

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF WEST VIRGINIA**

UNITED STATES OF AMERICA,

Plaintiff,

v.

BAYER CROPSCIENCE LP

Defendant.

Civ. No. _____

COMPLAINT

Plaintiff, the United States of America, by the authority of the Attorney General and through the undersigned attorneys, and at the request of the Administrator of the U.S. Environmental Protection Agency (“EPA”), files this Complaint and alleges as follows.

NATURE OF THE ACTION

1. This is a civil action brought pursuant to section 113(b) of the Clean Air Act (“Act”), 42 U.S.C. § 7413(b), for assessment of civil penalties and injunctive relief against Bayer CropScience LP (“Defendant” or “BCS”) for violations of sections 112(r)(1) and 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(1), (r)(7) (2008), in connection with Defendant’s facility in Institute, West Virginia.

2. Some of the violations alleged in this Complaint caused or contributed to conditions that, on August 28, 2008, led to an explosion that killed two of Defendant’s employees and released extremely hazardous substances to the atmosphere.

JURISDICTION, VENUE, AUTHORITY AND NOTICE

3. This Court has jurisdiction over the subject matter of this action pursuant to section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1331, 1345, and 1355.

4. Venue is proper in this judicial district pursuant to section 113(b) of the Act, 42 U.S.C. § 7413(b), and 28 U.S.C. §§ 1391(b), 1391(c) and 1395(a), because Defendant is located, and a substantial part of the events or omissions giving rise to the claim occurred, in this judicial district.

5. Notice of the commencement of this action has been given to the West Virginia Department of Environmental Protection pursuant to section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b).

DEFENDANT

6. Defendant is a limited partnership organized under the laws of Delaware and doing business in this judicial district.

7. Defendant is a “person” as defined by section 302(e) of the Clean Air Act, 42 U.S.C. § 7602(e).

8. At all times relevant to this Complaint, Defendant owned and operated an agricultural chemical manufacturing plant on Route 25 in Institute, West Virginia known as the “Institute Plant.”

LEGAL BACKGROUND

9. In 1990, Congress added section 112(r) to the Clean Air Act, *see* Pub. L. 101-549 (Nov. 15, 1990), in response to a 1984 release of methyl isocyanate in Bhopal, India that killed more than 3,400 people and in response to a 1985 release of methyl isocyanate from the Institute Plant that sent 409 people to hospital emergency rooms. S. Rep. No. 101-228, at 134 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3519.

10. The objective of section 112(r) of the Clean Air Act, and its implementing regulations, is “to prevent the accidental release and to minimize the consequences of any such release” of any extremely hazardous substance. 42 U.S.C. § 7412(r)(1).

11. Section 112(r)(1) of the Clean Air Act provides, in pertinent part:

The owners and operators of stationary sources producing, processing, handling or storing [any extremely hazardous] substances have a general duty in the same manner and to the same extent as Section 654 of Title 29 to identify hazards which may result from such releases using appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.

42 U.S.C. § 7412(r)(1).

12. An “extremely hazardous substance” is any chemical “which may as the result [of] short-term exposures associated with releases to the air cause death, injury or property damage due to their toxicity, reactivity, flammability, volatility or corrosivity.” S. Rep. No. 101-228, at 211 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3596. Extremely hazardous substances include, but are not limited to, substances listed pursuant to section 112(r)(3) of the Act, 42 U.S.C. § 7412(r)(3), at 40 C.F.R. § 68.130, and chemicals on the list of extremely hazardous substances published under section 302 of the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. § 11002, at 40 C.F.R. part 355, appendixes A and B.

13. An “accidental release” is “an unanticipated emission of a regulated substance or other extremely hazardous substance into the ambient air from a stationary source.” 42 U.S.C. §§ 7412(r)(2)(A).

14. Section 112(r)(7) of the Act, 42 U.S.C. § 7412(r)(7), provides that the Administrator of the EPA is authorized to promulgate regulations requiring owners or operators of a stationary source at which an extremely hazardous substance is present in more than a threshold amount to, among other things, prepare and implement a risk management program (“RMP”) to detect and prevent or minimize accidental releases of extremely hazardous substances from the stationary source, and to provide a prompt emergency response to any such releases in order to protect human health and the environment.

15. In 1994, pursuant to section 112(r)(7) of the Act, 42 U.S.C. § 7412(r)(7), the Administrator of the EPA promulgated regulations applicable to owners or operators of stationary sources at which extremely hazardous substances are present. These regulations are found at 40 C.F.R. part 68.

16. Pursuant to section 112(r)(7) of the Act, and 40 C.F.R. §§ 68.10(a) and 68.150, the owner or operator of a stationary source that has more than a threshold quantity of an extremely hazardous substance in a process shall comply with the requirements of 40 C.F.R. part 68, including, but not limited to, the submission of a risk management plan to the EPA.

17. Pursuant to 40 C.F.R. § 68.160, the owner or operator must complete a single registration form that lists each regulated extremely hazardous substance, and must include the registration form in its RMP.

18. The regulations at 40 C.F.R. part 68 separate the covered processes into three categories, designated as Program 1, Program 2, and Program 3, and set forth specific requirements for owners and operators of stationary sources with processes that fall within the respective programs.

19. Pursuant to 40 C.F.R. § 68.10(d), a covered process is subject to Program 3 requirements if the process does not meet one or more of the Program 1 eligibility requirements set forth in 40 C.F.R. § 68.10(b), and if either of the following conditions is met: (a) the process is listed in one of the specific North American Industry Classification System codes found at 40 C.F.R. § 68.10(d)(1); or (b) the process is subject to the United States Occupational Safety and Health Administration (“OSHA”) process safety management standard set forth in 29 C.F.R. § 1910.119.

20. Pursuant to 40 C.F.R. § 68.12(d), the owner or operator of a stationary source that is subject to Program 3 prevention requirements must undertake certain tasks including, but not limited to: the development and implementation of a management system (as provided in 40 C.F.R. § 68.15); conducting a hazard assessment (as provided in §§ 68.20-68.42); the development and implementation of prevention program requirements, which include the compilation of process safety information, written standard operating procedures, training, a mechanical integrity program, management of change procedures, and pre-startup safety review procedures (as provided in 40 C.F.R. §§ 68.65-68.87); and the development and implementation of an emergency response program (as provided in 40 C.F.R. §§ 68.90-68.95).

21. Pursuant to 40 C.F.R. § 68.69(a), an owner or operator must “develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information.” Such operating procedures must address, among other things, “(1) Steps for each operating phase: (i) Initial startup; (ii) Normal operations; (iii) Temporary operations; (iv) Emergency shutdown including the conditions under which emergency shutdown is required ...; (v) Emergency operations; (vi) Normal shutdown; and (vii) Startup following a turnaround, or after an emergency shutdown. (2) Operating limits: ... (ii) Steps required to correct or avoid deviation. (3) Safety and health considerations: ... (ii) Precautions necessary to prevent exposure, including engineering controls, administrative controls, and personal protective equipment; ... (4) Safety systems and their functions”

22. 40 C.F.R. § 68.69(c) mandates that “[t]he operating procedures shall be reviewed as often as necessary to assure that they reflect current operating practice ... [and the] owner or operator shall certify annually that these operating procedures are current and accurate.”

23. Pursuant to section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), a person who violates any requirement of chapter 85, subchapter I of title 42 of the U.S. Code (which includes sections 112 and 113 of the Clean Air Act), including any requirement or prohibition of any regulation promulgated thereunder, is liable for injunctive relief and for civil penalties of up to \$25,000 per day for each violation.

24. Under the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461, as amended by the Debt Collection Improvements Act of 1996 (“DCIA”), 31 U.S.C. § 3701, and pursuant to EPA’s Civil Monetary Penalty Inflation Adjustment Rule, 69 Fed. Reg. 7121 (Feb. 13, 2004) and 40 C.F.R. part 19, 73 Fed. Reg. 75,340 (Dec. 11, 2008), promulgated pursuant to the DCIA, the maximum amount of the civil penalties provided under section 113(b) of the Clean Air Act was increased to \$27,500 per day for each violation occurring from January 30, 1997 until March 15, 2004, \$32,500 per day for each violation occurring from March 15, 2004 until January 12, 2009, and \$37,500 per day for each violation occurring after January 12, 2009.

GENERAL ALLEGATIONS

25. The Institute Plant is located on a plot of approximately 460 acres of land. It is bordered to the north by Route 25 and Interstate 64; to the east by West Virginia State University, West Virginia State Community and Technical College, and the unincorporated community of Institute; to the south by the Kanawha River; and to the west by Norfolk Southern Railroad Siding and an undeveloped wooded area.

26. Approximately 11,400 people live within two miles of the Institute Plant. Schools, parks, and a church are located within two miles of the Institute Plant.

27. As of August 28, 2008, Defendant operated five processes at the Institute Plant that were subject to the Chemical Accident Prevention Provisions of 40 C.F.R. part 68.

28. One of the five processes subject to the provisions of 40 C.F.R. part 68 was called the Methomyl Process and was identified as Process ID 71240.

29. The Methomyl Process was carried out in a production line known as the Methomyl Unit.

30. The Methomyl Unit was located at the West Carbamoylation Center.

31. Defendant no longer operates the Methomyl Unit.

32. At the Methomyl Unit, Defendant used methyl isocyanate (Chemical Abstract Services (“CAS”) Number 624-83-9) and methyl mercaptan (CAS Number 74-93-1) in the production of methomyl.

33. Defendant developed and implemented a prevention program pursuant to 40 C.F.R. part 68, subpart D for the Methomyl Process. This prevention program included the compilation of process safety information, a process hazard analysis, written operating procedures, training, a mechanical integrity program, management of change procedures, and pre-startup safety review procedures.

34. Defendant developed an emergency response program for the Institute Plant pursuant to 40 C.F.R. part 68, subpart E.

35. Methomyl, formally known as S-methyl-N-[(methylcarbamoyl)oxy]-thioacetimidate (CAS Number 16752-77-5), is a carbamate insecticide.

36. At all relevant times to this Complaint, the Institute Plant, the West Carbamoylation Center, and the Methomyl Unit were “stationary sources” within the meaning of section 112(r)(2)(C) of the Act, 42 U.S.C. § 7412(r)(2)(C).

37. At all times relevant to this Complaint, the Methomyl Unit, which is part of the West Carbamoylation Center, was subject to the requirements of the Process Safety

Management (“PSM”) standard of the Occupational Safety and Health Administration, 29 C.F.R. § 1910.119.

38. At all times relevant to this Complaint, the Methomyl Unit, which is part of the West Carbamoylation Center, was subject to “Program 3” requirements within the meaning of 40 C.F.R. §§ 68.10(d) and 68.12(d).

Extremely Hazardous Substances in Use at the Facility

39. From at least 2003 until at least August 28, 2008, Defendant handled, stored, and used methyl isocyanate and methyl mercaptan at the Institute Plant, the West Carbamoylation Center, and the Methomyl Unit.

40. Methyl isocyanate is toxic, extremely flammable, corrosive to the skin, eyes, and respiratory tract, and it reacts violently with water. When stored in a pressurized container, it poses an explosion hazard if the tank is punctured or exposed to fire, or if the contents of the tank are exposed to water.

41. Methyl isocyanate is an “extremely hazardous substance” and a “regulated substance” pursuant to section 112(r)(3) of the Act, 42 U.S.C. § 7412(r)(3), and its implementing regulations, 40 C.F.R. § 68.130.

42. At all times relevant to this Complaint, Defendant had the capacity to store approximately 35,000 pounds of methyl isocyanate in the Methomyl Unit or the West Carbamoylation Center.

43. At the time of the explosion on August 28, 2008, there were approximately 13,600 lbs. of methyl isocyanate in the day tank at the Methomyl Unit or the West Carbamoylation Center.

44. Methyl mercaptan is extremely flammable, irritating to skin, eyes, mucus membranes, and the respiratory tract, and is toxic if inhaled. When stored in a pressurized container, it poses an explosion hazard if the tank is punctured or exposed to fire.

45. Methyl mercaptan is an “extremely hazardous substance” and a “regulated substance” pursuant to section 112(r)(3) of the Act, 42 U.S.C. § 7412(r)(3), and its implementing regulations, 40 C.F.R. § 68.130.

46. At all times relevant to this Complaint, Defendant had the capacity to store 290,000 pounds of methyl mercaptan in the Methomyl Unit or the West Carbamoylation Center.

47. Defendant submitted a risk management plan for the Institute Plant to the EPA in October 2001.

48. Defendant submitted updates to its risk management plan for the Institute Plant to the EPA in June 2004 and July 2007.

49. Methomyl is a restricted-use pesticide because of its high human toxicity.

50. Methomyl is toxic if inhaled, ingested, or absorbed through the skin. Severe exposure may cause nausea, vomiting, diarrhea, abdominal cramps, excessive salivation, blurred vision, profuse sweating, muscle spasms, and death.

51. Methomyl is flammable and, when mixed in the right portions, may present an explosion hazard.

52. When burned, methomyl decomposes to form toxic gases and vapors including, without limitation, acetonitrile, dimethyl sulfide, methyl mercaptan, and trace amounts of methyl isocyanate.

53. Methomyl is an extremely hazardous substance within the meaning of section 112(r) of the Clean Air Act, 42 U.S.C. § 7412(r).

54. Defendant sold dry, crystalline methomyl as a product, and also used it to manufacture thiocarb (Larvin[®]), a pesticide, at the Institute Plant.

55. Defendant used methyl isobutyl ketone (“MIBK”) in the manufacture of methomyl.

56. MIBK is a flammable liquid that is toxic if inhaled, ingested, or absorbed through the skin.

57. MIBK is an extremely hazardous substance within the meaning of section 112(r) of the Clean Air Act, 42 U.S.C. § 7412(r).

The Methomyl Process

58. The Methomyl Process used by Defendant created methomyl by combining several chemicals, including methyl isocyanate, in a complex process.

59. Defendant stored methyl isocyanate for use in the Methomyl Process in a tank known as the MIC day tank.

60. Once the Methomyl Process had created methomyl in a solution, the Methomyl Process entailed adding hexane to the solution to cause the methomyl to crystallize.

61. The Methomyl Process used centrifuges to collect the methomyl crystals into a cake. The liquid remaining, known as “mother liquor,” typically contained MIBK, hexane, small amounts of methomyl, and other impurities.

62. The Methomyl Process entailed transferring the mother liquor to a flasher to distill the mother liquor and recover usable solvent. Mother liquor entering the flasher typically contained approximately 0.5% methomyl.

63. The flasher concentrated the methomyl in the mother liquor by removing most of the solvent. The unvaporized solvents and impurities from the distillation process were known as “flasher bottoms.” Flasher bottoms were composed of as much as 22% methomyl.

64. The flammable liquids in the flasher bottoms could be used as auxiliary fuel for a boiler, but only after the concentration of methomyl was reduced to not more than 0.5%.

65. Methomyl decomposes at high temperatures in an exothermic reaction.

66. The Methomyl Process used a steel tank known as the “Residue Treater” to reduce the concentration of methomyl in the flasher bottoms.

67. The Methomyl Process used the residue treater to dilute the flasher bottoms in hot MIBK.

68. The Methomyl Process required maintaining the residue treater at a high temperature of at least 130°C in order to decompose methomyl until the concentration was below 0.5%.

69. The residue treater was a 4,000-gallon tank designed to operate with internal pressures of up to 50 pounds per square inch.

70. Temperature in the residue treater was controlled via circulation through a heater or through a cooler.

71. Defendant used 80°C tempered water in the cooling system to remove excess heat generated by the exothermic decomposition of methomyl in the residue treater.

The Explosion on August 28, 2008

72. Defendant replaced the old residue treater tank, made of carbon steel, with a new tank, made of stainless steel, in the summer of 2008, while the process was shut down.

73. The residue treater had a vent that was prone to blockages. When the vent became blocked, pressure inside the residue treater would rise. When the pressure rose, the operator would direct an outside operator to attach a temporary steam line to the vent in order to clear the blockage.

74. Defendant replaced the electronic control system for the Methomyl Unit in 2008.

75. Defendant was not operating the Methomyl Unit for at least the four months prior to August 25, 2008.

76. On or about August 25, 2008, Defendant restarted the Methomyl Unit.

77. On or about August 26, 2008, Defendant fed the first batch of methomyl and solvent into a centrifuge in the Methomyl Unit. However, when the solution left the centrifuge, there were few to no methomyl crystals in the centrifuge basket.

78. Because the methomyl failed to crystallize and failed to be collected in the centrifuge basket, the mother liquor leaving the centrifuges had an abnormally high concentration of methomyl.

79. Defendant fed the over-concentrated mother liquor into the solvent flashers. Defendant sampled the mother liquor in the flasher. The sampling results indicated that the concentration was as high as 3.7%, but the operators did not review the lab results.

80. After separating most of the hexane and MIBK solvents in the flasher, the flasher bottoms normally contained up to 22% methomyl.

81. On August 28, 2008, because the mother liquor was over-concentrated, the flasher bottoms had a concentration as high as 40% methomyl.

82. At approximately 4:30 a.m. on August 28, 2008, Defendant began feeding the over-concentrated flasher bottoms into the residue treater.

83. At approximately 6:28 p.m. on August 28, 2008, Defendant began heating the contents of the residue treater.

84. Defendant did not sample the contents of the residue treater prior to heating it.

85. Conditions inside the residue treater triggered a runaway chemical reaction.

86. At 10:25 pm on August 28, 2008, the high pressure alarm for the residue treater sounded at the operator's work station.

87. The operator sent two employees to check the vent for the residue treater and clear any blockages, if necessary.

88. At 10:33 pm on August 28, 2008, the residue treater exploded.

89. The explosion released extremely hazardous substances from the residue treater into the atmosphere.

90. The highly flammable contents of the residue treater ignited.

91. The combustion of the contents of the residue treater released other extremely hazardous substances into the atmosphere.

92. The explosion severed piping and damaged other equipment at the West Carbamoylation Center, releasing chemicals, including extremely hazardous substances, into the atmosphere.

93. One employee of Defendant died from blunt force trauma and burn injuries sustained at the scene.

94. A second employee of Defendant died 41 days later in a burn center.

95. The explosion damaged homes and other buildings outside the Institute Plant.

96. The explosion caused a fire that burned for more than four hours.

97. As a result of the explosion:

a. more than 40,000 area residents, including the residents at the adjacent West Virginia State University, were sheltered-in-place for more than three hours;

b. the state police and local law enforcement authorities closed roads and highways near the Institute Plant, which disrupted traffic for hours; and

c. the U.S. Coast Guard closed a portion of the Kanawha River to maritime traffic following the explosion.

98. A memorandum written by Union Carbide in 1984 identified the potential for a runaway chemical reaction inside the residue treater causing an explosion.

99. Defendant's process hazardous analysis mentioned the potential for a runaway chemical reaction inside the residue treater causing an explosion.

100. Defendant's written operating procedures for the Methomyl Unit identified the potential for a runaway chemical reaction inside the residue treater causing an explosion.

COUNT 1

Failure to Comply with Standard Operating Procedures in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.69(a)

101. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

102. Pursuant to 40 C.F.R. § 68.69(a), the owner or operator of a stationary source subject to 40 C.F.R. part 68 "shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information."

103. BCS had written operating procedures for the Methomyl Unit.

104. BCS's written operating procedures were known as "standard operating procedures" or SOPs.

105. BCS's SOPs for the residue treater stated, "No deviations should be made from the normal operating procedures without R&D, Engineering and Production Staff input."

(VI.A.2 at 13.)

106. BCS operated the Methomyl Unit from at least August 25, 2008 until at least August 28, 2008.

107. Each of Defendant's failures to comply with its written operating procedures is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.69(a).

108. At various times between August 25, 2008 and August 28, 2008, BCS failed to comply with its SOPs for the Methomyl Unit, including but not limited to the following:

- a. Defendant failed to prefill the residue treater with clean MIBK;
- b. Defendant failed to sample the residue treater before beginning to heat it;
- c. Defendant heated the residue treater when it contained more than 0.5% methomyl;
- d. Defendant failed to fully preheat the residue treater before adding flasher bottoms;
- e. Defendant bypassed the safety interlock for temperature;
- f. Defendant bypassed the operational interlock for flow;
- g. Defendant failed to comply with its SOPs for communications between operators;
- h. Defendant failed to comply with its SOPs for taking samples;
- i. Defendant failed to review the results of the samples it did take;
- j. Defendant failed to follow the SOPs for what to do in the event that the concentration of methomyl in the residue treater exceeded a critical operating parameter.

109. BCS did not obtain input from R&D, Engineering and Production Staff prior to deviating from its SOPs.

110. Each of the deviations identified in paragraph 108 caused or contributed to the explosion on August 28, 2008.

Failure to prefill the residue treater with clean MIBK

111. Defendant's written SOPs state "Initial system start-up will be with MIBK. An adequate amount of MIBK should be added to the treatment tank to allow the residue pump to establish circulation through the heater and cooler." (VI.A.2 at 12)

112. Clean MIBK was available at the facility to be added to the residue treater.

113. Defendant failed to add clean MIBK to the residue treater before adding flasher bottoms.

Failure to sample the residue treater before reheating it

114. Defendant's written SOPs for the residue treater stated "If the tank is allowed to cool below 130°C for any reason, it must be sampled before being heated up again."

115. The SOPs further state, "If the Methomyl analysis is below 0.5% the circulation heater steam can be put in service and the tank slowly heated to its normal operating temperature of 135°C."

116. The SOPs explicitly direct the operator to "Sample treater to the lab, and when the sample results return and if the tank concentration is below 0.5% Methomyl, put the steam supply to the heater in service and bring the treater up to normal operating temperature." (VI.B.2 at 11.)

117. On August 27, 2008, the temperature of the residue treater was below 130°C.

118. On August 28, 2008, at approximately 6:15 pm, Defendant began to heat up the residue treater.

119. Defendant did not sample the residue treater prior to applying heat on August 28, 2008.

Heating the residue treater when it contained more than 0.5% methomyl

120. Defendant's SOPs allowed the residue treater to be heated only if the concentration of methomyl in the residue treater was less than 0.5%.

121. At the time Defendant began to heat the residue treater on August 28, 2008, the concentration of methomyl in the residue treater was greater than 0.5% and may have been 40% or higher.

Failure to fully preheat the residue treater before adding flasher bottoms

122. Defendant's written SOPs state that flasher bottoms can be introduced "[o]nce normal operating temperature, and pressure are reached."

123. Normal operating temperature is 135°C.

124. At 4:30 a.m. on August 28, 2008, when Defendant began adding flasher bottoms to the residue treater, the temperature of the residue treater was approximately 63°C.

125. Defendant added flasher bottoms to the residue treater before normal operating temperature and pressure were reached.

Bypassing the safety interlock for temperature

126. Defendant had a safety interlock that would prevent adding flasher bottoms to the residue treater when the temperature of the tank was below 130°C.

127. Defendant's written SOPs state "[t]he interlocks should prevent feeding the tank when it is cold, but if methomyl concentration is above 1.3%, a run away reaction could result upon heating the tank."

128. The safety interlock for temperature was turned off when operators began to put the Methomyl Unit in service on August 25, 2008.

129. Defendant never turned on the safety interlock for temperature.

130. Operating the Methomyl Unit with the safety interlock for temperature turned off was inconsistent with Defendant's SOPs.

Bypassing the operational interlock for flow

131. Defendant had an operational interlock intended to prevent the addition of flasher bottoms to the residue treater until circulation of clean MIBK was established through the heating and cooling circulation loop.

132. Defendant had the ability to bypass the operational interlock for restricting flow, but doing so required a supervisor password being entered into the electronic control system.

133. Defendant bypassed the interlock for restricting flow prior to the explosion.

134. Bypassing the interlock for flow was inconsistent with Defendant's written SOPs.

Failure to comply with SOPs for communication between shift changes

135. Defendant's written SOPs state that operators must keep written notes on, *inter alia*, "changes, upsets, and unusual occurrences in the process, including actions to be taken."

136. Defendant uses these written notes to communicate information between operators.

137. The aforementioned deviations from the SOPs were all "changes, upsets, and unusual occurrences in the process" that should have been documented in written notes.

138. The operator on duty during the night shift beginning on August 27, 2008 and ending on the morning of August 28, 2008, did not make notes about the aforementioned deviations from the SOPs.

139. The operator on duty from the night shift beginning on August 27, 2008 and ending on the morning of August 28, 2008 did not communicate orally with the operator arriving for the day shift on August 28, 2008.

Failure to comply with SOP for taking samples:

140. Defendant's SOPs state "To confirm Methomyl is decomposing at the desired level of less than 0.5 weight percent in the treatment tank, samples should be taken on a regular basis, per the sample schedule."

141. Section X of Defendant's SOPs provides sampling schedules, including for the Methomyl Unit.

142. Section X of Defendant's SOPs states that samples of the residue treater tails should be taken at sampling point 25-5 every day at 0700 hours.

143. Section X of Defendant's SOPs states that samples of the flasher bottoms for methomyl, among other parameters, should be taken at sampling point 25-2 every day at 0700 and 1500 hours.

144. Defendant did not take all the samples as required by its SOPs.

Failure to Review Sampling Results

145. Defendant sampled the mother liquor on August 27, 2008, at 10:17 a.m., on August 28, 2008, at 7:00 a.m., and on August 28, 2008, at 8:00 p.m.

146. Defendant did not review the results of the laboratory analysis of those samples.

147. If Defendant had reviewed the results of the samples, it would have seen that the concentration of the methomyl in the mother liquor was abnormally high.

Failure to comply with SOPs regarding Critical Operating Parameters

148. Part VI.E of Defendant's SOPs is entitled "Emergency Procedures."

149. The second topic in part VI.E of Defendant's SOPs is entitled "Critical Operating Parameters."

150. Defendant's sixth critical operating parameter is entitled "High Methomyl Concentration in Residue Treater."

151. Defendant's sixth critical operating parameter states that a concentration of methomyl in the residue treater of more than 1% by weight is an "unsafe/uncertain level."

152. On information and belief, the concentration of methomyl in the residue treater on or about August 28, 2008 exceeded 1% by weight and may have been 40% or higher.

153. Defendant's sixth critical operating parameter states, "[A] runaway methomyl decomposition reaction in the residue treater could over pressure and rupture it. The safety relief valve system will protect the treater if the concentration of Methomyl in the residue treater is 1% or less and the treater is subject to a fire or loss of cooling."

154. Pursuant to the critical operating parameters section of Defendant's SOPs, Defendant must shut off the feed of flasher bottoms if the concentration of methomyl in the residue treater exceeds 0.4% by weight.

155. On information and belief, Defendant did not shut off the feed of flasher bottoms after the concentration of methomyl in the residue treater exceeded 0.4% by weight.

156. In violation of its sixth critical operating parameter SOP, Defendant failed to monitor the concentration of methomyl in the residue treater after the concentration exceeded 0.4% by weight.

157. Defendant's sixth critical operating parameter identifies specific actions that should be taken if the concentration of methomyl in the residue treater exceeds 0.5% by weight. Pursuant to that portion of the SOPs, Defendant must, among other things:

- a. Cut back other users of the 80°C tempered water system;
- b. Clear the area around the residue treater of non-essential personnel;
- c. Add hot MIBK to the residue treater after the concentration of methomyl

in the residue treater exceeded 0.5% by weight; and

d. Notify the shift supervisor and department head.

158. On information and belief, Defendant did not cut back other users of the 80°C tempered water after the concentration of methomyl in the residue treater exceeded 0.5% by weight.

159. Defendant failed to clear the area of nonessential personnel after the concentration of methomyl in the residue treater exceeded 0.5% by weight. In fact, Defendant directed two operators to approach the residue treater after the high-pressure alarm sounded at 10:25 pm on August 28, 2008. Both operators died as a result of injuries sustained in the explosion and ensuing fire.

160. Defendant failed to add hot MIBK to the residue treater after the concentration of methomyl in the residue treater exceeded 0.5% by weight.

161. Defendant failed to notify the shift supervisor and department head after the concentration of methomyl in the residue treater exceeded 0.5% by weight.

COUNT 2

Failure to Develop Adequate Operating Procedures in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.69(a)

162. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

163. Pursuant to 40 C.F.R. § 68.69(a), the owner or operator of a stationary source subject to 40 C.F.R. part 68 “shall develop and implement written operating procedures that provide clear instructions for safely conducting activities involved in each covered process consistent with the process safety information.”

164. Defendant’s written operating procedures for the Methomyl Unit did not address all the hazards that were, or should have been, identified in Defendant’s process hazard analysis.

165. Defendant's written operating procedures for the Methomyl Unit did not provide clear instructions for safely conducting activities involved in the Methomyl Process.

166. Each of Defendant's failures to address hazards and to provide clear instructions for safely conducting activities involved in the Methomyl Process is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.69(a).

COUNT 3
Failure to Review Operating Procedures
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.69(c)

167. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

168. Pursuant to 40 C.F.R. § 68.69(c), operating procedures shall be reviewed "as often as necessary to assure that they reflect current operating practice, including changes that result from changes in process chemicals, technology, and equipment"

169. At least as of August 2008, Defendant's written operating procedures did not reflect current operating practice for the Methomyl Unit in at least the following respect: portions of the written SOPs directed operators to notify "shift supervisors" of problems, but the position of "shift supervisor" had not existed since 2005.

170. Defendant failed to adequately review its written operating procedures prior to August 28, 2008.

171. Each of Defendant's failures to review its operating procedures and to identify differences between its operating practice and its written operating procedures is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.69(c).

COUNT 4
Failure to Annually Certify Operating Procedures
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.69(c)

172. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

173. Pursuant to 40 C.F.R. § 68.69(c), the owner or operator of a stationary source subject to 40 C.F.R. part 68 must “certify annually” that its operating procedures are “current and accurate.”

174. Defendant certified its SOPs on April 27, 2004.

175. Defendant did not certify its SOPs between April 27, 2004 and at least August 29, 2008.

176. Defendant’s failure to certify its written operating procedures is a violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.69(c).

COUNT 5
Failure to Conduct Compliance Audit
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.79(a)

177. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

178. Pursuant to 40 C.F.R. § 68.79(a), the owner or operator of a process must certify, at least every three years, that it has evaluated compliance with the provisions of 40 C.F.R. part 68, subpart D, entitled “Program 3 Prevention Program” in order to ensure “that procedures and practices developed under [subpart D] are adequate and being followed.”

179. Defendant failed to detect that operators had regular practices for starting up the Methomyl Unit that differed from the written operating procedures.

180. Therefore, either Defendant did not conduct a compliance audit, or conducted a compliance audit that was not adequate to verify compliance, as required by 40 C.F.R. § 68.79(a).

181. Defendant's failure to conduct an adequate compliance audit is a violation of section 107(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.79(a).

COUNT 6
Failure to Complete an Adequate Process Hazard Analysis
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.67(e)

182. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

183. Pursuant to 40 C.F.R. § 68.67(a), the owner or operator of a process shall perform a "process hazard analysis (hazard evaluation)" on all covered processes.

184. Pursuant to 40 C.F.R. § 68.67(c), the process hazard analysis shall address, among other things, "(1) The hazards of the process; (2) The identification of any previous incident which had a likely potential for catastrophic consequences; (3) Engineering and administrative controls applicable to the hazards... (4) Consequences of failure of engineering and administrative controls; ... [and] (6) Human factors."

185. Pursuant to 40 C.F.R. § 68.67(e) the owner or operator shall establish a system to promptly address the findings and recommendations of the process hazard analysis. Among other things, the recommendations in the process hazard analysis must be documented and "resolved in a timely manner." Actions taken in connection with the process hazard analysis must be completed "as soon as possible."

186. Defendant performed a process hazard analysis for the Methomyl Process in 2004.

187. Defendant failed to comply with 40 C.F.R. § 68.67 in at least the following respects:

a. As of August 28, 2008, Defendant's process hazard analysis revalidation did not result in developing a risk sheet related to the potential for a rupture of the residue treater due to the concentration of methomyl in the residue treater, among other potential causes; and

b. As of August 28, 2008, although there were no recommendations related to the residue treater, Defendant had not fully addressed the findings and recommendations of the process hazard analysis revalidation.

188. Defendant's failures to complete an adequate process hazard analysis, to promptly address the findings and recommendations of the process hazard analysis, and to complete actions as soon as possible are violations of section 112(r)(7) of the Clean Air Act and 40 C.F.R. § 68.67.

COUNT 7

Failure to Comply with Management of Change Regulations in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.75

189. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

190. Pursuant to 40 C.F.R. § 68.75(e), if a change covered by 40 C.F.R. § 68.75 "results in a change in the operating procedures or practices required by [40 C.F.R.] § 68.69, such procedures or practices shall be updated accordingly."

191. Prior to August 28, 2008, Defendant made changes to the process technology and equipment in the Methomyl Unit, including but not limited to replacement of the electronic control system. Some or all of the changes were "covered" by 40 C.F.R. § 68.75.

192. Defendant failed to comply with 40 C.F.R. § 68.75 in at least the following respects:

a. Defendant failed to modify its operating procedures as required by 40 C.F.R. § 68.75(e); and

b. Defendant failed to train its operators regarding the changes to the process.

Failure To Modify Operating Procedures

193. Some or all of the changes necessitated review and modification of the operating procedures.

194. Defendant failed to update its operating procedures or practices prior to introducing regulated substances to the Methomyl Unit.

195. Defendant violated 40 C.F.R. § 68.75(e) by failing to update its procedures or practices before starting the unit on August 25, 2008.

Failure To Train Employees

196. Pursuant to 40 C.F.R. § 68.75(c), employees involved in operating a process whose job tasks will be affected by a covered change must be trained in the change prior to the start-up of the process.

197. Defendant failed to adequately train its employees in the operation of the new electronic control system before starting up the Methomyl Unit on August 25, 2008.

198. Defendant violated 40 C.F.R. § 68.75(c) by failing to adequately train its employees before starting the unit on August 25, 2008.

COUNT 8
Failure to Conduct Pre-startup Safety Review
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.77

199. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

200. Pursuant to 40 C.F.R. § 68.77(a), “The owner or operator shall perform a pre-startup safety review for new stationary sources and for modified stationary sources when the modification is significant enough to require a change in the process safety information.”

201. The Methomyl Unit was modified in at least the following respect: the electronic control system was replaced.

202. The modifications of the Methomyl Unit were “significant enough to require a change in the process safety information.”

203. The process safety review required by 40 C.F.R. § 68.77(a) must be complete “prior to the introduction of regulated substances to a process.” 40 C.F.R. § 68.77(b).

204. Pursuant to 40 C.F.R. § 68.77(b)(1), the pre-startup safety review must ensure that “equipment is in accordance with design specifications.”

205. At the time that the process was re-started, the equipment associated with the Methomyl Unit was not in accordance with design specifications in at least the following respects:

- a. the alarm system in the processing area was not functioning;
- b. the safety interlock for temperature was not engaged.

206. Defendant violated 40 C.F.R. § 68.77 by failing to complete an adequate pre-startup safety review that included the Methomyl Unit before introducing regulated substances to the Unit on or before August 25, 2008.

COUNT 9
Failure to Adequately Train Employees
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.71

207. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

208. Pursuant to 40 C.F.R. § 68.71, Defendant must train each employee involved in operating a process in an overview of the process and in the standard operating procedures.

209. Pursuant to 40 C.F.R. § 68.71(b), Defendant must provide refresher training as often as necessary to ensure that each employee operating a process “understands and adheres to the current operating procedures of the process.”

210. Defendant failed to ensure that its operators understood and adhered to its written operating procedures.

211. Each of Defendant’s failures to provide adequate training is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.71 for each employee who operated the Methomyl Unit from August 25, 2008 through August 28, 2008.

COUNT 10
Failure to Ensure Mechanical Integrity of Systems
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.73

212. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

213. The requirements of 40 C.F.R. § 68.73 apply to at least the following process equipment: pressure vessels, relief and vent systems and devices, and controls (including monitoring devices and sensors, alarms, and interlocks).

214. The requirements of 40 C.F.R. § 68.73 apply to the residue treater and the MIC day tank because they are “pressure vessels.”

215. The requirements of 40 C.F.R. § 68.73 apply to the relief valves, vents, control systems, process alarms, and other appurtenances of the residue treater.

216. Pursuant to 40 C.F.R. § 68.73(e), Defendant was required to “correct deficiencies in equipment that are outside acceptable limits (defined by the process safety information in [40 C.F.R.] § 68.55) before further use or in a safe and timely manner when necessary means are taken to assure safe operation.”

217. Pursuant to 40 C.F.R. § 68.73(f), Defendant was required to assure that new equipment “is suitable for the process application for which [it] will be used.”

218. Upon information and belief, Defendant failed to correct deficiencies in operating equipment and appurtenances associated with the residue treater at the Institute Plant, including but not limited to the malfunctioning process alarm system.

219. Each of Defendant’s failures to correct deficiencies in operating equipment is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.73.

COUNT 11
Failure to Ensure That Equipment Complies
With Recognized and Generally Accepted Good Engineering Practices
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.65

220. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

221. Pursuant to 40 C.F.R. § 68.65(a), the owner or operators shall complete a compilation of written process safety information, including “information pertaining to the hazards of the regulated substances used or produced by the process, information pertaining to the technology of the process, and information pertaining to the equipment of the process.”

222. Pursuant to 40 C.F.R. § 68.65(d)(1), the information pertaining to the equipment in the process shall include “design codes and standards employed.”

223. Pursuant to 40 C.F.R. § 68.65(d)(2), Defendant was required to document that its equipment complies with recognized and generally accepted good engineering practices.

224. On information and belief, Defendant did not document that its equipment in the Methomyl Unit, including but not limited to the digital control system, complied with recognized and generally accepted good engineering practices.

225. Each of Defendant’s failures to document that its equipment complied with recognized and generally accepted good engineering practices is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.65 for each such engineering practice.

COUNT 12
Failure to Develop an Adequate Emergency Response Program
in Violation of 42 U.S.C. § 7412(r)(7) and 40 C.F.R. § 68.95

226. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

227. Pursuant to 40 C.F.R. § 68.90, Defendant must comply with 40 C.F.R. § 68.95 because it operates a Program 3 process that is not exempted from the requirements of 40 C.F.R. § 68.95 by any of the provisions in 40 C.F.R. § 68.90(b).

228. Pursuant to 40 C.F.R. § 68.95, Defendant must “develop and implement an emergency response program for the purpose of protecting public health and the environment.” 40 C.F.R. § 68.95(a).

229. The emergency response program required by 40 C.F.R. § 68.95(a) must include “an emergency response plan.” 40 C.F.R. § 68.95(a)(1).

230. The emergency response plan must include “[p]rocedures for informing the public and local emergency response agencies about accidental releases.” 40 C.F.R. § 68.95(a)(1)(i).

231. Defendant failed to adequately inform the public and local emergency response agencies about the accidental release on August 28, 2008 in at least the following respects:

- a. Defendant initially refused to allow the state fire marshal to access the facility;
- b. Defendant initially refused to allow the deputy director of Kanawha County Emergency Services to access the facility;
- c. Defendant initially refused to allow the West Virginia chief of homeland security and emergency response to access the facility;
- d. Defendant failed to provide 911 operators with adequate information.

232. Defendant’s failures were the result of an inadequate plan or inadequate implementation of its plan, or both.

233. Each of Defendant’s failures to adequately inform the public and local emergency response agencies and officials is a separate violation of section 112(r)(7) of the Clean Air Act, 42 U.S.C. § 7412(r)(7), and 40 C.F.R. § 68.95.

COUNT 13
Failure To Design and Maintain a Safe Facility and
To Minimize the Consequences of Releases
in Violation of 42 U.S.C. § 7412(r)(1)

234. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

235. Pursuant to section 112(r)(1) of the Clean Air Act, 42 U.S.C. § 7412(r)(1), Defendant had a duty “to identify hazards which may result from [accidental] releases using

appropriate hazard assessment techniques, to design and maintain a safe facility taking such steps as are necessary to prevent releases, and to minimize the consequences of accidental releases which do occur.”

236. An accidental release of extremely hazardous substances, including methomyl and MIBK, occurred on August 28, 2008.

237. From at least May 2008 until at least August 28, 2008, Defendant breached its duty pursuant to section 112(r)(1) of the Clean Air Act.

238. Each breach of Defendant’s duty pursuant to section 112(r)(1) of the Act, 42 U.S.C. § 7412(r)(1), constitutes a separate violation of the Act.

RELIEF SOUGHT

239. Plaintiff incorporates by reference all other paragraphs of this Complaint as if fully set forth herein.

240. Section 113(b) of the Act, 42 U.S.C. § 7413(b), provides that any person who violates section 112(r), and its implementing regulations, shall be subject to a civil penalty.

241. Section 113(e)(2) of the Clean Air Act states “[a] penalty may be assessed for each day of violation.”

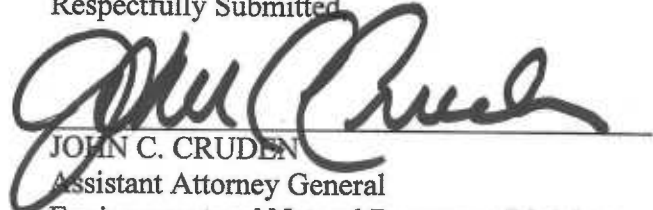
242. The statutory maximum civil penalty amounts that may be awarded under sections 112 and 113 of the Act, 42 U.S.C. §§ 7412–13, are described in paragraphs 23-24 above.

WHEREFORE, Plaintiff respectfully requests that this Court provide the following relief:

1. Order Defendant to pay a civil penalty up to the statutory maximum for each day of each violation alleged in this Complaint;
2. Award the United States its costs in this action

3. Award injunctive relief as appropriate; and
4. Grant the United States such further relief as this Court may deem just and proper.

Respectfully Submitted


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U.S. Department of Justice

Dated: September 21, 2015

s/ Daniel S. Smith
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Sept. 21, 2015

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