

To Bob Bersani + M Drury
From H Davis

Re Council order

Open letter to Cambridge Chronicle: By FAX Attention
Ken McGuire 6293381

June 7, 1999

Dear Editor:

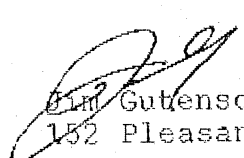
It has been over two years that those of us who live on the edge of the Polaroid/Spaulding and Sly site (Putnam/Pleasant/Memorial Drive) have had to tolerate excessive amounts of dust grit and avalanches of words from and about this site. Isn't it about time to move on? We have three simple suggestions for three of the involved parties. Early action on them would sweep away the debris and we and our neighbors could get on with our lives in a neighborhood that we and the city can be proud of.

City Agencies: Relevant city agencies should enforce construction dust and litter laws. The grit and filth blowing from the Polaroid/Spaulding/Sly site daily deposits a nasty film on every surface in our homes. The black fabric intended to mitigate blowing grit and dust flaps irrelevantly in the breeze, and unsightly weeds and litter punctuate the edges of the property. Fines should be levied against the developer and owner of the site just as fines are levied against drunken drivers.

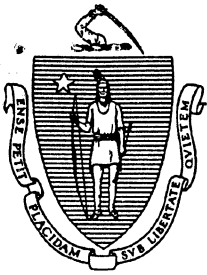
City Council: In terms of the City Council, rezone the site for the density of residential development of the property abutting it on Pleasant Street. This is a concept that many of the neighbors have suggested.

Developer: Polaroid/Spaulding/Sly should look at Steve Kaiser's analysis of the traffic situation and not the irrelevant basket of data from your consultants who seem to be trying to convince others of what they themselves couldn't possibly believe. The implication of his data for you is to propose a development consistent with what the infrastructure can tolerate. Your location is not Kendall Square or Technology Park on Rt.128. All the debris of words and numbers cannot obscure this simple fundamental point. Select a thoughtful housing developer (with input--not veto--from the immediate neighbors) to develop the site.

Thank you,

 Jim Gutensohn/Joanne Kauffman
152 Pleasant Street

C: Robert Healy, City Manager
Henrietta Davis, City Councilor
David Vickery, Developer



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Metropolitan Boston – Northeast Regional Office

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN LISS
Commissioner

MAY 27 1999

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Polaroid Corporation
750 Main Street
Cambridge, MA 02139
Attention Mr. James Harrison

RE: Polaroid Corp
784 Memorial Dr.
RTN 3-1959
Response Action Outcome

NOTICE OF AUDIT FINDINGS

Dear Mr. Harrison:

On July 15, 1998, you were notified that the Massachusetts Department of Environmental Protection had begun to audit cleanup actions conducted in response to a release of oil and hazardous materials at the location described above. This Notice informs you of the results of the Department's audit.

On September 27, 1994, the Department received a Class A-2 Response Action Outcome (RAO) Statement for a release of oil/hazardous materials at the Polaroid Facility at 784 Memorial Drive, Cambridge, Massachusetts. The RAO Statement was prepared by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional (LSP) # 5767.

**ADDITIONAL ACTIONS ARE NOT NECESSARY TO CORRECT
DEFICIENCIES**

The Department finds that the audited response actions currently comply with applicable requirement of the Massachusetts Contingency Plan, although a deficiency was noted. Therefore, no additional actions are necessary. The Site Memorandum (Attachment A) describes activities Department personnel performed during the audit, summarizes relevant site information and describes the deficiency that you have already corrected.

ADDITIONAL COMMENTS

In the Additional Comments section of the Site Memorandum, the Department has provided additional information related to the implementation of requirements applicable to your site. The Department provides those comments to assist you and your LSP better understand our interpretation of the Massachusetts Contingency Plan. Those comments do not constitute violations or deficiencies and require no response from you.

LICENSED SITE PROFESSIONAL

A copy of this Notice has been sent to Ms. Maureen Hill Collins and Mr. Paul Reiter, the Licensed Site Professionals for your disposal site.

LIMITATIONS

The Department relies upon the accuracy of the information reviewed during the audit to make these findings. These findings do not: (1) apply to actions or other aspects of the site that were not reviewed in the audit, (2) preclude future audits of past, current, or future actions at the site, (3) in any way constitute a release from any liability, obligation, action or penalty under M.G.L. c. 21E, 310 CMR 40.0000, or any other law, regulation, or requirement, or (4) limit the Department's authority to take or arrange, or to require any Responsible Party or Potentially Responsible Party to perform, any response action authorized by M.G.L. c. 21E which the Department deems necessary to protect health, safety, public welfare or the environment.

CONCLUSION

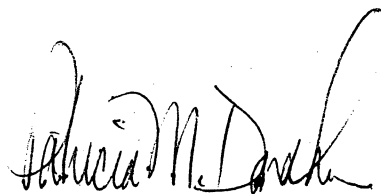
This audit focused primarily on compliance with certain requirements of M.G.L. c. 21E and the MCP and, to a limited extent, other applicable requirements. This audit does not preclude future audits of past, current, or future response actions or activities at the site or inspections to confirm compliance with applicable requirements of other laws or regulations enforced by the Department. These findings do not in any way constitute a release from liability under M.G.L. c. 21E, the MCP, or any other law, regulation, or requirement.

If you have any questions regarding this Notice, please contact Jack Miano or Sharon Gobiell at the letterhead address or telephone (978) 661-7600. Please reference the Release Tracking Number in any correspondence regarding the site.

Very truly yours,



Jack Miano
Environmental Engineer



Patricia M. Donahue
Chief, Audit Section
Bureau of Waste Site Cleanup

Attachment: A. Site Memorandum

cc: DEP/Woburn, Data Entry-NAFSIG (w/attachments)
DEP/Woburn/BWSC, John Fitzgerald (w/attachments)
DEP/BWSC/Boston/5th fl, c/o Maria Pinaud (w/attachments)
Board of Health, 1493 Cambridge Street, Cambridge, MA 02139
Attention: Health Officer (w/attachments)
City of Cambridge, 795 Massachusetts Ave., Cambridge, MA 02139
Attention: Mayors Office (w/attachments)
784 Memorial Drive LLC, c/o Spaulding & Slye, 125 Cambridgepark Drive, Cambridge,
MA 02140, Attention: Paul Sampson
Cambridgeport Neighborhood Initiative, c/o Mr. Stash Horowitz, 12 Florence Street,
Cambridge, MA 02139-4639
Haley & Aldrich, Inc., 456 Medford St., Suite 2200, Boston, MA 02129-1400, Attention:
Maureen Hill Collins
GZA GeoEnvironmental, Inc., 320 Needham Street, Newton Upper Falls, MA 02164,
Attention: Paul F. Reiter

Attachment A**SITE MEMORANDUM**

**Cambridge
784 Memorial Drive
Release Tracking Number 3-1959**

I. ACTIONS AUDITED

The purpose of this memorandum is to document the audit, pursuant to the Massachusetts Contingency Plan (MCP), 310 CMR 40.1100, of a Class A-2 Response Action Outcome (RAO) Statement filed for 784 Memorial Drive, Cambridge, Massachusetts. The RAO was prepared by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767.

II. AUDIT ACTIVITIES

The audit included a review of information in the Department's files including the documents listed below:

1. "Release Abatement Measure Completion Report and Report on Supplemental Site Activities, Former Polaroid Property," 784 Memorial Drive, Cambridge, Massachusetts, prepared by Haley & Aldrich, Inc. for 784 Memorial Drive LLC, c/o Spaulding & Slye and dated March 1999;
2. "Release Abatement Measure (RAM) Plan, Excavation of soils Containing Zinc Exceeding UCLS", 784 Memorial Drive, Cambridge, Massachusetts, prepared by Haley & Aldrich, Inc. for 784 Memorial Drive LLC, c/o Spaulding & Slye and dated November 1998;
3. "Soil and Groundwater Exploration Program Report, 784 Memorial Drive, Cambridge, Massachusetts", prepared for Polaroid Corporation by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767 and dated October 8, 1998;
4. "Request for Information Response, Polaroid Corporation, 784 Memorial Drive, Cambridge, Massachusetts", prepared for the Department of Environmental Protection by Polaroid Corporation, James Harrison, Environmental Manager and dated September 11, 1998;
5. "Proposed Additional Response Actions", 784 Memorial Drive, Cambridge, Massachusetts", prepared for Polaroid Corporation by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767 and dated September 4, 1998;
6. "Report on Environmental Site Evaluation Update, Former Polaroid Facility", 772 to 796 Memorial Drive, Cambridge, Massachusetts, prepared by Haley & Aldrich, Inc. for 784 Memorial Drive LLC, c/o Spaulding & Slye and dated November 1997;

7. "Response Action Outcome, DEP Site No. 3-1959, Polaroid Corporation, 784 Memorial Drive, Cambridge, Massachusetts", prepared by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767 and dated September 1994;
8. "Release Abatement Measure Plan, DEP Site No. 3-1959, Polaroid Corporation, 784 Memorial Drive, Cambridge, Massachusetts", prepared by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767 and dated June 17, 1994;
9. "Phase I Initial Site Investigation, DEP Site No. 3-1959, Polaroid Facility, 784 Memorial Drive, Cambridge, Massachusetts", prepared by GZA GeoEnvironmental, Inc., Paul F. Reiter, Licensed Site Professional #5767 and dated June 1994; and
10. "Environmental Site Assessment, Memorial Drive Facility, Cambridge, Massachusetts", prepared for Polaroid Corporation by Goldberg-Zoino & Associates, Inc. and dated September 1988.

III. SITE SUMMARY

The 5.5 acre Polaroid facility has been owned by Polaroid since 1967 and was used for film coating, film assembly, camera repair, research and development of film coating and machine shop operation. The property is occupied by ten buildings and includes paved and landscaped areas. Prior to 1967, B.B. (Boston Blackening) Chemical Company, a subsidiary of United Shoe Machinery Company, owned the property. B.B. Chemical produced adhesives for shoe manufacture. B.B. Chemical used six underground storage tanks (USTs). Three of the USTs were located beneath building 7 and three of the USTs were just outside of building 7. Building 7 was built in 1940 for the production of cement adhesive. East and southeast of building 7, along Pleasant Street, the Dover Stamping Company conducted operations between 1900 and 1950. Sanborn maps from 1935 and 1950 indicate that the Dover Stamping Company activities included metal forging, tinning, metal stamping, galvanizing, lacquering and japanning (dark finish with carbon) of sheet metal. According to a letter from the Cambridge Health Department received by the Department of Environmental Protection on March 28, 1998, the property was formerly used as an apple orchard.

The property is served by municipal sewer and water. A January 13, 1938 site plan from the City of Cambridge Engineering Department indicated that a municipal sewer line project adjacent to the subject site was completed in 1939. Two Massachusetts Water Resource Authority (MWRA) sewer lines pass through the property at a depth of approximately 10 to 20 feet below the ground surface. Heat is provided by steam lines from Commonwealth Energy Company.

The Charles River is located approximately 200 feet west and downgradient of the site. The depth to groundwater ranges from approximately 5 to 7.5 feet. The subsurface contains fill material with cinder and/or ash to a depth of approximately 9 feet. This fill material overlies the former tidal flats of the Charles River which were filled between 1900 and 1935.

On September 15, 1989, the Department received a notification of the discovery of four 1,000 and two 2,000 gallon USTs abandoned and filled with water and /or residual stored materials at building 7. On September 19, 1989, the contents of the tanks were sampled. These USTs reportedly stored toluene and methyl-ethyl-ketone. The sampling results indicated the presence of benzene, toluene, xylenes, acetone, chloroform and methyl-ethyl-ketone. Three USTs were removed in December 1989 and three USTs were removed in January 1990. Several tanks were punctured during removal operations. One 1,000 gallon UST began leaking when it was uncovered. One UST containing toluene had several small holes not due to the tank removal operation. Soil analyses indicated the presence of methyl-tertiary-butyl-ether, benzene, toluene, xylenes, ethylbenzene and 1,1,1-trichloroethane. Kerosene was measured at 2,100 mg/kg in a soil sample from boring B-25, located in the parking area for building 2.

In November 1993, groundwater samples were collected from 39 monitoring wells and analyzed for VOCs using EPA methods 8010 and 8020 or 8240. Toluene was measured in groundwater at P-8 at 13 mg/l and 1,1-dichloroethene was measured at 31 ug/l. In addition, benzene, ethylbenzene, xylenes, trichloroethene, chloroform, 1,1-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethene, vinyl chloride, and chloroethane were present in groundwater.

A RAM Plan was received by the Department on July 7, 1994. The RAM Plan proposed to remove soil contaminated with toluene and 1,1-dichloroethene from inside building 7 in the vicinity of well PW-8 and to remove petroleum contaminated soil from near boring B-25. The RAM was conducted in August 1994.

772 Memorial Drive is located at the southwest corner of the 784 Memorial Drive property. Three gasoline USTs, one fuel oil UST and one waste lubricating oil UST were removed from 772 Memorial Drive in March 1986. A release of gasoline and fuel oil (RTN 3-1369) was first listed by the Department as a Location To Be Investigated (LTBI) on April 15, 1989. This release impacted a portion of the 784 Memorial Drive property. Polaroid purchased this property in 1990 and submitted an application for a Waiver of Approvals on October 26, 1990. A bioremediation system was implemented to remediate the gasoline and fuel oil release. A Waiver Completion Statement was received by the Department on July 18, 1994.

On August 12, 1998, the Department issued a Request For Information (RFI) letter to Polaroid Corporation. This request was based on the Department's preliminary review of the Response Action Outcome Report, the site history and input from the Cambridgeport Neighborhood Initiative group. The RFI focused primarily on information regarding environmental assessments and historical releases at the property. Polaroid responded to the RFI with a "Request for Information Response" report dated September 11, 1998.

On August 18, 1998, the Department received a "Report on Environmental Site Evaluation Update, Former Polaroid Facility, 772 to 796 Memorial Drive, Cambridge, Massachusetts, prepared by Haley & Aldrich, Inc. for 784 Memorial Drive LLC, c/o Spaulding & Slye and dated November 1997. This report documented additional environmental site investigation including the analysis of seven groundwater samples for RCRA metals. No metal level in groundwater exceeded the applicable reportable concentration or MCP Method 1 standard.

On August 18, 1998, a meeting was held at the Massachusetts Department of Environmental Protection's Northeast Regional Office between representatives of the Department and Polaroid Corporation. During this meeting, Jim Harrison, Environmental Manager for Polaroid, informed the Department that Polaroid proposed to supplement the existing site assessment information for the property with additional sampling for metals.

On September 4, 1998, the Department received a proposal for additional response actions at 784 Memorial Drive, prepared for Polaroid by GZA, Paul Reiter, Licensed Site Professional and dated September 4, 1998. The proposed additional response actions included: soil borings at the former location of the operations of the Dover Stamping Company; soil borings at former drain line locations at the Polaroid facility buildings 1, 2, 3, and 8, where small laboratories operated; installation of groundwater monitoring wells at the former Dover Stamping location; installation of groundwater monitoring wells at the Polaroid facility location and, analysis of soil and groundwater samples for arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, zinc, nickel and tin.

The Department responded to this proposal with the following verbal recommendations:

1. Groundwater samples should be analyzed for copper based on the operation of a brass, bronze and aluminum foundry at the former Dover Stamping Company.
2. Petroleum present at HA-2 (a TPH level of 3,500 mg/kg) should be identified and the extent of the petroleum contamination should be determined.
3. The type and extent of TPH in groundwater should be evaluated using VPH/EPH laboratory methods. TPH was present in groundwater in 1994 at HA1 (1.2), HA2 (2.4), HA5 (1.7) and HA6 (1.6 mg/l.).
4. The Department recommended that soil samples from borings B-2, B-4, B-6, B-10, B-11, B-12 and the location of HA-2 be sampled for the presence of asbestos. The soil samples should be collected from depths of 0 to 5 feet below the ground surface (approximate depth of fill material at the property). This request was based on the possibility that asbestos building materials may have been released to the soil when the Dover Stamping Company buildings were demolished.

The proposed field work was performed during September 1998 and the results of the field study were presented to the Department in a report entitled, "Soil and Groundwater Exploration Program". The results indicated that levels of lead and zinc in soil exceeded the MCP RCS-2 Reportable Concentrations. Soil lead concentrations ranged to 2,720 mg/kg (RCS-1 = 300 mg/kg) and soil zinc concentrations ranged to 24,900 mg/kg (RCS-1 = 2500 mg/kg). No other metal levels in soil exceeded the MCP Reportable Concentrations. Levels of metals, VPH, EPH or VOCs in groundwater did not exceed the MCP RCGW-2 Reportable Concentrations or the MCP GW-2/GW-3 groundwater standards.

The September 1998 field study also included the analysis of seven soil samples for asbestos. Two of these soil samples, B-10 and B-12, contained asbestos at less than one percent (trace levels). One of these soil samples was collected from the area of the former Dover

Stamping Company and the other sample was collected from the former location of Polaroid Building Number 2. Additional asbestos sampling was conducted on February 8, 1999 at these two locations. Five Geoprobe borings were conducted from 0 to 5 feet at each of these locations. A total of 20 soil samples were collected for asbestos analysis. The samples were analyzed using EPA polarized light microscopy method EPA/600/R-93/116. Asbestos was not observed in any of the samples.

On November 30, 1998, the Department received a Release Abatement Measure Plan for the site. The purpose of the RAM was to excavate soil with zinc levels exceeding the MCP Upper Concentration Limits. Soils with elevated levels of zinc were found in the vicinity of the former galvanizing operation of the Dover Stamping Company. On December 31, 1998, soil was excavated to a depth of four feet in the area containing elevated levels of zinc. During the RAM, a gray metallic layer, suspected to be the source of the zinc contamination, was encountered and removed. A Ram Completion Report was received by the Department. The Completion report states that a total of 68 tons of soil were excavated for the RAM and transported to BFI Fall River Landfill facility.

On October 19, 1998, Ms. Maureen Hill, LSP with Haley & Aldrich, informed the Department that the solvent water separator (catch basin) located near groundwater monitoring well C-2 would be removed pursuant to the requirement of the Department's Underground Injection Control (UIC) Program. The basin was formerly connected to the sewer system. On November 13, 1998, Clean Harbors Inc., (CHI) sampled the water and sludge in the catch basin. The sludge was tested using the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP extract was found to contain cadmium, chromium, lead and chlorobenzene. No metals or VOCs were detected in the water in the catch basin. On December 30, 1998, CHI removed the water and sludge from the catch basin and jet cleaned the associated entry and exit pipes. The catch basin was excavated and no evidence of a release to surrounding soils from the separator was observed. Confirmatory soil samples from the catch basin excavation were analyzed for the RCRA Eight metals. Metal levels did not exceed the S2 soil standards.

Compliance Inspection

On September 14, 1998, a Compliance Inspection was conducted at the site. Personnel on site at the time of the Compliance Inspection included, Mr. Paul Reiter, LSP, Mr. Paul Sampson, Vice President for Spaulding & Slye, and Mr. James Harrison, Environmental Manager for Polaroid. The property was partially paved with asphalt and unpaved in the areas where Polaroid buildings demolished early in 1998 were formerly located. Building demolition rubble was present at the ground surface in the former building areas. Clinkers were observed at the ground surface in the building demolition areas. A site walkover was conducted and the proposed locations of the borings and groundwater monitoring wells for additional field work were observed and discussed. The locations of old groundwater monitoring wells, installed during earlier environmental investigations, were inspected. Paul Reiter indicated that several old groundwater monitoring wells would be re-developed and sampled, if possible. The locations of dry wells at the property were also inspected. No evidence of the dry wells could be observed at the ground surface. Refinements of proposed field work were discussed including

changes in sampling locations and modifications to the list of target analytes for selected soil and groundwater sampling locations.

Risk Characterization

A risk characterization for the VOC and TPH releases was completed in 1994 using MCP Method 1. The groundwater category is identified was GW-2/3 and the soil category was S-1. The risk characterization indicated that contaminants in soil and groundwater are below the S-1 soil standards and the GW-2 and GW-3 groundwater standards.

The risk characterization supporting the RAO did not specifically include an evaluation of the potential impact from VOC contaminated airborne particulates during future construction projects (site development is currently being proposed). However, given that a MCP Method 1 risk characterization was conducted and all exposure point concentrations for VOCs were below the S-1/GW-2 and S-1/GW-3 standards, and, the soil standards were derived assuming a daily soil ingestion rate of 50 mg/day for residents and construction workers, a condition of no significant risk is expected for a residential exposure scenario.

The 1994 risk characterization did not address the presence of metals in soil or groundwater or asbestos in soil. Additional information concerning levels of metals and asbestos was acquired following the completion of the RAO. The "Release Abatement Measure Completion Report and Report on Supplemental Site Activities", dated March 1999, included an appended Method 3 Risk Characterization that incorporated the additional metals and asbestos data collected subsequent to the RAO submittal. The risk characterization exposure scenario included the use of the site as a residential property. The results of the risk characterization indicate that a condition of No Significant Risk exists for human health, welfare, safety and the environment (Hazard Index = 1.0, ELCR = 1.0E-5).

IV. AUDIT FINDINGS

On the basis of the information reviewed during the audit and in reliance upon the accuracy of that information, the Department identified the following deficiency.

Deficiency

The 784 Memorial Drive site investigation did not comply with 310 CMR 40.0191, the Response Action Performance Standard (RAPS) with respect to the investigation of metals in soil and groundwater at the site. The Response Action Performance Standard (RAPS) is the level of diligence reasonably necessary to obtain the quantity and quality of information adequate to assess a site. The 1994 Response Action Outcome did not address the presence of metals in soil or groundwater. The Dover Stamping Company conducted operations at the property from the late 1800's to approximately 1960. The Dover Stamping Company activities included metal forging, tinning, metal stamping, galvanizing, lacquering and japanning (dark finish with carbon) of sheet metal. The operations of the Dover Stamping Company represented a substantial likelihood of the presence of metals in soil and/or groundwater at the property.

Steps To Be Taken To Address The Deficiency

Since additional investigation for metals in soil and groundwater was conducted in September 1998 and a Release Abatement Measure was completed to remediate elevated levels of zinc in soil at the former location of the Dover Stamping Company, no additional actions are required in this regard.

ADDITIONAL COMMENTS

The following contains observations and recommendations from the Department on the response actions that were audited. These observations and recommendations do not constitute deficiencies or violations and require no response to the Department from you. Instead, they are included to help you and your consultant better understand the Department's interpretation of M.G.L. c. 21E, 310 CMR 40.000, and other requirements applicable to the site.

1. It is the Department's understanding that the property is to be developed. Based on the history of the property and the uncertainty associated with the estimation of potential risk, future site excavation, construction and development activities should be managed in such a way as to prevent the release of dust from the site. The proper management of activities likely to generate dust will ensure the protection of site workers and the public.
2. Be advised that, pursuant to 310 CMR 40.0032(3), soils containing oil or waste oil at concentrations less than a release notification threshold specified in 310 CMR 40.0300 and 40.1600, and that are not otherwise a hazardous waste, and soils that contain one or more hazardous materials at concentrations less than a release notification threshold, and that are not a hazardous waste, may be transported from a disposal site without notice to or approval from the Department under the provisions of this Contingency Plan, provided that such soils:
 - are not disposed or reused at locations where the concentrations of oil or hazardous materials in the soil would be in excess of a release notification threshold applicable at the receiving site, as delineated in 310 CMR 40.0300 and 40.1600; and
 - are not disposed or reused at locations where existing concentrations of oil and/or hazardous material at the receiving site are significantly lower than the levels of those oil and/or hazardous materials present in the soil being disposed or reused.

Consent Communication #27 431 S

A communication was received from the Commonwealth of Massachusetts, Executive Office of Environmental Affairs, Dept. of Environmental Protection, transmitting a notice of audit findings regarding Polaroid Corporation.

In City Council June 14, 1999

Referred to
Inspectional
Services Department