OFFICE OF ADJUDICATIONS

IN THE MATTER OF	:	*ORDER NOS. SRD-098 AND SRD-100*
ROBERT C. MILLER AND ALCOA COMPOSITES, INC., (BONDED TECHNOLOGY, INC., ET. AL)	:	*AUGUST 7, 2001*

FINAL DECISION

I

SUMMARY

On June 23, 1998, the Commissioner of the Department of Environmental Protection (DEP) issued Order No. SRD-100 to Robert C. Miller (Miller) and Order No. SRD-098 to Alcoa Composites, Inc. (ACI) to investigate and remediate pollution at 14 Alcap Ridge Road in Cromwell, an aluminum aircraft parts manufacturing facility (the site). *(Attachment 1)* Order No. SRD-100 alleges that respondent Miller is the owner of the site and has created or is maintaining a facility or condition that reasonably can be expected to create a source of pollution to the waters of the state. Order No. SRD-098 alleges that respondent ACI engaged in the manufacture of composite honeycomb core products and established a facility or created a condition at the site that reasonably can be expected to create a source of pollution to the waters of the state.

The orders were issued pursuant to the Commissioner's authority under the *Connecticut Water Pollution Control Act*, General Statutes §§22a-416 et seq. Following extensive prehearing processes, Miller and ACI entered into a stipulation of facts that was admitted into evidence. These facts are incorporated herein. I conducted hearings on March 26 and 27, and April 2 and 3, 2001. Post hearing briefs were submitted by June 16, 2001.

There is sufficient evidence in the record to show the existence of soil and groundwater pollution, including the presence of chromium compounds, volatile organic compounds (VOCs), and heavy metals (i.e. barium, chromium, lead, copper, zinc, and nickel). The record shows that Miller is the owner of the site and is maintaining a condition that reasonably can be expected to create a source of pollution to the waters of the state. The record also demonstrates that ACI created a condition that reasonably can be expected to create a source of pollution to the waters of the state.

I find reasonable the orders requiring Miller and ACI to undertake an investigation and perform any approved remedial actions. In addition, I find that ACI has failed to produce sufficient evidence to establish a reasonable basis on which I can apportion liability. ACI has also failed to demonstrate that the remediation standards authorized by General Statutes §22a-133k limit the enforcement provisions of §22a-432, or that the Transfer Act impacts the ability of the Commissioner to issue an order in this matter. I therefore conclude that Miller and ACI are jointly and severally liable for the pollution that exists both on and off-site, and *affirm* Order No. SRD-100 and Order No. SRD-98.[1]

[1] The Commissioner also issued the following pollution abatement orders on June 23, 1998: Order No. SRD-097 to Bonded Technology, Inc. and Order No. SRD-099 to XBTI, Inc. On November 3, 1999, the Commissioner issued three additional abatement orders: Order No. SRD-116 to Newbond, Inc.; Order No. SRD-117 to Lightbody, Inc.; and Order No. SRD-118 to Safeway Products, Inc. The orders allege that each of the respondents engaged in the manufacture of aluminum honeycomb composite structures at the site and established a facility or created a condition which reasonably can be expected to create a source of pollution to the waters of the state. All the respondents except for Lightbody, Inc. and Newbond, Inc. filed timely appeals of the orders pursuant to General

II

FINDINGS OF FACT

A

The Site

1. The site is located at 14 Alcap Ridge Road in Cromwell in a light industrial, commercial and residential area. There are small manufacturers located along Alcap Ridge Road; businesses include a health club and ice rink on Progress Drive, and an auto body shop on Sebethe Drive. The site is approximately 6.4 acres and is about one-half mile west of Interstate I-91 and one-quarter mile north of State Highway 72, and is accessible from Alcap Ridge Road. The Town of Berlin is located within four miles of the site. (Exs. DEP-76, 90; exs. ACI-13, 31)

2. The property on which the site is located is relatively flat, landscaped to the east and south, and paved to the west and north. The site is located on the crest of a small drumlin[2], approximately 130 feet above mean sea level. There are moderate to steeply dipping slopes that extend radially from the site; the slopes are wooded and/or heavily vegetated. Progress Drive and Sebethe Drive are located at the bottom of the hill to the north and east respectively, and Alcap Ridge Road extends down along the southern portion of the hill. The Mattabesset River is located at the bottom of the hill, approximately 600 feet from the site. (Exs. DEP-76, 90, 93; exs. ACI-17, 31).

Statutes §22a-436. These requests for hearings on the orders were consolidated. Safeway Products, Inc. and the Commissioner entered into a Consent Order issued as a *Final Decision* by Hearing Officer Lewis J. Miller on January 18, 2001, resolving Order SRD-118. On February 6, 2001, Hearing Officer Lewis J. Miller issued a *Final Decision on Default*, defaulting respondents Bonded Technology, Inc. and XBTI, Inc. for failure to appear, rendering final the orders against them, SRD-097 and SRD-099, respectively.

[2] Drumlin is a streamlined hill or ridge of glacial drift.

3. Soils in the drumlin are described as dense silty to gravelly loam. Overburdened material of the drumlin is mapped as till and stratified drift composed of a mixture of gravel, sand, silt, and clay. These deposits are capable of yielding small to moderate amounts of water. The depth to bedrock is approximately 185 feet below grade. (Ex. DEP-90; ex. ACI-31; test. 03-27-01, T. Riscassi, pp. 30-31)

4. A former leachfield used by Alcap Manufacturing Company[3] (ALCAP), for the disposal of industrial manufacturing process waste is located in the northwest portion of the site. The exact location, size and dimensions of this former leachfield are unknown. (Ex. DEP-90; ex. ACI-19; test. 03-27-01, D. Stokes, pp. 147-149; test. 04-02-01, R. Frigon, p. 106)

5. The original building was constructed in 1969, and is positioned in the center of the site. Two additions on the north side of the building were constructed in the early 1970s and in 1984. In 1987, additional manufacturing space was constructed on the northeast side of the building. (An employee swimming pool, which was located on the area covered by the 1987 addition, was demolished prior to construction of this space.) The most recent addition was constructed in 1989, at the southeast corner of the building. The entire building is approximately 59,375 square feet. (Exs. DEP-76, 90, 93; exs. ACI-17, 31)

6. The interior of the building consists of the following: an administrative and general office space; a quality control laboratory; an etch and clean line room; a wastewater treatment system; a degreaser; a hazardous materials shipping/staging area; a paint room; a satellite storage area; and two autoclaves. (Ex. DEP-90; ex. ACI-31; site sketch from *ARCS Site Inspection Report*, *Attachment 2*)

[3] ALCAP owned the property from April 29, 1968 to April 12, 1977 and produced hydraulic and fuel line tubing for aerospace applications. ALCAP went out of business and vacated the site in April 1977. (Exs. DEP-1, 90, 92; ex. ACI-31)

7. The etch and clean line area once housed seven tanks containing various chemical liquids used in the treatment of aluminum aircraft parts. The wastewater treatment system consists of chromium reduction tanks, pH adjustment tanks, a mixer tank, a clarifier tank and a sludge holding tank. The tanks were connected to a 5,000 gallon in-ground concrete settling tank. The settling tank was emptied, cleaned, and abandoned in place in 1992, and a new wastewater treatment system was installed. Wastewater from the etch line treatment system is pretreated and discharged to the wastewater treatment system that discharges to a settling tank and the municipal sewer system. The current degreaser was installed in 1991. Two former concrete-lined degreaser pits located below ground in the building have been filled with concrete and capped. The hazardous materials shipping/staging area has a concrete floor and measures approximately 10 feet by 15 feet. Fifty-five gallon drums containing hazardous waste, various containers and waste paint filters are stored in the hazardous materials shipping/staging area. The paint room measures approximately 15 feet by 35 feet, with an adjacent drying room. Chromium-based primer and paints, methyl ethyl ketone[4] (MEK), toluene[5], and acetone[6] were used in the paint room. The two autoclaves are used to cure parts under pressure. (Exs. DEP-68, 90, 93; ex. ACI-31; test. 04-02-01, R. Frigon, pp. 14-15)

8. A chemical storage shed is located outside and adjacent to the northwest corner of the building. It has a concrete floor; raw chemicals, waste paints, and waste solvents were stored in this area. The chemical storage shed had open berm drains prior to 1990. Also outside and

[4] Methyl ethyl ketone is a solvent used in industrial cleaning processes and is a hazardous waste. (Test., 03-27-01, D. Stokes, pp. 111, 118)

[5] Toluene is an aromatic volatile organic compound and not a naturally occurring component in groundwater. (Test. T. Riscassi, 03-26-01, p. 171)

[6] Acetone is a volatile organic compound used in industrial cleaning processes. (Ex. DEP-90; test. 03-27-01, D. Stokes, p.112)

located adjacent to the northern section of the building is a 5,000-gallon above ground storage tank that contains #2 fuel oil. (Ex. DEP-90; ex. ACI-31; *Attachment 2)*

9. The floor drains in the etch and clean line room area are connected to storm water catch basins that discharge to manmade ponds on Sebethe Drive and to the leachfield located in the northwest corner.[7] The manmade ponds drain northwest to the Mattabesset River. The floor drains were closed in 1978. They were opened and sealed with concrete in 1988, and re-sealed in 1992. The exact number and locations of all the floor drains in the building are not known. (Exs. DEP-5, 90; ex. ACI-31; test. 04-02-01, R. Frigon, pp. 190-192)

10. The site is served by municipal water and all discharges, including processed wastewater, are connected to the municipal sewer system. An on-site groundwater well was abandoned and capped sometime in 1988. (Exs. DEP-75, 90; ex. ACI-31)

11. The groundwater beneath the site is classified by the DEP as GB/GA; the groundwater that surrounds the area is classified as GA.[8] Public water supply wells and private drinking water wells are located within four miles of the site. Private residences are located on Oak Road, approximately 625 feet south/southeast of the site. The immediate area surrounding the site and the area west of Route 3 in Cromwell are served mainly by private drinking water wells. The remaining population of Cromwell is served by the Gardener Wells located outside

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[7] One catch basin is located on the northern side of the facility, and several catch basins are located on the southwestern side of the building. (Ex. DEP-90; ex. ACI-31)

[8] Water quality classifications are based on Water Quality Standards and Criteria (WQS). The WQS set an overall policy for management of water quality in accordance with General Statutes §22a-426 that requires the Commissioner to adopt standards of water quality for all the state's waters. The GB classification is assigned to groundwaters within highly urbanized areas of intense industrial activity and where public water supply is available. The GB rating indicates that groundwater is known or presumed to be in a degraded condition. The designated use is for industrial process waters and cooling waters; the water is presumed not to be suitable for direct human consumption without treatment. The GA classification is assigned to those areas of existing private and potential public or private water supply wells; the water is presumed suitable for direct human consumption without the need for treatment. *Water Quality Standards,* Connecticut Department of Environmental Protection, April, 1996. (Exs. DEP-75, 90; exs. ACI-15, 31)

the four mile radius of the site. Approximately 95 percent of the Town of Berlin receives its water from a public water supply. The Swede Wells, which provide about 90 percent of this supply, are located approximately 3.3 miles west of the site. (Exs. DEP-75, 90; exs. ACI-15, 31)

B

History of Ownership and Tenancy

12. ALCAP purchased the property on April 29, 1968. On August 25, 1977, ALCAP, as debtor in possession, transferred the property to Middletown Industrial Development Corporation, which leased the site to Safeway Products, Inc. (Safeway), a subsidiary of Raymond Industries. Safeway manufactured aluminum aircraft parts from 1977 to 1980. (Exs. DEP-1, 90, 92; ex. ACI-31; *Site Owner and Operator History*, *Attachment 3)*

13. Miller was the President of Safeway and in charge of its Cromwell Division that operated at the site. On December 23, 1980, Miller purchased the property and the Cromwell Division, and continued operations under the name Bonded Technology, Inc., which was later changed to XBTI, Inc.[9] From its formation in 1980 until it vacated the site on July 19, 1990, XBTI manufactured composite honeycomb products at the site. (Exs. DEP-1, 2, 90, 92; ex. ACI-31; test. 04-03-01, R. Miller, pp. 40-44)

14. ACI purchased the business and all the non-real estate assets of XBTI and on July 19, 1990, began operations under the name of Bonded Technology, Division of ALCOA Composites, Inc. ACI leased the site from Miller until December 1993, using the same basic processes as XBTI. Miller worked for ACI from July 1990 to late 1991. (Exs. DEP-1, 71, 90; ex. ACI-31; test. 04-02-01, R. Miller, pp. 40-42)

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[9] For ease of reference this entity will be referred to as XBTI.

15. On March 9, 1994, Miller's son Robert E. Miller formed Bonded Technology, Inc. (BTI) and Newbond, Inc. (Newbond). On March 10, 1994, BTI purchased the non-real estate assets of ACI. On April 20, 1994, the respondent Robert C. Miller formed Lightbody Technology, Inc. (Lightbody). Since April 1994, BTI, Newbond, and Lightbody have occupied the site pursuant to an oral lease with Miller, and have engaged in the manufacture of composite structures. Miller is the President of Lightbody and continues to work at the site. (Exs. DEP-1, 90; exs. ACI-23, 31; *Attachment 3*)

C

Miller: XBTI Operations at the Site

16. Miller is the owner of the site and has owned the site since December 23, 1980. Miller was the President of XBTI from its formation in 1980 to its sale to ACI in 1990. (Exs. DEP-1, 90, 92; ex. ACI-31; test. 04-03-01, R. Miller, p. 38)

17. XBTI was a registered hazardous waste large quantity generator. It used spent solvents, trichloroethylene[10] (TCE), 1,1,1-trichloroethane[11] (TCA), waste acid, waste paint and thinners, paint filters and metal hydroxide sludge in its manufacture of aircraft parts. The manufacturing process involved coating lightweight honeycomb material (aluminum) with fiberglass and composites that were chemically treated, degreased and treated in an acid etch process[12] and spray painting the aluminum. The processes also included: machining; cutting;

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[10] Trichloroethylene is a volatile organic compound used in industrial degreasing operations. (Ex. DEP-90)

[11] Trichloroethane is a volatile organic compound used in industrial degreasing operations and is not a naturally occurring component in groundwater. (Test. 03-26-01, T. Riscassi, p. 171)

[12] The acid etch process involves the placement of metal in an acid solution to either change its surface coating so that it is less likely to oxidize or rust, give it a shiny appearance, or "pit it" on a microscopic level to accept some type of coating. (Test. 03-27-01, D. Stokes, p. 97)

drilling; pressing; milling and grinding; degreasing; etching; cleaning; compositing; sanding; printing and painting (using chrome based primer and paint, paint filters and MEK and toluene); wiping down (using MEK or acetone); testing; and tooling. (Exs. DEP-1, 13, 22, 26, 76, 90; ex. ACI-31; test. 03-27-01, D. Stokes, pp. 96-98, 118, 141)

18. From February 20 to 22, 1982, XBTI spilled approximately 400 gallons of chemical etch solution[13] into the floor drains at the facility that released into the public sewer system. This spill was reported to the DEP on February 23, 1982. (Exs. DEP-8, 9)

19. On June 12, 1982, the DEP conducted a site inspection of the wastewater treatment system and the industrial processes and chemical storage and handling practices of XBTI. The following violations were observed: wastewater from boiler blow-down[14] was being discharged into a settling tank and overflowing into the sanitary sewer; there was no access port to the settling tank to take samples of wastewater, and XBTI had failed to collect and submit wastewater sampling results to the DEP; solvents and paint thinners were stored outside on a concrete pad that did not have a dike around it to contain spills and prevent discharges to ground surface; an open floor drain in the waste treatment area served as an avenue for untreated wastewater to discharge into the sanitary sewer; and finally, fuel oil spillage was visible around an outside oil tank located in the rear of the building. (Ex. DEP-10; test. 03-26-01, K. Majors, pp. 54-58, 139-140)

20. The following day, the DEP forwarded a letter to XBTI that stated, "XBTI must comply with their existing wastewater discharge permit and state rules and regulations" and

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[13] The solution included arsenic collusion, that primarily contains hexavalent chromium, a toxic pollutant. (Test. 03-26-01, K. Majors, pp. 63)

[14] Boiler blow-down is a maintenance procedure in which processed wastewater is discharged from the boiler and replaced with cleaner water. (Test. 03-26-01, K. Majors, pp. 98-100)

suggested that XBTI do the following: place a berm around the outside enclosure to contain spillage off the pad; seal the floor drain to prevent untreated wastewater from releasing into the sewer; and excavate and remove contaminated soils from the fuel oil spillage. (Ex. DEP-10; test. 03-26-01, K. Majors, pp. 58-60, 112-113)

21. XBTI operated under a wastewater discharge permit issued to Safeway (Safeway permit) from December 1980 to February 27, 1985. XBTI failed to file a transfer of the Safeway permit and when the permit expired, operated without a metal wastewater discharge permit in violation of §22a-430 of the General Statutes and §22a-430-4 of the Regulations of Connecticut State Agencies. (Exs. DEP-2, 4, 14, 15; test. 03-26-01, K. Majors, pp. 66-68, 118, 145)

22. In September 1988, the DEP received a complaint from the Zoning Enforcement Officer for the Town of Cromwell Sewer Department who observed a yellow liquid in the municipal storm drain outside of the XBTI facility. DEP conducted a site investigation and took one pretreated metal finishing wastewater sample being discharged to the municipal sewer system and two surface water samples (one from a catch basin located on-site and one from a catch basin located on Sebethe Drive). The samples were analyzed for hexavalent chromium[15], total chromium, iron, aluminum and pH. High concentrations of hexavalent chromium, total chromium, iron, and aluminum were detected in all three samples at levels ranging from 1.7 milligrams per liter (mg/L) (iron) to 240 mg/L (total chromium).[16] The inspection determined that untreated wastewater had been released into the storm drain line on Sebethe Drive and into the wetlands. XBTI was discharging wastewater without a permit. The DEP instructed XBTI to

[15] Under the expired Safeway permit, XBTI would have been required to remove hexavalent chromium via the wastewater treatment system before discharging it to the sanitary sewer. (Test. 03-26-01, K. Major, pp. 63-64)

[16] The drinking water standard for chrome is 0.05 parts per million. (Ex. DEP-70)

start monitoring its wastewater discharges and file an application for a discharge permit as soon as possible. (Exs. DEP-11, 12, 13, 90; test. 03-26-01, K. Majors, pp. 61-68, 115-116, 142-144)

23. On September 30, 1988, the DEP conducted a site inspection at XBTI and observed the following conditions: rags soaked with MEK; chrome waste paint filters; the disposal of sanding debris and empty cans of liquid waste paint in an outside dumpster; liquid waste paints, MEK, toluene and acetone had been collected by employees and bulked together and poured into unlabeled 55-gallon drums that were stored outside the hazardous waste storage area on a cracked concrete base; and spilled oil in the maintenance shop and autoclave area. Other hazardous waste handling violations noted were: failure to properly identify and classify their hazardous waste; failure to list all process-generated hazardous waste; failure to maintain proper hazardous waste determination records; shipping of hazardous waste off-site as non-hazardous waste; failure to maintain manifests for shipping of hazardous waste off-site; failure to label and date drums containing hazardous waste; failure to perform daily inspection of tanks and maintain logs; failure to perform weekly inspection of containers and tanks and maintain logs; failure to provide training to employees in the handling of hazardous wastes, including emergency response procedures regarding spills, fire, explosions, chemical usage and occupational hazards; and failure to maintain employee training records. (Ex. DEP-13; test. 03-27-01, D. Stokes pp. 100-101, 110, 112-114, 127, 150)

24. In November 1988, the DEP issued Administrative Order HM-557 to XBTI for past hazardous waste handling violations. The order required that the current hazardous waste handling procedures comply with the Connecticut Hazardous Waste Management Regulations under the provisions of Chapter 439 and 446k of the General Statutes. (Exs. DEP-22, 90; ex. ACI-31; test. 03-27-01, D. Stokes, p. 117)

25. On November 1, 1989, the DEP conducted a second site inspection during which it observed that many of the past hazardous waste handling violations noted one year earlier still existed. Rags soaked with MEK were again noted, as was the disposal of residual epoxy paint cans in an on-site dumpster. Also observed: co-mingled waste paints and solvents stored in 5-gallon pails that had been transferred into 55-gallon drums were stored in the main hazardous waste storage area; unlabeled 55-gallon drums and 30-gallon containers containing waste were stored outdoors on the ground exposed to rain; the cement berm in the outside hazardous material storage area was cracked; and open drains were observed in the secondary containment area and the outside hazardous waste storage area. (Ex. DEP-22; test. 03-27-01, D. Stokes, pp. 117-127)

26. Rainwater coming into contact with open dumpsters containing MEK rags, residual epoxy cans and liquid wastes could release hazardous waste contaminants into the soils and pollute the groundwater. Rainwater that accumulated in the hazardous waste storage area could pick up contaminants spilled on the concrete base and run-off. Rainfall would promote the escape of contaminants from the dumpster and create a source area of contamination. (Ex. DEP-22; test. 03-27-01, D. Stokes, 116-127; test. 04-02-01, R. Frigon, p. 21)

27. In the late 1980s, the case was referred to the Office of the Attorney General. An action against XBTI for discharging without a water permit and other violations resulted in a stipulated judgment under which XBTI agreed to pay a civil penalty. A discharge metal finishing wastewater permit was subsequently issued to XBTI on April 6, 1990. (Exs. DEP-10, 15, 20; test. 03-26-01, K. Majors, pp. 87, 125-127, 134-135)

28. On September 20, 1990, the DEP issued a Notice of Violation (NOV) to XBTI that included the following violations: exceeding total chromium and hexavalent chromium

wastewater effluent limitations; failure to submit discharge monitoring sampling reports; and unpermitted releases of metal finishing wastewater to wetlands adjacent to the facility off Alcap Ridge Road. (Ex. DEP 25; test. 03-26-01, K. Majors, pp. 81-85)

D

ACI Operations At The Site

29. Under a lease agreement with Miller, ACI operated at the site from July 19, 1990 to December 31, 1993, continuing the same manufacturing activities as XBTI. (Exs. DEP-27, 90, 92, 93; exs. ACI-4, 31; test. 03-26-01, K. Majors, pp. 85-87)

30. One week after assuming operations, an ACI Regional Environmental Manager conducted a mini-site assessment and noted the following environmental problems from current and past operations: the discharge of chromium from the etch line treatment system in excess of the limits of its water discharge permit; lack of personnel training in hazardous waste handling procedures; emission of VOCs and other air pollutants from the prime booth, paint booth and etch line directly into the atmosphere without pollution control equipment and air permits; disposal of epoxy resins and paint filters in the dumpster; failure to investigate existing degreaser pits for leaks and contamination; potential soil and groundwater contamination avenues of chlorinated degreasing solvents presented by past, present and planned degreasing operations; lack of drawings and information on the location, interconnection and discharge connections to the sewer system; leaks and leak monitoring of a recently installed 5,000-gallon fiberglass fuel tank and associated piping; and lack of record keeping at the facility. (Ex. DEP-28; test. 04-02-01, R. Frigon, pp. 13-25)

31. Various ACI internal inspection reports show the following occurred between September 5, 1990 and June 7, 1991: corrosion and leaking of the etch line tank; inadequate freeboard[17] in the wastewater treatment sump[18]; "tank level alarms response function unacceptable"[19]; wastewater on the floor in the final staging area in etch line room; a non-functioning hexavalent chromium tank alarm; and malfunctioning pH/ORP indicators [20]. (Exs. DEP-29-53, 68; test. 04-02-01, R. Frigon, pp. 27-48, 58)

32. There are potential pathways for wastewater contaminants to reach the subsurface. Cracks in the concrete etch and clean line floor could provide a direct pathway for subsurface contamination. Even where there are no cracks, the porous nature of concrete permits wastewater spills to penetrate through it which could cause contamination below the subsurface. The floor drains that were improperly sealed in 1988 and re-sealed in 1992 were also a potential pathway. (Exs. DEP-29-53, 68; test. R. Frigon, 04-02-01, pp. 27-48, 58)

33. ACI employees noticed that the liquid levels in the No. 1 concrete treatment sump containing hexavalent chromium were dropping overnight. In December 1990, an inspection of the sump revealed that the concrete floor and sidewalls were badly eroded. In July 1991, the sump was neutralized; the concrete was repaired and coated, and a polypropylene liner was installed as a temporary fix to keep operations running. (Exs. DEP-69, 70; ex. ACI-9; test. R. Frigon, 04-02-01, pp. 58-59, 170)

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[17] Freeboard is the distance from the wastewater level to the top of the sump tank. If there is inadequate freeboard, the sump may overflow. (Test. 04-02-01, R. Frigon, p. 30)

[18] There are seven tanks in the spill sump area that collect wastewater from the etch line. The wastewater from those tanks is discharged for treatment through the wastewater treatment system. (Test. 04-02-01, R. Frigon, p. 28)

[19] Tank alarms were not functioning properly. The purpose of the tank alarms is to warn employees that tank levels are reaching capacity and overflowing. (Exs. DEP-29 – 53; test. 04-02-01, R. Frigon, pp. 28-29, 41-42)

[20] If wastewater is not within optimum pH range at the treatment sump, the treatment system may be ineffective. (Test. 04-02-01, R. Frigon, pp. 31-32)

34. The etch line was considered the heart of ACI operations, and to shut down the etch line would shut down the company. Therefore, it took one year before ACI made repairs to the No. 1 treatment sump. During that year, wastewater containing hexavalent chromium penetrated through the cracks and floor of this sump causing subsurface contamination. (Exs. DEP-69, 70; test. R. Frigon, 04-02-01, pp. 58-60, 70, 79, 170)

35. On September 23, 1991, during routine maintenance of the boiler, ACI employees observed yellow discoloration of the boiler blow-down wastewater. Samples taken of the main boiler blow-down wastewater revealed unacceptable high levels of hexavalent chromium and total chrome. Water samples taken from a discharge pipe located in the courtyard detected hexavalent chromium and total chrome. The boiler system was contaminated with hexavalent chromium from a leak in the process tank piping that connected to the boiler that heated the tanks. Boiler blow-down water contaminated with hexavalent chromium and total chrome was continuously discharged into the center courtyard and municipal sewer in violation of ACI's water discharge permit. (Exs. DEP-61-64, 66, 90, 93; ex. ACI-31; test. 03-26-01, K. Majors, pp. 88-92, 95, 100-104)

36. ACI instructed its employees to give environmental issues the minimum effort necessary. Employees were directed to spend less time on environmental activities and only address the absolutely critical concerns, devoting most of their major efforts toward other assignments. (Ex. DEP-67; ex. ACI-9; test. 04-02-01, R. Frigon, pp. 51-53)

37. In August 1991, ACI retained Consulting Environmental Engineers, Inc. (CEE) to conduct soil and groundwater sampling at the site. Soil samples were taken inside the plant location at the two vapor degreaser pits, and at one spill containment sump. Groundwater samples were taken from three groundwater-monitoring wells (CEE-1, CEE-2 and CEE-3), two

installed in the former degreaser pits and one in the courtyard near the former settling tank. Soil sample analysis detected TCE, 1,2 dichloroethane (DCA), hexavalent chromium and total chromium. Groundwater sample analysis detected TCE, DCA, 1,1 dichloroethylene (DCE), tetrachloroethylene (PCE), chloroform, hexavalent chromium and total chrome. The degree of groundwater and soil contamination by both hexavalent chrome and primarily TCE at the site was determined to be significant and well above drinking water standards[21]. (Exs. DEP-65, 67-70, 90, 93; exs. ACI-6, 8, 31; test. 03-27-01, D. Stokes, pp.128-129; test. 04-02-01, R. Frigon, pp. 49-50, 53-57, 60-63, 65-67, 69-70)

38. The detection of hexavalent chrome[22] confirmed that ACI had discharged untreated wastewater bearing hexavalent chromium into the subsurface from spills, overflows and releases from the etch and clean line room operations. VOCs detected in soil and water samples confirm contamination from the two solvent degreaser pits. (Exs. DEP-69-71, 90; test. 04-02-01, R. Frigon, pp. 61-63, 65-67, 69-70)

39. CEE recommended to ACI that additional groundwater monitoring wells needed to be located downgradient and upgradient of wells CEE-1, CEE-2 and CEE-3 as part of its hydrogeologic study of the site: (1) to identify the lateral and vertical extent of the VOC and chrome plume; (2) to determine site stratigraphy[23]; (3) to establish the geometry of the uppermost aquifer; (4) to identify potential confining layers to vertical groundwater flow; and (5) to calculate aquifer parameters such as hydraulic conductivity and the rate and direction of

[21] The state and federal soil clean-up standard in a GA/GB area for Toxicity Characteristic Leaching Procedure (TCLP) chrome is 0.05 parts per million. Chrome contaminated soils based on TCLP analysis exceeded the state and federal drinking water standard at a level that was subject to clean-up action. (Ex. DEP-68; test. 04-02-01, R. Frigon, pp. 56-57)

[22] Hexavalent chromium is the primary valence stage used in wastewater treatment operations, and is more toxic than other valence stages of chromium. (Test. 04-02-01, R. Frigon, p. 70)

[23] Stratigraphy is the study of rock strata, particularly of their distribution, deposition, and age.

contaminant migration. In addition, CEE recommended that all potential off-site receptors to groundwater within a half-mile radius be determined. These receptors included water supply wells and surface bodies of water. (Ex. ACI-8; test. 04-02-01, R. Frigon, p. 67)

40. On January 8, 1992, ACI notified the DEP that soil and groundwater contamination from chromium compounds and chlorinated VOCs were discovered on the site. (Ex. DEP-71; ex. ACI-9)

41. ACI hired the environmental consulting firm of Legette, Brashears & Graham, Inc. (LGB) to define the nature and extent of contamination on the site. In April 1992, LBG conducted a soil vapor survey to detect subsurface VOC contamination.[24] (Ex. DEP-75; test. 04-02-01, R. Lamonica, p. 209)

42. The results of the vapor survey detected: high concentrations of a TCE plume northwest of the building (near the former leachfield and chemical storage area) and to a lesser extent, directly north of the site; PCE contamination in the parking lot off the northwest corner of the site building (downgradient of the hazardous material shipping and staging area, chemical storage area and former degreaser pit); TCA contamination in locations north of the building (potential sources identified as the former degreaser pit and satellite storage area/paint room), northwest of the building (in an area with TCE contamination), south of the building in the parking lot and southwest of the building in a grassed area. (Exs. DEP-75, 93; ACI-12; test. 04-02-01, R. Frigon, pp. 90-94, R. Lamonica, pp. 217-220)

43. LBG installed monitoring wells and took soil borings at various depths on-site, targeting areas that had the highest vapor concentrations. Initially the water discharge from all of

[24] The detection of VOCs in soil vapor indicates that there is a source area location either from a direct spill or groundwater that is highly saturated. (Test. 04-02-01, R. Frigon, pp. 87-88)

the wells had a red discoloration, with the exception of three wells that had a clear discharge. A strong odor of volatile organic compounds was detected in three additional wells. The water sample taken from one of these wells was slightly viscous, indicating significant quantities of VOCs. (Ex. DEP-75; test. 04-02-01, R. Frigon, pp. 97-98, R. Lamonica, p.212)

44. Groundwater samples indicated the presence of TCE, TCA, PCE, DCA, DCE, trans-1,2-dichloroethylene, methylene chloride, vinyl chloride[25], total chromium and hexavalent chromium.[26] Significant quantities of TCE were detected in samples from wells located northwest of the facility, inside the building and in the former degreaser pit. Chromium levels in excess of drinking water standards were detected in the groundwater from a monitoring well in the etch and clean line, and in a monitoring well located outside in the parking lot. (Exs. DEP-75, *Table 5,* DEP-90, *Table 10;* ex. ACI-31; test. 04-03-01, R. Lamonica, pp. 217-219)

45. Soil boring samples indicated the presence of TCE, TCA, PCE, DCA, vinyl chloride, methylene chloride, carbon tetrachloride and chromium. TCE was the most prevalent compound detected on-site with the greatest concentrations in one well at 21.081 milligrams per kilogram. Chromium in excess of the Connecticut Public Drinking Water Standards was detected in soil samples collected in the etch room. A general inspection of the etch room revealed deterioration of the concrete floor between the process tanks . (Ex. DEP-75, *Table 4*; test. 04-02-01, R. Lamonica, pp. 217-218)

46. Total chromium and seven VOCs were detected in soil samples obtained from the former leachfield. The LBG report confirmed chromium contamination in the soil beneath the building and two plumes of VOCs, one originating from the former degreaser pits located on the

[25] Vinyl chloride is a breakdown component of either PCE, TCE or 1,1,1 TCA. (Test. 04-02-01, R. Frigon, p. 99)

[26] Dichloroethane, vinyl chloride, methylene chloride and carbon tetrachloride are breakdown products of either TCE, TCA or PCE. (Exs. DEP-74, 75; test. 04-02-01, R. Frigon, pp. 81-82, 86-87, 92)

western portion of the site, and a second plume located northwest of the waste storage area. Groundwater testing results showed that chromium levels exceeded drinking water standards. (Exs. DEP-74, 75; test. 04-02-01, R. Frigon, pp. 81-82, 86-87, 92)

47. An internal ACI memo dated January 31, 1992 outlined the history of solvent usage at the site by XBTI and ACI. The memo stated that TCE was used in 1981 and 1982, and the last shipment of TCE to XBTI was on October 26, 1982. Since April 7, 1983, TCA was used exclusively at the site. ACI used TCA recycled solvent[27] and not TCA analytical grade solvent[28]. Recycled TCA contained TCE and various other chemical impurities that have been found in soil and groundwater at the site. (Ex. ACI-10; test, 03-27-01, D. Stokes, pp. 186-189; test. 04-02-01, R. Frigon, pp. 129-131)

48. LBG recommended ACI not remediate the TCA and chromium groundwater contamination because the levels detected were below those levels at which remediation is required. LBG also recommended that TCE contamination not be examined because records reviewed indicated that TCE had not been used by ACI during its tenancy at the site. LBG was not able to gain access to install off-site wells. Based upon the results of this limited investigation, it determined that there were no impacts on any potential off-site receptors resulting from activities at the site. (Ex. DEP-75; test. 04-02-01, R. Lamonica, pp. 220, 230-231)

49. On July 23, 1992, ACI hired Environmental Waste Technology, Inc. to remove a 6,000-gallon underground storage tank and install a 5,000-gallon above ground storage tank.

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[27] A recycled solvent is a solvent that has been used, distilled, and then sold again as a product. The process of recycling chlorinated solvents involves collecting a customer's hazardous waste, bulking it all together, and distilling it. The clean portion coming off the distill is then repackaged and sold to customers. The hazardous waste the customer sends in to be recycled contains all kinds of materials. The solvent recovery process does not produce a pristine return and contains other chemical impurities. (Test. 03-27-01, D. Stokes, pp. 135-136)

[28] A product that is analytical grade is 100% pure. (Test. 03-27-01, D. Stokes, p. 128)

EWT also removed soils contaminated with #2 fuel oil that were discovered during the excavation of the tank. (Ex. DEP-90; exs. ACI-13, 31)

50. In October 1992, the 5,000-gallon concrete settling tank located in the courtyard was abandoned in place. EWT removed overburdened soil, sealed the connecting inlet and outlet pipes, pumped out the residual sludge, scraped and rinsed the inside walls, and pressure washed the interior. Two soil samples taken from beneath the settling tank detected barium[29], chromium, copper, zinc, lead and nickel. Barium was the only metal detected at levels that are subject to regulation. (Ex. DEP-90, ex. ACI-31; test. 04-02-01, R. Frigon, pp. 124-125)

51. On July 12, 1993, the DEP collected six groundwater samples from private drinking water wells located on Oak Road in Cromwell[30]. The samples were analyzed by the Connecticut Department of Health for the presence of halogenated VOCs, including various cleaning solvents used by industry and aromatic VOCs, including constituents found in fuel oil and gasoline. One sample taken from 17 Oak Road detected concentrations of TCA, toluene, and chloroform[31] that were below the drinking water standards. The DEP determined that the releases from the site were the source of the contaminants detected in the residential well. (Exs. DEP-31, 79, 90; test. 03-26-01, T. Riscassi, pp. 170-173; 03-27-01, p. 9, 16-17, 87; *Offsite Sample Locations,* DEP-90, *Attachment 4*)

52. In September and December 1993, OHM Remediation Services Corporation (OHM) performed a limited remedial action at the site on behalf of Miller and ACI who agreed

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[29] Barium is a metal associated with metal manufacturing and process type operation. (Test. 04-02-01, R. Frigon, p. 124)

[30] Oak Road is located approximately 625 feet south/southwest downgradient from the site. (Ex. DEP-90, test. T. Riscassi, p. 167)

[31] Chloroform is a trihalomethane, a chemical compound and not a naturally occurring component found in groundwater. (Test. 03-26-01, T. Riscassi, p. 171)

to split the costs. The remedial actions consisted of: removal of the etch and clean line tanks; removal of the concrete floor in the etch and clean line room; and removal of chromium contaminated soils beneath the building slab in the area of the etch and clean line room. Excavation activities ceased when all the soils were removed from accessible areas. Excavation of contaminated soils beneath the building could not continue in a lateral direction and expanded to the maximum limits possible without compromising the structural integrity of the building. The remediation did not remove all the chromium contaminated soils at the site and was limited primarily to the inside of the building. (Exs. DEP-90, 93; exs. ACI-20, 31; test. 04-02-01, R. Frigon, pp. 117-119; test. 04-03-01, R. Miller, p. 11)

53. Potable water service has not been extended to the residential well that was impacted. The six residential wells located south of the site continue to be monitored annually by the DEP. Subsequent testing in 1995 confirmed continuing contamination in the residential well located on 17 Oak Road. The detection of MBTE (an additive typically found in gasoline) has been detected in one of the residential wells. (Test. 03-27-01, T. Riscassi, pp. 86-87; test. 04-02-01, R. Frigon, 175-176, 180)

E

Present Condition of Site

54. Despite the voluntary investigations and limited remedial action of ACI and Miller, the extent and degree of groundwater contamination on and emanating from the site has not been fully revealed and characterized. The LBG report prepared on behalf of ACI purporting to characterize the nature and extent of contamination on-site is inadequate and contains data gaps. Many of the potential source areas of contamination on the site were not investigated by

LBG, and there has been no testing or sampling conducted since the LBG report. The potential source areas of contamination that were not investigated include:

- the hazardous materials shipping/staging area;
- the satellite storage area;
- the chemical storage area;
- the building courtyard;
- the paint room, the autoclaves, the 5,000 gallon above ground storage tank, the soil beneath the former underground storage tank, and the leachfield;
- the septic system in front of the facility;
- the catch basins on-site;
- the underground piping and sewer system on the site;
- the former inground swimming pool on the north side of the building;
- the former well located on the site;
- the floor drains located in the etch and clean line room; and
- the man made pond located approximately three-quarters of a mile away from the site.

(Exs. DEP-28, 75; test. 04-02-01, R. Frigon, pp. 104-117, 191-192, R. Lamonica, pp. 242-244, 248)

55. A complete investigation at the site has not been performed and no assessment has been made as to what contaminates at the site must be remediated. There is confirmed soil and groundwater contamination located in the former leachfield area, but information is lacking on the full extent of the horizontal and vertical contamination. The concentration of total chromium in the monitoring well located within the former leachfield indicates that further

assessment of chromium is required. (Exs. DEP-68 through 70, 75, 90; test. 04-02-01, R. Frigon, pp. 54-69, 71-72, 106, 123, 185)

56. No investigation was performed to determine the full degree and extent of barium contamination beneath the concrete settling tank and an investigation is necessary. (Ex. DEP-90; ex. ACI-31; test. 04-02-01, R. Frigon, pp. 124-125)

57. A significant TCE plume and chrome plume exist below the building, the vertical and lateral extent of which are not known. In order to characterize the lateral and vertical extent of the plumes additional monitoring wells need to be installed. The number of wells currently installed on-site is inadequate. There are no off-site monitoring wells and, given the potential flow patterns and the proximity of potential receptors, off-site monitoring wells would further define the extent of groundwater plumes. (Exs. DEP-69, 90; ex. ACI-31; test. 04-02-01, R. Frigon, pp. 61-67, 69-70, 106)

58. The soil vapor points to the southwest and southeast indicate a TCA plume or potential source of an area of TCA at these locations. The wells installed in these areas by LBG are at shallow depths and were sampled only once. Re-sampling of those wells is required to evaluate their construction and make sure that the zone of groundwater is correctly identified and sampled. (Ex. DEP-75; test. 04-02-01, R. Frigon, p.106)

59. The detection of approximately 1 part per million of TCE upgradient east of the vapor degreaser cannot be explained based on current information. Groundwater flow has not consistently been northeast to southwest. The hydrology[32] of the site is complex and unknown. Given the nature of TCE as a dense non-aqueous phase compound, it is possible that TCE is migrating along clay or silty layers at the site. Site stratigraphy and hydrolgeologic relationships

[32] Hydrology is the scientific study of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

are not known. Groundwater discharge has been mapped as flowing radially from the center of the site. However, there is very little data to support that in fact groundwater is flowing radially from the site. Groundwater contaminants have a tendency to migrate in preferential flows in a drumlin since the soil behaves like rock material that is fractured or is planing. (Ex. ACI-7; test. 03-27-01, T. Riscassi, pp. 30-31; test. 04-02-01, R. Frigon, p. 64)

60. Details of the underground plumbing and piping of the building configuration are unknown. This plumbing and piping could serve as potential preferential pathways for contaminant migration. (Ex. DEP-28; test. 04-02-01, R. Frigon, pp. 21-22)

61. No investigation was performed to determine the exact location of the on-site dumpster containing hazardous wastes, including MEK and paint filters. There has been no testing for MEK contamination. (Test. 04-02-01, R. Frigon, p. 111-112)

F

Transfer Act Filings

62. On May 13, 1993, Miller in his capacity of President of XBTI, executed a Connecticut Transfer Act Form III[33] filing identifying XBTI as the party responsible for investigating and remediating the site pursuant to General Statutes §22a-134a. This filing was in connection with the sale of business assets from XBTI to ACI in 1990. (Ex. ACI-18)

63. On March 10, 1994, the Treasurer of BTI executed a Transfer Act Form III filing, identifying BTI as the party responsible for investigating and remediating the site. This filing

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[33] Form III is defined in §22a-134 as a written certification signed by a certifying party on a form provided by the Commissioner, which certification states that (A) discharge, spillage, uncontrolled loss, seepage or filtration of hazardous waste has occurred at the parcel or the environmental conditions at the parcel are unknown, and (B) that the person signing the certification agrees to investigate the parcel in accordance with prevailing standards and guidelines and to remediate the parcel in accordance with the remediation standards.

was in connection with the change in ownership (share of controlling share of assets) regarding the sale and purchase of assets from ACI to BTI. (Exs. ACI-23, 24)

III

CONCLUSIONS OF LAW

A

Introduction

The orders that are the subject of this appeal were issued pursuant to the Commissioner's authority under the *Connecticut Water Pollution Control Act* (CWPCA), General Statutes §§22a-416 et seq. At the time of its enactment in 1967, legislators referred to the CWPCA as "a declaration of war against water pollution*." Starr v. Commissioner of Environmental Protection,* 226 Conn. 358, 376 (1993). The legislative sentiment regarding the importance of the CWPCA is crystallized in its declaration of policy set forth in §22a-422 that provides:

> It is found and declared that the pollution of the waters of the state is inimical to the public health, safety and welfare of the inhabitants of the state, is a public nuisance and is harmful to wildlife, fish and aquatic life and impairs domestic, agricultural, industrial, recreational and other legitimate beneficial uses of water, and that the use of public funds and the granting of tax exemptions for the purpose of controlling and eliminating such pollution is a public use and purpose for which public moneys may be expended and tax exemptions granted, and the necessity and public interest for the enactment of this chapter and the elimination of pollution is hereby declared as a matter of legislative determination.

The CWPCA "arose from the ashes of several previous failures to arm the agency charged with enforcing Connecticut's statutes designed to combat water pollution with adequate powers and procedures to solve the state's pollution problems." *Starr v. Commissioner of Environmental Protection,* supra, 226 Conn. 378. The Connecticut legislature has granted the Department broad authority to enforce environmental laws and the courts have held that the

Department has the discretion to choose the appropriate enforcement action to remedy pollution. Id. at 382.

B

The Orders Are Reasonable Under §§22a-432 and 22a-433

The Commissioner's orders require that Miller and ACI each: investigate the extent and degree of soil, groundwater and surface water pollution at the site and the potential impact of such wastes on human health and the environment both on-site and off-site; and based on the results of these investigations, propose and undertake approved remedial actions to abate such pollution. Remedial orders must be reasonably related to the substantive violations that are alleged in the order. *Cadlerock Properties Joint Venture, L.P. v. Commissioner of Environmental Protection and The Department of Environmental Protection*, 1999 Ct. Sup. 6267, 6275 (May 5, 1999), aff'd, 253 Conn. 661 (2000). See also *Connecticut Building Wrecking Co. v. Carothers,* 218 Conn. 580, 605 (1991*)*.

The record clearly demonstrates that further investigation and remedial action is necessary to abate pollution at the site. Testing by DEP, CEE and LBG confirm that soil and groundwater pollution is present on the site. A private drinking water well downgradient of the site has been impacted from pollution emanating from the site. Because the full extent and degree of that pollution is presently unknown, a comprehensive investigation is required to fully characterize the degree and extent of the pollution. The orders issued to Miller and ACI to investigate and abate any pollution at the site are reasonably related to the alleged substantive violations that underlie those orders.

1

The Conditions at the Site Constitute Pollution as Defined in §22a-423 of the CWPCA

General Statutes §22a-423 defines "pollution" as "harmful thermal effect or the contamination or rendering unclean or impure or prejudicial to public health of any waters of the state by reason of any wastes or other material discharged or deposited therein by any public or private sewer or otherwise so as directly or indirectly to come in contact with any waters." Section 22a-423 further defines "rendering unclean or impure" as "any alteration of the physical, chemical or biological properties of any of the waters of the state, including but not limited to any change in odor, color, turbidity or taste."

It is clear that the history of the discharges of chromium compounds, solid wastes, oil, heavy metals and VOCs deposited into the soils and discharged into the groundwater at the site have altered the chemical properties of the groundwater, thus causing pollution within the meaning of §22a-423. The continuation of such pollution can be anticipated in view of the presence of the contaminants in the soil and groundwater both on-site and off-site through percolation of rain. The solid wastes disposed of in the dumpster; the oil spills; the releases of untreated wastewater; and the discharges of blower blow-down waters contaminated with hexavalent chromium have polluted the site and pose a risk of pollution to the waters of the state. The overwhelming evidence in the record establishes that the site is polluted, this pollution impacts the groundwater, and conditions at the site can reasonably be expected to continue to pollute the waters of the state.

2

Miller is Maintaining a Facility or Condition Which Reasonably Can be Expected to Create a Source of Pollution to the Waters of the State

The order issued to Miller, the owner of the site, alleges that he "has created or is maintaining a facility or condition which reasonably can be expected to create a source of pollution to the waters of the state" and orders him to investigate and remediate this pollution. General Statutes §22a-432. The DEP is authorized to bring an order for the abatement of pollution against a property owner under the provisions of §22a-433.

The DEP "does not abuse its discretion by issuing an order to abate pollution against a current property owner regardless of the owner's culpability for the pollution of the property." *Cadlerock Properties Joint Venture, L.P. v. Commissioner of Environmental Protection,* 253 Conn. 661, 670 (2000). In light of the remedial purposes of the CWPCA, the "legislature intended the word 'maintaining' in §22a-432, be interpreted liberally to include within its purview a landowner who has failed to abate pollution existing on his or her land that reasonably could be expected to create a source of pollution to the state's waters regardless of blame for the creation of the condition." *Starr v. Commissioner of Environmental Protection,* supra, 226 Conn. 382. Sections 22a-432 and 22a-433 are complementary and "operate in conjunction to enable the commissioner to impose liability not only on those who have established . . . or created the pollution or [are] maintaining a condition, but also on the owner of the land." Id. at 388.

Miller has admitted that he has owned the property since December 1980. Miller is liable for maintaining a condition at the site, which reasonably can be expected to create a source of pollution to the waters of the state.

3

ACI has Established a Facility or Created a Condition Which Reasonably can be Expected to Create a Source of Pollution to the Waters of the State

The order issued to ACI pursuant to §22a-432 alleges that ACI "established a facility or created a condition which reasonably can be expected to create a source of pollution to the waters of the state." The Connecticut Supreme Court held that to "establish" or "create" requires some affirmative act in contrast to maintaining which encompasses passive conduct or ownership of the land. *Starr v. Commissioner of Environmental Protection,* supra, 226 Conn. 386. It is clear from the evidence that ACI was concerned about and identified environmental problems at the site in its first month of its tenancy. ACI continued with its operations despite these concerns. The releases, spills, and discharges of industrial hazardous materials (chromium, heavy metals and VOCs) deposited in soils and discharged to the groundwater during ACI's tenancy have altered the chemical properties of the groundwater both on-site and off-site, thus causing pollution within the meaning of §22a-423. ACI is liable for creating a condition that reasonably can be expected to create a source of pollution to the waters of the state.

C

Miller and ACI Are Jointly and Severally Liable and There is No Reasonable Basis for Apportionment

The Commissioner issued seven orders to various respondents including the respondent Miller, the owner of the land, and to six companies that conducted manufacturing operations at the site, including the respondent ACI. (See footnote 1, supra.) In reviewing a DEP order to investigate and abate pollution at a site, it is necessary to determine whether the "agency ever addressed the issue of combined harm". *Connecticut Building Wrecking Co. v. Carothers*, supra, 218 Conn. 609. The record shows that the DEP considered the issue of combined causes for pollution and issued clean up orders to all potentially responsible parties. All but two of these parties have already had the issue of their liability settled; this appeal resolves the issue of liability against the remaining parties, Miller and ACI.

General Statutes §22a-6a provides for joint and several liability "[w]henever two or more persons knowingly or negligently violate any provision of . . . section 22a-424 to 22a-433, inclusive . . . and responsibility for the damage caused thereby is not reasonably apportionable, such persons shall, subject to a right of equal contribution, be jointly and severally liable under this section." Review of environmental cleanup orders must therefore be conducted with reference to the principles of joint and several liability, as limited by the doctrine of apportionment. *Connecticut Building Wrecking Co. v. Carothers*, supra, 218 Conn. 608.

Where a respondent seeks to limit its liability on the ground that the harm is capable of apportionment, the burden of proof as to the apportionment is upon each respondent. Id. The respondent ACI has asserted a number of arguments in its effort to establish that there is a reasonable basis to apportion liability for pollution at the site. ACI claims that each party operated independently at the site and that different parties used different solvents at different

times. ACI maintains that it audited and implemented its own environmental practices and standards (e.g. record keeping, inspections, environmental compliance) and modified its operations to halt the continuing releases of pollution. ACI argues that it used the etch line (the source of chromium contamination) for less than one year of the site's 30-year history, did not use TCE at the site, and voluntarily remediated chromium contamination at the site.

None of the evidence presented by ACI was sufficient to support its burden of proving that apportionment is an appropriate limitation on joint and several liability in this case. For example, although each party operated independently, ACI did not show that the impacts and cumulative effects of the pollution could be divided or characterized as such to demonstrate that ACI should be liable for a certain percentage. It is true that ACI used TCA and did not use TCE in its operations. However, the TCA that ACI used was a recycled solvent and contained various other chemicals, including TCE. The voluntary chromium soil remediation performed by ACI was confined solely to the excavation of contaminated soils beneath the building and ceased when the integrity of the building became compromised. Chromium contaminated soils still exist at the site. ACI's internal inspection records document the leaking of the etch line tank; problems with tank alarms; wastewater on the floor; and boiler blow-down water contaminated with hexavalent chromium being discharged in the center courtyard and municipal sewer.

The extent of the pollution on the site has not been fully characterized. There are numerous potential source areas of pollution existing on site that have not been investigated. To apportion liability absent such crucial information would be speculative at best. The record is devoid of the toxicity or migratory potential of ACI's wastes, the quantity of chemicals used by ACI, and the resulting proportionate pollution to the soils and groundwater from ACI's releases, discharges and spills.

Because ACI has failed to produce sufficient evidence for me to establish a reasonable basis of apportioning liability for the pollution at the site, I find both Miller and ACI jointly and severally liable for the pollution at the site.

D

Enforcement of the Provisions of §22a-432 is Not Limited by the Remediation Standard Regulations

After LBG conducted the site assessment, it recommended to ACI that the TCA contamination on site not be remediated because it was below a level that is regulated and TCE contamination not be examined because records reviewed indicted that TCE had not been used by ACI during its tenancy at the site. ACI argues that General Statutes §22a-133k, which authorizes the Commissioner to adopt regulations and set forth standards for remediation of pollution, limits the enforcement of §22a-432 in this case.

The remediation standard regulations (RSRs) set out in §22a-133k –1(b) of the Regulations of Connecticut State Agencies do not limit the Commissioner's authority to issue orders to abate pollution under §22a-432. The RSRs simply set forth the standards that the Commissioner must apply to abate a potential source of pollution. The fact that the level of certain chemicals found on and off the site may not require remediation under the RSRs does not mean they are not sources of pollution to the waters of the state.

Pollution is not defined by remediation level standards of a particular substance. Section 22a-133k-1(a)(46) of the Regulations of Connecticut State Agencies refers to the General Statutes for its definition of pollution: " '[p]ollution' means pollution as defined in section 22a-423 of the General Statutes under the CWPCA." Furthermore, section §133-k-1(b) provides,

"Section 22a-133k-1 through 22a-133k-3, inclusive, of the Regulations….apply to any action taken to remediate polluted soil, surface water or a ground-water plume at or emanating from a release area *which action is: (1) required pursuant to [§22a-432] of the General Statut*es. . . .". (Emphasis added.)

In addition, it is presumptuous for ACI to assert an argument on the basis of remediation standard limits where the extent and degree of the contamination at the site has not been fully investigated and characterized. Any determination of remedial action in accordance with the RSRs is a function of the Commissioner and not of an environmental consulting firm or environmental engineer.

E

The Transfer Act Does Not Affect the Commissioner's Authority to Issue an Order Pursuant to §22a-432

ACI asserts that its liability for the costs of investigating and remediating the site has been transferred to and voluntarily assumed by XBTI and BTI by virtue of the Transfer Act filings. Each filing identified XBTI and BTI as the party responsible for investigating and remediating the site.

Statutes §22a-134c provides that "the provisions of §§22a-134 to 22a-134e, inclusive, shall not affect the authority of the commissioner under any other statute or regulation, including but not limited to, the authority to issue any order to the transferor or transferee of an establishment." The Commissioner is explicitly empowered to issue the order against ACI under §22a-432 regardless of the transfer act filings.

IV

DECISION

The respondent Miller, the owner of the site, is maintaining, and the respondent ACI, during its tenancy at the site, has created or established, a condition that can reasonably be expected to create a source of pollution to the waters of the state. General Statutes §§22a-432 and 22a-433. The respondents are jointly and severally liable under these orders that mandate investigation and remediation of the pollution at the site.

I *AFFIRM* Order No. SRD-100, issued to the respondent Robert C. Miller, and Order No. SRD-098, issued to the respondent Aloca Composites, Inc. All of the deadlines set out in these orders that run from the date of their issuance shall instead run from the date of this decision.

August 7, 2001
Date

/s/ Elaine R. Tata
Elaine R. Tata, Hearing Officer