Old Syracuse Die Casting Inactive Hazardous Waste Site

Salina, Onondaga County, New York
Site No. 7-34-029

RECORD OF DECISION

September 1992

Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

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New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

DECLARATION STATEMENT - RECORD OF DECISION (ROD)

Old Syracuse Die Casting
Salina, Onondaga County
Site No. 7-34-029

Statement of Purpose

The Record of Decision (ROD) sets forth the selected Remedial Action Plan for the Old Syracuse Die Casting inactive hazardous waste site. This Remedial Action Plan was developed in accordance with the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and the New York State Environmental Conservation Law (ECL). The selected remedial plan complies to the maximum extent practicable with the National Oil and Hazardous Substance Pollution Contingency Plan, 40 CFR Part 300, of 1990.

Statement of Basis

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Old Syracuse Die Casting site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix A of the ROD.

Description of Selected Remedy

The selected remedy for the Old Syracuse Die Casting site includes the excavation and removal to a hazardous waste landfill of the PCB-contaminated soil. The components of the selected remedy are as follows:

- Demolition of the northern bay of the building;
- Excavation of approximately 130 cubic yards of PCB-contaminated soil; and
- Removal of the soil to a hazardous waste landfill permitted for the disposal of PCB contaminated materials.

New York State Department of Health Acceptance

The New York State Department of Health (NYSDOH) concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected Remedial Action Plan is protective of human health and the environment. The remedy selected will meet the substantive requirements of the Federal and State laws, regulations and standards that are applicable or relevant and appropriate to the remedial action. The remedy will satisfy, to the maximum extent practicable, the statutory preference for remedies that employ treatment that reduce toxicity, mobility or volume as a principal element. Incineration was considered as a permanent remedy that would reduce the toxicity of the soil. Given that PCBs are essentially immobile in a properly managed hazardous waste landfill, and given the small volume of soil (130 yd^3), incineration was determined to present little environmental benefit over landfilling.

September 30, 1992
DATE

Ann Hill DeBarbieri
Deputy Commissioner

SECTION 1: SITE DESCRIPTION

The Old Syracuse Die Casting site is a Class 2 site listed in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites in New York State. The site is a former industrial facility of approximately 1/4 acre, located at 2101 Teall Avenue, in the eastern end of the City of Syracuse, Onondaga County. The immediately surrounding area is industrial and commercial, with a residential area one block east of the site. A location map and site map are attached (Figures 1A and 1B).

The physical dimensions of the Old Syracuse Die Casting site are very small. The property outside the building extends only ten to fifteen feet to the north property line and abuts property belonging to the Leo Kline Corporation, forming a graveled driveway/work area approximately 50 feet wide and 70 feet long.

Storm water runoff from the site drains into a storm sewer catch basin on Teall Avenue directly in front of the site. One block north the storm water discharges into a roadside ditch. Runoff re-enters a storm water sewer line a block further east, and ultimately discharges into Teall Brook, approximately 1200 feet from the site.

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SECTION 2: SITE HISTORY

From 1967 through sometime after 1972, waste PCB hydraulic oil was spread immediately north of the building for disposal and dust control. In addition, based on information presented in court depositions, small amounts of used cutting oil and solvents were also disposed in the same general location.

In 1985, Environmental Oil, Inc. was hired by the site owner to excavated and remove the PCB contaminated soils. Approximately 57 tons (2 truckloads) of soils were excavated to depths from 2 to 3.5 feet below grade. Samples taken following excavation showed PCB levels of 83 to 1200 ppm, as compared with concentrations ranging up to 46,700 ppm before excavation. The excavation was not backfilled, but was surrounded by snow fencing.

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SECTION 3: CURRENT STATUS

The site was referred to the State Superfund program in 1990 for a Remedial Investigation/Feasibility Study. Two rounds of soil sampling were conducted, in November of 1990 and in July of 1991, to determine the nature and extent of contamination. Based upon the results of these samples, PCBs were selected as the sole contaminant of concern. Using the results of this sampling, an Interim Remedial Measure was implemented from January through February of 1992, which included excavating all known contaminated soil, cleaning out the storm sewer catch basin directly in front of the site, and installing three groundwater monitoring wells. During the course of the IRM, additional PCB contamination was found beneath the foundation of the building, resulting in a third round of soil sampling in March 1992.

3.1 Summary of the RI/IRM

3.1.1 Summary of the 1st Phase RI November 1990 Sampling:

To determine the depth and concentration of PCB contamination in and adjacent to the 1985 excavation, fifteen soil samples were collected at eight sample locations in the

excavation. Surface soil samples were also collected in the adjacent Kline property. The storm sewer catch basin on Teall Avenue directly in front of the site was sampled to determine if PCB contamination in surface soils had spread into the storm sewers as a result of site runoff. Analytical parameters included PCBs, five metals (cadmium, chromium, lead, nickel, and zinc), and volatile organic compounds.

Results of the analyses indicated PCB levels ranging up to 5,000 ppm. Low levels of the metals were also found. No volatile organic compounds were detected.

In the excavation PCB concentrations declined rapidly with depth. The highest PCB concentration was found in the area of reported disposal close to the north door (5,000 ppm). PCB concentrations in surface soil samples from the adjacent Kline property were significantly lower than concentrations in the excavation. The highest concentration detected was 115 ppm, with most of the levels between nondetect and 22 ppm.

One sediment sample was collected from the storm sewer catch basin in Teall Avenue adjacent to the excavation. The sediments contained 3.8 ppm of PCBs.

Analysis for the heavy metals cadmium, chromium, lead, nickel and zinc was performed on two samples from the excavation and three samples from the adjacent Kline property. Almost all the levels for metals in the soil were within the common range of background levels. The two samples taken adjacent to the Kline warehouse contained elevated levels of zinc, at 2639 and 1462 ppm. Common background levels range from 10 to 300 ppm.

July 1991 Sampling:

To fill data gaps regarding the extent of PCB contamination, the NYSDEC collected additional soil and storm sewer sediment samples. The sampling occurred July 16 through July 18, 1991. Samples were analyzed for PCBs only.

To determine the extent of PCB subsurface soil contamination, a staggered row of 4 foot deep soil borings were collected along the perimeter of the existing excavation. In general, soil PCB concentrations again decreased rapidly with depth and with distance from the 1985 excavation. PCB levels ranged from 2,200 ppm to less than 1.0 ppm.

To further define PCB concentrations in the storm sewer system, three additional sediment samples were collected. The upgradient catch basin contained PCB concentrations of 1.8 ppm. The open ditch across Teall Avenue, which the storm sewer empties into, contained 2.4 ppm of PCBs.

3.1.2 Interim Remedial Measure (IRM) Soil Excavation and Removal:

The soil removal was designed to excavate and remove all soil containing PCB concentrations of 10 ppm or greater. Surface soils containing PCB concentrations between 1 ppm and 10 ppm were removed to a depth of one foot and placed in the bottom of the excavation. The excavation was then backfilled with clean fill, resulting in surface soil concentrations at levels well below 1 ppm. The area was then covered with 10 inches of gravel. Approximately 532 tons of contaminated soil was excavated, and disposed at a permitted hazardous waste landfill.

The depth of the excavation was determined based on the results of confirmatory soil sampling, with 48-hour turnaround time for results. The extent and

depth of the excavation is shown in Figure 2, which also identifies the locations of the final round of confirmatory samples. Results of the final round of confirmatory sampling, presented in Table 1, showed that PCBs remained in the soil directly under the foundation of the northern bay of the building.

Storm Sewer Cleaning:

The storm sewer catch basin in Teall Avenue adjacent to the excavation was found to contain 3.8 ppm of PCBs. Therefore, cleaning of this catch basin was included in the IRM. The contractor removed accumulated sediments, flushed each incoming/outgoing line twice, spray washed the catch basin to ensure removal of all adhering sediments, and collected all wash waters for proper disposal.

Monitoring Well Installation:

To determine the nature and extent, if any, of groundwater contamination by PCBs, and to determine site-specific geologic and hydrogeologic conditions, three groundwater monitoring wells were installed.

The top five feet below grade is primarily composed of sand and silt with some clay and gravel. At six feet and below, the soil is comprised of very dense interbedded layers of silt, clay, and weathered shale. The silt and clay layers are slightly moist to moist, and the layers of weathered shale are dry. A water-bearing zone approximately one-half foot thick is found at a depth of approximately 16 to 20 feet below grade. Soil above and below this layer is dry. The groundwater appears to be under pressure as evidenced by the water rising to a depth of approximately 12 feet below grade in each well. Groundwater flow direction is generally to the northeast at a slight gradient of approximately .0047 ft/ft. Due to the compact fine grained nature of the soil and the low magnitude of the hydraulic gradient, groundwater flow is expected to be very slow.

No PCBs were detected in the groundwater samples, indicating that PCBs have not migrated to the groundwater.

3.1.3 Summary of the 2nd Phase Remedial Investigation (RI)

IRM Confirmatory Sampling:

As part of the final round of confirmatory sampling in January 1992, samples were collected from the face of the excavation, under the foundation of the building, approximately four feet below grade. High levels of PCBs were found, ranging from nondetect to 285 ppm. A hand auger was then used to bore horizontally, at a depth of 4' under the building, at two locations in the middle of the north face of the building. Samples were collected at one foot intervals in from the face of the excavation. Locations are shown in Figure 3.

PCB levels increased with horizontal distance. The highest level, 4040 ppm, was found at 30" horizontally under the building. One sample was analyzed for the full TCL and the metals cadmium, chromium, nickel, and zinc. No volatile organic compounds were found. The only semi-volatile organic compounds found were low levels of diethylphthalate, bis(2-ethylhexyl)phthalate, and di-n-octyl-phthalate. Metals were all within the common range of background levels for the Eastern U.S. The Aroclors found were determined to be a mix of Aroclor 1248 and polychlorinated terphenyls. The polychlorinated terphenyls were used by Monsanto in a range of Aroclor mixtures, and are very similar chemically to PCBs.

TABLE 1

Confirmatory Samples Analytical Results

Sample Number	Total PCBs (ppm)	Location Description	Depth from Grade
1	<.5	Excavation Bottom	2 ft
2	5.4	Excavation Bottom	6 ft
3	7.7	Side of Excavation	4 ft
4	220	Excavation Bottom	4 ft
4B	2.1	Excavation Bottom	5 ft
5	<.5	Excavation Bottom	4 ft
6	120	Side of Excavation	4 ft
7	<.5	Side of Excavation	4 ft
8	<.5	Excavation Bottom	5 ft
9	.5	Side of Excavation	4 ft
10	52	Excavation Bottom	4 ft
10B *	<.5	Excavation Bottom	5 ft
11	31	Excavation Bottom	4 ft
11B *	14	Excavation Bottom	5 ft
11C *	<.5	Excavation Bottom	6 ft

*** B/C Denotes subsequent confirmatory sample at same location after additional excavation based on prior confirmatory samples.**

TABLE 2
IRM Confirmatory Samples Analytical Results

Core Samples 4 feet Below Grade
From Under Building

Sample No.	Total PCBs (ppm)	Horizontal Distance
12	<.5	6"
13	1.7	6"
14A	4.6	6"
14B	158	18"
14C	4040	30"
14D	163	42"
15A	285	6"
15B	885	18"
15C	987	30"
15D	31	42"
16	.7	6"
17	.9	6"

March 1992 Sampling:

The Syracuse Die Casting building is divided into three bays. The northernmost bay, a garage and storage area, was added to the original building in the early 1960's. The PCBs identified during the IRM confirmatory sampling were beneath the northern and western foundation of this northernmost bay. After boring through the concrete floor, nine soil borings were placed in the northern bay, and advanced to a depth of 6 feet, with samples collected at one foot intervals starting with the one foot depth. Locations are shown in Figure 3.

In general, levels of PCB in the soils were very low. The highest concentration found was 19 ppm, with most samples between non-detect and 2 ppm. PCB levels were lower near the interior of the building.

3.1.4 Nature and Extent of Remaining Contamination

All known PCB contaminated soil exceeding the cleanup levels of 1 ppm for surface soils and 10 ppm for subsurface soils was removed from the area outside the building by the IRM. The PCB contaminated sediment from the Teall Avenue storm sewer catch basin in front of the site was also removed. Review of the groundwater data revealed that groundwater has not been impacted.

The remaining area of PCB contamination is in the soil underneath the northern end of the Syracuse Die Casting building, PCB concentrations in this area range up to 4040 ppm. The area of contamination underneath the building extends from the northern foundation footing approximately six feet underneath the building to the south, and from the western foundation footing approximately three feet underneath the building to the east. Given the magnitude of the rate of increase in PCB concentrations between the face of the excavation and 30 inches in horizontally, and the low concentrations in borings seven feet in from the foundation, the locations of highly contaminated soils appears to be confined to this narrow strip. For the same reason, it is difficult to draw conclusions regarding PCB concentrations in areas under the foundation that were not sampled in this narrow strip. Depth of the contamination is unknown. The concentrations in the samples collected in March 1992, while mostly below cleanup levels, were still increasing at depths of six feet. The February 1992 soil removal excavated soils to a depth of up to six feet directly adjacent to the foundation. The area of contamination can be assumed to extend to a depth of at least six feet. An additional area of PCB contamination was found on the eastern side of the building, near the overhead doors. This area appears to be confined to soils directly under the concrete slab.

Figure 4 shows the presently defined areal extent of PCB-contaminated soils. The volume of contaminated soil to be addressed by the remedy selected for this site has been estimated at 130 cubic yards. However, confirmatory sampling during remediation will be needed to insure a complete removal.

3.2 Summary of Health Risk

Current site conditions do not pose any routes of exposure to PCB contaminated soils. The existing PCBs are below the concrete slab of the building, eliminating dermal exposure or inhalation. The nature of the soils between the areas of contamination and the water-table, combined with the tight affinity to soil of PCBs, make migration to the groundwater highly unlikely. Even if the PCBs did migrate, the site is located in an urban area served by a public water system with no

known drinking water wells in the area, eliminating potential exposures to the human population.

There is a potential for exposure to PCBs in subsurface soils beneath the Syracuse Die Casting building associated with future use of the site. Possible exposures would include dermal contact with contaminated soils and/or inhalation of contaminated soil particulates during excavation or the intrusive activities (i.e., installation of a building foundation).

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SECTION 4: ENFORCEMENT STATUS

The Responsible Parties (RPs) for the site include the property owner, Mrs. Mildred McClusky and the previous owner of the Syracuse Die Casting business, Adam McClusky. The RPs failed to implement the remedial program when ordered by the Commissioner (see Decision and Order, March 10, 1988). The NYSDEC will be performing the remedial action with 1988 EQBA Bond Act funds. The RPs will be subject to future legal actions by the State to recover the costs incurred by the State on the remedial program.

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SECTION 5: GOALS FOR THE REMEDIAL ACTION

Goals for the remedial program are established under the broad guidelines of meeting all standard, criteria, and guidance (SCGs) and protecting human health and the environment.

The media of concern identified for the Old Syracuse Die Casting site are PCB-contaminated soils. The remedial action objective for the site is to reduce contamination present in site soils to eliminate potential risks to human health and the environment and to reduce the potential for off-site migration. The primary remediation goal is 10 ppm for subsurface PCBs.

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SECTION 6: SUMMARY OF THE EVALUATION OF REMEDIAL ALTERNATIVES

Potential remedial alternatives for the Old Syracuse Die Casting site were identified, screened and evaluated in the July 1992 Remedial Investigation/Feasibility Study Report. A summary of the detailed analysis follows:

6.1 Description of Remedial Alternatives

Alternative 1 - No Action:

Capital Costs: 0
Present Worth O&M: 0
Present Worth Cost: 0

The no-action alternative is required by the NCP and serves as a baseline to evaluate the other alternatives. It would not include any type of institutional or remedial actions, or any continuing groundwater monitoring.

Alternative 2 - On Site Containment:

Capital Costs: 54,000
Present Worth O&M: 27,000
Present Worth Cost: $81,000

The PCB-contaminated soil would be contained on site by sealing the floor of the

northern bay, and by installing six foot deep curtain walls under the foundation footing on the north, east, and west sides of the building. A permanent easement would be taken to provide access for maintenance of the sealed floor. Deed restrictions and groundwater monitoring for 30 years would also be included.

Alternative 3 - Excavation with Landfill Disposal:

3A - Building Left in Place, Removal of Contaminated Soil to Landfill:

Capital Costs: $275,000
Present Worth O&M: 0
Present Worth Cost: $275,000

In this alternative, a trench would be excavated outside the building adjacent to the foundation, and underpinning placed beneath the foundation. To protect the building from shifting or settling, shoring would be installed, small discrete volumes of contaminated soil would be removed from underneath the foundation, and the resulting void backfilled with concrete. Additional discrete volumes of contaminated soil would be removed and backfilled when the concrete from previous removals had set sufficiently to support the load of the foundation. This process of underpinning would continue until the entire area immediately under the foundation requiring excavation had been removed and the building was stabilized. The slab inside the building would then be removed, and the remaining PCB-contaminated soil excavated working from inside the building. The contaminated soil would be removed off site to a permitted hazardous waste landfill.

3B - Building demolished, Removal of Building Debris and Contaminated Soil to Appropriate Landfills:

Capital Cost: $128,000
Present Worth O&M: 0
Present Work Cost: $128,000

In this alternative, rather than removing the soil as described in Alternative 3A, the northern bay of the Syracuse Die casting building would be demolished. The contaminated soil would then be excavated and removed, and sent to a permitted hazardous waste landfill. The demolition debris would be disposed at a permitted construction and demolition debris or sanitary landfill.

Alternative 4 - Excavation with Off-Site Incineration:

4A - Building Left in Place, Removal of Soil for Off-Site Incineration:

Capital Cost: $788,000
Present Worth O&M: 0
Present Worth Cost: $788,000

In this alternative, the contaminated soil would be removed as in Alternative 3A. The contaminated soil would be sent to a RCRA/TSCA permitted commercial incinerator.

4B - Building Demolished, Removal of Contaminated Soil for Off-Site Incineration and Landfill Building Debris:

Capital Cost: $634,000
Present Worth O&M: 0
Present Worth Cost: $634,000

In this alternative the northern bay of the building would be demolished. The contaminated soil would be excavated, removed, and sent to a RCRA/TSCA permitted commercial incinerator, and the demolition debris disposed at a permitted landfill.

6.2 Comparative Evaluation

The remedial alternatives have been compared against the criteria identified in the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) 4030, "Selection of Remedial Actions at Inactive Hazardous Waste Sites". A detailed discussion of the evaluation criteria and comparative analysis is contained in the report entitled "Remedial Investigation/ Feasibility Study" (RI/FS). The following is a brief summary of the comparative analysis contained in the FS:

The first two evaluation criteria are termed threshold criteria, indicating that each alternative evaluated at this stage must satisfy the criteria. The exception is the no-action alternative, which must be retained for the detailed evaluation.

1. Protection of Human Health and the Environment. This criterion is an overall assessment of protection based on a composite of all the other evaluation criteria.

   Of the alternatives, the no-action alternative does not protect human health and the environment. The on-site containment alternative is more protective of human health and the environment than the no-action alternative. However, it is less protective than the removal options, since contaminated soil would remain on site. For this alternative to be protective, given the slow rate of degradation of PCBs, easement restrictions and floor seal maintenance would have to continue for the foreseeable future. The excavation and removal alternatives, by removing from the site all contaminated soil exceeding the 10 ppm subsurface PCBs clean-up level, would eliminate the risk to people and the environment near the site. The incineration option would be the most protective, as it would eliminate long-term risk to people and the environment near a permitted landfill.

2. Compliance with Applicable Standards, Criteria, and Guidelines (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. Each of the alternatives, except no-action, would meet the SCGs.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies:

3. Short-term Impacts and Effectiveness. The adverse impacts to the community, remedial workers, and the environment resulting from the implementation of each remedy are compared.

   The no-action alternative would have the fewest short term adverse effects, followed by on-site containment. The removal alternatives would present slightly increased short term adverse effects to nearby workers and the public, requiring protective measures to be taken. Maintaining the existing building would present the highest short-term risk, both to the workers and to the community.

4. Long-term Effectiveness and Permanence. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: a) the magnitude of the

remaining risks, b) the adequacy of the controls intended to limit the risk, and c) the reliability of these controls.

As described previously, the no-action alternative would not provide long-term protection as it would not prevent future excavation and exposure to the PCB-contaminated soil. The on-site containment alternative would theoretically prevent future excavation and exposures, however, enforcement of easement restrictions is problematic. The demolition and removal alternatives would eliminate long-term risk to the public and workers near the site by removing the contaminated soil from the site. Maintaining the existing building would increase the long-term risk slightly by leaving the contaminated foundation in place.

5. Reduction of Toxicity, Mobility or Volume. In the remedy selection process, preference is given to alternatives that permanently reduce the toxicity, mobility or volume of the wastes at the site. Incineration is classified as a permanent alternative that would completely destroy the contaminants. Removing the contaminated soils to a permitted landfill would reduce the mobility of the PCBs by controlling the conditions of storage.

6. Implementability. This criterion compares the technical and administrative difficulties in implementing each alternative.

The no-action alternative would be the easiest alternative to implement, followed by on-site containment. Demolishing the northern bay of the building prior to excavation would be the easier of the excavation and removal alternatives to implement, as it utilizes standard construction practices. Maintaining the present building during excavation would be significantly more difficult to implement, requiring precise, careful design and implementation, and monitoring to confirm the structural stability of the building following remediation.

7. Cost. The total cost for each alternative are compare on a present-worth basis. The present worth costs include capital costs and operation and maintenance (O&M) costs.

The no-action alternative would be the least costly (see Table 3). While on-site containment is next in cost at $81,000, this amount does not include the cost of loss of future use of the property. Of the excavation and removal alternatives, the two that include incineration are the most costly, with the alternative of incineration while maintaining the existing building the most costly alternative at $788,000. Incineration with demolition of the existing building would cost $634,000. The alternatives that include landfilling are significantly less expensive. Landfilling while maintaining the existing building would cost $275,000, while landfilling with demolition of the existing building is the least costly option at $128,000. The cost estimates for maintaining the existing building are less firm then the other estimates, due to the complexity of the construction; the actual cost may be significantly higher.

6.3 Remedial Action Selection

Alternative 3B, excavation and landfilling of the contaminated soil, with demolition of the northern bay of the existing building, has been selected by NYSDEC to remediate the site.

The no-action alternative is eliminated as not meeting SGCs and not being protective of human health and the environment.

The on-site containment alternative is rejected because of two considerations. The first is that future use of the site would be seriously impacted, due to its remaining a listed hazardous waste site. The economic loss, while not quantified, would probably exceed the cost savings between this alternative and the recommended remedy. The second consideration is that the remedy is less protective of human health and the environment than the excavation and removal alternatives. Long-term enforcement of the easement restrictions would be problematic, resulting in a risk of human exposure to soil containing over 4,000 ppm of PCBs.

The landfilling of the PCB-contaminated soil would completely eliminate any threat to human health or the environment at this site by removing all contaminated soil above the level of concern. While this remedy is not a true permanent remedy in that the material is not destroyed, it is just as "permanent" for the site as incineration since the same volume of material is being removed. Given that PCBs are essentially immobile in a properly managed hazardous waste landfill, incineration has little environmental benefit over landfilling.

At the present time, PCB incineration capacity is both limited and expensive. The cost to incinerate the soil would increase the cost of the remedy by approximately $500,00 over the cost to landfill the soil. Because of the limited incineration capacity and attendant higher price, as well as the small volume of soil involved (130 yds), landfilling in a TSDF rather than incineration is the recommended remedy.

The significant differences between the alternatives of demolishing the northern bay of the building and maintaining it by underpinning the foundation are cost, short and long-term effectiveness, and implementability. The demolition of the northern bay of the building prior to excavation is both less expensive and less difficult to implement than maintaining the existing building by underpinning the foundation. Demolition of the northern bay is also more protective in both the short term and the long term, of both workers and the community. There is no significant difference in compliance with SCGs, reduction of toxicity, mobility or volume, or protectiveness of human health and the environment.

Of the alternatives that meet SCGs and are protective of human health and the environment, the recommended alternative of demolition of the northern bay of the building, excavation, and removal to an off-site landfill has the greatest short term and long term effectiveness. While this alternative does not provide the greatest reduction of toxicity, mobility, or volume, it does provide a permanent site remedy, with very low environmental risk. Implementation would be straightforward and require only standard construction methods. Finally, it is the most cost-effective. The NYSDEC will implement Alternative 3B, demolition of the northern bay and removal to an off-site landfill of the contaminated soil at this site.

6.4 NYSDOH Acceptance

The New York State Department of Health (NYSDOH) concurs with the remedy selected for this site as described in the Feasibility Study (FS) Report as being protective of human health.

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SECTION 7: SUMMARY OF THE PREFERRED ALTERNATIVE

The remedy selected for the site by the NYSDEC was developed in accordance with the New York State Conservation Law (ECL) and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42USC Section 9601 et.seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Based upon the results of the RI/FS, the NYSDEC has selected Alternative 3B, demolition of the northern bay of the existing building, with excavation and landfilling of the contaminated soil, as the remedy for the Old Syracuse Die Casting site. The components of the selected remedy are as follows:

- Demolition of the northern bay of the building. Contaminated demolition debris will be removed to a hazardous waste landfill. Uncontaminated debris will be removed to an appropriate solid waste or demolition debris landfill.
- Excavation of the PCB-contaminated soil and removal to a hazardous waste landfill, with confirmatory sampling to ensure that all contaminated soil has been removed.
- Backfill the excavation with clean fill.
- Removal and closure of the three monitoring wells.

The performance standards for the implementation of the remedy include the following:

- All soils containing PCB concentrations greater than 10 ppm shall be removed.
- The remedy shall be implemented to prevent to the maximum extent practical any adverse impact on the surrounding neighborhood.
- All necessary and appropriate air monitoring shall be performed to assure that the air quality in the surrounding neighborhoods and businesses is not adversely impacted. A contingency plan shall be in place to protect local residents and workers in the event that dust or air emissions become unacceptable.

Table 3

Summary Table

	Protection Human Health & Environment	Compliance w/Clean-up Standards	Short-term Effectiveness	Long-term Effectiveness	Reduce Toxicity, Mobility, & Volume	Implement-ability	Cost
#1 No Action	No	No	High	No	No	High	0
#2 On-Site Containment	Questionable	Yes	High	Questionable	No	High	$81,000
#3A Landfill, Maintain	Moderate	Yes	Moderate	High	No	Moderate	$275,000
#3B Landfill, Demolition	High	Yes	High	High	No	High	$128,000
#4A Incinerate, Maintain	Moderate	Yes	Moderate	High	Yes	Moderate	$788,000
#4B Incinerate, Demolition	High	Yes	High	High	Yes	High	$634,000

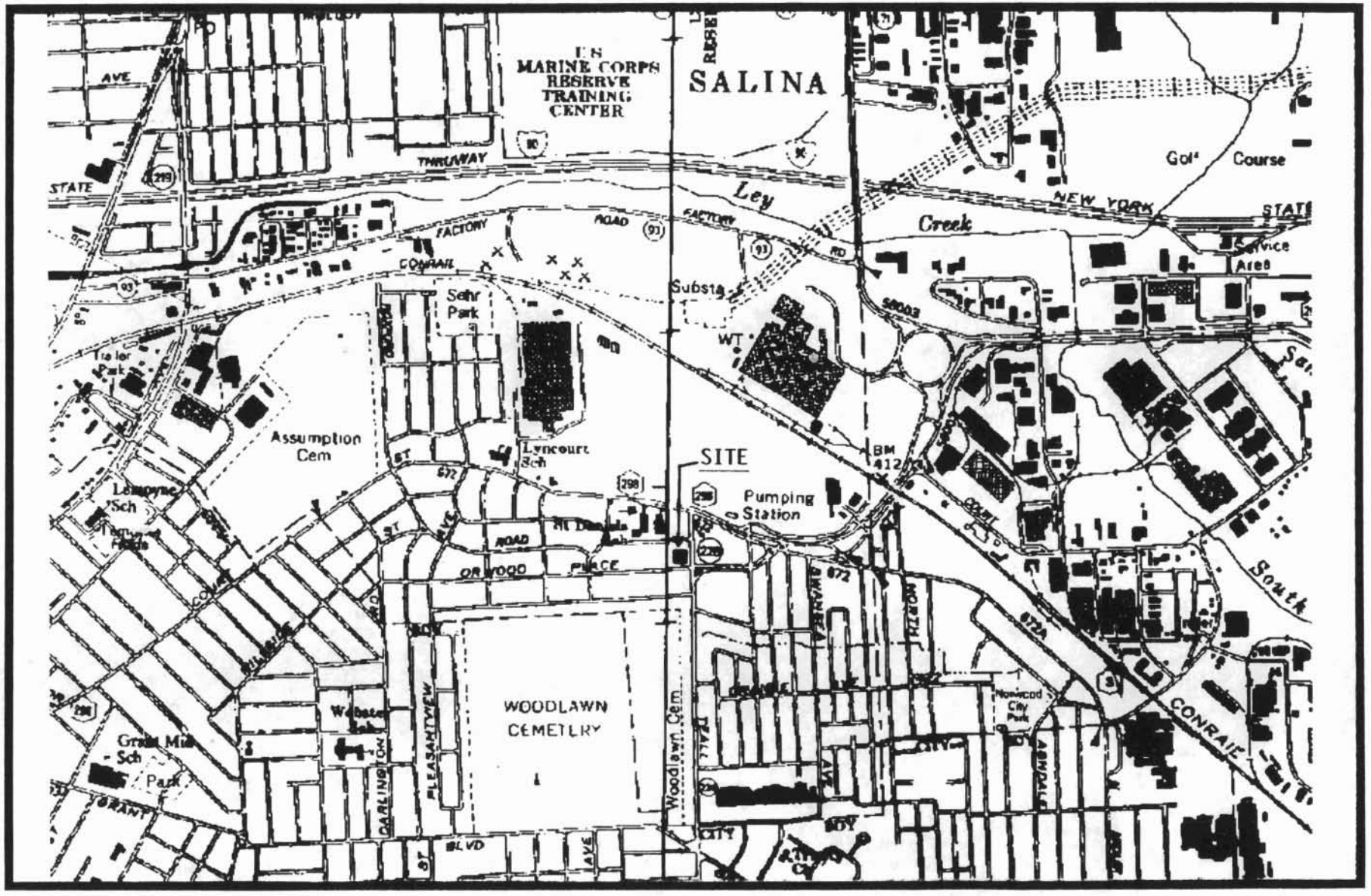


Figure No. 1A: Location Map

Scale: 1" = 1,300'

New York State Department of Environmental Conservation
Old Syracuse Die Casting Site
(7-34-029)

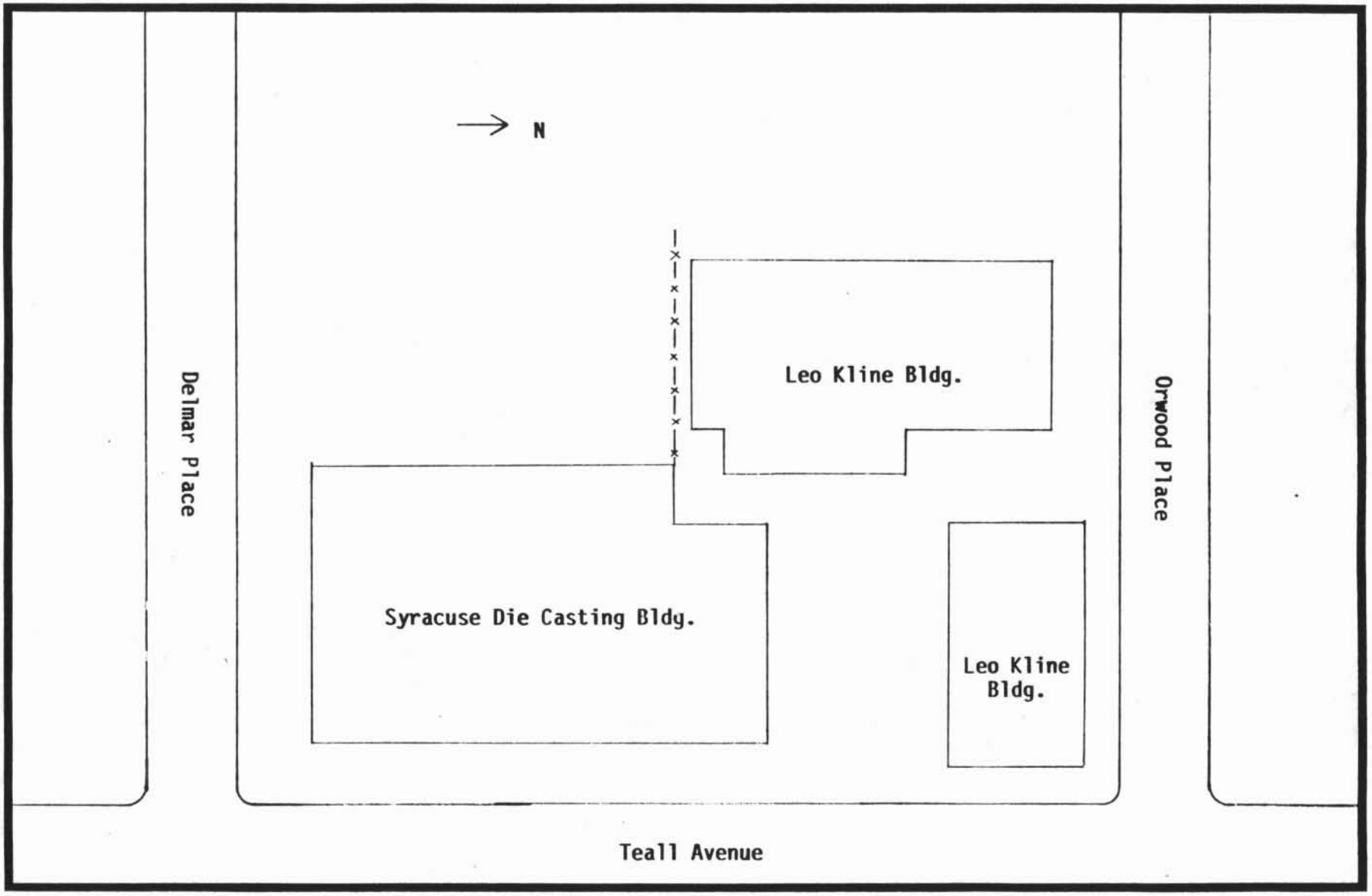


Figure No. 1B: Site Map

Scale: 1" = 40'

New York State Department of Environmental Conservation
Old Syracuse Die Casting Site
(7-34-029)

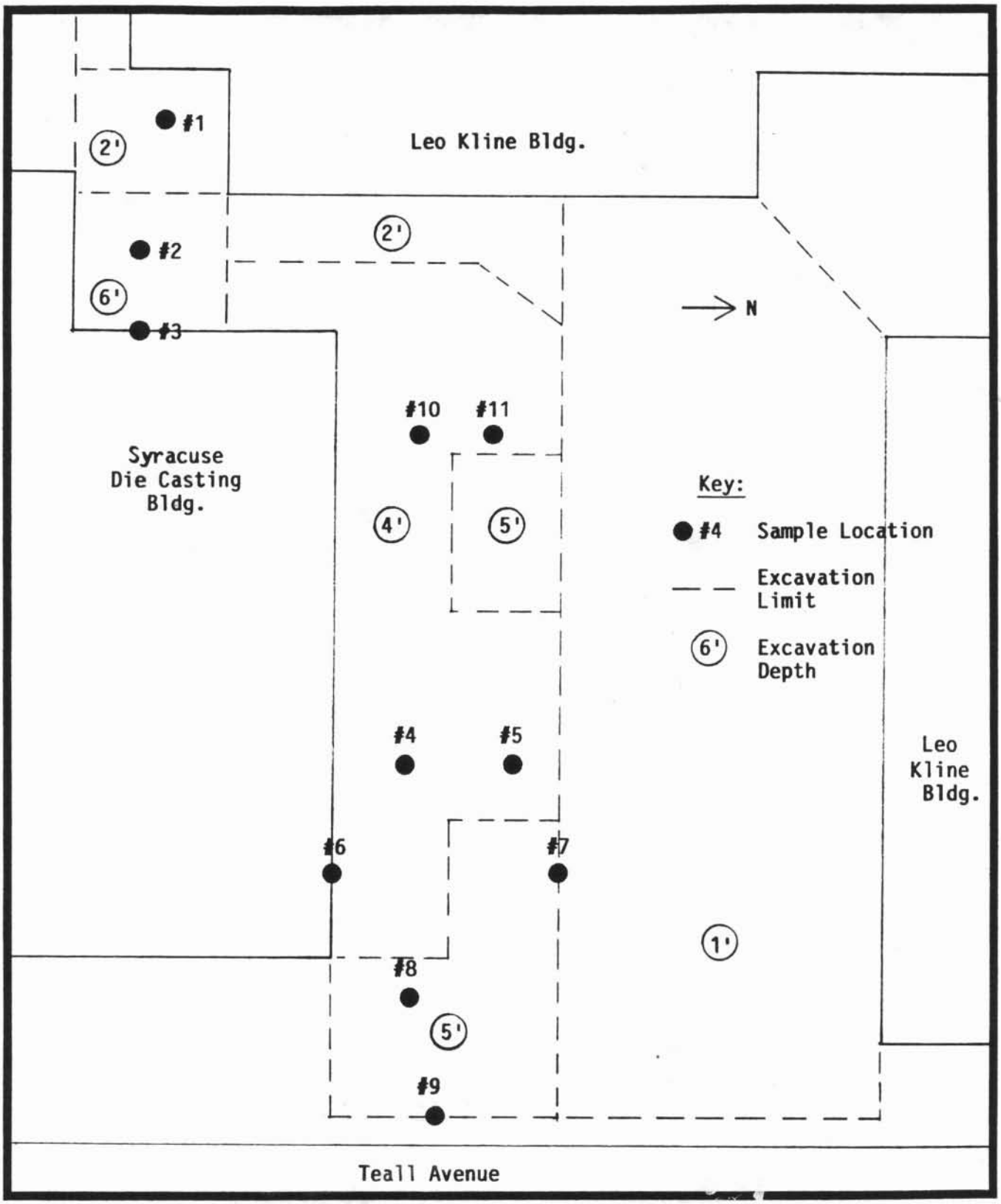


Figure No. 2: IRM Excavation Limits & Confirmatory Sample Locations Scale: ¾" = 10'

New York State Department of Environmental Conservation
Old Syracuse Die Casting Site
(7-34-029)

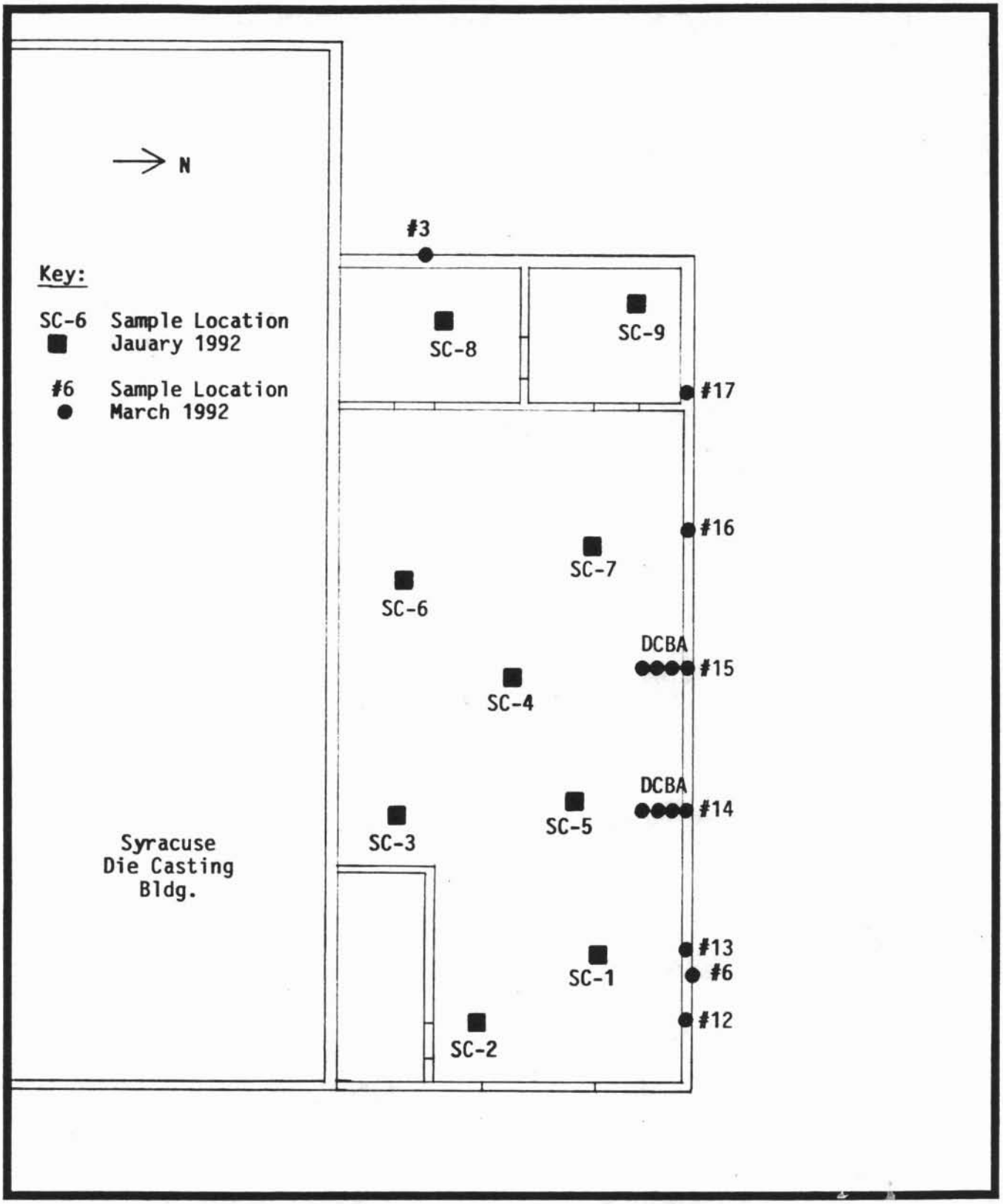


Figure No. 3: Soil Sample Locations Beneath Building,
January/March 1992

Scale: 1" = 10'

New York State Department of Environmental Conservation
Old Syracuse Die Casting Site
(7-34-029)

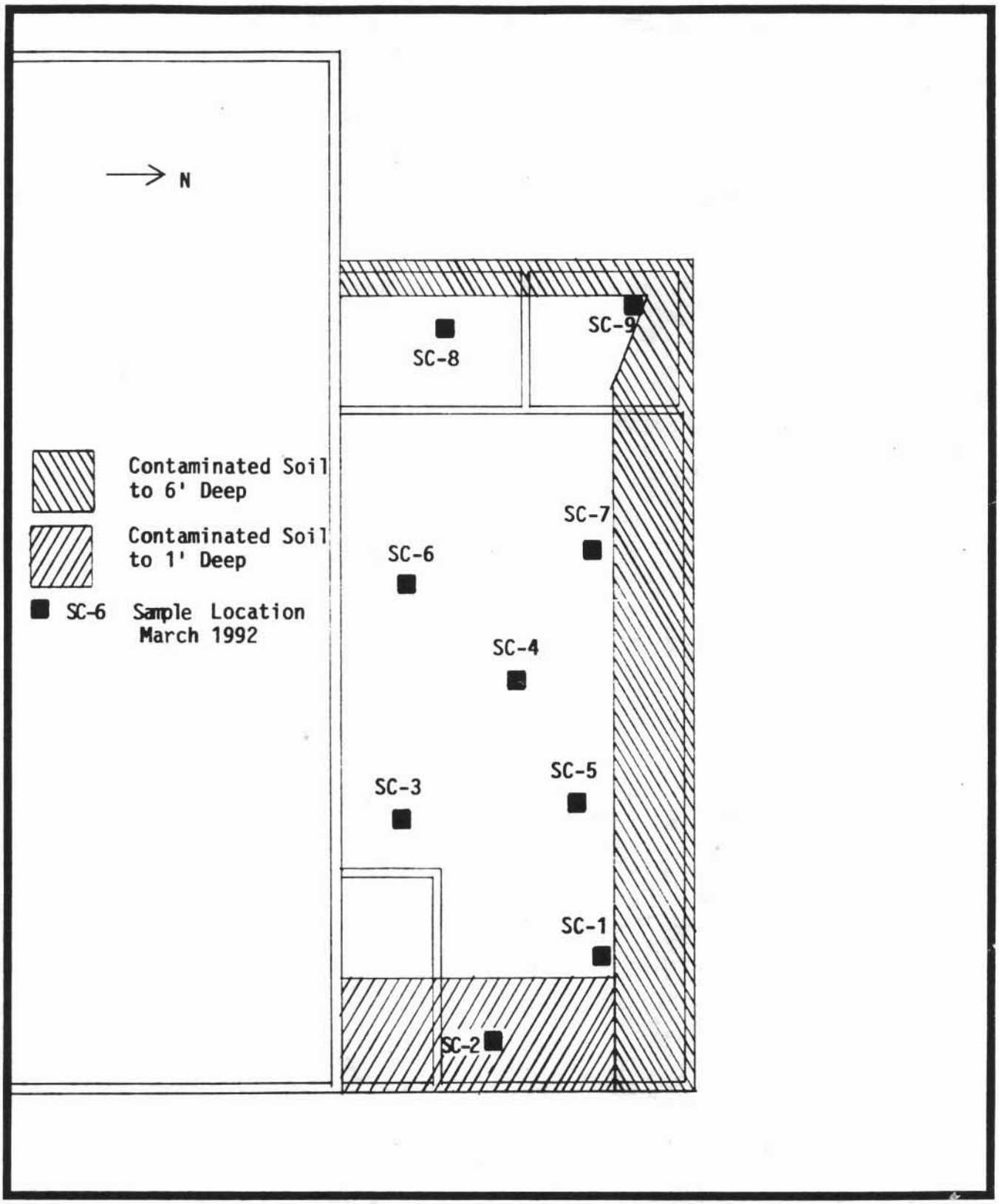


Figure No. 4: Extent of PCB-Contaminated Soils Under Building Scale: 1" = 10'

New York State Department of Environmental Conservation
Old Syracuse Die Casting Site
(7-34-029)

APPENDIX A

Administrative Record

The following documents constitute the Administrative Record for the Old Syracuse Die Casting site, Remedial Investigation/Feasibility Study (RI/FS).

June 1985:	Letter from T. Humiston, Environmental Oil, Inc., with sample locations and analytical results from the 1985 soil removal.
August 1985:	Hazardous Waste Inspection Summary Report.
October 1985:	NYSDEC "Sampling and Investigation Trip to Region 7" memo detailing sample locations and analytical results.
March 1988:	Decision and Order, NYSDEC.
November 1990:	Soil and Sediment Sampling Program Work Plan.
February 1991:	Soil and Sediment Sampling Program Report.
June 1991:	Site Investigation Work Plan.
August 1991:	Contract Documents, Excavation, Transportation and Proper Disposal of Contaminated Soils from the Old Syracuse Die Casting site.
March 1992:	Work Plan Addendum: March 1992.
July 1992:	RI/FS Report.
August 1992:	Proposed Remedial Action Plan (PRAP).
September 1992:	Minutes of Public Meeting.

APPENDIX B

Responsiveness Summary

Old Syracuse Die Casting

Salina (T), Onondaga County, New York
Site No. 7-34-029

RESPONSIVENESS SUMMARY
for
PROPOSED REMEDIAL ACTION PLAN

Public Hearing
September 9, 1992

Issue Date
October 1992

Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

Old Syracuse Die Casting
Salina (T), Onondaga County
Site No. 7-34-029

RESPONSIVENESS SUMMARY
for
PROPOSED REMEDIAL ACTION PLAN

Public Hearing
September 9, 1992
Salina Town Hall

A Public Hearing was held on September 9, 1992 at the Salina Town Hall to gather public comment on the Proposed Remedial Action Plan (PRAP) for the Old Syracuse Die Casting Site, an inactive hazardous waste disposal site being addressed by the State Superfund Program. At this hearing the New York State Department of Environmental Conservation (NYSDEC) made a brief presentation of the results of the Remedial Investigation/Feasibility Study (RI/FS) and the PRAP. The PRAP summarizes the nature and extent of contamination at the site, the alternatives evaluated to address the problems identified and proposes a remedy based on the alternative evaluated. The proposed remedy for this site consists of the following:

- Demolition of the northern bay of the building;
- Excavation of approximately 130 cubic yards of PCB-contaminated soil; and
- Removal of the soil to a hazardous waste landfill permitted for the disposal of PCB-contaminated materials.

This Responsiveness Summary responds to all questions submitted during the PRAP comment period. The Appendix contains comment letters submitted at the hearing and during the comment period. A transcript of the hearing is available for review upon request.

I. PUBLIC HEARING COMMENTS

COMMENT #1: Is it expensive to perform the demolition? Can you give some kind of figures in terms of keeping the northern bay of the building up as opposed to tearing it down?

RESPONSE #1: Both demolition and maintaining the northern bay by underpinning and shoring the foundation were evaluated as remedial alternatives. The estimated cost of the remedial alternative that includes demolition of the northern bay is $128,000. The estimated cost of the remedial alternative that includes maintaining the northern bay is $275,000. The basis for these figures is presented in detail in the RI/FS report.

COMMENT #2: Do PCBs migrate?

RESPONSE #2: While not as mobile as more volatile organic compounds, under certain conditions PCBs can migrate. If solvents are disposed of in conjunction with PCBs, the PCBs will partially dissolve in the solvent, and migrate with the solvent. Alternately, PCBs will sorb onto soil particles, and be carried with as the soil particle is mechanically moved, such as surface runoff.

At this site there is no evidence that solvents are present in the PCB-contaminated soil, and all routes of surface soil migration have been remediated. Our investigation indicated that PCB movement in the soil since the original disposal has been very slow, and that PCBs have not moved significantly into the environment.

COMMENT #3: Does the NYSDEC know the source of the PCBs under the building foundation?

RESPONSE #3: We believe that they are either a result of the spill behind the building or the result of other spills in the same location prior to construction of the building. PCBs are actually a group of similar chemicals, numbered according to their chemical structure and the percent of chlorine; for example, Aroclor 1254 contains 54% chlorine by weight. The PCBs under the building are similar in type to the ones found outside the building, leading us to believe that they originated from the same source. In addition, compounds called polychlorinated terphenyls were detected under the building. These compounds are associated with PCB hydraulic fluids, again connecting the PCBs under the building with the hydraulic fluids disposed of outside the building.

COMMENT #4: Have PCBs affected the groundwater or the nearby storm sewers?

RESPONSE #4: Three groundwater monitoring wells were installed around the building. The level of groundwater is 16 to 18 feet below the surface of the ground, with very dense soils between the surface and the groundwater. Analysis of groundwater samples were nondetect for PCBs. The analytical results and the nature of the soils leads us to conclude that there has not been an impact on the groundwater.

Low levels of PCBs were found in the storm sewer in Teall Avenue in front of the area of highest contamination. The storm sewers were cleaned during the January 1992 Interim Remedial Measure, eliminating this concern.

COMMENT #5: Is there any indication that this particular situation has resulted in any harm or risk to the people working in the building or near by?

RESPONSE #5: The area where PCB contaminated soils were at the surface was directly adjacent to the building, and in the adjacent parking lot. The area of heaviest soil contamination was fenced, preventing access to contaminated soils, and thereby minimizing potential exposures. Crushed stone was placed over the contaminated soils in the parking lot, limiting the potential

for direct contact with the soils. The most exposure people would have had would be walking over the contaminated soil, but again the gravel in the driveway would probably have eliminated that potential. In terms of PCB migration off-site, sampling data indicate that on-site groundwater is not contaminated, and there are no known private water supplies in the vicinity that are being used for drinking water.

COMMENT #6: To present a risk, would I have to actually come in contact with the soil by touching it with my hand?

RESPONSE #6: Yes, this is one potential for exposure and thus risk. In evaluating remedial alternatives for the site, we looked at the potential for exposure to PCBs in soil. There is also the possibility that someone could get the soil on their hand and ingest it. There is a possibility that someone could stir the dust up and inhale it. These scenarios were evaluated to determine the risk posed by the site.

COMMENT #7: It should be clarified that a barrier existed around the area of highest contamination. In the paper, a lady said that for years she walked through the contaminated parking lot. She would have had to jump a fence. The contaminated area was a place that was not open to people driving in or walking across.

RESPONSE #7: This is correct. When the site was first identified, relatively high concentrations of PCBs were present in soils at the surface. The property owner initiated a removal which involved excavating and removing the top two to three feet of contaminated soil, and surrounded the resulting excavation with snow fencing to keep people out. Access to the area of highest contamination was restricted, and gravel covered the areas with lower levels of PCB contamination.

COMMENT #8: At the present time the owner's actions and the State's actions have eliminated risk other than the PCBs directly under the building, is that correct? If nothing further is done, what is the likelihood of the PCBs presenting a risk to anyone using the building? How much contact would present a hazard to someone who came in on a one day basis and did some work under the slab?

RESPONSE 8: Anyone walking by the site would not be exposed to the soils that are contaminated underneath the building. The purpose of the remedial action is to eliminate future as well as present potential exposures. For this site, our concern is with the potential for exposures in the future. If someone excavated beneath the building, to expand the building or to retrofit the existing building for another purpose, there would be a potential for exposure to high levels of PCBs.

The health hazard to a person who came in for one day to perform work under the slab would be dependent upon the concentrations of PCBs in the soils they came in contact with, the degree of contact (how long the individual was exposed), the health of the individual, as well as other considerations.

COMMENT #9: Would the use of this building be restricted if it would remain a listed site?

RESPONSE #9: There would in effect be an economic restriction, since banks are reluctant to loan money on properties that are listed on the NYS Registry of Inactive Hazardous Waste Sites.

COMMENT #10: It would be sufficient to place a deed restriction on the property which would prohibit excavation unless approval is received from the NYSDEC. A deed restriction becomes a permanent part of the record. Anyone buying this property would see the restriction. Further, a copy can be given to the Town of Salina for consideration when someone applies for a building permit.

RESPONSE #10: The difficulty with this solution is enforceability. Legally, the DEC does not have the authority to enforce a deed restriction; compliance would be voluntary on the part of the property owner, and the potential for future exposure would still exist. If someone went in to do an emergency repair of some sort without checking the records, they could expose themselves unknowingly to high concentrations of PCBs, and possibly suffer a health effect without knowing what it was related to. There would not be sufficient control over future use of the building to have a high degree of confidence in the effectiveness of deed restrictions to prevent future exposure.

COMMENT #11: A former employee stated that he was exposed to PCB hydraulic fluids on a daily basis. Rather than spending money on soil containing relatively small amounts of PCBs, the employees that worked with PCBs should be contacted and doctors should test them for PCBs.

RESPONSE #11: The man was provided with the name of a Department of Health physician to consult with regarding his own exposure. Anyone else who is concerned about their own exposure can contact the NYSDOH at 1-800-843-6433. It was explained that in the hazardous waste site remedial program, DOH focuses on preventing future, as well as present exposures, especially to people who may not be aware of the risk.

COMMENT #12: What are the symptoms of PCB exposure?

RESPONSE #12: Symptoms can be divided into acute (immediate) symptoms, and chronic, (long-term) symptoms. Acute symptoms could include chloracne or a rash. Chronic health problems may not show up for 30 years and might include cancer.

COMMENT #13: What are the concentrations of PCBs under the building? How much of the foundation is contaminated?

RESPONSE #13: Measured concentrations of PCBs in the soils under the foundation range from less than 1 part per million (ppm) to 4040 ppm. The subsurface cleanup level established for this

site is 10 ppm. Figure 8 and Tables 7 and 8 in the RI/FS Report and similar ones in the PRAP show the distribution and levels of PCBs in more detail.

COMMENT #14: How would the foundation be shored?

RESPONSE #14: A trench would be excavated outside the building, and temporary shoring would be installed at regular intervals under the foundation. Small sections of the PCB-contaminated soil would be removed, and replaced with concrete to underpin the foundation. The concrete would be allowed to set, and the process repeated for the length of the foundation.

COMMENT #15: Isn't it a rather remote possibility that someone would come in and dig up a drain underneath the building?

RESPONSE #15: If the building were used in the future for manufacturing or industrial processes, it is very probable that the building would have to be retrofitted for the particular process. This could include installing piping or drains under the slab, and installing sanitary sewer connections for process water.

COMMENT #16: Over the years, I feel that if any of the employees were ill, something would have showed up by now. There should be someone who knows someone that we would of hear of. I have a son that worked in there with everyone else and was exposed to the PCBs, don't you think that I worry about that? I worry about the employees, I had wonderful people working for me and we always kept our building clean and anything that had to be done or tried, we tried, but then we got the letter, we were shut down and all the machinery cleaned out.

RESPONSE #16: Chronic health effects can take up to 30 years to develop, depending on the individual, the type of exposure, and the presence of other risk factors (e.g., smoking or other daily exposures). Additional discussion is presented in Response #12.

COMMENT #17: How is the Superfund made up?

RESPONSE #17: Funding for the State Superfund program comes from the 1986 Environmental Quality Bond Act, which allocated $1,200,000,000 for investigations and cleanups at Superfund sites. Most of the site investigations and cleanups in NYS are performed by the responsible parties with their own funds. Money from the 1986 EQBA is used for sites where the responsible parties either refuse to perform the work or have insufficient funds to perform the work.

COMMENT #18: Is the risk of one particular site as opposed to another site factored in determining where Superfund money will be spent?

RESPONSE #18: Not at the time this site was identified. Sites were dealt with as they entered the system, rather than being ranked according to health threat. A system which ranks sites by both health and environmental threat is currently being implemented for new sites.

COMMENT #19: Have the manufacturers of PCBs ever been assessed anything?

RESPONSE #19: To our knowledge, the manufactures of PCBs have not been assessed any sort of fee or fine related to the manufacture and sale of PCBs. Legally such an assessment would be very difficult, since the issue is the disposal of the PCBs in such a way that public health or the environment is threatened. The manufacturers of PCBs had no control over the manner of disposal of PCBs. When manufactured, this was a product intended for a specific accepted use; only improper disposal, etc. lead to its becoming an environmental contaminant.

II. WRITTEN COMMENTS RECEIVED AT THE PUBLIC HEARING

A letter was read into the record at the hearing by Milton Crystal, representing Adam McClusky. The letter is included in the Appendix of this document. The following are the comments extracted from this letter which relate to the PRAP, followed by the NYSDEC response:

COMMENT #20: I strongly urge the DEC to consider at maximum, alternative number one. The PCB contaminated soil is underneath the building and has no place to go. In my opinion, the existing PCB contaminated soil has been contained very much in the same manner as asbestos is permitted to be contained by encapsulation.

RESPONSE #20: See Response #8.

COMMENT #21: Public interest would be served adequately by placing a restriction upon the property that there be no excavation or demolition without first notifying DEC.

RESPONSE #21: See Response #10.

COMMENT #22: Recent research indicates that PCBs can be biologically degraded. A job like this which the contamination (PCBs) are prevented from moving by a contained concrete barrier would be ideal for such work.

RESPONSE #22: Bioremediation was considered for this site, but rejected as not feasible. While laboratory research indicates that bioremediation of PCBs may be possible, we are not aware of any sites where it has been successfully used in the field. PCBs are very difficult for microbes to break down, requiring a lengthy two-stage treatment process with precise control of nutrient and oxygen levels. It is doubtful even with this process that site clean-up levels would be achieved.

Treating the soil in place is not possible because of site conditions. The space available at the site is very limited, and is not sufficient for the equipment needed for on-site treatments. In addition, in-place treatments require soil that is porous, allowing chemicals or nutrients to flow through the soil and reach all the PCB contamination. The soil at this site is very dense and tight; chemicals or nutrients would flow very slowly if at all. The same conditions that restricted the migration of PCBs in the soil make in-place treatment not feasible.

COMMENT #23: Another cleaning method is being perfected by Syracuse developers. Please review the enclosed newspaper article.

RESPONSE #23: The newspaper article describing the treatment process is included in the Appendix. The treatment would involve excavating the contaminated soil, extracting the PCBs from the soil, returning the soil to the ground, and disposing of the PCBs with an alternate technology such as incineration. The same issues regarding excavation that were considered in the FS would apply here, leading to the same conclusion. Cost would probably be comparable to excavation and incineration, and would certainly be higher than the chosen remedy of excavation and landfilling.

COMMENT #24: In the absence of any immediate threat, time and technology will allow for cleaning the site in place.

RESPONSE #24: As discussed in response #22, in-place treatment is not a viable alternative for this site because of the soil type, which is very dense. It is possible that in the future other treatment technologies will be developed; however, by waiting, the chance of potential exposures is increased. The technologies are in place now that allow for the complete remediation of this site, preventing any chance of future exposure.

COMMENT #25: Given the lack of present hazard, there are many other sites which have significant situations having far reaching, long term effects and do present eminent environmental harm which require DEC action. Under the circumstances, I do not see how the DEC would be justified in spending Superfund money on this site.

RESPONSE #25: Justification for spending State Superfund funds to remediate this site has included consideration of the elimination of potential exposure to PCB contaminated soil in the future. For a relatively low cost, all future exposures at this site can be eliminated.

III. WRITTEN COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD

A letter written by Wilfred Hoffman, representing Mildred McClusky, was received after the public hearing. The letter is included in the Appendix of this document. Following are comments extracted from this letter which relate to the PRAP, followed by the NYSDEC's response.

COMMENT #26: The State should have removed the PCBs underneath the building during the previous soil excavation and removal.

RESPONSE #26: Removal of the PCB-contaminated soil underneath the building at that time was considered and discussed with the contractor. Both the contractor and the DEC decided that the danger of undermining or affecting the structural stability of the building made this impractical. In addition, at that time the extent of contaminated soil under the building was unknown, making it impossible to predict the extent of the work required.

COMMENT #27: Deed restrictions would answer the problem.

RESPONSE #27: See Response #10.

COMMENT #28: The fact that the persons, who were working in this building for a number of years and exposed directly to oils containing PCBs, were not adversely affected should constitute plenty of evidence that PCBs, well hidden in the soil beneath a concrete floor, could not possibly be injurious to the public or anyone working in the building.

RESPONSE #28: See Responses #8 and #12.

COMMENT #29: There is evidence that underground water has in no manner been contaminated.

RESPONSE #29: This is true and is discussed further in Response #4.

APPENDIX

Rec'd 9/9/92
@ Public Mtg
Salina (T) Hall
by Atty Crystal

Mr. Robert W. Schick, P.E.
and
Catherine A. Klatt, Project Engineer
New York State Department of Environmental Conservation
50 Wolf Road, Rm 222
Albany, New York 12233

RE: Old Syracuse Die Casting, Salina (T) Onondaga County New York, Site No. 7-34-029

Dear Ms. Klatt and Mr. Schick:

I have your letter of August 20, 1992, Together with a copy of a report which recommends demolition of the northern bay of the building at an estimated cost of $ 128,000.00.

I feel that this is wholly unnecessary and I strongly urge the DEC to consider at maximum, alternative number one. Based upon the report, the PCB contaminated soil is underneath the building and has no place to go. Reference: 4.1.4 " contaminated soils appears to be confined to this narrow strip." 4.2 Summary of Health Risk " Current site conditions do not pose any routes of exposure to PCB contaminated soils. The existing PCB's are below the concrete slab of the building, ". It is, in fact, effectively sealed in place by the concrete floor of the building and the clean soil placed in the outside excavation. There is no ground water contamination or evidence thereof. There is no adjoining sub-surface water being contaminated and the present situation does not present a hazard to persons who might be using the building, nor to the public at large.

In my opinion, the existing PCB contaminated soil has been contained very much in the same manner as asbestos is permitted to be contained by encapsulation.

The building is owned by, Mildred McClusky, and she does not have the funds to pay for any of the alternative proposals.

My own financial situation is very dim. I have not drawn a regular paycheck since June of 1990, and I have been trying to get by on doing some occasional consultation work. It turns out that there is a strong prejudice against hiring a former entrepreneur. At this point our house is on the market and am hoping we can realize enough to pay off the mortgage and avoid bankruptcy.

This means that the cost of any remedial work would have to come out of the Super Fund with very little likelihood of reimbursement. Under the circumstances, I do not see how the DEC would be justified to spend Super Fund money on this site.

I really do not know why I am still in the picture. The oil was spread on the ground years ago when it was common practice to keep dust from entering the air. I never instructed anyone to dump any type oil on the property while in control of the company. Subsequent to [redacted] my company's constructive eviction other tenants have occupied and operated the premise.

In this case, the public interest would be served adequately by placing a restriction upon the property that there be no excavation or demolition without first notifying DEC.

Recent research indicates that PCB's can be biologically degraded. A job like this which the contamination (PCB's) are prevented from moving by a contained concrete barrier would be ideal for such work. Unfortunately I am not in a position to finance a study but an EPA grant might be available. Recently brought to my attention is another cleaning method that Syracuse developers are perfecting. Please review the enclosed news paper article. Notice that the article discuss several other similar clean up projects.

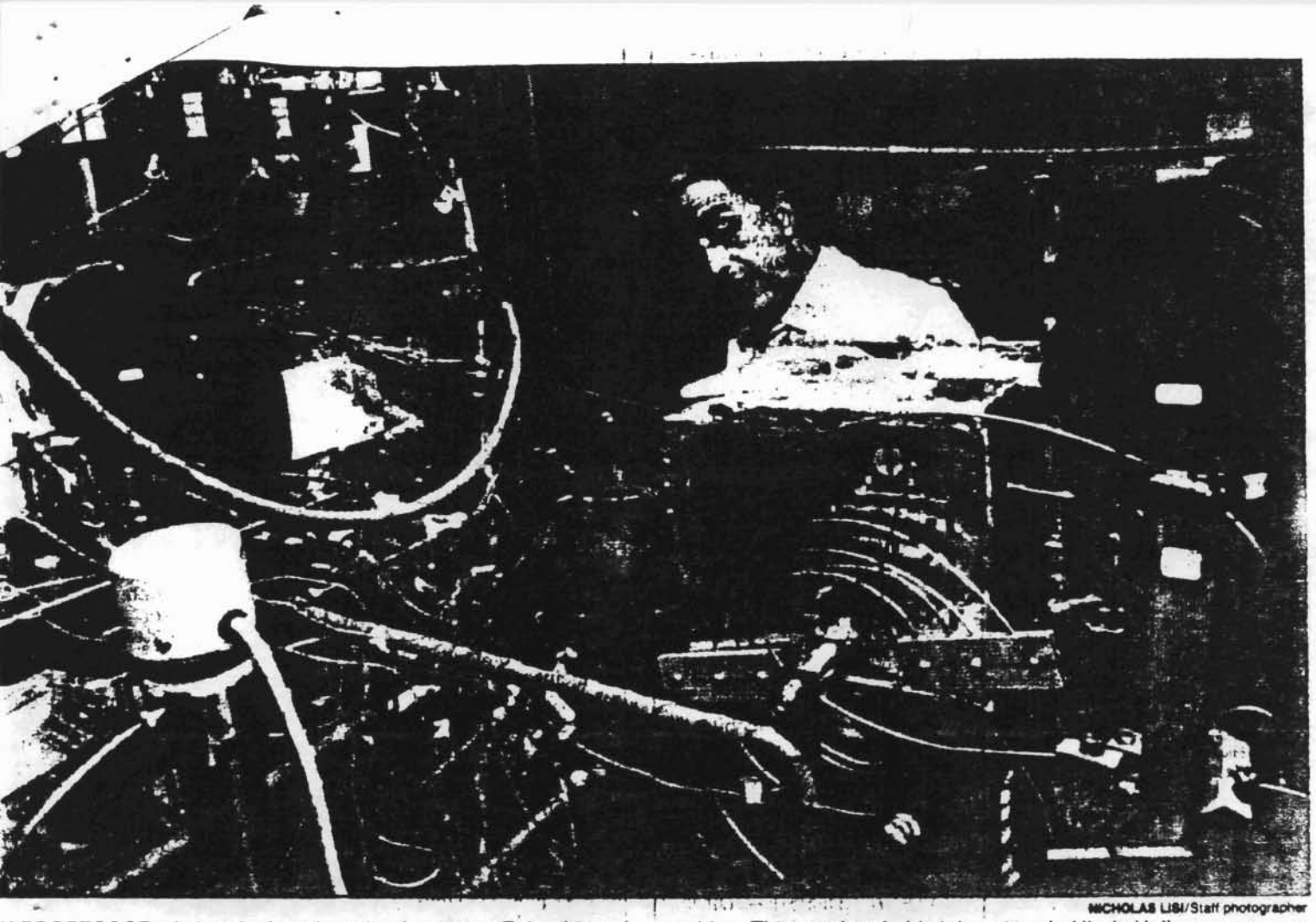
It seems to me that contamination problem modeling is conducted on this type problem regularly. The goal is to have clean conditions. Land filling contaminated hazards does not achieve the goal, it only prolongs clean up. In the absence of any immediate threat, time and technology will allow for cleaning the site in place.

This situation has deteriorated my family relationship. The repercussions have been devastating. Also, approximately one hundred jobs are lost in the Town of Salina. There are many other sites which have significant situations having , far reaching, long term effects and do present eminent environmental harm which require DEC action.

Yours Truly,

Adam McClusky

cc: Mr. Milton Crystal, Ms. Mildred McClusky, Mr. Wilfred Hoffmann
enc: ✓



NICHOLAS LISI/Staff photographer

U PROFESSOR of chemical engineering Lawrence Talvarides xplains the workings of his PCB extractor — a device to remove azardous chemicals from soil. Talvarides likens it to a big coffee machine. This version, in his laboratory in Hinds Hall, can process about one teaspoon of soil at a time. A consultant is at work on a larger model.

SU invention cleans tainted earth

Chemistry professor likens his PCB extractor to a coffee machine.

by **Mark Weiner**
Staff Writer

Syracuse University researchers have invented a process that could help clean the ation's toxic waste sites by removing hazrdous PCBs from soil.

The new technology cleans soil in relatively short time, extracting PCBs with high-ressure gases. The hazardous chemicals are then destroyed using an existing process.

Researchers say they are encouraged by the efficiency of an experimental PCB-extracting machine, developed at the SU Department of Chemical Engineering and Materials Science. ..

"When you finish cleaning up, you've got good clean stuff," said Lawrence Tavlarides, a professor of chemical engineering who has led the research effort.

In the United States, researchers have developed about 10 other technologies that remove PCBs from the ground, but those processes don't clean as quickly or efficiently, he said.

PCBs, or polychlorinated biphenyls, are a group of chemicals that were commonly used with hydraulic oil in electrical equipment. In July 1979, the chemicals were banned by the U.S. Environmental Protection Agency after being identified as a suspected carcinogen.

The land around many closed industrial plants is contaminated in spots where PCB-laden oil was either dumped or spread to suppress dust.

For example, PCB contamination was a problem at the old Syracuse Die Casting plant on Teall Avenue and the former scrap yard where Carousel Center mall was built.

■ SU, Page B2

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ease, he said.

— The Associated Press

Three arrested in robbery-slaying

POUGHKEEPSIE— Three men were arrested and charged Saturday in the robbery and slaying of a 29-year-old book and video store clerk in Poughkeepsie, police said.

Sidney Powers, 20, Clevon Betterton, 18, and George Pittman, 29, all of Poughkeepsie, were arraigned before Poughkeepsie City Judge Stephen Wing, who ordered them to the Dutchess County Jail without bail. They were accused of killing Scott Porter during an armed robbery Wednesday at a book and video store.

— The Associated Press

reason it isn't higher is because we have benefited from lower interest rates," he said. "There have been increased costs, too, because of pollution control equipment that we need to plan for since regulations have changed."

Baker said opponents are not responsible for the higher costs.

"The higher cost has nothing to do with citizens who have ex-

The EPA is expected to issue a ruling sometime this summer.

"I guess the only thing I can tell you is this bond issue is somewhat premature," Sherman said. "Because they haven't yet heard what's going to happen with the Environmental Protection Agency appeal. As far as I can see, the economics of the plan look very tenuous at this point."

SU invention cleans PCB-tainted earth

■ SU
Continued from Page B1

Both of those sites were cleaned by excavating the contaminated soil and taking it to landfills designed to hold hazardous waste.

State environmental officials recently found additional contamination at the old Syracuse Die Casting plant and plan to dig up the foundation and the tainted soil.

The process invented at SU would remove PCBs from the soil, allowing it to be returned to the ground as clean fill. A sludge-like byproduct containing the PCBs would then be destroyed using existing technology.

Last week, Tavlarides demonstrated how the new technology works inside a laboratory at Hinds Hall.

The extraction equipment is covered with shatterproof Lexan, a clear plastic-like shield that would contain any high-pressure explosions. Inside the shield, there's room for three people to stand. But the size is deceiving.

A tangle of tubes, wires and electronic gadgets leads to a stainless steel tube, about the size of a small flashlight. That's where the action takes place. The tube holds less than a teaspoon of soil.

The PCBs are removed when carbon dioxide and methanol are pumped through the soil at high pressure. Tavlarides compares the process to that of a coffee machine.

A big difference is that his extractor works by putting the gas under pressure 1,000 times greater than what normally exists in the atmosphere.

The PCBs are then trapped in a sludge-like material that's cooled in a bucket of ice and water. The soil left in the tube is clean.

Tavlarides said researchers are trying to find out how to vary temperature and pressure for different types of soil. Studies have shown that some soils are easier to clean than others.

He said the researchers would like to begin a commercial test of the equipment within the next three years.

"We're very excited about this," Tavlarides said. "The economics at this stage of development look very promising."

He said the cleanup costs would be competitive with existing technology.

The research team recently received a three-year, $600,000 grant from the National Institute of Environmental Health and Sciences to continue their work.

Wayne S. Amato, a former Allied-Signal Inc. engineer, has worked as a consultant on the project. He is now designing an extractor that can be transported on a trailer bed and used commercially.

The larger unit would be able to clean a ton of soil every 30 to 60 minutes.

The SU researchers are part of a national consortium of college and universities that have established 11 Superfund Site Research Centers.

LAW OFFICES OF
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ROBERT K. GREENOUGH, JR.

28

September 21, 1992

Ms. Catherine A. Klatt
NYS Department of Environmental Conservation
50 Wolf Road
Albany, NY 12233

Re: Mildred B. McClusky
2101 Teall Avenue, Syracuse, NY

Dear Ms. Klatt:

I received from Milton Crystal, attorney for Adam McClusky, a memorandum containing, in general, what occurred at the recent meeting held in the Town of Salina concerning the above-named's property. I concur with all remarks made by Attorney Crystal at the hearing and the letter to the DEC by Adam McClusky, and read into the record by Attorney Crystal.

I believe it is absolutely ridiculous to consider tearing down this building in an attempt to remove a small amount of PCB's which are remaining. There is no question in my mind but that the State was highly negligent for not going under the foundation, with proper support to the north wall, and removing the PCB's that were adjacent to the north wall, knowing that the highest concentration was immediately outside of the wall near the north entrance to the building. Now the State comes along and wants to tear down the north wing of the building and start from scratch to remove the remaining PCB's. The suggestion by Attorney Crystal and that which was also stated in the letter by Adam McClusky that there be restrictions on the deed would certainly answer the problem.

The fact that the persons, who were working in this building for a number of years and exposed directly to oils containing PCB's, were not adversely affected should constitute plenty of evidence that PCB's, well hidden in the soil beneath a concrete floor, could not possibly be injurious to the public or anyone working in the building, and there is evidence that underground water has in no manner been contaminated.

Mrs. McClusky is a widow and certainly would have insufficient means to defray the costs of any remedial procedures, and the little she now has is needed to sustain her for the rest of her life.

I trust that the State will take the above factors into consideration in making its determination so that what may become a prolonged litigation in this matter may be avoided.

Very truly yours,

HOFFMANN, HUBERT, HOFFMANN & GREENOUGH

Wilfred E. Hoffmann

WEH:afc
cc: Milton Crystal, Esq.
Mildred McClusky
Robert W. Schick, P. E.