect) should be less than 1000. Odor should not be especially bad. Strong ammonia smells or dead something smells can be a deal breaker. Vertex has been able to handle the strong smell if the solids are not too high. You do want to make sure you don't mix the strong smell with high ash if at all possible.

Pricing- High ash to Alamo and Midstate- pretty standard $0.85 per gallon. May be some room to move up, I would only do it after we send them some good loads for a while.

Low Ash (and typically low flash)- Vertex and HRR (Scott). They will pay off plats. Vertex should give you a price, typically after looking at a sample and taking a few days, Scott will also usually require a sample and take a day or two. Prices range from $1.05 to $1.40 /gallon.

Ash – Under 0.7 wt % is good. Up to 1% OK, over that, options start narrowing, over 2.5%, likely only going to go to Alamo or Midstate

Flash – A flash of greater than 135F is good. Not a limiting factor. If the flash is less than 135F, then you need to convey the information to the customer. This will be case by case if they can take. If the flash is 100F or less, this can become a difficult problem to move

Gravity- Typical is 0.85 to 0.92. API ~21 – 30. If the gravity gets over 0.92 g/ml or drops below 20 API, the material is pretty thick and can be hard to place (even more so in the winter). We could add some light ends, but that will drop the flash quickly and may cause another problem. Thick oil will have to be managed on a case by case basis.

Odor- Should not have a strong smell. Typical musty hydrocarbon smell. If has strong odor, this will affect where it can go. In strong odor cases, it is best to have customer have sample before shipping. Alamo is good in this respect, since their driver (alfredie, sp?) will QC before he leaves.

Choride / Halogens- The oil should have pass our chor –d- tect test. If it is over 1000 ppm, need to convey to customer.

Amines – We should not mix amines or other non hydrocarbon based material in black oil at any significant amount.

Solids- Typically, the solids should be less than a half of a percent. Much more than than, look to have problems. We should have decent solids levels unless we are having some processing difficulties.

Color- This product is typically black. If it is lighter and has some clarity, try to segregate if possible. Lighter oils with decent color could have better pricing.

Water- The less water the better. Over 2 to 3% starts to cause problems. Generally this is not much of a problem.

LIGHT ENDS- Must be separated into groups-

Unrestricted Light ends from Kinder Morgan (Lance Wiley)- We get this material in slugs. It comes from line flushes at KM's terminal where they handle various fuels such as gasoline, kerosene, diesel, bio-diesel. The material usually has a gravity of ~0.8, amber color, somewhat opaque, hydrocarbon smell, chlorides from 5 to 200 ppm, sulfur from 50 to ~300 ppm. The lower the chloride levels, the better the price. This material is "Unrestricted Light Ends" meaning that it can be sold into markets where it can be burned as a fuel. This allows us to get a better price than we could if it was "restricted Light Ends". We can sell to a variety of places. In almost all cases, the first thing we need to do with the KM light ends is get a sample as soon as we know they want to send. Test the sample for SG, color, odor (whatever the profile says), and send to an external lab for organic chlorides and total sulfur. Hope that the chlorides are less than 10 ppm for best price. A sulfur number under a 100 is desirable. A couple of hundred OK, more than that, pricing will suffer.

Lancer- Thuy- Lancer usually pays at the higher end of the spectrum based upon a formula on published pricing. They also like us to deliver to various parts of Oklahoma, AR, etc. Need low Sulfur and Cl- content.

Scott Rainey (Hydrocarbon Resource and Recovery (HRR) – Scott has been paying better recently. I would give him a chance on most all KM light ends to see where he is at.

Hutchinson & Hays – Jason Hemsley- Just recently took sample for ASTM D86 distillation. They are interested in buying ALL of the material. I told him we would consider a contract that gives them some large percentage, but pricing needs to be at or better than our current options. I told him that price now was $1.50 per gallon. Jason wants to fix the price with Platts. That is reasonable to me.

Alamo & Midstate would love to have it, but usually do not want to pay more than ~$0.85 per gallon. Use them as a backup

Jack Kessel – He can sometimes be quite competitive. Ususally requires samples. I had a dirty Toluene stream from KMCO that he paid us $1.75 per gallon on, much better than any others offer.

Chemorph – Carolyn may be able to sell, but historically has not been involved in this product.

Southeaster Chemicals –Louis Mattice – If you have no other outlets, may be worth a phone call.

Other Unrestricted Light Ends – CES generates ~1 – 4 truck loads per week of unrestreicted light ends. This material is generated from various processes. Typically the material has an amber to brown color. Cloudy, with typical hydrocarbon odor. This product goes to Midstate and Alamo. Pricing is $0.85 per gallon. We may have some room to raise the price. This material can change in composition dramatically from load to load, as such, we do not usually do any outside analysis on it. We test for , SG (or API), chor-d-tech, solids, and sometimes flash.

Restricted light ends- This material comes from either ZaCh or PPG La Porte. These solvent streams must be used as a solvent and not burned as fuel. If we develop any new customers to buy the solvent, we need to get them to sign a letter (on shared) that states they will not use the material in those ways.

Stream 3 – ZaCH- John Parker- We are taking this material as hazardous waste and then terminating the manifest at CES by recycling. This is typically done by removing the water, adjusting the pH, filtering, possibly distillation etc. After processing, it is sold as a product. This material contains primarily heptanes and toluene. Appearance is water white with a solvent odor. We currently sell to:

Carolyn: She is selling to a company in Mexico. They have some pretty tight requirements. Toluene content must be LESS than 35%. pH to be between 5 and 9. Color and odor must be good. Carolyn sell the high strength toluene (greater than 50% but likes 70%) to another customer. They look for toluene content, color, and pH. pH less than 4 or over 10 needs to be communicated before shipment.

Southeastern Chemical- Louis sells to a Houston location. Wants good color. Specifies which name must be on our B/L. Requires a COA for each load. I just take ZaCh's analysis and put into a word document that has CES's logo.

PAR- Wendy is interested in this product. I have put off this customer until we get the stream back going smoothly. This should happen by mid may.

Methylene Chloride (MC or MeCl2)-

PAR- We currently sell most loads to PAR (North Carolina). They arrange for the pickup. The sales price is $0.06 per pound. We then provide the wt. tickets to Sochem and pay them a $300 commission per load. (Orig. Sochem was the one who provided this account). PAR seems to be the most flexible and efficient company to work with. My main contact is Wendy Herendeen. She is very easy to work with. Note we have non-competes in place with Sochem/PAR for MC

Besway- Mark Faulker- We sell via Scott Rainey. Scott sell to another broker who sells to Besway. Besway is the company that threatened to sue us for not selling distilled methylene chloride to them for an unprocessed price. We ended up with an agreement that we would offer them at least one load of MC per month (provided we have at least one to sell, they would have rights if we just produced one). The price for the first thee loads would be at the old price, from that point on, it would be at the lowest spot price we are selling to other customers. This is in effect through 2008, after which, we can sell or not sell to them. (see

signed agreement to make sure all is being followed). My personal suggestion for working with this group is to be very careful and document any correspondences you have with them. Note that we have non competes in place with Scott for Besway and MC.

MRC (Montgomery-Rinehardt Corp)- Gary Leopard- This is a company that Carolyn found for us. It seems they continually try to go around her even though they should not. In addition, they are very difficult to work with, often setting up trucks, even loading, then backing out for one reason or another. My advice would be to only use them in absolutely necessary. Then if you must, make sure you have a full analysis and you make the terms very clear. Historically, they have agreed to $0.06 per pound, but we never actually have sold them anything. They are apparently interested in methanol and our stream 3. My opinion of this company is they are used to working with prime chemicals and have difficulty in our secondary market. They are not a great fit, but I would not rule them out if needed.

Southeastern Chemical – Louis Mattice, Jim Mylan. Louis bought one load of MC to sell to someone in Chicago. They would not accept due to claimed water and cloudiness. Retain showed water, cloudiness was to be argued due to the fact our MC is cloudy after pouring, but clears within 30 minutes. We are still working out who pays what for that load. The end result was we sent the load to Safety Clean in Ohio via Carolyn Yatsu. We lost potential revenue, but Mattice was glad we were able to find a home. I think he will be reasonable.

Base Oils- These primarily come from Shell (Joy Baker's account). When looking at base oils, the following is important:

Color- The lighter the better. The lab has a color wheel tester. Light amber (with no cloudiness) brings in the most money.

Gravity- Good to know, in the absence of a viscosity reading, this will have to do. FYI, the lab is in the process of setting up a viscometer. Once we have that, I expect all base oil loads will be tested. In general, they like viscocity similar to motor oil. Too thick is bad, too thin is bad.

Water- The lower the better. Generally, if the oil is opaque, it has water. A quick test is to put a small amount of oil in a beaker and heat to see if it improves cloudiness. If it does, I often send the customer a picture of what it looks like after driving off the water. I would say that while the water content in itself is bad, what the customers are more worried about is the cloudiness.

Odor- Base oil should smell like motor oil. That is a mild hydrocarbon odor. Any amine, sulfur, alcohol, or any strong chemical smell can make it difficult to sell.

Color- From Amber to brown is good. That usually means it does not have a lot of additives or dyes. Color can range to about anything you have seen. Dark Green/Blue oils have been the most difficult to place. Right now if you have a green oil, try Smitties, then H&H.

Solids- Base oils need to be low in solids. High solids indicate the oil has other contaminants. Likely a dirty trailer.

Also keep in mind, that all oils are not base oils. Base oils have been processed more thoroughly than heavy oils from the Crude tower. When selling a base oil, it is good to know as much as you can about where it came from (a base oil suppier??), if not, the more information the better. There are some other chemical/ hydrocarbon mixes that look like base oils, but are not.

Who do you call to sell base oils:

Southcoast Terminals: Arsenio Garcia- They are a good customer and will likely be a bigger customer when we get our oil plant running. They will always check the oil before accepting. Any free water, solids, or differences than expected will result in a return. Arsenio is good to work with, and their location is close. The last load we sold to them was $2.50 per gallon delivered. Historically they have paid between $2.00 and $2.30 per gallon. But with oil prices going up, so does the price of our oils. Arsenio sells this product to a company in Mexico. Their specs are a little looser than what the US has, so he can sell a little wider range of materials.

Hutchinson & Hays- Jason- H&H process the base oils to upgrade. They have the most problems with very dark oils. They are located in Baytown, so it is easy to get the oil to them. They would like us to sell more to them. Historically, they are a little picky, and have not paid as much as Southcoast or Smitties. H&H is a big buyer in our Viscoplex viscosity modifiers. Typical prices to H&H is $1.80 to $2.30 per gallon.

Smitties: Smitties is an end user and buys oils from a variety of plants and brokers. They make a two cycle oil which allows them to take some of the green/blue oils. Smitties seem to be able to take a wider range of oils than most. The problem is we have to ship to their plant which is in Florida?? Anyways, it is a long ways away. My recommendation is to send some oil to them when you don't need them, because in the end you will need them.

Acetic Acid- Right now the only company I know that sends us Acetic acid is ZaCh. The material is ~50% acetic acid and is tea colored. The last load had white floaties in it. We had to sit on the load a while since no one wanted it due to the conc. and solids. We originally offered to Carolyn, but in the end only Scott Rainey was able to move. The price was only $0.01 per pound. For future shipments, make sure you have a home before accepting as a product. The acetic acid from ZaCh has been accepted and profiled to PSC so we can always send there (trans only, PSC bills ZaCh).

This "product" is only generated on a batch basis. According to conversations with Ron and John, they may not make any more acetic acid for some time.

Glycol (not RasGas)- We typically get in drums. The lab will test the glycol content by a special indicator strip. Saber has been the main purchaser, however, they are selective. They only want used ethylene glycols. If it is a mixed glycol, get as much information you can from supplier before committing to buy. Run by Saber first. They do not like solids. For example if the drums have

butylene glycol, they will not want. Pricing is based on concentration. I believe the price is ~$0.80 per gallon for 50% material (check file for exact number).

Ethylene Glycol (RasGas)- At last check we had 2 to 3 truck loads of a 99.7% glycol that was water white. However, it had a hydrocarbon smell. To this point the only person we sold the hydrocarbon smelling glycol to was Mark Speets (Skyhawk) at $0.40 per gallon.

Hydrochloric Acid-

THF-

Viscosity improver-

Ethanol

Butanol

Recovered Oil Skimmings-

CES Fuel-(DSO)-

Chemorph-

Skyhawk

Hyrocarbon Resources & Recovery

Gulf Stream Tanker Chartering

Alamo-

Midstate-

Smitties-

Hutchinson & Hayes-

Southcoast- Arsenio Garcia

Petroleum Express-

Sochem

4 R Marketing-

Dave Alberts-

Saber-

Rampac-

T&H Plastics- Tony Mendoza (Owner)

Miles to Paper Mills

from Greenville, MS

Storage Terminal

	To	Miles	Service By	
1.	Arkansas City, AR (Potlatch)	53	Truck	520
2.	Texarkana, TX	201	Truck	
3.	West Monroe, LA	106	Truck	575
4.	Hodge, LA	155	Truck	
5.	Monticello, MS	177	Truck	
6.	Pine Bluff, AR	104	Barge	565

Average for 5 Sites (1-5) 138 miles from Greenville, MS by truck.

Crossett 515

BASTROP 535

VICKSBURG 547

425 FSL

175 Cleanout

Miles to Paper Mills

from "KMTEX" Port Arthur, TX

Storage Terminal

	To	Miles	Service By
7.	De Ridder, LA	89	Truck
8.	Mansfield, LA	179	Truck
9.	Pineville, LA	154	Truck
10.	Baton Rouge, LA	181	Truck
11.	Evadale, TX	46	Truck

- **Average for 5 Sites (7-11) 130 miles from KMTEX (Port, Arthur, TX) by truck.**
- **Average for 4 Sites (7-10) 151 miles from KMTEX.**
- **Average for 3 Sites (7, 8 & 11) 150 miles from KMTEX.**
- **Average for 2 Sites (7 & 8) 134 miles from KMTEX.**

EPAHO044000478

1

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Arkansas City, Desha, Arkansas, United States

Start: Greenville, Mississippi, United States

Trip: 53.1 mi, 1 hr 10 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	42.1 mi
5.	Turn **right** onto **SR-4 / Crooked Bayou Dr**	3.0 mi
6.	Keep **left** to stay on **SR-4**	7.6 mi
7.	Turn **right** to stay on **SR-4 / Sprague St**	0.1 mi
8.	Arrive at **Arkansas City, Desha, Arkansas, United States** *The last intersection is AR-4 / Morning Star Ave* *If you reach Robert S Moore Ave, you've gone too far*	

EPAHO044000480

End: Arkansas City, Desha, Arkansas, United States

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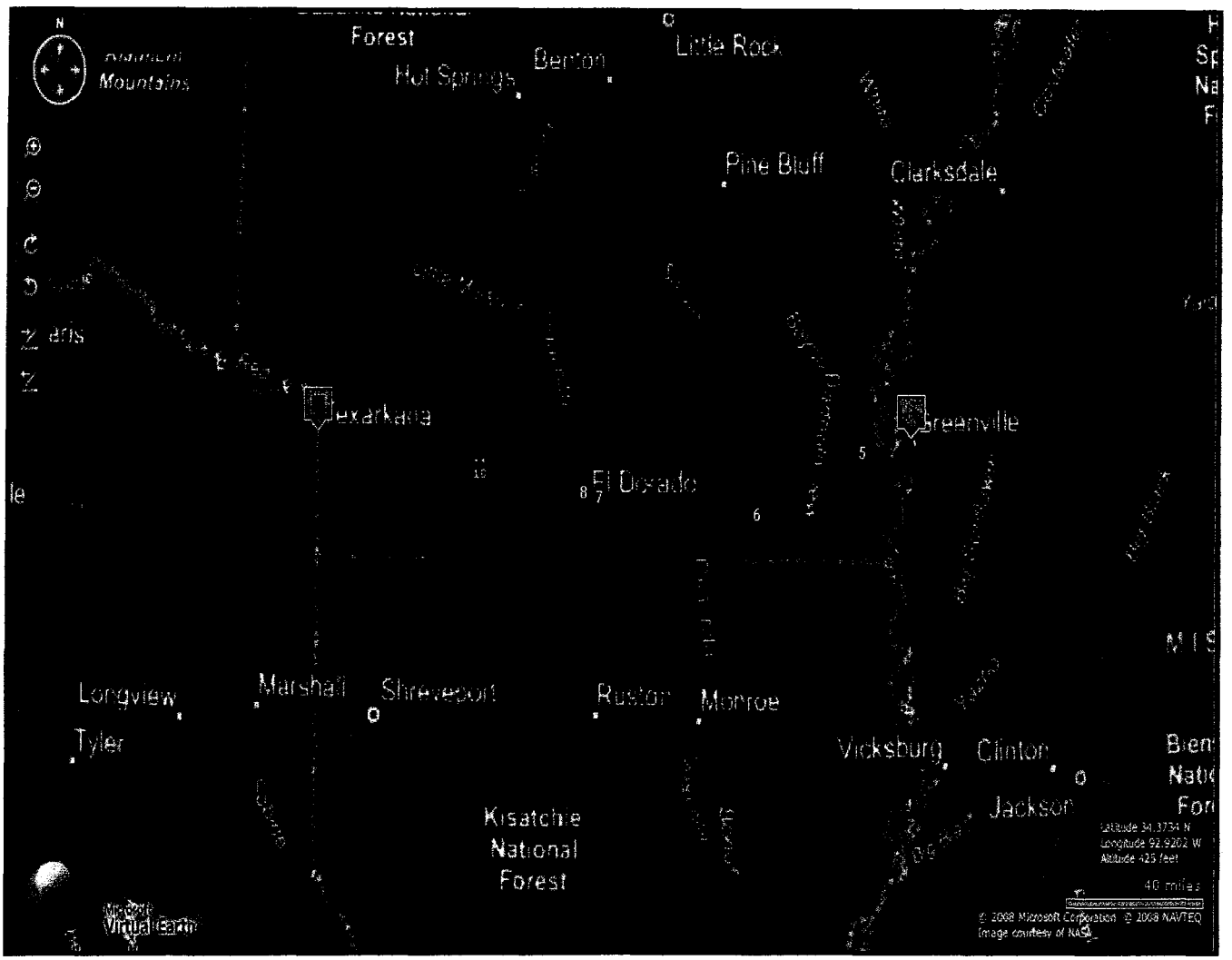
2

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: Greenville, Mississippi, United States to Texarkana, Texas, United States



Start: Greenville, Mississippi, United States

Trip: 201.3 mi, 4 hr 5 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	38.4 mi
6.	Turn **right** to stay on **US-82**	49.1 mi
7.	Keep **right** to stay on **US-82 West**	5.5 mi
8.	At exit **17**, take ramp **left** and follow signs for **US-82 West**	0.6 mi
9.	Keep **straight** onto **US-82 / Magnolia Hwy**	30.5 mi

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10. Turn **right** to stay on **US-79 / US-82** 2.2 mi
11. Turn **left** to stay on **US-82** 52.9 mi
    Entering Texas
12. Turn **left** onto **US-82 / Texas Blvd**
13. Arrive at **Texarkana, Texas, United States**
    The last intersection is US-67 / W Martin Luther King Blvd
    If you reach US-67 / US-82 / W 7th St, you've gone too far

End: Texarkana, Texas, United States

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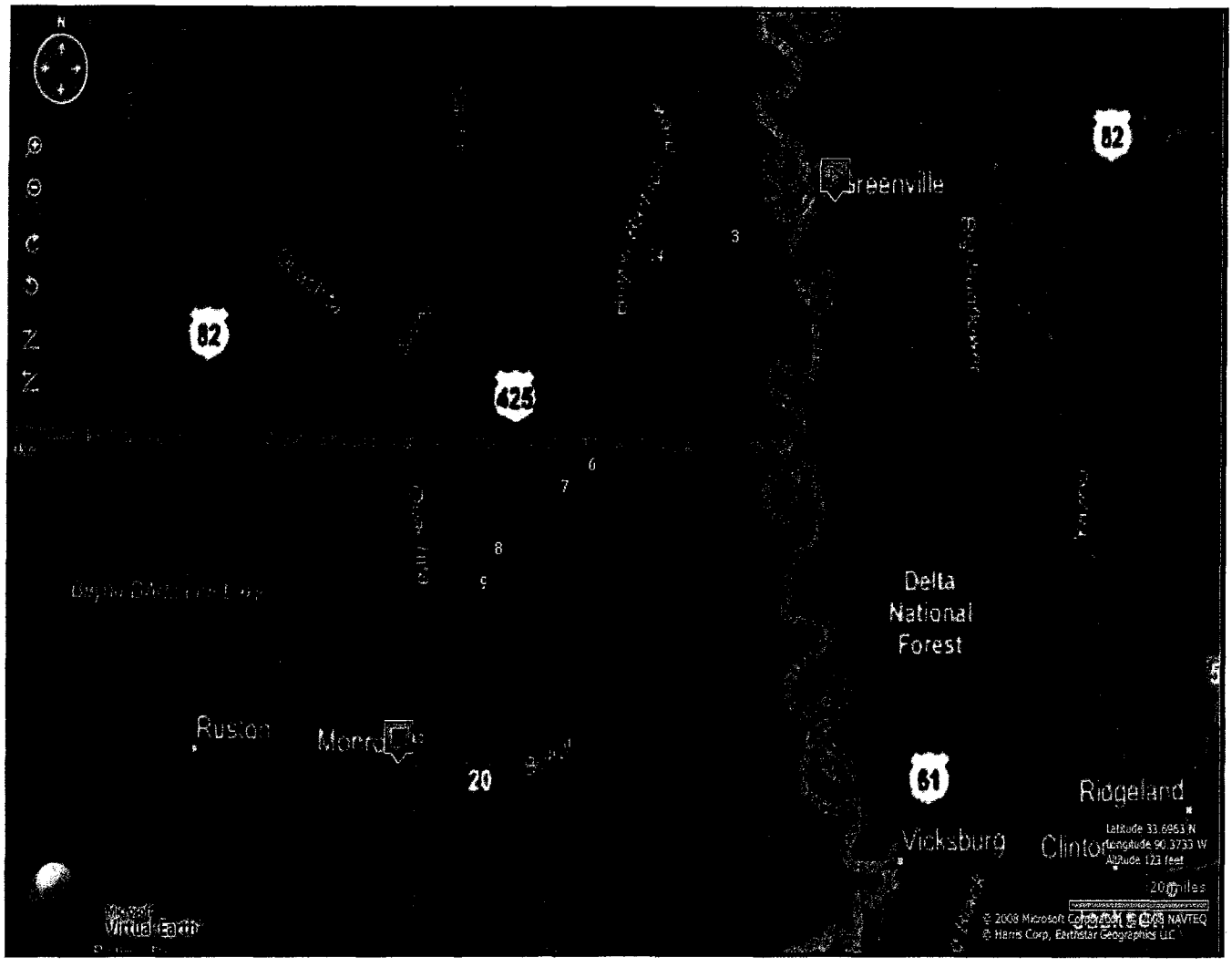
3

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to West Monroe, Louisiana, United States



Start: Greenville, Mississippi, United States

Trip: 106.5 mi, 2 hr 19 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	11.0 mi
6.	Keep **right** onto **US-82 Bus**	1.0 mi
7.	Turn **left** onto **US-165 / E Main St** *Entering Louisiana*	25.2 mi
8.	Turn **right** onto **SR-833 / Jones Cutoff Rd**	4.9 mi
9.	Turn **right** onto **SR-140 / Old Bonita Hwy / Old Bonita Rd**	12.3 mi

EPAHO044000486

10.	Bear **left** onto **US-425 / Crossett Hwy / Crossett Rd**	4.5 mi
11.	Turn **right** onto **US-165 / W Madison Ave South**	22.3 mi
12.	Turn **right** onto **Breard St**	0.6 mi
13.	Bear **right** onto **US-80 / US-165 Bus / Louisville Ave**	2.8 mi
14.	Arrive at **West Monroe, Louisiana, United States** *The last intersection is Cotton St* *If you reach US-80 / Cypress St, you've gone too far*	

End: West Monroe, Louisiana, United States

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4

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Hodge, Jackson, Louisiana, United States

Start: Greenville, Mississippi, United States

Trip: 154.9 mi, 3 hr 13 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	11.0 mi
6.	Keep **right** onto **US-82 Bus**	1.0 mi
7.	Turn **left** onto **US-165 / E Main St** *Entering Louisiana*	25.2 mi
8.	Turn **right** onto **SR-833 / Jones Cutoff Rd**	4.9 mi
9.	Turn **right** onto **SR-140 / Old Bonita Hwy / Old Bonita Rd**	12.3 mi

EPAHO044000489

10.	Bear **left** onto **US-425 / Crossett Hwy / Crossett Rd**	4.5 mi
11.	Turn **right** onto **US-165 / W Madison Ave South**	24.2 mi
12.	Take ramp **right** for **I-20 West** toward **Shreveport**	9.8 mi
13.	At exit **108**, take ramp **right** for **La-546** toward **Cheniere**	0.2 mi
14.	Turn **left** onto **SR-546**	1.1 mi
15.	Keep **left** to stay on **SR-546**	9.2 mi
16.	Turn **right** onto **SR-34**	10.5 mi
17.	Turn **right** onto **SR-4 / Shell Ave**	16.9 mi
18.	Turn **right** onto **US-167**	2.3 mi
19.	Arrive at **Hodge, Jackson, Louisiana, United States** *The last intersection is W Central* *If you reach W Pine St, you've gone too far*	

End: Hodge, Jackson, Louisiana, United States

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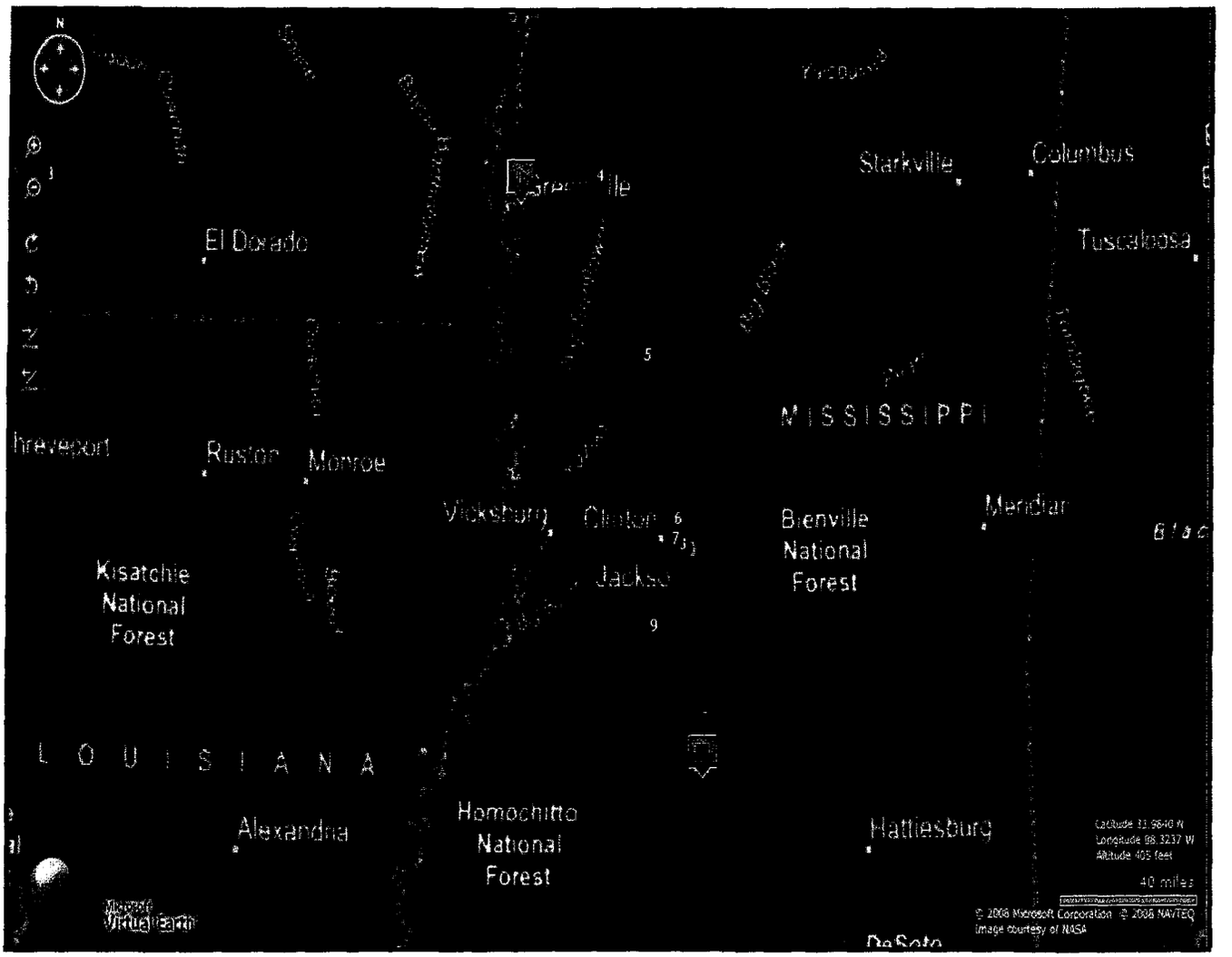
5

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: Greenville, Mississippi, United States to Monticello, Lawrence, Mississippi, United States



Start: Greenville, Mississippi, United States

Trip: 177.5 mi, 3 hr 35 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**, and then immediately turn **right** onto **Martin Luther King Blvd**	0.1 mi
3.	Turn **right** onto **US-82 East / US-278 East**	24.1 mi
4.	Turn **right** onto **US-49W / N Martin Luther King Dr South**	46.4 mi
5.	Take ramp **right** for **US-49 / Jerry Clower Blvd N** toward **Jackson**	39.5 mi
6.	Take ramp **right** and follow signs for **I-220 South**	4.9 mi
7.	Take ramp **left** for **I-20 East** toward **Meridian / Hattiesburg**	2.5 mi
8.	At exit **43A-B**, take ramp **right** for **I-55 South** toward **McComb / McDowell Rd**	20.7 mi

EPAHO044000492

9.	At exit **72**, take ramp **right** for **MS-27** toward **North Crystal Springs / Vicksburg**	0.2 mi
10.	Turn **left** onto **SR-27 South**	37.6 mi
11.	Bear **left** onto **US-84 / W Broad St**	1.4 mi
12.	Arrive at **Monticello, Lawrence, Mississippi, United States** *The last intersection is SR-27 / Brookhaven St* *If you reach Irwin St, you've gone too far*	

End: Monticello, Lawrence, Mississippi, United States

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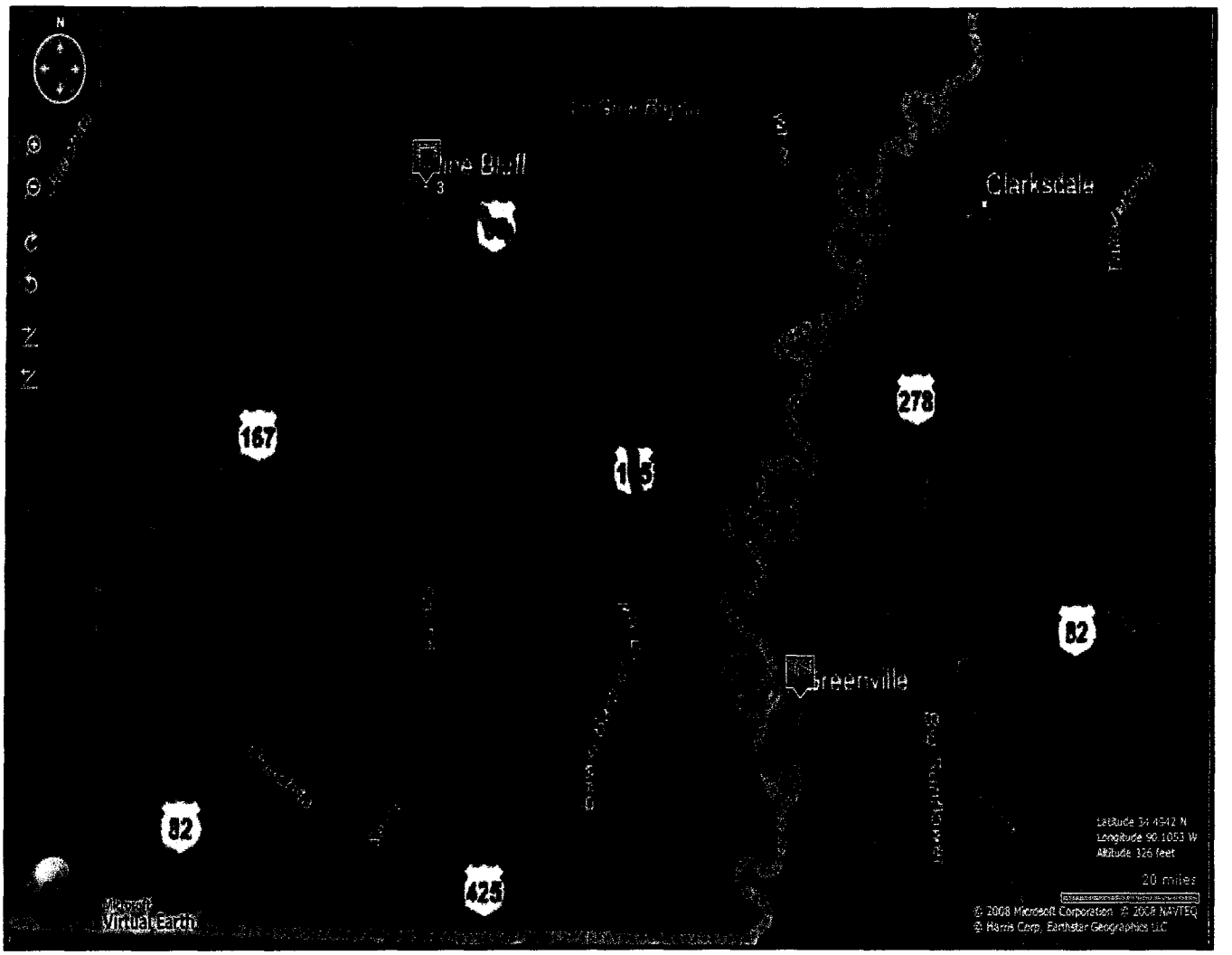
6

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Pine Bluff, Arkansas, United States



Start: Greenville, Mississippi, United States

Trip: 104.4 mi, 2 hr 1 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	100.0 mi
5.	Take ramp **right** for **US-65 North / US 65 Hwy S** toward **Downtown**	3.4 mi
6.	Turn **left** onto **Convention Center Dr / US-63B**	0.4 mi
7.	Turn **right** onto **US-65 Bus North / E 5th Ave**	0.2 mi
8.	Turn **left** onto **SR-15 / S Main St**	0.1 mi
9.	Arrive at **Pine Bluff, Arkansas, United States** *The last intersection is US-65 Bus / E 6th Ave* *If you reach E 8th Ave, you've gone too far*	

End: Pine Bluff, Arkansas, United States

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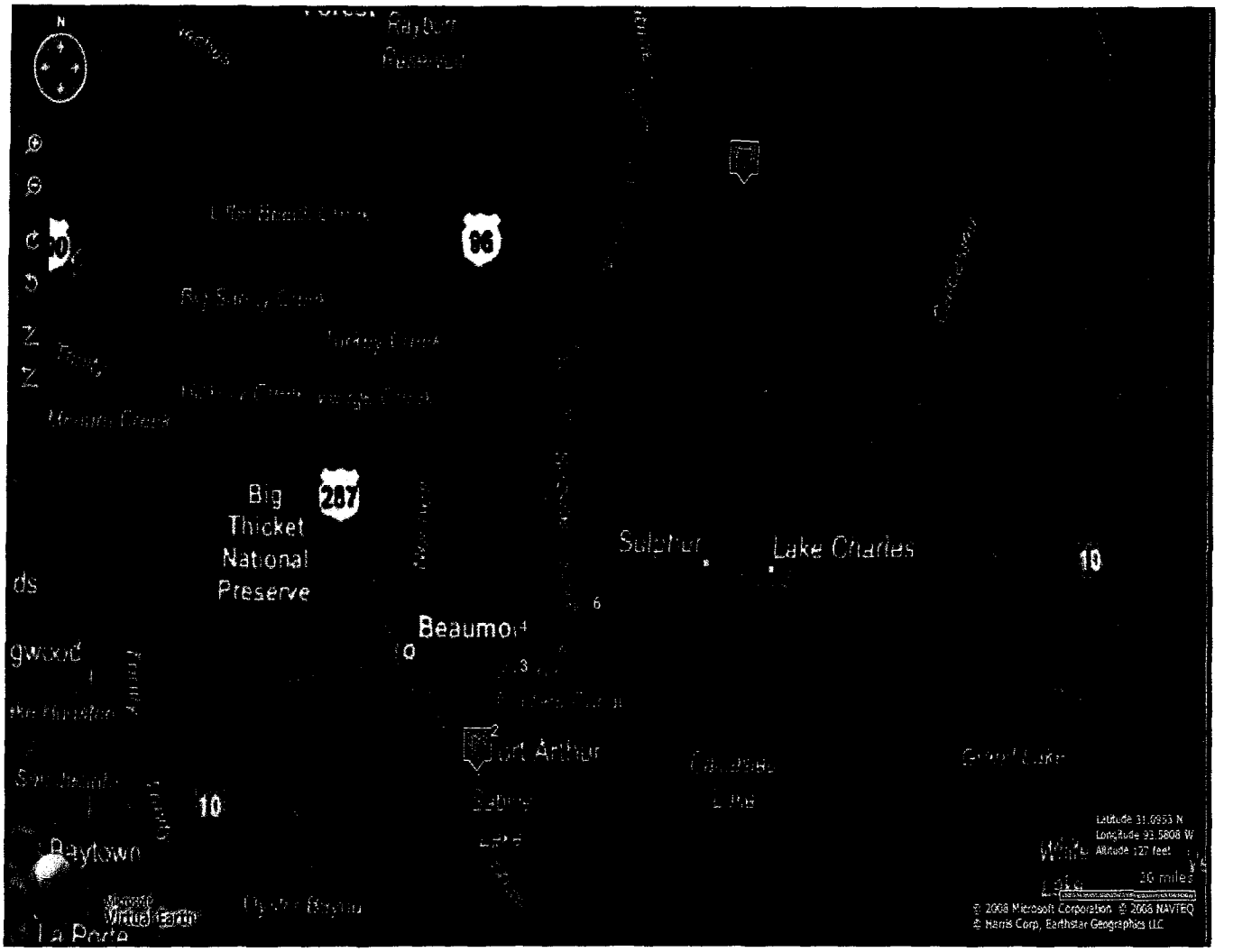
7

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to DeRidder [De Ridder], Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 88.6 mi, 1 hr 44 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	10.9 mi
6.	At exit **4**, take ramp **right** for **US-90 East / La-109** toward **Toomey / Starks**	0.3 mi
7.	Turn **left** onto **US-90**	0.6 mi
8.	Keep **straight** onto **SR-109**	28.6 mi
9.	Turn **left** to stay on **SR-109**	11.5 mi

EPAHO044000498

10. Turn **left** onto **SR-27** 18.3 mi
11. Turn **right** onto **W 8th St** 0.1 mi
12. Turn **left** onto **S Washington St**
13. Arrive at **DeRidder [De Ridder], Louisiana, United States** on the right
    The last intersection is W 8th St
    If you reach W 7th St, you've gone too far

End: DeRidder [De Ridder], Louisiana, United States

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8

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: 2400 Gulfway Dr, Port Arthur to Mansfield, Louisiana, United States

Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 178.7 mi, 3 hr 20 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Keep **straight** onto **TX-73 E / TX-87 N**	0.5 mi
3.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.4 mi
4.	Turn **left** to stay on **SR-62 / SR-73**	28.7 mi
5.	Keep **straight** onto **US-96 Bus**	0.7 mi
6.	Turn **right** onto **US-96**	98.9 mi
7.	Turn **right** onto **SR-7 / San Augustine St**	14.9 mi
8.	Keep **straight** onto **US-84** *Entering Louisiana*	21.3 mi
9.	Turn **left** onto **SR-3103 / Kings Hwy**	0.8 mi
10.	Turn **left** onto **US-84 / US-171 / S Washington Ave**	0.2 mi

EPAHO044000501

11. Arrive at **Mansfield, Louisiana, United States**
The last intersection is SR-513 / Gibbs St
If you reach Welch St, you've gone too far

End: Mansfield, Louisiana, United States

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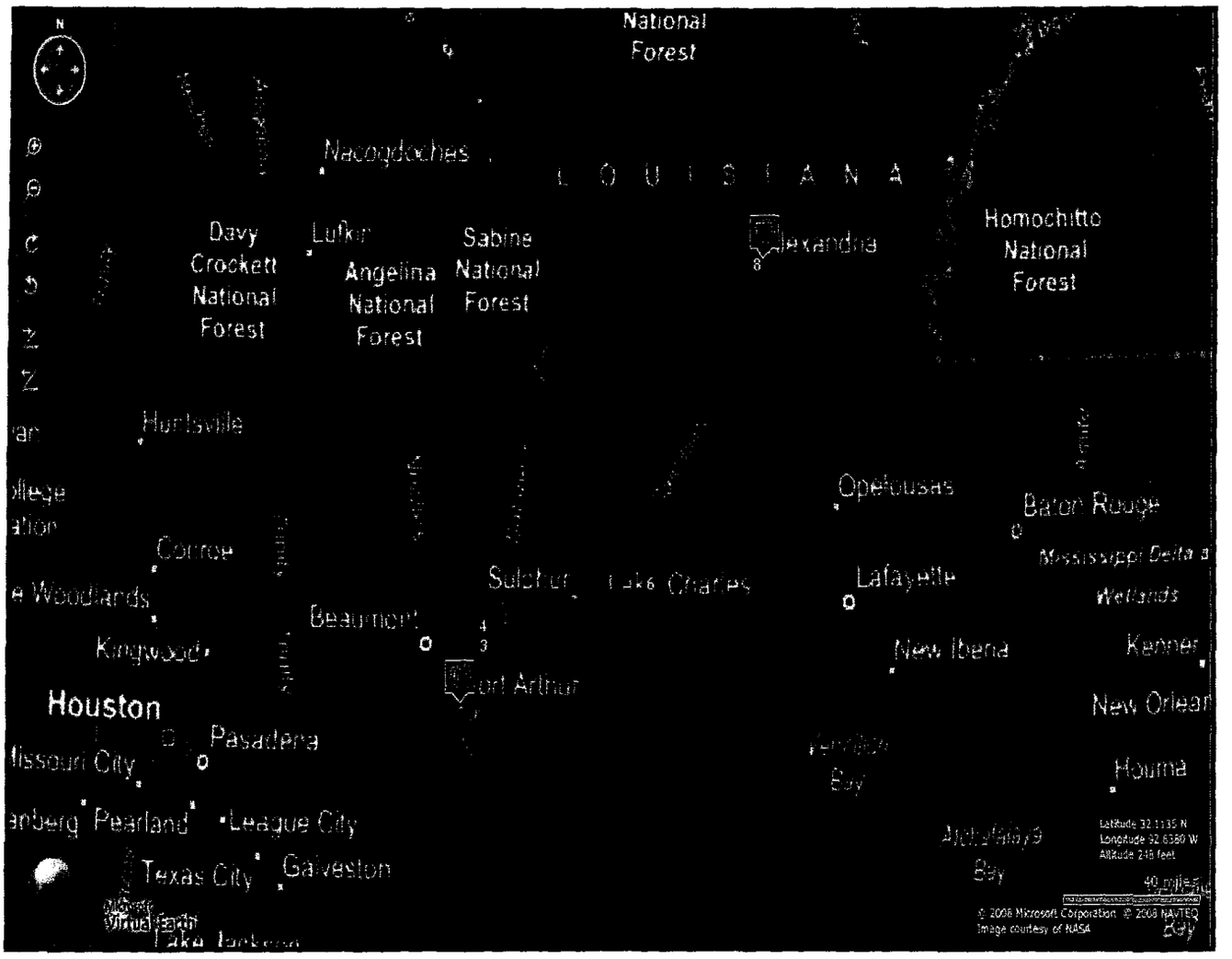
9

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to Pineville, Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 153.6 mi, 2 hr 50 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	51.3 mi
6.	At exit **44**, take ramp **right** for **US-165 North** toward **Alexandria / Kinder**	0.4 mi
7.	Turn **left** onto **US-165**	78.7 mi
8.	At roundabout, take **3rd** exit	1.1 mi
9.	Take ramp **right** for **MacArthur Dr** toward **Jackson St**	0.3 mi

EPAHO044000504

10. Turn **right** onto **SR-1208 3 East / Jackson St** 1.8 mi
11. Keep **straight** onto **US-165 Bus / Jackson St** 1.7 mi
12. Arrive at **Pineville, Louisiana, United States**
    The last intersection is Hayden St
    If you reach SR-107 / Shamrock Ave, you've gone too far

End: Pineville, Louisiana, United States

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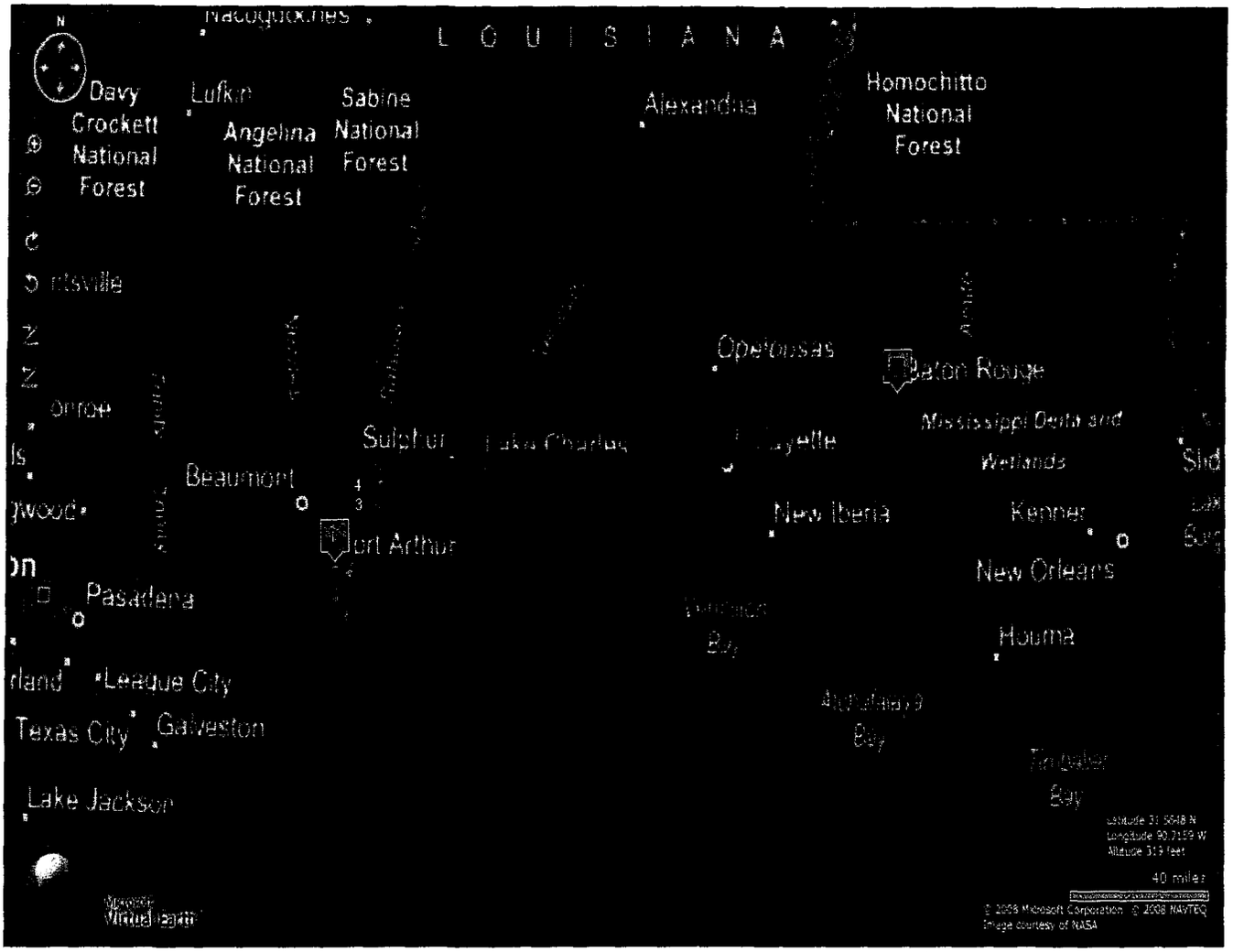
10

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to Baton Rouge, Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 181.0 mi, 2 hr 52 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	161.9 mi
6.	At exit **155A**, take ramp **right** for **Nicholson Dr / La-30** toward **Downtown**	0.3 mi
7.	Bear **right** onto **SR-30 / Nicholson Dr**	0.5 mi
8.	Turn **right** onto **SR-73 / Government St**	
9.	Arrive at **Baton Rouge, Louisiana, United States** *The last intersection is SR-30 / St Louis St*	

If you reach St Ferdinand St, you've gone too far

End: Baton Rouge, Louisiana, United States

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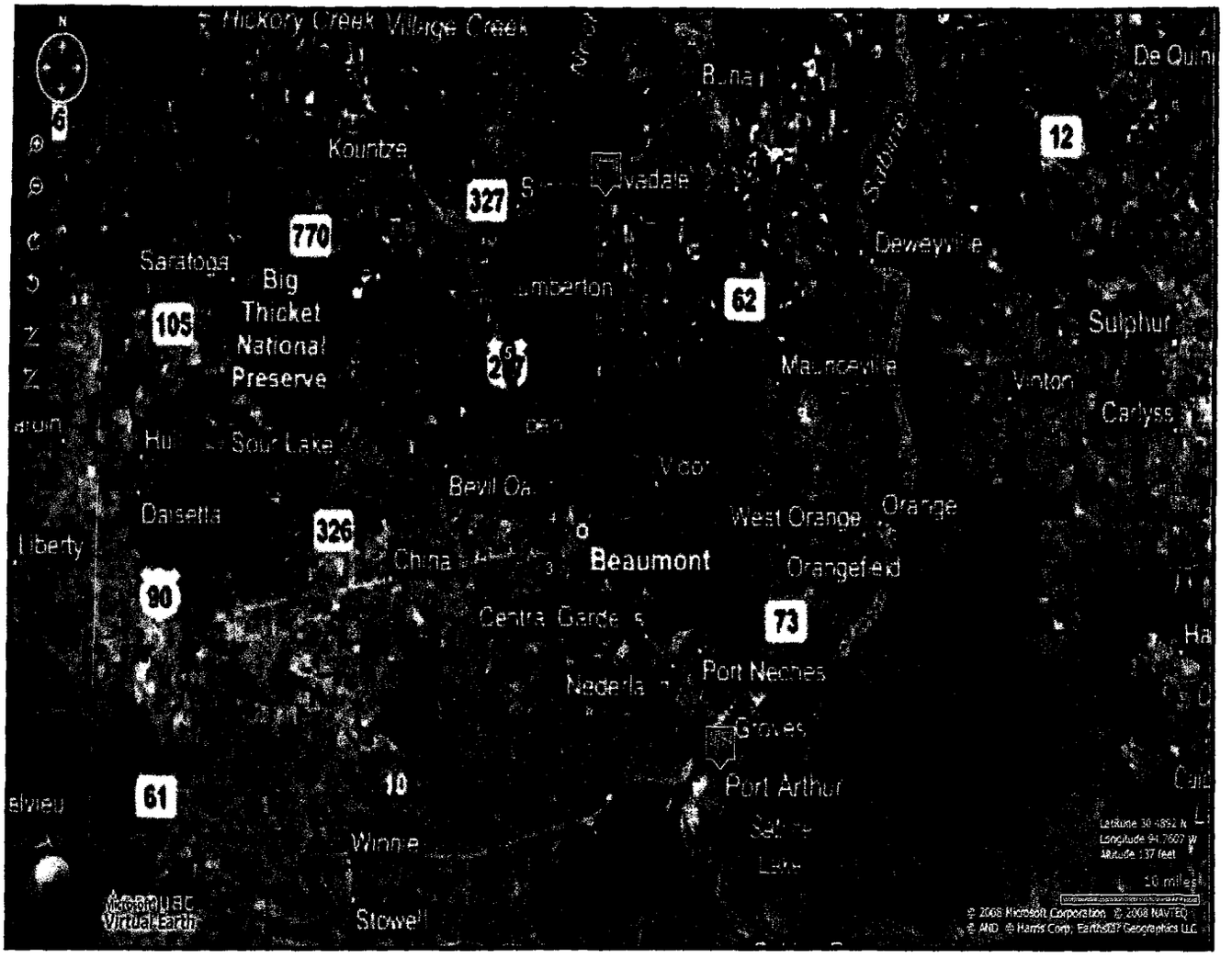
11

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: 2400 Gulfway Dr, Port Arthur to Evadale, Jasper, Texas, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 46.4 mi, 46 min

1.	Depart **SR-87 / 16th St**	0.3 mi
2.	Turn **left** onto **US-69 / US-96 / US-287 / Woodworth Blvd**	17.7 mi
3.	Take ramp **right** for **I-10 East** toward **Lake Charles / Lufkin**	2.9 mi
4.	Keep **right** onto **US-69 North / US-96 North / US-287 North**	10.3 mi
5.	Keep **right** to stay on **US-96 North**	14.8 mi
6.	Bear **right** toward **FM-105**	0.2 mi
7.	Keep **straight** onto **FM-105**	0.2 mi
8.	Arrive at **Evadale, Jasper, Texas, United States** *The last intersection is County Road 857* *If you reach Private Road 8325, you've gone too far*	

End: Evadale, Jasper, Texas, United States

EPAHO044000510

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Miles to Paper Mills from Greenville, MS Storage Terminal

Existing Customers

	To	Miles	By	Miller Transport Caustic Rates ($)
1.	Arkansas City, Ar (Potlatch)	53	Truck	$ 712.50
2.	Texarkana, TX	201	Truck	
3.	West Monroe, LA	106	Truck	$ 819.38
4.	Hodge, LA	155	Truck	
5.	Monticello, MS	177	Truck	
6.	Pine Bluff, AR	104	Barge	

Average for 5 Sites (1-5) 138 miles from Greenville, MS by Truck.

Potential Paper Mill Customers

	To	Miles	By	Miller Transport Caustic Rates ($)
12.	Crossett, AR	69	Truck	$ 733.88
13.	Bastrop, LA	81	Truck	$ 762.38
14.	Vicksburg, MS	91	Truck	$ 798.00
15.	Grenada, MS	86	Truck	$ 779.48

Average for 1-5 and 12-15 is 114 miles.

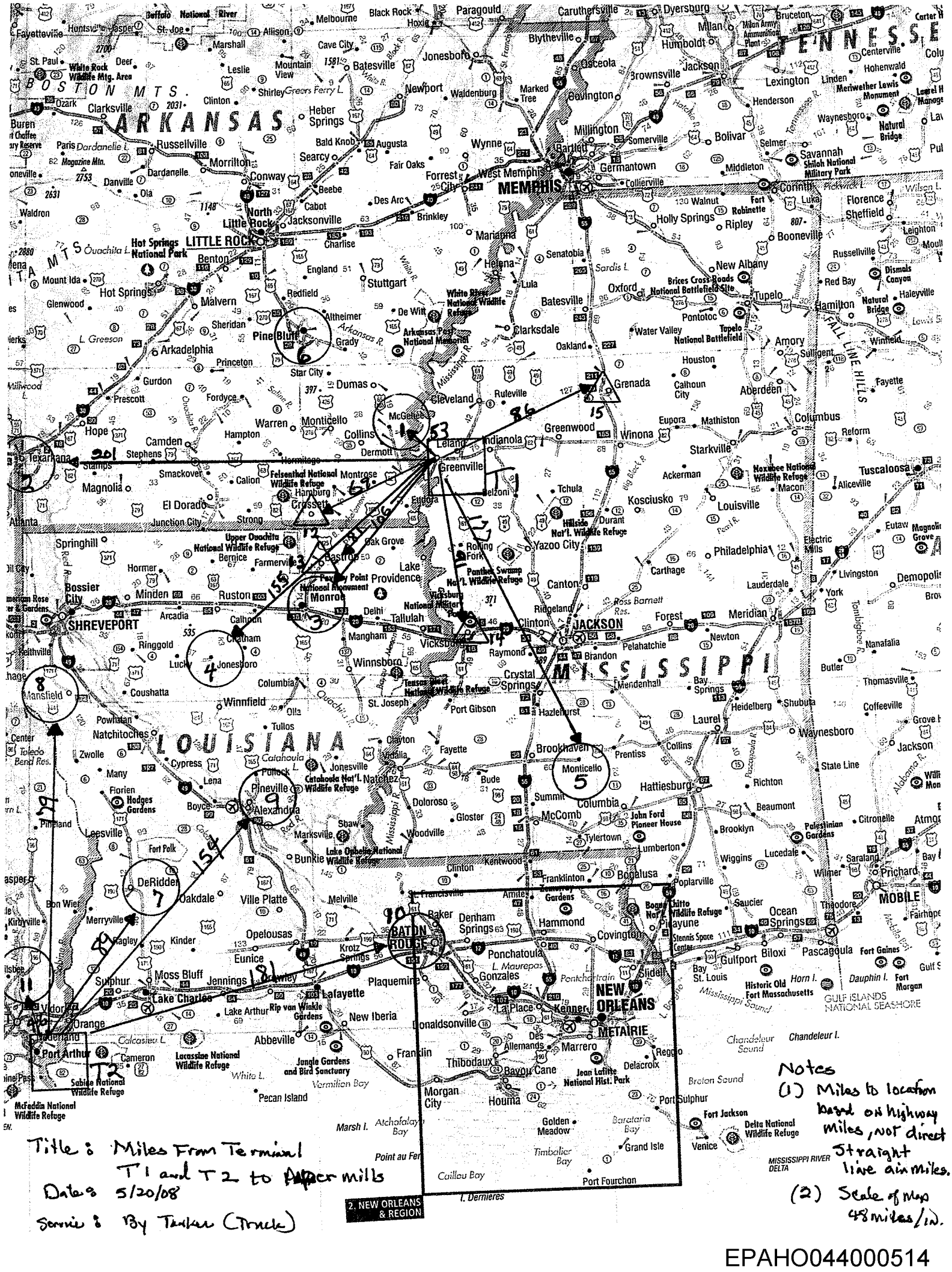
NOTES:
1. Truck charges include 42.5 FSC

MWWP Miles 5 20 8

Miles to Paper Mills
from "KMTEX" Port Arthur, TX
Storage Terminal

	To	Miles	By
7.	De Ridder, LA	89	Truck
8.	Mansfield, LA	179	Truck
9.	Pineville, LA	154	Truck
10.	Baton Rouge, LA	181	Truck
11.	Evadale, TX	46	Truck

- Average for 5 Sites (7-11) 130 miles from KMTEX.
- Average for 4 Sites (7-10) 151 miles from KMTEX.
- Average for 3 Sites (7, 8 & 11) 150 miles from KMTEX.
- Average for 2 Sites (7 & 8) 134 miles from KMTEX.



EPAHO044000514

Refineries & Caustic

EPAHO04400515

8/14/09
WD
K-3
10

Miles to Paper Mills
from Greenville, MS
Storage Terminal

	To	Miles	Service By
1.	Arkansas City, AR (Potlatch)	53	Truck
2.	Texarkana, TX	201	Truck
3.	West Monroe, LA	106	Truck
4.	Hodge, LA	155	Truck
5.	Monticello, MS	177	Truck
6.	Pine Bluff, AR	104	Barge

Miller Transport Canister Rates From Greenville To
$712.50
$819.38

Average for 5 Sites (1-5) 138 miles from Greenville, MS by truck.

Potential Paper Mills

12. Crossett, AR	68	Truck	$733.88
13. Bastrop, LA	82	Truck	$862.38
14. Vicksburg, MS	101	Truck	$798.00
15. Grenada, MS	86	Truck	$779.48

Average For 1-5 and 12-15 is 114 Miles

Notes

(1) Truck Charges include 42.5 FSC

(2) Miller Transporters, INC. Jackson, MS (601) 932-8331 Mark Geiger

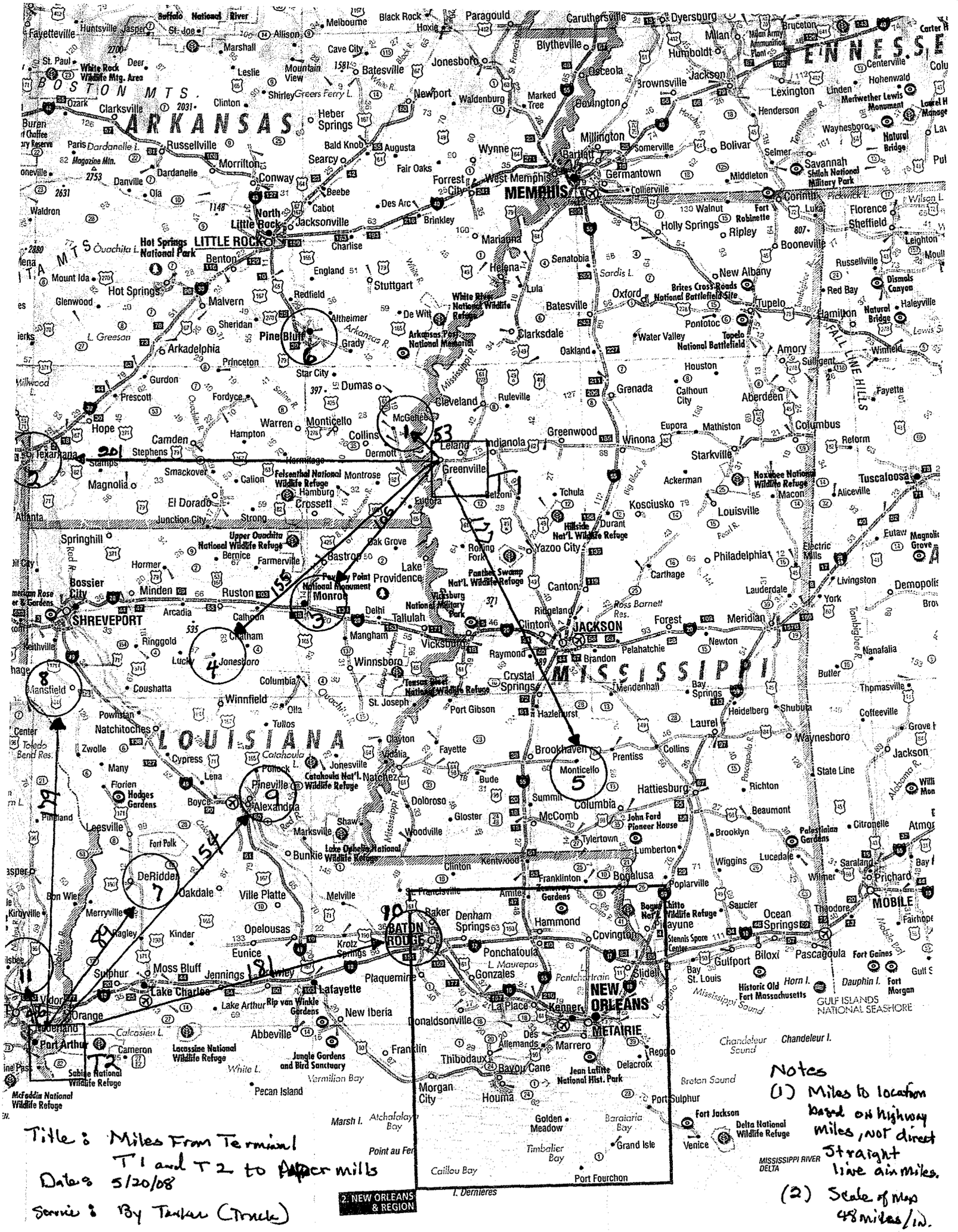
Miles to Paper Mills

from "KMTEX" Port Arthur, TX

Storage Terminal

	To	Miles	Service By
7.	De Ridder, LA	89	Truck
8.	Mansfield, LA	179	Truck
9.	Pineville, LA	154	Truck
10.	Baton Rouge, LA	181	Truck
11.	Evadale, TX	46	Truck

- Average for 5 Sites (7-11) 130 miles from KMTEX (Port, Arthur, TX) by truck.
- Average for 4 Sites (7-10) 151 miles from KMTEX.
- Average for 3 Sites (7, 8 & 11) 150 miles from KMTEX.
- Average for 2 Sites (7 & 8) 134 miles from KMTEX.



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1

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Arkansas City, Desha, Arkansas, United States

Start: Greenville, Mississippi, United States

Trip: 53.1 mi, 1 hr 10 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	42.1 mi
5.	Turn **right** onto **SR-4 / Crooked Bayou Dr**	3.0 mi
6.	Keep **left** to stay on **SR-4**	7.6 mi
7.	Turn **right** to stay on **SR-4 / Sprague St**	0.1 mi
8.	Arrive at **Arkansas City, Desha, Arkansas, United States** *The last intersection is AR-4 / Morning Star Ave* *If you reach Robert S Moore Ave, you've gone too far*	

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End: Arkansas City, Desha, Arkansas, United States

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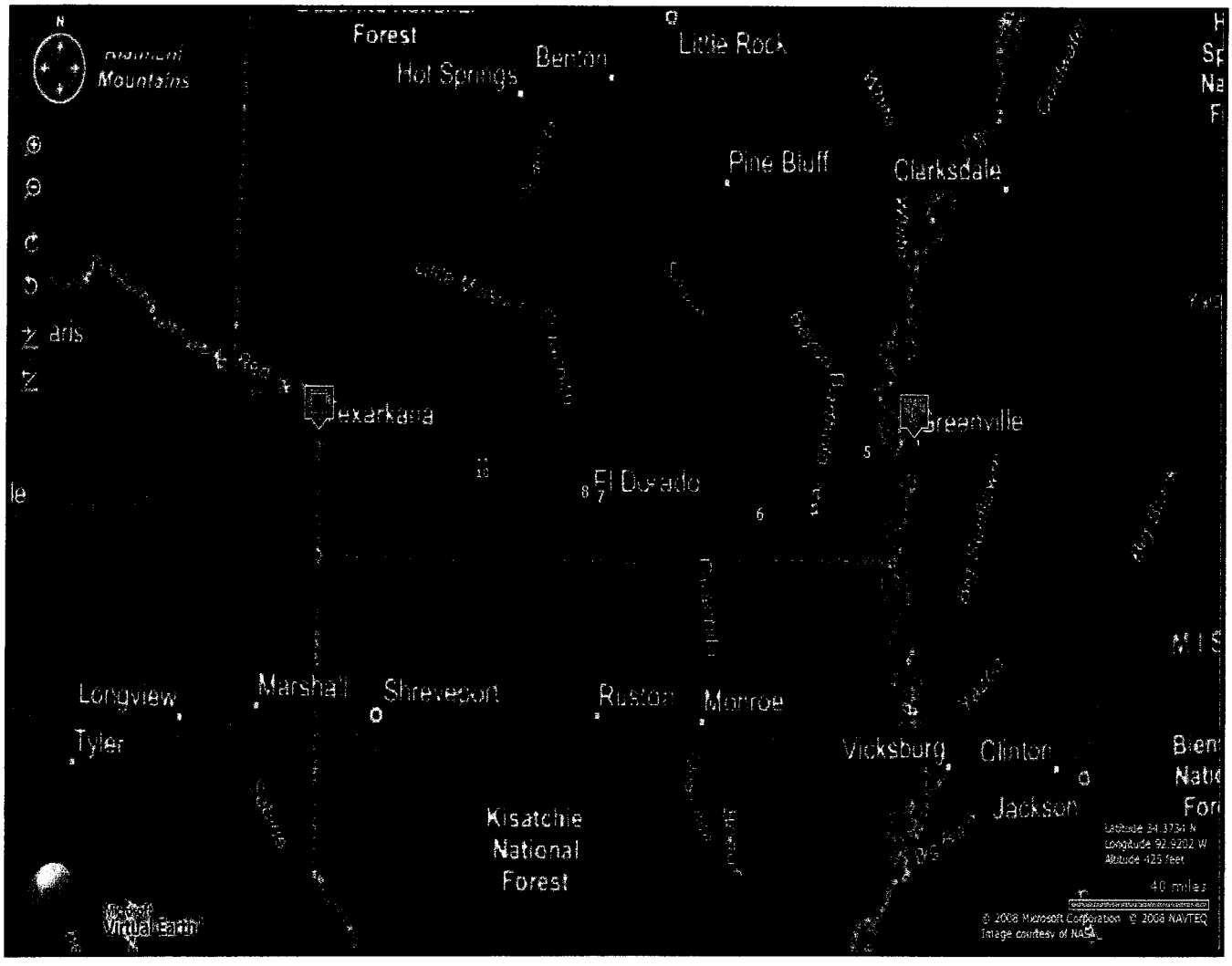
2

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: Greenville, Mississippi, United States to Texarkana, Texas, United States



Start: Greenville, Mississippi, United States

Trip: 201.3 mi, 4 hr 5 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	38.4 mi
6.	Turn **right** to stay on **US-82**	49.1 mi
7.	Keep **right** to stay on **US-82 West**	5.5 mi
8.	At exit **17**, take ramp **left** and follow signs for **US-82 West**	0.6 mi
9.	Keep **straight** onto **US-82 / Magnolia Hwy**	30.5 mi

10. Turn **right** to stay on **US-79 / US-82** 2.2 mi
11. Turn **left** to stay on **US-82** 52.9 mi
    Entering Texas
12. Turn **left** onto **US-82 / Texas Blvd**
13. Arrive at **Texarkana, Texas, United States**
    The last intersection is US-67 / W Martin Luther King Blvd
    If you reach US-67 / US-82 / W 7th St, you've gone too far

End: Texarkana, Texas, United States

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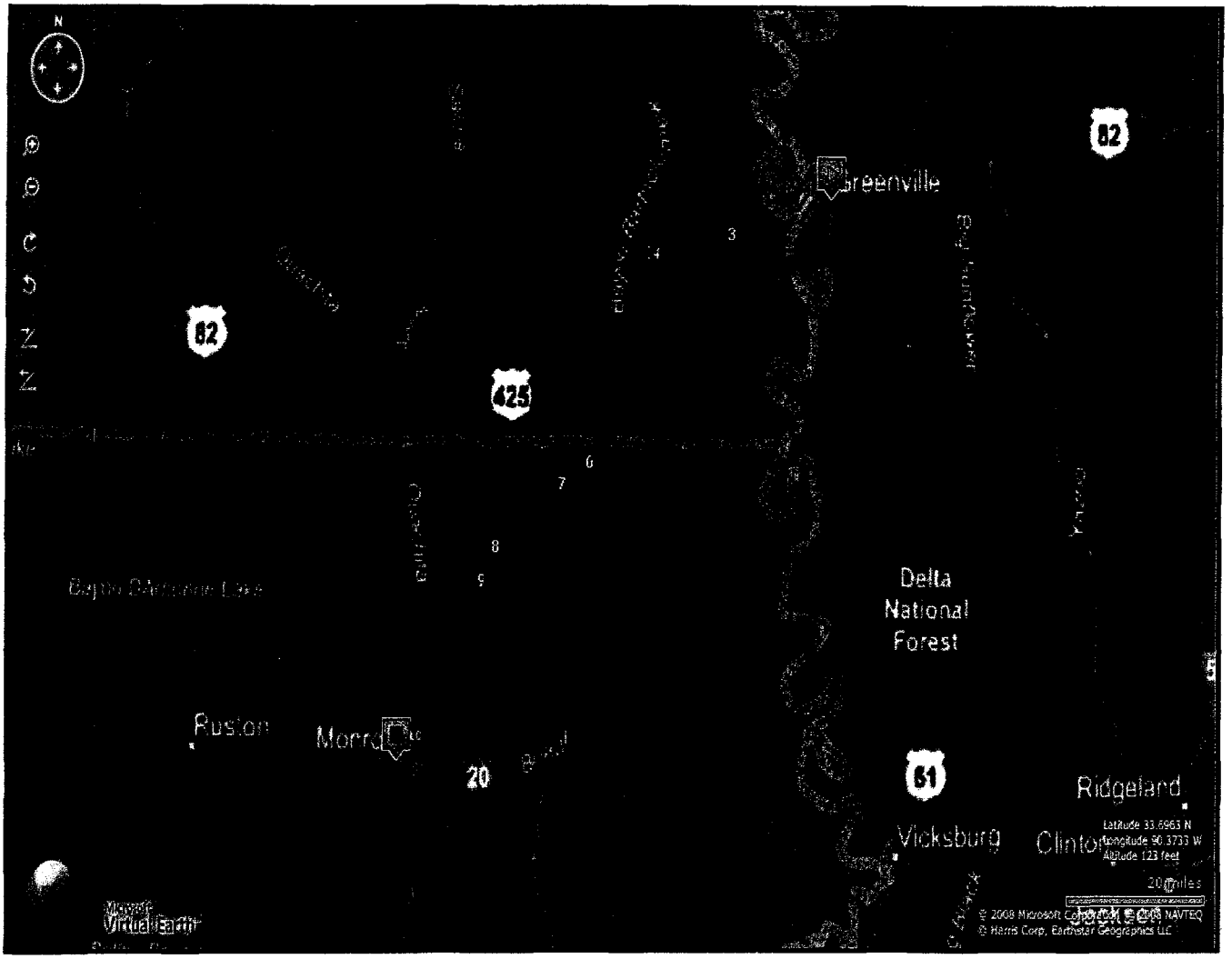
3

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to West Monroe, Louisiana, United States



Start: Greenville, Mississippi, United States

Trip: 106.5 mi, 2 hr 19 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	11.0 mi
6.	Keep **right** onto **US-82 Bus**	1.0 mi
7.	Turn **left** onto **US-165 / E Main St** *Entering Louisiana*	25.2 mi
8.	Turn **right** onto **SR-833 / Jones Cutoff Rd**	4.9 mi
9.	Turn **right** onto **SR-140 / Old Bonita Hwy / Old Bonita Rd**	12.3 mi

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10.	Bear **left** onto **US-425 / Crossett Hwy / Crossett Rd**	4.5 mi
11.	Turn **right** onto **US-165 / W Madison Ave South**	22.3 mi
12.	Turn **right** onto **Breard St**	0.6 mi
13.	Bear **right** onto **US-80 / US-165 Bus / Louisville Ave**	2.8 mi
14.	Arrive at **West Monroe, Louisiana, United States** *The last intersection is Cotton St* *If you reach US-80 / Cypress St, you've gone too far*	

End: West Monroe, Louisiana, United States

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4

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Hodge, Jackson, Louisiana, United States

Start: Greenville, Mississippi, United States

Trip: 154.9 mi, 3 hr 13 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**	0.2 mi
3.	Turn **right** onto **Mortimer Ln**	0.1 mi
4.	Turn **left** onto **US-82 / US-278 / US-82 E** *Entering Arkansas*	21.6 mi
5.	Turn **left** to stay on **US-82 / US-82 W**	11.0 mi
6.	Keep **right** onto **US-82 Bus**	1.0 mi
7.	Turn **left** onto **US-165 / E Main St** *Entering Louisiana*	25.2 mi
8.	Turn **right** onto **SR-833 / Jones Cutoff Rd**	4.9 mi
9.	Turn **right** onto **SR-140 / Old Bonita Hwy / Old Bonita Rd**	12.3 mi

10.	Bear **left** onto **US-425 / Crossett Hwy / Crossett Rd**	4.5 mi
11.	Turn **right** onto **US-165 / W Madison Ave South**	24.2 mi
12.	Take ramp **right** for **I-20 West** toward **Shreveport**	9.8 mi
13.	At exit **108**, take ramp **right** for **La-546** toward **Cheniere**	0.2 mi
14.	Turn **left** onto **SR-546**	1.1 mi
15.	Keep **left** to stay on **SR-546**	9.2 mi
16.	Turn **right** onto **SR-34**	10.5 mi
17.	Turn **right** onto **SR-4 / Shell Ave**	16.9 mi
18.	Turn **right** onto **US-167**	2.3 mi
19.	Arrive at **Hodge, Jackson, Louisiana, United States** *The last intersection is W Central* *If you reach W Pine St, you've gone too far*	

End: Hodge, Jackson, Louisiana, United States

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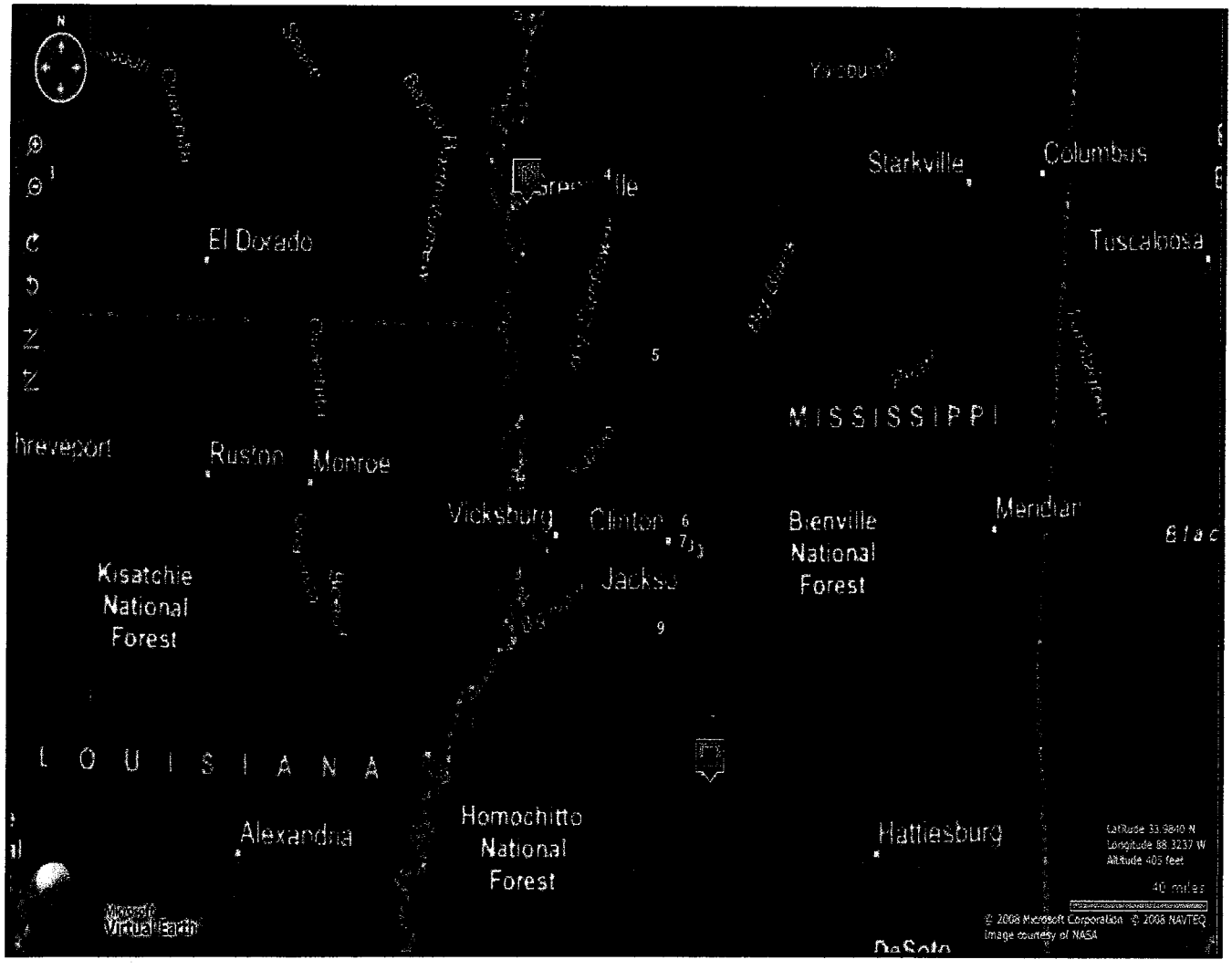
5

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: Greenville, Mississippi, United States to Monticello, Lawrence, Mississippi, United States



Start: Greenville, Mississippi, United States

Trip: 177.5 mi, 3 hr 35 min

1.	Depart **SR-1 / Martin Luther King Blvd South**	
2.	Turn **right** onto **E Havana St**, and then immediately turn **right** onto **Martin Luther King Blvd**	0.1 mi
3.	Turn **right** onto **US-82 East / US-278 East**	24.1 mi
4.	Turn **right** onto **US-49W / N Martin Luther King Dr South**	46.4 mi
5.	Take ramp **right** for **US-49 / Jerry Clower Blvd N** toward **Jackson**	39.5 mi
6.	Take ramp **right** and follow signs for **I-220 South**	4.9 mi
7.	Take ramp **left** for **I-20 East** toward **Meridian / Hattiesburg**	2.5 mi
8.	At exit **43A-B**, take ramp **right** for **I-55 South** toward **McComb / McDowell Rd**	20.7 mi

9.	At exit **72**, take ramp **right** for **MS-27** toward **North Crystal Springs / Vicksburg**	0.2 mi
10.	Turn **left** onto **SR-27 South**	37.6 mi
11.	Bear **left** onto **US-84 / W Broad St**	1.4 mi
12.	Arrive at **Monticello, Lawrence, Mississippi, United States** *The last intersection is SR-27 / Brookhaven St* *If you reach Irwin St, you've gone too far*	

End: Monticello, Lawrence, Mississippi, United States

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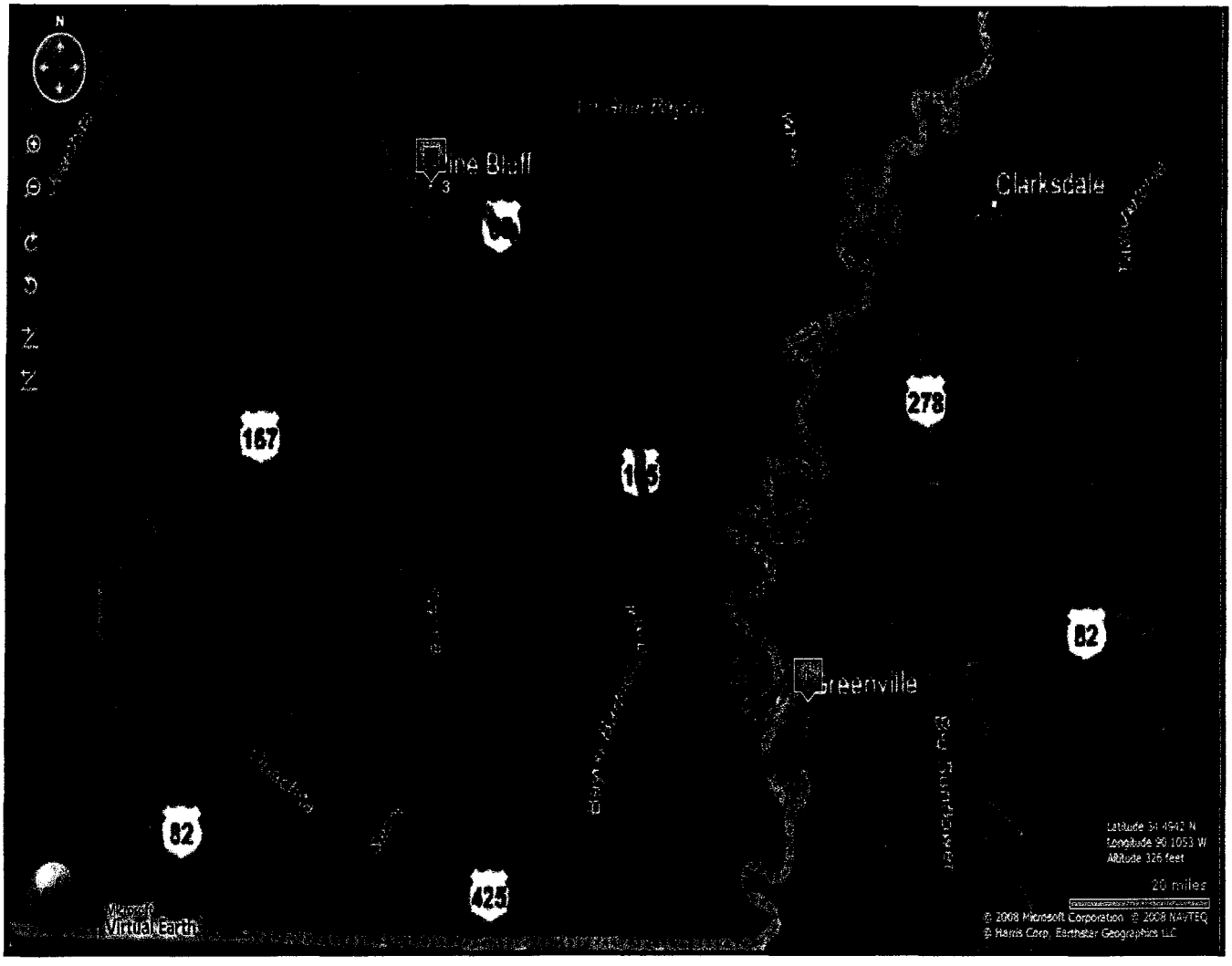
6

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : Greenville, Mississippi, United States to Pine Bluff, Arkansas, United States



Start: Greenville, Mississippi, United States

Trip: 104.4 mi, 2 hr 1 min

1. Depart **SR-1 / Martin Luther King Blvd South**
2. Turn **right** onto **E Havana St** — 0.2 mi
3. Turn **right** onto **Mortimer Ln** — 0.1 mi
4. Turn **left** onto **US-82 / US-278 / US-82 E** — 100.0 mi
   Entering Arkansas
5. Take ramp **right** for **US-65 North / US 65 Hwy S** toward **Downtown** — 3.4 mi
6. Turn **left** onto **Convention Center Dr / US-63B** — 0.4 mi
7. Turn **right** onto **US-65 Bus North / E 5th Ave** — 0.2 mi
8. Turn **left** onto **SR-15 / S Main St** — 0.1 mi
9. Arrive at **Pine Bluff, Arkansas, United States**
   The last intersection is US-65 Bus / E 6th Ave
   If you reach E 8th Ave, you've gone too far

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End: Pine Bluff, Arkansas, United States

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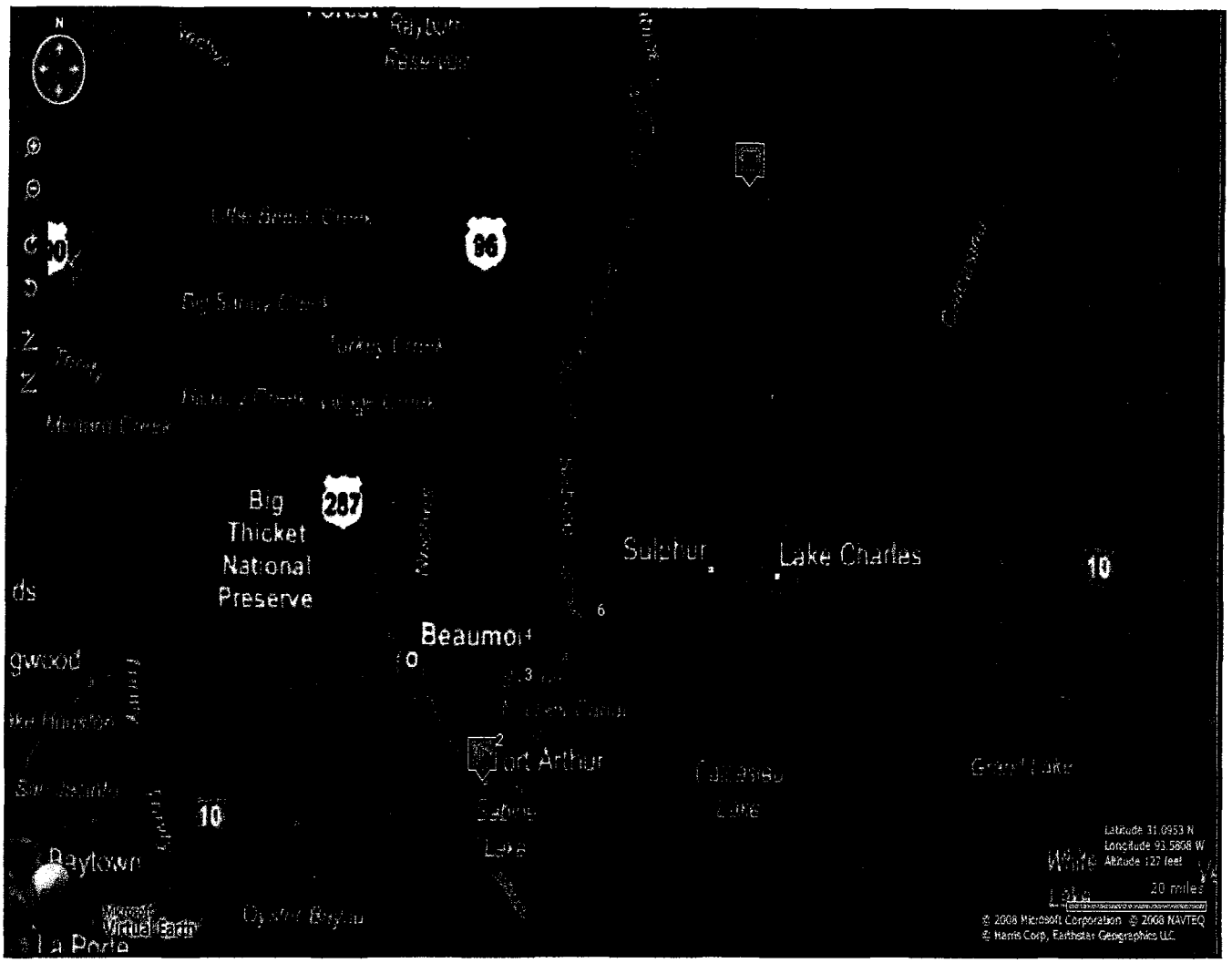
7

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to DeRidder [De Ridder], Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 88.6 mi, 1 hr 44 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	10.9 mi
6.	At exit **4**, take ramp **right** for **US-90 East / La-109** toward **Toomey / Starks**	0.3 mi
7.	Turn **left** onto **US-90**	0.6 mi
8.	Keep **straight** onto **SR-109**	28.6 mi
9.	Turn **left** to stay on **SR-109**	11.5 mi

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10. Turn **left** onto **SR-27** 18.3 mi
11. Turn **right** onto **W 8th St** 0.1 mi
12. Turn **left** onto **S Washington St**
13. Arrive at **DeRidder [De Ridder], Louisiana, United States** on the right
    The last intersection is W 8th St
    If you reach W 7th St, you've gone too far

End: DeRidder [De Ridder], Louisiana, United States

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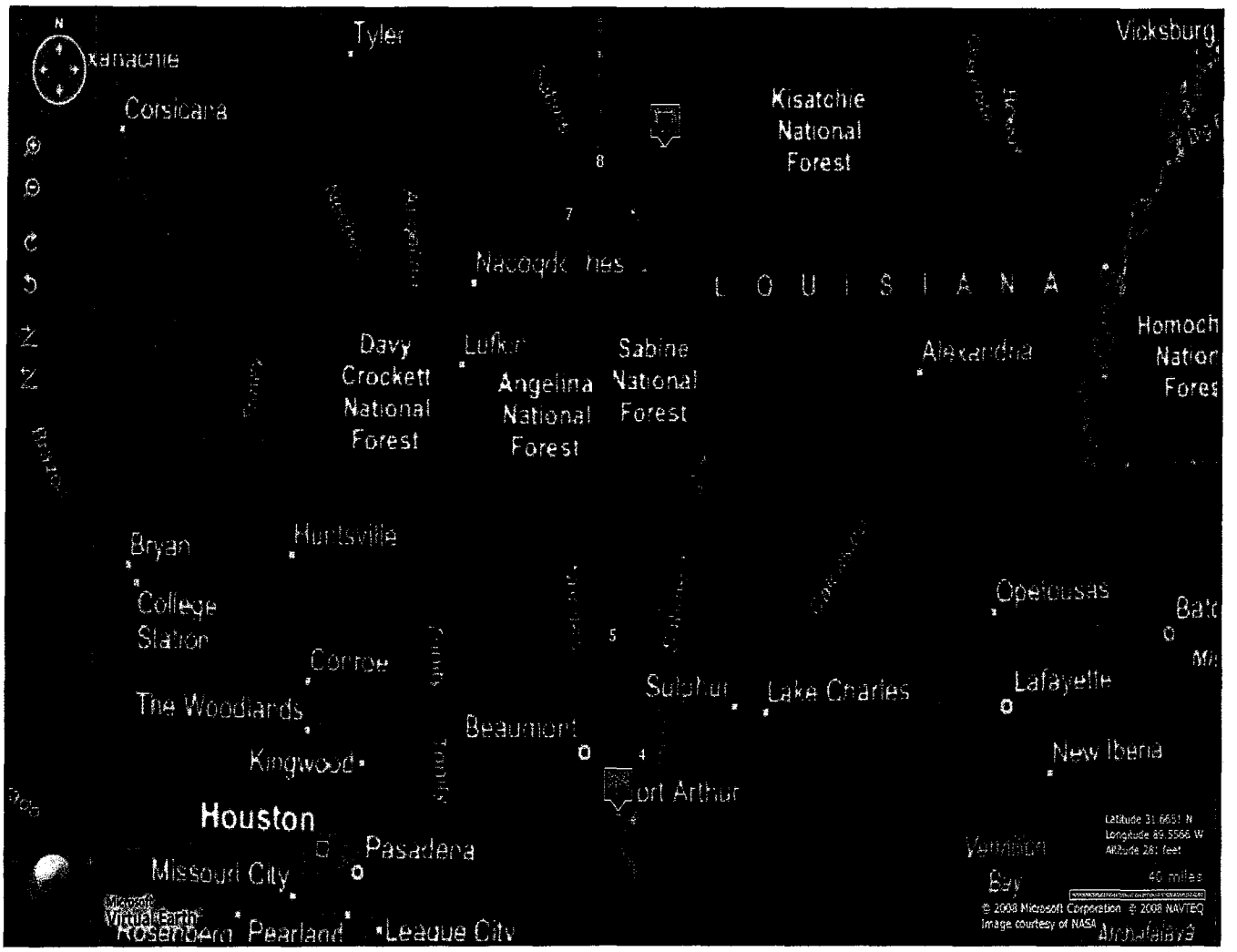
8

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: 2400 Gulfway Dr, Port Arthur to Mansfield, Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 178.7 mi, 3 hr 20 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Keep **straight** onto **TX-73 E / TX-87 N**	0.5 mi
3.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.4 mi
4.	Turn **left** to stay on **SR-62 / SR-73**	28.7 mi
5.	Keep **straight** onto **US-96 Bus**	0.7 mi
6.	Turn **right** onto **US-96**	98.9 mi
7.	Turn **right** onto **SR-7 / San Augustine St**	14.9 mi
8.	Keep **straight** onto **US-84** *Entering Louisiana*	21.3 mi
9.	Turn **left** onto **SR-3103 / Kings Hwy**	0.8 mi
10.	Turn **left** onto **US-84 / US-171 / S Washington Ave**	0.2 mi

11. Arrive at **Mansfield, Louisiana, United States**
The last intersection is SR-513 / Gibbs St
If you reach Welch St, you've gone too far

End: Mansfield, Louisiana, United States

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9

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to Pineville, Louisiana, United States

Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 153.6 mi, 2 hr 50 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	51.3 mi
6.	At exit **44**, take ramp **right** for **US-165 North** toward **Alexandria / Kinder**	0.4 mi
7.	Turn **left** onto **US-165**	78.7 mi
8.	At roundabout, take **3rd** exit	1.1 mi
9.	Take ramp **right** for **MacArthur Dr** toward **Jackson St**	0.3 mi

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10. Turn **right** onto **SR-1208 3 East / Jackson St** 1.8 mi
11. Keep **straight** onto **US-165 Bus / Jackson St** 1.7 mi
12. Arrive at **Pineville, Louisiana, United States**
    The last intersection is Hayden St
    If you reach SR-107 / Shamrock Ave, you've gone too far

End: Pineville, Louisiana, United States

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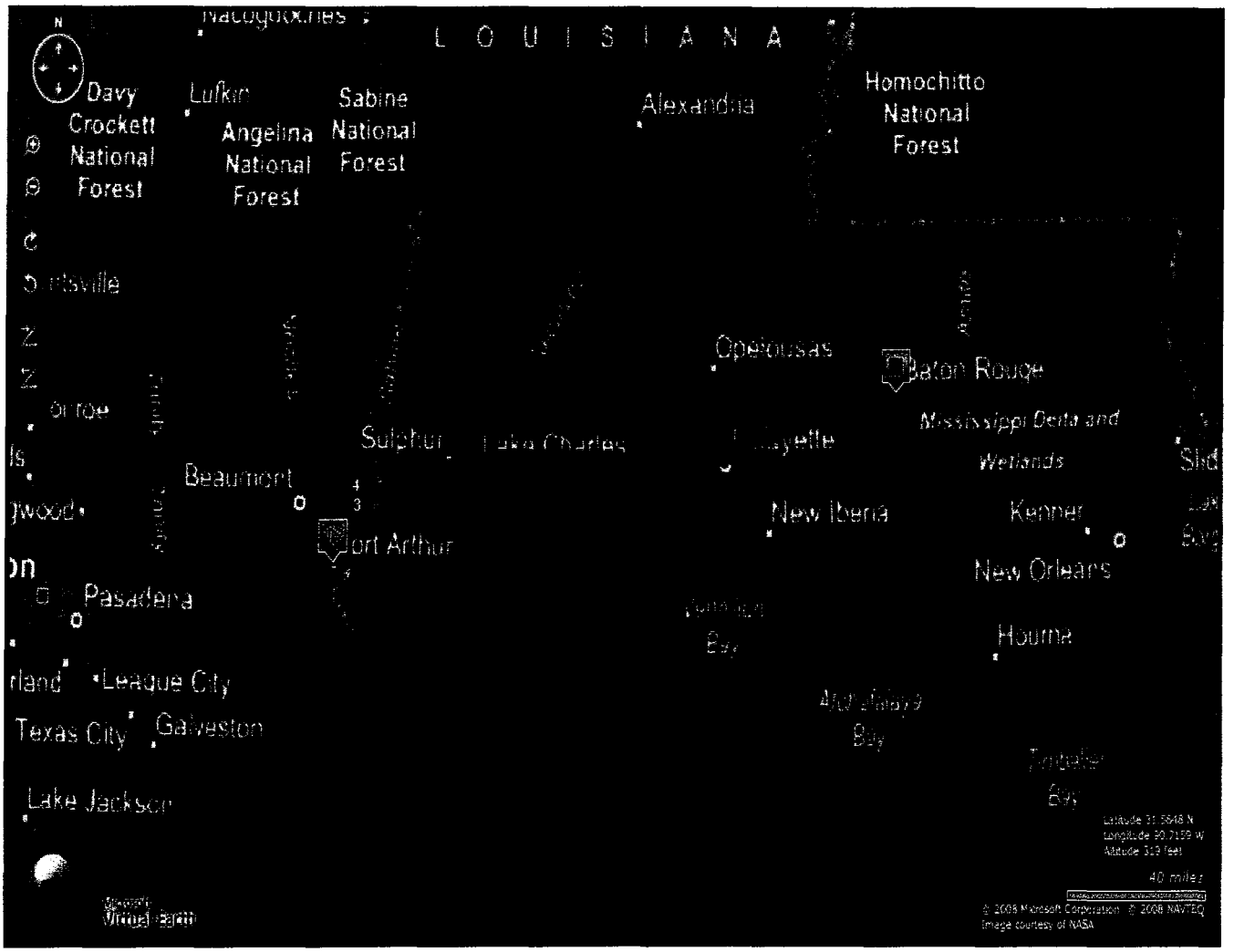
10

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions (abbreviated) : 2400 Gulfway Dr, Port Arthur to Baton Rouge, Louisiana, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 181.0 mi, 2 hr 52 min

1.	Depart **SR-87 / 16th St**	4.3 mi
2.	Take ramp **left** and follow signs for **SR-73 East / SR-87 North**	8.8 mi
3.	Turn **left** to stay on **SR-62 / SR-73**	4.6 mi
4.	Turn **right** onto **I-10 E / US-90 E**	0.5 mi
5.	Take ramp **left** and follow signs for **I-10 East** *Entering Louisiana*	161.9 mi
6.	At exit **155A**, take ramp **right** for **Nicholson Dr / La-30** toward **Downtown**	0.3 mi
7.	Bear **right** onto **SR-30 / Nicholson Dr**	0.5 mi
8.	Turn **right** onto **SR-73 / Government St**	
9.	Arrive at **Baton Rouge, Louisiana, United States** *The last intersection is SR-30 / St Louis St*	

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If you reach St Ferdinand St, you've gone too far

End: Baton Rouge, Louisiana, United States

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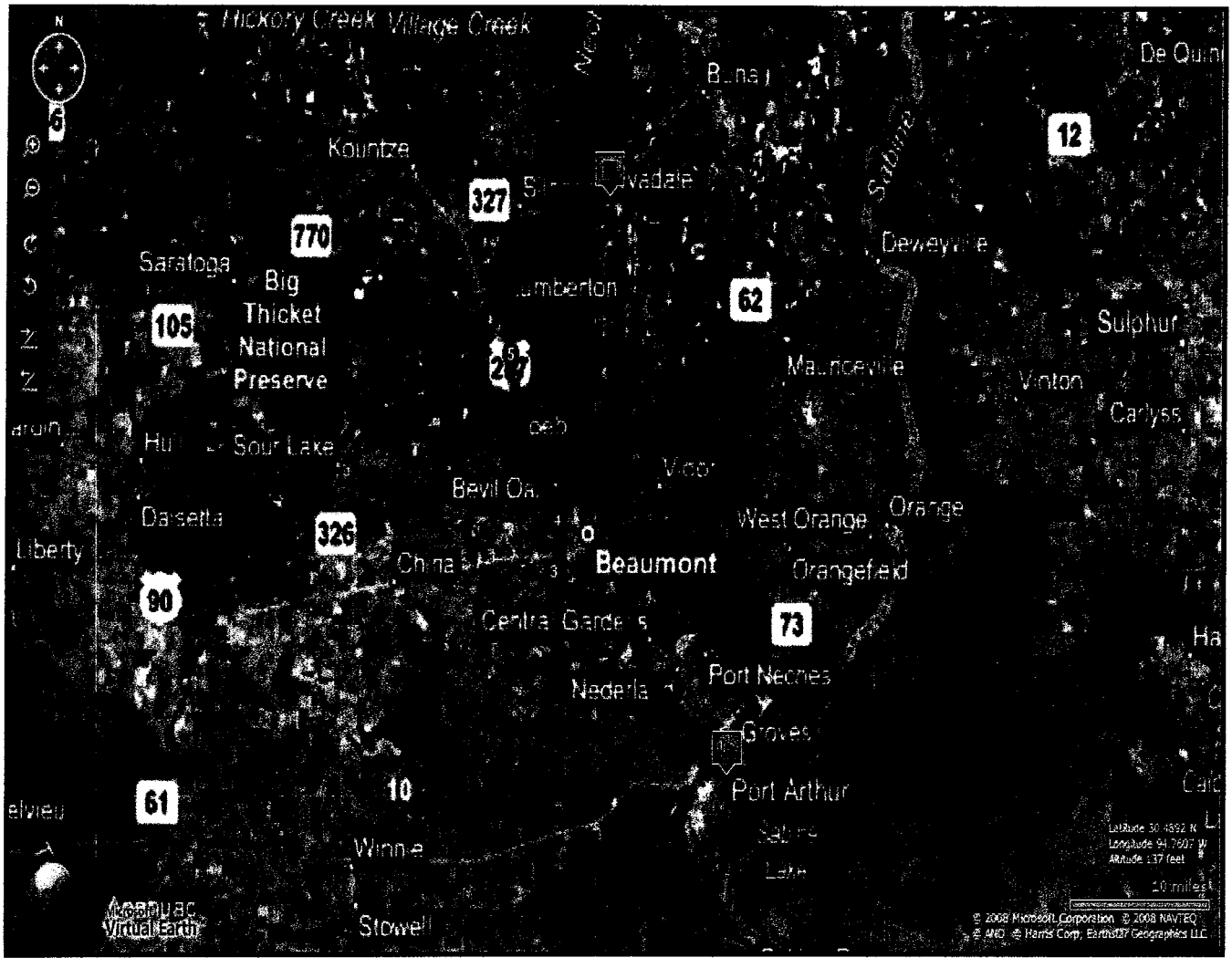
11

For the best possible print results, click the printer icon on the Live Search Maps page.

Driving directions: 2400 Gulfway Dr, Port Arthur to Evadale, Jasper, Texas, United States



Start: 2400 Gulfway Dr, Port Arthur, TX 77640-4541

Trip: 46.4 mi, 46 min

1.	Depart **SR-87 / 16th St**	0.3 mi
2.	Turn **left** onto **US-69 / US-96 / US-287 / Woodworth Blvd**	17.7 mi
3.	Take ramp **right** for **I-10 East** toward **Lake Charles / Lufkin**	2.9 mi
4.	Keep **right** onto **US-69 North / US-96 North / US-287 North**	10.3 mi
5.	Keep **right** to stay on **US-96 North**	14.8 mi
6.	Bear **right** toward **FM-105**	0.2 mi
7.	Keep **straight** onto **FM-105**	0.2 mi
8.	Arrive at **Evadale, Jasper, Texas, United States** *The last intersection is County Road 857* *If you reach Private Road 8325, you've gone too far*	

End: Evadale, Jasper, Texas, United States

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Table 1. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2007

PAD District and State	Number of Operable Refineries			Atmospheric Crude Oil Distillation Capacity					
				Barrels per Calendar Day			Barrels per Stream Day		
	Total	Operating	Idle [a]	Total	Operating	Idle [b]	Total	Operating	Idle [b]
PAD District I	**15**	**13**	**2**	**1,717,575**	**1,657,575**	**60,000**	**1,810,200**	**1,743,200**	**67,000**
Delaware	1	1	0	182,200	182,200	0	190,200	190,200	0
Georgia	1	0	1	28,000	0	28,000	32,000	0	32,000
New Jersey	6	5	1	655,000	623,000	32,000	686,000	651,000	35,000
Pennsylvania	5	5	0	773,000	773,000	0	817,500	817,500	0
Virginia	1	1	0	59,375	59,375	0	62,500	62,500	0
West Virginia	1	1	0	20,000	20,000	0	22,000	22,000	0
PAD District II	**26**	**25**	**1**	**3,587,220**	**3,581,720**	**5,500**	**3,819,260**	**3,812,960**	**6,300**
Illinois	4	4	0	903,600	903,600	0	954,000	954,000	0
Indiana	2	2	0	433,000	433,000	0	444,000	444,000	0
Kansas	3	3	0	300,700	300,700	0	312,000	312,000	0
Kentucky	2	1	1	227,500	222,000	5,500	245,300	239,000	6,300
Michigan	1	1	0	100,000	100,000	0	105,000	105,000	0
Minnesota	2	2	0	349,300	349,300	0	375,000	375,000	0
North Dakota	1	1	0	58,000	58,000	0	60,000	60,000	0
Ohio	4	4	0	510,120	510,120	0	579,000	579,000	0
Oklahoma	5	5	0	490,700	490,700	0	527,960	527,960	0
Tennessee	1	1	0	180,000	180,000	0	182,000	182,000	0
Wisconsin	1	1	0	34,300	34,300	0	35,000	35,000	0
PAD District III	**56**	**55**	**1**	**8,354,809**	**7,989,609**	**365,200**	**8,818,462**	**8,411,462**	**407,000**
Alabama	4	3	1	135,300	118,600	16,700	156,000	134,000	22,000
Arkansas	2	2	0	77,200	77,200	0	79,600	79,600	0
Louisiana	19	19	0	2,971,183	2,971,183	0	3,131,855	3,131,855	0
Mississippi	3	3	0	364,000	364,000	0	396,800	396,800	0
New Mexico	3	3	0	121,600	121,600	0	124,107	124,107	0
Texas	25	25	0	4,685,526	4,337,026	348,500	4,930,100	4,545,100	385,000
PAD District IV	**16**	**16**	**0**	**598,350**	**598,350**	**0**	**639,600**	**639,600**	**0**
Colorado	2	2	0	94,000	94,000	0	104,000	104,000	0
Montana	4	4	0	182,500	182,500	0	193,200	193,200	0
Utah	5	5	0	167,350	167,350	0	176,000	176,000	0
Wyoming	5	5	0	154,500	154,500	0	166,400	166,400	0
PAD District V	**36**	**36**	**0**	**3,185,538**	**3,170,538**	**15,000**	**3,337,800**	**3,321,300**	**16,500**
Alaska	6	6	0	375,000	375,000	0	405,200	405,200	0
California	21	21	0	2,037,188	2,022,188	15,000	2,131,300	2,114,800	16,500
Hawaii	2	2	0	147,500	147,500	0	152,000	152,000	0
Nevada	1	1	0	2,000	2,000	0	5,000	5,000	0
Oregon	1	1	0	0	0	0	0	0	0
Washington	5	5	0	623,850	623,850	0	644,300	644,300	0
U.S. Total	**149**	**145**	**4**	**17,443,492**	**16,997,792**	**445,700**	**18,425,322**	**17,928,522**	**496,800**
Puerto Rico	1	1	0	77,900	77,900	0	85,000	85,000	0
Virgin Islands	1	1	0	500,000	500,000	0	525,000	525,000	0

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000553

Table 1. Number and Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2007

PAD District and State	Downstream Charge Capacity (Barrels per Stream Day)							
	Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Hydro-Cracking	Catalytic Reforming	Hydrotreating/ Desulfurization	Fuels Solvent Deasphalting
			Fresh	Recycle				
PAD District I	**709,700**	**99,000**	**742,700**	**7,000**	**44,300**	**323,100**	**1,364,020**	**22,000**
Delaware	102,600	53,000	83,000	4,000	22,300	43,800	151,500	0
Georgia	0	0	0	0	0	0	0	0
New Jersey	294,000	27,000	322,000	0	0	92,000	542,500	22,000
Pennsylvania	267,200	0	309,500	1,000	22,000	171,800	608,560	0
Virginia	37,300	19,000	28,200	2,000	0	12,100	42,860	0
West Virginia	8,600	0	0	0	0	3,400	18,600	0
PAD District II	**1,566,320**	**414,560**	**1,285,556**	**13,550**	**332,500**	**952,340**	**3,252,476**	**17,350**
Illinois	397,100	150,500	315,000	3,000	69,000	256,900	789,950	0
Indiana	255,000	36,000	173,200	4,200	0	96,500	386,000	0
Kansas	123,800	61,600	98,300	500	35,000	95,000	304,200	0
Kentucky	120,500	0	102,000	0	0	52,000	270,700	12,500
Michigan	51,000	0	31,000	0	0	19,000	100,800	0
Minnesota	248,000	70,800	113,000	0	98,500	71,800	319,800	0
North Dakota	0	0	27,000	3,600	0	12,100	31,900	0
Ohio	153,500	57,000	200,000	0	102,000	165,000	407,200	0
Oklahoma	196,920	38,660	145,056	2,250	28,000	140,040	452,226	4,850
Tennessee	0	0	70,000	0	0	36,000	160,000	0
Wisconsin	20,500	0	11,000	0	0	8,000	29,700	0
PAD District III	**4,082,875**	**1,382,380**	**3,109,645**	**53,300**	**780,682**	**1,885,990**	**7,993,240**	**238,900**
Alabama	61,400	14,600	0	0	0	29,800	90,000	0
Arkansas	32,000	0	19,900	0	0	14,800	87,300	7,400
Louisiana	1,438,400	499,550	1,140,480	20,500	244,182	570,800	2,506,350	59,000
Mississippi	338,875	105,000	80,000	0	74,000	96,000	284,300	0
New Mexico	24,600	0	41,500	3,500	0	35,800	117,300	0
Texas	2,187,600	763,230	1,827,765	29,300	462,500	1,138,790	4,907,990	172,500
PAD District IV	**234,100**	**49,240**	**198,656**	**4,190**	**17,600**	**128,380**	**508,300**	**5,040**
Colorado	33,500	0	30,000	500	0	20,500	78,100	0
Montana	98,700	30,740	61,450	990	6,100	39,080	193,550	0
Utah	37,500	8,500	57,400	2,200	0	37,200	118,600	5,040
Wyoming	64,400	10,000	49,806	500	11,500	31,600	118,050	0
PAD District V	**1,658,456**	**618,900**	**882,400**	**4,000**	**615,600**	**617,700**	**2,329,100**	**96,000**
Alaska	26,900	0	0	0	12,500	12,000	22,000	0
California	1,258,756	518,200	723,100	1,000	524,100	447,100	1,883,200	66,000
Hawaii	71,300	11,000	22,000	0	18,000	13,000	16,500	0
Nevada	5,000	0	0	0	0	0	0	0
Oregon	10,000	0	0	0	0	0	0	0
Washington	286,500	89,700	137,300	3,000	61,000	145,600	407,400	30,000
U.S. Total	**8,251,451**	**2,564,080**	**6,218,957**	**82,040**	**1,790,682**	**3,907,510**	**15,447,136**	**379,290**
Puerto Rico	31,500	0	0	0	19,800	20,000	20,000	0
Virgin Islands	225,000	103,000	149,000	0	0	115,000	476,000	0

[a] Refineries where distillation units were completely idle but not permanently shutdown on January 1, 2007.

[b] Includes capacity from refineries that are either completely or partially idle.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

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Table 2. Production Capacity of Operable Petroleum Refineries by PAD District and State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

PAD District and State	Production Capacity							
	Alkylates	Aromatics	Asphalt and Road Oil	Isomers	Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/day)
PAD District I	**110,229**	**22,120**	**143,115**	**31,800**	**20,145**	**26,520**	**84**	**1,358**
Delaware	11,729	1,700	0	6,000	0	13,620	40	596
Georgia	0	0	24,000	0	0	0	0	0
New Jersey	40,200	7,500	98,500	14,000	12,000	7,500	29	296
Pennsylvania	54,100	12,920	20,065	11,800	2,945	0	0	405
Virginia	4,200	0	0	0	0	5,400	14	60
West Virginia	0	0	550	0	5,200	0	1	1
PAD District II	**274,350**	**57,900**	**305,916**	**174,900**	**17,900**	**120,320**	**491**	**5,829**
Illinois	82,400	13,500	67,000	15,000	0	48,500	114	1,789
Indiana	37,700	17,000	65,700	28,200	0	13,400	31	559
Kansas	30,800	2,200	4,000	27,150	0	14,170	69	657
Kentucky	20,000	7,000	23,000	15,250	8,800	0	0	448
Michigan	4,900	0	23,000	0	0	0	0	146
Minnesota	18,000	0	58,000	37,700	0	22,000	125	1,121
North Dakota	4,400	0	0	0	0	0	0	17
Ohio	28,450	18,200	22,500	23,800	0	14,000	91	635
Oklahoma	34,100	0	35,216	23,800	9,100	8,250	61	307
Tennessee	12,000	0	0	4,000	0	0	0	116
Wisconsin	1,600	0	7,500	0	0	0	0	34
PAD District III	**580,850**	**223,000**	**237,025**	**346,412**	**162,912**	**409,111**	**1,164**	**19,865**
Alabama	0	0	28,200	3,200	0	2,500	6	115
Arkansas	5,000	0	16,100	6,600	5,000	0	3	157
Louisiana	212,400	39,700	65,800	121,720	67,417	138,355	271	5,571
Mississippi	18,600	21,000	36,125	0	11,400	35,500	238	1,324
New Mexico	10,900	0	6,700	13,959	0	0	10	161
Texas	333,950	162,300	84,100	200,933	79,095	232,756	636	12,537
PAD District IV	**43,670**	**0**	**73,750**	**15,809**	**0**	**13,725**	**143**	**708**
Colorado	0	0	12,250	985	0	0	22	116
Montana	17,150	0	35,100	5,900	0	7,125	89	376
Utah	16,300	0	3,300	7,900	0	1,900	0	59
Wyoming	10,220	0	23,100	1,024	0	4,700	32	157
PAD District V	**217,826**	**2,850**	**116,933**	**169,850**	**32,800**	**152,625**	**1,218**	**5,261**
Alaska	0	1,350	4,000	4,200	0	0	13	20
California	179,026	1,500	71,433	145,450	32,800	127,975	1,064	4,539
Hawaii	5,000	0	16,000	3,200	0	0	21	34
Nevada	0	0	5,000	0	0	0	0	0
Oregon	0	0	7,000	0	0	0	0	0
Washington	33,800	0	13,500	17,000	0	24,650	120	668
U.S. Total	**1,226,925**	**306,870**	**876,739**	**738,771**	**233,757**	**722,301**	**3,100**	**33,021**
Puerto Rico	0	0	0	0	0	0	18	22
Virgin Islands	20,000	20,000	0	18,000	0	19,000	0	550

MMcfd = Million cubic feet per day.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

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Directory of Operable Petroleum Refineries on Tables 3 and 4

Refiner	State(s) [a]	Refiner	State(s) [a]
Age Refining Inc.	TX	Little America Refining Co.	WY
Alon USA Energy Inc.	TX	Lunday Thagard Co.	CA
American Refining Group Inc.	PA	Marathon Petroleum Co LLC	IL, KY, LA, MI, MN, OH, TX
BP Exploration Alaska Inc.	AK	Montana Refining Co.	MT
BP Products North America Inc.	IN, OH, TX	Motiva Enterprises LLC	LA, TX
BP West Coast Products LLC	CA, WA	Murphy Oil USA Inc.	LA, WI
Big West Of California	CA	NCRA	KS
Big West Oil Co.	UT	Navajo Refining Co.	NM
Calcasieu Refining Co.	LA	PDV Midwest Refining LLC	IL
Calumet Lubricants Co LP	LA	Paramount Petroleum Corporation	CA, OR
Calumet Shreveport LLC	LA	Pasadena Refining Systems Inc.	TX
Cenex Harvest States Coop.	MT	Pelican Refining Company LLC	LA
Chalmette Refining LLC	LA	Petro Star Inc.	AK
Chevron USA Inc.	CA, HI, MS, NJ, UT	Placid Refining Co.	LA
Citgo Asphalt Refining Co.	GA, NJ	Premcor Refining Group Inc.	DE, OH, TN, TX
Citgo Petroleum Corp.	LA	San Joaquin Refining Co Inc.	CA
Citgo Refining & Chemical Inc.	TX	Shell Chem LP	AL, LA
Coffeyville Resources LLC	KS	Shell Chem Yabucoa Inc.	PR
ConocoPhillips Alaska Inc.	AK	Shell Oil Products US	CA, WA
ConocoPhillips Company	CA, LA, MT, NJ, OK, PA, TX, WA	Silver Eagle Refining.	UT, WY
Countrymark Cooperative Inc.	IN	Sinclair Oil Corp.	OK, WY
Cross Oil Refining & Marketing Inc.	AR	Somerset Refinery Inc.	KY
Deer Park Refining LTD Partnership	TX	South Hampton Resources Inc.	TX
Delek Refining LTD	TX	Suncor Energy (USA) Inc.	CO
Edgington Oil Co Inc.	CA	Sunoco Inc.	NJ, OH, OK, PA
Ergon Refining Inc.	MS	Sunoco Inc (R&M)	PA
Ergon West Virginia Inc.	WV	Tenby Inc.	CA
Excel Paralubes	LA	Tesoro Alaska Petroleum Co.	AK
ExxonMobil Refining & Supply Co.	CA, IL, LA, MT, TX	Tesoro Hawaii Corp.	HI
Flint Hills Resources Alaska LLC	AK	Tesoro Refining & Marketing Co.	CA
Flint Hills Resources LP	MN, TX	Tesoro West Coast	ND, UT, WA
Foreland Refining Corp.	NV	Total Petrochemicals Inc.	TX
Frontier El Dorado Refining Co.	KS	Trigeant LTD.	TX
Frontier Refining Inc.	WY	US Oil & Refining Co.	WA
Giant Industries Inc.	NM	Ultramar Inc.	CA
Giant Refining Co.	NM	United Refining Co.	PA
Giant Yorktown Refining	VA	Valero Energy Corporation	TX
Goodway Refining LLC	AL	Valero Refining Co California	CA
Greka Energy	CA	Valero Refining Co Louisiana	LA
Gulf Atlantic Operations LLC	AL	Valero Refining Co New Jersey	NJ
Hess Corporation	NJ	Valero Refining Co Oklahoma	OK
Holly Corp Refining & Marketing	UT	Valero Refining Co Texas	TX
Houston Refining LP	TX	Valero Refining New Orleans LLC	LA
Hovensa LLC	VI	WRB Refining LLC	IL, TX
Hunt Refining Co.	AL	Western Refining Company LP	TX
Hunt Southland Refining Co.	MS	Wynnewood Refining Co.	OK
Kern Oil & Refining Co.	CA	Wyoming Refining Co.	WY
Lion Oil Co.	AR		

[a] Includes Puerto Rico (PR) and Virgin Islands (VI).

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Alabama	**118,600**	**16,700**	**134,000**	**22,000**	**61,400**	**14,600**	**0**	**0**	**0**
Goodway Refining LLC									
Atmore	4,100	0	5,000	0	0	0	0	0	0
Gulf Atlantic Operations LLC									
Mobile	0	16,700	0	22,000	15,400	0	0	0	0
Hunt Refining Co									
Tuscaloosa	34,500	0	38,000	0	16,000	14,600	0	0	0
Shell Chem LP									
Saraland	80,000	0	91,000	0	30,000	0	0	0	0
Alaska	**375,000**	**0**	**405,200**	**0**	**26,900**	**0**	**0**	**0**	**0**
BP Exploration Alaska Inc									
Prudhoe Bay	12,500	0	14,200	0	0	0	0	0	0
ConocoPhillips Alaska Inc									
Kuparuk	15,000	0	16,000	0	0	0	0	0	0
Flint Hills Resources Alaska LLC									
North Pole	210,000	0	226,500	0	5,500	0	0	0	0
Petro Star Inc									
North Pole	17,500	0	18,500	0	0	0	0	0	0
Valdez	48,000	0	50,000	0	0	0	0	0	0
Tesoro Alaska Petroleum Co									
Kenai	72,000	0	80,000	0	21,400	0	0	0	0
Arkansas	**77,200**	**0**	**79,600**	**0**	**32,000**	**0**	**0**	**0**	**0**
Cross Oil Refining & Marketing Inc									
Smackover	7,200	0	7,600	0	3,500	0	0	0	0
Lion Oil Co									
El Dorado	70,000	0	72,000	0	28,500	0	0	0	0
California	**2,022,188**	**15,000**	**2,114,800**	**16,500**	**1,258,756**	**413,200**	**100,000**	**5,000**	**0**
Big West Of California									
Bakersfield	66,000	0	68,000	0	40,000	22,000	0	0	0
BP West Coast Products LLC									
Los Angeles	265,000	0	265,500	0	140,000	70,500	0	0	0
Chevron USA Inc									
El Segundo	260,000	0	274,000	0	143,000	66,000	0	0	0
Richmond	242,901	0	257,200	0	123,456	0	0	0	0
ConocoPhillips Company									
Arroyo Grande	44,200	0	46,500	0	33,600	23,400	0	0	0
Rodeo	76,000	0	80,000	0	59,600	27,000	0	0	0
Wilmington	139,000	0	147,000	0	82,000	53,200	0	0	0
Edgington Oil Co Inc									
Long Beach	18,000	15,000	19,800	16,500	15,000	0	0	0	0
ExxonMobil Refining & Supply Co									
Torrance	149,500	0	155,800	0	102,300	54,600	0	0	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Alabama	**0**	**0**	**0**	**0**	**0**	**7,800**	**22,000**	**0**
Goodway Refining LLC								
Atmore	0	0	0	0	0	0	0	0
Gulf Atlantic Operations LLC								
Mobile	0	0	0	0	0	0	0	0
Hunt Refining Co								
Tuscaloosa	0	0	0	0	0	7,800	0	0
Shell Chem LP								
Saraland	0	0	0	0	0	0	22,000	0
Alaska	**0**	**0**	**0**	**12,500**	**0**	**12,000**	**0**	**0**
BP Exploration Alaska Inc								
Prudhoe Bay	0	0	0	0	0	0	0	0
ConocoPhillips Alaska Inc								
Kuparuk	0	0	0	0	0	0	0	0
Flint Hills Resources Alaska LLC								
North Pole	0	0	0	0	0	0	0	0
Petro Star Inc								
North Pole	0	0	0	0	0	0	0	0
Valdez	0	0	0	0	0	0	0	0
Tesoro Alaska Petroleum Co								
Kenai	0	0	0	12,500	0	12,000	0	0
Arkansas	**19,900**	**0**	**0**	**0**	**0**	**14,800**	**0**	**7,400**
Cross Oil Refining & Marketing Inc								
Smackover	0	0	0	0	0	0	0	0
Lion Oil Co								
El Dorado	19,900	0	0	0	0	14,800	0	7,400
California	**723,100**	**1,000**	**212,400**	**246,700**	**65,000**	**216,600**	**230,500**	**66,000**
Big West Of California								
Bakersfield	0	0	24,000	0	0	16,300	0	0
BP West Coast Products LLC								
Los Angeles	102,500	0	50,000	0	0	10,000	42,000	0
Chevron USA Inc								
El Segundo	72,500	0	0	52,300	0	49,000	0	0
Richmond	90,000	0	0	96,400	65,000	71,300	0	66,000
ConocoPhillips Company								
Arroyo Grande	0	0	0	0	0	0	0	0
Rodeo	0	0	0	41,000	0	0	32,000	0
Wilmington	51,600	0	27,500	0	0	0	36,000	0
Edgington Oil Co Inc								
Long Beach	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co								
Torrance	100,200	0	22,200	0	0	0	20,000	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Alabama	**32,000**	**0**	**2,500**	**8,000**	**15,000**	**0**	**32,500**	**0**
Goodway Refining LLC								
Atmore	0	0	0	0	0	0	0	0
Gulf Atlantic Operations LLC								
Mobile	0	0	0	0	0	0	0	0
Hunt Refining Co								
Tuscaloosa	10,000	0	2,500	0	15,000	0	10,500	0
Shell Chem LP								
Saraland	22,000	0	0	8,000	0	0	22,000	0
Alaska	**12,000**	**0**	**0**	**10,000**	**0**	**0**	**0**	**0**
BP Exploration Alaska Inc								
Prudhoe Bay	0	0	0	0	0	0	0	0
ConocoPhillips Alaska Inc								
Kuparuk	0	0	0	0	0	0	0	0
Flint Hills Resources Alaska LLC								
North Pole	0	0	0	0	0	0	0	0
Petro Star Inc								
North Pole	0	0	0	0	0	0	0	0
Valdez	0	0	0	0	0	0	0	0
Tesoro Alaska Petroleum Co								
Kenai	12,000	0	0	10,000	0	0	0	0
Arkansas	**20,000**	**6,500**	**0**	**28,000**	**0**	**0**	**21,000**	**11,800**
Cross Oil Refining & Marketing Inc								
Smackover	0	0	0	0	0	0	0	5,000
Lion Oil Co								
El Dorado	20,000	6,500	0	28,000	0	0	21,000	6,800
California	**463,300**	**146,100**	**167,300**	**345,300**	**84,000**	**0**	**623,000**	**54,200**
Big West Of California								
Bakersfield	13,800	0	0	0	0	0	15,000	0
BP West Coast Products LLC								
Los Angeles	46,000	10,000	10,000	21,000	0	0	90,000	0
Chevron USA Inc								
El Segundo	77,500	0	18,000	40,000	14,000	0	72,000	0
Richmond	57,600	0	96,000	64,800	0	0	0	27,000
ConocoPhillips Company								
Arroyo Grande	0	0	0	0	0	0	0	0
Rodeo	27,500	0	0	40,000	0	0	0	0
Wilmington	50,800	0	12,900	32,000	0	0	52,000	0
Edgington Oil Co Inc								
Long Beach	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co								
Torrance	24,700	0	0	18,000	0	0	106,500	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
California	**2,022,188**	**15,000**	**2,114,800**	**16,500**	**1,258,756**	**413,200**	**100,000**	**5,000**	**0**
Greka Energy									
Santa Maria	9,500	0	10,000	0	10,000	0	0	0	0
Kern Oil & Refining Co									
Bakersfield	26,000	0	27,000	0	0	0	0	0	0
Lunday Thagard Co									
South Gate	8,500	0	10,000	0	7,000	0	0	0	0
Paramount Petroleum Corporation									
Paramount	50,000	0	53,000	0	30,000	0	0	0	0
San Joaquin Refining Co Inc									
Bakersfield	15,000	0	25,000	0	14,300	0	0	5,000	0
Shell Oil Products US									
Martinez	155,600	0	158,000	0	101,000	27,500	22,500	0	0
Wilmington	97,000	0	103,500	0	65,000	40,000	0	0	0
Tenby Inc									
Oxnard	2,800	0	4,000	0	0	0	0	0	0
Tesoro Refining & Marketing Co									
Martinez	166,000	0	170,000	0	153,000	0	48,000	0	0
Ultramar Inc									
Wilmington	80,887	0	81,000	0	45,000	29,000	0	0	0
Valero Refining Co California									
Benicia	144,000	0	153,000	0	89,500	0	29,500	0	0
Wilmington	6,300	0	6,500	0	5,000	0	0	0	0
Colorado	**94,000**	**0**	**104,000**	**0**	**33,500**	**0**	**0**	**0**	**0**
Suncor Energy (USA) Inc									
Commerce City	62,000	0	68,000	0	25,000	0	0	0	0
Denver	32,000	0	36,000	0	8,500	0	0	0	0
Delaware	**182,200**	**0**	**190,200**	**0**	**102,600**	**0**	**53,000**	**0**	**0**
Premcor Refining Group Inc									
Delaware City	182,200	0	190,200	0	102,600	0	53,000	0	0
Georgia	**0**	**28,000**	**0**	**32,000**	**0**	**0**	**0**	**0**	**0**
Citgo Asphalt Refining Co									
Savannah	0	28,000	0	32,000	0	0	0	0	0
Hawaii	**147,500**	**0**	**152,000**	**0**	**71,300**	**0**	**0**	**11,000**	**0**
Chevron USA Inc									
Honolulu	54,000	0	57,000	0	31,300	0	0	0	0
Tesoro Hawaii Corp									
Kapolei	93,500	0	95,000	0	40,000	0	0	11,000	0
Illinois	**903,600**	**0**	**954,000**	**0**	**397,100**	**150,500**	**0**	**0**	**0**
ExxonMobil Refining & Supply Co									
Joliet	238,600	0	248,500	0	126,700	59,100	0	0	0
Marathon Petroleum Co LLC									
Robinson	192,000	0	213,000	0	65,200	29,400	0	0	0
PDV Midwest Refining LLC									
Lemont (Chicago)	167,000	0	170,500	0	75,000	44,000	0	0	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
California	**723,100**	**1,000**	**212,400**	**246,700**	**65,000**	**216,600**	**230,500**	**66,000**
Greka Energy								
Santa Maria	0	0	0	0	0	0	0	0
Kern Oil & Refining Co								
Bakersfield	0	0	0	0	0	0	3,300	0
Lunday Thagard Co								
South Gate	0	0	0	0	0	0	0	0
Paramount Petroleum Corporation								
Paramount	0	0	0	0	0	0	8,500	0
San Joaquin Refining Co Inc								
Bakersfield	0	0	0	0	0	0	0	0
Shell Oil Products US								
Martinez	73,000	0	42,000	0	0	31,000	0	0
Wilmington	34,000	0	10,000	22,000	0	0	31,500	0
Tenby Inc								
Oxnard	0	0	0	0	0	0	0	0
Tesoro Refining & Marketing Co								
Martinez	70,000	1,000	0	35,000	0	22,000	20,000	0
Ultramar Inc								
Wilmington	54,000	0	0	0	0	17,000	0	0
Valero Refining Co California								
Benicia	75,300	0	36,700	0	0	0	37,200	0
Wilmington	0	0	0	0	0	0	0	0
Colorado	**30,000**	**500**	**0**	**0**	**0**	**20,500**	**0**	**0**
Suncor Energy (USA) Inc								
Commerce City	20,500	0	0	0	0	10,500	0	0
Denver	9,500	500	0	0	0	10,000	0	0
Delaware	**83,000**	**4,000**	**0**	**22,300**	**0**	**43,800**	**0**	**0**
Premcor Refining Group Inc								
Delaware City	83,000	4,000	0	22,300	0	43,800	0	0
Georgia	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Citgo Asphalt Refining Co								
Savannah	0	0	0	0	0	0	0	0
Hawaii	**22,000**	**0**	**18,000**	**0**	**0**	**13,000**	**0**	**0**
Chevron USA Inc								
Honolulu	22,000	0	0	0	0	0	0	0
Tesoro Hawaii Corp								
Kapolei	0	0	18,000	0	0	13,000	0	0
Illinois	**315,000**	**3,000**	**0**	**69,000**	**0**	**207,000**	**49,900**	**0**
ExxonMobil Refining & Supply Co								
Joliet	98,000	0	0	0	0	52,200	0	0
Marathon Petroleum Co LLC								
Robinson	49,000	0	0	28,000	0	76,000	0	0
PDV Midwest Refining LLC								
Lemont (Chicago)	67,000	3,000	0	0	0	0	32,200	0

EPAHO044000561

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
California	**463,300**	**146,100**	**167,300**	**345,300**	**84,000**	**0**	**623,000**	**54,200**
Greka Energy								
Santa Maria	0	0	0	0	0	0	0	0
Kern Oil & Refining Co								
Bakersfield	5,000	0	0	0	9,000	0	0	0
Lunday Thagard Co								
South Gate	0	0	0	0	0	0	0	0
Paramount Petroleum Corporation								
Paramount	8,500	0	0	13,000	0	0	0	0
San Joaquin Refining Co Inc								
Bakersfield	0	0	0	0	3,000	0	0	0
Shell Oil Products US								
Martinez	28,000	50,100	0	26,000	21,000	0	79,000	0
Wilmington	35,000	0	15,000	10,000	22,000	0	38,000	0
Tenby Inc								
Oxnard	0	0	0	0	0	0	0	0
Tesoro Refining & Marketing Co								
Martinez	27,000	38,900	0	36,000	15,000	0	69,500	5,500
Ultramar Inc								
Wilmington	32,000	0	0	32,000	0	0	62,000	0
Valero Refining Co California								
Benicia	29,900	47,100	15,400	12,500	0	0	39,000	21,700
Wilmington	0	0	0	0	0	0	0	0
Colorado	**21,000**	**0**	**12,100**	**19,000**	**0**	**0**	**26,000**	**0**
Suncor Energy (USA) Inc								
Commerce City	10,500	0	12,100	19,000	0	0	26,000	0
Denver	10,500	0	0	0	0	0	0	0
Delaware	**50,000**	**26,000**	**16,500**	**0**	**59,000**	**0**	**0**	**0**
Premcor Refining Group Inc								
Delaware City	50,000	26,000	16,500	0	59,000	0	0	0
Georgia	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Citgo Asphalt Refining Co								
Savannah	0	0	0	0	0	0	0	0
Hawaii	**13,000**	**0**	**0**	**0**	**0**	**0**	**0**	**3,500**
Chevron USA Inc								
Honolulu	0	0	0	0	0	0	0	3,500
Tesoro Hawaii Corp								
Kapolei	13,000	0	0	0	0	0	0	0
Illinois	**338,400**	**87,000**	**68,250**	**239,600**	**0**	**0**	**0**	**56,700**
ExxonMobil Refining & Supply Co								
Joliet	110,400	0	0	85,100	0	0	0	56,700
Marathon Petroleum Co LLC								
Robinson	63,000	39,000	0	73,000	0	0	0	0
PDV Midwest Refining LLC								
Lemont (Chicago)	95,700	0	15,000	35,500	0	0	0	0

EPAHO044000562

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day			Thermal Cracking			
	Operating	Idle	Operating	Idle	Vacuum Distillation	Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Illinois	**903,600**	**0**	**954,000**	**0**	**397,100**	**150,500**	**0**	**0**	**0**
WRB Refining LLC (Formerly ConocoPhillips Company)									
Wood River	306,000	0	322,000	0	130,200	18,000	0	0	0
Indiana	**433,000**	**0**	**444,000**	**0**	**255,000**	**36,000**	**0**	**0**	**0**
BP Products North America Inc									
Whiting	410,000	0	420,000	0	247,000	36,000	0	0	0
Countrymark Cooperative Inc									
Mount Vernon	23,000	0	24,000	0	8,000	0	0	0	0
Kansas	**300,700**	**0**	**312,000**	**0**	**123,800**	**61,600**	**0**	**0**	**0**
Coffeyville Resources LLC									
Coffeyville	112,000	0	115,000	0	45,000	20,600	0	0	0
Frontier El Dorado Refining Co									
El Dorado	107,500	0	112,000	0	43,000	19,000	0	0	0
NCRA									
McPherson	81,200	0	85,000	0	35,800	22,000	0	0	0
Kentucky	**222,000**	**5,500**	**239,000**	**6,300**	**120,500**	**0**	**0**	**0**	**0**
Marathon Petroleum Co LLC									
Catlettsburg	222,000	0	239,000	0	120,500	0	0	0	0
Somerset Refinery Inc									
Somerset	0	5,500	0	6,300	0	0	0	0	0
Louisiana	**2,971,183**	**0**	**3,131,855**	**0**	**1,438,400**	**488,950**	**0**	**0**	**10,600**
Calcasieu Refining Co									
Lake Charles	78,000	0	80,000	0	0	0	0	0	0
Calumet Lubricants Co LP									
Cotton Valley	13,020	0	14,000	0	0	0	0	0	0
Princeton	8,300	0	8,655	0	7,000	0	0	0	0
Calumet Shreveport LLC									
Shreveport	42,000	0	50,000	0	18,000	0	0	0	0
Chalmette Refining LLC									
Chalmette	192,760	0	200,700	0	116,700	40,150	0	0	0
Citgo Petroleum Corp									
Lake Charles	429,500	0	454,500	0	200,000	104,000	0	0	0
ConocoPhillips Company									
Belle Chasse	247,000	0	260,000	0	92,000	27,000	0	0	0
Westlake	239,400	0	252,000	0	132,000	64,000	0	0	10,600
Excel Paralubes									
Westlake	0	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co									
Baton Rouge	503,000	0	524,000	0	241,100	119,800	0	0	0
Marathon Petroleum Co LLC									
Garyville	245,000	0	275,000	0	134,000	40,000	0	0	0
Motiva Enterprises LLC									
Convent	235,000	0	255,000	0	119,400	0	0	0	0
Norco	242,200	0	250,000	0	94,000	23,600	0	0	0
Murphy Oil USA Inc									
Meraux	120,000	0	125,000	0	50,000	0	0	0	0

EPAHO044000563

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Illinois	**315,000**	**3,000**	**0**	**69,000**	**0**	**207,000**	**49,900**	**0**
WRB Refining LLC (Formerly ConocoPhillips Company)								
Wood River	101,000	0	0	41,000	0	78,800	17,700	0
Indiana	**173,200**	**4,200**	**0**	**0**	**0**	**6,500**	**90,000**	**0**
BP Products North America Inc								
Whiting	165,000	4,000	0	0	0	0	90,000	0
Countrymark Cooperative Inc								
Mount Vernon	8,200	200	0	0	0	6,500	0	0
Kansas	**98,300**	**500**	**0**	**35,000**	**0**	**55,500**	**39,500**	**0**
Coffeyville Resources LLC								
Coffeyville	35,300	0	0	0	0	24,000	17,000	0
Frontier El Dorado Refining Co								
El Dorado	39,000	0	0	0	0	7,500	22,500	0
NCRA								
McPherson	24,000	500	0	35,000	0	24,000	0	0
Kentucky	**102,000**	**0**	**0**	**0**	**0**	**20,000**	**32,000**	**12,500**
Marathon Petroleum Co LLC								
Catlettsburg	102,000	0	0	0	0	20,000	31,000	12,500
Somerset Refinery Inc								
Somerset	0	0	0	0	0	0	1,000	0
Louisiana	**1,140,480**	**20,500**	**49,200**	**142,982**	**52,000**	**369,000**	**201,800**	**59,000**
Calcasieu Refining Co								
Lake Charles	0	0	0	0	0	0	0	0
Calumet Lubricants Co LP								
Cotton Valley	0	0	0	0	0	0	0	0
Princeton	0	0	0	0	0	0	0	0
Calumet Shreveport LLC								
Shreveport	3,500	7,000	0	0	0	12,000	0	0
Chalmette Refining LLC								
Chalmette	71,600	0	20,200	0	0	20,000	29,400	0
Citgo Petroleum Corp								
Lake Charles	147,000	3,000	0	42,000	0	58,000	52,800	0
ConocoPhillips Company								
Belle Chasse	102,000	2,000	0	0	0	0	44,600	0
Westlake	50,000	0	0	0	0	44,000	0	0
Excel Paralubes								
Westlake	0	0	0	34,982	0	0	0	0
ExxonMobil Refining & Supply Co								
Baton Rouge	241,000	0	29,000	0	0	78,000	0	0
Marathon Petroleum Co LLC								
Garyville	131,000	0	0	0	0	49,000	0	34,000
Motiva Enterprises LLC								
Convent	92,000	0	0	0	52,000	0	40,000	0
Norco	114,000	0	0	34,000	0	40,000	22,000	0
Murphy Oil USA Inc								
Meraux	37,000	0	0	32,000	0	32,000	0	18,000

EPAHO044000564

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Illinois	**338,400**	**87,000**	**68,250**	**239,600**	**0**	**0**	**0**	**56,700**
WRB Refining LLC (Formerly ConocoPhillips Company)								
Wood River	69,300	48,000	53,250	46,000	0	0	0	0
Indiana	**155,000**	**0**	**2,000**	**123,000**	**6,000**	**0**	**100,000**	**0**
BP Products North America Inc								
Whiting	145,000	0	2,000	112,000	6,000	0	100,000	0
Countrymark Cooperative Inc								
Mount Vernon	10,000	0	0	11,000	0	0	0	0
Kansas	**108,500**	**0**	**17,000**	**110,700**	**22,000**	**0**	**45,000**	**0**
Coffeyville Resources LLC								
Coffeyville	30,500	0	7,000	27,000	22,000	0	0	0
Frontier El Dorado Refining Co								
El Dorado	42,000	0	10,000	43,000	0	0	45,000	0
NCRA								
McPherson	36,000	0	0	40,700	0	0	0	0
Kentucky	**53,300**	**0**	**30,000**	**60,000**	**0**	**0**	**105,000**	**22,400**
Marathon Petroleum Co LLC								
Catlettsburg	52,000	0	30,000	60,000	0	0	105,000	22,400
Somerset Refinery Inc								
Somerset	1,300	0	0	0	0	0	0	0
Louisiana	**636,650**	**581,500**	**122,000**	**626,500**	**122,000**	**12,500**	**282,000**	**123,200**
Calcasieu Refining Co								
Lake Charles	0	0	0	0	0	0	0	0
Calumet Lubricants Co LP								
Cotton Valley	4,750	0	0	0	0	0	0	0
Princeton	0	0	0	0	8,500	0	0	0
Calumet Shreveport LLC								
Shreveport	12,000	0	0	0	8,000	0	8,000	1,200
Chalmette Refining LLC								
Chalmette	40,000	45,000	0	0	27,500	0	65,000	0
Citgo Petroleum Corp								
Lake Charles	123,000	77,000	29,000	117,500	0	0	0	0
ConocoPhillips Company								
Belle Chasse	48,300	53,000	0	70,100	0	0	0	0
Westlake	50,000	38,500	24,000	55,000	0	12,500	49,000	0
Excel Paralubes								
Westlake	0	0	0	0	0	0	0	0
ExxonMobil Refining & Supply Co								
Baton Rouge	78,000	130,000	0	101,900	0	0	0	122,000
Marathon Petroleum Co LLC								
Garyville	50,000	87,000	0	108,000	0	0	108,000	0
Motiva Enterprises LLC								
Convent	98,000	0	39,800	70,000	0	0	40,000	0
Norco	38,500	73,000	0	55,000	0	0	0	0
Murphy Oil USA Inc								
Meraux	35,000	0	18,000	34,000	0	0	12,000	0

EPAHO044000565

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day			Thermal Cracking			
	Operating	Idle	Operating	Idle	Vacuum Distillation	Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Louisiana	**2,971,183**	**0**	**3,131,855**	**0**	**1,438,400**	**488,950**	**0**	**0**	**10,600**
Pelican Refining Company LLC									
Lake Charles	0	0	0	0	15,000	0	0	0	0
Placid Refining Co									
Port Allen	56,000	0	58,000	0	25,000	0	0	0	0
Shell Chem LP									
Saint Rose	55,000	0	56,000	0	28,000	0	0	0	0
Valero Refining Co Louisiana									
Krotz Springs	80,000	0	83,000	0	36,200	0	0	0	0
Valero Refining New Orleans LLC									
Norco	185,003	0	186,000	0	130,000	70,400	0	0	0
Michigan	**100,000**	**0**	**105,000**	**0**	**51,000**	**0**	**0**	**0**	**0**
Marathon Petroleum Co LLC									
Detroit	100,000	0	105,000	0	51,000	0	0	0	0
Minnesota	**349,300**	**0**	**375,000**	**0**	**248,000**	**70,800**	**0**	**0**	**0**
Flint Hills Resources LP									
Saint Paul	279,300	0	294,000	0	216,000	70,800	0	0	0
Marathon Petroleum Co LLC									
Saint Paul Park	70,000	0	81,000	0	32,000	0	0	0	0
Mississippi	**364,000**	**0**	**396,800**	**0**	**338,875**	**105,000**	**0**	**0**	**0**
Chevron USA Inc									
Pascagoula	330,000	0	360,000	0	314,000	105,000	0	0	0
Ergon Refining Inc									
Vicksburg	23,000	0	24,300	0	18,000	0	0	0	0
Hunt Southland Refining Co									
Sandersville	11,000	0	12,500	0	6,875	0	0	0	0
Montana	**182,500**	**0**	**193,200**	**0**	**98,700**	**20,340**	**10,400**	**0**	**0**
Cenex Harvest States Coop									
Laurel	55,000	0	60,000	0	29,000	0	0	0	0
ConocoPhillips Company									
Billings	58,000	0	61,000	0	35,800	20,340	0	0	0
ExxonMobil Refining & Supply Co									
Billings	60,000	0	62,200	0	28,900	0	10,400	0	0
Montana Refining Co									
Great Falls	9,500	0	10,000	0	5,000	0	0	0	0
Nevada	**2,000**	**0**	**5,000**	**0**	**5,000**	**0**	**0**	**0**	**0**
Foreland Refining Corp									
Eagle Springs	2,000	0	5,000	0	5,000	0	0	0	0
New Jersey	**623,000**	**32,000**	**651,000**	**35,000**	**294,000**	**27,000**	**0**	**0**	**0**
Chevron USA Inc									
Perth Amboy	80,000	0	83,000	0	47,000	0	0	0	0
Citgo Asphalt Refining Co									
Paulsboro	0	32,000	0	35,000	40,000	0	0	0	0
ConocoPhillips Company									
Linden	238,000	0	250,000	0	75,000	0	0	0	0
Hess Corporation									
Port Reading	0	0	0	0	0	0	0	0	0

EPAHO044000566

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Louisiana	**1,140,480**	**20,500**	**49,200**	**142,982**	**52,000**	**369,000**	**201,800**	**59,000**
Pelican Refining Company LLC								
Lake Charles	0	0	0	0	0	0	0	0
Placid Refining Co								
Port Allen	20,000	500	0	0	0	11,000	0	7,000
Shell Chem LP								
Saint Rose	0	0	0	0	0	0	0	0
Valero Refining Co Louisiana								
Krotz Springs	34,000	0	0	0	0	0	13,000	0
Valero Refining New Orleans LLC								
Norco	97,380	8,000	0	0	0	25,000	0	0
Michigan	**31,000**	**0**	**0**	**0**	**0**	**19,000**	**0**	**0**
Marathon Petroleum Co LLC								
Detroit	31,000	0	0	0	0	19,000	0	0
Minnesota	**113,000**	**0**	**98,500**	**0**	**0**	**58,000**	**13,800**	**0**
Flint Hills Resources LP								
Saint Paul	86,500	0	98,500	0	0	37,500	13,800	0
Marathon Petroleum Co LLC								
Saint Paul Park	26,500	0	0	0	0	20,500	0	0
Mississippi	**80,000**	**0**	**0**	**74,000**	**0**	**62,000**	**34,000**	**0**
Chevron USA Inc								
Pascagoula	80,000	0	0	74,000	0	62,000	34,000	0
Ergon Refining Inc								
Vicksburg	0	0	0	0	0	0	0	0
Hunt Southland Refining Co								
Sandersville	0	0	0	0	0	0	0	0
Montana	**61,450**	**990**	**6,100**	**0**	**0**	**12,000**	**27,080**	**0**
Cenex Harvest States Coop								
Laurel	14,450	0	0	0	0	12,000	0	0
ConocoPhillips Company								
Billings	20,500	990	0	0	0	0	13,550	0
ExxonMobil Refining & Supply Co								
Billings	23,500	0	6,100	0	0	0	12,500	0
Montana Refining Co								
Great Falls	3,000	0	0	0	0	0	1,030	0
Nevada	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Foreland Refining Corp								
Eagle Springs	0	0	0	0	0	0	0	0
New Jersey	**322,000**	**0**	**0**	**0**	**0**	**92,000**	**0**	**22,000**
Chevron USA Inc								
Perth Amboy	0	0	0	0	0	0	0	0
Citgo Asphalt Refining Co								
Paulsboro	0	0	0	0	0	0	0	0
ConocoPhillips Company								
Linden	145,000	0	0	0	0	32,000	0	22,000
Hess Corporation								
Port Reading	65,000	0	0	0	0	0	0	0

EPAHO044000567

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Louisiana	**636,650**	**581,500**	**122,000**	**626,500**	**122,000**	**12,500**	**282,000**	**123,200**
Pelican Refining Company LLC								
Lake Charles	0	0	0	0	0	0	0	0
Placid Refining Co								
Port Allen	11,000	0	0	15,000	0	0	0	0
Shell Chem LP								
Saint Rose	0	0	0	0	0	0	0	0
Valero Refining Co Louisiana								
Krotz Springs	14,000	18,000	0	0	0	0	0	0
Valero Refining New Orleans LLC								
Norco	34,100	60,000	11,200	0	78,000	0	0	0
Michigan	**29,000**	**0**	**6,800**	**30,000**	**0**	**0**	**35,000**	**0**
Marathon Petroleum Co LLC								
Detroit	29,000	0	6,800	30,000	0	0	35,000	0
Minnesota	**126,000**	**0**	**30,800**	**32,500**	**0**	**0**	**130,500**	**0**
Flint Hills Resources LP								
Saint Paul	105,000	0	23,800	12,500	0	0	101,500	0
Marathon Petroleum Co LLC								
Saint Paul Park	21,000	0	7,000	20,000	0	0	29,000	0
Mississippi	**57,300**	**0**	**30,000**	**35,000**	**0**	**0**	**100,000**	**62,000**
Chevron USA Inc								
Pascagoula	57,300	0	30,000	35,000	0	0	100,000	50,000
Ergon Refining Inc								
Vicksburg	0	0	0	0	0	0	0	12,000
Hunt Southland Refining Co								
Sandersville	0	0	0	0	0	0	0	0
Montana	**44,550**	**18,900**	**19,300**	**42,500**	**16,000**	**0**	**44,400**	**7,900**
Cenex Harvest States Coop								
Laurel	16,000	0	0	0	16,000	0	16,000	0
ConocoPhillips Company								
Billings	13,550	6,000	4,400	30,000	0	0	25,400	0
ExxonMobil Refining & Supply Co								
Billings	13,900	12,900	13,900	10,500	0	0	0	7,900
Montana Refining Co								
Great Falls	1,100	0	1,000	2,000	0	0	3,000	0
Nevada	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Foreland Refining Corp								
Eagle Springs	0	0	0	0	0	0	0	0
New Jersey	**159,000**	**127,000**	**28,500**	**193,000**	**17,000**	**0**	**0**	**18,000**
Chevron USA Inc								
Perth Amboy	0	0	0	0	0	0	0	0
Citgo Asphalt Refining Co								
Paulsboro	0	0	0	0	0	0	0	0
ConocoPhillips Company								
Linden	97,000	0	0	108,000	17,000	0	0	0
Hess Corporation								
Port Reading	0	27,000	0	0	0	0	0	18,000

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
New Jersey	**623,000**	**32,000**	**651,000**	**35,000**	**294,000**	**27,000**	**0**	**0**	**0**
Sunoco Inc									
Westville	145,000	0	152,000	0	42,000	0	0	0	0
Valero Refining Co New Jersey									
Paulsboro	160,000	0	166,000	0	90,000	27,000	0	0	0
New Mexico	**121,600**	**0**	**124,107**	**0**	**24,600**	**0**	**0**	**0**	**0**
Giant Industries Inc									
Bloomfield	16,800	0	18,107	0	0	0	0	0	0
Giant Refining Co									
Gallup	20,800	0	21,000	0	0	0	0	0	0
Navajo Refining Co									
Artesia	84,000	0	85,000	0	24,600	0	0	0	0
North Dakota	**58,000**	**0**	**60,000**	**0**	**0**	**0**	**0**	**0**	**0**
Tesoro West Coast									
Mandan	58,000	0	60,000	0	0	0	0	0	0
Ohio	**510,120**	**0**	**579,000**	**0**	**153,500**	**57,000**	**0**	**0**	**0**
BP Products North America Inc									
Toledo	131,000	0	160,000	0	71,500	34,000	0	0	0
Marathon Petroleum Co LLC									
Canton	73,000	0	84,000	0	30,000	0	0	0	0
Premcor Refining Group Inc									
Lima	146,120	0	170,000	0	52,000	23,000	0	0	0
Sunoco Inc									
Toledo	160,000	0	165,000	0	0	0	0	0	0
Oklahoma	**490,700**	**0**	**527,960**	**0**	**196,920**	**38,660**	**0**	**0**	**0**
ConocoPhillips Company									
Ponca City	194,000	0	213,995	0	88,220	27,660	0	0	0
Sinclair Oil Corp									
Tulsa	70,300	0	75,465	0	27,000	0	0	0	0
Sunoco Inc									
Tulsa	85,000	0	90,000	0	32,000	11,000	0	0	0
Valero Refining Co Oklahoma									
Ardmore	87,400	0	92,000	0	32,000	0	0	0	0
Wynnewood Refining Co									
Wynnewood	54,000	0	56,500	0	17,700	0	0	0	0
Oregon	**0**	**0**	**0**	**0**	**10,000**	**0**	**0**	**0**	**0**
Paramount Petroleum Corporation									
Portland	0	0	0	0	10,000	0	0	0	0
Pennsylvania	**773,000**	**0**	**817,500**	**0**	**267,200**	**0**	**0**	**0**	**0**
American Refining Group Inc									
Bradford	10,000	0	10,500	0	0	0	0	0	0
ConocoPhillips Company									
Trainer	185,000	0	190,000	0	73,000	0	0	0	0
Sunoco Inc									
Marcus Hook	178,000	0	194,000	0	0	0	0	0	0
Sunoco Inc (R&M)									
Philadelphia	335,000	0	355,000	0	163,200	0	0	0	0

EPAHO044000569

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
New Jersey	**322,000**	**0**	**0**	**0**	**0**	**92,000**	**0**	**22,000**
Sunoco Inc								
Westville	57,000	0	0	0	0	30,000	0	0
Valero Refining Co New Jersey								
Paulsboro	55,000	0	0	0	0	30,000	0	0
New Mexico	**41,500**	**3,500**	**0**	**0**	**0**	**24,000**	**11,800**	**0**
Giant Industries Inc								
Bloomfield	6,000	500	0	0	0	0	5,000	0
Giant Refining Co								
Gallup	8,500	3,000	0	0	0	0	6,800	0
Navajo Refining Co								
Artesia	27,000	0	0	0	0	24,000	0	0
North Dakota	**27,000**	**3,600**	**0**	**0**	**0**	**0**	**12,100**	**0**
Tesoro West Coast								
Mandan	27,000	3,600	0	0	0	0	12,100	0
Ohio	**200,000**	**0**	**0**	**102,000**	**0**	**19,000**	**146,000**	**0**
BP Products North America Inc								
Toledo	55,000	0	0	31,000	0	0	43,000	0
Marathon Petroleum Co LLC								
Canton	26,000	0	0	0	0	19,000	0	0
Premcor Refining Group Inc								
Lima	40,000	0	0	26,000	0	0	55,000	0
Sunoco Inc								
Toledo	79,000	0	0	45,000	0	0	48,000	0
Oklahoma	**145,056**	**2,250**	**28,000**	**0**	**0**	**39,850**	**100,190**	**4,850**
ConocoPhillips Company								
Ponca City	69,847	0	0	0	0	0	54,190	0
Sinclair Oil Corp								
Tulsa	24,209	2,250	0	0	0	0	22,000	0
Sunoco Inc								
Tulsa	0	0	0	0	0	0	24,000	0
Valero Refining Co Oklahoma								
Ardmore	30,000	0	12,000	0	0	21,350	0	0
Wynnewood Refining Co								
Wynnewood	21,000	0	16,000	0	0	18,500	0	4,850
Oregon	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Paramount Petroleum Corporation								
Portland	0	0	0	0	0	0	0	0
Pennsylvania	**309,500**	**1,000**	**0**	**0**	**22,000**	**50,000**	**121,800**	**0**
American Refining Group Inc								
Bradford	0	0	0	0	0	0	1,800	0
ConocoPhillips Company								
Trainer	53,000	0	0	0	22,000	50,000	0	0
Sunoco Inc								
Marcus Hook	108,000	0	0	0	0	0	20,000	0
Sunoco Inc (R&M)								
Philadelphia	123,500	0	0	0	0	0	86,000	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
New Jersey	**159,000**	**127,000**	**28,500**	**193,000**	**17,000**	**0**	**0**	**18,000**
Sunoco Inc								
Westville	30,000	65,000	0	39,000	0	0	0	0
Valero Refining Co New Jersey								
Paulsboro	32,000	35,000	28,500	46,000	0	0	0	0
New Mexico	**45,800**	**0**	**3,500**	**39,000**	**0**	**0**	**29,000**	**0**
Giant Industries Inc								
Bloomfield	5,000	0	0	3,000	0	0	0	0
Giant Refining Co								
Gallup	6,800	0	0	3,000	0	0	0	0
Navajo Refining Co								
Artesia	34,000	0	3,500	33,000	0	0	29,000	0
North Dakota	**13,600**	**4,300**	**0**	**14,000**	**0**	**0**	**0**	**0**
Tesoro West Coast								
Mandan	13,600	4,300	0	14,000	0	0	0	0
Ohio	**176,200**	**100,000**	**0**	**57,000**	**0**	**0**	**74,000**	**0**
BP Products North America Inc								
Toledo	40,000	0	0	17,000	0	0	47,000	0
Marathon Petroleum Co LLC								
Canton	25,000	0	0	10,000	0	0	27,000	0
Premcor Refining Group Inc								
Lima	63,000	35,000	0	30,000	0	0	0	0
Sunoco Inc								
Toledo	48,200	65,000	0	0	0	0	0	0
Oklahoma	**138,200**	**70,268**	**18,500**	**106,281**	**27,306**	**0**	**55,540**	**36,131**
ConocoPhillips Company								
Ponca City	50,700	48,268	18,500	31,981	27,306	0	23,540	14,531
Sinclair Oil Corp								
Tulsa	20,000	22,000	0	29,300	0	0	0	0
Sunoco Inc								
Tulsa	28,000	0	0	0	0	0	0	21,600
Valero Refining Co Oklahoma								
Ardmore	26,500	0	0	28,000	0	0	32,000	0
Wynnewood Refining Co								
Wynnewood	13,000	0	0	17,000	0	0	0	0
Oregon	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Paramount Petroleum Corporation								
Portland	0	0	0	0	0	0	0	0
Pennsylvania	**212,600**	**141,000**	**16,400**	**41,360**	**157,200**	**0**	**40,000**	**0**
American Refining Group Inc								
Bradford	3,600	0	0	0	0	0	0	0
ConocoPhillips Company								
Trainer	54,000	0	13,400	24,360	4,200	0	40,000	0
Sunoco Inc								
Marcus Hook	45,000	73,000	0	0	40,000	0	0	0
Sunoco Inc (R&M)								
Philadelphia	88,000	65,000	0	0	113,000	0	0	0

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Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Pennsylvania	**773,000**	**0**	**817,500**	**0**	**267,200**	**0**	**0**	**0**	**0**
United Refining Co									
Warren	65,000	0	68,000	0	31,000	0	0	0	0
Tennessee	**180,000**	**0**	**182,000**	**0**	**0**	**0**	**0**	**0**	**0**
Premcor Refining Group Inc									
Memphis	180,000	0	182,000	0	0	0	0	0	0
Texas	**4,337,026**	**348,500**	**4,545,100**	**385,000**	**2,187,600**	**720,730**	**42,500**	**0**	**0**
Age Refining Inc									
San Antonio	13,000	0	13,500	0	0	0	0	0	0
Alon USA Energy Inc									
Big Spring	67,000	0	70,000	0	24,000	0	0	0	0
BP Products North America Inc									
Texas City	205,000	212,000	230,000	245,000	237,000	43,000	0	0	0
Citgo Refining & Chemical Inc									
Corpus Christi	156,000	0	165,000	0	79,800	44,500	0	0	0
ConocoPhillips Company									
Sweeny	247,000	0	260,000	0	132,100	78,730	0	0	0
Deer Park Refining LTD Partnership									
Deer Park	333,700	0	340,000	0	175,000	88,000	0	0	0
Delek Refining LTD									
Tyler	58,000	0	60,000	0	15,000	6,500	0	0	0
ExxonMobil Refining & Supply Co									
Baytown	562,500	0	586,000	0	281,000	47,000	42,500	0	0
Beaumont	348,500	0	363,100	0	143,000	48,000	0	0	0
Flint Hills Resources LP									
Corpus Christi	288,126	0	305,000	0	87,500	14,000	0	0	0
Houston Refining LP (Formerly Lyondell Citgo Refining Co Ltd)									
Houston	270,200	0	287,000	0	195,000	107,000	0	0	0
Marathon Petroleum Co LLC									
Texas City	72,000	0	78,000	0	0	0	0	0	0
Motiva Enterprises LLC									
Port Arthur	285,000	0	300,000	0	147,000	57,500	0	0	0
Pasadena Refining Systems Inc									
Pasadena	100,000	0	106,500	0	38,000	12,500	0	0	0
Premcor Refining Group Inc									
Port Arthur	260,000	0	265,000	0	140,000	103,000	0	0	0
South Hampton Resources Inc									
Silsbee	0	0	0	0	0	0	0	0	0
Total Petrochemicals Inc									
Port Arthur	95,500	136,500	100,000	140,000	52,000	0	0	0	0
Trigeant LTD									
Corpus Christi	0	0	0	0	29,000	0	0	0	0
Valero Energy Corporation									
Sunray	171,000	0	181,000	0	53,200	0	0	0	0
Three Rivers	93,000	0	97,000	0	35,000	0	0	0	0
Valero Refining Co Texas									
Corpus Christi	142,000	0	146,000	0	97,000	19,000	0	0	0

EPAHO044000572

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Pennsylvania	**309,500**	**1,000**	**0**	**0**	**22,000**	**50,000**	**121,800**	**0**
United Refining Co								
Warren	25,000	1,000	0	0	0	0	14,000	0
Tennessee	**70,000**	**0**	**0**	**0**	**0**	**36,000**	**0**	**0**
Premcor Refining Group Inc								
Memphis	70,000	0	0	0	0	36,000	0	0
Texas	**1,827,765**	**29,300**	**179,100**	**222,000**	**61,400**	**887,600**	**251,190**	**172,500**
Age Refining Inc								
San Antonio	0	0	0	0	0	0	0	0
Alon USA Energy Inc								
Big Spring	25,000	0	0	0	0	21,000	0	10,000
BP Products North America Inc								
Texas City	175,000	4,300	60,000	0	61,400	63,000	75,000	17,000
Citgo Refining & Chemical Inc								
Corpus Christi	82,800	0	0	0	0	51,200	0	0
ConocoPhillips Company								
Sweeny	107,000	12,000	0	0	0	37,500	0	0
Deer Park Refining LTD Partnership								
Deer Park	70,000	5,000	0	67,000	0	47,000	25,000	0
Delek Refining LTD								
Tyler	20,250	0	0	0	0	13,000	4,500	0
ExxonMobil Refining & Supply Co								
Baytown	215,500	8,000	28,500	0	0	126,000	0	48,500
Beaumont	117,700	0	66,600	0	0	155,000	0	0
Flint Hills Resources LP								
Corpus Christi	106,700	0	13,000	0	0	53,600	18,000	0
Houston Refining LP (Formerly Lyondell Citgo Refining Co Ltd)								
Houston	100,000	0	0	0	0	0	35,000	0
Marathon Petroleum Co LLC								
Texas City	57,000	0	0	0	0	0	11,000	0
Motiva Enterprises LLC								
Port Arthur	90,000	0	0	0	0	48,000	0	0
Pasadena Refining Systems Inc								
Pasadena	56,000	0	0	0	0	23,000	0	0
Premcor Refining Group Inc								
Port Arthur	78,600	0	0	46,000	0	53,800	0	0
South Hampton Resources Inc								
Silsbee	0	0	0	0	0	1,500	0	0
Total Petrochemicals Inc								
Port Arthur	78,000	0	11,000	0	0	39,600	0	19,500
Trigeant LTD								
Corpus Christi	0	0	0	0	0	0	0	0
Valero Energy Corporation								
Sunray	55,555	0	0	29,500	0	28,900	18,500	16,500
Three Rivers	24,500	0	0	30,000	0	23,500	11,000	10,000
Valero Refining Co Texas								
Corpus Christi	117,000	0	0	49,500	0	59,000	10,000	0

EPAHO044000573

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Pennsylvania	**212,600**	**141,000**	**16,400**	**41,380**	**157,200**	**0**	**40,000**	**0**
United Refining Co								
Warren	22,000	3,000	3,000	17,000	0	0	0	0
Tennessee	**52,000**	**39,000**	**0**	**69,000**	**0**	**0**	**0**	**0**
Premcor Refining Group Inc								
Memphis	52,000	39,000	0	69,000	0	0	0	0
Texas	**1,225,140**	**799,100**	**358,500**	**885,830**	**267,500**	**318,920**	**807,000**	**246,000**
Age Refining Inc								
San Antonio	0	0	0	0	0	0	0	0
Alon USA Energy Inc								
Big Spring	25,500	0	5,000	23,000	0	0	6,500	0
BP Products North America Inc								
Texas City	114,000	110,000	40,000	98,000	0	0	105,000	0
Citgo Refining & Chemical Inc								
Corpus Christi	52,700	34,000	0	50,500	0	0	69,800	0
ConocoPhillips Company								
Sweeny	67,300	8,700	0	135,200	0	0	107,000	0
Deer Park Refining LTD Partnership								
Deer Park	80,000	43,000	37,000	0	45,000	49,500	80,000	43,000
Delek Refining LTD								
Tyler	20,000	0	0	20,000	0	0	0	0
ExxonMobil Refining & Supply Co								
Baytown	157,000	80,000	34,000	0	206,500	0	110,000	155,800
Beaumont	161,700	25,000	52,500	30,500	0	0	0	38,200
Flint Hills Resources LP								
Corpus Christi	80,300	45,000	15,500	54,000	0	0	53,000	0
Houston Refining LP (Formerly Lyondell Citgo Refining Co Ltd)								
Houston	49,000	95,000	25,000	94,000	0	4,300	110,000	0
Marathon Petroleum Co LLC								
Texas City	0	0	0	0	0	0	0	0
Motiva Enterprises LLC								
Port Arthur	48,000	67,000	42,000	48,000	0	0	24,000	0
Pasadena Refining Systems Inc								
Pasadena	28,000	0	0	0	16,000	0	0	0
Premcor Refining Group Inc								
Port Arthur	50,500	84,000	33,000	87,000	0	0	61,000	0
South Hampton Resources Inc								
Silsbee	4,000	0	0	0	0	0	0	2,500
Total Petrochemicals Inc								
Port Arthur	45,500	33,300	0	53,000	0	0	30,700	0
Trigeant LTD								
Corpus Christi	0	0	0	0	0	0	0	0
Valero Energy Corporation								
Sunray	40,500	39,600	0	32,500	0	0	0	0
Three Rivers	24,000	0	10,000	21,000	0	0	22,000	0
Valero Refining Co Texas								
Corpus Christi	66,000	60,000	11,000	13,000	0	74,000	28,000	0

EPAHO044000574

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Texas	**4,337,026**	**348,500**	**4,545,100**	**385,000**	**2,187,600**	**720,730**	**42,500**	**0**	**0**
Valero Refining Co Texas									
Houston	83,000	0	85,000	0	39,000	0	0	0	0
Texas City	218,500	0	230,000	0	141,000	52,000	0	0	0
Western Refining Company LP									
El Paso	122,000	0	125,000	0	47,000	0	0	0	0
WRB Refining LLC (Formerly ConocoPhillips Company)									
Borger	146,000	0	152,000	0	0	0	0	0	0
Utah	**167,350**	**0**	**176,000**	**0**	**37,500**	**8,500**	**0**	**0**	**0**
Big West Oil Co									
North Salt Lake	29,400	0	30,000	0	5,000	0	0	0	0
Chevron USA Inc									
Salt Lake City	45,000	0	49,000	0	27,500	8,500	0	0	0
Holly Corp Refining & Marketing									
Woods Cross	24,700	0	26,000	0	0	0	0	0	0
Silver Eagle Refining									
Woods Cross	10,250	0	11,000	0	5,000	0	0	0	0
Tesoro West Coast									
Salt Lake City	58,000	0	60,000	0	0	0	0	0	0
Virginia	**59,375**	**0**	**62,500**	**0**	**37,300**	**19,000**	**0**	**0**	**0**
Giant Yorktown Refining									
Yorktown	59,375	0	62,500	0	37,300	19,000	0	0	0
Washington	**623,850**	**0**	**644,300**	**0**	**286,500**	**89,700**	**0**	**0**	**0**
BP West Coast Products LLC									
Ferndale (Cherry Point)	225,000	0	234,000	0	106,000	64,000	0	0	0
ConocoPhillips Company									
Ferndale	96,000	0	102,800	0	48,800	0	0	0	0
Shell Oil Products US									
Anacortes	145,000	0	147,500	0	65,500	25,700	0	0	0
Tesoro West Coast									
Anacortes	120,000	0	121,000	0	47,000	0	0	0	0
US Oil & Refining Co									
Tacoma	37,850	0	39,000	0	19,200	0	0	0	0
West Virginia	**20,000**	**0**	**22,000**	**0**	**8,600**	**0**	**0**	**0**	**0**
Ergon West Virginia Inc									
Newell (Congo)	20,000	0	22,000	0	8,600	0	0	0	0
Wisconsin	**34,300**	**0**	**35,000**	**0**	**20,500**	**0**	**0**	**0**	**0**
Murphy Oil USA Inc									
Superior	34,300	0	35,000	0	20,500	0	0	0	0
Wyoming	**154,500**	**0**	**166,400**	**0**	**64,400**	**10,000**	**0**	**0**	**0**
Frontier Refining Inc									
Cheyenne	47,000	0	52,000	0	25,000	10,000	0	0	0
Little America Refining Co									
Evansville (Casper)	24,500	0	25,500	0	5,600	0	0	0	0

EPAHO044000575

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Texas	**1,827,765**	**29,300**	**179,100**	**222,000**	**61,400**	**887,600**	**251,190**	**172,500**
Valero Refining Co Texas								
Houston	65,000	0	0	0	0	0	11,500	18,000
Texas City	83,500	0	0	0	0	18,000	0	33,000
Western Refining Company LP								
El Paso	32,500	0	0	0	0	25,000	0	0
WRB Refining LLC (Formerly ConocoPhillips Company)								
Borger	70,160	0	0	0	0	0	31,690	0
Utah	**57,400**	**2,200**	**0**	**0**	**0**	**0**	**37,200**	**5,040**
Big West Oil Co								
North Salt Lake	11,500	0	0	0	0	0	7,300	0
Chevron USA Inc								
Salt Lake City	14,000	0	0	0	0	0	8,000	0
Holly Corp Refining & Marketing								
Woods Cross	8,900	0	0	0	0	0	7,700	5,040
Silver Eagle Refining								
Woods Cross	0	0	0	0	0	0	2,200	0
Tesoro West Coast								
Salt Lake City	23,000	2,200	0	0	0	0	12,000	0
Virginia	**28,200**	**2,000**	**0**	**0**	**0**	**0**	**12,100**	**0**
Giant Yorktown Refining								
Yorktown	28,200	2,000	0	0	0	0	12,100	0
Washington	**137,300**	**3,000**	**0**	**61,000**	**0**	**43,400**	**102,200**	**30,000**
BP West Coast Products LLC								
Ferndale (Cherry Point)	0	0	0	61,000	0	0	63,000	0
ConocoPhillips Company								
Ferndale	34,400	0	0	0	0	17,400	0	0
Shell Oil Products US								
Anacortes	57,900	0	0	0	0	0	32,700	0
Tesoro West Coast								
Anacortes	45,000	3,000	0	0	0	26,000	0	30,000
US Oil & Refining Co								
Tacoma	0	0	0	0	0	0	6,500	0
West Virginia	**0**	**0**	**0**	**0**	**0**	**3,400**	**0**	**0**
Ergon West Virginia Inc								
Newell (Congo)	0	0	0	0	0	3,400	0	0
Wisconsin	**11,000**	**0**	**0**	**0**	**0**	**8,000**	**0**	**0**
Murphy Oil USA Inc								
Superior	11,000	0	0	0	0	8,000	0	0
Wyoming	**49,806**	**500**	**11,500**	**0**	**0**	**14,200**	**17,400**	**0**
Frontier Refining Inc								
Cheyenne	12,000	0	0	0	0	9,200	0	0
Little America Refining Co								
Evansville (Casper)	10,500	500	0	0	0	5,000	0	0

EPAHO044000576

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Texas	**1,225,140**	**799,100**	**358,500**	**885,830**	**267,500**	**318,920**	**807,000**	**246,000**
Valero Refining Co Texas								
Houston	12,000	17,500	0	18,000	0	0	0	0
Texas City	19,000	57,000	36,000	50,000	0	110,000	0	6,500
Western Refining Company LP								
El Paso	26,800	0	9,000	22,000	0	0	0	0
WRB Refining LLC (Formerly ConocoPhillips Company)								
Borger	53,340	0	8,500	36,130	0	81,120	0	0
Utah	**44,600**	**0**	**0**	**38,800**	**28,000**	**0**	**0**	**7,200**
Big West Oil Co								
North Salt Lake	8,900	0	0	9,500	0	0	0	0
Chevron USA Inc								
Salt Lake City	8,300	0	0	13,300	18,000	0	0	7,200
Holly Corp Refining & Marketing								
Woods Cross	12,600	0	0	0	10,000	0	0	0
Silver Eagle Refining								
Woods Cross	2,200	0	0	4,000	0	0	0	0
Tesoro West Coast								
Salt Lake City	12,600	0	0	12,000	0	0	0	0
Virginia	**11,900**	**0**	**0**	**12,000**	**18,960**	**0**	**0**	**0**
Giant Yorktown Refining								
Yorktown	11,900	0	0	12,000	18,960	0	0	0
Washington	**163,600**	**57,400**	**42,300**	**107,200**	**29,300**	**0**	**7,600**	**0**
BP West Coast Products LLC								
Ferndale (Cherry Point)	70,000	0	11,500	31,000	0	0	0	0
ConocoPhillips Company								
Ferndale	18,200	20,000	14,800	25,000	0	0	0	0
Shell Oil Products US								
Anacortes	32,900	37,400	16,000	44,200	0	0	0	0
Tesoro West Coast								
Anacortes	34,000	0	0	0	29,300	0	7,600	0
US Oil & Refining Co								
Tacoma	8,500	0	0	7,000	0	0	0	0
West Virginia	**4,300**	**0**	**0**	**8,000**	**0**	**0**	**6,300**	**0**
Ergon West Virginia Inc								
Newell (Congo)	4,300	0	0	8,000	0	0	6,300	0
Wisconsin	**11,000**	**7,500**	**6,200**	**5,000**	**0**	**0**	**0**	**0**
Murphy Oil USA Inc								
Superior	11,000	7,500	6,200	5,000	0	0	0	0
Wyoming	**35,950**	**10,000**	**11,000**	**46,100**	**0**	**0**	**15,000**	**0**
Frontier Refining Inc								
Cheyenne	10,000	10,000	0	17,500	0	0	0	0
Little America Refining Co								
Evansville (Casper)	7,200	0	0	9,500	0	0	0	0

EPAHO044000577

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Atmospheric Crude Oil Distillation				Downstream Charge Capacity				
	Barrels per Calendar Day		Barrels per Stream Day		Vacuum Distillation	Thermal Cracking			
	Operating	Idle	Operating	Idle		Delayed Coking	Fluid Coking	Visbreaking	Other/Gas Oil
Wyoming	**154,500**	**0**	**166,400**	**0**	**64,400**	**10,000**	**0**	**0**	**0**
Silver Eagle Refining									
Evanston	3,000	0	3,300	0	0	0	0	0	0
Sinclair Oil Corp									
Sinclair	66,000	0	71,500	0	32,000	0	0	0	0
Wyoming Refining Co									
Newcastle	14,000	0	14,100	0	1,800	0	0	0	0
U.S. Total	**16,997,792**	**445,700**	**17,928,622**	**496,800**	**8,251,451**	**2,331,580**	**205,900**	**16,000**	**10,600**
Puerto Rico	**77,900**	**0**	**85,000**	**0**	**31,500**	**0**	**0**	**0**	**0**
Shell Chem Yabucoa Inc									
Yabucoa	77,900	0	85,000	0	31,500	0	0	0	0
Virgin Islands	**500,000**	**0**	**525,000**	**0**	**225,000**	**61,000**	**0**	**42,000**	**0**
Hovensa LLC									
Kingshill (St Croix)	500,000	0	525,000	0	225,000	61,000	0	42,000	0

EPAHO044000578

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Catalytic Cracking		Catalytic Hydrocracking			Catalytic Reforming		
	Fresh	Recycled	Distillate	Gas Oil	Residual	Low Pressure	High Pressure	Fuels Solvent Deasphalting
Wyoming	**49,806**	**500**	**11,500**	**0**	**0**	**14,200**	**17,400**	**0**
Silver Eagle Refining								
Evanston	0	0	0	0	0	0	2,150	0
Sinclair Oil Corp								
Sinclair	21,806	0	11,500	0	0	0	12,500	0
Wyoming Refining Co								
Newcastle	5,500	0	0	0	0	0	2,750	0
U.S. Total	**6,218,957**	**82,040**	**602,800**	**987,482**	**200,400**	**2,354,950**	**1,552,560**	**379,290**
Puerto Rico	**0**	**0**	**0**	**19,800**	**0**	**20,000**	**0**	**0**
Shell Chem Yabucoa Inc								
Yabucoa	0	0	0	19,800	0	20,000	0	0
Virgin Islands	**149,000**	**0**	**0**	**0**	**0**	**90,000**	**25,000**	**0**
Hovensa LLC								
Kingshill (St Croix)	149,000	0	0	0	0	90,000	25,000	0

EPAHO044000579

Table 3. Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Downstream Charge Capacity							
	Desulfurization (incl. Catalytic Hydrotreating)							
	Naphtha/ Reformer Feed	Gasoline	Kerosene/ Jet Fuel	Diesel Fuel	Other Distillate	Residual	Heavy Gas Oil	Other
Wyoming	**35,950**	**10,000**	**11,000**	**46,100**	**0**	**0**	**15,000**	**0**
Silver Eagle Refining								
Evanston	3,250	0	0	0	0	0	0	0
Sinclair Oil Corp								
Sinclair	12,500	0	11,000	13,500	0	0	15,000	0
Wyoming Refining Co								
Newcastle	3,000	0	0	5,600	0	0	0	0
U.S. Total	**4,453,890**	**2,221,568**	**1,009,450**	**3,332,671**	**87(,266**	**331,420**	**2,578,840**	**649,031**
Puerto Rico	**20,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Shell Chem Yabucoa Inc								
Yabucoa	20,000	0	0	0	0	0	0	0
Virgin Islands	**115,000**	**20,000**	**60,000**	**60,000**	**2(,000**	**0**	**145,000**	**56,000**
Hovensa LLC								
Kingshill (St Croix)	115,000	20,000	60,000	60,000	2(,000	0	145,000	56,000

Note: Much of the capacity included in the table for BP Texas City is currently idle, but is under active repair and is expected to return to service.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000580

Directory of Operable Petroleum Refineries on Tables 3 and 4

Refiner	State(s) [a]	Refiner	State(s) [a]
Age Refining Inc.	TX	Little America Refining Co.	WY
Alon USA Energy Inc.	TX	Lunday Thagard Co.	CA
American Refining Group Inc.	PA	Marathon Petroleum Co LLC	IL, KY, LA, MI, MN, OH, TX
BP Exploration Alaska Inc.	AK	Montana Refining Co.	MT
BP Products North America Inc.	IN, OH, TX	Motiva Enterprises LLC	LA, TX
BP West Coast Products LLC	CA, WA	Murphy Oil USA Inc.	LA, WI
Big West Of California	CA	NCRA	KS
Big West Oil Co.	UT	Navajo Refining Co.	NM
Calcasieu Refining Co.	LA	PDV Midwest Refining LLC	IL
Calumet Lubricants Co LP	LA	Paramount Petroleum Corporation	CA, OR
Calumet Shreveport LLC	LA	Pasadena Refining Systems Inc.	TX
Cenex Harvest States Coop.	MT	Pelican Refining Company LLC	LA
Chalmette Refining LLC	LA	Petro Star Inc.	AK
Chevron USA Inc.	CA, HI, MS, NJ, UT	Placid Refining Co.	LA
Citgo Asphalt Refining Co.	GA, NJ	Premcor Refining Group Inc.	DE, OH, TN, TX
Citgo Petroleum Corp.	LA	San Joaquin Refining Co Inc.	CA
Citgo Refining & Chemical Inc.	TX	Shell Chem LP	AL, LA
Coffeyville Resources LLC	KS	Shell Chem Yabucoa Inc.	PR
ConocoPhillips Alaska Inc.	AK	Shell Oil Products US	CA, WA
ConocoPhillips Company	CA, LA, MT, NJ, OK, PA, TX, WA	Silver Eagle Refining	UT, WY
Countrymark Cooperative Inc.	IN	Sinclair Oil Corp.	OK, WY
Cross Oil Refining & Marketing Inc.	AR	Somerset Refinery Inc.	KY
Deer Park Refining LTD Partnership	TX	South Hampton Resources Inc	TX
Delek Refining LTD	TX	Suncor Energy (USA) Inc.	CO
Edgington Oil Co Inc.	CA	Sunoco Inc.	NJ, OH, OK, PA
Ergon Refining Inc.	MS	Sunoco Inc (R&M)	PA
Ergon West Virginia Inc.	WV	Tenby Inc.	CA
Excel Paralubes	LA	Tesoro Alaska Petroleum Co.	AK
ExxonMobil Refining & Supply Co.	CA, IL, LA, MT, TX	Tesoro Hawaii Corp.	HI
Flint Hills Resources Alaska LLC	AK	Tesoro Refining & Marketing Co.	CA
Flint Hills Resources LP	MN, TX	Tesoro West Coast	ND, UT, WA
Foreland Refining Corp.	NV	Total Petrochemicals Inc.	TX
Frontier El Dorado Refining Co.	KS	Trigeant LTD	TX
Frontier Refining Inc.	WY	US Oil & Refining Co.	WA
Giant Industries Inc.	NM	Ultramar Inc.	CA
Giant Refining Co.	NM	United Refining Co.	PA
Giant Yorktown Refining	VA	Valero Energy Corporation	TX
Goodway Refining LLC	AL	Valero Refining Co California	CA
Greka Energy	CA	Valero Refining Co Louisiana	LA
Gulf Atlantic Operations LLC	AL	Valero Refining Co New Jersey	NJ
Hess Corporation	NJ	Valero Refining Co Oklahoma	OK
Holly Corp Refining & Marketing	UT	Valero Refining Co Texas	TX
Houston Refining LP	TX	Valero Refining New Orleans LLC	LA
Hovensa LLC	VI	WRB Refining LLC	IL, TX
Hunt Refining Co.	AL	Western Refining Company LP	TX
Hunt Southland Refining Co.	MS	Wynnewood Refining Co.	OK
Kern Oil & Refining Co.	CA	Wyoming Refining Co.	WY
Lion Oil Co.	AR		

[a] Includes Puerto Rico (PR) and Virgin Islands (VI).

EPAHO044000581

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Alabama	**0**	**0**	**28,200**	**1,200**	**2,000**	**0**	**2,500**	**6**	**115**
Gulf Atlantic Operations LLC									
Mobile	0	0	13,200	0	0	0	0	0	0
Hunt Refining Co									
Tuscaloosa	0	0	15,000	0	0	0	2,500	6	80
Shell Chem LP									
Saraland	0	0	0	1,200	2,000	0	0	0	35
Alaska	**0**	**1,350**	**4,000**	**0**	**4,200**	**0**	**0**	**13**	**20**
Flint Hills Resources Alaska LLC									
North Pole	0	1,350	2,000	0	0	0	0	0	0
Tesoro Alaska Petroleum Co									
Kenai	0	0	2,000	0	4,200	0	0	13	20
Arkansas	**5,000**	**0**	**16,100**	**0**	**6,600**	**5,000**	**0**	**3**	**157**
Cross Oil Refining & Marketing Inc									
Smackover	0	0	1,500	0	0	5,000	0	3	0
Lion Oil Co									
El Dorado	5,000	0	14,600	0	6,600	0	0	0	157
California	**179,026**	**1,500**	**71,433**	**31,150**	**114,300**	**32,800**	**127,975**	**1,064**	**4,539**
Big West Of California									
Bakersfield	0	0	0	700	0	0	6,000	25	35
BP West Coast Products LLC									
Los Angeles	17,000	0	0	3,500	23,000	0	11,400	105	350
Chevron USA Inc									
El Segundo	33,500	0	0	7,700	22,300	0	20,000	77	600
Richmond	23,426	0	0	7,200	46,800	27,000	0	181	789
ConocoPhillips Company									
Arroyo Grande	0	0	0	0	0	0	5,800	0	120
Rodeo	0	0	0	3,500	9,400	0	6,000	84	310
Wilmington	9,900	0	0	3,100	12,800	0	16,800	105	370
Edgington Oil Co Inc									
Long Beach	0	0	6,000	0	0	0	0	0	0
ExxonMobil Refining & Supply Co									
Torrance	24,200	0	0	0	0	0	17,725	138	448
Greka Energy									
Santa Maria	0	0	6,000	0	0	0	0	0	0
Kern Oil & Refining Co									
Bakersfield	0	0	0	0	0	0	0	0	5
Lunday Thagard Co									
South Gate	0	0	5,833	0	0	0	0	0	0
Paramount Petroleum Corporation									
Paramount	0	0	16,500	0	0	0	0	0	40
San Joaquin Refining Co Inc									
Bakersfield	0	1,500	8,000	0	0	5,800	0	4	3
Shell Oil Products US									
Martinez	12,000	0	15,000	0	0	0	8,600	107	496
Wilmington	12,500	0	0	4,400	0	0	10,250	15	240
Tenby Inc									
Oxnard	0	0	1,600	0	0	0	0	0	0
Tesoro Refining & Marketing Co									
Martinez	15,400	0	0	0	0	0	8,600	82	200

EPAHO044000582

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Ultramar Inc									
Wilmington	14,000	0	0	0	0	0	10,000	0	230
Valero Refining Co California									
Benicia	17,100	0	9,000	1,050	0	0	6,800	141	303
Wilmington	0	0	3,500	0	0	0	0	0	0
Colorado	**0**	**0**	**12,250**	**985**	**0**	**0**	**0**	**22**	**116**
Suncor Energy (USA) Inc									
Commerce City	0	0	12,250	0	0	0	0	22	114
Denver	0	0	0	985	0	0	0	0	2
Delaware	**11,729**	**1,700**	**0**	**6,000**	**0**	**0**	**13,620**	**40**	**596**
Premcor Refining Group Inc									
Delaware City	11,729	1,700	0	6,000	0	0	13,620	40	596
Georgia	**0**	**0**	**24,000**	**0**	**0**	**0**	**0**	**0**	**0**
Citgo Asphalt Refining Co									
Savannah	0	0	24,000	0	0	0	0	0	0
Hawaii	**5,000**	**0**	**16,000**	**3,200**	**0**	**0**	**0**	**21**	**34**
Chevron USA Inc									
Honolulu	5,000	0	15,000	3,200	0	0	0	3	0
Tesoro Hawaii Corp									
Kapolei	0	0	1,000	0	0	0	0	18	34
Illinois	**82,400**	**13,500**	**67,000**	**0**	**15,000**	**0**	**48,500**	**114**	**1,789**
ExxonMobil Refining & Supply Co									
Joliet	28,100	0	12,000	0	0	0	18,500	0	683
Marathon Petroleum Co LLC									
Robinson	11,500	0	0	0	15,000	0	7,000	0	202
PDV Midwest Refining LLC									
Lemont (Chicago)	21,000	9,000	0	0	0	0	16,500	12	400
WRB Refining LLC (Formerly *ConocoPhillips Company*)									
Wood River	21,800	4,500	55,000	0	0	0	6,500	102	504
Indiana	**37,700**	**17,000**	**65,700**	**0**	**28,200**	**0**	**13,400**	**31**	**559**
BP Products North America Inc									
Whiting	36,000	17,000	63,000	0	26,000	0	13,400	31	550
Countrymark Cooperative Inc									
Mount Vernon	1,700	0	2,700	0	2,200	0	0	0	9
Kansas	**30,800**	**2,200**	**4,000**	**3,650**	**23,500**	**0**	**14,170**	**69**	**657**
Coffeyville Resources LLC									
Coffeyville	10,500	0	0	0	0	0	5,760	0	229
Frontier El Dorado Refining Co									
El Dorado	13,500	2,200	4,000	850	12,500	0	5,000	35	260
NCRA									
McPherson	6,800	0	0	2,800	11,000	0	3,410	34	168
Kentucky	**20,000**	**7,000**	**23,000**	**0**	**15,250**	**8,800**	**0**	**0**	**448**
Marathon Petroleum Co LLC									
Catlettsburg	20,000	7,000	23,000	0	15,000	8,800	0	0	448
Somerset Refinery Inc									
Somerset	0	0	0	0	250	0	0	0	0

EPAHO044000583

Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Louisiana	**212,400**	**39,700**	**65,800**	**43,500**	**78,220**	**67,417**	**138,355**	**271**	**5,571**
Calcasieu Refining Co									
Lake Charles	0	0	0	7,600	0	0	0	0	0
Calumet Lubricants Co LP									
Cotton Valley	0	0	0	0	500	0	0	2	0
Princeton	0	0	2,000	0	0	7,000	0	5	3
Calumet Shreveport LLC									
Shreveport	0	0	5,800	0	0	9,000	0	6	14
Chalmette Refining LLC									
Chalmette	13,100	10,200	0	10,000	10,000	0	11,000	0	935
Citgo Petroleum Corp									
Lake Charles	22,000	17,200	0	0	28,000	11,000	26,500	0	640
ConocoPhillips Company									
Belle Chasse	38,000	12,300	0	0	0	0	5,289	0	125
Westlake	6,000	0	0	930	0	0	22,500	0	440
Excel Paralubes									
Westlake	0	0	0	0	0	23,817	0	0	185
ExxonMobil Refining & Supply Co									
Baton Rouge	39,700	0	0	0	0	16,600	30,831	0	800
Marathon Petroleum Co LLC									
Garyville	28,000	0	30,000	22,000	21,000	0	12,900	0	756
Motiva Enterprises LLC									
Convent	16,500	0	0	0	12,500	0	0	63	728
Norco	16,800	0	0	0	0	0	5,550	60	169
Murphy Oil USA Inc									
Meraux	8,500	0	18,000	0	0	0	0	0	180
Pelican Refining Company LLC									
Lake Charles	0	0	10,000	0	0	0	0	0	0
Placid Refining Co									
Port Allen	4,000	0	0	0	0	0	0	0	28
Valero Refining Co Louisiana									
Krotz Springs	0	0	0	2,970	6,220	0	0	0	0
Valero Refining New Orleans LLC									
Norco	19,800	0	0	0	0	0	23,785	135	568
Michigan	**4,900**	**0**	**23,000**	**0**	**0**	**0**	**0**	**0**	**146**
Marathon Petroleum Co LLC									
Detroit	4,900	0	23,000	0	0	0	0	0	146
Minnesota	**18,000**	**0**	**58,000**	**8,700**	**29,000**	**0**	**22,000**	**125**	**1,121**
Flint Hills Resources LP									
Saint Paul	12,500	0	45,000	6,700	21,000	0	22,000	116	999
Marathon Petroleum Co LLC									
Saint Paul Park	5,500	0	13,000	2,000	8,000	0	0	9	122
Mississippi	**18,600**	**21,000**	**36,125**	**0**	**0**	**11,400**	**35,500**	**238**	**1,324**
Chevron USA Inc									
Pascagoula	18,600	21,000	20,000	0	0	0	35,500	230	1,300
Ergon Refining Inc									
Vicksburg	0	0	10,000	0	0	11,400	0	8	24
Hunt Southland Refining Co									
Sandersville	0	0	6,125	0	0	0	0	0	0

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Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Montana	**17,150**	**0**	**35,100**	**5,200**	**700**	**0**	**7,125**	**89**	**376**
Cenex Harvest States Coop									
Laurel	4,200	0	16,800	1,200	0	0	0	30	130
ConocoPhillips Company									
Billings	7,250	0	0	4,000	0	0	4,625	33	246
ExxonMobil Refining & Supply Co									
Billings	4,700	0	14,500	0	0	0	2,500	24	0
Montana Refining Co									
Great Falls	1,000	0	3,800	0	700	0	0	2	0
Nevada	**0**	**0**	**5,000**	**0**	**0**	**0**	**0**	**0**	**0**
Foreland Refining Corp									
Eagle Springs	0	0	5,000	0	0	0	0	0	0
New Jersey	**40,200**	**7,500**	**98,500**	**4,000**	**10,000**	**12,000**	**7,500**	**29**	**296**
Chevron USA Inc									
Perth Amboy	0	0	35,000	0	0	0	0	0	0
Citgo Asphalt Refining Co									
Paulsboro	0	0	49,000	0	0	0	0	0	0
ConocoPhillips Company									
Linden	18,000	0	0	4,000	0	0	0	20	0
Hess Corporation									
Port Reading	7,000	0	0	0	0	0	0	0	10
Sunoco Inc									
Westville	4,000	7,500	0	0	10,000	0	0	0	80
Valero Refining Co New Jersey									
Paulsboro	11,200	0	14,500	0	0	12,000	7,500	9	206
New Mexico	**10,900**	**0**	**6,700**	**419**	**13,540**	**0**	**0**	**10**	**161**
Giant Industries Inc									
Bloomfield	0	0	0	419	0	0	0	0	3
Giant Refining Co									
Gallup	1,800	0	0	0	4,000	0	0	0	2
Navajo Refining Co									
Artesia	9,100	0	6,700	0	9,540	0	0	10	156
North Dakota	**4,400**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**
Tesoro West Coast									
Mandan	4,400	0	0	0	0	0	0	0	17
Ohio	**28,450**	**18,200**	**22,500**	**5,100**	**18,700**	**0**	**14,000**	**91**	**635**
BP Products North America Inc									
Toledo	11,500	0	9,000	0	0	0	10,000	33	340
Marathon Petroleum Co LLC									
Canton	7,000	0	13,500	0	0	0	0	0	123
Premcor Refining Group Inc									
Lima	0	9,200	0	4,500	18,700	0	4,000	58	110
Sunoco Inc									
Toledo	9,950	9,000	0	600	0	0	0	0	62
Oklahoma	**34,100**	**0**	**35,216**	**10,600**	**13,200**	**9,100**	**8,250**	**61**	**307**
ConocoPhillips Company									
Ponca City	17,220	0	0	8,800	0	0	6,300	35	0

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Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007

(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Sinclair Oil Corp									
Tulsa	4,868	0	15,216	0	9,000	0	0	0	28
Sunoco Inc									
Tulsa	0	0	0	900	0	9,100	1,950	0	0
Valero Refining Co Oklahoma									
Ardmore	7,012	0	14,000	900	0	0	0	26	243
Wynnewood Refining Co									
Wynnewood	5,000	0	6,000	0	4,200	0	0	0	36
Oregon	**0**	**0**	**7,000**	**0**	**0**	**0**	**0**	**0**	**0**
Paramount Petroleum Corporation									
Portland	0	0	7,000	0	0	0	0	0	0
Pennsylvania	**54,100**	**12,920**	**20,065**	**5,000**	**6,800**	**2,945**	**0**	**0**	**405**
American Refining Group Inc									
Bradford	0	0	65	0	0	2,945	0	0	0
ConocoPhillips Company									
Trainer	12,000	0	0	0	0	0	0	0	41
Sunoco Inc									
Marcus Hook	12,000	8,000	0	0	0	0	0	0	34
Sunoco Inc (R&M)									
Philadelphia	26,000	4,920	0	5,000	0	0	0	0	260
United Refining Co									
Warren	4,100	0	20,000	0	6,800	0	0	0	70
Tennessee	**12,000**	**0**	**0**	**0**	**4,000**	**0**	**0**	**0**	**116**
Premcor Refining Group Inc									
Memphis	12,000	0	0	0	4,000	0	0	0	116
Texas	**333,950**	**162,300**	**84,100**	**81,200**	**119,733**	**79,095**	**232,756**	**636**	**12,537**
Alon USA Energy Inc									
Big Spring	5,000	1,000	7,600	0	0	0	0	0	150
BP Products North America Inc									
Texas City	35,000	45,000	0	18,000	24,000	0	20,800	0	1,400
Citgo Refining & Chemical Inc									
Corpus Christi	24,000	15,000	0	0	0	0	14,500	0	368
ConocoPhillips Company									
Sweeny	21,700	11,600	0	0	10,100	0	22,800	155	664
Deer Park Refining LTD Partnership									
Deer Park	18,500	0	0	0	0	0	30,000	108	1,150
Delek Refining LTD									
Tyler	4,700	0	0	500	0	0	1,500	0	28
ExxonMobil Refining & Supply Co									
Baytown	37,000	0	0	0	0	21,800	19,755	0	1,796
Beaumont	15,500	0	0	11,200	24,500	12,500	15,885	55	580
Flint Hills Resources LP									
Corpus Christi	14,800	34,500	0	4,900	2,500	0	3,430	0	237
Houston Refining LP (Formerly Lyondell Citgo Refining Co Ltd)									
Houston	11,250	7,000	0	0	0	3,895	29,960	0	803
Marathon Petroleum Co LLC									
Texas City	13,000	2,000	0	0	0	0	0	0	0

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Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Motiva Enterprises LLC									
Port Arthur	20,000	0	0	0	0	39,000	15,616	0	739
Pasadena Refining Systems Inc									
Pasadena	10,000	0	0	0	0	0	2,000	0	28
Premcor Refining Group Inc									
Port Arthur	16,500	0	0	3,600	0	0	32,240	0	1,280
South Hampton Resources Inc									
Silsbee	0	1,100	0	0	1,500	0	0	2	0
Total Petrochemicals Inc									
Port Arthur	5,500	13,600	4,000	0	9,333	0	0	0	300
Trigeant LTD									
Corpus Christi	0	0	16,000	0	0	0	0	0	0
Valero Energy Corporation									
Sunray	9,500	0	12,000	3,000	0	0	0	0	73
Three Rivers	6,500	10,500	0	3,000	0	1,900	0	30	70
Valero Refining Co Texas									
Corpus Christi	17,000	21,000	38,000	17,000	12,000	0	6,270	195	1,288
Houston	11,000	0	0	0	0	0	0	0	386
Texas City	12,000	0	0	0	6,500	0	18,000	0	817
Western Refining Company LP									
El Paso	11,500	0	6,500	5,000	0	0	0	0	40
WRB Refining LLC (Formerly ConocoPhillips Company)									
Borger	14,000	0	0	15,000	29,300	0	0	91	340
Utah	**16,300**	**0**	**3,300**	**3,200**	**4,700**	**0**	**1,900**	**0**	**59**
Big West Oil Co									
North Salt Lake	2,500	0	0	1,900	1,700	0	0	0	4
Chevron USA Inc									
Salt Lake City	5,600	0	0	1,300	0	0	1,900	0	27
Holly Corp Refining & Marketing									
Woods Cross	2,200	0	1,800	0	3,000	0	0	0	10
Silver Eagle Refining									
Woods Cross	0	0	1,500	0	0	0	0	0	0
Tesoro West Coast									
Salt Lake City	6,000	0	0	0	0	0	0	0	18
Virginia	**4,200**	**0**	**0**	**0**	**0**	**0**	**5,400**	**14**	**60**
Giant Yorktown Refining									
Yorktown	4,200	0	0	0	0	0	5,400	14	60
Washington	**33,800**	**0**	**13,500**	**14,000**	**3,000**	**0**	**24,650**	**120**	**668**
BP West Coast Products LLC									
Ferndale (Cherry Point)	0	0	0	6,000	0	0	16,250	120	252
ConocoPhillips Company									
Ferndale	9,500	0	0	4,400	0	0	0	0	56
Shell Oil Products US									
Anacortes	11,900	0	0	0	0	0	8,400	0	350
Tesoro West Coast									
Anacortes	12,400	0	5,500	3,600	0	0	0	0	0
US Oil & Refining Co									
Tacoma	0	0	8,000	0	3,000	0	0	0	10
West Virginia	**0**	**0**	**550**	**0**	**0**	**5,200**	**0**	**1**	**1**

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Table 4. Production Capacity of Operable Petroleum Refineries by State as of January 1, 2007
(Barrels per Stream Day, Except Where Noted)

State/Refiner/Location	Alkylates	Aromatics	Asphalt and Road Oil	Isomers		Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/ per day)
				Isobutane	Isopentane and Isohexane				
Ergon West Virginia Inc									
Newell (Congo)	0	0	550	0	0	5,200	0	1	1
Wisconsin	**1,600**	**0**	**7,500**	**0**	**0**	**0**	**0**	**0**	**34**
Murphy Oil USA Inc									
Superior	1,600	0	7,500	0	0	0	0	0	34
Wyoming	**10,220**	**0**	**23,100**	**24**	**1,000**	**0**	**4,700**	**32**	**157**
Frontier Refining Inc									
Cheyenne	4,200	0	13,000	0	0	0	4,700	6	101
Little America Refining Co									
Evansville (Casper)	0	0	2,100	0	0	0	0	0	5
Silver Eagle Refining									
Evanston	0	0	0	0	1,000	0	0	0	0
Sinclair Oil Corp									
Sinclair	4,500	0	8,000	0	0	0	0	26	47
Wyoming Refining Co									
Newcastle	1,520	0	0	24	0	0	0	0	4
U.S. Total	**1,226,925**	**305,870**	**876,739**	**227,128**	**511,643**	**133,757**	**722,301**	**3,100**	**33,021**
Puerto Rico	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**22**
Shell Chem Yabucoa Inc									
Yabucoa	0	0	0	0	0	0	0	18	22
Virgin Islands	**20,000**	**20,000**	**0**	**0**	**18,000**	**0**	**19,000**	**0**	**550**
Hovensa LLC									
Kingshill (St Croix)	20,000	20,000	0	0	18,000	0	19,000	0	550

Note: Much of the capacity included in the table for BP Texas City is currently idle, but is under active repair and is expected to return to service.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day
Companies with Capacity Over 100,000 bbl/cd	
VALERO ENERGY CORP.	2,219,410
Premcor Refining Group Inc	
Port Arthur, Texas	260,000
Delaware City, Delaware	182,200
Memphis, Tennessee	180,000
Lima, Ohio	146,120
Valero Refining Co Texas	
Texas City, Texas	218,500
Corpus Christi, Texas	142,000
Houston, Texas	83,000
Valero Energy Corporation	
Sunray, Texas	171,000
Three Rivers, Texas	93,000
Valero Refining New Orleans LLC	
Norco, Louisiana	185,003
Valero Refining Co New Jersey	
Paulsboro, New Jersey	160,000
Valero Refining Co California	
Benicia, California	144,000
Wilmington, California	6,300
Valero Refining Co Oklahoma	
Ardmore, Oklahoma	87,400
Ultramar Inc	
Wilmington, California	80,887
Valero Refining Co Louisiana	
Krotz Springs, Louisiana	80,000
EXXON MOBIL CORP.	1,862,100
ExxonMobil Refining & Supply Co	
Baytown, Texas	562,500
Baton Rouge, Louisiana	503,000
Beaumont, Texas	348,500
Joliet, Illinois	238,600
Torrance, California	149,500
Billings, Montana	60,000
CONOCOPHILLIPS	1,778,600
ConocoPhillips Company	
Belle Chasse, Louisiana	247,000
Sweeny, Texas	247,000
Westlake, Louisiana	239,400
Linden, New Jersey	238,000
Ponca City, Oklahoma	194,000
Trainer, Pennsylvania	185,000
Wilmington, California	139,000
Ferndale, Washington	96,000
Rodeo, California	76,000
Billings, Montana	58,000
Arroyo Grande, California	44,200
ConocoPhillips Alaska Inc	
Kuparuk, Alaska	15,000
BP PLC	1,460,500
BP Products North America Inc	
Texas City, Texas	417,000
Whiting, Indiana	410,000
Toledo, Ohio	131,000
BP West Coast Products LLC	
Los Angeles, California	265,000
Ferndale (Cherry Point), Washington	225,000
BP Exploration Alaska Inc	
Prudhoe Bay, Alaska	12,500

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day
CHEVRON CORP	1,011,901
Chevron USA Inc	
Pascagoula, Mississippi	330,000
El Segundo, California	260,000
Richmond, California	242,901
Perth Amboy, New Jersey	80,000
Honolulu, Hawaii	54,000
Salt Lake City, Utah	45,000
MARATHON OIL CORP	974,000
Marathon Petroleum Co LLC	
Garyville, Louisiana	245,000
Catlettsburg, Kentucky	222,000
Robinson, Illinois	192,000
Detroit, Michigan	100,000
Canton, Ohio	73,000
Texas City, Texas	72,000
Saint Paul Park, Minnesota	70,000
SUNOCO INC	903,000
Sunoco Inc	
Marcus Hook, Pennsylvania	178,000
Toledo, Ohio	160,000
Westville, New Jersey	145,000
Tulsa, Oklahoma	85,000
Sunoco Inc (R&M)	
Philadelphia, Pennsylvania	335,000
PDV AMERICA INC	812,500
Citgo Petroleum Corp	
Lake Charles, Louisiana	429,500
PDV Midwest Refining LLC	
Lemont (Chicago), Illinois	167,000
Citgo Refining & Chemical Inc	
Corpus Christi, Texas	156,000
Citgo Asphalt Refining Co	
Paulsboro, New Jersey	32,000
Savannah, Georgia	28,000
KOCH INDUSTRIES INC	777,426
Flint Hills Resources LP	
Corpus Christi, Texas	288,126
Saint Paul, Minnesota	279,300
Flint Hills Resources Alaska LLC	
North Pole, Alaska	210,000
MOTIVA ENTERPRISES LLC (50% Royal Dutch/Shell Group, 50% Saudi Aramco)	762,200
Motiva Enterprises LLC	
Port Arthur, Texas	285,000
Norco, Louisiana	242,200
Convent, Louisiana	235,000
TESORO CORP	567,500
Tesoro West Coast	
Anacortes, Washington	120,000
Mandan, North Dakota	58,000
Salt Lake City, Utah	58,000
Tesoro Refining & Marketing Co	
Martinez, California	166,000
Tesoro Hawaii Corp	
Kapolei, Hawaii	93,500
Tesoro Alaska Petroleum Co	
Kenai, Alaska	72,000

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day
ROYAL DUTCH SHELL GROUP	532,600
Shell Oil Products US	
Martinez, California	155,600
Anacortes, Washington	145,000
Wilmington, California	97,000
Shell Chem LP	
Saraland, Alabama	80,000
Saint Rose, Louisiana	55,000
WRB REFINING LLC [a]	452,000
WRB Refining LLC	
Wood River, Illinois (50% ConocoPhillips, 50% EnCana)	306,000
Borger, Texas (85% ConocoPhillips, 15% EnCana)	146,000
DEER PARK REFINING LTD PTNRSHP (50% Royal Dutch/Shell Group, 50% Pemex)	
Deer Park Refining LTD Partnership	
Deer Park, Texas	333,700
LYONDELL CHEMICAL CO [b]	
Houston Refining LP	
Houston, Texas	270,200
TOTAL SA	
Total Petrochemicals Inc	
Port Arthur, Texas	232,000
CHALMETTE REFINING LLC (50% ExxonMobil, 50% PDV)	
Chalmette Refining LLC	
Chalmette, Louisiana	192,760
SINCLAIR OIL CORP	160,800
Sinclair Oil Corp	
Tulsa, Oklahoma	70,300
Sinclair, Wyoming	66,000
Little America Refining Co	
Evansville (Casper), Wyoming	24,500
FRONTIER OIL CORP	154,500
Frontier El Dorado Refining Cc	
El Dorado, Kansas	107,500
Frontier Refining Inc	
Cheyenne, Wyoming	47,000
MURPHY OIL CORP	154,300
Murphy Oil USA Inc	
Meraux, Louisiana	120,000
Superior, Wisconsin	34,300
ALON ISRAEL OIL COMPANY _TD	150,000
Alon USA Energy Inc	
Big Spring, Texas	67,000
Paramount Petroleum Corporation [c]	
Paramount, California	50,000
Edgington Oil Co Inc [d]	
Long Beach, California	33,000
COMPAGNIE NATIONALE A FORTEFEUILLE [e]	137,850
Pasadena Refining Systems Irc (50% CNAP, 50% Petrobras)	
Pasadena, Texas	100,000
US Oil & Refining Co [f]	
Tacoma, Washington	37,850
CHS INC	136,200
NCRA	
McPherson, Kansas	81,200
Cenex Harvest States Coop	
Laurel, Montana	55,000

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day
WESTERN REFINING INC.	
Western Refining Company LP	
El Paso, Texas	122,000
ERGON INC	113,000
Lion Oil Co	
El Dorado, Arkansas	70,000
Ergon Refining Inc	
Vicksburg, Mississippi	23,000
Ergon West Virginia Inc	
Newell (Congo), West Virginia	20,000
COFFEYVILLE ACQUISITIONS LLC	
Coffeyville Resources LLC (50% Goldman Sachs, 50% Kelso & Co)	
Coffeyville, Kansas	112,000
HOLLY CORP	108,700
Navajo Refining Co	
Artesia, New Mexico	84,000
Holly Corp Refining & Marketing	
Woods Cross, Utah	24,700
Total	**16,491,747**
Companies with Capacity 30,001 to 100,000 bbl/cd	
GIANT INDUSTRIES INC	96,975
Giant Yorktown Refining	
Yorktown, Virginia	59,375
Giant Refining Co	
Gallup, New Mexico	20,800
Giant Industries Inc	
Bloomfield, New Mexico	16,800
FLYING J INC	95,400
Big West Of California	
Bakersfield, California	66,000
Big West Oil Co	
North Salt Lake, Utah	29,400
SUNCOR ENERGY INC	94,000
Suncor Energy (USA) Inc	
Commerce City, Colorado	62,000
Denver, Colorado	32,000
TRANSWORLD OIL USA INC	
Calcasieu Refining Co	
Lake Charles, Louisiana	78,000
ARTIC SLOPE REGIONAL CORPORATION	65,500
Petro Star Inc	
Valdez, Alaska	48,000
North Pole, Alaska	17,500
UNITED REFINING INC	
United Refining Co	
Warren, Pennsylvania	65,000
CALUMET LUBRICANTS CO	63,320
Calumet Shreveport LLC	
Shreveport, Louisiana	42,000
Calumet Lubricants Co LP	
Cotton Valley, Louisiana	13,020
Princeton, Louisiana	8,300
DELEK GROUP LTD	
Delek Refining LTD	
Tyler, Texas	58,000
PLACID OIL CO	
Placid Refining Co	
Port Allen, Louisiana	56,000

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day
GARY WILLIAMS CO	
Wynnewood Refining Co	
Wynnewood, Oklahoma	54,000
HUNT CONSLD INC	45,500
Hunt Refining Co	
Tuscaloosa, Alabama	34,500
Hunt Southland Refining Co	
Sandersville, Mississippi	11,000
Total	**771,695**
Companies with Capacity 10,001 to 30,000 bbl/cd	
KERN OIL & REFINING CO	
Kern Oil & Refining Co	
Bakersfield, California	26,000
COUNTRYMARK COOP INC	
Countrymark Cooperative Inc	
Mount Vernon, Indiana	23,000
GULF ATLANTIC OPERATIONS LLC	
Gulf Atlantic Operations LLC	
Mobile, Alabama	16,700
SAN JOAQUIN REFINING CO INC	
San Joaquin Refining Co Inc	
Bakersfield, California	15,000
WYOMING REFINING CO	
Wyoming Refining Co	
Newcastle, Wyoming	14,000
SILVER EAGLE REFINING INC	13,250
Silver Eagle Refining	
Woods Cross, Utah	10,250
Evanston, Wyoming	3,000
AGE REFINING & MARKETING INC	
Age Refining Inc	
San Antonio, Texas	13,000
Total	**120,950**
Companies with Capacity 10,000 bbl/cd or Less	
AMERICAN REFINING GROUP INC	
American Refining Group Inc	
Bradford, Pennsylvania	10,000
CONNACHER OIL & GAS LTD	
Montana Refining Co	
Great Falls, Montana	9,500
GREKA ENERGY	
Greka Energy	
Santa Maria, California	9,500
WORLD OIL CO	
Lunday Thagard Co	
South Gate, California	8,500
CROSS OIL REFINING CO INC	
Cross Oil Refining & Marketing Inc	
Smackover, Arkansas	7,200
SOMERSET OIL CO	
Somerset Refinery Inc	
Somerset, Kentucky	5,500

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Table 5. Refiners' Total Operable Atmospheric Crude Oil Distillation Capacity as of January 1, 2007

CORPORATION / Refiner / Location	Barrels per Calendar Day	CORPORATION / Refiner / Location	Barrels per Calendar Day
GOODWAY REFINING LLC			
Goodway Refining LLC			
Atmore, Alabama	4,100		
OIL HOLDING INC			
Tenby Inc			
Oxnard, California	2,800		
FORELAND REFINING CORP			
Foreland Refining Corp			
Eagle Springs, Nevada	2,000		
Total	**59,100**		
U.S. Total	**17,443,492**		

a Formerly Wholly Owned By ConocoPhillips Company

b Formerly Lyondell Citgo Refining Co Ltd

c Formerly Owned By Paramount Petroleum Corp

d Formerly Owned By Apex Oil Co

e Formerly Wholly Owned by Compagnie Nationale A Portefeuille.

f Formerly Owned By Time Oil Co

g Formerly Owned By Holly Corp

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

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Table 6. Operable Crude Oil and Downstream Charge Capacity of Petroleum Refineries, January 1, 1981 to January 1, 2007

(Thousand Barrels per Stream Day, Except Where Noted)

Year/PAD District	Atmospheric Crude Oil Distillation	Downstream Charge Capacity							
		Vacuum Distillation	Thermal Cracking	Catalytic Cracking		Catalytic Hydro-Cracking	Catalytic Reforming	Hydrotreating/ Desulfurization	Fuels Solvent Deasphalting
				Fresh	Recycled				
JAN 1, 1981	19,763	7,033	1,587	5,543	594	909	4,098	8,487	NA
JAN 1, 1982	19,018	7,197	1,782	5,474	562	892	3,966	8,539	NA
JAN 1, 1983	17,871	7,180	1,715	5,402	488	883	3,918	8,354	NA
JAN 1, 1984	17,059	7,165	1,852	5,310	492	952	3,907	9,009	NA
JAN 1, 1985	16,501	6,998	1,858	5,232	507	1,053	3,750	8,897	NA
JAN 1, 1986	16,346	6,892	1,880	5,214	463	1,125	3,744	8,791	NA
JAN 1, 1987	16,460	6,935	1,928	5,251	466	1,189	3,805	9,083	230
JAN 1, 1988	16,825	7,198	2,080	5,424	381	1,202	3,891	9,170	240
JAN 1, 1989	16,568	7,225	2,073	5,324	326	1,238	3,911	9,440	245
JAN 1, 1990	16,507	7,245	2,108	5,441	314	1,282	3,896	9,537	279
JAN 1, 1991	16,557	7,276	2,158	5,559	304	1,308	3,926	9,676	271
JAN 1, 1992	16,633	7,127	2,100	5,608	280	1,363	3,907	9,644	276
JAN 1, 1993	15,935	6,892	2,082	5,540	244	1,397	3,728	9,677	269
JAN 1, 1994	15,904	6,892	2,107	5,586	191	1,376	3,875	10,616	261
JAN 1, 1995	16,326	7,248	2,123	5,583	169	1,386	3,867	10,916	251
JAN 1, 1997	16,287	7,349	2,050	5,595	155	1,388	3,727	11,041	275
JAN 1, 1999	17,155	7,538	2,046	5,920	153	1,552	3,779	11,461	319
JAN 1, 2000	17,393	7,617	2,163	5,949	99	1,576	3,770	11,440	351
JAN 1, 2001	17,511	7,798	2,277	5,983	86	1,615	3,797	11,673	350
JAN 1, 2002	17,676	7,779	2,329	5,989	80	1,633	3,753	11,845	362
JAN 1, 2003	17,675	7,788	2,377	6,052	79	1,644	3,777	11,987	350
JAN 1, 2004	17,815	7,964	2,435	6,098	87	1,602	3,812	13,501	366
JAN 1, 2005	18,031	8,120	2,491	6,151	87	1,624	3,836	14,087	384
JAN 1, 2006	18,308	8,398	2,540	6,188	87	1,637	3,859	14,808	386
JAN 1, 2007	**18,425**	**8,251**	**2,564**	**6,219**	**82**	**1,791**	**3,908**	**15,447**	**379**
PADD I	1,810	710	99	743	7	44	323	1,364	22
PADD II	3,819	1,566	415	1,286	14	333	952	3,252	17
PADD III	8,818	4,083	1,382	3,110	53	781	1,886	7,993	239
PADD IV	640	234	49	199	4	18	128	508	5
PADD V	3,338	1,658	619	882	4	616	618	2,329	96
JAN 1, 2008 [a]	**18,658**	**8,502**	**2,600**	**6,222**	**82**	**1,833**	**3,856**	**15,706**	**379**
PADD I	1,810	710	99	756	7	44	323	1,399	22
PADD II	3,878	1,594	415	1,286	14	329	935	3,309	17
PADD III	8,987	4,296	1,396	3,095	53	828	1,852	8,132	239
PADD IV	640	234	69	200	4	18	128	532	5
PADD V	3,344	1,668	621	885	4	613	618	2,333	96
2007-2008 [a]	**233**	**251**	**36**	**3**	**0**	**42**	**-52**	**259**	**0**
PADD I	0	0	0	14	0	0	0	35	0
PADD II	59	28	0	1	0	-4	-17	57	0
PADD III	169	213	14	0	0	47	-34	139	0
PADD IV	0	0	20	1	0	0	0	24	0
PADD V	6	10	2	2	0	-3	0	4	0

[a] Projected data from refiners

NA = Not available.

Note: Totals may not equal sum of components due to independent rounding.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000595

Table 7. Operable Production Capacity of Petroleum Refineries, January 1, 1981 to January 1, 2007
(Thousand Barrels per Stream Day, Except Where Noted)

Year/PAD Distric	Production Capacity							
	Alkylates	Aromatics	Asphalt and Road Oil	Isomers	Lubricants	Marketable Petroleum Coke	Hydrogen (MMcfd)	Sulfur (short tons/day)
JAN 1, 1981	974	299	765	131	234	276	2,054	NA
JAN 1, 1982	984	290	740	162	242	267	1,944	NA
JAN 1, 1983	960	237	722	212	241	296	2,298	NA
JAN 1, 1984	945	218	800	208	241	407	2,444	NA
JAN 1, 1985	917	215	767	219	243	424	2,572	NA
JAN 1, 1986	941	276	804	258	246	356	2,357	NA
JAN 1, 1987	974	287	788	326	250	364	2,569	23,806
JAN 1, 1988	993	289	788	465	232	368	2,418	27,639
JAN 1, 1989	1,015	290	823	469	230	333	2,501	28,369
JAN 1, 1990	1,030	290	844	456	232	341	2,607	24,202
JAN 1, 1991	1,077	292	866	490	229	367	2,527	23,875
JAN 1, 1992	1,095	290	812	494	217	356	2,644	23,811
JAN 1, 1993	1,083	286	814	499	217	393	2,674	25,940
JAN 1, 1994	1,086	278	793	499	213	410	2,940	24,554
JAN 1, 1995	1,105	285	846	502	217	427	3,139	24,885
JAN 1, 1997	1,120	288	872	577	244	458	3,052	26,466
JAN 1, 1999	1,172	302	846	667	233	441	3,104	26,423
JAN 1, 2000	1,185	315	886	643	218	464	3,143	26,645
JAN 1, 2001	1,191	318	900	654	214	538	3,230	27,446
JAN 1, 2002	1,181	313	917	658	218	548	3,244	29,107
JAN 1, 2003	1,191	316	873	679	216	646	3,265	29,766
JAN 1, 2004	1,205	322	887	688	210	672	3,258	30,606
JAN 1, 2005	1,229	318	881	703	217	696	2,965	31,004
JAN 1, 2006	1,238	319	893	708	220	709	2,823	32,421
JAN 1, 2007	**1,227**	**306**	**877**	**739**	**234**	**722**	**3,100**	**33,021**
PADD I	110	22	143	32	20	27	84	1,358
PADD II	274	58	306	175	18	120	491	5,829
PADD III	581	223	237	346	163	409	1,164	19,865
PADD IV	44	0	74	16	0	14	143	708
PADD V	218	3	117	170	33	153	1,218	5,261
JAN 1, 2008 [a]	**1,228**	**306**	**882**	**740**	**238**	**727**	**3,215**	**33,355**
PADD I	111	22	143	32	20	27	84	1,357
PADD II	274	58	307	175	18	121	493	5,844
PADD III	582	223	238	348	167	409	1,251	19,975
PADD IV	44	0	74	16	0	18	169	868
PADD V	218	3	121	170	33	153	1,218	5,311
2007-2008 [a]	**1**	**0**	**5**	**1**	**4**	**5**	**115**	**334**
PADD I	1	0	0	0	0	0	0	-1
PADD II	0	0	1	0	0	1	2	15
PADD III	1	0	1	2	4	0	87	110
PADD IV	0	0	0	0	0	4	26	160
PADD V	0	0	4	0	0	0	0	50

[a] Projected data from refiners.
NA = Not available. MMcfd = Million cubic feet per day.
Note: Totals may not equal sum of components due to independent rounding.
Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000596

Table 8. Working Storage Capacity[a] at Operable Refineries by PAD District as of January 1, 2007

(Thousand Barrels)

Commodity	PAD Districts					United States
	I	II	III	IV	V	
Crude Oil	20,932	18,468	79,100	3,644	35,612	157,756
Liquefied Petroleum Gases	4,016	7,721	15,603	510	2,245	30,095
Propane/Propylene	1,649	3,477	4,324	171	200	9,821
Normal Butane/Butylene	2,367	4,244	11,279	339	2,045	20,274
Other Liquids	11,614	13,976	31,786	3,546	21,144	82,066
Oxygenates	397	115	703	81	39	1,335
Fuel Ethanol	310	115	33	81	39	578
ETBE	0	0	0	0	0	0
MTBE	71	0	634	0	0	705
Other Oxygenates[b]	16	0	36	0	0	52
Gasoline Blending Components	11,217	13,861	31,083	3,465	21,105	80,731
Petroleum Products	48,907	78,348	188,242	17,351	75,947	408,795
Finished Motor Gasoline	6,292	15,427	26,224	3,643	9,524	61,110
Reformulated	2,310	536	2,608	0	5,315	10,769
Conventional	3,982	14,891	23,616	3,643	4,209	50,341
Kerosene-type Jet Fuel	2,547	3,692	10,156	656	6,245	23,296
Kerosene	379	957	2,072	176	110	3,694
Distillate Fuel Oil	9,744	14,793	27,993	3,341	10,535	66,406
15 ppm sulfur and under	3,530	9,430	12,322	2,058	6,371	33,711
Greater than 15 ppm sulfur to 500 ppm	3,452	2,378	6,808	377	1,854	14,869
Greater than 15 ppm sulfur	2,762	2,985	8,863	906	2,310	17,826
Residual Fuel Oil	2,944	3,597	11,337	875	7,255	26,008
Lubricants	1,273	674	11,384	0	1,817	15,148
Asphalt and Road Oil	2,873	10,463	6,036	3,114	3,376	25,862
Other Products[c]	22,855	28,745	93,040	5,546	37,085	187,271
Total	85,469	118,513	314,731	25,051	134,948	678,712

[a] The difference in volume between the maximum safe fill capacity and tank bottoms.

[b] Includes tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), and other aliphatic alcohols and ethers intended for motor gasoline blending (e.g., isopropyl ether (IPE) or n-propanol).

[c] Includes ethane/ethylene, isobutane/isobutylene, pentanes plus, other hydrocarbons, hydrogen, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke, still gas, petrochemical feedstocks and miscellaneous products.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000597

Table 9. Shell Storage Capacity[a] at Operable Refineries by PAD District as of January 1, 2007

(Thousand Barrels)

Commodity	PAD Districts					United States
	I	II	III	IV	V	
Crude Oil	**24,421**	**23,108**	**93,855**	**4,109**	**40,653**	**186,146**
Liquefied Petroleum Gases	**4,267**	**8,165**	**17,383**	**541**	**2,497**	**32,853**
Propane/Propylene	1,827	3,667	4,357	183	220	10,254
Normal Butane/Butylene	2,440	4,498	13,026	358	2,277	22,599
Other Liquids	**13,369**	**16,215**	**36,692**	**3,954**	**24,274**	**94,504**
Oxygenates	458	135	810	95	50	1,548
Fuel Ethanol	358	135	35	95	50	673
ETBE	0	0	0	0	0	0
MTBE	82	0	733	0	0	815
Other Oxygenates[b]	18	0	42	0	0	60
Gasoline Blending Components	12,911	16,080	35,882	3,859	24,224	92,956
Petroleum Products	**54,303**	**88,658**	**213,104**	**18,918**	**86,219**	**461,202**
Finished Motor Gasoline	7,199	17,193	30,908	4,065	11,087	70,452
Reformulated	2,654	638	3,011	0	6,432	12,735
Conventional	4,545	16,555	27,897	4,065	4,655	57,717
Kerosene-type Jet Fuel	2,800	4,314	11,477	728	7,277	26,596
Kerosene	411	1,057	2,495	188	139	4,290
Distillate Fuel Oil	10,560	16,232	30,880	3,593	11,773	73,038
15 ppm sulfur and under	3,810	10,415	13,673	2,213	7,175	37,286
Greater than 15 ppm sulfur to 500 ppm	3,734	2,577	7,521	417	2,061	16,310
Greater than 15 ppm sulfur	3,016	3,240	9,686	963	2,537	19,442
Residual Fuel Oil	3,262	4,030	12,857	966	8,108	29,223
Lubricants	1,384	759	12,208	0	1,910	16,261
Asphalt and Road Oil	3,089	11,663	6,672	3,336	3,563	28,323
Other Products[c]	25,598	33,410	105,607	6,042	42,362	213,019
Total	**96,360**	**136,146**	**361,034**	**27,522**	**153,643**	**774,705**

[a] The design capacity of the tank.

[b] Includes tertiary amyl methyl ether (TAME), tertiary butyl alcohol (TBA), and other aliphatic alcohols and ethers intended for motor gasoline blending (e.g., isopropyl ether (IPE) or n-propanol).

[c] Includes ethane/ethylene, isobutane/isobutylene, pentanes plus, other hydrocarbons, hydrogen, unfinished oils, finished aviation gasoline, special naphthas, wax, petroleum coke, still gas, petrochemical feedstocks and miscellaneous products.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000598

Table 10. Capacity and Fresh Feed Input to Selected Downstream Units at U.S. Refineries, 2005 - 2007
(Barrels per Calendar Day)

Year/PAD	Cokers		Catalytic Crackers		Hydrocrackers	
District	Capacity	Inputs	Capacity	Inputs	Capacity	Inputs
2005	**2,295,712**	**2,036,321**	**5,766,397**	**5,260,611**	**1,491,359**	**1,161,271**
PADD I	88,900	71,373	690,900	668,148	39,000	33,682
PADD II	378,463	319,047	1,155,380	1,099,479	144,010	132,737
PADD III	1,228,629	1,111,912	2,921,798	2,596,797	720,099	492,855
PADD IV	43,500	42,518	181,079	162,263	16,000	14,874
PADD V	556,220	491,471	817,240	733,923	572,250	487,123
2006	**2,330,100**	**2,085,540**	**5,799,582**	**5,219,816**	**1,474,986**	**1,218,581**
PADD I	90,400	80,293	696,800	610,652	41,500	31,011
PADD II	376,594	297,066	1,184,373	1,052,967	153,986	135,932
PADD III	1,254,726	1,181,397	2,910,833	2,616,022	705,090	524,548
PADD IV	44,500	42,647	180,526	161,603	16,000	15,205
PADD V	563,880	484,137	827,050	778,573	558,410	511,885
2007	**2,359,318**	**NA**	**5,830,486**	**NA**	**1,620,705**	**NA**
PADD I	92,500	NA	703,300	NA	41,500	NA
PADD II	378,806	NA	1,170,138	NA	294,271	NA
PADD III	1,274,006	NA	2,932,238	NA	694,976	NA
PADD IV	44,800	NA	185,105	NA	16,000	NA
PADD V	569,206	NA	839,705	NA	573,958	NA

NA = Not Available.

Note: Capacities are as of January 1 of the indicated year.

Sources: Capacities are from the Energy Information Admistration (EIA) Form EIA-820, "Annual Refinery Report."

Inputs are from the form EIA-810, "Monthly Refinery Report." Year 2005 data is final, 2006 is preliminary

EPAHO044000599

Table 11. Refinery Receipts of Crude Oil by Method of Transportation by PAD District, 2006
(Thousand Barrels)

Method	PAD Districts					United States
	I	II	III	IV	V	
Pipeline						
Domestic	2,217	624,071	608,349	86,766	277,069	1,598,472
Foreign	23,846	572,238	412,872	95,313	37,121	1,141,390
Tanker						
Domestic	0	0	6,603	0	250,093	256,696
Foreign	432,103	0	1,534,624	0	361,961	2,328,688
Barge						
Domestic	3,131	136	39,608	0	1,096	43,971
Foreign	83,484	0	16,492	0	27,787	127,763
Tank Cars						
Domestic	1,333	0	1,298	0	1,903	4,534
Foreign	0	0	0	0	0	0
Trucks						
Domestic	3,703	4,624	22,131	19,468	7,367	57,793
Foreign	0	0	0	0	0	0
Total						
Domestic	10,384	628,831	677,989	106,234	538,028	1,961,466
Foreign	539,433	572,238	1,963,988	95,313	426,369	3,597,841

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report."

EPAHO044000600

Table 12. Fuel Consumed at Refineries by PAD District, 2006
(Thousand Barrels, Except Where Noted)

Commodity	PAD I	PAD II	PAD III	PAD IV	PAD V	United States
Crude Oil	0	0	0	0	0	0
Liquefied Petroleum Gases	329	567	277	15	1,468	2,656
Distillate Fuel Oil	23	45	111	0	255	434
Residual Fuel Oil	920	206	1	121	770	2,018
Still Gas	21,232	49,585	125,046	8,496	44,999	249,358
Marketable Petroleum Coke	0	0	194	154	110	458
Catalyst Petroleum Coke	11,033	16,502	45,395	2,664	14,440	90,034
Natural Gas (million cubic feet)	36,225	114,721	395,627	24,830	126,190	697,593
Coal (thousand short tons)	31	3	0	0	0	34
Purchased Electricity (million kWh)	3,576	10,488	18,612	1,704	4,973	39,353
Purchased Steam (million pounds)	5,716	7,298	38,999	757	17,999	70,769
Other Products[a]	54	1,961	1,971	142	2,199	6,327

Note: Includes volumes used as fuel at refineries and all nonprocessing losses of crude oil and petroleum products (e.g., spills, fire losses, contamination, etc.)

[a] Includes pentanes plus, other hydrocarbons, oxygenates, hydrogen, unfinished oils, gasoline, special naphthas, jet fuel, lubricants, asphalt and road oil, and miscellaneous products.

Source: Energy Information Administration (EIA), Form EIA-820, "Annual Refinery Report," and EIA-810, "Monthly Refinery Report."

EPAHO044000601

Table 13. Shutdown and Reactivated Refineries During 2006

PAD District / Refinery	Location	Total Atmospheric Crude Oil Distillation Capacity (bbl/cd) [a]	Total Downstream Charge Capacity (bbl/sd) [b]	Date Operable	Date of Last Operation	Date Shutdown
OTHER [c]						
PAD District III		**0**	**34,982**			
Excel Paralubes	Westlake, LA	0	34,982	09/96		
SHUTDOWN						
PAD District III		**5,800**	**0**			
Hunt Southland Refining Co	Lumberton, MS	5,800	0	03/66	03/05	12/06
Total U.S. Shutdowns		**5,800**	**0**			

[a] bbl/cd=Barrels per calendar day.

[b] bbl/sd=Barrels per stream day.

[c] Excel Paralubes is a separate operation which manufactures lube oils and their precursors. Their downstream capacity was formerly reported as part of ConocoPhillips Westlake refinery's capacity. Excel Paralubes is a joint venture between ConocoPhillips and Flint Hills Resources each owning a 50 percent interest.

Sources: Energy Information Administration (EIA) Form EIA-810, "Monthly Refinery Report" and Form EIA-820, "Annual Refinery Report."

EPAHO044000602

Table 14. Refinery Sales During 2006

Former Corporation/Refiner	Total Atmospheric Crude Oil Distillation Capacity (bbl/cd)	New Corporation/Refiner	Date of Sale
Compagnie Nationale a Portefeuille/Astra Oil/Pasadena Refining Systems Inc.		*Petroleo Brasileiro, S.A. (Petrobras)*[a]	9/06
Pasadena, TX	100,000		
ConocoPhillips		**WRB Refining LLC**[b]	12/06
Wood River, IL	306,000		
Borger, TX	146,000		
Edgington Oil Co		**Alon Israel Oil Co/ Alon USA Energy/Edgington Oil Co**	9/06
Long Beach, CA	33,000		
Holly Corp/ Montana Refining		**Connacher Oil & Gas/Montana Refining**	3/06
Great Falls, MT	9,500		
Lyondell Chemical Co/Lyondell Citgo Refining Co LTD		**Lyondell Chemical Co/Houston Refining LP**	8/06
Houston, TX	270,200		
Paramount Petroleum Corp		**Alon Israel Oil Co/ Alon USA Energy/Paramount Petroleum Co**	8/06
Paramount, CA	50,000		
Portland, OR	0		
Time Oil Co/US Oil & Refining		**Compagnie Nationale a Portefeuille/Astra Oil/US Oil & Refining**	3/06
Tacoma, WA	37,850		

a. Compagnie Nationale a Portefeuille/Astra Oil/Pasadena Refining Systems Inc. sold a 50 percent interest in this refinery to Petrobras.

b. The WRB partnership is between ConocoPhillips and EnCana Corporation in which each owns 50 percent of the partnership, but ConocoPhillips owns a disproportionate interest in the Borger refinery of 85 percent in 2007 and 65 percent in 2008.

Notes:

Somerset Oil Co sold its refinery to USA Energy Corp on April 9, 2007.

RoyalDutch/Shell Group's refinery in Wilmington, CA was sold to Tesoro Corp on May 11, 2007.

On May 31, 2007 Western Refining Inc. acquired Giant Industries Inc.

Bbl/cd=Barrels per calendar day, as of January 1, 2007.

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