

Exhibit 4



Nov 18 2011
3:26PM

City of Fresno v Chevron U.S.A. Inc., et al.
Report of Christine T. Wood, Ph.D.

Christine T. Wood

Christine T. Wood, Ph.D.

Exponent Failure Analysis Associates, Inc.
149 Commonwealth Drive
Menlo Park, CA 94025

November 18, 2011

© Exponent, Inc.

Introduction

My name is Christine T. Wood. I am a Principal Scientist and Director of the Human Factors Practice at Exponent[®] Failure Analysis Associates (Exponent), a scientific and engineering consulting firm, where I have worked since 1988.

Exponent has been retained by attorneys representing various defendants in this matter to address claims by plaintiff related to the failure to warn or inadequacy of warnings provided by the defendants.

Background of Scientific Studies of Risk Communication

Over the past 30 years, there has developed a sizable literature on behavioral responses to risk communications. Significant reviews of and annotated guides to the literature for different periods can be found in McCarthy et al. (1984), Ayres et al. (1994; 1998), and Miller & Lehto (2001). Key factors considered in the scientific literature include the likely effectiveness of providing a warning about a particular hazard (e.g., Ayres et al., 1994; Arndt et al., 1998; Dorris & Purswell, 1977), labeling directives presented in relevant standards and guidelines (e.g., Wood et al., 2006; Diedrich et al., 2001), relationships between the number of warnings presented and attention to and memory of those warnings (e.g., Chen et al., 1997; Dorris, 1991; Frantz et al., 1999), the likely effect of formatting and the inclusion of specific warning elements on compliance (e.g., Young et al., 2002), and the selection of hazards to warn about based on the highest potential impact in terms of injury counts, risk analysis, or accident mode analysis (e.g., McCarthy et al., 1995; Ayres & Wood, 1995). The significant body of literature to which these studies belong allows for scientific investigation as to what, when, where, and how warnings could be provided and the likely impact they are to have on human behaviors. Based on a synthesis of findings from published scientific studies, frameworks have been developed identifying factors that must be present for a warning to result in reductions in harmful behaviors (Ayres et al., 1994).

Training and Qualifications

I hold a Ph.D. in experimental psychology (1974) and a B.A. with distinction and honors in psychology (1971), both from Stanford University. Central to the field of experimental psychology is the study of human information processing, including learning, memory, attention, perception, and decision making. The capabilities and limitations of human information processing are systematically analyzed from infancy to late adulthood to understand better how they develop, operate, and change.

As part of my work, I apply my training and education in experimental psychology to people's use of products. In particular, for the past 20 years, I have studied the impact of safety- and

health-related information on human behavior and injury reduction, focusing on ways that risk communication and product design shape the knowledge and risk-taking behavior of people. I have studied the area of human information processing involving aspects of attention, comprehension, decision making, and recall and recognition.

I have authored peer-reviewed papers published in scientific journals and in the proceedings of annual conferences of professional organizations dealing with topics related to on-product warnings, changes in the use and presentation of safety information in the 20th Century, and responses to this type of information in the form of safety-related behavior. I have investigated and identified factors that influence compliance with risk communication and developed a scientific framework for considering their impact. I have applied concepts of experimental design and used statistical methods to measure the effectiveness of warnings to change behavior and reduce rates of injury. I have investigated patterns of injury associated with a variety of products and activities and analyzed data from large-scale databases maintained by the Food and Drug Administration, the Department of Transportation, and the Consumer Product Safety Commission.

I am a member of the Human Factors and Ergonomics Society, the Society for Risk Analysis, and the American Educational Research Association. A copy of my resume is attached.

Exponent charges a rate of \$430 an hour for my time.

Basis and Supporting Information

The opinions contained in this report are based on my education, training and experience and on my review of materials listed in an attachment to my report. I reserve the right to supplement this report and to expand or modify my opinions based on review of material as it becomes available through ongoing discovery. Should I be asked to testify in this case, I plan to use excerpts and charts from the materials I have cited in my report.

Understanding of Introduction of MTBE into Gasoline

Congress passed the 1990 Clean Air Act Amendments (CAAA) with the general goal of improving air quality, including reducing emissions from motor vehicles. Among various provisions, the EPA developed regulations under the CAAA that required use of reformulated gasoline (RFG) to be used year-round by January 1, 1995, in nine metropolitan areas that had the worst ground-level ozone problems.¹ The RFG was to contain a minimum of 2 percent oxygen by weight in addition to other requirements.² Similarly, California Air Resources Board's (CARB's) California Phase 2 Reformulated Gasoline (CaRFG2) program, adopted in 1991,³ and implemented in 1996,⁴ required a minimum of 1.8 percent oxygen by weight for

¹ http://www.epa.gov/otaq/rfg_regs.htm, "RFG and Oxygenate Waiver Requests;"
<http://www.epa.gov/mtbe/gas.htm>

² S.1630.ES – Clean Air Act Amendments of 1990, Sec. 217 (k)(2)(B)(iv)

³ <http://www.arb.ca.gov/fuels/gasoline/carfg2/carfg2.htm>

⁴ <http://www.arb.ca.gov/fuels/gasoline/gasoline.htm>

certain regions of California.⁵ MTBE, which had been employed since 1979 in the production of gasoline,⁶ was an additive used to provide oxygen in the fuel.

Understanding of Plaintiff's Warning Allegations

Plaintiff alleges that the defendants failed to and/or inadequately warned about the risks of groundwater contamination from unintended releases of gasoline containing MTBE. They allege that adequate warnings would have resulted in gasoline with MTBE being treated differently by service station operators and others.⁷ I have been asked to address the adequacy of warnings provided by the defendants relating to reducing releases of gasoline containing MTBE from underground storage tanks (USTs) located at retail service stations.

Warnings Provided by Defendants

Warnings and safety information concerning prevention and treatment of releases of gasoline were provided by the defendants to their customers, such as service station operators, jobbers, and others. I reviewed a number of such documents and materials.

The defendants provided safety information specific to numerous topics involving gasoline release. Examples identified include, but are not limited to, safety information that addressed the following:

- prevention of leaks and spills,⁸
- daily and monthly inventory control,⁹
- maintenance of the integrity of USTs,¹⁰
- avoidance of overfilling tanks,¹¹
- monitoring of leaks from pipes and tanks,¹²
- reporting of leaks or spills,¹³ and
- actions to contain any leak or spill that may occur.¹⁴

Examples were identified where defendants also supplied their customers, such as service station operators or jobbers, with information on company and federal program requirements

⁵ California Phase 2 Reformulated Gasoline Specifications. Volume 1. Proposed Regulations for California Phase 2 Reformulated Gasoline, pp. 34-35; <http://www.arb.ca.gov/fuels/gasoline/faq.htm>

⁶ EPA MTBE Fact Sheet #1 (EPA 510-F-97-014), p. 1

⁷ First Amended Complaint City of Fresno v Chevron USA, Inc. et al., §§ 62-63, 73, 76(e), 84, 85(4) & (5), 96(b)

⁸ See, e.g., Shell EQHOGG 03714 – 03715

⁹ See, e.g., Exxon Mobil XOM-WARN-00004310; Amoco 0804001674

¹⁰ See, e.g., Exxon Mobil XOM-WARN-00005755 – 00005772; BP/Amoco 1207000521 - 1207000530

¹¹ See, e.g., Chevron CHEVMDL135800000254968

¹² See, e.g., Shell EQHOGG 04039 – EQHOGG 04048

¹³ See, e.g., Exxon Mobil XOM-WARN-00017994

¹⁴ See, e.g., Chevron CHEVMDL135800000371052; BP/Amoco 1201002253 – 1201002277

and enforcement policies.¹⁵ In addition, where the nature of a business relationship permitted, examples were identified where a defendant warned service station operators or jobbers that they risked contract termination or other punitive actions if they did not comply with company policies or federal and state regulations.¹⁶

In 1983, OSHA promulgated new hazard communication requirements.¹⁷ These regulations required manufacturers and importers to develop or obtain material safety data sheets (MSDSs) for each hazardous chemical they produce or import and mandated that employers have an MSDS for each hazardous chemical they use.¹⁸ Employers were also required to ensure that MSDSs were readily accessible to employees.¹⁹ OSHA has described an MSDS as “essentially a technical bulletin... which contains information about a hazardous chemical, such as chemical composition, chemical and physical characteristics, health and safety hazards, and precautions for safe handling and use.”²⁰

The defendants provided MSDSs for gasoline; and in addition to the other information present, MSDSs often contained information about preventing released material from entering waterways²¹ and instructions for reporting an accidental leak or spill.²² Examples of safety information disseminated by defendants addressing the hazards of release of gasoline were identified that used other formats and media.²³

¹⁵ Shell “Comprehensive Environmental Program Presentation” video; BP/Amoco 0804001611 – 0804001842; Chevron CHEVMDL13580000254910 – CHEVMDL13580000254936; Mobil TONN-CDK-00215 – TONN-CDK-00216

¹⁶ CHEVMDL13580000371009; CHEVMDL13580000371015; CITGO CITGOMDLII-0019135; Shell EQHOGG 03156; ExxonMobil TONN-CDK-00054; BP/Amoco 0804001617

¹⁷ 48 Fed. Reg. 53,280

¹⁸ 48 Fed. Reg. 53,343

¹⁹ 48 Fed. Reg. 53,344

²⁰ 48 Fed. Reg. 53,305

²¹ For instance, storm sewers; drains; drainage or sewage systems; waterways [e.g., CITGO CITGOMDL1358II-0101934; Exxon Mobil XOM-WARN-00012874; Shell EQHOOC42666 – EQHOOC42676; BP/Amoco 0102001369]

²² Such as the U.S. Coast Guard, or local, state or federal authorities (e.g., Shell EQHOOC42691; Chevron CHEVMDL13580000370950; Exxon Mobil XOM-WARNEM-0000004; BP/Amoco 0102001364; CITGO CITGOMDLII-0015163)

²³ Among others, training (e.g., XOM-WARN-00003908-00003950; BP/Amoco 1206003119 – 1206003120); training guides (e.g., Amoco 1201002255); checklists (e.g., Exxon TONN-CDK-00052 – TONN-CDK-00053; Shell EQHOGG 00930); bulletins (e.g., Shell EQHOGG 01127); videos (e.g., Chevron CHEVMDL138580000254905; Shell “Responding to Product Releases” video) and accompanying workbook exercises (e.g., Shell EQHOGG00375); guides (e.g., Chevron CHEVMDL 13580000254897; Chevron CHEVMDL 13580000371077; Shell EQHOGG02644), including MSDS reference guides (e.g., BP/Amoco 0102001316 – 0102001442); and/or cartoons and posters (e.g., Shell EQHOGG00929; Chevron CHEVMDL13580000371357 – CHEVMDL13580000371365)

Knowledge of Operators of Retail Service Stations

The deposition testimony of operators of 17²⁴ retail service stations who sold gasoline after passage of the CAAA provides information about knowledge in this period of the need to monitor and treat gasoline spills and leaks. All the operators questioned about training, and who were able to remember their time as gas station operators, testified that defendants provided such training, or training materials; or that they, in turn, provided training to their employees.²⁵ The operators received instruction from defendants on topics such as how to prevent leaks of gasoline, proper cleanup of spills, as well as about inventory reconciliation.²⁶ Those gas station operators further testified that they were aware of the applicable laws and regulations and strove to comply with them.²⁷

There was a general understanding among the gas station operators of all 17 stations that gasoline is a hazardous, dangerous substance, and needed to be handled with care.²⁸ The

²⁴ Ten deponents operated gas stations outside of the date range of the RFG period (Deposition of Mohammad Ashraf, 03/31/2011, p. 18; Deposition of James Clements, 03/29/2011, pp. 15, 27-28; Deposition of Charles Ray Doyle, 03/02/2011, p. 36; Deposition of Charles Fisher, 04/04/2011, p. 24; Deposition of Bob Harandi, 08/10/2011, pp. 58-59; Deposition of Chang Lee, 03/31/2011, p. 14; Deposition of Ellis (Ike) Pursell, 08/11/2011, p. 15; Deposition of Gilbert Romero, 08/12/2011, pp. 17-18; Deposition of Gary Singh, 03/22/2011, p. 9; Deposition of Ronald C. Stephens, 08/17/2011, p. 101); and thirteen deponents did not operate gas stations that sold fuel to the general public (Deposition of Siranoush Bedirian, 04/04/2011, pp. 10, 17; Deposition of Gail Blue, 03/18/2011, pp. 13-14; Deposition of Glen R. Blue, 03/17/2011, p. 17; Deposition of Robert DeNinno, 04/01/2011, pp. 22-30; Deposition of Donald Doyle, 04/04/2011, pp. 13, 17-18; Deposition of Joel Hohenshelt, 02/09/2011, pp. 20-22; Deposition of Richard S. Irwin, 04/19/2011, pp. 8-9; Deposition of Ron King, 03/25/2011, pp. 16-17; Deposition of Mark David Lill, 03/14/2011, p. 61; Deposition of Dan Martin, 03/23/2011, pp. 15-17; Deposition of Balinder Mehat, 07/27/2011, p. 26 [owned the station but "didn't go too much over there"]; Deposition of James Shehadey, 03/16/2011, p. 16; Deposition of John Silvas, 04/04/2011, pp. 13-14).

²⁵ Deposition of Gary Beacom, 08/10/2011, pp. 21, 156; Deposition of Garabed Bedirian, 04/04/2011, pp. 62-63; Deposition of David Benjamin, 08/09/2011, pp. 193, 198; Deposition of David D'Alessandro, 04/01/2011, pp. 71, 132; Deposition of Jatinder Paul Dhillon, 08/11/2011, pp. 25-27, 62-63, 147; Deposition of Babak Lakestani, 08/09/2011, pp. 28-29, 38, 43-44, 64; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 17-18, 21, 54-56, 59-60, 65; Deposition of Joe Rebella, 03/15/2011, pp. 142-143, 145; Deposition of Judy Rogers, 03/08/2011, pp. 67, 69; Deposition of Jeetander Sethi, 07/13/2011, pp. 17, 28-29, 81-82, 99; Deposition of Dalibir Singh, 08/09/2011, pp. 16-17; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 119-120; Deposition of Ravi Stephen, 08/05/2011, pp. 83-84, 103, 122, 126, 130-131

²⁶ Deposition of Gary Beacom, 08/10/2011, p. 21; Deposition of David Benjamin, 08/09/2011, p. 198; Deposition of Jatinder Paul Dhillon, 08/11/2011, p. 27; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 21, 55-56; Deposition of Jeetander Sethi, 07/13/2011, pp. 28-29; Deposition of Dalibir Singh, 08/09/2011, p. 17

²⁷ Deposition of Gary Beacom, 08/10/2011, pp. 153-154; Deposition of Garabed Bedirian, 04/04/2011, pp. 70-71; Deposition of David Benjamin, 08/09/2011, pp. 153-154; Deposition of Jatinder Paul Dhillon, 08/11/2011, p. 146; Deposition of Babak Lakestani, 08/09/2011, pp. 67-68; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 53, 67; Deposition of Joe Rebella, 03/15/2011, p. 141; Deposition of Dalibir Singh, 08/09/2011, pp. 99-100; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 102-103; Deposition of Ravi Stephen, 08/05/2011, pp. 121-122, 126, 151-152

²⁸ Deposition of Gary Beacom, 08/10/2011, pp. 140, 147, 157; Deposition of Garabed Bedirian, 04/04/2011, pp. 68-69, 71; Deposition of David Benjamin, 08/09/2011, pp. 165-166; Deposition of David D'Alessandro, 04/01/2011, pp. 128-129; Deposition of Jatinder Paul Dhillon, 08/11/2011, pp. 147-148; Deposition of Babak Lakestani, 08/09/2011, p. 72; Deposition of Bryan Leonard Moe, 08/17/2011, p. 69; Deposition of Joe Rebella, 03/15/2011, pp. 141-142, 145; Deposition of Judy Rogers, 03/08/2011, p. 74; Deposition of Jeetander Sethi, 07/13/2011, pp. 108-109, 122; Deposition of Palwinder Singh, 08/28/2011, p. 173; Deposition of Baldev Singh Sandhu, 07/27/2011, pp. 109-111; Deposition of Dalibir Singh, 08/09/2011, pp. 101-102; Deposition of Narinder Singh,

operators took steps to prevent leaks and spills of gasoline and were in the habit of promptly cleaning up any spills that might have occurred.²⁹ The operators also instructed their employees to be careful in the handling of gasoline and on how to respond to a potential leak or spill.³⁰ Finally, the gas station operators and their employees checked for spills regularly, checked equipment, and monitored the inventory.³¹ They knew that any discrepancies required further action and that any spill that might have occurred was to be cleaned up immediately, using cat litter, sand, rags or a spill kit, rather than water or detergent.³²

The operators were aware of the presence of MTBE in gasoline.³³ When asked about the importance of knowing the specific ingredients of gasoline, all service station operators thus queried testified that they consider gasoline to be dangerous, regardless of whether it contains

03/16/2011, pp. 128-129; Deposition of Geoffrey Steinbach, 08/04/2011, p. 104-105; Deposition of Ravi Stephen, 08/05/2011, pp. 101, 132

²⁹ Deposition of Gary Beacom, 08/10/2011, pp. 140-141, 143, 148, 156; Deposition of Garabed Bedirian, 04/04/2011, pp. 69-71; Deposition of David Benjamin, 08/09/2011, p. 40, 169, 197; Deposition of David D'Alessandro, 04/01/2011, p. 127; Deposition of Babak Lakestani, 08/09/2011, p. 72; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 63-65; Deposition of Joe Rebella, 03/15/2011, pp. 142-143, 146; Deposition of Judy Rogers, 03/08/2011, p. 69; Deposition of Palwinder Singh, 08/28/2011, p. 174; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 105-106, 124-125; Deposition of Ravi Stephen, 08/05/2011, pp. 103-104, 153

³⁰ Deposition of Gary Beacom, 08/10/2011, pp. 143, 156-157, 167; Deposition of Garabed Bedirian, 04/04/2011, p. 69; Deposition of David Benjamin, 08/09/2011, pp. 165-166, 193, 198; Deposition of Jatinder Paul Dhillon, 08/11/2011, p. 147; Deposition of Babak Lakestani, 08/09/2011, pp. 28-29, 57-58, 64-65; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 55-56, 60, 65; Deposition of Joe Rebella, 03/15/2011, p. 24, 142-143, 145; Deposition of Judy Rogers, 03/08/2011, pp. 67, 69; Deposition of Jeetander Sethi, 07/13/2011, p. 121; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 107-108, 119-120; Deposition of Ravi Stephen, 08/05/2011, pp. 103-104, 121-122

³¹ Deposition of Gary Beacom, 08/10/2011, pp. 44-45, 57, 111, 147; Deposition of Garabed Bedirian, 04/04/2011, pp. 31-32; Deposition of David Benjamin, 08/09/2011, p. 20, 25, 47; Deposition of David D'Alessandro, 04/01/2011, pp. 68-69, 126, 131-132; Deposition of Jatinder Paul Dhillon, 08/11/2011, p. 37, 56, 59; Deposition of Babak Lakestani, 08/09/2011, p. 23, 51; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 21-22, 69, 71; Deposition of Joe Rebella, 03/15/2011, p. 34, 37-38; Deposition of Jeetander Sethi, 07/13/2011, p. 24-25, 79, 91; Deposition of Palwinder Singh, 08/28/2011, p. 58, 70-73; Deposition of Baldev Singh Sandhu, 07/27/2011, pp. 49-51, 106-107; Deposition of Dalibir Singh, 08/09/2011, pp. 51-52, 59, 99-100; Deposition of Narinder Singh, 03/16/2011, pp. 40-42; Deposition of Ravi Stephen, 08/05/2011, pp. 29-30, 126

³² Deposition of Gary Beacom, 08/10/2011, pp. 21-22, 35, 141, 143-144, 146, 151; Deposition of David Benjamin, 08/09/2011, pp. 35-36, 38-40, 54-56, 129; Deposition of David D'Alessandro, 04/01/2011, pp. 133-134; Deposition of Jatinder Paul Dhillon, 08/11/2011, pp. 27, 32-33, 63; Deposition of Babak Lakestani, 08/09/2011, pp. 25-26; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 19-20, 22, 31, 33-34, 71; Deposition of Joe Rebella, 03/15/2011, pp. 24, 142; Deposition of Judy Rogers, 03/08/2011, pp. 40-42, 44-45; Deposition of Jeetander Sethi, 07/13/2011, pp. 28-29, 98-99; Deposition of Palwinder Singh, 08/28/2011, pp. 32-33; Deposition of Baldev Singh Sandhu, 07/27/2011, pp. 40-42, 50-51; Deposition of Dalibir Singh, 08/09/2011, pp. 27-28; Deposition of Narinder Singh, 03/16/2011, pp. 57-58; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 47-50, 123-124; Deposition of Ravi Stephen, 08/05/2011, p. 33-35, 158-159

³³ Deposition of Gary Beacom, 08/10/2011, p. 78; Deposition of Jatinder Paul Dhillon, 08/11/2011, pp. 93-94; Deposition of Bryan Leonard Moe, 08/17/2011, pp. 22-23; Deposition of Joe Rebella, 03/15/2011, p. 80; Deposition of Jeetander Sethi, 07/13/2011, pp. 43, 111; Deposition of Palwinder Singh, 08/28/2011, p. 141; Deposition of Baldev Singh Sandhu, 07/27/2011, pp. 35, 39; Deposition of Dalibir Singh, 08/09/2011, p. 93; Deposition of Ravi Stephen, 08/05/2011, p. 50, 53, 97-98, 144-146

MTBE or whether they know the chemical constituents or not.³⁴ One operator summarized this position succinctly: “[g]asoline is gasoline.”³⁵ Another testified, “I assumed MTBE was in it, and, no, I wouldn’t have handled it any differently because we were already doing the appropriate standards and procedures for handling gasoline in general.”³⁶

Analysis of Adequacy of Warnings

Plaintiff suggests that additional or alternative warning and safety information should have been provided by the defendants about the storage of gasoline with MTBE, including more explicit information concerning the movement of MTBE in groundwater and the explicit consequences for potential contamination of drinking water. My understanding of these claims is that plaintiff alleges that had such additional or alternative information been provided, such information would increase the perception of the hazardousness of gasoline with MTBE and result in an increase in safety-related behaviors involving USTs among customers, and fewer releases. I have considered these warning claims in terms of the types of safety behaviors required to avoid the hazard of gasoline releases, scientific literature on risk communication and information processing, common practices used in safety campaigns about handling hazardous materials, and the effect on behavior when warnings are combined with regulations and enforcement.

Behaviors to Prevent and Treat Releases Are the Same, Regardless of Formulation of Gasoline

The different constituents or components that are found in gasoline all pose a potential risk of contaminating drinking water (e.g., benzene, toluene, and xylene) should gasoline in USTs leak or spill. If any of these components enter the ground, they do so as part of a gasoline mixture. If one prevents such gasoline spills or leaks, one consequently precludes any of its constituents from entering the ground. Nothing changes in this regard when gasoline contains MTBE as an additive. Regardless of the specific formulation of the gasoline, there is a need to have tanks that do not leak; to avoid overfilling; and to strive for early detection of leaks and spills. MTBE is not unique in this respect. Conversely, when gasoline does not contain MTBE, it does not eliminate the need to practice all the same safety precautions to prevent the leaking or spilling of gasoline. A message explicitly giving emphasis to a greater need for proper storage of gasoline with MTBE compared with other formulations would be misleading to customers, who could conclude that gasoline without MTBE can be stored with less care. In addition, specifying the technical information about the properties or effect of MTBE in gasoline, should it enter groundwater, in detail that is unneeded and has no practical implications for the actions required to reduce and prevent spills and leaks.

³⁴ Deposition of Gary Beacom, 08/10/2011, pp. 147, 157; Deposition of Garabed Bedirian, 04/04/2011, pp. 71-72; Deposition of David Benjamin, 08/09/2011, pp. 168-170; Deposition of Jatinder Paul Dhillon, 08/11/2011, p. 148; Deposition of Judy Rogers, 03/08/2011, pp. 72-74; Deposition of Jeetander Sethi, 07/13/2011, pp. 121-122; Deposition of Baldev Singh Sandhu, 07/27/2011, pp. 109-110; Deposition of Dalibir Singh, 08/09/2011, pp. 101-102; Deposition of Geoffrey Steinbach, 08/04/2011, pp. 124-125, 127-129; Deposition of Ravi Stephen, 08/05/2011, pp. 153, 155

³⁵ Deposition of Judy Rogers, 03/08/2011, p. 73

³⁶ Deposition of Ravi Stephen, 08/05/2011, p. 155

Single, Consistent Message Reduces Cognitive Load

It is desirable for each defendant to have maintained a single, consistent message in its respective warnings about the methods appropriate to avoid releases of gasoline, regardless of specific formulation, and about the steps necessary to achieve this goal. The same single, consistent message can be given to all the customers³⁷ of a given defendant across the country, irrespective of the formulation being used at any given time in any particular region. The chance that confusion could arise from communication between subgroups of customers having different information is minimized, as is possible confusion from projecting different messages to the same recipients at different times. Consistency – geographically and temporally – reduces uncertainty.

Moreover, research on people's ability to retain information in working memory demonstrates that people's information processing capacity is limited (Miller, 1956); and as the number of warnings increases, each additional warning may dilute attention to the existing messages (Chen et al., 1997). When people are exposed to more information than they can process, only portions of that information are retained. This phenomenon is known as "information overload." There are no safety benefits to be gained from requiring customers to process amounts of technical information that exceed human memory capacity and that are not needed to inform safe handling behaviors. A single, clear message reduces demand on cognitive processing: Customers do not need to make distinctions about the specific chemicals in gasoline in order to store gasoline safely. The straightforward nature of the messages used by the defendants reduces the amount of processing of information that has to be done by their customers to avoid overwhelming "cognitive load." Consequently, the central, decisive directive – to prevent leaks or spills of gasoline, whether it contains MTBE or not – is not diluted by the cognitive demands of processing extraneous information.

Single, Consistent Message is a Common Approach

The provision of a single, consistent admonition not to permit hazardous products to spill, or not to dispose of them in a careless manner, is a common practice found in safety campaigns directed at the handling of hazardous materials: For the disposal of electronics, batteries, pesticides, paints, as well as prescription and over-the-counter medications, for instance, people are not informed of the specific ingredient of concern but are told, instead, that the product cannot be discarded in the same manner as other waste. The major manufacturers of household paint, for example, direct consumers to the MSDSs for their products and advise them to take precautions in disposing of the paint: Consumers are told "Never [to] pour paint, stain, or any other coating down a drain, into a storm sewer or anywhere else that might contaminate the environment"³⁸ or to "Avoid runoff into storm sewers, ditches, and waterways";³⁹ but no mention is made of why or which particular compounds make such precautions advisable, nor do people need to have additional information in order to prevent hazardous outcomes.

³⁷ As throughout this report, "customers" here refers to the typical customers of defendants, such as service station operators and jobbers, not to the gasoline-purchasing public.

³⁸ http://www.sherwin-williams.com/do_it_yourself/painting_techniques/how_to_paint/interior/clean/

³⁹ MSDS, BEHR® Premium Plus Int Ultra Satin Enamel Paint UPW No. 7750

In the case of medications, major manufacturers may contribute to the SMARxT Disposal program, which instructs consumers: “DO NOT FLUSH unused medications and DO NOT POUR them down a sink or drain.”⁴⁰ Again, no mention is made of any particular ingredient and its specific effects on the environment; the prevention of the disposal of medications into the sewage system is regarded as a universal principle. The SMARxT Disposal program further advises consumers to “Consult your pharmacist with any questions.” Rather than overburdening laypersons with technical details, general precautions in the use and disposal of medications are provided.

At the community or state level of information dissemination, instructions to consumers are provided at the class-of-product level as well, rather than at the level of individual constituents; and precautionary instructions are general, rather than specific. For example, the California Department of Toxic Substances Control tells California residents that certain “wastes must not be poured down the drain, disposed on the ground, or put in the trash,”⁴¹ but does not differentiate further. These wastes include such high-level categories as, “Antifreeze,” “Batteries,” “Drain Cleaners,” “Glue and Adhesives,” “Paints,” “Pesticides,” and others.⁴² Similarly, the official City of Fresno website⁴³ alludes to hazardous waste as containing “chemicals that can harm us;” but it does not specify any constituents that would potentially render a subset of these wastes particularly hazardous. It instructs residents that household hazardous waste (HHW) “products must be used carefully and disposed of properly,” and asks them, “Please don’t put HHW products in the trash, on the ground, down the sewer or into the gutter.” Specifically for motor oil, it instructs residents, “DO NOT pour it on the ground or into the storm drain,” and provides the “helpful hint”: “In case of an oil spill, cover the area with an absorbent material such as cat litter or sawdust.”⁴⁴ The official Fresno County website also provides a list of household wastes considered to be hazardous and admonishes residents to dispose of these properly.⁴⁵ This list includes “gasoline;” but no discussion is provided of the constituents that might render gasoline dangerous in particular.

No Scientific Evidence That More Explicit Messages Increase Compliance

Efforts to change behavior by elevating perceived risk with fearful or threatening messages have been studied in health and safety-related domains. Attempts to increase seat belt use by showing graphic films illustrating the negative consequences of not wearing a seatbelt have not yielded stable benefits (Fhaner & Hane, 1975; Jonah et al., 1982) and safety films emphasizing the risk reduction provided by seat belts failed to increase seat belt usage (Slovic & Schwalm, 1984; Waller et al., 1984). Increasing the fear or threat level of a safety message has been found to have inconsistent effects on attitudes and behavior (Janis & Feshbach, 1953; Leventhal, 1970). Attempts to offer messages that manipulate perceived risk of activities or products have not demonstrated corresponding positive behavior changes in safety-related practices.

⁴⁰ <http://www.smarxtdisposal.net/>

⁴¹ http://www.dtsc.ca.gov/HazardousWaste/Haz_Wastes_Home.cfm

⁴² http://www.dtsc.ca.gov/HazardousWaste/Haz_Wastes_Home.cfm

⁴³ <http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/SolidWaste/HWIDG/default.htm>

⁴⁴ <http://www.fresno.gov/Government/DepartmentDirectory/PublicUtilities/SolidWaste/MotorOil/default.htm>

⁴⁵ <http://www.co.fresno.ca.us/DepartmentPage.aspx?id=18071>

Safety Messages Coupled With Oversight and Enforcement

Compliance with safety messages is greatly increased when coupled with external monitoring of behaviors and enforcement. Publicized and enforced seat belt regulations, for example, greatly increased the seat belt usage rates among occupants beyond levels achieved by safety messages alone.⁴⁶

In 1988, regulations were published by the EPA to regulate USTs to reduce releases.⁴⁷ USTs were required to be upgraded to comply with federal regulations by December 22, 1998. The regulation mandated tank owners and operators to report suspected releases and begin corrective action. The corrective actions would include long-term cleanups addressing ground water contamination, where applicable.⁴⁸ Moreover, in California, USTs are subject to California Health and Safety Code Section 25299, which implements penalties for a host of violations related to the proper maintenance of USTs.⁴⁹ These regulations are enforced by the Certified Unified Program Agency (CUPA), which “makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs.”⁵⁰ This program went into effect on January 1, 1994;⁵¹ but it consolidates the activities of preexisting agencies entrusted with enforcement of UST regulations.

In addition to these regulations for USTs, reformulated gas regulations were promulgated for the State of California by the California Air Resources Board.⁵² These went into effect in December 1999.⁵³ The labeling requirements introduced as part of these regulations specifically demanded that “[t]he label shall state that the gasoline being dispensed ‘Contains MTBE. [And that the] State of California has determined that the use of this chemical presents a significant risk to the environment.’”⁵⁴

The State of California provides oversight of operations at service stations. For example, State representatives make annual visits and inspect the equipment, or require equipment testing, or provide the inventory forms used for reconciliation; and representatives of the defendants independently make visits to inspect the cleanliness and compliance of the individual gas

⁴⁶ Phillips, B. M. (1983). *Safety Belt Usage Among Drivers* DOT HS-806 424; NHTSA website (<http://www.nhtsa.dot.gov/people/injury/airbags/presbelt/> downloaded on 5/15/00); NHTSA report “Process and Outcome Evaluation of the Buckle Up America Initiatives” (DOT HS 809 272), May 2001; Traffic Safety Facts: Safety Belt Use in 2004 - Overall Results (DOT HS 809 783); Safety Belt Interlock System: Usage Survey. Final Report (DOT-HS-4-00805); Traffic Safety Facts 1994: State Traffic Data, NHTSA

⁴⁷ 40 CFR, Parts 280 [Technical standards and corrective action requirements for owners and operators of underground storage tanks (UST)] and 281 (Approval of state underground storage tank programs); Final Rules. 3 FR 37082-37247 Friday, Sept. 23, 1988

⁴⁸ 40 CFR, Part 280, Subpart F

⁴⁹ <http://law.onecle.com/california/health/25299.html>

⁵⁰ <http://www.calepa.ca.gov/cupa/>

⁵¹ *UST Facility Compliance Inspection Handbook* of the National Work Group On Leak Detection Evaluations (http://www.nwglde.org/downloads/CA_InspectorsHandbook_PDF.pdf)

⁵² Title 13, California Code of Regulations, Sections 2250-2273.5

⁵³ Title 13, California Code of Regulations, Sections 2250-2273.5, p. i

⁵⁴ Title 13, California Code of Regulations, Section 2273 (a) (1)

stations.⁵⁵ It is this existence of laws and regulations, and the enforcement thereof, that increases compliance with warnings that are disseminated about the safe handling of gasoline.

Summary and Conclusions

In summary, I offer the following opinions with a reasonable degree of scientific certainty:

The safety messages contained in warnings and other information about gasoline releases provided by defendants available to their customers are reasonable, adequate and sufficient to communicate the proper precautions for storing and handling gasoline, whether it contains MTBE or not.

The inclusion of additional or alternative information, such as that proposed by plaintiff, would not change the safety practices among service station operators.

The inclusion of additional warnings would dilute the message of a simple warning not to permit spills or leaks of gasoline, reducing its effectiveness.

⁵⁵ Deposition of Gary Beacom, 08/10/2011, pp. 22, 24, 72; Deposition of Garabed Bedirian, 04/04/2011, pp. 41-42; Deposition of David Benjamin, 08/09/2011, p. 33; Deposition of David D'Alessandro, 04/01/2011, pp. 66-67; Deposition of Jatinder Paul Dhillon, 08/11/2011, pp. 26-27, 59, 62-64; Deposition of Babak Lakestani, 08/09/2011, p. 36; Deposition of Bryan Leonard Moe, 08/17/2011, p. 43; Deposition of Joe Rebella, 03/15/2011, p. 40 (fire department); Deposition of Judy Rogers, 03/08/2011, pp. 35-37; Deposition of Jeetander Sethi, 07/13/2011, pp. 26, 47-48, 90-91

List of Defendants

Atlantic Richfield Company
Chevron Corporation (f/k/a Chevron Texaco Corporation)
Chevron Environmental Services Company (n/k/a Chevron Environmental Management Company)
Chevron U.S.A. Inc.
Citgo Petroleum Corporation
ConocoPhillips Company
Equilon Enterprises LLC
ExxonMobil Corporation
Kern Oil & Refining Co.
Lyondell Chemical Company
Shell Oil Company
Texaco Inc.
Tosco Corporation
Ultramar Inc.
Unocal Corporation
Union Oil Company of California
Valero Marketing and Supply Company
Valero Refining Company – California

List of Materials

- First Amended Complaint, City of Fresno v Chevron U.S.A. Inc. et al.
- Depositions (and exhibits)
 - Mohammad Ashraf, 03/31/2011
 - Gary Beacom, 08/10/2011 + exhibits
 - Garabed Bedirian, 04/04/2011 + exhibits
 - Siranoush Bedirian, 04/04/2011 + exhibits
 - David Benjamin, 08/09/2011 + exhibits
 - Gail Blue, 03/18/2011
 - Glen R. Blue, 03/17/2011
 - James Clements, 03/29/2011 + exhibits
 - David D'Alessandro, 04/01/2011
 - Robert DeNinno, 04/01/2011
 - Jatinder Paul Dhillon, 08/11/2011
 - Charles Ray Doyle, 03/02/2011
 - Donald Doyle, 04/04/2011
 - Charles Fisher, 04/04/2011
 - Bob Harandi, 08/10/2011
 - Joel Hohenshelt, 02/09/2011
 - Richard S. Irwin, 04/19/2011 + exhibits
 - Ron King, 03/25/2011
 - Babak Lakestani, 08/09/2011
 - Chang H. Lee, 03/31/2011
 - Mark David Lill, 03/14/2011 + exhibits
 - Dan Martin, 03/23/2011
 - Balinder Mehat, 07/27/2011
 - Leonard Moe, 08/17/2011
 - Ellis (Ike) Pursell, 08/11/2011
 - Joe Rebella, 03/15/2011 + exhibits
 - Judy Rogers, 03/08/2011
 - Gilbert L. Romero, 08/12/2011
 - Jeetander Sethi, 07/13/2011
 - James Shehadey, 03/16/2011
 - Daliber Singh, 08/09/2011
 - Gary Singh, 03/22/2011
 - Narinder Singh, 03/16/2011
 - Palwinder Singh, 03/28/2011
 - Baldev Singh Sandhu, 07/27/2011
 - John Silvas, 04/04/2011
 - Geoffrey Steinbach, 08/04/2011
 - Ravi Stephen, 08/05/2011
 - Ronald C. Stephens, 08/17/2011
 - Sterling Swartout, 04/04/2011

- The California Reformulated Gasoline Regulations: Title 13
- Cleanup of Releases from Petroleum USTs: Selected Technologies, EPA/530/UST-88-001
- Underground Storage Tanks, EPA 510-R-04-001
- Normas Y Procedimientos Para TSA, EPA/530/UST-90/001
- Spill, Overfill, And Corrosion Protection for Underground Tanks, EPA 510-B-94-002
- Don't Wait until 1998: Brief Facts, EPA 510-F-95-002
- Reformulated Gasoline: Basic Information, EPA, www.epa.gov/otaq/rfg/information.htm (11/30/09)
- Dollars and Sense: Financial Responsibility Requirements for Underground Tanks, EPA 510-K-95-004
- MTBE, EPA, <http://www.epa.gov/mtbe/gas.htm> (11/30/2009)
- Musts for USTs, EPA 510-K-95-002
- Petroleum Leaks and Spills, EPA/530/UST—88/004
- Reformulated Gas, EPA, <http://www.epa.gov/otaq/rfg.htm> (11/30/2009)
- Straight Talk on Tanks, EPA 510-B-05-001
- Underground Storage Tanks: Requirements and Options, EPA 510-F-97-005
- 40 CFR 80.35, Labeling of retail gasoline pumps; oxygenated gasoline
- Chevron documents
 - Branded Marketer Agreement
 - Motor Fuel Quality Compliance Manual
 - Retail Facility Compliance Guide
 - CHEVMDL135800000371366 – CHEVMDL135800000371572
 - CHEVMDL135800000254897 – CHEVMDL135800000254998
 - CHEVMDL135800000371209 – CHEVMDL135800000371365
 - CHEVMDL135800000371073 – CHEVMDL135800000371208
- Shell documents
 - Environmental walk-a-thon
 - Environmental walk-a-thon cartoon & checklist (EQHOGG 00960-970)
 - Environmental walk-a-thon cartoon & checklist, plus cover letter (Q4, 1989; Q2, Q4 1990; Q1 1991)
 - Environmental walk-a-thon cartoon & checklist (Q3 1990)
 - Health & Safety walk-a-thon cartoon & checklist (EQHOGG 00988-991)
 - Health & Safety walk-a-thon cartoon, checklist & cover letter (8/7/1991)
 - HS&E insight onsite cartoon: Managing inventory control (Summer 1994); plus cover letter
 - HS&E insight onsite cartoon & checklist (Q3 1991; Winter 1994)

- HS&E insight onsite cartoon, checklist & cover letter (Q4 1991; Q1, Q2, Q3, & Q4 1992; Q1, Q3, Fall 1993; Spring, & Winter 1994).
- HS&E station alert bulletin (10/10/1994)
- HS&E station alert bulletin, plus cover letter (#s 90.01, 90.02, 90.03, & 92.01)
- Marketing service station Health, safety & environment manual (1993, 1994, 1996, 1997, 2005)
- “Green book” Revision/Update package
- Retail engineers procedure manual (EQHOGG 01145-1160, EQHOJC 06877-07109)
- Safety procedures manual (1990)
- Area engineers procedure manual (1976)
- District engineering staff procedure manual (1975), pp. 17-33 (Section XII): Leaks and spills
- District engineers procedure manual (1984)
- Marketing procedures manual, excerpt (EQHOJC 04821-4840)
- Comprehensive environmental program (1985, 1988, 1991)
- Environmental engineers procedure manual (1992; EQHOJC09824, 10188)
- Health, Safety & Environmental Bulletins Nos. 1-10
- Health, Safety & Environment participant guide
- Marketing Guide (1994)
- Service station HS&E review (2004); plus cover letter
- Shell policies document (1982)
- Spill prevention control and countermeasure plan, sample plan
- The Big "E": First aid for spill headaches; plus cover letter
- Trainee handout
- Ground water contamination: Evaluation and procedures (prepared for district engineers' conference)
- Letter to dealers RE: Dealer Inventory Control Program (n/d)
- Letter: Leak Control Program' (01/23/1978)
- Letter to district managers (03/30/1978)
- Letter: SPCC Plans for Service Stations (04/11/1983)
- Letter: Comprehensive Environmental Program (11/15/1984)
- Letter: Comprehensive Environmental Program (11/16/1984)
- Letter: Retail Groundwater Protection Program (12/17/1984)
- Letter: Retail Groundwater Protection Program (01/21/1985)
- Letter to district managers (01/23/1985; EQHOJC 19072 – EQHOJC 18110)
- Memo: Vapor recovery at service stations

- Memo: Comprehensive Environmental Program
- Memo: Comprehensive Environmental Program
- Memo: Green Book 1994 Update
- Memo: Leak Control Program
- Memo: Leak Control Program Funding
- Memo: HS&E insight onsite themes
- Memo: API Underground Spill Cleanup Manual
- Gasoline Hazard Summary (05/24/2000)
- EQHOJC 16174 – EQHOJC 16230
- EQHOJC 17909 – EQHOJC 17936
- EQHOJC 19978 – EQHOJC 20008
- Videos
 - Risk based corrective action
 - Responding to product releases
 - Unit 1: an overview
 - Unit 2: assessment & recovery
 - A matter of priorities
 - Dealer inventory control
 - Shell Oil presents... Comprehensive environmental program presentation
- MSDS, gasoline (Shell; EQHOFR-E0023974, EQNBDS08696, EQNBDS-E0051414, EQNBKD04724, EQNBKD04734, EQNBKD04743, EQWHDF25637, EQWHJJ18935, ST001393)
- MSDS/EDS, gasoline (Shell; EQNBDS03312, EQWHIR19831, EQWHIR19970, EQWHIR19979, EQWHIR21507, ST001379)
- MSDS, gasoline (Shell, BP; EQHOOC42666, EQHOOC42685, EQHOOC42707)
- MSDS, gasoline (Shell, Texaco; EQHOSJ-E0036092, EQHOSJ-E0039820)
- MSDS, gasoline (Texaco; EQNBDS04164, EQWHJJ18922)
- MSDS, MTBE (AGIP)
- MSDS, MTBE (Exxon)
- MSDS, MTBE (Shell; EQHOFR01787, EQHOMP00187, EQHOMP00195, EQHOMP00217, EQHORD11805, EQWHSG01171)
- MSDS, MTBE (Shell, Aldrich Chemical)
- MSDS, MTBE (Shell, American Burdick & Jackson; EQHOMP00117, EQWHJJ38423)
- MSDS, MTBE (Shell, Amoco)
- MSDS, MTBE (Shell, Arco; EQHOMP00011, EQHOMP00020, EQHOMP00029, EQHOMP00038, EQHOMP00047, EQHOMP00062)

- MSDS, MTBE (Shell, Champlin)
- MSDS, MTBE (Shell, Coastal)
- MSDS, MTBE (Shell, Crown Central Petroleum; EQHOMP00146, EQNBDS08658.PDF)
- MSDS, MTBE (Shell, Curtin Matheson Scientific; EQHOMP00129, EQHOMP00135)
- MSDS, MTBE (Shell, Exxon; EQHOMP00078, EQHOMP00085, EQHOMP00092, EQHOMP00098, EQNBDS08653)
- MSDS, MTBE (Shell, Fischer Scientific)
- MSDS, MTBE (Shell, Hill Petroleum)
- MSDS, MTBE (Shell, Marathon Petroleum)
- MSDS, MTBE (Shell, Texas Petrochemicals)
- MSDS, MTBE (Texaco; EQDCGS01351, EQTUL13763)
- MSDS, MTBE (Tosco)
- Discontinued MTBE MSDS
- MSDS Change of Status (MTBE)
- MSDSs, EQHOOC68781 – EQHOOG69113
- MSDSs, ALL.MDL 1358-0007638 – ALL.MDL 1358-0007746
- EDS MTBE
- ExxonMobil documents
 - XOM-REM-00042542 – 00042565
 - Underground Storage Tank Leak Detection
 - SOI-SMI Health & Safety Guide (XOM-WARN-00006775 – XOM-WARN-00007013)
 - SOI-SMI Health & Safety Guide (XOM-WARN-00003053 – XOM-WARN-00003283)
 - Service Station Safety, Health & Environmental Awareness Presentation
 - Service Station Safety Resource Manual (XOM-WARN-00002408 – XOM-WARN-00002926)
 - Service Station Health & Safety Manual (XOM-WARN-00001867 – XOM-WARN-00002125)
 - Questions and Answers About Reformulated Gasolines (XOM-WARN-00003642 – XOM-WARN-00003667)
 - Questions and Answers About Reformulated Gasolines (XOM- WARN-00003668 – XOM-WARN-00003675)
 - Presentation Your Invisible Inventory
 - New Store Operator Training

- Mobil Service Station Self-Audit Checklist for the State of California
- Mobil Service Station Health & Safety Manual
- Mobil Service Station Awareness presentation (XOM-WARN-00024)
- Mobil Recommended Practices for Gasoline Inventory Control
- Mobil Maintenance Manual
- Mobil Leak Detection Presentation Sent To Service Station Dealers
- Mobil Environmental Records-Environmental Emergency Response Action Plan
- Mobil Environmental Records Supplement
- Mobil Environmental Awareness Presentation Given To Dealers (XOM-WARN-00006706 – XOM-WARN-00006759)
- Mobil Environmental Awareness Presentation Given To Dealers (XOM-WARN-00031227 – XOM-WARN-00031254)
- Mobil Annual Inventory Verification Procedures
- Memo + Pamphlet Facts about Oxygenated Fuels
- Letter to Station Operator and Monitoring Procedure Material
- Leak Incidents - Handling and Reporting of Hydrocarbon Releases at Resale Outlets
- Green Book Environmental Training Presentation
- Green Book - Environmental Compliance Manual (XOM-WARN-00003676 – XOM-WARN-0003907)
- Green Book - Environmental Compliance Manual (XOM-WARN-00014944 – XOM-WARN-00014980)
- Facts About RFG
- Exxon Mobil Environmental Play Book 2001
- Exxon Underground Tank Maintenance Manual
- Exxon The Good Book for Exxon Retailers
- ExtraUpdate Newsletter For Exxon Dealers
- Environmental, Health & Safety Management System
- Dealer Clinic Gasoline Leak Detection SlideTape Presentation
- CBE-Ex2030 – CBE-Ex2036
- CBE-Ex2038 – CBE-Ex2040
- CBE-Ex2046 – CBE-Ex2050
- CBE-Ex2500 – CBE-Ex2516
- CBE-Ex2522
- CBE-Ex2529 – CBE-Ex2531
- CBE-Ex4057 – CBE-Ex4061
- CBE-Ex4064 – CBE-Ex4067
- CBE-Ex4075

- CBE-Ex4076 (pp. 0086-0101)
- Citgo
 - National Petroleum Refiners Association: The role of MTBE and other oxygenates under lead phasedown
 - MTBE Octane Enhancer – Brochure by ARCO Chemical
 - MTBE – Brochure by ARCO Chemical
 - MTBE – Brochure by Air Products
 - An MTBE Primer – by American Petroleum Institute
 - Technical Bulletin: MTBE Gasoline Blending Component (ARCO Chemical)
 - American Petroleum Institute: Reformulated Gasoline – Fuel of the Future
 - Letter to CITGO branded distributors RE: Oxygenated gasoline program (1992), w/ fuel pump sticker templates
 - Letter to CITGO branded distributors RE: Oxygenated gasoline program (1993)
 - Aquatic toxicity studies w/ cover letter by John Boucher
 - Report on MTBE w/ cover letter to John Boucher
 - MTBE Product Bulletin w/ cover letter
 - CITGOMDL135811-0042759 – CITGOMDL135811-42795
 - CITGOMDL135811-0047402 – CITGOMDL135811-0047403
 - Fax to CITGO branded distributors RE: Oxygenated fuel program (1992)
 - Letter to CITGO branded distributors RE: Oxygenated fuel program (1993)
 - Letter to CITGO branded distributors RE: Oxygenated fuel program (1993)
 - Interoffice letter: Conversion dates from RFG to non-RFG (1993)
 - E-mail RE: Illinois MTBE labeling law
 - CITGOMDL135811-0064680 – CITGOMDL135811-0064682
 - Colorado MTBE labeling requirements
 - Pennsylvania fuel labeling requirements
 - CITGOMDL135811-0070078 – CITGOMDL135811-0070082
 - State of Virginia Title 59.1 Chapter 12: Motor fuels and lubrication oils, Regulations
 - ARCO Technology Process Proposal for MTBE and TAME, plus cover letter
 - Interoffice letter RE: MTBE blending in unleaded regular Florida shipments
 - CITGOMDLII-0007961 – CITGOMDLII-0009861
 - CITGOMDLII-0009327 – CITGOMDLII-0009406
 - CITGOMDLII-0009407 – CITGOMDLII-0009547
 - CITGOMDLII-0009639 – CITGOMDLII-0009742
 - CITGOMDLII-0009862 – CITGOMDLII-0009987
 - CITGO memo announcing introduction of MTBE
 - American Petroleum Institute: An MTBE Primer

- CITGOMDLII-0018803 – CITGOMDLII-0018832
- Letter to CITGO branded customers RE: Increase in scope of CITGO Product Integrity Program
- Letter to Champlin customers RE: Oxygenated gasoline program
- 2000 RVP conversion letter to branded marketers (CITGO)
- 2001 RVP conversion letter to branded marketers (CITGO)
- Letter to CITGO unbranded customers RE: Introduction of RFG
- CITGO brochure: Reformulated gasoline and anti-dumping regulations
- CITGO brochure: Reformulated gasoline and anti-dumping regulations – An overview of distributor, dealer, and retailer responsibilities; plus cover letter
- Letter to CITGO marketers/dealers/retailers RE: State regulation changes in Michigan
- Report on MTBE: Physical, chemical and biological characteristics; w/ cover letter to John Boucher
- MTBE Octane Enhancer: Storage & Handling Bulletin
- LAN0278560 – LAN0278563
- MSDS, MTBE (CITGO)
- MSDS, MTBE (CITGO)
- MSDS, MTBE (CITGO)
- MSDS, Gasoline all grades unleaded (CITGO)
- MSDS draft, MTBE (CITGO)
- MSDS, Gasoline all grades unleaded (CITGO)
- MSDS, MTBE (CITGO)
- MSDS, Regular gasoline (CITGO)
- MSDS, MTBE (ARCO) w/ cover letter
- MSDS, Gasoline all grades (CITGO)
- MSDS, Gasoline all grades unleaded (CITGO)
- Atlantic Richfield Company/BP
 - MSDS, MTBE (ARCO, 1979)
 - MSDS, MTBE (ARCO, 1985)
 - MSDS, MTBE (ARCO, 1989)
 - MSDS, MTBE (ARCO, 1991)
 - MSDS, MTBE (ARCO, 1992)
 - Product Safety Bulletin: MTBE (ARCO, 1993)
 - Inactive MSDS, MTBE (ARCO)
 - Guidelines for Handling Ethers; associated correspondence
 - MTBE Spill Monitoring Summary (1992)

- BP Oil Environmental Compliance Manual, excerpt: Introduction, HSE quality policy
- BP Memo RE: special material handling for MTBE
- BP Memo RE: MTBE tank specification
- BP Memo RE: Draft MTBE handling practice
- BP Memo RE: Revised copy MTBE handling practice
- MTBE handling recommendations
- MSDS revision and approval form
- BP Reformulated Gasoline Program for BP branded jobbers document (1994)
- BP Memo RE: Oxygenated gasoline training program
- BP Letter to BP Dealers RE: introduction of MTBE blended gasoline (1996)
- BP Oxygenated Gasoline Program document
- BP Environmental Compliance document
- BP Service Station Standards Manual (1998)
- Training handouts: Service station environmental life cycle management; Operating expenses training
- Environmental and safety resource guide
- Jobber checklist for service station conversion to ethanol-blended gasoline (BP)
- Station-specific emergency response plan (BP Amoco)
- BP Amoco Environmental awareness for petroleum marketers handout
- Environmental awareness for petroleum marketers: Spill prevention and spill reporting (“Zero Spills”)
- Inventory control procedures for underground storage
- Spill notification guide (1987)
- List of hazardous substances and reportable quantities
- Environmental procedures document
- Hazardous waste regulations affecting service stations
- Environmental awareness for petroleum marketers: Emergency response planning
- MTBE release emergency response plan
- Letter to field distribution managers RE: No spill policy awareness and training
- Emergency plan – MTBE release
- The Amoco petroleum products retail safety reference guide
- Amoco petroleum products mid-Atlantic region: Emergency response plan for service stations
- Bates 0102001169 – 0102001240
- Bates 0102001241 – 0102001442
- Standard operating procedures for distribution terminals

- Direct retail operations employee safety reference guide
- General liability accident report form
- Amoco operations and training guide: Accident investigation
- Amoco operations and training guide: Fuel spill handling
- New Jersey station inspection checklist: MTBE study
- Environmental awareness for petroleum marketers: Program overview – Draft
- Letter from Perma-Fill to BP RE: decommissioning of tanks (installation of foam)
- Bates 1206002787 – 1206002838 (plus two unnumbered pages)
- Letter to Amoco retail marketers with waste oil tanks RE: Compliance with stricter guidelines for UTSs (1998)
- Letter to Amoco marketers RE: New leak detection standards and statistical inventory reconciliation
- Compliance-in-a-box
- Amoco compliance program (1998) brochure
- BP Amoco mid-Atlantic region Emergency response plan for service stations
- Executed lease agreement; BPA00379754 – BPA00379854
- BPA00379855 – BPA00379965 (RDU to CM conversion)
- BPA00379966 – BPA00380031
- BPA00379652 – BPA00379753
- Bates 1206000936 – 1206001010
- Environmental awareness for petroleum marketers Program roll-out and training for regional account executives
- Bates 1206000110 – 1206000222
- Bates 1206000223 – 1206000308
- Crisis and emergency management system: PowerPoint presentation materials
- Bates 1207003506
- Bates 1207003507 – 1207003509
- Service station maintenance manual
- Amoco lease form (blank)
- Letter to Amoco marketers RE: Labeling of fuel pumps for RFG
- Lease rider maintenance and repairs (blank)
- Letter to BP jobber RE: MTBE ban for NY and CT
- Bates 1207003582 – 1207003583
- Memo to all NY and CT BP jobbers RE: mandatory use of ethanol in RFG (2003)
- Letter to BP branded dealers RE: Recommendations for transitioning from winter to summer gasoline
- MTBE contingency plan Beaumont terminal

- Dispenser upgrade pour-in-place pan document
- Amoco and the Environment pamphlet
- No spills procedures
- Compliance-in-a-box
- Recordkeeping-at-a-glance document
- Underground storage tanks leak detection requirements presentation
- Spill prevention and service stations document
- Bates 0102008049
- Gravity deliver test (completed)
- No spill procedures
- Letter to all Amoco reseller accounts RE: EPA UTS regulations
- Kern Oil & Refining Co.
 - MSDSs, unleaded (2)
 - MSDSs, unleaded premium (2)
 - MSDSs, unleaded regular (2)
 - MSDSs, leaded premium (2)
 - MSDSs, leaded regular (2)

- Chen, J. Y. C., Gilson, R. D., & Mouloua, M. (1997). Perceived risk dilution with multiple warnings. *Proceedings of the Human Factors and Ergonomics Society 41st Annual Meeting*, 831-835.
- Fhaner, G., & Hane, M. (1975). Seat Belts: Changing usage by changing beliefs. *Journal of Applied Psychology*, 60, 589-598.
- Janis, I. L., & Feshbach, S. (1953). Effects of fear arousing communications. *Journal of Abnormal and Social Psychology*, 48, 78-92.
- Jonah, B. A., Dawson, N. E., MacGregor, C. G., & Wilde, G. J. S. (1982). Promoting seat belt use: A comparison of three approaches. *American Association for Automotive Medicine 26th Annual Proceedings* (pp. 167-181). Arlington Heights, IL: American Association for Automotive Medicine.
- Leventhal, H. (1970). Findings and theory in the study of fear communication. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp 119-186). New York: Academic Press.
- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63, 81-97.
- Slovic, P., & Schwalm, N. D. (1984). *Development of perception of risk approaches designed to increase safety belt usage* (DOT-HS-806-598). Woodland, CA: Perceptronics, Inc.
- Waller, P. F., Li, L. K., Stewart, J. R., & Ma, J. M. (1984). *Evaluation of the effect of perception of risk messages on observed safety belt usage* (DOT-HS-806-595). Chapel Hill: University of North Carolina, Highway Safety Research Center.
- Phillips, B. M. (1983). *Safety Belt Usage Among Drivers* DOT HS-806 424
- NHTSA website (<http://www.nhtsa.dot.gov/people/injury/airbags/presbelt/> downloaded on 5/15/00)
- NHTSA report "Process and Outcome Evaluation of the Buckle Up America Initiatives" (DOT HS 809 272), May 2001
- Traffic Safety Facts: Safety Belt Use in 2004 - Overall Results (DOT HS 809 783)
- Safety Belt Interlock System: Usage Survey. Final Report (DOT-HS-4-00805)
- Traffic Safety Facts 1994: State Traffic Data, NHTSA