

STATE OF LOUISIANA

COURT OF APPEAL

FIRST CIRCUIT

NO. 2003CA1840

TERRY BOYD AND ALL OTHER SIMILARLY
SITUATED PERSONS

VERSUS

ALLIED SIGNAL, INC.

CONSOLIDATED WITH

2003CA 1841

WILLIAM J. MEYERS AND ALL OTHER SIMILARLY
SITUATED PERSONS

VERSUS

ALLIED SIGNAL, INC.

CONSOLIDATED WITH

2003CA 1842

CARNELL BELL, MARTHA M. ANTOINE, MARY L. BOWMAN,
AND JOHN STEWART INDIVIDUALLY AND ON BEHALF
OF HIS MINOR CHILDREN, TORRI M. STEWART
AND JEREMY M. STEWART

VERSUS

HONEYWELL INTERNATIONAL, INC.
(FORMERLY ALLIED SIGNAL, INC.)

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BMF M

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CONSOLIDATED WITH

2003CA 1843

**LEO HILTON, KEVIN COLEMAN, MARTHA MARIE ANTOINE,
REV. FRANK O'CONNOR, CORNELL COLLIER AND JANICE
ROBERSON, INDIVIDUALLY AND ON BEHALF OF HER MINOR
DAUGHTER, DASHANDA ROBERSON**

VERSUS

**HONEYWELL INTERNATIONAL, INC., FDBA ALLIED SIGNAL,
INC., US STEEL USX CORPORATION, SAINT GOBAIN
PERFORMANCE PLASTICS CORPORATION, FDBA FURON
COMPANY, PARKER HANNIFIN CORPORATION, WESTERN
SALES AND TESTING OF AMARILLO, JESSE WALKER AND
QUALITY CARRIERS, INC.**

Judgment Rendered: DEC 30 2004

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**Appealed from the
19th Judicial District Court
in and for the Parish of East Baton Rouge, Louisiana
Case No. 463,184**

The Honorable Kay Bates, Judge Presiding

* * * * *

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BEFORE: FOIL, FITZSIMMONS, AND GAIDRY, JJ.

GAIDRY, J.

This is an appeal by various defendants, contesting the trial court's decision to certify the issue of liability in a class action arising from an alleged mass tort. For the reasons expressed below, we reverse and amend the trial court's judgment in part only with regard to the recognition of one class representative, but otherwise affirm the judgment.

FACTUAL BACKGROUND AND PROCEDURAL HISTORY

On August 2, 1999, at approximately noon, a tractor-trailer unit transporting boron trifluoride (BF₃)¹ gas on Interstate Highway 12 (I-12) entered East Baton Rouge Parish from Livingston Parish. The BF₃ was manufactured by AlliedSignal, Inc. (since acquired by Honeywell International, Inc.), and was being transported by Quality Carriers, Inc. (Quality) as a compressed gas in a tube trailer with six separate, manifolded tubes. A leak noticeable to following traffic had developed from one of the trailer's tubes as the unit was traveling in the vicinity of Denham Springs in Livingston Parish. After the unit entered the corporate limits of Baton Rouge, the driver discovered the leak, and he stopped the unit on the westbound shoulder near I-12's overpass for Cedarcrest Avenue.

The leak originated from the bull plug of Tube No. 5. The first fire truck on the scene was dispatched at 12:23 p.m., and arrived at 12:34 p.m. Its crew was instructed to direct the water spray of 200 gallons per minute from its manual monitor into the visible vapor cloud originating from the

¹ According to the toxicological profile of the Louisiana Department of Environmental Quality introduced into evidence, BF₃ is "a colorless gas with a pungent, suffocating odor that forms dense white fumes in moist air. In moist air or hot water, it hydrolyzes to form boric acid, hydrogen fluoride, and fluoroboric acid. It also reacts with water to form hydrofluoric acid. Upon inhalation, it is an irritant to the nasal passages and causes nosebleeds and burns." AlliedSignal, Inc.'s own Material Safety Data sheet similarly describes it as "[a] colorless high pressure compressed gas with a sharp pungent odor which forms a dense white vapor cloud upon release. Exposure to vapor is highly irritating to the respiratory tract. Exposure to liquid or vapor can produce severe irritation and possible burns to all parts of the body."

trailer. Approximately two hours after its arrival, the first fire truck overheated, and was replaced with another truck using a fixed monitor applying water at a rate estimated variously to be from 750 to 1,000 gallons per minute. That first fixed monitor was later joined by a second, and by 4:14 p.m., a third fixed monitor was also in use.

Because the leak could not be stopped due to the location of the hole and the interior pressure of the tube at issue, it was decided to undertake a “scrubbing” operation, by which the remaining BF_3 in the tube would be vented through a tote tank containing water into which the gas would be dissolved. By 10:32 p.m., it was determined that the initial attempt to “scrub” the remaining BF_3 was unsuccessful, so a second tube trailer was sent by AlliedSignal, Inc., into which most of the remaining gas was offloaded through a step-down pressure equalization process. After the interior pressure of the leaking tube reached 150 pounds per square inch, the second tube trailer was moved at 2:45 a.m. on August 3, and the remaining gas “scrubbed” into the tote tank. The leaking cylinder was finally patched at 5:24 a.m. The “all clear” signal was issued at 6:15 a.m., and I-12 was completely re-opened for traffic at 7:05 a.m. AlliedSignal, Inc.’s records showed that the tube trailer contained 17,740 pounds of BF_3 prior to the release, and that the total amount released was 775 pounds.

A “shelter in place” plan was established during the incident for a $\frac{1}{4}$ mile radius from the intersection of I-12 and Cedarcrest Avenue, and the eleven homes nearest the leak were evacuated. Over 100 emergency response workers from various agencies were assigned to the incident scene.

The first petition to be filed in these consolidated actions was filed on August 3, 1999, at 9:19 a.m., about three hours after the “all clear” signal was given. It was styled as a “Class Action Petition for Damages,” and

named only AlliedSignal, Inc., as defendant.² A second action seeking damages on behalf of a class of potential claimants was filed on August 17, 1999. Two more class action petitions were filed on August 1, 2000 and February 6, 2002. Additionally, by September 5, 2000, at least eight other civil actions arising out of the release had been instituted.

On December 22, 1999, the Boyd plaintiffs filed their initial motion to certify their action as a class action, pursuant to La. C.C.P. art. 592. On Honeywell's motion, the various actions were consolidated. Extensive discovery was undertaken by the parties. On joint motion of the parties, the trial court issued a comprehensive case management order on March 22, 2001. On July 2, 2001, based upon the complexity of the factual and legal issues presented, the trial court appointed a special master with the consent of the parties, pursuant to La. R.S. 13:4165.

On August 1, 2002, in accordance with the case management order, the plaintiffs revised their initial motion for certification by the filing of a new motion for class certification, seeking certification on the issues of liability and causation. The evidentiary hearing on the issue of the certification of the class was held before the special master appointed by the trial court. The hearing took place on December 16, 17, 18, and 19, 2002, and January 28, 2003, with the special master presiding. Numerous exhibits were introduced and testimony was given by fact and expert witnesses. On March 23, 2003, the special master issued his report and recommendations on the issue of class certification to the trial court. After reviewing the factual and procedural history, the special master recommended that a class

² Since the filing of the original petition in the initial action, a number of other defendants have been joined in the consolidated actions, including Quality Carriers, Inc., United States Steel Corporation, Saint-Gobain Performance Plastics Corporation (formerly Furon Company), Portersville Sales and Testing, Inc., Western Sales and Testing of Amarillo, Inc., and Parker-Hannifin Corporation, all of whom join with Honeywell International, Inc., in appealing the trial court's judgment certifying the class action.

be certified on the liability issue only, with the class being defined by the class members' presence within or other relationship to a geographic area defined by named streets which roughly corresponded to the "shelter in place" zone radius. He further recommended that the class be divided into two subclasses, the first consisting of those class members whose claims were the first they ever made in a mass tort action or were for property damage, and the second consisting of those having filed claims in any other mass tort litigation. Finally, he made recommendations regarding the class representatives and class counsel, and also recommended that detailed new "proof of claim" forms be required and that proper notice be issued to all potential class members.

In compliance with the case management order previously issued, the defendants filed a timely motion in opposition to the special master's recommendations. The trial court's hearing on the defendants' objections to the special master's findings and recommendations was held on May 5, 2003. The trial court adopted the recommendations of the special master, with the exception of his recommendation to appoint the district attorney and an assistant district attorney as special class counsel for the second subclass,³ and its judgment in that regard was signed on May 20, 2003. This appeal followed.

STANDARD OF REVIEW

The trial court's decision to certify a class action is a two-step process. The trial court must first determine whether a factual basis exists for class action certification. If the trial court finds that a factual basis exists

³ The stated purpose behind the creation of the subclasses was to facilitate identification of possibly spurious claims by class members known to have asserted similar claims in other mass tort actions. The trial court declined to appoint the assistant district attorney at his request, and deferred ruling on the appointment of the district attorney, who also had expressed reservations regarding the advisability of such an appointment.

for certification, it then must exercise its discretion in deciding whether to certify the class. Appellate review must therefore consist of a two-part analysis. The trial court's factual findings in the first step of certification are subject to review under the manifest error standard. The trial court's ultimate decision regarding certification is then reviewed under the abuse of discretion standard. *Mire v. EatelCorp, Inc.*, 02-1705, p. 3 (La. App. 1st Cir. 5/9/03), 849 So.2d 608, 612, *writ denied*, 03-1590 (La. 10/3/03), 855 So.2d 317. The appellate courts will only decertify a class where there is an abuse of the trial court's vast discretion. *Banks v. New York Life Insurance Company*, 98-0551, p. 6 (La. 12/7/98), 722 So.2d 990, 993-94.

The trial court has much discretion in deciding whether a suit should be certified as a class action. *Carr v. Houma Redi-Mix Concrete Company, Inc.*, 96-1548, p. 3 (La. App. 1st Cir. 11/10/97), 705 So.2d 213, 215, *writ denied*, 98-0743 (La. 5/1/98), 718 So.2d 416. In reviewing a trial court's exercise of its discretion in certifying a class action, an appellate court should bear in mind the supreme court's jurisprudential admonition to trial courts to err on the side of caution, in favor of maintaining the class action:

[I]f there is to be an error made, it should be in favor and not against the maintenance of the class action, for it is always subject to modification should later developments during the course of the trial so require. [Citations omitted.]

McCastle v. Rollins Environmental Services of Louisiana, Inc., 456 So.2d 612, 620 (La. 1984).

ASSIGNMENTS OF ERROR

The defendants contend the trial court erred in finding that the plaintiffs met their burden of proof on each of the requisite elements of numerosity, commonality, typicality, and adequate representation necessary for certification. They further contend the trial court erred in certifying the

class action, given evidence suggesting extensive fraud by potential claimants. Alternatively, in the event certification is upheld, they contend that the trial court erred in defining the class and establishing the geographic boundaries for the class, given the evidence.

DISCUSSION

The class action is a nontraditional litigation procedure permitting a representative with typical claims to sue or defend on behalf of, and stand in judgment for, a class of similarly situated persons when the question is one of common or general interest to persons so numerous as to make it impracticable to bring them all before the court. *Ford v. Murphy Oil U.S.A., Inc.*, 96-2913, 96-2917, 96-2929, p. 4 (La. 9/9/97), 703 So.2d 542, 544.

Louisiana Code of Civil Procedure article 591(A) sets forth the following required elements for certification and maintenance of a class action:

- (1) The class is so numerous that joinder of all members is impracticable.
- (2) There are questions of law or fact common to the class.
- (3) The claims or defenses of the representative parties are typical of the claims or defenses of the class.
- (4) The representative parties will fairly and adequately protect the interests of the class.
- (5) The class is or may be defined objectively in terms of ascertainable criteria, such that the court may determine the constituency of the class for purposes of the conclusiveness of any judgment that may be rendered in the case.

All of the elements of numerosity, commonality, typicality, adequate representation, and objectivity (definability) must be present to maintain a class action. La. C.C.P. art. 591(B). The party seeking to maintain the class action bears the initial burden of *prima facie* proof of these elements. *Brumfield v. Rollins Environmental Services (LA), Inc.*, 589 So.2d 35, 37

(La. App. 1st Cir. 1991). In determining whether these elements have been established, the court may consider the pleadings, affidavits, depositions, briefs, exhibits, and testimony presented at a certification hearing. *Singleton v. Northfield Insurance Company*, 01-0447, p. 9 (La. App. 1st Cir. 5/15/02), 826 So.2d 55, 62, *writ denied*, 02-1660 (La. 9/30/02), 825 So.2d 1200.

A mass tort has typically not been considered a “true” class action, that which concludes the rights of all class members. *Ford*, 96-2913, 96-2917, 96-2929 at p. 5-6, 703 So.2d at 545; *Blank v. Sid Richardson Carbon and Gasoline Company*, 97-0872, p. 3 (La. App. 1st Cir. 5/15/98), 712 So.2d 630, 632. Only mass torts “arising from a common cause or disaster” may be appropriate for class action certification. *Ford*, 96-2913, 96-2917, 96-2929 at p. 13, 703 So.2d at 549-50.

Class action certification is purely procedural. *Hampton v. Illinois Railroad Company*, 98-0430, p. 6 (La. App. 1st Cir. 4/1/99), 730 So.2d 1091, 1093. The likelihood of any plaintiff’s success on the merits is not properly part of the certification process. *Mire*, 02-1705 at p. 5, 849 So.2d at 613. Further, “[c]ertification shall not be for the purpose of adjudicating . . . defenses dependent for their resolution on proof individual to a member of the class.” La. C.C.P. art. 591(C). Individual questions of quantum of damages do not preclude a class action when predominant liability issues are common to the class. *McCastle*, 456 So.2d at 620.

PLAUSIBLE NUMEROSITY AND OBJECTIVITY

In *Hampton*, 98-0430 at p. 8, 730 So.2d at 1094-95, this court required that the plaintiffs seeking certification meet a threshold burden of “plausibility” as a component element of a prima facie showing of numerosity. In doing so, we emphasized that numerosity is not shown by mere allegations of a large number of potential claimants, or, in the case of a

mass tort, by showing a certain population within a certain geographic radius or proximity of the event. *Id.* In the case of a mass tort, this burden of plausibility requires some evidence of a causal link between the incident and the injuries or damages claimed by sufficiently numerous class members. This prima facie showing need not rise to the status of proof by a preponderance of the evidence, as would be necessary to prevail on the merits. *Hampton*, 98-0430 at p. 11, 730 So.2d at 1096.

In a mass exposure tort case, the determination of the issues of both numerosity and objectivity for class action certification is usually predicated upon proof of the geographic limits of potentially harmful exposure of the purported class. In terms of the objectivity (definability) requirement, this court has held that “[a] determination of the geographic area of the class is an integral part of the definition of the class.” *Singleton*, 01-0447 at p. 17, 826 So.2d at 66, citing *Hampton*, 98-0430 at p. 6, 730 So.2d at 1094. In *Hampton*, 98-0430 at p. 11, 730 So.2d at 1096, we similarly observed that in a mass tort case, a trial court cannot properly determine whether the numerosity requirement has been met without first determining the physical area of the mass tort. It is therefore appropriate to first examine the evidence upon which the geographic area selected by the trial court was based.⁴

Factual Testimony of Emergency Responders Regarding the Incident

Larry Mounce of the Baton Rouge Fire Department’s Hazardous Materials (HAZMAT) Unit testified by deposition that upon his arrival at the site, the vapor cloud appeared to be drifting downwind in a northerly

⁴ Our discussion which follows is limited to that evidence considered most significant by the special master and trial court in reaching their conclusions, and is not meant to imply that they did not consider other evidence and the totality of the voluminous record in reaching those conclusions. For example, the plaintiffs submitted evidence from Beryl Gamse, Ph.D., a forensic engineer, relating to the disposition of the runoff water from the fire trucks’ monitors. While taking specific note of such evidence, the special master concluded that it was not probative of any damage caused by mitigated BF₃ or byproduct compounds, and did not justify extension of the class geographic limits beyond the air dispersion modeling evidence.

direction over a length of ten to fifteen yards. A “hot zone” of 200 feet in circumference from the rear of the trailer was established, which emergency personnel were generally prohibited from entering without breathing protection.

Eugene Beauchamp was the captain of the Baton Rouge Fire Department’s Engine #19, the first fire truck to arrive at the scene. He described the leaking BF_3 as resembling a white, steam-like mist, which seemed to dissipate within eight to twelve feet from the trailer. He estimated the “hot zone” around the trailer to have been approximately 150 yards in diameter. The HAZMAT Unit instructed Captain Beauchamp’s crew to don protective clothing and breathing equipment, and to direct their hose’s water stream into the escaping vapor. He had no knowledge of any complaints of illness or injury by any firefighter on the scene.

The testimony of Jeff Meyers of the Louisiana Department of Environmental Quality (DEQ) was presented by deposition. At the time of the incident, he was a DEQ field supervisor. He testified that the first DEQ representative on the scene arrived at 1:30 p.m. on August 2, and that he was personally present from about that time until 9:00 a.m. the following morning. The DEQ response team worked on the north side of the interstate right-of-way during the whole incident, due to the prevailing wind direction. Mr. Meyers did not allow his team members to enter the vapor cloud itself to take measurements. The team utilized Draeger testing tubes for hydrofluoric acid, a byproduct of BF_3 and water, since they had no testing equipment specific to BF_3 . The first Draeger reading was taken at 8:58 p.m. Based upon the periodic Draeger readings and their observations, the DEQ team believed that the water spray was containing the BF_3 and that all of the gas released and its byproduct compounds were dissolved into and diluted by

the water runoff. No readings were taken after the last reading at 12:14 a.m. on August 3, which Mr. Meyers attributed to the fact that the water spray was then probably containing all vapor coming from the leak. At that time, any hydrofluoric acid in the water runoff had been reduced to an undetectable level. He classified the leak as a “major incident.” However, he was unaware of any DEQ employee claiming symptoms attributed to the leak.

Other Factual Testimony Relating to the Geographic Limits

Theresa Pennington testified that her residence was located on the corner of Seracedar Drive and Lebanon Street, several blocks to the north of the intersection of I-12 and Cedarcrest. At the time of the incident, she was home recuperating from knee surgery. Upon awakening from sleep, she was coughing and experienced a burning sensation in her eyes. She noticed that a message had been left on her telephone answering machine. The caller informed her of the release at issue and advised her to turn off her air conditioner and to either stay inside or leave her residence. She turned off her air conditioner, but eventually chose to leave her residence at the urging of relatives. (It was later determined, however, that Ms. Pennington’s residence was located slightly outside the actual limits of the “shelter in place” zone.) Ms. Pennington also testified that within a few weeks of the incident, she and some of her neighbors experienced damage to trees, in the form of dying limbs and browning of foliage.

Plaintiffs’ Expert Testimony and Reports

Bert Wilkins, Jr., Ph.D., was called to testify on behalf of the plaintiffs as an expert in the field of chemical engineering. He testified that he was retained to analyze the leak to determine its flow rate over time and the total amount of the chemical leak. He was also asked to determine the effect of

the water applied to mitigate the chemical released. He expressed no opinions on the extent of the atmospheric dispersal or the toxicological effects of the chemical, as such were beyond the scope of his expertise.

Dr. Wilkins explained that his first objective was to determine the leak rate over its duration of approximately fourteen hours, a task complicated by the fact that the exact size of the hole through which the gas escaped was initially unknown. A further complicating factor was the fact that the leak rate changed over time with changes in pressure and temperature inside the pressurized tube. Nevertheless, comparing the original weight of the gas and the tube's internal pressure with the residual weight and pressure after the leak was stopped, combined with internal temperature considerations, Dr. Wilkins was able to utilize standard chemical engineering calculation techniques and "equations of state" to calculate the leak rate at hourly intervals during the course of the incident.⁵

Dr. Wilkins's second objective was to determine the effectiveness of the water sprayed onto the leak area in absorbing the BF_3 and mitigating the leak. Using information as to the manner in which the spray was directed onto the trailer, the varying volume of water applied over time, and assumptions as to the percentage of water spray contacting the leak, combined with mass transfer calculations, Dr. Wilkins calculated that the absorption efficiencies varied from a minimum of 8 - 17 % to a maximum of 32 - 63 %.⁶

Dr. Wilkins's final objective was to determine the point at which the gas would become heavier than air. He explained that that fact was

⁵ At noon on August 2, 1999, the leak rate was 60.1 pounds per hour, and gradually decreased to 2.7 pounds per hour by 2:30 a.m. the following morning.

⁶ The minimum figure related to the period during which only 200 gallons per minute were being applied, while the maximum figure related to the periods during which 750 gallons per minute or more were being applied.

important in that a gas heavier than air will remain closer to the ground and disperse in the atmosphere more slowly than a lighter gas. He concluded that the BF_3 initially leaked through the hole as a colorless cold gas, heavier than the surrounding air, but reacted almost immediately with the moisture in the air to form boron dihydrate, visible as a white fume. Boron dihydrate, however, is unstable at temperatures above 70°F , and the chemical reaction forming it caused the air- BF_3 mixture to heat up. After the unstable boron dihydrate separated into its components of BF_3 and water, the remaining air- BF_3 mixture was heavier than the surrounding air as it dispersed.

The plaintiffs also presented the testimony of Erno Sajo, Ph.D., a physicist, engineer, and expert in air modeling and aerosol and atmospheric dispersion. Dr. Sajo testified that Dr. Wilkins's expert determinations formed part of the factual basis for his expert opinions. His role was to determine the thermodynamic and thermohydraulic behavior of the BF_3 , its threshold limit and concentration values, and the meteorological conditions present over the period of thirteen hours from noon on August 2, 1999 to 1:00 a.m. the following morning. Using meteorological data recorded at a meteorological tower located about eight miles away, Dr. Sajo noted, for example, that during the first four hours of the incident, the wind was blowing the gas plume in a generally southwesterly direction from the site. By the fifth hour, the wind was blowing the gas plume in a generally westerly direction, and by the sixth hour the wind had shifted to blow the gas plume in a generally northerly direction. From those facts, he prepared an atmospheric dispersion data analysis which was run in an appropriate computer model to derive the probable downwind concentrations over the described time period.

Dr. Sajo testified that he utilized the SLAB computer model for air dispersion, which yielded cigar-shaped “footprints” or isopleths depicting the plumes of gas dispersed by the wind on an hourly basis for fourteen consecutive hours.⁷ He explained that the SLAB model was more scientifically accurate to use for a release involving a heavy gas such as BF₃, even though it was not designed to use the more precise standard deviation or sigma theta ($\Sigma\theta$) variable for changes in wind direction available in other dispersion models. Although the SLAB model, like all heavy-gas dispersion models, assumes no change in wind direction or speed for each consecutive time interval modeled, a “moving average” could be obtained by modeling new time intervals beginning with a different time than that of the first series of isopleths, such as, for example, five minutes after the original hour.

Dr. Sajo specifically criticized the defense expert’s use of another dispersion model, CALPUFF, as being inappropriate to address the physics of gases that start their dispersion as heavier than air. His major criticism was that the defense expert misused one part or module of another model designed to analyze heavy gas dispersion, the HGSYSTEM model, in order to justify the improper use of CALPUFF to complete his analysis.⁸ Although the CALPUFF model admittedly allowed for more precise use of meteorological data at five-minute intervals in calculating the $\Sigma\theta$ for wind

⁷ Dr. Sajo modeled separate hourly isopleths for each of several different concentration plumes of BF₃, ranging from ERPG-1 (“Emergency Response Planning Guide No. 1”), a concentration of .72 parts of BF₃ per million, below which only transient health effects would be noticed; to the PEL (“permissible exposure limit”) ceiling value of one part of BF₃ per million established by the federal Occupational and Safety Health Administration; to ERPG-2, or 11 parts per million; to IDLH (“immediately dangerous to life and health”), or 25 parts per million or above. For each concentration, Plume 1 corresponded to 12:00 noon on August 2, 1999, with each consecutive numbered plume corresponding with the next consecutive hour, up to Plume 14 for 1:00 a.m. on August 3. Dr. Sajo explained that in his analysis, he had to coordinate the times for each hourly plume to correspond with those of Dr. Wilkins for average hourly leak rates.

⁸ Dr. Sajo also questioned, among other points, the validity of the defense expert’s use of the HGSYSTEM module on the grounds that the module could not properly utilize the data for leak aperture size that the opposing expert supposedly provided.

direction changes, it was simply not designed to analyze the behavior of a heavy gas such as BF_3 , according to Dr. Sajo, and was “totally inapplicable” to analyze the incident at issue. He further explained that there are six recognized classes of stability (or how readily gas plumes will disperse), and that there is a general correlation between the $\Sigma\theta$ and the stability classes. He admitted that he did not use one of the stability classes as an input variable in his modeling, but instead used what he felt to be a more precise measure of stability, the inverse Monin-Obukhov length. However, he testified that when he used a different heavy-gas dispersion model, ALOHA, capable of utilizing the particular stability class used by the defense expert, the results corroborated with the original results obtained from the SLAB model, but with much higher concentrations of BF_3 and longer plume duration.

Under cross-examination, Dr. Sajo explained that his analysis was based upon the BF_3 emission being reduced by the average water absorption rate of 32 % estimated by Dr. Wilkins, and he admitted that he did not undertake an analysis using the maximum absorption rate of 63 %. He also admitted that he derived the Monin-Obukhov stability measure from a chart, rather than calculating it directly from the available meteorological data. However, he emphasized that although the accuracy and precision of meteorological data is one of the factors to be considered in selecting an appropriate dispersion model, it is not a primary factor, as compared to the physical characteristics of the gas upon release.

The plaintiffs also presented the opinions and conclusions of William T. Lowry, Ph.D., a toxicologist, by means of his narrative report. In preparing his report, he reviewed medical records and depositions of certain claimants (including two of the class representatives eventually appointed),

as well as the incident reports of the Baton Rouge Fire Department, the Louisiana State Police, and DEQ. He described in his report the three principal avenues of exposure to BF_3 (inhalation, absorption through the skin, and eye contact), and the various signs and symptoms of exposure to BF_3 and its byproducts after it hydrolyzes: hydrogen fluoride, hydrofluoric acid, and fluoboric acid. Dr. Lowry concluded that the symptoms and injuries supported by medical documentation were consistent with exposure to BF_3 or its byproduct compounds, and that it was reasonable that the symptoms and injuries were associated with the exposure, based upon their development shortly after the incident.

Defendants' Expert Testimony and Reports

The defendants presented the testimony of Gale Hoffnagle, a certified consulting meteorologist and expert in the fields of meteorology, air quality modeling, and atmospheric chemistry. He explained that the white vapor visible to witnesses and depicted in a videotape was BF_3 hydrate. In selecting the CALPUFF model for use in his analysis, Mr. Hoffnagle considered that the elevation of the roadway portion where the trailer was parked might result in an aerodynamic downwash of the gas plume. He also considered the fact that the leak involved a heavier-than-air gas, but noted that at some point the mixture of air and BF_3 becomes neutrally buoyant, behaving no differently than normal air. He pointed out that AlliedSignal, Inc. had guidelines on modeling for BF_3 which allowed the option of using dispersion models for neutrally buoyant gases, such as CALPUFF.

Mr. Hoffnagle used another model, the HGSYSTEM model for heavy gas releases, in the first segment of his analysis in order to determine the point at which the BF_3 released became neutrally buoyant. According to that determination, the gas plume became neutrally buoyant within eight feet of

the leak in the afternoon hours and within 46 feet of the leak in the evening hours. Mr. Hoffnagle further defended his limited use of the HGSYSTEM model for heavy gas releases in the first segment of his analysis by explaining that the user's manual for that model permitted selective use of the model's individual modules. He also expressed his opinion that the HGSYSTEM model was superior to the SLAB model used by Dr. Sajo in determining the downwind density and drop of the plume before it becomes neutrally buoyant. Mr. Hoffnagle criticized Dr. Sajo's use of the SLAB model as inappropriate for analyzing the dispersion of BF_3 in its gaseous state, as SLAB was designed to analyze dispersion of liquid aerosols.

By using the CALPUFF model, Mr. Hoffnagle was able to incorporate the $\Sigma\theta$ variable, or standard deviation in wind direction, to achieve what he felt were more accurate results in modeling the dispersion of the gas. He explained that the greater the fluctuation in wind direction, the smaller the concentration of the gas downwind would be, and the closer the maximum concentration would be to the source of the release, with the result that the plumes would be shorter.

The hourly isopleths derived from Mr. Hoffnagle's analysis and modeling differed markedly from those obtained by Dr. Sajo, being much shorter in length and smaller in area. In his opinion, the amount of BF_3 mitigated by the application of water from the three fixed monitors (2,250 - 3,000 gallons per minute) was much higher than the 32% minimum figure estimated by Dr. Wilkins. Mr. Hoffnagle emphasized the fact that for purposes of analysis he assumed the amount of BF_3 released to have been 900 pounds, more than the 700 pounds assumed by Dr. Sajo. Based upon his analysis of the extent of dispersion, Mr. Hoffnagle testified that he could not attribute the browning of Mrs. Pennington's trees to the release.

The defendants presented by report and deposition the opinions and conclusions of an expert in emergency medicine and toxicology, Marc Bayer, M.D., on the issue of the plausible connexity of the documented health complaints of various plaintiffs to the incident. He analyzed the same deposition testimony and medical records of the plaintiffs reviewed by Dr. Lowry. Based on those records, Dr. Bayer concluded that none of them sustained any lengthy or disabling injuries attributable to the release, and that none were exposed to concentrations of BF₃ significant enough to cause more than mild or transient symptoms. In addition to pointing out supposed inconsistencies in the medical histories and complaints of those plaintiffs, he emphasized Dr. Lowry's lack of medical credentials and criticized his toxicological methodology as flawed and unscientific.

The trial court in *Hampton* compounded its error as to the prima facie evidence of numerosity and objectivity by its "failure to establish any geographic boundaries whatsoever." *Hampton*, 98-0430 at p. 10, 730 So.2d at 1096. The situation presented here is dramatically different from that presented in *Hampton*. Here, unlike the situation in *Hampton*, both the plaintiffs and defendants presented expert testimony relating to the geographic boundaries of the proposed class. The expert witnesses' conflicting opinions were all well-articulated and supported by sound scientific principles and objective documentary foundation. The principle that questions of credibility are for the trier of fact to resolve applies to the evaluation of expert testimony, unless the stated reasons of the expert are patently unsound. *Bonnette v. Conoco, Inc.*, 01-2767, p. 33 (La. 1/28/03), 837 So.2d 1219, 1240. Given the content of the record before us, we cannot conclude that the choice of the special master and the trial court to use Dr. Sajo's analysis as the basis for establishing the geographic boundaries of the

proposed class, supplementing the “shelter in place” zone boundaries, constitutes manifest error. Nor do we find error in the trial court’s acceptance of the tree damage described by Ms. Pennington and corroborated by photographs as grounds to incorporate areas outside of the “shelter in place” zone. Although the special master characterized that evidence as “antidotol” [*sic*] (anecdotal), it may more appropriately be described as circumstantial. While it may not be sufficient for purposes of proving causation on the merits, it may properly be considered as corroborative evidence supporting the trial court’s decision on the geographic area in the context of determining class certification. The objectivity or definability requirement clearly is satisfied.

With regard to the numerosity requirement, we conclude that the plaintiffs have adequately demonstrated the existence of sufficiently numerous claims to meet the threshold “burden of plausibility.” This burden, we again emphasize, is not fairly comparable to the burden of proof of causation, medical or otherwise, on the merits. The evidence shows that 5,484 “proof of claim” forms were submitted by claimants. The types of claims presented range from personal injury claims to property damage claims to claims of significant inconvenience. I-12 is one of the major thoroughfares in and out of the Baton Rouge area, and was closed in the vicinity of the release for a relatively lengthy period. The records of the East Baton Rouge Office of Emergency Preparedness in evidence show that from 16 to 22 homes were within its evacuation plan, while at least 150 additional homes fell within the “shelter in place” zone. Documents submitted in connection with Mr. Mounce’s testimony show that telephone calls were attempted to 280 to 295 telephone numbers associated with addresses within the “shelter in place” zone. Of 1,905 claimants listed in a database

maintained by one plaintiffs' attorney as of November 4, 2002, 560 made claims for damages arising from evacuation.

Considering the foregoing, especially in light of the interconnected issue of objectivity satisfied by the geographic area chosen, we are satisfied that the plaintiffs have adequately met their burden of proving sufficiently numerous aggrieved persons such that joinder of their claims would be impractical.

COMMONALITY

We agree with the observation of the special master that, generally speaking, “[s]ingle incident mass disasters are ideal for class certification,” in terms of the requirement of commonality, or the existence of common questions of law or fact. Our courts have regularly recognized the usefulness of the class action procedure in mass tort cases. *See Daniels v. Witco Corporation*, 03-1478, p. 9-11 (La. App. 5th Cir. 6/1/04), 877 So.2d 1011, 1017-18. In their assignments of error, the defendants seem to confuse the requirement of commonality of issues to the class under La. C.C.P. art. 591(A)(2) with that of typicality of the claims of the class representatives under La. C.C.P. art. 591(A)(3). The issue of the defendants’ liability clearly presents the same issues of fact and law as to all claimants, regardless of the character of their claims, since all arise from the same incident or “common nucleus of operative facts.” *See McCastle v. Rollins Environmental Services of Louisiana, Inc.*, 456 So.2d at 619-20. In the cited case, which arose from the operation of a hazardous waste disposal facility, the supreme court noted that one of the common factual issues subsumed within the broader issue of liability was “whether the probable dispersal patterns of the gases and odors emitted include the areas within which the residences of the members of the class are located.” *Id.* It is noteworthy that

the court found certification to be warranted, even though the class definition was much less precise than that established by the trial court in this action.

Since certification was granted only as to the issue of liability, the issue of causation is not actually before us. Nonetheless, that issue is indirectly germane to our discussion of commonality. The defendants herein not only do not concede liability, they vigorously dispute the issue of whether any significant number of claimants was subjected to even minimal exposure to toxic levels of BF_3 . While this subsidiary factual issue obviously relates more to the broader issue of causation than that of liability, it reinforces our conclusion that commonality exists as to the liability issue. In the *Daniels* case, *supra*, the plaintiffs sought certification of a class action arising from an explosion and fire at a chemical plant. There, the defendant stipulated that the cause of the incident was its fault, as well as the issue of “general causation,” *i.e.*, “that the substances released in the air following the explosion could, in certain combinations and quantities, cause injury.” *Daniels*, 03-1478 at p. 12, 877 So.2d at 1019. It thereupon argued that no common issues of fact and law remained after its stipulations, but only individual issues relating to each claimant’s damages remain, which predominated and precluded class certification. The Fifth Circuit disagreed, holding that the stipulations tended to satisfy the commonality requirement, being “more of an admission of common issues than a negation of them.” *Id.* It also characterized the disputed issue of whether any of the plaintiffs were exposed to chemical levels sufficiently toxic to cause injury as a common issue. Similar conclusions are justified here, and support the trial court’s determination of commonality as to the issue of liability.

TYPICALITY AND ADEQUATE REPRESENTATION

The typicality requirement of La. C.C.P. art. 591(A)(3) requires that the claims of the class representatives be a cross-section, or typical, of the claims of all class members. *Singleton v. Northfield Insurance Company*, 01-0447, at p. 12, 826 So.2d at 63. Typicality is satisfied if the claims of the class representatives arise out of the same event, practice, or course of conduct giving rise to the claims of the other class members, and are based on the same legal theory. *Id.* The representatives' claims need not exhibit all of the various types of possible injuries or elements of damages claimed by the class as a whole. *Singleton*, 01-0447 at p. 13, 826 So.2d at 64. We agree with the conclusion of the special master, adopted by the trial court, that the claims of the class representatives here are typical of the claims of all members of the defined class, with one exception, detailed below.

We agree with defendants that the claims of the class representative, Chastity LeJeune, cannot be considered "typical" of the class members' claims, for the simple reason that by her own sworn testimony, she does not meet the criteria for class membership established by the trial court. Ms. LeJeune, a secretary employed by the attorneys filing the initial action,⁹ testified by deposition that she was at her office most of the workday, from 8:30 a.m. to 5:00 p.m., except for lunch. She testified that she learned of the release at issue from a radio announcement she heard while at her office, and that her office complied with the "shelter in place" warning, turning off the office air conditioning. She claimed that she began to experience burning in her nostrils and a headache after lunch. Defendants point out, and plaintiffs concede, that at no time during the course of the incident was Ms. Lejeune

⁹ The first named plaintiff in the initial action, Terry Boyd, happens to be Ms. Lejeune's boyfriend and the father of her daughter.

ever present within the geographic area selected by the trial court to define the class, which encompassed the actual “shelter in place” zone. As the evidence plainly established that she was not a class member, it only stands to reason that she does not possess that threshold qualification of a class representative. The defendants’ objection to her designation as class representative by the trial court is clearly well-taken. We therefore reverse the trial court’s judgment in part, insofar as it adopted the special master’s recommendation as to Ms. LeJeune and confirmed her as a class representative, and amend it to remove her name from the list of class representatives.

The test for determining the existence of adequate representation under La. C.C.P. art. 591(A)(4) consists of three elements: (1) the claims of the chosen class representatives cannot be antagonistic or conflict with those of other class members; (2) the chosen representatives must have a sufficient interest in the outcome to ensure vigorous advocacy; and (3) counsel for the chosen representatives must be competent, experienced, qualified, and generally able to conduct the litigation vigorously. *Mire v. EatelCorp, Inc.*, 02-1705 at p. 9, 849 So.2d at 615-16; *Singleton*, 01-0447 at p. 13, 826 So.2d at 64. The trial court accepted the choices of the special master regarding the class representatives, but only after its own independent review of their deposition testimony and consideration of the class counsel’s qualifications. Our review of the record reveals no error in the trial court’s decision on the requirement of adequate representation.

In conclusion, we emphatically agree with defendants, as did the trial court, that fraud is a legitimate and serious concern as to many of the claims

at issue.¹⁰ But identification of members of the class based upon their claims of physical presence in its geographic and temporal limits is an issue separate from proof of the veracity of such claims. It is not essential that every member of the class be identified before a class action can be certified. *McCastle*, 456 So.2d at 620. It thus stands to reason that it is likewise unnecessary for every claimant to establish a legally probable or even *prima facie* case on the issue of his membership criteria before such certification can be made. That some of the class members may present exaggerated, spurious, or fraudulent claims should not defeat certification as long as the requisite elements for certification are present. That serious concern can best be addressed if and when class action certification is sought on any further issue, such as causation, or at some later stage of proceedings in the class action or the presentation of individual members' claims. We find that the trial court's judgment, as fashioned with subclasses, its avowed willingness to decertify the class if the fraud issue becomes too burdensome, and the inherent safeguards available in the class action procedure provide adequate protection against this action being commandeered by fraudulent riders on a "gravy train."

¹⁰ It strains credulity almost to its limits to claim that one person could be so unfortunate as to suffer injury or inconvenience in over eleven separate mass torts or other incidents serious enough to result in class actions, unless that person is the equivalent of the biblical patriarch Job or the late comic artist Al Capp's Joe Bfstplk (a character who went about with a perpetual raincloud over his head). Yet such is the remarkable background revealed for one claimant, whose residence was inaccurately listed on claims forms as the residence of nine other claimants shown to have only slightly less statistical ill fortune regarding other mass torts resulting in class actions. Another claimant repeatedly invoked the Fifth Amendment privilege against self-incrimination in her testimony in open court and moved to withdraw her claim upon being confronted with proof of involvement in multiple prior class actions, after expressly denying such involvement on her sworn claims form. Of the 1,049 claimants not residing in Baton Rouge, 320 have filed claims in four other class actions, 40 in five other class actions, 37 in six other class actions, and eight in seven other class actions, statistics which certainly raise very strong suspicions as to the veracity of those making such multiple claims.

DECREE

The trial court's judgment adopting by reference the recommendations of the special master is hereby affirmed in part, but that portion identifying the class representatives is reversed in part and amended to delete Chastity Lejeune from the list of class representatives, as follows:

“3. That the following individuals be recognized as class representatives: Michael Paul, Nannette Sunde, Janet Ayo Smith, and Kathryn Culmone.”

REVERSED IN PART AND AFFIRMED IN PART AS AMENDED.