

5.0 IMMEDIATE RESPONSE ACTION (IRA)

On June 20, 1996, ATC, on behalf of Crane Co., submitted to the Department of Environmental Protection a letter of proposed tasks and schedules for the tasks to be completed under the IRA. By letter of July 2, 1996, DEP confirmed the tasks (and completion times for each) as the objectives of the IRA:

- Removal and disposal of onsite drums and contents;
- Removal and disposal of transformers;
- Development and implementation of a sampling plan for characterization of the on-site surficial soils and waste stockpiles;
- Disposal of surficial soils and waste stockpiles;
- Preparation of reports and LSP submittals as required under the MCP.

The July 2, 1996 DEP letter also referenced a research effort being conducted by ATC on behalf of Crane Co., regarding the past ownership, use, and responsibility of the abandoned underground storage tanks at the site. A report on this study was submitted to the DEP on June 30, 1997 and is attached hereto as Appendix 7.

5.1 Removal and Disposal of Onsite Drums

Under the Preliminary Response Actions conducted in August 1994, two drums were identified, one containing petroleum products and water and the other containing epoxy. An additional drum labeled as containing epoxy (likely originating from the former American Dreams modular home manufacturing operation) was subsequently discovered and included as part of the drum disposal activity.

On July 30, 1996 Cyn Environmental Services (CYN) of Wilbraham, Massachusetts, overpacked and removed three drums and their contents from the site under Commonwealth of Massachusetts Hazardous Waste Manifests for subsequent disposal. The drum containing petroleum products and water was transported to Cyn's facility in Stoughton, Massachusetts for disposal. The other two drums containing epoxy resin were transported to Northland Environmental, Inc. in Providence, Rhode Island for disposal. Copies of the hazardous waste manifests are included in Appendix 6.

5.2 Removal and Disposal of Onsite Transformers

As identified during the Preliminary Response Actions, two 2,500 KVA transformers were installed on the site. One was located on a concrete pad by the south wall of the building and contains <2.00 ppm PCB oil, the other was abandoned by the south property line and contains no fluids. A small "nest" of transformers comprising two approximately 55 gallon bucket transformers and one approximately 10 gallon electrical switch, was mounted aboveground on the southwestern corner of the building. The transformers and electrical switch contained <2.00 ppm PCB oil, as identified by Trans-Cycle Industries, Inc. analytical laboratory of Pell City, Alabama. A copy of the analytical report is included in Appendix 2.

On August 15, 1996 Standard Electrical Testing Company, Inc. (SETCO) of Ludlow, Massachusetts removed and transported all site transformers and the electrical switch to Acme Metals & Recycling Inc. (ACME) of Springfield for recycling. Oil was removed from the transformers by Western Oil Inc. under contract with SETCO for subsequent disposal at Bridgeport United Recycling, of Bridgeport, Connecticut.

A copy of the hazardous waste manifest is included in Appendix 6. Copies of the "certificates of destruction" for the two 2,500 KVA transformers are included in Appendix 6.

5.3 Development and Implementation of Sampling Plan

On July 16, 1996, ATC developed and submitted to the DEP for approval an *Immediate Response Action Sampling Plan*. The objective of the IRA Sampling Plan was to characterize for disposal the on-site stockpiles of black and white materials and to investigate and characterize for disposal, as appropriate, areas of exposed petroleum contaminated soils and potential PCB contaminated soils discovered at the Site. The DEP approved the IRA Sampling Plan by letter dated August 29, 1996.

On November 27, 1996, a total of seventeen (17) surficial soil samples were collected from the railroad track area running along the eastern side of the building. Samples were collected every 50 feet from the southern end of the building to the northern end of the building. Sample locations were designated RR-1 through RR-19. On December 2 and 3, 1996, a total of twenty-six (26) surficial soil samples were collected from the southern side of the Site building. These samples were collected based on a measured and marked grid extending 210 feet on an east-west basis, designated 0-11 (zero to eleven), and 180 feet on a north-south basis, designated A-I (alphabetically), to the south of the property building. Soil samples were not collected in areas of viable asphalt covering. All soil samples and samples collected from the black stock piles were submitted to Con-Test Laboratory in East Longmeadow, Massachusetts for the analyses requested. Samples collected from the white and black stockpiles were submitted to Hygeia Proscience Laboratories Inc. of Woburn, Massachusetts for analysis of asbestos content by Polarized Light Microscopy (PLM). Soil samples were subjected to laboratory analyses for VOCs, TPH, PAHs, RCRA 8 Metals, and PCBs via EPA Methods.

Results of the laboratory analyses indicated elevated concentrations of TPH, PAHs, RCRA Metals and PCBs were present in surficial soils recovered from the southern side of the building. TPH results ranged from Below Detection Limits (BDL) to 15,000 ppm. PAH results ranged from non-detectable (ND) to 1,260 ppm for Benzo(a)anthracene, BDL to 1,130 ppm for Benzo(a)pyrene, BDL to 1,120 ppm for Benzo(b)fluoranthene, BDL to 1,450 ppm for Chrysene, BDL to 2,900 ppm for Fluoranthene, ND to 875 ppm for Indeno(1,2,3-cd) pyrene, ND to 100 ppm for 2-Methylnaphthalene, ND to 308 ppm for Naphthalene, BDL to 2,660 ppm for Phenanthrene, and BDL to 2,580 ppm for Pyrene. Results for lead ranged from 5.2 ppm to 2,860 ppm and for cadmium from 0.05 ppm to 70.5 ppm. PCB results ranged from ND to 37.8 ppm. All other results including those for VOCs were below applicable standards.

Elevated concentrations of TPH and PAHs were present in surficial soils collected along the railroad tracks at the eastern side of the building. TPH results ranged from BDL to 7,800 ppm. PAH results ranged from ND to 5.39 ppm for Benzo(a)anthracene, ND to 3.89 ppm for Benzo(a)pyrene, ND to 4.94 ppm for Benzo(b)fluoranthene, ND to 7.24 ppm for Chrysene, and ND to 3.04 ppm for Indeno (1,2,3-cd) pyrene. All other results including those for VOCs and PCBs were below applicable standards.

Characterization of the on-site white and black stockpiles indicated that both white and black piles were of non-asbestos containing material and the black piles contained elevated levels of both TPH and Metals.

A Site Plan of the railroad tracks sample locations is included as **Figure 3** in **Appendix 1**. A summary of the Railroad Track Surface Soil Analytical Data (including analytical data from samples taken from beneath the black and white piles) compared to the Massachusetts Contingency Plan (MCP) Method 1 Standards is

presented as **Table 1-3** in **Appendix 3**. A Site Plan of the South Side of Building sample locations is included as **Figure 4** in **Appendix 1**. A summary of the South Side of Building Surface Soil Analytical Data compared to the Massachusetts Contingency Plan (MCP) Method 1 Standards is presented as **Tables 1-5** in **Appendix 4**. Copies of the analytical reports for both soil sample analyses and analysis of the white and black piles for asbestos content are included I Appendix 2.

5.4 Development of IRA Disposal Plan

Based on the results of the IRA Sampling Plan, ATC developed and submitted to the DEP on January 31, 1997 an *Immediate Response Action Disposal Plan* which indicated that ATC on behalf of Crane Co. would conduct Immediate Response Actions (IRAs) at the Site under the direction of an LSP, including the excavation, removal and off-site disposal of the contaminated surficial soils identified at the east side of the building (along the railroad tracks), at the south side of the building (near the former electrical transformers), and the off-site removal of the aboveground white and black stock piles located on the Site. All excavated surficial soil would be handled pursuant to Bureau of Waste Site Cleanup Policy No. WSC-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils. The IRA Disposal Plan also indicated that results of the IRA activities will, if applicable, be documented within an IRA Completion Report in accordance with 310 CMR 40.0427.

6.0 Disposal of On-Site Soils and Waste Stockpiles

From May through August, 1997, Immediate Response Actions (IRAs) were performed at the site. IRA activities included the excavation, removal and off-site disposal of the TPH contaminated surficial soils discovered along the railroad tracks (at the east side of the building/property); the excavation, removal and off-site disposal of the TPH/PAH/PCB and RCRA 8 Metals contaminated surficial soils discovered in the area of the former on-site electrical transformers (at the south side of the building/property); and the off-site removal of the aboveground TPH containing "black piles" (peastone roofing material) and aboveground non-hazardous "white piles" (sheet rock waste) located along the southwest side of the building/property. All IRA activities conducted at the Site were performed under the direction of a LSP and all field methods were conducted following strict Quality Assurance/Quality Control (QA/QC) standards.

6.1.1 Contaminated Soil Excavation and Removal at Railroad Tracks

6.1.1.1 Excavation-1 (EXC-1)

On May 8, 1997, P.F. Civetti Environmental Excavation, Inc. (Civetti), of West Springfield, Massachusetts, under the direction of ATC personnel, excavated, removed and transported off-site the TPH contaminated surficial soils identified along the railroad tracks at the southeast side of the building in the area of soil sample location point RR-6. The surficial soils at this location appeared heavily oil stained and exhibited a strong petroleum odor. During the contaminated soil removal operations, one soil excavation was created which was designated Excavation-1 (EXC-1). EXC-1 was expanded to dimensions measuring approximately 21 feet long by 21 feet wide by 4 feet deep (21'x21'x4') in order to remove the contaminated soils. No groundwater was encountered within EXC-1 during the soil removal operations. A total of approximately 40 cubic yards of TPH contaminated soils were removed from EXC-1. The contaminated soils were immediately transported off-site by Civetti to an asphalt recycling facility (Ted Ondricks Construction Co. of Chicopee, Massachusetts [Ondricks]) for disposal in accordance with DEP protocols.

6.1.1.2 Excavation-2 (EXC-2)

On May 8 and 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and transported off-site the TPH contaminated surficial soils identified along the railroad tracks at the middle-east side of the building in the area of soil sample location point RR-10. The surficial soils at this location appeared oil stained and exhibited a slight petroleum odor. During the contaminated soil removal operations, one soil excavation was created which was designated Excavation-2 (EXC-2). EXC-2 was expanded to dimensions measuring approximately 21 feet long by 16 feet wide by 2 feet deep (21'x16'x2') in order to remove the contaminated soils. No groundwater was encountered within EXC-2 during the soil removal operations. A total of approximately 20 cubic yards of TPH contaminated soils were removed from EXC-2. The contaminated soils were immediately transported off-site by Civetti to Ondricks for disposal in accordance with DEP protocols.

After completion of the IRA activities at EXC-1 and EXC-2, the excavations were backfilled to 2-3 feet deep from grade with clean sand and gravel, thus eliminating the surficial TPH soil contamination identified along the railroad tracks in the area of soil sample points RR-6 and RR-10.

6.1.2 Contaminated Soil Excavation and Removal at Former Transformer Areas

6.1.2.1 Excavation-3 (EXC-3)

On May 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and stockpiled on-site the TPH/PAH/PCB contaminated surficial soils identified near the southwest corner of the building in the area of grid soil sample points B-1.5 and B/C-1 (area of former on-site electrical transformers and large surficial oil stain). The surficial soils in this area appeared heavily oil stained and exhibited a strong petroleum odor. During the soil removal operations, one soil excavation was created which was designated Excavation-3 (EXC-3). EXC-3 was expanded to dimensions measuring approximately 11 feet long by 11 feet wide by 2.5 feet deep (11'x11'x2.5') in order to remove the contaminated soils. No groundwater was encountered within EXC-3 during the soil removal operations. A total of approximately 15 cubic yards of contaminated soils were removed from EXC-3. The contaminated soils were then stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal to a licensed hazardous waste disposal facility.

6.1.2.2 Excavation-4 (EXC-4)

On May 20, 1997, Civetti, under the direction of ATC personnel, scraped/excavated, removed and stockpiled on-site the TPH/PCB/PAH and Lead contaminated surficial soils identified along the south side of the building/property in the area of grid soil sample points D-7.5, D-8.5, E-7.5, D/E-9, E-7.5, F-6.5, E/F-7.5, F-6.5, F-G-7.5 G-6.5 and G-7.5. These sample points were located downslope from the area of former on-site electrical transformers and in the vicinity of scrap metal/machinery piles. During the contaminated soil scraping, excavation and removal operations, one soil excavation was created which was designated Excavation-4 (EXC-4). EXC-4 was expanded to dimensions measuring approximately 120 feet long by 40 feet wide by 6 inches to 1.5 feet deep (120'x40'x6"-1.5') in order to remove the contaminated surficial soils. After removal of the surficial soils from EXC-4, asphalt paving was discovered under portions of the scraped areas at a depth of approximately 6 inches below (the former) grade. The portions of EXC-4 not containing pavement (i.e. dirt areas) were excavated to a depth of approximately 1.5 feet below (the former) grade. Approximately 100 cubic yards of contaminated soils were scraped/excavated and removed from EXC-4. The contaminated soils were then stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal to a licensed hazardous waste disposal facility.

6.1.2.3 Excavation-5 (EXC-5)

On May 21 and 22, 1997, Civetti, under the direction of ATC personnel, excavated, removed and stockpiled on-site the TPH/PAH/PCB and Lead contaminated surficial soils identified near the south side of the building in the area of grid soil sample points C-8.5 and C-9.5 (area of current on-site transformer pad). The surficial soils in this area appeared heavily oil stained and exhibited a strong petroleum odor. During the contaminated soil removal operations, one soil excavation was created which was designated Excavation-5 (EXC-5). EXC-5 was expanded to dimensions measuring approximately 48 feet long by 27 feet wide by 6 feet deep (48'x27'x6') in order to remove the contaminated soils. While excavating the soil from around the transformer pad, which was discovered to be approximately 5 feet thick, oily soils were detected along the sides of the pad and saturated oily soils were discovered along the bottom of the pad at a depth of approximately 5 feet below grade. Upon close inspection, soils recovered from the bottom of the pad appeared saturated with a clear-oily fluid with a non-petroleum oily odor indicative of mineral oil. After determining the soils below the pad were saturated, the excavation activities were continued from a depth of approximately 5 to 8 feet below grade in an attempt to remove the potential PCB-containing oily soils. Excavation activities were discontinued at 8 feet of depth so as not to undermine the 5 foot thick concrete pad. At that point, four soil samples were collected with a hand auger from directly under the north and south sides of the pad at a depth of 9'-9.5' and 12'-12.5' in an attempt to determine the vertical extent of the oily soils under the pad. Inspection of the hand auger soil samples indicated the soils were still saturated with the oily fluid to a depth greater than 12.5 feet below grade or 7.5 feet below the bottom of the pad. The

excavation activities were then discontinued and EXC-5 was partially backfilled to a depth of less than 4 feet from grade with clean fill (for safety reasons and to stabilize the transformer pad) and surrounded with safety fence and caution tape. No groundwater was encountered within EXC-5 during the soil removal operations. A total of approximately 100 cubic yards of contaminated/oily soils were removed from EXC-5. The contaminated soils were then stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal to a licensed hazardous waste disposal facility.

6.1.3 Removal of Black StockPiles

On May 7, 8 and 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and transported off-site a total of 180.29 tons of the aboveground piles of TPH containing roofing material (black piles of roofing pea stone) located along the southwest side of the building/property. The roofing material was transported from the Site to American Reclamation Corporation (AMREC) in Charlton, Massachusetts (an asphalt recycling facility) for disposal/recycling under a DEP Beneficial Use Determination (BUD) permit issued to AMREC in September 1995.

6.1.4 Removal of White StockPiles

On May 20, 21 and 22, 1997, Civetti, in conjunction with Charter Environmental, Inc., (Charter) of Belmont, Massachusetts and under the direction of ATC personnel, excavated, removed and transported off-site a total of approximately 560 cubic yards of the aboveground piles of white building debris (white piles of sheet rock waste) located along the southwest side of the building/property adjacent to the area of the former black piles. The non-hazardous/non-regulated sheet rock waste was transported from the Site by Charter to the Mormon Hollow Landfill operated by DB Enterprises in Wendell, Massachusetts for disposal.

6.1.5 Soil Sampling and Soil Field Screening

6.1.5.1 EXC-1 (Railroad Tracks) Soil Sampling & Screening

After removal of the contaminated soils from EXC-1, soil samples were collected from the four sidewalls and bottom of the excavation and field screened for TPH using the Petroflag TPH field test kit. The Petroflag test kit utilizes a solvent extraction process and spectrophotometric technology to provide estimated TPH concentrations in the parts per million (ppm) range which typically are within approximately 50 ppm of laboratory TPH method results. As such, the Petroflag TPH screening is useful for field applications to determine the level of cleanup of a remedial project. Results of the Petroflag field tests indicated no significant levels of TPH (above 50 ppm) remained within the sidewall and bottom soils of EXC-1. On May 9, 1997, based upon the results of the field screening, confirmatory soil samples or "Confirmation Samples" were collected from the north sidewall (NSW), south sidewall (SSW), east sidewall (ESW) and west sidewall (WSW) at a depth of approximately 3-4 feet below grade and from the bottom of EXC-1 at a depth of approximately 4 feet below grade. After collection, the Confirmation Samples were immediately placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analyses. Refer to the EXC-1 Confirmation Sample Location Plan presented as **Figure 5** in **Appendix 1**.

6.1.5.2 EXC-2 (Railroad Tracks) Soil Sampling & Screening

After removal of the contaminated soils from EXC-2, soil samples were collected from the four sidewalls and bottom of the excavation and field screened for TPH using the Petroflag TPH field test kit. Results of the Petroflag field tests indicated no significant levels of TPH (above 50 ppm) remained within the sidewall and bottom soils of EXC-2. On May 9, 1997 Confirmation Samples were collected from the north sidewall

(NSW), south sidewall (SSW), east sidewall (ESW) and west sidewall (WSW) of EXC-2 at a depth of approximately 1-2 feet below grade and from the bottom of EXC-2 at a depth of approximately 2 feet below grade. After collection, the Confirmation Samples were immediately placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analyses. Refer to the EXC-2 Confirmation Sample Location Plan presented as **Figure 6 in Appendix 1**.

6.1.5.3 EXC-3 (Southwest Corner of Building) Soil Sampling & Screening

After removal of the contaminated soils from EXC-3, soil samples were collected from the four sidewalls and bottom of the excavation and field screened for TPH using the Petroflag TPH field test kit. Results of the Petroflag field tests indicated no significant levels of TPH (above 50 ppm) remained within the sidewall and bottom soils of EXC-3. On May 9 and 14, 1997 Confirmation Samples were collected from the bottom of EXC-3 at a depth of approximately 2.5-3 feet below grade. After collection, the Confirmation Samples were immediately placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analyses. Refer to the EXC-3 Confirmation Sample Location Plan presented as **Figure 7 in Appendix 1**.

6.1.5.4 EXC-4 (South of Building) & Grid Soil Sampling & Screening

On December 2 and 3, 1996, in accordance with the IRA Sampling Plan, twenty-six (26) surficial soil samples (grid samples) were collected from the southern side of the Site building in the areas of suspected surficial soil contamination (areas of electrical transformers, oily soils, black piles and white piles). Laboratory analyses of the collected samples indicated elevated levels of TPH, PAHs, PCBs and RCRA Metals were present in certain soil samples collected from the sample grid. During May 1997, the soils with elevated concentrations were scraped and stockpiled as EXC-4. The soils from EXC-4, the black piles and the white piles, were transported and disposed off-site to approved waste disposal facilities.

In order to assess the surficial soil conditions following the removal of the contaminated soils in the area of EXC-4 and after removal of the aboveground black and white piles, ATC personnel recreated the original sample grid constructed in December 1996 and collected Confirmation Samples (in duplicate) on May 28, 1997 from the following grid point locations (previously identified areas of elevated results); D-7.5, D-8.5, E-7.5, D/E-9, E-7.5, F-6.5, E/F-7.5, F-6.5, F/G-7.5 G-6.5 and G-7.5 from the area of EXC-4; B-1.5 and B/C-1 from the area of EXC-3; A-1.5 and H/I-2.5 from the area of the aboveground black piles; and D/E-2 and F/G-4 from the area of the aboveground white piles. After collection, the duplicate samples were field screened for TPH using the Petroflag TPH field test kit. Results of the Petroflag field tests indicated no significant levels of TPH (above 50 ppm) remained within the area of EXC-4 or within the areas of the former on-site black and white piles. The Confirmation Samples were then placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analysis. Refer to the EXC-4 & Grid Confirmation Sample Location Plan presented as **Figure 8 in Appendix 1** to review the above referenced Confirmation Sample locations.

6.1.5.5 EXC-5 (Area of Transformer Pad) Soil Sampling & Screening

After removal of the contaminated soils from EXC-5 (area of former grid sample points C-8.5 and C-9.5) including the clear oily soils from around the four sides of the transformer pad to a depth of approximately 8 feet below grade, soil samples were collected from the four sidewalls of the excavation at a depth of approximately 5-6 feet below grade and from four bottom areas of the excavation between the transformer pad and the outer sidewalls of EXC-5 at a depth of approximately 8-8.5 feet below grade. All samples were field screened for TPH using the Petroflag TPH field test kit. Results of the Petroflag field tests indicated no significant levels of TPH (above 50 ppm) remained within the sidewalls or bottom of EXC-5. On May 22,

1997, based upon the results of the field screening, Confirmation Samples were collected from the north sidewall (NSW), south sidewall (SSW), east sidewall (ESW) and west sidewall (WSW) of EXC-5 at a depth of approximately 5-6 feet below grade. No Confirmation Samples were collected from the bottom of the excavation due to the presence of the saturated clear oily soils remaining under the transformer pad. After collection, the sidewall Confirmation Samples and the four hand auger soil samples collected from directly under the north and south sides of the pad (at a depth of 9'-9.5' and 12'-12.5') were immediately placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analyses. Refer to the EXC-5 Confirmation Sample Location Plan presented as **Figure 9** in **Appendix 1** to review the above referenced Confirmation Sample locations.

6.1.5.6 Soil Re-Sampling Along Railroad Tracks

On November 27, 1996, in accordance with a DEP approved IRA Sampling Plan, seventeen (17) surficial soil samples were collected from along the railroad tracks located at the eastern side of the Site building. The surficial soil samples were collected at a depth of approximately 0-6 inches below grade. Laboratory analyses of the collected soil samples indicated elevated levels of TPH were present at sample locations RR-6 and RR-10 and elevated levels of PAHs were present at sample locations RR-9, RR-11, RR-14, RR-16, RR-17 and RR-18. On May 8 and 9, 1997, the TPH contaminated soils were excavated and removed by Civetti from the area of railroad sample locations RR-6 as EXC-1 and RR-10 as EXC-2 (areas of obvious surficial soil staining). After removal of the TPH contaminated soils from EXC-1 and EXC-2 (to a depth of approximately 2-4 feet below grade), ATC observed an approximate one foot layer of black fill material underlying the railroad tracks from surface grade to approximately one foot below grade. Upon close inspection, the fill material appeared to be composed of coal ash and cinders (hydrocarbon containing materials) and was most likely applied along the railroad bed as a "base" material for grading prior to installation of the railroad tracks. The soils below the "coal ash" layer from an observed depth of approximately 1-4 below grade, were composed mainly of light brown to reddish brown, fine to coarse sands with little fine to medium gravel.

According to 310 CMR 40.0317 (9) (Releases and Threats of Release Which Do Not Require Notification) "a release of oil and/or hazardous material related to coal, coal ash, or wood ash are exempt from the notification requirements as set forth in 310 CMR 40.0300". As noted above, laboratory analyses indicated elevated concentrations of PAHs (above applicable Method 1 Soil standards) were present in the surficial soils collected from along the railroad tracks in November 1996 at a depth of approximately 0-6 inches below grade. ATC believes that the surficial railroad soil samples collected in November 1996 most likely contained elevated concentrations of exempted, PAH containing coal ash and/or cinders. Therefore, in order to determine if the subsurface soils under the coal ash layer contained elevated concentrations of PAHs, ATC personnel using a hand auger collected additional soil samples on September 22, 1997 from railroad soil sample locations RR-9, RR-11, RR-14, RR-16, RR-17 and RR-18 at a depth of approximately 1.5-2 feet below grade i.e. beneath the coal ash layer. After collection, the soil samples were immediately placed into chilled coolers for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories for analyses. Refer to the EXC-5 Confirmation Sample Location Plan presented as **Figure 11** in **Appendix 1** to review the above referenced railroad sample locations

6.1.6 Confirmation Soil Analyses & Analytical Results

The Confirmation Samples recovered at the Site were collected for laboratory analyses in order to determine the degree of contamination remaining in the surficial soils at the Site (area of Excavations 1,2,3,4 & 5 and areas of former black piles & white piles) for comparison with MCP Method 1 Soil and Groundwater Standards.

6.1.6.1 EXC-1 (Railroad Tracks) Confirmation Soil Analyses & Results

Confirmation Samples recovered from the sidewalls and bottom of EXC-1 were submitted to Con-Test Laboratories on May 9, 1997 for the following analyses by EPA Methods: NSW (2'-4'), SSW (2'-4'), ESW (2'-4'), WSW (2'-4'), and Bottom (4') were subjected to TPH via EPA Method 8015 Modified; PAHs via EPA Method 8270; PCBs via EPA Method 8080; and RCRA 8 Metals. Results of the EXC-1 confirmation soil analyses are presented below in Table 1.

TABLE 1
Results of EXC-1 (Railroad Tracks) Confirmation Soil Analyses
May 9, 1997

Sample Location						
Compound	Units	NSW S-1	SSW S-2	ESW S-3	WSW S-4	BOTTOM S-5
		(2'-4')	(2'-4')	(2'-4')	(2'-4')	(4')
TPH						
Other Hydrocarbons	mg/kg	BDL	BDL	BDL	BDL	BDL
RCRA-8 Metals						
Arsenic	mg/kg	7.76	ND	ND	ND	ND
Barium	mg/kg	22.1	17.6	20.6	21.2	17.7
Chromium	mg/kg	9.66	6.21	6.76	5.82	5.67
Lead	mg/kg	8.81	BDL	4.88	3.4	2.78
Mercury	mg/kg	0.02	ND	ND	ND	0.02
Selenium	mg/kg	7.42	ND	ND	ND	ND

BDL = Below Detection Limit; ND = None Detected.

6.1.6.2 EXC-2 (Railroad Tracks) Confirmation Soil Analyses & Results

Confirmation Samples recovered from the sidewalls and bottom of EXC-2 were submitted to Con-Test Laboratories on May 9, 1997 for the following analyses by EPA Methods: NSW (2'-4'), SSW (2'-4'), ESW (2'-4'), WSW (2'-4'), and Bottom (4') were subjected to TPH via EPA Method 8015 Modified; PAHs via EPA Method 8270; PCBs via EPA Method 8080; and RCRA 8 Metals. Results of the EXC-2 confirmation soil analyses are presented below in Table 2.

TABLE 2
Results of EXC-2 (Railroad Tracks) Confirmation Soil Analyses
 May 9, 1997

May 9, 1997

Sample Location						
Compound	Units	NSW S-1	SSW S-2	ESW S-3	WSW S-4	BOTTOM S-5
		(1'-2')	(1'-2')	(1'-2')	(1'-2')	(2'-2.5')
PAHs						
Benzo(a)anthracene	mg/kg	ND	BDL	ND	BDL	ND
Benzo(a)pyrene	mg/kg	ND	BDL	ND	ND	ND
Benzo(b)fluoranthene	mg/kg	BDL	BDL	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	BDL	BDL	ND	ND	ND
Chrysene	mg/kg	ND	BDL	ND	ND	ND
Fluoranthene	mg/kg	ND	BDL	ND	ND	ND
Naphthalene	mg/kg	ND	ND	ND	BDL	ND
Pyrene	mg/kg	ND	BDL	ND	ND	ND
TPH						
Other Hydrocarbons	mg/kg	BDL	BDL	BDL	BDL	BDL
RCRA-8 Metals						
Barium	mg/kg	19.4	28	32.9	31.8	31.3
Cadmium	mg/kg	ND	0.08	ND	ND	ND
Chromium	mg/kg	5.52	4.8	7.24	7.85	8.8
Lead	mg/kg	2.7	2.68	4.1	BDL	BDL
PCBs						
Total PCBs	mg/kg	ND	ND	ND	ND	ND

BDL = Below Detection Limit; ND = None Detected

BDL = Below Detection Limit; ND = None Detected.

6.1.6.3 EXC-3 (Southwest Corner of Building) Confirmation Soil Analyses & Results

Confirmation Samples recovered from the bottom of EXC-3 were submitted to Con-Test Laboratories on May 9 and May 14, 1997 for the following analyses by EPA Methods: Bottom samples (2.5'-3') were subjected to PAHs via EPA Method 8270 and PCBs via EPA Method 8080. Results of the EXC-3 confirmation soil analyses are presented below in **Table 3**.

TABLE 3
Results of EXC-3 (Southwest Corner of Building) Confirmation Soil Analyses
May 9, 14, 1997

Compound	Units	BOTTOM S-1 (2.5'-3')
PAHs		
Benzo(a)anthracene	mg/kg	BDL
Chrysene	mg/kg	BDL
Fluoranthene	mg/kg	BDL
Pyrene	mg/kg	BDL
PCBs		
Total PCBs	mg/kg	ND

BDL = Below Detection Limit; ND = None Detected.

6.1.6.4 EXC-4 (South of Building) Confirmation Soil Analyses & Results

Confirmation Samples recovered from the recreated grid sample point locations within EXC-4 were submitted to Con-Test Laboratories on May 30, 1997 for the following analyses by EPA Methods: Grid Samples D-7.5, D-8.5, D/E-9, E-7.5, F-6.5, F/G-7.5 and G-6.5 were subjected to Total Lead via EPA Methods SW846-3050-6010 Grid Samples D-8.5, E-7.5, E/F-7.5, F/G-7.5 and G-7.5 were subjected to PAHs via EPA Method 8270; and Grid Samples E/F-7.5 and G-7.5 were subjected to PCBs via EPA Method 8080.

Confirmation Samples recovered from the grid sample point locations near the southwest corner of the building (area of former surficial oil stain) in the area of EXC-3 were submitted to Con-Test Laboratories on May 30, 1997 for the following analyses by EPA Methods: Grid Samples B-1.5 and B/C-1 were subjected to PAHs via EPA Method 8270 and Grid Sample B-1.5 was subjected to TPH via EPA Method 8015 Modified.

Confirmation Samples recovered from the grid sample point locations from beneath the former aboveground black piles and former aboveground white piles were submitted to Con-Test Laboratories on May 30, 1997 for the following analyses by EPA Methods: Grid Samples A-1.5 (from area of black piles); and D/E-2 and F/G-4 (from area of white piles) were subjected to TPH via EPA Method 8015 Modified; PAHs via EPA Method 8270; PCBs via EPA Method 8080 and RCRA 8 Metals. Additionally, Grid Sample H/I-2.5 (from area of black piles) was subjected to PAHs via EPA Method 8270; PCBs via EPA Method 8080 and Total Lead. Results of the EXC-4 and grid confirmation soil analyses are presented below in **Table 4**.

6.1.6.5 Additional Grid Confirmation Soil Analyses & Results

After review and evaluation of the grid confirmation analytical results as presented in **Table 4**, it was determined that elevated concentrations (above the S-1/GW-2 standards) of PAHs remained in the surficial soils at Grid Sample locations B-1.5 and D/E-2 and elevated concentrations of Total Lead remained in the surficial soils at Grid Sample locations F-6.5 and G-6.5. The elevated concentrations of PAHs and Total Lead most likely resulted from the inadvertent introduction of particles of asphalt and/or lead paint into the Confirmation Samples collected at these locations. Therefore, in order to deny or confirm the presence of PAHs and/or Total Lead at the above referenced Grid Sample locations, ATC re-sampled and submitted to

RESULTS OF EXC-4 (SOUTH OF BUILDING) CONFIRMATION SOIL ANALYSES

Crane Co. - Former American Dream
225 Goodwin Street
Springfield, Massachusetts
Site No. 1-0616

Sampling Date: May 28, 1997

Compound	Units	Sample Location														
		S-1 B-1.5 (2.5-5.1)	S-2 BQ-1 (2.3-3)	S-3 D-7.5 (0-6)	S-4 D-4.5 (0-5)	S-5 D-E-9 (0-6)	S-6 E-7.5 (0-6)	S-7 E-F-7.5 (0-6)	S-8 F-4.5 (0-6)	S-9 F-6 (0-6)	S-10 G-4.5 (0-6)	S-11 G-7.5 (0-6)	S-12 H-7.5 (0-6)	S-13 A-1.5 (0-6)	S-14 D-E-2 (0-6)	S-15 F-G-4 (0-6)
PAH Compounds																
Acenaphthene	mg/kg	0.33	ND	*	BDL	*	ND	BDL	*	ND	*	BDL	BDL	BDL	BDL	ND
Acenaphthylene	mg/kg	ND	ND	*	ND	*	ND	ND	*	ND	*	ND	BDL	ND	ND	ND
Anthracene	mg/kg	0.39	ND	*	BDL	*	BDL	BDL	*	ND	*	BDL	BDL	0.34	ND	ND
Benzo(a)anthracene	mg/kg	0.98	ND	*	BDL	*	BDL	BDL	*	BDL	*	BDL	BDL	BDL	ND	ND
Benzo(a)pyrene	mg/kg	0.98	BDL	*	BDL	*	ND	BDL	*	BDL	*	BDL	BDL	1.02	ND	ND
Benzo(b)fluoranthene	mg/kg	0.88	ND	*	BDL	*	ND	BDL	*	ND	*	BDL	BDL	1.1	ND	ND
Benzo(g,h,i)perylene	mg/kg	BDL	ND	*	ND	*	ND	ND	*	ND	*	BDL	BDL	BDL	ND	ND
Benzo(k)fluoranthene	mg/kg	0.89	ND	*	BDL	*	ND	BDL	*	BDL	*	BDL	BDL	BDL	ND	ND
Chrysene	mg/kg	1.01	BDL	*	BDL	*	BDL	BDL	*	BDL	*	BDL	BDL	1.11	ND	ND
Dibenz(a,h)anthracene	mg/kg	ND	ND	*	ND	*	ND	ND	*	ND	*	ND	BDL	1.1	ND	ND
Fluoranthene	mg/kg	1.88	BDL	*	BDL	*	0.47	BDL	*	BDL	*	0.45	BDL	2.02	ND	ND
Fluorene	mg/kg	BDL	ND	*	BDL	*	ND	BDL	*	ND	*	BDL	BDL	BDL	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	0.54	ND	*	ND	*	ND	ND	*	ND	*	BDL	ND	0.58	ND	ND
2-Methylnaphthalene	mg/kg	BDL	ND	*	ND	*	ND	ND	*	ND	*	BDL	ND	BDL	ND	ND
Naphthalene	mg/kg	BDL	ND	*	BDL	*	ND	BDL	*	BDL	*	BDL	BDL	BDL	ND	ND
Phenanthrene	mg/kg	1.9	ND	*	BDL	*	0.38	BDL	*	BDL	*	BDL	BDL	1.76	ND	ND
Pyrene	mg/kg	2.24	BDL	*	BDL	*	BDL	BDL	*	BDL	*	BDL	BDL	2.08	ND	ND
Total Petroleum Hydrocarbons (TPH)																
#2/#4 Fuel Oil or Diesel	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
#6 Fuel Oil	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
Gasoline	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
Jet Fuel	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
Kerosene	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
Other Hydrocarbons	mg/kg	BDL	*	*	*	*	*	*	*	*	*	*	*	ND	ND	BDL
RCRA-8 Metals (totals)																
Arsenic	mg/kg	7.76	*	*	*	*	*	*	*	*	*	*	*	ND	7.56	ND
Barium	mg/kg	22.1	*	*	*	*	*	*	*	*	*	*	*	26.4	31.6	23.4
Cadmium	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	0.07	0.16	0.13
Chromium	mg/kg	9.66	*	*	*	*	*	*	*	*	*	*	*	7.23	11.1	9.48
Lead	mg/kg	8.81	*	*	*	*	*	*	*	*	*	*	*	7.28	50.4	10.8
Mercury	mg/kg	0.02	*	*	*	*	*	*	*	*	*	*	*	0.05	0.077	0.02
Selenium	mg/kg	7.42	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
Silver	mg/kg	ND	*	*	*	*	*	*	*	*	*	*	*	ND	ND	ND
PCBs																
Total PCBs	mg/kg	*	*	*	*	*	*	0.53	*	*	0.6	0.54	ND	ND	ND	ND
Total Lead	mg/kg	*	*	177	27.9	281	124	*	*	*	*	*	*	*	*	*

NOTES:

mg/kg - milligrams per kilogram
ug/kg - micrograms per kilogram
ND - compound was not detected above or below the laboratory detection limit
BDL - compound was detected below the applicable laboratory detection limit, however, could not be quantified
* - sample not tested for this compound
Laboratory analysis for Polycyclic Aromatic Hydrocarbon (PAH) via SW846 Method 3550/8270
Laboratory analysis for Total Petroleum Hydrocarbon (TPH) via SW846 8015 Modified
Laboratory analysis for Polychlorinated Biphenyl (PCB) via SW846 8080

Con-Test Laboratories additional grid Confirmation Samples on August 27 and September 4, 1997 for the following analyses by EPA Methods: Grid Samples B-1.5 and D/E-2 were subjected to PAHs via EPA Method 8270 and Grid Samples G-6.5 and F-6.5 were subjected to Total Lead. Results of the additional grid confirmation soil analyses are presented below in Table 4A.

TABLE 4A
RESULTS OF ADDITIONAL GRID CONFIRMATION SOIL ANALYSES
August 27, 1997

Compound	Units	B-1.5 S-1 (2.5'-3')	D/E-2 S-14 (0''-6'')	F-6.5 S-8 (0''-6'')	G-6.5 S-10 (0''-6'')
PAHs					
Benzo(a)anthracene	mg/kg	BDL	ND	*	*
Fluoranthene	mg/kg	BDL	BDL	*	*
Pyrene	mg/kg	BDL	BDL	*	*
Lead					
Total Lead	mg/kg	*	*	4.50	288

BDL = Below Detection Limit; ND = None Detected; * = Not Tested.

6.1.6.6 EXC-5 (Area of Transformer Pad) Confirmation Soil Analyses & Results

Confirmation Samples recovered from the sidewalls of EXC-5 were submitted to Con-Test Laboratories on May 30, 1997 for the following analyses by EPA Methods: NSW (5'-6'), SSW (5'-6'), ESW (5'-6'), WSW (5'-6') were subjected to PCBs via EPA Method 8080. Results of the EXC-5 confirmation soil analyses are presented below in Table 5.

TABLE 5
Results of EXC-5 (Area of Transformer Pad) Confirmation Soil Analyses
May 30, 1997

Compound	Units	NSW S-16 (5'-6')	SSW S-17 (5'-6')	ESW S-18 (5'-6')	WSW S-19 (5'-6')
PCBs					
Total PCBs	mg/kg	ND	ND	ND	ND

ND = None Detected.

6.1.6.7 Re-Sampled Railroad Track Confirmation Soil Analyses and Results

Additional soil samples collected on September 22, 1997 from railroad sample locations RR-9, RR-11, RR-14, RR-16, RR-17 and RR-18. The soil samples (collected at a depth of approximately 1.5-2 feet below grade, under the coal ash layer) were subjected to laboratory analyses for PAHs via EPA Method 8270. Results of the re-sampled railroad track confirmation soil analyses are presented below in Table 6.

TABLE 6
RESULTS OF RE-SAMPLED RAILROAD TRACK CONFIRMATION SOIL ANALYSES
September 22, 1997

Compound	Units	Sample Location					
		RR-9	RR-11	RR-14	RR-16	RR-17	RR-18
		(1.5'-2')	(1.5'-2')	(1.5'-2')	(1.5'-2')	(1.5'-2')	(1.5'-2')
PAHs							
Acenaphthene	mg/kg	ND	ND	ND	ND	ND	ND
Acenaphthylene	mg/kg	ND	ND	ND	BDL	ND	ND
Anthracene	mg/kg	BDL	ND	BDL	BDL	ND	BDL
Benzo(a)anthracene	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	mg/kg	BDL	ND	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	mg/kg	BDL	ND	BDL	BDL	BDL	BDL
Benzo(g,h,i)perylene	mg/kg	BDL	ND	ND	BDL	ND	ND
Benzo(k)fluoranthene	mg/kg	BDL	ND	BDL	BDL	BDL	BDL
Chrysene	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz(a,h)anthracene	mg/kg	ND	ND	ND	ND	ND	ND
Fluoranthene	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	mg/kg	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	mg/kg	BDL	ND	ND	BDL	BDL	ND
2-Methylnaphthalene	mg/kg	ND	ND	ND	ND	ND	ND
Naphthalene	mg/kg	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	BDL	ND	BDL	BDL	ND	BDL
Pyrene	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit; ND = None Detected.

6.1.7 Transformer Pad Additional Soil Analyses & Analytical Results

On May 22, 1997 ATC collected hand auger samples from under the south side and north side of the transformer pad situated within EXC-5. Hand auger samples HA/S-1 and HA/S-2 were collected from under the south side of the transformer pad at a depth of approximately 9-9.5 feet and 12-12.5 feet below grade respectively. Hand auger samples HA/S-3 and HA/S-4 were collected from under the north side of the transformer pad at a depth of approximately 9-9.5 feet and 12-12.5 feet below grade respectively. Upon examination, hand auger samples HA/S-1, HAS-2 HA/S-3 and HA/S-4 appeared saturated with the clear oily fluid indicative of mineral oil. In order to determine if the oily saturated soils under the pad contained PCBs, hand auger samples HA/S-2 and HA/S-4 were subjected to laboratory analyses for PCBs via EPA Method 8080. Results of the laboratory analyses indicated no detectable (ND) concentrations of PCBs were present in hand auger samples HA/S-2 and HA/S-4 collected on May 22, 1997.

In an attempt to characterize the oily fluid discovered under the transformer pad (within EXC-5), hand auger samples were again collected by ATC from under the south side and north side of the transformer pad on June 9, 1997. The soil samples were collected from the same approximate locations of the hand

auger samples collected on May 22, 1997 and were therefore again identified as hand auger samples HA/S-1, HA/S-2, HA/S-3 and HA/S-4. Samples HA/S-1 and HA/S-2 were collected from under the south side of the transformer pad at a depth of approximately 9-9.5 and 12-12.5 feet below grade, respectively and samples HA/S-3 and HA/S-4 were collected from under the north side of the transformer pad at a depth of approximately 9-9.5 and 12-12.5 feet below grade respectively. Samples HA/S-1 and HA/S-2 were subjected to laboratory analyses for extractable petroleum hydrocarbons (EPH) via DEP Methodology and samples HA/S-3 and HA/S-4 were subjected to laboratory analyses for total petroleum hydrocarbons (TPH) via EPA Method 8015 Modified. Additionally, the hand auger samples were subjected to laboratory analyses for PCBs via EPA Method 8080. Results of the laboratory analyses indicated no detectable (ND) concentrations of PCBs were present in hand auger samples HA/S-1, HA/S-2, HA/S-3 and HA/S-4 collected on June 9, 1997. Results of the hand auger soil sample analyses are presented below in **Table 7**. Refer to the Hand Auger Sample Location Plan presented as **Figure 9** in **Appendix 1** to review the above referenced hand auger sample locations.

TABLE 7
 RESULTS OF SOIL ANALYSES FROM UNDER TRANSFORMER PAD
 June 9, 1997

Compound	Units	HA/S-1 (south side) (9'-9.5')	HA/S-2 (S-20) (south side) (12'-12.5')	HA/S-3 (north side) (9'-9.5')	HA/S-4 (S-21) (north side) (12'-12.5')
EPH					
C9-C18 Aliphatics	mg/kg	7.6	4.5	*	*
C19-C36 Aliphatics	mg/kg	9.2	3.4	*	*
C10-C22 Aromatics	mg/kg	10.8	9.1	*	*
Benzo(a) anthracene	mg/kg	BDL	BDL	*	*
Benzo(a) pyrene	mg/kg	BDL	BDL	*	*
Benzo(b) fluoranthene	mg/kg	BDL	BDL	*	*
Benzo(g,h,i) perylene	mg/kg	BDL	BDL	*	*
Benzo(k) fluoranthene	mg/kg	BDL	BDL	*	*
Indeno (1,2,3-cd) pyrene	mg/kg	BDL	BDL	*	*
TPH					
Other Hydrocarbons	mg/kg	*	*	930	950
PCBs					
Total PCBs	mg/kg	ND	ND	ND	ND

BDL = Below Detection Limit; ND = None Detected; * = Not Tested.

6.1.8 Transformer Pad Cleaning, Wipe Sampling and Analysis

After removal of the contaminated soils from EXC-5 (area of former grid sample points C-8.5 and C-9.5) and the oily soils from around the four sides of the transformer pad to approximately 8 feet below grade, Civetti under the supervision of ATC, applied the CAPSUR PCB Extraction System in an attempt to remove the potential PCB containing oil stains remaining on the surface (top and sides) of the transformer pad. The CAPSUR PCB extraction process performed at the Site involved the application of a uniform foam blanket onto the concrete surface of the transformer pad via a pressurized tank applicator. After applying the CAPSUR foam blanket to the top and sides of the pad, the foamed areas were agitated with a stiff broom,

allowed to set for approximately 10 minutes, then vacuumed, lightly rinsed with water and re-vacuumed. After performing the initial application procedure, the pad was foamed again, vacuumed, rinsed and revacuumed then refoamed a third time, vacuumed and triple rinsed. According to the manufacturer, CAPSUR can effectively remediate to a depth of 1/2-inch to 1-inch in porous surfaces such as concrete. After the CAPSUR cleaning, the concrete transformer pad exhibited a bleached appearance (similar to an acid washing) and no visual or olfactory evidence of oil staining on the surface top and sides of the transformer pad was evident.

In order to determine if the CAPSUR PCB extraction System effectively removed the potential PCBs from the surface of the transformer pad, ATC personnel collected a random wipe sample from the top of the pad on October 16, 1997, using a gauze pad, hexane solution and VOA vial. After collection, the wipe sample was immediately placed into a chilled cooler for preservation and transported, under chain-of-custody procedures, to Con-Test Laboratories. The wipe sample was subjected to laboratory analysis for PCBs via EPA Methods. Results of the random wipe sample analysis indicated no detectable (ND) concentrations of PCBs remained on the surface of the transformer pad after application of the CAPSUR PCB extraction System.

6.1.9 Removal of Asbestos Containing Materials

A total of approximately 2.5 cubic yards of various types of Asbestos Containing Materials (ACMs) which were discovered scattered throughout the southern side of the building/property were picked, bagged and removed from the Site by Abide Environmental Contracting and Services (Abide) of East Longmeadow, Massachusetts on May 7 and 8, 1997 for disposal at a licensed hazardous waste disposal facility.

7.0 DISPOSAL OF REMEDIAL WASTES

A total of 180.29 tons of TPH containing peastone roofing material was removed from the Site by Civetti on May 7, 8 and 9, 1997, and transported to American Reclamation Corporation (AMREC) in Charlton, Massachusetts (an asphalt recycling facility) for disposal. The peastone roofing material was accepted for disposal/recycling under a DEP Beneficial Use Determination (BUD) permit issued to AMREC in September 1995. A copy of the load log sheets and the BUD permit is included in **Appendix 6**.

A total of 136.80 tons of petroleum contaminated soils were removed from the Site by Civetti on May 8, May 9, and October 16, 1997, and transported, under Bills of Lading (BOLs) certified by Timothy J. O'Brien, LSP, to Ted Ondrick Construction Company in Chicopee, Massachusetts (an asphalt recycling facility) for disposal. Copies of the BOLs are included in **Appendix 6**.

A total of 273.34 tons of PCB contaminated soils were removed from the Site by Charter Environmental on May 21 and 22, 1997, and transported, under a Bill of Lading (BOL) certified by Timothy J. O'Brien, LSP, to Environmental Soil Management, Inc., in Loudon, New Hampshire (a Thermal Processing facility) for disposal. A copy of the BOL is included in **Appendix 6**.

A total of approximately 560 cubic yards of non-hazardous/non-regulated sheet rock waste was removed from the Site by Charter Environmental on May 20, 21 and 22, 1997, and transported to the Mormon Hollow Landfill (operated by DB Enterprises) in Wendell, Massachusetts for disposal. A copy of the Charter Environmental "Load Log Sheet" regarding the removal and transportation of the sheetrock waste is included in **Appendix 6**.

A total of approximately 2.5 cubic yards of Asbestos Containing Materials (ACMs) were removed from the Site by Abide on May 7 and 8, 1997 and transported by Logano Trucking Company of Portland, CT, from May 16 to May 20, 1997, under an Asbestos Disposal & Documentation Form (manifest) to the Southern Alleghenies Disposal facility (landfill) in Davidsville, PA for disposal. A copy of the Asbestos Disposal & Documentation Form is attached in **Appendix 6**.

8.0 REQUIRED PERMITS/MANIFESTS

Bills of Lading (BOLs), certified by Timothy J. O'Brien, LSP, were utilized for the removal and off-site transportation and disposal of the petroleum contaminated soils (a total of 136.80 tons) and the PCB contaminated soils (a total of 273.34 tons).

Commonwealth of Massachusetts DEP Division of Hazardous Waste, Uniform Hazardous Waste Manifests were utilized to transport and dispose of the contents of waste drums and onsite transformers and electrical switch.

A Beneficial Use Determination (BUD) permit issued by the DEP to AMREC in September 1995 was utilized to accept and recycle the TPH containing pea stoneroofing material (a total of 180.29 tons).

A Commonwealth of Massachusetts Asbestos Notification Form No. 519494 and an Asbestos Disposal & Documentation Form No. 53155 were utilized to notify transport, and dispose of the asbestos containing materials (a total of 2.5 cubic yards).

No other state, local or federal permits were required to complete the IRA. Copies of the BOLs, hazardous waste manifests, and other permits utilized to complete the IRA are included as **Appendix 6**.

9.0 OPERATION, MAINTENANCE & MONITORING PLAN

Remedial Response Actions that may require an Operation, Maintenance & Monitoring Plan at the Site have not been implemented. Such actions are not considered necessary to maintain a condition of no imminent hazard and no significant risk. Therefore, no operation, maintenance or monitoring plan will be implemented at the Site in the future relative to the conditions addressed by the IRA.

10.0 SITE SECURITY MEASURES

The excavated contaminated soils were stockpiled temporarily on-site and encapsulated in 6 millimeter polyethylene to limit exposure potential. During and after completion of the soil excavation activities, a safety fence and caution tape were utilized to limit access to the excavated areas. Excavations EXC-1, EXC-2 and EXC-3 were partially backfilled with clean materials. EXC-5 was backfilled with clean materials to a depth of less than 4 feet deep pending further investigations outside of the objectives and scope of this IRA.

The subject property is normally fenced and padlocked at all entrances to prevent access by children, adults and/or trespassers. However, recent damage to the northwest entrance gate was observed during the IRA activities.

12.0 COMPARISON OF POST IRA SITE CONCENTRATIONS WITH MCP METHOD 1 RISK ASSESSMENT STANDARDS

The MCP Method 1 Risk Characterization method was used to assess the potential risks posed by this Site. The MCP Method 1 Soil and Groundwater Standards consider both the potential risk of harm resulting from direct exposure to OHM in the soil and the potential impacts on the groundwater at the disposal site. The MCP Method 1 Soil Standards are presented in **Tables 1-5** as **Appendix 5** for soil samples that confirm post-excavation Site conditions.

As indicated in **Tables 1 and 2** none of the soil contaminant concentrations remaining in areas of EXC-1 and EXC-2 (soil excavations at railroad tracks) exceed the applicable MCP Method 1 Soil and Groundwater Standards.

As indicated in **Tables 3, 4 and 4A** none of the soil contaminant concentrations remaining in areas of EXC-3, EXC-4 and grid sampling locations (soil excavations at former transformer areas and areas of aboveground black and white piles) exceed the applicable MCP Method 1 Soil and Groundwater Standards.

As indicated in **Table 5** none of the soil contaminant concentrations remaining in the sidewalls of EXC-5 exceed the applicable MCP Method 1 Soil and Groundwater Standards.

As indicated in **Table 6** none of the soil contaminant concentrations remaining under the on-site transformer pad exceed the applicable MCP Method 1 Soil and Groundwater Standards. However, hand auger samples HA/S-3 and HA/S-4 subject to TPH analysis via EPA Method 8015 Modified (collected from under the north side of the transformer pad at a depth of 9-12.5 feet below grade) exceed the S-1/GW-3 soil standard of 800 ppm allowed for TPH. In contrast, analysis of similarly saturated soil samples from the same depths under the south side of the transformer pad for EPH via DEP methodology, indicated results below soil standards for the respective aliphatic and aromatic components.

13.0 IDENTIFICATION OF RECEPTORS

13.1 Identification of Human Receptors

The human receptors for the risk characterization were identified with consideration to current and foreseeable activities and uses of the Site. The Site is improved by a 141,000 square foot abandoned/vacant former foundry building. Potential human receptors associated with the subject property include neighborhood residents and business personnel located within the immediate Site vicinity.

Except as noted in Section 10.0, no children or adults currently reside or work at the Site or are likely to frequent the Site and the subject property is normally fenced and padlocked at all entrances to prevent access by children, adults and/or trespassers. ATC has determined that any impact from the release of OHM (TPH, PAH, PCB and/or Lead contaminated surficial soils) to human receptors at the Site or within the immediate Site vicinity is unlikely. According to personnel of the Springfield Board of Health, no known public or private water supply wells are located within the immediate Site vicinity. Additionally, no schools, playgrounds, parks etc., are located within the immediate Site area. However, construction and/or service workers associated with any future upgrade and/or replacement of the former excavated areas are also considered potential human receptors. These workers could potentially be exposed to residual contaminated soils at the Site if excavation activities are involved.

13.2 Identification of Environmental Receptors

Wildlife at the Site is primarily limited to urban biota such as birds, small mammals and small reptiles which most likely are transient and/or seasonal in nature. No household pets such as cats and dogs currently reside at the Site (although they could potentially frequent the Site).

The Site contains an abundant amount of vegetation including trees and shrubs and overgrown grasses and weeds. During Site visits by ATC personnel, all vegetation on and surrounding the Site appeared healthy and non-distressed. ATC has determined that any impact from the release of OHM at the Site to environmental receptors at the Site or in the immediate Site vicinity is unlikely.

The nearest surface water bodies in relation to the subject property are Long Pond located approximately 1500 feet northwest of the Site, Dimmock Pond located approximately 1500 feet southeast of the Site and Loon Pond located approximately 2000 feet south of the Site. The Chicopee River (a tributary of the Connecticut River) is located approximately 0.5 miles north of the Site. Any impact from the release of OHM at the Site to the above referenced environmental receptors is considered unlikely.

Review of the 1994 Atlas of Estimated Habitats of state-listed Rare Wetlands Wildlife and Certified Vernal Pools and High Priority Sites of Rare Species Habitats and Exemplary Natural Communities delineated by the Natural Heritage & Endangered Species Program (NHESP), indicated the aforementioned areas are not located on the Site or within the immediate vicinity of the Site.

14.0 IMMINENT HAZARD EVALUATION

In accordance with 310 CMR 40.0950, Site conditions were evaluated to determine whether an Imminent Hazard, as defined by the MCP currently exists at the Site.

Based upon a review and evaluation of the remedial actions and environmental assessment activities performed at the Site, an Imminent Hazard to human health, safety, public welfare and the environment as defined by the MCP does not currently exist at the Site or is likely to exist at the Site in the foreseeable future.

15.0 SUMMARY OF FINDINGS

From July 1996 through September, 1997, Immediate Response Actions (IRAs) were performed at the Former American Dream Modular Homes site located at 225 Goodwin Street in Springfield, MA (the Site). IRA activities performed at the Site included the excavation, removal and off-site disposal of abandoned waste drums, electrical transformers and an electrical switch, TPH contaminated surficial soils discovered along the railroad tracks (at the east side of the building/property), TPH/PAH/PCB and Lead contaminated surficial soils discovered in the area of the former on-site electrical transformers (along the south side of the building/property), and the off-site removal of the aboveground TPH containing "black piles" (peastone roofing material) and the aboveground non-hazardous "white piles" (sheet rock waste) located along the southwest side of the building/property.

On July 30, 1996 one drum of petroleum products and water and two drums of epoxy were transported offsite for proper disposal by Cyn Environmental Services of Wilbraham, Massachusetts.

On August 15, 1996 Standard Electrical Testing Company Inc. transported offsite for proper disposal two 2,500 KVA transformers and contents, two approximately 55 gallon bucket transformers and one electrical switch and contents.

On July 16, 1997 ATC developed and submitted to the DEP an *Immediate Response Action Sampling Plan*. DEP approved the Sampling Plan on August 29, 1996.

On November 27, 1996 and December 2 and 3, 1996 ATC collected a total of 43 surficial soil samples for characterization of soils along the railroad tracks, the transformer pad area, the oily soils area to the south of the site building and the waste stockpiles of peastone roofing material and sheetrock material.

Based on the results of the IRA Sampling Plan, ATC developed and submitted to DEP on January 31, 1997 an *Immediate Response Action Disposal Plan*, which addressed the excavation, removal and proper disposal of all wastes identified via the *IRA Sampling Plan*.

On May 7 and 8, 1997, a total of approximately 2.5 cubic yards of various types of Asbestos Containing Materials (ACMs) which were discovered scattered throughout the southern side of the building/property were picked, bagged and removed from the Site by Abide Environmental Contracting and Services. The ACMs were transported by Logano Trucking Company of Portland, CT, to the Southern Alleghenies Disposal facility (landfill) in Davidsville, PA for disposal.

On May 7, 8 and 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and transported off-site the aboveground piles of TPH containing roofing material (black piles of peastone roofing material) located along the southwest side of the building/property. A total of 180.29 tons of the peastone roofing material was transported to American Reclamation Corporation (AMREC) in Charlton, Massachusetts (an asphalt recycling facility) for disposal.

On May 8 and 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and transported off-site the TPH contaminated surficial soils discovered along the railroad tracks in the areas of soil sample location points RR-6 and RR-10. The soil excavations were designated Excavation-1 (EXC-1) and Excavation-2 (EXC-2) respectively. After completion of the IRA activities at EXC-1 and EXC-2, the excavations were partially backfilled with clean sand and gravel. A total of 136.8 tons of petroleum

contaminated soils were transported to Ted Ondrick Construction Company in Chicopee, Massachusetts (an asphalt recycling facility) for disposal.

On May 9, 1997, Civetti, under the direction of ATC personnel, excavated, removed and stockpiled on-site the TPH/PAH/PCB contaminated surficial soils discovered near the southwest corner of the building in the area of grid soil sample points B-1.5 and B/C-1 (area of former on-site electric transformers and large surficial oil stain) and the soil excavation was designated Excavation-3 (EXC-3). The contaminated soils were stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal.

On May 20, 1997, Civetti, under the direction of ATC personnel, scraped/excavated, removed and stockpiled on-site the TPH/PCB/PAH and Lead contaminated surficial soils discovered along the south side of the building/property in the area of grid soil sample points D-7.5, D-8.5, E-7.5, D/E-9, E-7.5, F-6.5, E/F-7.5, F-6.5, F-G-7.5 G-6.5 and G-7.5 (located immediately downslope from the area of former on-site electric transformers) and the soil excavation was designated Excavation-4 (EXC-4). After removal of the surficial soils from EXC-4, asphalt paving was discovered under portions of the scraped areas at a depth of approximately 6 inches below (the former) grade. The portions of EXC-4 not containing asphalt pavement were excavated to a depth of approximately 1.5 feet below (the former) grade. Approximately 100 cubic yards of contaminated soils were scraped/excavated and removed from EXC-4. The contaminated soils were then stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal.

On May 21 and 22, 1997, Civetti, under the direction of ATC personnel, excavated, removed and stockpiled on-site the TPH/PAH/PCB and Lead contaminated surficial soils discovered near the south side of the building in the area of grid soil sample points C-8.5 and C-9.5 (area of current on-site transformer pad) and the soil excavation was designated Excavation-5 (EXC-5). While excavating the soil from around the concrete pad (which was discovered to be approximately 5 feet thick), oily soils were detected along the sides of the pad and saturated oily soils were discovered along the bottom of the pad at a depth of approximately 5 feet below grade (most likely due to releases from the former electrical transformers). Upon close inspection, soils recovered from the bottom of the pad appeared saturated with a clear type of oily fluid indicative of mineral oil. After determining the soils below the pad were saturated the excavation activities were continued from a depth of approximately 5 to 8 feet below grade. Four soil samples were collected with a hand auger from directly under the north and south sides of the pad at a depth of 9'-9.5' and 12'-12.5' in an attempt to determine the vertical extent of the oily soils under the pad. Inspection of the hand auger soil samples indicated the soils were still saturated with the clear oily fluid to a depth greater than 12.5 feet below grade or 7.5 feet below the bottom of the pad. The excavation activities were then discontinued and EXC-5 was partially backfilled to a depth less than 4 feet below grade with clean fill and surrounded with safety fence and caution tape. A total of approximately 100 cubic yards of contaminated/oily soils were removed from EXC-5 and the soils were stockpiled on-site and encapsulated in 6 millimeter polyethylene for subsequent off-site disposal. On May 21 and 22, 1997, a total of 273.34 tons of PCB contaminated soils (from EXC-3, EXC-4 and EXC-5) were transported to Environmental Soil Management, Inc., in Loudon, New Hampshire (a Thermal Processing facility) for disposal.

On May 20, 21 and 22, 1997, Civetti, in conjunction with Charter Environmental, Inc., (Charter) and under the direction of ATC personnel, excavated, removed and transported off-site a total of approximately 560 cubic yards of the aboveground piles of white building debris (white piles of sheet rock waste) located along the southwest side of the building/property and adjacent to the area of the former black piles. The non-contaminated/non-regulated sheet rock waste was transported to the Mormon Hollow Landfill (operated by DB Enterprises) in Wendel, Massachusetts for disposal.

The MCP Method 1 Risk Characterization method was used to assess the potential risks posed by this Site. The MCP Method 1 Soil Standards consider the potential risk of harm resulting from direct exposure to OHM in the soil. Results of the Confirmation Soil analyses indicated none of the soil contaminant concentrations remaining at the Site in the areas of EXC-1, EXC-2, EXC-3, EXC-4, EXC-5 and grid locations, exceed the applicable MCP Method 1 Soil Standards. However, hand auger samples HA/S-3 and HA/S-4 (collected from under the north side of the transformer pad at a depth of 9-12.5 feet below grade) exceed the S-1 soil standard of 800 ppm for TPH. In contrast analysis of similarly saturated soil samples from the same depths under the south side of the transformer pad for EPH via DEP Methodology, indicated results below soil standards for the respective aliphatic and aromatic components.

Based on the analytical data collected at the conclusion of the contaminated soil excavation activities (Confirmation Sample analyses), ATC has determined that no Exposure Potential to any remaining contaminated subsurface soils via ingestion, inhalation and/or dermal absorption currently exists at the Site. A total of 180.29 tons of aboveground TPH containing pea stone-roof rubble, 560 cubic yards of aboveground sheet rock waste, 136.80 tons of petroleum contaminated soils and 273.34 tons of PCB contaminated soils were excavated and removed from the Site during May 1997, thus eliminating the major source of the contamination detected at the Site.

16.0 CONCLUSIONS AND RECOMMENDATIONS

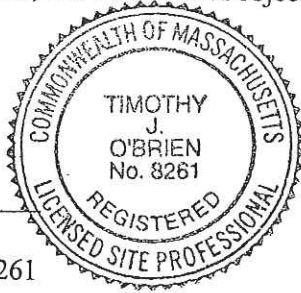
Following completion of this IRA, ATC presents the following conclusions and recommendations:


1. All objectives of this IRA as specified in DEP's IRA Approvals letter dated July 2, 1996 have been met.
2. Based upon a review and evaluation of the assessment activities and remedial actions performed at the site, an Imminent Hazard to human health, safety, public welfare, and the environment as defined by the MCP, does not currently exist at the site. Ongoing monitoring of site conditions is not warranted following completion of this IRA.
3. IRA activities conducted have demonstrated no change in existing site conditions. However, continuation of preliminary response actions in accordance with 310 CMR 40.0400 will be required to address remaining site conditions as determined by the current IRA activities and former assessments. Such actions fall outside the scope and objectives of this IRA.
4. It is recommended that repairs be made by the current owners of the property to the northwest gate to ensure security of the site. The perimeter fence should also be inspected and maintained on an ongoing basis.
5. Subsequent to repairs being conducted on the northwest gate and, if appropriate, to the perimeter fence, it is recommended that the existing "Hazardous Waste Disposal Site" warning signs be removed.

17.0 LICENSED SITE PROFESSIONAL CERTIFICATION

This IRA Completion Report has been prepared under the supervision of and approved by Mr. Timothy J. O'Brien, LSP for the intended use of Crane Co. It is the opinion of the undersigned that all IRA scope of activities were conducted in accordance with written IRA approvals dated July 2, 1996 and appropriate provisions of 310 CMR 40.0410, and that all IRA objectives have been met.

ATC Associates Inc.





Timothy J. O'Brien
Licensed Site Professional #8261
Director of Environmental Services

18.0 LIMITATIONS

This report was completed with respect to Massachusetts General Law Chapter 21E as promulgated in July 1992, and the Massachusetts Contingency Plan Chapter 310 CMR 40.0000 as promulgated in October 31, 1997 and has been prepared for the exclusive use of Crane Co.

This Immediate Response Action Completion Report was completed for the evaluation of environmental site conditions and the disposal of site contaminated soils as outlined in the MCP at 310 CMR 40.0427 for the Former American Dream Modular Homes facility located at 225 Goodwin Street, Springfield, Hampshire County, Massachusetts.

Observations described in this report were made under the conditions stated within the report. The conclusions presented are based solely on the services described. ATC Associates Inc. reserves the right to modify the conclusions of this report should further information become available.

Certain information provided by state and local officials as well as other parties herein referenced was used to develop this report. The accuracy or completeness of the information provided by these sources was not independently verified.

All submittals to the Massachusetts Department of Environmental Protection (MA DEP) are subject to random audits pursuant to Massachusetts General Laws Chapter 21E. The submittal of this document represents the opinions of Mr. Timothy J O'Brien, LSP, LSP License No. 8261, which are not guaranteed to be in agreement with the interpretations of the MA DEP should submittal of this document be audited.

16.0 CONCLUSIONS AND RECOMMENDATIONS

Completion of this IRA, ATC presents the following conclusions and recommendations:

All objectives of this IRA as specified in DEP's IRA Approvals letter dated July 2, 1996 have been met.

Based upon a review and evaluation of the assessment activities and remedial actions performed at the site, an Imminent Hazard to human health, safety, public welfare, and the environment as defined by the MCP, does not currently exist at the site. Ongoing monitoring of site conditions is not warranted following completion of this IRA.

IRA activities conducted have demonstrated no change in existing site conditions. However, continuation of preliminary response actions in accordance with 310 CMR 40.0400 will be required to address remaining site conditions as determined by the current IRA activities and former assessments. Such actions fall outside the scope and objectives of this IRA.

It is recommended that repairs be made by the current owners of the property to the northwest gate to ensure security of the site. The perimeter fence should also be inspected and maintained on an ongoing basis.

Subsequent to repairs being conducted on the northwest gate and, if appropriate, to the perimeter fence, it is recommended that the existing "Hazardous Waste Disposal Site" warning signs be removed.

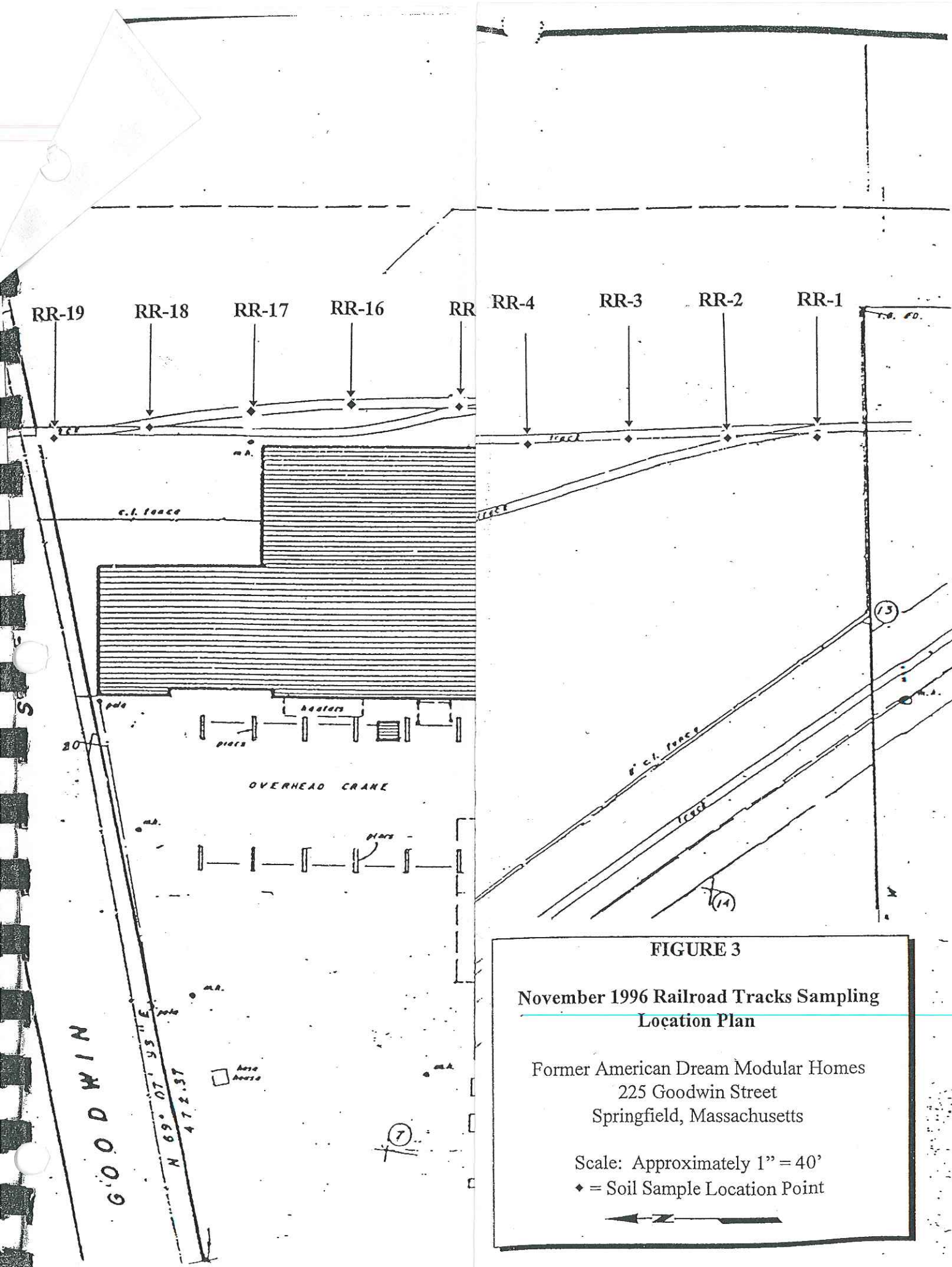


FIGURE 3

November 1996 Railroad Tracks Sampling
Location Plan

Former American Dream Modular Homes
225 Goodwin Street
Springfield, Massachusetts

Scale: Approximately 1" = 40'

♦ = Soil Sample Location Point



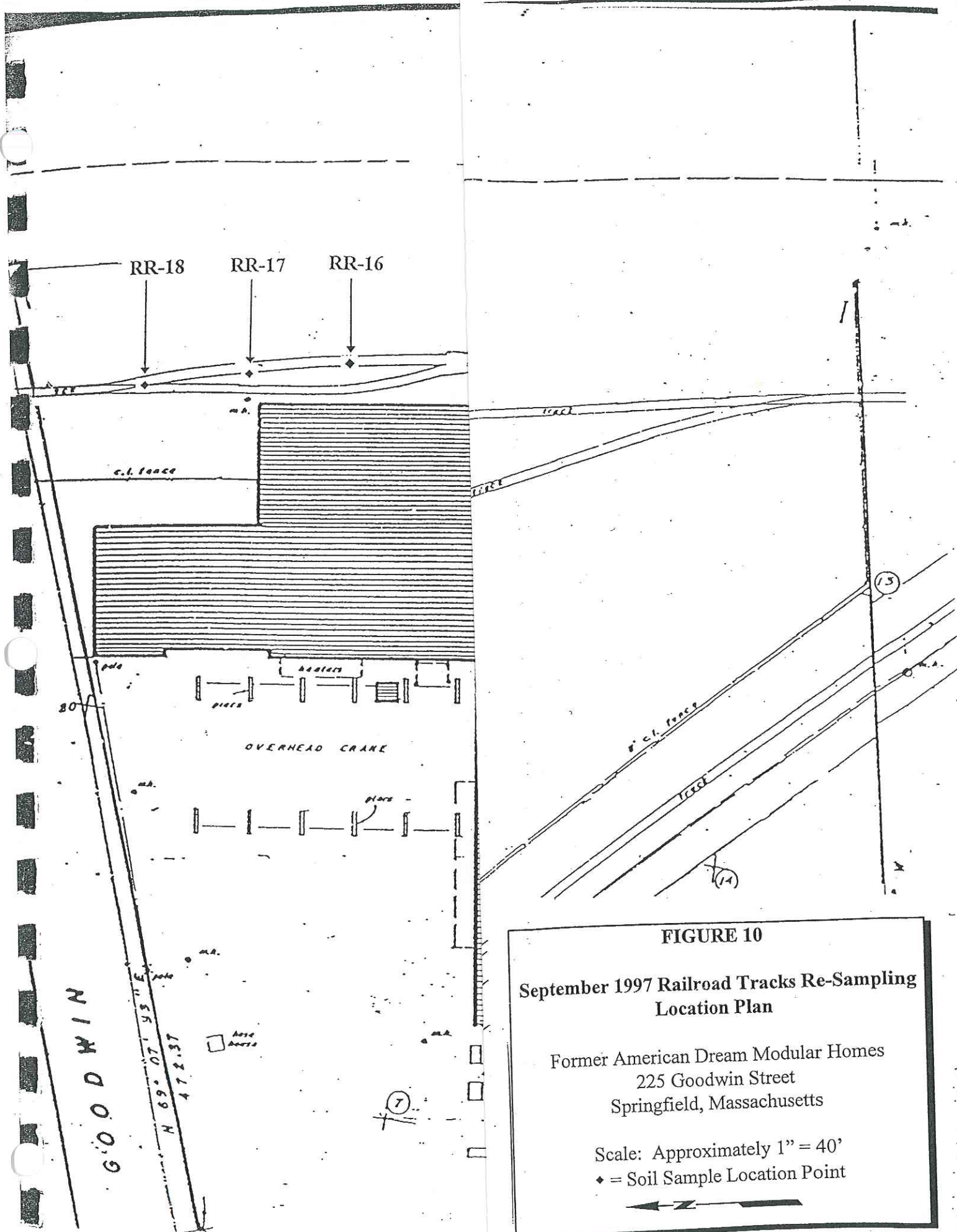


FIGURE 10

**September 1997 Railroad Tracks Re-Sampling
Location Plan**

Former American Dream Modular Homes
225 Goodwin Street
Springfield, Massachusetts

Scale: Approximately 1" = 40'

◆ = Soil Sample Location Point



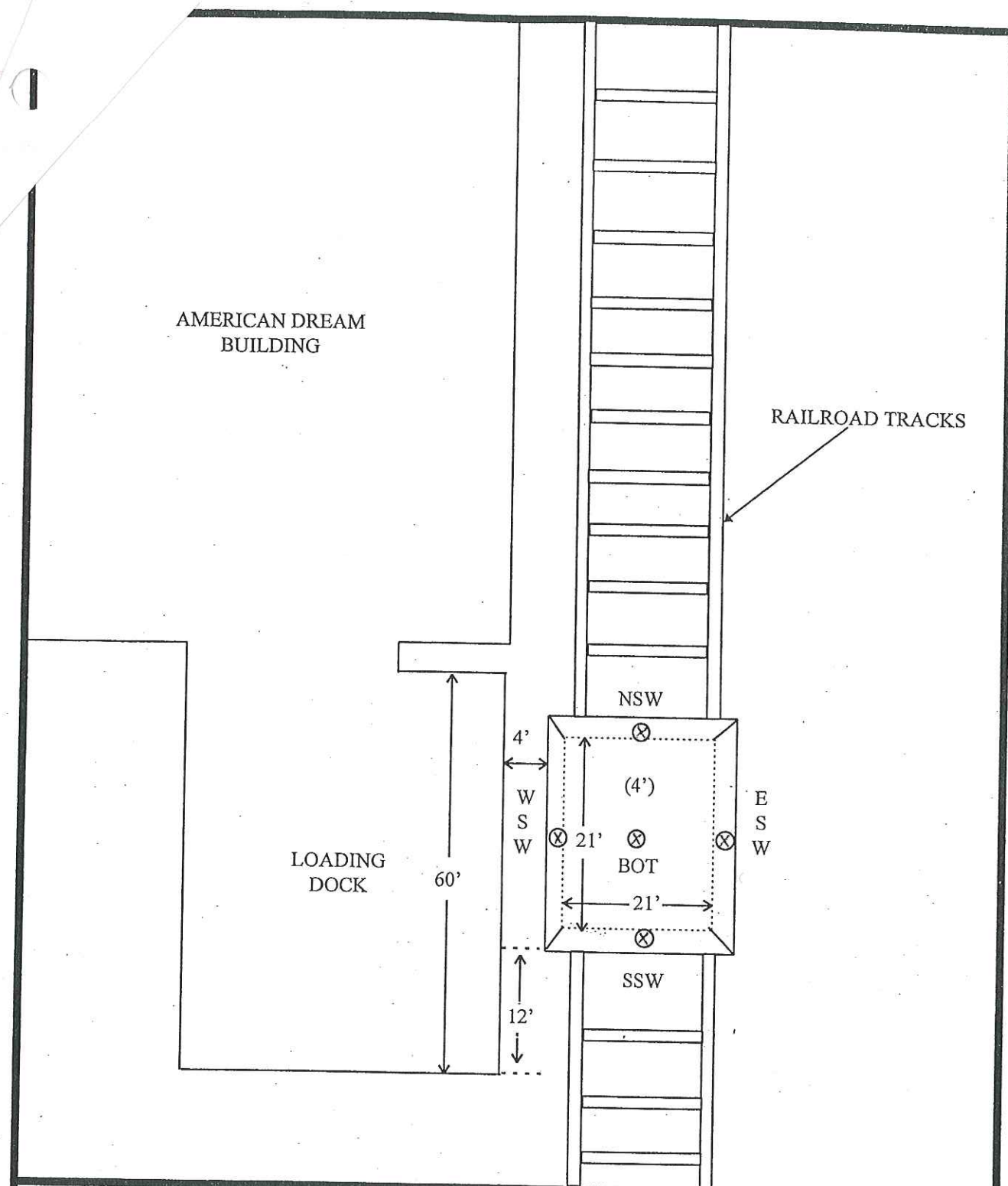


FIGURE NUMBER:

5

LEGEND:

⊗ = Soil Sample Location
NSW = North Side Wall

EXC-1 Confirmation Sample Location Plan

Former American Dream
Modular Homes
225 Goodwin Street
Springfield, Massachusetts

NORTH:



SCALE:

NTS

DATE:

12 September 1997

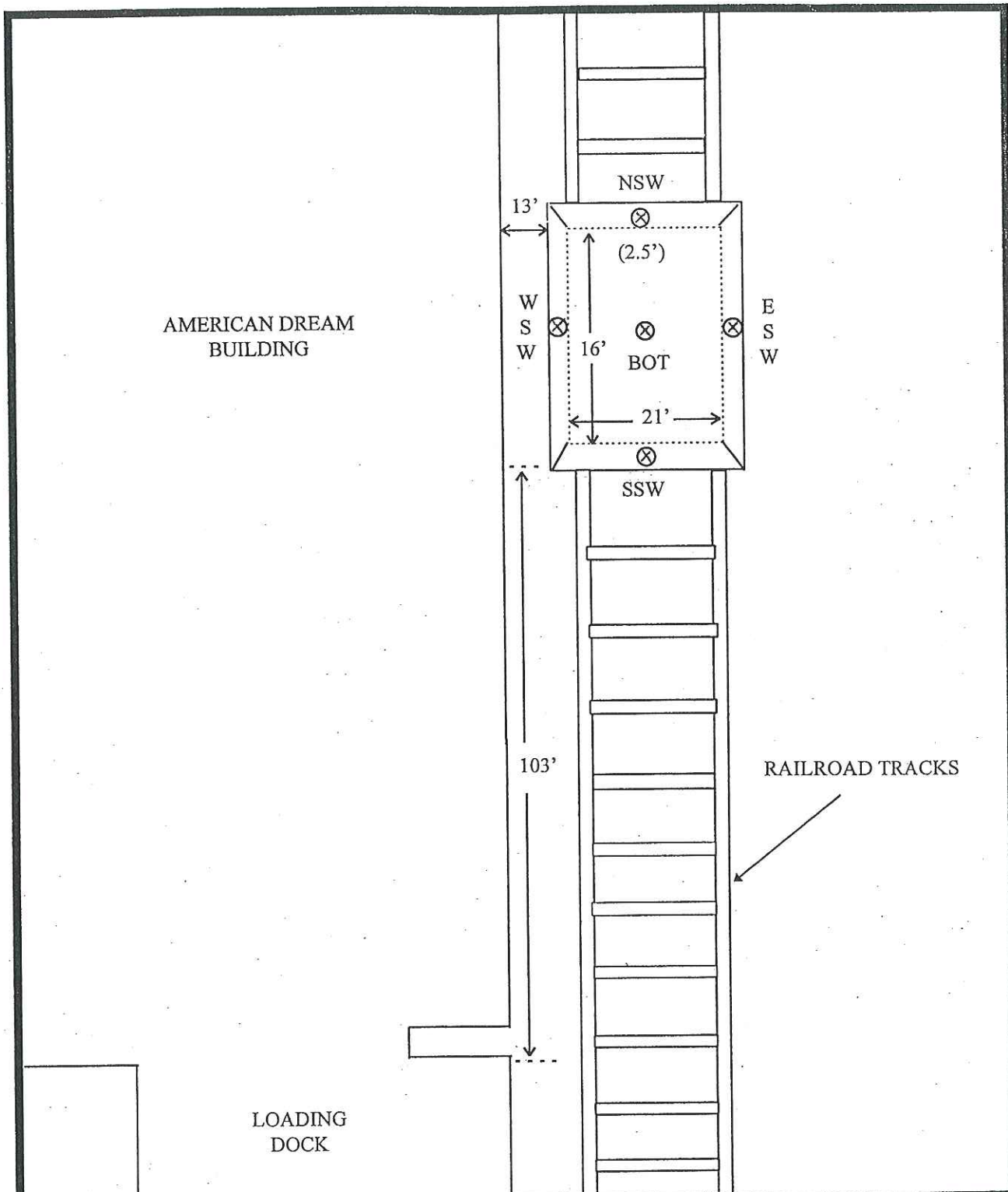


FIGURE NUMBER:

6

LEGEND:

⊗ = Soil Sample Location
NSW = North Side Wall

EXC-2 Confirmation Sample Location Plan

Former American Dream
Modular Homes
225 Goodwin Street
Springfield, Massachusetts

NORTH:



SCALE:

NTS

DATE:

12 September 1997

AMERICAN DREAM
BUILDING

SOUTHWEST
CORNER

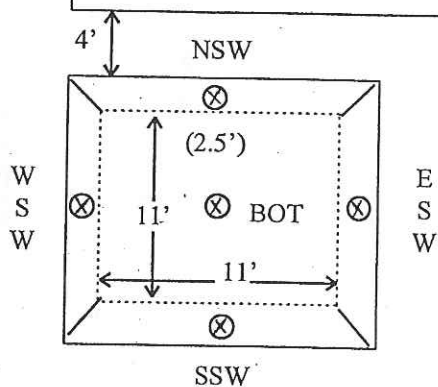


FIGURE NUMBER:

7

LEGEND:

⊗ = Soil Sample Location
NSW = North Side Wall

**EXC-3 Confirmation Sample
Location Plan**

Former American Dream
Modular Homes
225 Goodwin Street
Springfield, Massachusetts

NORTH:



SCALE:

NTS

DATE:

12 September 1997

AMERICAN DREAM
BUILDING

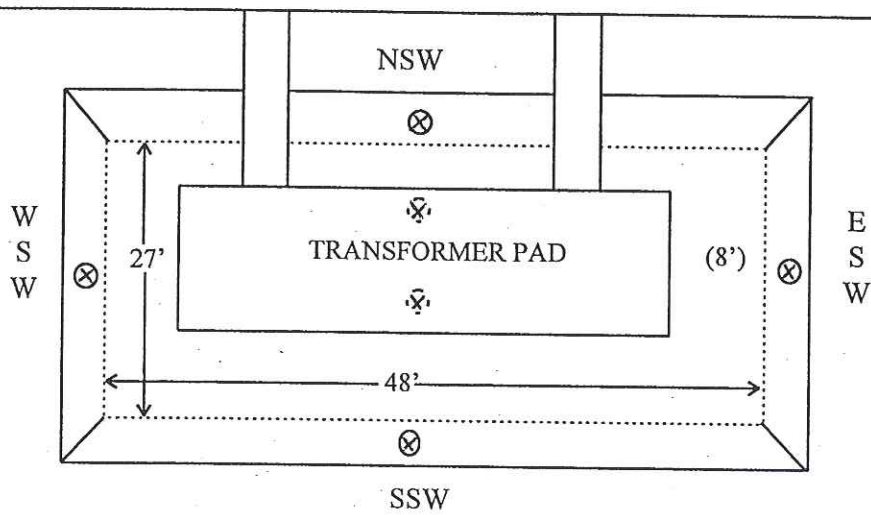


FIGURE NUMBER:

9

LEGEND:

- ⊗ = Soil Sample Location
- ⊗ = Soil Sample Location
Beneath Pad
- NSW = North Side Wall

**EXC-5 Confirmation Sample
Location Plan**

Former American Dream
Modular Homes
225 Goodwin Street
Springfield, Massachusetts

NORTH:



SCALE:

NTS

DATE:

19 September 1997

TABLE 3
SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL DATA
COMPARED TO MCP REPORTABLE CONCENTRATIONS (RCGW-2)

American Dream Modular Homes
225 Goodwin Street
Springfield, MA
Site No. 1-0616

December 1988 - July 1996

Compound	Sampling Date	Sample Location							Reportable Concentration RCGW-2
		CEA-1	CEA-2	CEA-3	CEA-4	CEA-5	CEA-6	CEA-7	
TPH (ug/l)									
	12/7/88	NM	100	<100	400	NM	1,240,000	NM	50,000
	7/10/96	BDL	BDL	ND	340	BDL	1,960	NM	50,000
#2/#4 Fuel Oil or Diesel	12/7/88	NM	NM	NM	NM	NM	NM	NM	
	7/10/96	ND	ND	ND	ND	ND	1,960	NM	
Other Hydrocarbons	12/7/88	NM	NM	NM	NM	NM	NM	NM	
	7/10/96	BDL	BDL	ND	340	BDL	ND	NM	
PCB Compounds (ug/l)									
PCB 1016, 1026, 1021, 1232, 1242, 1248, 1254, 1260	12/7/88	NM	NM	NM	ND	NM	ND	NM	
PCB 1221, 1232, 1242, 1248, 1254, 1260	7/10/96	ND	ND	ND	ND	ND	ND	NM	
PAH Compounds (ug/l)									
Acenaphthene	12/7/88	NM	NM	NM	ND	ND	NM	ND	
	7/10/96	ND	ND	ND	ND	ND	BDL	NM	2,000
Fluorene	12/7/88	NM	NM	NM	ND	ND	BDL	NM	2,000
	7/10/96	ND	ND	ND	ND	ND	BDL	NM	1,000
2-Methylnaphthalene	12/7/88	NM	NM	NM	NM	NM	NM	ND	1,000
	7/10/96	ND	ND	ND	BDL	ND	BDL	NM	
Naphthalene	12/7/88	NM	NM	NM	ND	ND	NM	ND	6,000
	7/10/96	ND	ND	ND	ND	BDL	BDL	NM	6,000
Remaining PAH Compounds	12/7/88	NM	NM	NM	ND	ND	NM	ND	
	7/10/96	ND	ND	ND	ND	ND	ND	NM	
Dissolved Metals (mg/l)									
Zinc	12/7/88	NM	NM	NM	NM	NM	NM	NM	0.9
	7/10/96	0.014	0.015	0.015	0.015	0.017	0.025	NM	0.9
Remaining Metal Parameters	12/7/88	NM	NM	NM	NM	NM	NM	NM	
	7/10/96	ND	ND	ND	ND	ND	ND	ND	
VOC's (ug/l)									
Benzene	12/7/88	ND	NM	NM	ND	ND	ND	ND	2,000
	7/10/96	ND	ND	ND	1.1	ND	ND	ND	2,000
Carbon Disulfide	12/7/88	NM	NM	NM	NM	NM	NM	NM	10,000
	7/10/96	BDL	ND	ND	ND	ND	ND	NM	10,000
Chlorobenzene	12/7/88	ND	NM	NM	ND	ND	ND	ND	500
	7/10/96	ND	BDL	ND	ND	ND	ND	NM	500

Table 3 Continued....

Compound	Sampling Date	Sample Location					Reportable Concentration				
		CEA-1	CEA-1	CEA-3	CEA-4	CEA-5	CEA-6	CEA-7	RCGW-2		
Chloroethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	10,000	
	7/10/96	ND	0.8	ND	ND	ND	ND	ND	ND	10,000	
1,2-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	9	ND	ND	8,000	
	7/10/96	ND	1.1	ND	BDL	ND	ND	ND	ND	8,000	
1,3-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	5	ND	ND	8,000	
	7/10/96	ND	BDL	ND	ND	ND	BDL	ND	ND	8,000	
1,4-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	5	ND	ND	8,000	
	7/10/96	ND	BDL	ND	ND	ND	BDL	ND	ND	8,000	
1,1-Dichloroethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	9,000	
	7/10/96	ND	11.9	2.3	ND	BDL	ND	ND	ND	9,000	
1,1-Dichloroethylene	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	1	
	7/10/96	ND	ND	ND	ND	BDL	ND	ND	ND	1	
Ethyl Benzene	12/7/88	ND	NM	NM	ND	ND	87	ND	ND	4,000	
	7/10/96	ND	ND	ND	ND	ND	2.6	ND	ND	4,000	
Methylene Chloride	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	50,000	
	7/10/96	0.9	0.8	1	BDL	ND	1.8	ND	ND	50,000	
1,1,1-Trichloroethane	12/7/88	ND	NM	NM	ND	ND	385	9	ND	4,000	
	7/10/96	ND	ND	2.1	ND	38.6	ND	ND	ND	4,000	
Trichloroethylene	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	300	
	7/10/96	ND	ND	ND	ND	1.1	ND	ND	ND	300	
Trichlorofluoromethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	100,000	
	7/10/96	ND	ND	ND	ND	BDL	ND	ND	ND	100,000	
Xylene	12/7/88	ND	NM	NM	ND	ND	186	ND	ND	6,000	
	7/10/96	ND	ND	ND	ND	ND	BDL	ND	ND	6,000	
Remaining VOC Compounds	12/7/88	ND	NM	NM	ND	ND	ND	ND	ND	ND	
	7/10/96	ND	ND	ND	ND	ND	ND	ND	ND	ND	

NOTES:

ug/l - micrograms per liter

mg/l - milligrams per liter

TPH - Total Petroleum Hydrocarbons

PCBs - Polychlorinated Biphenyls

PAHs - Polynuclear Aromatic Hydrocarbons

ND - compound was not detected above or below the laboratory detection limit

NM - Not measured

BDL - compound was detected below the applicable laboratory detection limit; however, could not be quantified

Laboratory analysis for TPH performed via IR Scan (12/7/88) or EPA Modified Method 8015 (7/10/96)

Laboratory analysis for PCBs performed via EPA Method 608 (12/7/88) or EPA Method 8080 (7/10/96)

Laboratory analysis for PAHs performed via EPA Method 625 (12/7/88 and 7/10/96)

Laboratory analysis for Priority Pollutant 13 metals via EPA Method 200.7 or EPA 245.1 (mercury)

ATC ENVIRONMENTAL INC.

HAND DELIVERED

DATE 7-Aug-96

REC'D. BY emg

LICENSED SITE PROFESSIONAL OPINION

Former American Dream Modular Homes
Former Crane Company Steel Foundry
Former Chapman Valve Mfg. Company
Former Department of Defense Facility

225 Goodwin Street
Springfield, Massachusetts

Non-Priority Confirmed
Transition Site No. 1-0616

31 July 1996

Prepared for:

Dr. Anthony D. Pantaleoni
Crane Co.
100 First Stamford Place
Stamford, Connecticut 06902

Prepared by:

ATC Environmental Inc.
39 Spruce Street
East Longmeadow, Massachusetts 01028

Solutions For Environmental Concerns



TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION	1
2.0 MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE STATUS	1
3.0 LOCATION DESCRIPTION	8
4.0 SURROUNDING LAND USE AND SENSITIVE RECEPTORS	9
5.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS	10
5.1 TECHNICAL REPORT - CEA, INC.	10
5.2 PRELIMINARY RESPONSE ACTIONS - CON-TEST, INC.	10
6.0 ENVIRONMENTAL SITE CONDITIONS	12
6.1 SOIL MEDIA	12
6.2 GROUNDWATER MEDIA	13
6.3 SURFACE WATER/WETLANDS	14
6.4 AIR	14
7.0 FIELD INVESTIGATIONS	15
8.0 IMMINENT HAZARD EVALUATION	17
9.0 CONCLUSIONS AND LICENSED SITE PROFESSIONAL (LSP) OPINION	18
LICENSED SITE PROFESSIONAL (LSP) CERTIFICATION	19
APPENDIX 1 TECHNICAL REPORT - CEA, INC.	
APPENDIX 2 PRELIMINARY RESPONSE ACTIONS - CON-TEST, INC.	
APPENDIX 3 TABLES	
APPENDIX 4 LABORATORY ANALYTICAL REPORTS	

List of Tables

Table 1	Summary of Soil Analytical Data Compared to MCP Reportable Concentrations (RCS-1) - December 1988
Table 2	Summary of Soil Analytical Data Compared to MCP Reportable Concentrations (RCS-1) - July 1994
Table 3	Summary of Historical Groundwater Analytical Data Compared to MCP Reportable Concentrations (RCGW-2) - December 1988 to July 1996

1.0 INTRODUCTION

On behalf of Crane Co., ATC Environmental Inc. (ATC) is providing a Licensed Site Professional (LSP) Evaluation Opinion in accordance with 310 CMR 40.0600 for release conditions documented at the Former American Dream Modular Homes property located at 225 Goodwin Street, in Springfield, Hampden County, Massachusetts. Pursuant to Section 5A of M.G.L. c. 21E, Crane Co. has been identified as a potentially responsible party (PRP). Crane Co.'s liability is "strict", meaning that it is not based on fault, but solely on its status as former owner in said Section 5A. The following PRPs have also been identified for the aforementioned property: TJF Realty Trust, American Dream Modular Homes, and the United States Department of Defense.

2.0 MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION SITE STATUS

According to the April 1995 List of Transition & Tier Classified Sites, the American Dream Modular Homes property was first listed by the Department of Environmental Protection (DEP) as a Non-Priority Confirmed Disposal Site on 15 January 1991. The American Dream Modular Homes property is currently identified as Transition Site No. 1-0616.

A complete review of the regulatory interaction with the Massachusetts Department of Environmental Protection (DEP), as well as, available reports and correspondence on file with ATC was conducted. The following chronology of events and milestones of compliance has been prepared:

09 February 1989 CEA Site Investigation Report

Work conducted between October 14, 1988 and February 9, 1989, for Stephen P. Gray.

- 8-10 USTs in place
- 7 transformers and 92 capacitors removed August 1986. Two transformers remaining
- Solvents in groundwater (5 wells) - TPH at 1240 ppm in CEA-6
- Up to 155 ppm PCB in CEA-6 boring
- Recommended Phase II assessment and removal of contaminated soils

26 May 1989 Site Discovery-Assessment Data Sheet

- Stephen Gray and Crane Co. listed as owner and other PRP, respectively
- CEA listed as consultant
- Site Discovery Source - unsolicited 03 March 1989 Phase I report
- TPH in groundwater, PCBs in soil and PNAs in soil - see CEA report for values
- Preliminary Priority Rating - Non-priority
- Prepared on 26 May 1989 by Stephen Ball (DEQE)

31 May 1989 Letter-DEQE (Stephen Joyce) to Stephen Gray - Review of Phase I

- Acknowledgment of report receipt
- Potential of 21E responsibility (copy of 21E reportedly attached to letter)
- Site to be placed on LTBI list
- Deficiencies with submitted Phase I
 - lat/long/Mercator info. missing
 - location of utilities not noted
 - potential contaminant pathways not identified

- sensitive receptors not identified
- discrepancy between Chain of Custody and lab sheets (holding times questionable)

- Notice to submit preliminary assessment form, completed Phase I, Interim Site Classification Form and Phase II Scope of Work w/in 90 days

31 July 1989 Letter to DEQE (S. Joyce) from Louis Moore

- Notice that all correspondence to Gray should be copied to Ryan & White, P.C. (Attorneys at Law)

02 February 1990 Phase I Report Addendum No. 1 submitted by CEA (Alicandro) to DEQE (Joyce)

- Provided additional technical information
- Provided answers to 31 May 1989 letter
- CEA did not see problem with Chain of Custody
- Attachments included P.A. form and Interim Site Classification Form

17 May 1990 Acknowledgment of Receipt of Report -- DEQE (Joyce) letter to Gray

- report received 3-12-90 entitled Phase I Report Addendum

31 May 1990 Public Water Supply Source Location Confirmation

- Requested by T. Tokarz (DEP), confirmed by M. Lotti - site not located w/in Zone II, Interim Zone II or w/in proximity of surface water source
- Public water supply distribution system available listed as partial (99%)

24 October 1990 Letter from DEQE (Joyce) to Gray --- Review of Phase I submittals

- Summary of Phase I Report contents
- Approval of interim site classification of non-priority
- Notice of Responsibility - site is a disposal site (21E) and to be listed as LTBI
- Dept. has reason to believe Gray is a PRP w/ liability under 21E
- No further work (remediation, clean-up, etc.) w/o DEQE approval

31 October 1990 Site Confirmation Form - DEP/BWSC Form

- Source of information - P.A./Phase I report, Site Classification Form

29 November 1990 Letter from DEQE (Joyce) to Gray - Notice of Classification and Publication as a Non-Priority Site

15 August 1991 Memo to Files from T. Tokarz (DEP)

- Stephen Ball and T. Tokarz conducted site visit
- Granted access by Henry Zola of GPI, Inc. who was doing grading work for Gray
- According to Zola, approximately 200 yds of soil from an area located approximately 20 feet west of wells CEA-2,3,4 had been transferred to Ridge Road in Wilbraham to property owned by Gray before operations ceased 15 August 1991 per the DEP request. Soil appeared clean w/ no odor and with some chunks of coal intermixed
- 25 trailers noted on site (1 trailer open contained used tires, another trailer had a radioactive placard attached)

- Leaking transformer noted, ~50 yd gap in fence (border w/ Truss Engineering)

30 August 1991 Letter from DEP (Joyce) to Gray -- Site Visit and Requirements for a Short Term Measure

- Inspection result of complaint concerning conditions on site (complaint source not listed)
- Required actions: fix fence to eliminate potential imminent hazard, repair/remove transformer and test for PCBs in oil or provide analytical if already done, no further removal of soil w/o analytical and DEP approval, identify contents of trailers

30 August 1991 Letter from Roys Towing of Springfield to Gray

- All trailers of theirs on site loaded with used tires

11 September 1991 Letter from Gray to DEP

- Informing DEP that: transformer leaking stopped, fence being fixed, would like permit to remove soil and letter from Roy

30 September 1991 Letter from DEP (Joyce) to Gray -- Short Term Measure Requirements

- Received Gray letter of 11 September 1991, require the following information: PCB test results from transformer, details of what was done to stop the leak and by whom, definite date of fence repair, need for analytical data before removing soil (and approval), need for Department inspection after all actions above are completed

18 May 1993 Letter from DEP (James Colman) to Gray-----Request for payment

- Letter with invoice for costs incurred in performing response actions at site \$384.56

24 February 1993 Second invoice

- Above costs plus interest

11 April 1994 Dept. of Army Corp of Engineers letter to John Benoit representing TJF Realty Corp.

- Re: Defense Environmental Restoration Program- Formerly Used Defense Sites (DERP-FUDS)
- Site visit in May 1991 revealed 7 USTs, 3 abandoned transformers, piping in foundry covered by asbestos left when site conveyed to Chapman Valve Manufacturing in 1947
- Conversations with Crane Co. indicated all (except 1 tank) were used by Crane extensively and for substantial time period
- Regulations prohibit remediation under DERP-FUDS if used subsequent to military; also asbestos not covered under DERP-FUDS
- Seventh tank not used post-military and Corp needs right-of-entry before removing

25 April 1994 Letter from DEP (Catherine G. Wanat) to Gray

- Notice of Audit
- Request for information about compliance with Short Term Measure Requirements
- Notice of intent to perform site inspection on 6 May 1994

29 April 1994 Letter from DEP (Catherine G. Wanat) to Mr. Fluharty of TJF Realty Corp.

- Notice of Audit --- same letter as above

11 May 1994 Army Corp. letter to Scherer (DEP)

- Enclosed a map with location of 6 USTs and transformers identified during May 1991 Army investigation; said 5 of 6 tanks do not qualify (numbers appeared in letter to be listed incorrectly)
- Noted that other tank is in process of being scheduled for removal

11 May 1994 Letter from John Benoit of Cottage Hill Realty to DEP (Michael Scherer)

- submitted to DEP a copy of DEP letter dated 24 October 1990 to Gray notifying him of Phase I results and his responsibility under 21E

12 May 1994 Phone Memo of Scherer (DEP) of conversation with Benoit

- Benoit represents Crane Co.
- Crane to hire Con-Test for Environmental Assessment; Scherer to meet on site to point out DEP concerns

18 May 1994 Letter from John Benoit to Scherer (DEP)

- Summary of historical ownership

19 May 1994 Letter from DEP (Richard Green) to Robert Pirie, Asst Secretary of the Navy: Notice of Responsibility; IRA; Notice of Response Actions

- Navy owned and operated from 1942-1947
- Dept. has reason to believe they are PRP
- Notify DEP by 01 June 1994 if intend to undertake response actions

19 May 1994 Letter from DEP (Richard Green) to Anthony D. Pantaleoni, V.P. (Crane)

- Same letter as above
- Reason to believe Crane is a PRP

19 May 1994 Letter from DEP (Green) to TJF Realty Corp.

- Same as above
- Reason to believe PRP

19 May 1994 Letter from DEP (Green) to Gray

- Same as above
- Reason to believe PRP

01 June 1994 Letter to Scherer DEP from Crane Co.

- Willing to discuss position of other PRPs
- Do not have responsibility for imminent hazard outlined in 19 May 94 letter

2 June 1994 Letter from Peter Neintrelman (Attorney) to Scherer (DEP)

- Represents TJF Realty
- Permission granted to Crane to enter property to do work

9 June 1994 Letter from Green (DEP) to Gray: Notice of Audit Findings - Non Compliance

- Summary IRA actions needed
- Fix fence

- Determine content of transformers
- Extent and disposal PCB soil
- Identify and remove contents of USTs

13 June 1995 Letter from Cooperman DEP to Crane Co.

- Describes conditions at site requiring Immediate Response Actions

5 July 1994 Site Meeting Con-Test and DEP (Scherer and Cooperman)

20 July 1994 Letter from Con-Test to Cooperman (DEP)

- Describes preliminary actions to be taken for IRA
- Limit access (TJF)
- Removal / disposal transformers
- Investigate extent of PCB soils
- Identify on-site drums
- Identify contents of USTs
- Prepare IRA plan

26-27 July 1994 Field Work Conducted by Con-Test

5 August 94 Report on Preliminary Response Actions by Con-Test Submitted to DEP

- Access secured
- PCBs identified by transformers - exceed RC:
- Contents of drums identified
- Contents of 6 x 15,000 gallon USTs identified
 - 4 x No. 6 fuel oil
 - 1 x No. 2 fuel oil
 - 1 x filled with cement

16 August 1994 IRA Plan Submitted to DEP

- Removal and disposal of drums
- Removal and disposal of transformers
- Evaluate extent of PCB soils
- Remove and dispose UST contents, excavate and remove USTs
- Test oil-stained soils
- Characterize black sandy soil
- Characterize white-pink material
- Inspection of building
- Prepare completion report

24 August 1994 Letter from DEP to Crane Co.

- IRA plan conditional approval

28 February 1995 IRA Status Report Submitted to DEP

- Crane Co. will proceed but wishes to hold meeting with other PRPs to resolve outstanding questions

March 1995 Dispute Resolution Meeting, Waltham, MA

- All PRPs present, including ACE
- TJF will do anything providing no cost to them
- ACE will reassess their responsibilities and respond to the group

6 September 1995 IRA Status Report Submitted to DEP

- No IRA activities pending outcome of Dispute Resolution Meeting

13 February 1996 IRA Status Report Submitted to DEP

- No IRA activities; waiting for response from ACE

19 March 1996 Amended IRA Plan Submitted by DEP to Crane Co.

- Established interim deadlines for IRA activities - to be completed during April

28 March 1996 Letter from Crane Co. to DEP on Interim Deadlines

- Despite all initiatives taken by Crane Co. to date with no activities taken by other PRPs, Crane Co. will:
 - remove drums
 - remove transformers
 - develop a sampling plan
 - request DEP to extend interim deadlines

23 May 1996 Meeting Between Crane Co. and DEP

- DEP requires response on IRA activities, chronology of UST history and other PRP responsibilities
- Phase I and Transition Opinion due 2 August 1996

30 May 1996 Letter from Crane Co. to DEP

- Crane Co. will remove drums; transformers and develop a sampling plan
- Crane Co. not responsible for USTs and will research history, to be submitted to DEP

13 June 1996 Letter from DEP to Crane Co.

- Crane Co. letter and deadlines do not agree with DEP understanding of 23 May 1996 meeting
- Submit specific schedule for IRA activities within 1 week (June 20, 1996)

20 June 1996 Letter from Crane Co. to DEP

Crane Co. will, in good faith, perform the following:

- Remove drums in 30 days
- Remove transformers in 45 days
- Submit sampling plan in 15 days
- UST research to be submitted June 30, 1996
- Require flexibility from DEP in doing above as well as Transition requirements

01 July 1996 Letter from Con-Test to Crane Co. on UST Research

- Background history
- Submit copy to DEP

02 July 1996 Letter from DEP to Crane Co.

- Approves plan of 20 June 1996 letter

16 July 1996 Letter from Crane Co. to DEP (Weinberg)

- Sampling plan detail
- Analytical results to DEP after 45 days
- Disposal plan 15 days later

3.0 LOCATION DESCRIPTION

The subject site is located in the Indian Orchard section of the City of Springfield, Hampden County, Massachusetts, at 225 Goodwin Street. Geographically, the subject site is situated at 42° 09' 07" North latitude and 72° 29' 57" West longitude with Universal Transverse Mercator (UTM) coordinates of 4,669,460 North and 706,640 East.

The subject site, as herein described, consists of approximately 11.9 acres of Industrial zoned land. The subject site is currently owned by the TJF Realty Trust of Fitchburg, Massachusetts. The subject site is improved by a single story Industrial type building which occupies approximately 141,000 square feet of the site. The building was constructed circa 1942 by Stone and Webster Engineering Corp. of Boston, MA.

The building is currently vacant. The remaining portions of the site are open and overgrown with vegetation. A chain link fence surrounds the property.

A total of six 15,000-gallon underground storage tanks are currently located on the subject site. The tanks are located adjacent to the western wall of the northwest corner of the building. Two, 2,500 KVA Transformers and a nest of three small mounted transformers are located along the southern side of the building. Waste materials including wallboard, roofing stone, scrap metal, machinery, and woodblocks occupy a large area of the property to the south of the building.

5.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

ATC personnel and Mr. Timothy J. O'Brien, LSP for ATC, have performed a review of data obtained from previously documented environmental investigations, with respect to 310 CMR 40.0000 as promulgated on 05 April 1996. The review was conducted in support of an LSP Opinion of subject site conditions as required by 310 CMR 40.0600 to determine whether one or more releases of oil and/or hazardous materials has occurred that requires notification pursuant to 310 CMR 40.0000.

5.1 Technical Report - CEA, Inc.

In February 1989, Corporate Environmental Advisors, Inc. (CEA) of Ludlow, Massachusetts completed a Phase I - Limited Site Assessment Report (Technical Report), for Stephen P. Gray, owner of American Dream Modular Home. The investigation included an evaluation of soil and groundwater media through the installation of seven soil borings which were completed as groundwater monitoring wells. The sample points were correspondingly identified as CEA-1, CEA-2, CEA-3, CEA-4, CEA-5, CEA-6, and CEA-7. The sample points were installed in the areas of the underground storage tanks, transformer locations, scrap metal debris locations, and railroad tracks. The subsurface investigation identified the presence of groundwater impacts by solvents, and Total Petroleum Hydrocarbons (TPH).

In addition, surficial soil samples were collected in the area of the scrap metal piles, the remaining transformers, and along the railroad tracks along the eastern side of the building. The surficial soil investigation identified the presence of soil impacts by Polychlorinated Biphenyls (PCB). A copy of the Phase I report is included in **Appendix 1**.

In February 1990, CEA completed a Phase I Report Addendum to provide additional information in support of previously submitted Phase I report as requested by the DEP in their letter dated 31 May 1989. The addendum also included completed Preliminary Assessment (PA) forms and Interim Site Classification (ISCF).

5.2 Preliminary Response Actions - Con-Test, Inc.

In August 1994, Con-Test, Inc. (Con-Test) of East Longmeadow, Massachusetts completed Preliminary Response Actions on behalf of Crane Co. (an identified PRP for the property) to identify and quantify existing hazards at the Site. The Preliminary Response actions resulted from a DEP site inspection conducted on 06 May 1994 (resulting from an anonymous complaint) which noted conditions requiring further assessment including three conditions representing Imminent Hazards. Imminent Hazards identified by the DEP included: 1) accessibility of the property; 2) the presence of PCB's in surficial soils adjacent to abandoned transformers; and 3) abandoned drums. DEP outlined response actions to be completed in a letter dated 20 July 1994. The response actions included limiting property access, identifying the extent of PCB contamination in the surficial soil, identification of abandoned drum contents, and identification of UST contents.

On 30 June 1994, gaps in a chain link fence were repaired, and prominent warning signs were placed along the perimeter of the property. The aforementioned activities were conducted to restrict site access.

Laboratory analysis of surficial soil PCB sampling indicated the presence of PCB ranging from <0.025 parts per million (ppm) to 5.30 ppm. Laboratory analysis of drum contents (two drums) indicated the presence of ethylbenzene, xylenes, and chlorobenzenes. Flashpoints of the drums were determined to be 138°F and 181°F, respectively. The contents of six USTs were evaluated and all USTs, with the exception of UST No. 6, were indicated to contain petroleum fluids. UST No.s 1 and 2 were also noted to contain measurable amounts of water. A copy of the Preliminary Response Action Report is included in **Appendix 2**.

6.0 ENVIRONMENTAL SITE CONDITIONS

Based upon previous environmental investigations completed at the subject site between February 1989 and August 1995, (refer to **Section 5**) of select environmental media (soil, groundwater, surface water/wetlands, and air), ATC prepared an evaluation of potential release conditions in accordance with 310 CMR 40.0300.

6.1 Soil Media

Soil conditions at the subject site were evaluated through soil boring and surficial soil sampling activities conducted in February 1989, and surficial soil sampling activities conducted in August 1994. In accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000, laboratory analytical results of soil samples collected on 08 December 1988 (CEA, Inc. surficial soil) and 26 July 1994 (Con-Test, Inc. surficial soil) were compared to the applicable reportable concentrations of soil to determine if detected compounds constitute release conditions which require notification to the DEP pursuant to the current regulations under 310 CMR 40.0315. Detected compound concentrations at the subject site were compared to the applicable Reportable Concentrations of oil or hazardous materials as described in 310 CMR 40.0360 through 310 CMR 40.0369 and listed at 310 CMR 40.1600. In order to establish the appropriate soil reportable concentration, a reporting category that best characterizes the current use of the subject site was selected.

Two reportable categories of soil have been defined by the DEP to reflect the current soil use potential of the subject site. The soil categories have been designated RCS-1 and RCS-2. RCS-1 applies to all soil samples obtained at or within 500 feet of a residential dwelling or residentially-zoned property, school, playground, recreational area or park or if the soil is located within the geographic boundaries of a groundwater resource area. Groundwater resource areas include groundwater located within a certain radius of a potable water intake structure or an aquifer protection area such as groundwater located within a DEP approved Zone II wellhead protection area or one-half mile Interim Wellhead Protection Area (IWHPA), or within a designated Potentially Productive Aquifer (PPA) region. RCS-2 applies to all soil samples collected from non-RSC-1 designated areas.

The subject site is currently located within 500 feet of residential dwellings; therefore, laboratory analytical results of soil samples collected at the subject site will be compared to the applicable soil 1 category for determining reportable concentrations (RCS-1).

A comparison of laboratory analytical results of soil samples collected on 08 December 1988 (CEA, Inc. surficial soil) to applicable RCS-1 concentrations presented at 310 CMR 40.1600 (effective 05 April 1996) did demonstrate concentrations which meet or exceed RCS-1 concentrations. Polychlorinated-Biphenyls (PCB) were detected at a concentration of 156 milligrams per kilogram (mg/kg) at CEA-6s (located within the scrap metal area). Polycyclic Aromatic Hydrocarbons (PAH) were detected at two locations, CEA-7S and the Railroad Tracks. PAH compounds exceeding RCS-1 included: Benzo(a)anthracene at concentrations of 3.25 mg/kg (CEA-7S) and 4.15 mg/kg (Tracks), respectively; Benzo(b)fluoranthene at concentrations of 3.30 mg/kg (CEA-7S) and 6.85 mg/kg (Tracks), respectively; Benzo(a)pyrene at concentrations of 3.40 mg/kg (CEA-7S) and 4.70 mg/kg (Tracks), respectively; and Indeno(1,2,3-c,d)pyrene at concentrations of 1.70 mg/kg (CEA-7S) and 4.75 mg/kg (Tracks), respectively. Refer to CEA, Inc. Technical Report located in **Appendix 1**.

A comparison of laboratory analytical results of soil samples collected on 24 July 1994 (Con-Test, Inc. surficial soil) to applicable RCS-1 concentrations presented at 310 CMR 40.1600 (effective 05 April 1996) did demonstrate concentrations which meet or exceed RCS-1 concentrations. Polychlorinated-Biphenyls (PCB) were detected at a concentration of 2.13 mg/kg (1B) and 5.30 mg/kg (1A) adjacent to Transformer 1 Pad Mount. Refer to Con-Test, Inc. Preliminary Response Actions report located in **Appendix 2**.

Therefore, the documented soil conditions on 07 December 1988 and 24 July 1994 do meet or exceed reportable concentrations which would require notification to the DEP pursuant to 310 CMR 40.0300. A **Summary of Soil Analytical Data (December 1988) Compared to MCP Reportable Concentrations** is included in **Table 1** located in **Appendix 3**. A **Summary of Soil Analytical Data (July 1994) Compared to MCP Reportable Concentrations** is included in **Table 2** located in **Appendix 3**. The complete laboratory analytical report is included in the respective environmental investigations (Technical Report - CEA, Inc.) located in **Appendix 1** & (Preliminary Response Actions - Con-Test, Inc.) **Appendix 2**.

6.2 Groundwater Media

Groundwater conditions at the subject site were evaluated on 07 December 1988 through the installation of groundwater monitoring wells. In accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000, laboratory analytical results of groundwater samples collected on 07 December 1988 were compared to the applicable reportable concentrations of groundwater to determine if detected compounds constitute release conditions which require notification to the Massachusetts Department of Environmental Protection (DEP) pursuant to 310 CMR 40.0315. Detected compound concentrations at the subject site were compared to the applicable Reportable Concentrations of oil or hazardous materials as described in 310 CMR 40.0360 through 310 CMR 40.0369 and listed at 310 CMR 40.1600. In order to establish the appropriate groundwater reportable concentration, a reporting category that best characterizes the current use of the subject site was selected.

Two reportable categories of groundwater have been defined by the DEP to reflect the current groundwater use potential of the subject site. The groundwater categories have been designated RCGW-1 and RCGW-2. RCGW-1 applies to all groundwater samples obtained within a certain radius of a potable water intake structure or an aquifer protection area such as groundwater located within a DEP approved Zone II wellhead protection area or one-half mile Interim Wellhead Protection Area (IWHPA), or within a designated Potentially Productive Aquifer (PPA) region. RCGW-2 applies to all groundwater samples collected from non-RCGW-1 designated areas.

Based on available information documented on the 11 January 1995 DEP Western Region: Natural Resources Map and supported by 310 CMR 40.0000 effective 05 April 1996, the subject site is not located within the geographic boundaries of a groundwater resource area. Therefore, laboratory analytical results of groundwater samples collected at the subject site will be compared to the applicable Groundwater 2 category for determining reportable concentrations (RCGW-2).

A comparison of laboratory analytical results of groundwater samples collected on 07 December 1988 to applicable RCGW-2 concentrations presented at 310 CMR 40.1600 (effective 05 April 1996) indicate detected concentrations which meet or exceed RCGW-2 concentrations. Total Petroleum Hydrocarbons (TPH) as "Petroleum Hydrocarbon Content" was detected at a concentration of 1,240,000 micrograms per

ter (ug/l) within CEA-6 (located south of transformers). Refer to CEA, Inc. Technical Report located in Appendix 1.

Therefore, the documented groundwater condition does meet or exceed reportable concentrations which would require notification to the DEP pursuant to 310 CMR 40.0300. A **Summary of Historical Groundwater Analytical Data Compared to MCP Reportable Concentrations** is included in Table 2 located in Appendix 3. The complete **laboratory analytical report** is included in the respective environmental investigation (Technical Report - CEA, Inc.) located in Appendix 1.

6.3 Surface Water/Wetlands

Surface waters or identified wetland areas were are not located on or within 100 feet of the subject site. Oil or hazardous materials (OHM) likely attributable to the subject site have not been identified in, and are not anticipated to be identified in surface waters based on previous site investigations.

6.4 Air

Although releases of OHM likely attributable to the subject site have not been measured or identified in the ambient air, OHM that may be released to the air as particulate material has been identified in surficial soils.

7.0 FIELD INVESTIGATIONS

Limited field investigatory activities were performed on 10 July 1996 in accordance with 310 CMR 40.0000 to determine whether one or more releases of oil and/or hazardous materials has occurred or is occurring which require notification pursuant to 310 CMR 40.0000. In addition, these assessment activities were conducted to document current conditions at the subject location as an affirmation of previously documented environmental investigations.

Site Inspection:

On 10 July 1996, a visual inspection of the subject site was performed. Present during the site inspection were Mr. Timothy J. O'Brien, LSP, and Steven D. Charron representing ATC. Weather conditions on the day of the inspection did not hinder the evaluation. The scope of the investigation included a visual inspection of the exterior portion of the site with particular attention on the current condition of the barrier fence, on-site transformers, drum storage, and the location of previously installed groundwater monitoring wells.

The condition of the subject site has remained unchanged since the investigation conducted in July 1994.

Groundwater Sampling:

On 10 July 1996, six of a total of seven previously installed monitoring wells were located on the subject site, CEA-1, CEA-2, CEA-3, CEA-4, CEA-5, CEA-6 and were gauged for depth to water and the presence of non-aqueous phase liquid (NAPL) or visible petroleum sheens. Monitoring well CEA-7 could not be located. The monitoring wells had a measured depth to water ranging from 14.50 feet from grade (CEA-5) to 19.24 feet from grade (CEA-3). The presence of NAPL was not observed in the monitoring wells. A slight petroleum sheen was observed on the groundwater collected from CEA-6. Groundwater samples were collected from all six monitoring wells and submitted to Con-Test Analytical Laboratory (Con-Test) (Certification No. 100) in East Longmeadow, Massachusetts for analysis of Volatile Organic Compounds (VOC) plus Methyl tert-Butyl Ether (MTBE) via EPA Method 8020, Total Petroleum Hydrocarbons (TPH) via EPA Modified Method 8015, Polycyclic Aromatic Hydrocarbons (PAH) via EPA Method 8270, Polychlorinated-Biphenyl's (PCB) via EPA Method 8080 and Dissolved Total 13 (Priority Pollutant) Metals.

Analytical results of groundwater samples collected on 10 July 1996 indicated the presence of VOC, TPH, and dissolved Total Metals above the applicable laboratory detection limits. PAH and PCB compounds were not detected above the applicable laboratory detection limits. The detection of VOC compounds included Benzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,1-Dichloroethane, 1,1-Dichloroethylene, Methylene Chloride, 1,1,1-Trichloroethane, Trichloroethylene, and Trichlorofluoromethane. TPH was detected as No. 2/No. 4 fuel oil and as other hydrocarbons. Zinc was detected as dissolved metals. A listing of all compounds detected is presented as **Table 3** in **Appendix 3**.

Based on available information documented on the 11 January 1995 DEP Western Region: Natural Resources Map and supported by 310 CMR 40.0000 effective 05 April 1996, the subject site is not located within the geographic boundaries of a groundwater resource area. Therefore, laboratory analytical results of

groundwater samples collected on 10 July 1996 at the subject site will be compared to the applicable Groundwater 2 category for determining reportable concentrations (RCGW-2).

A comparison of laboratory analytical results of groundwater samples to applicable RCGW-2 concentrations presented at 310 CMR 1600 (effective 05 April 1996) do not indicate detected concentrations which meet or exceed RCGW-2 concentrations. Therefore, the documented groundwater condition does not meet or exceed reportable concentrations which would require notification to the DEP pursuant to 310 CMR 40.0300. A **Summary of Historical Groundwater Analytical Data Compared to MCP Reportable Concentrations** is included as **Table 3** located in **Appendix 3**. The complete laboratory analytical report is included **Appendix 4**.

8.0 IMMINENT HAZARD EVALUATION

In accordance with 310 CMR 40.0321, site conditions were evaluated during the February 1989 Site Investigation, August 1994 Preliminary Response Actions activities and most recently during a 10 July 1996 site inspection to determine whether they pose or could pose an Imminent Hazard, as defined in 310 CMR 40.0006, which would require an immediate response action pursuant to 310 CMR 40.0410.

Based on investigation activities reported in February 1989, detectable concentrations (above method detection limits) of PCB located in surficial soils located adjacent to on-site transformers were noted between 0.321 milligrams per kilogram (mg/kg) and 156 mg/kg. In accordance with 310 CMR 0321(2)(b), releases which could pose an imminent hazard include releases to the environment indicated by the measurement of concentrations of hazardous materials including PCB equal to or greater than the established concentration. The concentration is measured at the ground surface or within a depth of six inches below the ground surface, at any location within 500 feet of a residential dwelling, school, playground, recreation area or park, unless access by children is controlled or prevented by means of bituminous pavement, concrete, fence, or other physical barrier. The applicable concentration for PCB (total) is 10 micrograms per gram (ug/g). Therefore, assuming the subject site was not controlled by a barrier, an imminent hazard could exist.

However, in August 1994, the issue of an imminent hazard was addressed as requested by DEP. At this time additional surficial soil samples were collected and a permanent barrier or fence around the property was secured (refer to section 5.0). PCB concentrations measured through additional soil sampling indicated the detectable presence of PCB between 0.0682 mg/kg and 5.30 mg/kg.

Thus, current oil or hazardous materials impacts to surficial soil and groundwater media at the subject site do not indicate and/or present an imminent hazard to human health, safety or the environment. The presence of the fence surrounding the property should be maintained until such time as the PCB soil impacts are removed through response actions. It is the opinion of ATC that no imminent hazard is posed or could be posed by existing site conditions at this time.

9.0 CONCLUSIONS AND LICENSED SITE PROFESSIONAL (LSP) OPINION

In accordance with the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000 as promulgated on 05 April 1995, a LSP Opinion has been completed for a Non-Priority Confirmed Disposal site identified on the List of Transition & Tier Classified Sites dated 05 April 1996 and known as the American Dream Modular Homes property located at 225 Goodwin Street, Springfield, Hampden County, Massachusetts, Transition Site No. 1-0616. This opinion is rendered in reference to the applicable transition provisions cited at 310 CMR 40.0600 and all associated provisions of the MCP as promulgated in 1993, revised 1995, 1996 and previously promulgated in 1988.

In accordance with 310 CMR 40.0610, a limited assessment of the subject site was performed on 10 July 1996 by ATC to affirm that a release subject to the notification requirements of 310 CMR 40.0000 occurred or may have occurred at this location, requiring further response actions.

Based on a review of previously documented environmental investigations, and a limited assessment of current site conditions, it is the opinion of Mr. Timothy J. O'Brien, LSP as represented by ATC Environmental Inc. that a Release subject to the notification requirements of 310 CMR 40.0300 occurred or may have occurred at this location, and further Response Actions are necessary, pursuant to 310 CMR 40.0000.

In accordance with 310 CMR 40.0500, a Tier Classification of site conditions was prepared to accompany this submittal. The applicable Numerical Ranking Scoresheet (NRS) and Tier Classification Submittal Transmittal Form (BWSC-107) have also been prepared. The subject site is currently classified as **TIER II**. Appropriate Public Involvement activities conducted in accordance with 310 CMR 40.1400 have been performed.

LICENSED SITE PROFESSIONAL (LSP) CERTIFICATION

This LSP Opinion report has been prepared by Mr. Timothy J. O'Brien, LSP for the sole intended use of Crane Co. (Crane). This investigation and report was conducted and prepared under 310 CMR 40.0000 as promulgated on 05 April 1996.

T. O'Brien
Timothy J. O'Brien
Licensed Site Professional No. 8261
Director of Environmental Services



Aug 02 1996
Date

APPENDIX 1

(Technical Report - CEA, Inc.)

APPENDIX 2

(Preliminary Response Actions - Con-Test, Inc.)

LIMITATIONS

The information used in this report was gathered using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations, and materials that were observed at the time field work was conducted. The professional opinions represented in this report are based solely on the Scope of Work conducted and sources referenced and relied upon in this report. All recommendations and conclusions should be viewed within the context of the date and circumstances of this report. No warranties, expressed or implied, are made.

APPENDIX 3

(Tables)

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
COMPARED TO MCP RERORTABLE CONCENTRATIONS (RCS-1)

American Dream Modular Homes
225 Goodwin Street
Springfield, MA
Site No. 1-0616
07 December 1988

Compound	Sampling Date	Sample Location				Reportable Concentration RCS-1
		CEA-5S	CEA-6S	CEA-7S	TRACKS	
Pesticide Compounds (mg/kg)						
All Pesticide Compounds	12/7/88	ND	ND	ND	ND	
PCB Compounds (mg/kg)						
PCB 1016	12/7/88	ND	156	ND	ND	2
PCB 1260	12/7/88	0.585	ND	ND	0.321	2
PCB 1221, 1232, 1242, 1248, 1254	12/7/88	ND	ND	ND	ND	2
PAH Compounds (mg/kg)						
Acenaphthene	12/7/88	NM	NM	0.90	ND	20
Anthracene	12/7/88	NM	NM	2.25	1.66	1000
Benzo(a)anthracene	12/7/88	NM	NM	3.25	4.15	0.7
Benzo(b)fluoranthene	12/7/88	NM	NM	3.30	6.85	0.7
Benzo(k)fluoranthene	12/7/88	NM	NM	2.20	9.70	
Benzo(ghi)perylene	12/7/88	NM	NM	1.30	3.60	
Benzo(a)pyrene	12/7/88	NM	NM	3.40	4.70	0.7
Chrysene	12/7/88	NM	NM	3.65	5.90	7
Dibenzo(a,h)anthracene	12/7/88	NM	NM	0.58	ND	0.7
Fluoranthene	12/7/88	NM	NM	8.00	7.00	600
Fluorene	12/7/88	NM	NM	0.77	ND	400
Indeno(1,2,3-c,d)pyrene	12/7/88	NM	NM	1.70	4.75	0.7
Naphthalene	12/7/88	NM	NM	0.74	ND	4
Phenanthrene	12/7/88	NM	NM	7.40	4.00	100
Pyrene	12/7/88	NM	NM	7.00	7.40	500
Other PAH Compounds	12/7/88	NM	NM	ND	ND	
Leachable Metals - EP Toxicity (mg/l)						
Antimony	12/7/88	NM	<0.003	NM	NM	N/A
Arsenic	12/7/88	NM	<0.005	NM	NM	N/A
Beryllium	12/7/88	NM	<0.005	NM	NM	N/A
Cadmium	12/7/88	NM	0.16	NM	NM	N/A
Chromium, Total	12/7/88	NM	0.03	NM	NM	N/A
Copper	12/7/88	NM	0.3	NM	NM	N/A
Lead	12/7/88	NM	0.92	NM	NM	N/A
Mercury	12/7/88	NM	<0.001	NM	NM	N/A
Nickel	12/7/88	NM	0.047	NM	NM	N/A
Selenium	12/7/88	NM	<0.005	NM	NM	N/A
Silver	12/7/88	NM	<0.001	NM	NM	N/A
Thallium	12/7/88	NM	<0.001	NM	NM	N/A
Zinc	12/7/88	NM	5.9	NM	NM	N/A
VOC's (ug/kg)						
All VOC Compounds	12/7/88	ND	ND	NM	NM	

NOTES:

mg/kg - milligrams per kilogram

PCBs - Polychlorinated Biphenyls

PAHs - Polynuclear Aromatic Hydrocarbons

ND - Compound was not detected above or below the laboratory detection limit.

NM - Not measured

BDL - compound was detected below the applicable laboratory detection limit; however, could not be quantified.

Laboratory analysis for PCBs and pesticides performed via EPA Method 608.

Laboratory analysis for PAHs performed via EPA Method 610.

Laboratory analysis for Priority Pollutant 13 metals via EPA Method 200.7 except mercury (EPA 245.1)

Laboratory analysis for Volatile Organic Compounds via EPA Method 8240

TABLE 2
SUMMARY OF SOIL ANALYTICAL DATA
COMPARED TO MCP REPORTABLE CONCENTRATIONS (RCS-1)

American Dream Modular Homes
225 Goodwin Street
Springfield, MA
Site No. 1-0616
24 July 1994

Sampling Location	Soil Sample mg/kg	Wipe Sample mg/kg	Reportable Concentration RCS-1 (mg/kg)
Transformer 1 - Pad Mount			
Soil -			
1A	5.30*	N/A	2
1B	2.13*	N/A	2
1C	1.72*	N/A	2
1D	1.40*	N/A	2
1E	0.0682*	N/A	2
1F	0.135*	N/A	2
1G	<0.025*	N/A	2
Wipe-			
1H	N/A	0.0019*	2
1I	N/A	<0.00015*	2
1J	N/A	<0.00015**	2
Transformer 2 - On Soil			
Soil (Composite Samples) -			
2 ABCD	ND	N/A	2
2 EFGH	<0.025*	N/A	2
2 IJ	0.109*	N/A	2
Transformer 3 (nest) - On Building			
Wipe-			
3A	N/A	ND	2
3B	N/A	ND	2
3C	N/A	ND	2

NOTES:

* Aroclor 1260

** Aroclor 1260 and Aroclor 1248

<= less than the laboratory detection limit

mg/kg - milligrams per kilogram

PCBs - Polychlorinated Biphenyls

ND - Compound was not detected above or below the laboratory detection limit.

N/A - Not Applicable

Laboratory analysis for PCBs via EPA Method 8080.

TABLE 3

SUMMARY OF HISTORICAL GROUNDWATER ANALYTICAL DATA
COMPARED TO MCP RERORTABLE CONCENTRATIONS (RCGW-2)

American Dream Modular Homes
225 Goodwin Street
Springfield, MA
Site No. 1-0616

December 1988 - July 1996

Compound	Sampling Date	Sample Location							Reportable Concentration RCGW-2
		CEA-1	CEA-2	CEA-3	CEA-4	CEA-5	CEA-6	CEA-7	
TPH (ug/l)	12/7/88 7/10/96	NM BDL	100 BDL	<100 ND	400 340	NM BDL	1,240,000 1,960	NM NM	50,000 50,000
#2/#4 Fuel Oil or Diesel	12/7/88 7/10/96	NM ND	NM ND	NM ND	NM ND	NM ND	NM 1,960	NM NM	NM NM
Other Hydrocarbons	12/7/88 7/10/96	NM BDL	NM BDL	NM ND	NM 340	NM BDL	NM ND	NM NM	NM NM
PCB Compounds (ug/l) PCB 1016, 1026, 1021, 1232, 1242, 1248, 1254, 1260 PCB 1221, 1232, 1242, 1248, 1254, 1260	12/7/88 7/10/96	NM ND	NM ND	NM ND	ND ND	NM ND	ND ND	NM NM	NM NM
PAH Compounds (ug/l) Acenaphthene	12/7/88 7/10/96	NM ND	NM ND	NM ND	ND ND	ND ND	NM BDL	ND NM	2,000 2,000
Fluorene	12/7/88 7/10/96	NM ND	NM ND	NM ND	ND ND	ND ND	NM BDL	ND NM	1,000 1,000
2-Methylnaphthalene	12/7/88 7/10/96	NM ND	NM ND	NM ND	NM BDL	NM ND	NM BDL	ND NM	6,000 6,000
Napthalene	12/7/88 7/10/96	NM ND	NM ND	NM ND	ND ND	ND BDL	NM BDL	ND NM	6,000 6,000
Remaining PAH Compounds	12/7/88 7/10/96	NM ND	NM ND	NM ND	ND ND	ND ND	NM ND	ND NM	0.9 0.9
Dissolved Metals (mg/l) Zinc	12/7/88 7/10/96	NM 0.014	NM 0.015	NM 0.015	NM 0.015	NM 0.017	NM 0.025	NM NM	0.9 0.9
Remaining Metal Parameters	12/7/88 7/10/96	NM ND	NM ND	NM ND	NM ND	NM ND	NM ND	NM ND	0.9 0.9
VOC's (ug/l) Benzene	12/7/88 7/10/96	ND ND	NM ND	NM ND	ND 1.1	ND ND	ND ND	ND NM	2,000 2,000
Carbon Disulfide	12/7/88 7/10/96	NM BDL	NM ND	NM ND	NM ND	NM ND	NM ND	NM NM	10,000 10,000
Chlorobenzene	12/7/88 7/10/96	ND ND	NM BDL	NM ND	ND ND	ND ND	ND ND	ND NM	500 500

Table 3 Continued.....

Compound	Sampling Date	Sample Location				Reportable Concentration			
		CEA-1	CEA-2	CEA-3	CEA-4	CEA-5	CEA-6	CEA-7	Reportable Concentration
Chloroethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	10,000
	7/10/96	ND	0.8	ND	ND	ND	ND	NM	10,000
1,2-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	9	ND	8,000
	7/10/96	ND	1.1	ND	BDL	ND	ND	NM	8,000
1,3-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	5	ND	8,000
	7/10/96	ND	BDL	ND	ND	ND	BDL	NM	8,000
1,4-Dichlorobenzene	12/7/88	ND	NM	NM	ND	ND	5	ND	8,000
	7/10/96	ND	BDL	ND	ND	ND	BDL	NM	8,000
1,1-Dichloroethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	8,000
	7/10/96	ND	11.9	2.3	ND	BDL	ND	NM	9,000
1,1-Dichloroethylene	12/7/88	ND	NM	NM	ND	ND	ND	ND	1
	7/10/96	ND	ND	ND	ND	BDL	ND	NM	1
Ethyl Benzene	12/7/88	ND	NM	NM	ND	ND	87	ND	4,000
	7/10/96	ND	ND	ND	ND	ND	2.6	NM	4,000
Methylene Chloride	12/7/88	ND	NM	NM	ND	ND	ND	ND	50,000
	7/10/96	0.9	0.8	1	BDL	ND	1.8	NM	50,000
1,1,1-Trichloroethane	12/7/88	ND	NM	NM	ND	385	9	ND	4,000
	7/10/96	ND	ND	2.1	ND	38.6	ND	NM	4,000
Trichloroethylene	12/7/88	ND	NM	NM	ND	ND	ND	ND	300
	7/10/96	ND	ND	ND	ND	1.1	ND	NM	300
Trichlorofluoromethane	12/7/88	ND	NM	NM	ND	ND	ND	ND	100,000
	7/10/96	ND	ND	ND	ND	BDL	ND	NM	100,000
Xylene	12/7/88	ND	NM	NM	ND	ND	186	ND	6,000
	7/10/96	ND	ND	ND	ND	ND	BDL	NM	6,000
Remaining VOC Compounds	12/7/88	ND	NM	NM	ND	ND	ND	ND	
	7/10/96	ND	ND	ND	ND	ND	ND	NM	

NOTES:

ug/l - micrograms per liter

mg/l - milligrams per liter

TPH - Total Petroleum Hydrocarbons

PCBs - Polychlorinated Biphenyls

PAHs - Polynuclear Aromatic Hydrocarbons

ND - compound was not detected above or below the laboratory detection limit

NM - Not measured

BDL - compound was detected below the applicable laboratory detection limit; however, could not be quantified

Laboratory analysis for TPH performed via IR Scan (12/7/88) or EPA Modified Method 8015 (7/10/96)

Laboratory analysis for PCBs performed via EPA Method 608 (12/7/88) or EPA Method 8080 (7/10/96)

Laboratory analysis for PAHs performed via EPA Method 625 (12/7/88 and 7/10/96)

Laboratory analysis for Priority Pollutant 13 metals via EPA Method 200.7 or EPA 245.1 (mercury)

APPENDIX 4

(Laboratory Analytical Report)

ATC ENVIRONMENTAL - E. LONGMEADOW
 SPRUCE STREET
 EAST LONGMEADOW, MA 01028
 ATTN: TIM O'BRIEN

CONTACT: S. CHARRON
 FIELD OFFICE: CL

REPORT DATE: 07/16/96

ANALYTICAL SUMMARY

LIMS BAT #: LIMS-24986

JOB NUMBER: 10585.0006

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report

PROJECT LOCATION: CRANE - AMERICAN DREAM

FIELD SAMPLE #	LAB ID	MATRIX	SAMPLE DESCRIPTION	TEST
CEA-1	96B11556	GRND WATER	NOT SPECIFIED	8240 - water
CEA-1	96B11556	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-1	96B11557	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-1	96B11558	GRND WATER	NOT SPECIFIED	tph gc water
CEA-1	96B11559	GRND WATER	NOT SPECIFIED	pah - water
CEA-1	96B11560	GRND WATER	NOT SPECIFIED	pcb - water
CEA-2	96B11561	GRND WATER	NOT SPECIFIED	8240 - water
CEA-2	96B11561	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-2	96B11562	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-2	96B11563	GRND WATER	NOT SPECIFIED	tph gc water
CEA-2	96B11564	GRND WATER	NOT SPECIFIED	pah - water
CEA-2	96B11565	GRND WATER	NOT SPECIFIED	pcb - water
CEA-3	96B11566	GRND WATER	NOT SPECIFIED	8240 - water
CEA-3	96B11566	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-3	96B11567	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-3	96B11568	GRND WATER	NOT SPECIFIED	tph gc water
CEA-3	96B11569	GRND WATER	NOT SPECIFIED	pah - water
CEA-3	96B11570	GRND WATER	NOT SPECIFIED	pcb - water
CEA-4	96B11571	GRND WATER	NOT SPECIFIED	8240 - water
CEA-4	96B11571	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-4	96B11572	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-4	96B11573	GRND WATER	NOT SPECIFIED	tph gc water
CEA-4	96B11574	GRND WATER	NOT SPECIFIED	pah - water
CEA-4	96B11575	GRND WATER	NOT SPECIFIED	pcb - water
CEA-5	96B11576	GRND WATER	NOT SPECIFIED	8240 - water
CEA-5	96B11576	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-5	96B11577	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-5	96B11578	GRND WATER	NOT SPECIFIED	tph gc water
CEA-5	96B11579	GRND WATER	NOT SPECIFIED	pah - water
CEA-5	96B11580	GRND WATER	NOT SPECIFIED	pcb - water
CEA-6	96B11581	GRND WATER	NOT SPECIFIED	8240 - water
CEA-6	96B11581	GRND WATER	NOT SPECIFIED	8240 - water (b)
CEA-6	96B11582	GRND WATER	NOT SPECIFIED	metals(w13) icp
CEA-6	96B11583	GRND WATER	NOT SPECIFIED	tph gc water
CEA-6	96B11584	GRND WATER	NOT SPECIFIED	pah - water
CEA-6	96B11585	GRND WATER	NOT SPECIFIED	pcb - water
TRIP BLANK	96B11586	GRND WATER	TRIP BLANK	8240 - water
P BLANK	96B11586	GRND WATER	TRIP BLANK	8240 - water (b)

ATC ENVIRONMENTAL - E. LONGMEADOW

39 SPRUCE STREET
EAST LONGMEADOW, MA 01028
ATTN: TIM O'BRIEN

CONTACT: S. CHARRON
FIELD OFFICE: CL

REPORT DATE: 07/16/96

ANALYTICAL SUMMARY

LIMS BAT #: LIMS-24986
JOB NUMBER: 10585_0006

FIELD SAMPLE #	LAB ID	MATRIX	SAMPLE DESCRIPTION	TEST
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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

AIHA 308	AIHA ELLAP (LEAD) 6838
MASSACHUSETTS MA100	MAINE (POTABLE/NON-POTABLE)
CONNECTICUT PH-0567	VERMONT DOH (LEAD) No. 15036
NEW YORK ELAP 10899	RHODE ISLAND (LIC. No. 112)
PENNSYLVANIA DER 68-433	OHIO (ENVIRO. LEAD) # 10005
NEW HAMPSHIRE 2516	

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document.

Edward Denson 7/17/96

SIGNATURE

DATE

Tod Kopyscinski
Director of Operations

Edward Denson
Technical Director

TIM O'BRIEN
 ENVIRONMENTAL - E. LONGMEADOW
 39 SPRUCE STREET
 EAST LONGMEADOW, MA 01028

Contact: S. CHARRON
 Field Office: CL

07/16/96
 page 1 of 31

Project Location: CRANE - AMERICAN DREAM
 Date Received: 07/10/96

LIMS-BAT #: LIMS-24986
 Job Number: 10585.0006
 Sample Matrix: GRND WATER

Sampled: 07/10/96
 NOT SPECIFIED
 CEA-1

	Units	96811556	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
Acetone	ug/l	ND	07/11/96	WSD	16.1		
Acrolein	ug/l	ND	07/11/96	WSD	20.0		
Acrylonitrile	ug/l	ND	07/11/96	WSD	7.6		
Benzene	ug/l	ND	07/11/96	WSD	0.6		
Bromodichloromethane	ug/l	ND	07/11/96	WSD	0.4		
Bromomethane	ug/l	ND	07/11/96	WSD	1.2		
Bromoform	ug/l	ND	07/11/96	WSD	1.2		
2-Butanone (MEK)	ug/l	ND	07/11/96	WSD	12.0		
Carbon Disulfide	ug/l	BDL	07/11/96	WSD	0.5		
Carbon Tetrachloride	ug/l	ND	07/11/96	WSD	0.5		
Chlorobenzene	ug/l	ND	07/11/96	WSD	0.6		
Chlorodibromomethane	ug/l	ND	07/11/96	WSD	0.5		
Chloroethane	ug/l	ND	07/11/96	WSD	0.8		
2-Chloroethylvinylether	ug/l	ND	07/11/96	WSD	9.6		
Chloroform	ug/l	ND	07/11/96	WSD	0.8		
Chloromethane	ug/l	ND	07/11/96	WSD	1.2		
Dibromomethane	ug/l	ND	07/11/96	WSD	1.1		
1,2-Dichlorobenzene	ug/l	ND	07/11/96	WSD	0.8		
1,3-Dichlorobenzene	ug/l	ND	07/11/96	WSD	0.6		
1,4-Dichlorobenzene	ug/l	ND	07/11/96	WSD	0.8		
c-1,4-Dichloro-2-Butene	ug/l	ND	07/11/96	WSD	2.4		
t-1,4-Dichloro-2-Butene	ug/l	ND	07/11/96	WSD	2.1		
Dichlorodifluoromethane	ug/l	ND	07/11/96	WSD	1.0		
1,1-Dichloroethane	ug/l	ND	07/11/96	WSD	0.7		
1,2-Dichloroethane	ug/l	ND	07/11/96	WSD	0.9		
1,1-Dichloroethylene	ug/l	ND	07/11/96	WSD	0.6		
t-1,2-Dichloroethylene	ug/l	ND	07/11/96	WSD	0.8		
1,2-Dichloropropane	ug/l	ND	07/11/96	WSD	0.6		
cis-1,3-Dichloropropene	ug/l	ND	07/11/96	WSD	0.7		
t-1,3-Dichloropropene	ug/l	ND	07/11/96	WSD	0.6		
Ethyl Benzene	ug/l	ND	07/11/96	WSD	0.6		
Ethyl Methacrylate	ug/l	ND	07/11/96	WSD	0.8		

MDL = Method Detection Limit
 = Not Detected
 L = Below Detection Limit
 NM = Not Measured

SPEC LIMIT = a client specified, recommended, or
 regulatory level for comparison with data to
 determine PASS (P) or FAIL (F) condition of results.

07/16/96

page 2 of 31

LIMS-BAT #: LIMS-24986

Job Number: 10585.0006

Sample Matrix: GRND WATER

Sampled: 07/10/96

NOT SPECIFIED

CEA-1

	Units	96B11556	Date Analyzed	Analyst	MDL	SPEC LIMIT	P/F
2-Hexanone	ug/l	ND	07/11/96	WSD	9.7		
Iodomethane	ug/l	ND	07/11/96	WSD	0.8		
Methyl tert-Butyl Ether (MTBE)	ug/l	ND	07/11/96	WSD	0.8		
Methylene Chloride	ug/l	0.9	07/11/96	WSD	0.8		
4-Methyl-2-Pentanone (MIBK)	ug/l	ND	07/11/96	WSD	8.8		
Styrene	ug/l	ND	07/11/96	WSD	0.7		
1,1,2,2-Tetrachloroethane	ug/l	ND	07/11/96	WSD	1.4		
Tetrachloroethylene	ug/l	ND	07/11/96	WSD	0.4		
Toluene	ug/l	ND	07/11/96	WSD	0.7		
1,1-Trichloroethane	ug/l	ND	07/11/96	WSD	0.9		
1,2-Trichloroethane	ug/l	ND	07/11/96	WSD	0.7		
Trichloroethylene	ug/l	ND	07/11/96	WSD	1.0		
Trichlorofluoromethane	ug/l	ND	07/11/96	WSD	0.7		
1,2,3-Trichloropropane	ug/l	ND	07/11/96	WSD	1.3		
Vinyl Acetate	ug/l	ND	07/11/96	WSD	16.4		
Vinyl Chloride	ug/l	ND	07/11/96	WSD	0.3		
m-Xylene	ug/l	ND	07/11/96	WSD	1.3		
o&p-Xylene	ug/l	ND	07/11/96	WSD	0.5		

MDL = Method Detection Limit

ND = Not Detected

= Below Detection Limit

NM = Not Measured

SPEC LIMIT = a client specified, recommended, or regulatory level for comparison with data to determine PASS (P) or FAIL (F) condition of results.