CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 98 - 066

REVISION OF SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. 89-055 FOR:

FMC CORPORATION

for the property located at

8787 ENTERPRISE DRIVE
NEWARK, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Board), finds that:

1. **Site Location**: The site is located at 8787 Enterprise Drive, Newark, Alameda County (hereinafter the site). The site is located west of I-880 and east of salt evaporation ponds in an area with various industrial and commercial uses (see figure 1). The parcels formerly used for manufacturing purposes at the Site (Parcels A, B, C, D, and I) comprise 39.3 acres and are located at the western end of Enterprise Drive in Newark, Alameda County, California (see figure 2). This portion of the Site is bounded by the Southern Pacific Railroad and portions of the Hetch Hetchy Pipeline Right of Way to the north, Willow Street to the east, Enterprise Drive and undeveloped land owned by Cargill Incorporated - Salt Division, to the south and undeveloped land including present or former salt evaporation ponds and one engineered barge canal connected to the Newark Slough to the west.

2. **Site History**: FMC Corporation and predecessor companies have manufactured chemicals at this site from 1929 uptill 1995. At present FMC only operates a facility for storage and distribution of hydrogen peroxide on the site. Unauthorized releases of some of these chemicals reportedly occurred during the past years of operation.

   Sierra Magnesite Co. first began chemical production at the site (on Parcels B and I) when bromine and magnesium chloride were made from seawater bittern. Sierra Magnesite became California Chemical Company in 1934. California Chemical Company merged into Westvaco Chlorine Products Corporation in 1937. A magnesia plant (Parcel C) and ethylene dibromide (EDB) plant (Parcels B and I) were constructed at that time in part of the property (Parcel I) leased from Leslie Salt Company. In 1942, a plant for the production of a copper-based catalyst was constructed on

Parcel A, while a pilot plant for the catalyst was built on Parcel I. These catalyst plants were closed in 1944. Westvaco Chlorine Products Corporation merged with Food Machinery Corporation to form Food Machinery and Chemicals Corporation (ultimately FMC Corporation) in 1948. A phosphoric acid and phosphate plant were constructed on Parcel A in 1950. The magnesia plant, bromine plant, and EDB plant were shutdown and the manufacturing facilities were removed in 1968. In 1972, a small catalyst plant was constructed on Parcel B for manufacture of a proprietary catalyst; this facility was shutdown in 1976. During that same year, a hydrogen peroxide (and other chemical) distribution area was constructed on Parcel B. The discharger acquired the adjacent site (Parcel I where the former EDB Plant was located, at least in part) from Designed Building Systems, Inc. (DBS) on August 16, 1988. The phosphate plant and phosphoric acid plant were shutdown in 1994 and 1995, respectively. All former manufacturing facilities were removed by the end of 1996. The City of San Francisco maintains a right of way for the Hetch Hetchy water pipeline that bisects the eastern portion of the Site from the southeast to the northwest and borders the western portion to the north.

A discussion of specific areas is presented below.

Parcel A - Acid Plant and Phosphate Plant Area: A phosphoric acid plant and phosphate plant were constructed on this parcel in 1950. The phosphoric acid was manufactured by burning elemental phosphorus (P4), and phosphate products by processing phosphoric acid, sodium carbonate, and potassium hydroxide.. The phosphate plant was expanded in 1954 and added a new line of alkali phosphate products. In the 1960's, FMC constructed two below grade pits of steel reinforced concrete in Parcel A for storage of elemental phosphorus. These pits were taken out of service, decontaminated and closed in place (i.e., the concrete floors and walls remain) by backfilling in 1993-1994. Sampling in the mid-1970's and 1996 has revealed the presence of elemental phosphorus in soil immediately outside the walls of the pit, suggesting that leaks or spills have occurred. FMC also operated a surface impoundment from the early 1950's until the late 1970's for water which had come into contact with elemental phosphorus (e.g., water used to cover the elemental phosphorus during shipment in railcars or used to displace the elemental phosphorus during unloading) on the east side of Parcel A, north of the Hetch Hetchy Right of Way. This impoundment was closed in 1985 under the direction of the California Department of Health Services (now the Department of Toxic Substances Control, or DTSC). Sampling of shallow zone groundwater beneath Parcel A has shown levels of arsenic above MCLs. All phosphate manufacturing concluded in 1994 and the plant was shutdown. Manufacture of phosphoric acid concluded in 1995, and that plant was shutdown.The discharger completed dismantling and removal of the equipment and structures for the plants by 1996.

The "1707" Catalyst Plant was also located on the western half of Parcel A and operated from 1942 to 1944 to produce a catalyst used in the production of synthetic rubber for the U.S. Government during World War II.

Parcel B & I - EDB Plant Area: The EDB Plant was constructed in 1937 on parcel B and I. Raw materials used at the plant included sea water bittern and ethanol. EDB was manufactured primarily for agricultural use as a soil fumigant. Over the years of operations, it is likely that there were minor leaks and spills in the course of routine manufacturing and handling. The only known significant spill occurred in 1967 when a steel tank used to store EDB ruptured, spilling

approximately 6000 gallons of product onto the ground. Other than flushing with water, there is no record of specific cleanup actions taken at the time.

The EDB Area also contained an underground diesel tank that overflowed and leaked in the 1960s. The tank was removed. Additionally, a small underground gasoline storage tank was removed from the area in 1986 in accordance with City of Newark Fire Department requirements and oversight. A soda ash transloading area was located on Parcel B, northwest of the EDB Area. Soda ash was transferred from railcars to trucks, and some soda ash spilled onto the ground and railroad tracks. The area was paved in 1992. Parcel B also contained a waste water pond (E-1 Pond) which was operated from the mid-1970's to 1995 as part of the plant's effluent management and treatment system under an NPDES permit. Wastewater from the plant, consisting primarily of cooling tower blowdown, boiler blowdown, softener regeneration brines, and storm water runoff, was collected in this pond and adjusted for pH prior to discharge. A small catalyst pilot plant was constructed on parcel B in 1972. This plant was shutdown in 1976. Additionally, a hydrogen peroxide transloading and chemical warehousing distribution facility was constructed on Parcel B in 1976. The discharger has ceased warehousing and distribution of chemical products, but continues to operate the hydrogen peroxide transloading facility. Parcel I contained a "1707 catalyst" pilot plant which operated during World War II, supporting the "1707" Catalyst Plant on Parcel A. The catalyst was used for the production of synthetic rubber. A number of other products were tested in the pilot plant for a short period of time, including magnesium oxide, gypsum, and iron-based catalyst, a magnesium silicate compound, and copper pyrophosphate.

Parcel C - Magnesia Plant Area: The magnesia plant was constructed in 1937 on approximately 15 acres adjacent to an engineered barge canal connected to the Newark Slough. Barges with clam and oyster shells used as source of calcium were brought from San Francisco Bay into the Newark Slough and barge canal and unloaded at the Magnesia plant. Magnesia compounds were produced and gypsum was the byproduct. The magnesia compounds were used in refactory brick, pulp, and paper. The gypsum was primarily used in wallboard manufacture and as a soil amendment. The manufacturing equipment, which consisted of several long kilns, crushers, burners, and fuel oil storage, was removed following the closure of the plant in 1968.

Parcel D - Magnesia Plant Area: Prior to about 1972, the E-I ditch began in the middle of Parcel D, with a pond used for disposal of filter aid at the head of the ditch. The filter aid contained some levels of arsenic sulfide, during the production of food grade phosphoric acid. Along with 700-800 feet of ditch, the pond was closed by excavation and off-site disposal in 1972, and the area backfilled.

Stormwater runoff from the phosphate plant and other manufacturing areas was collected and contained in an earthen impoundment near the southeastern corner of the property. The pond was lined with native clay soil. The pond was closed in 1987 by excavation and off-site disposal, with the excavated soils manifested as a hazardous waste due to arsenic (toxicity characteristic). The area was backfilled.

Filter aid from the production of tetrapotassium pyrophosphate (TKPP) was disposed of in an earthen impoundment located immediately south of the Hetch-Hetchy right- of- way from about

1972 to 1980. It was closed pursuant to notifications to RWQCB and DOHS in 1983 by excavation and off-site disposal, and the area backfilled.

There are three undeveloped parcels (E, F, and G) owned by the discharger that are located to the southeast, northeast, and east of Willow Street, respectively. These properties have not been used for manufacturing activities and are not part of this order. However, groundwater beneath these parcels have been polluted with volatile organic compounds (VOCs) from offsite source area.

3. **Named Dischargers**: FMC Corporation has owned and operated on the property since 1929 and is the current property owner. FMC Corporation is named as a discharger because its activities on the site caused soil and groundwater pollution and because it was and is the property owner.

   If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the State, the Board will consider adding that party's name to this Order.

4. **Regulatory Status**: This site is subject to the Board's Site Cleanup Requirements (Order No. 89-055) adopted on June 21, 1989. The purpose of revising the existing Site Cleanup Requirements is to evaluate the effectiveness of ongoing groundwater remediation system with respect to EDB Area, undertake a remedial investigation and evaluation of remedial alternatives with respect to the entire site, and to develop cleanup standards and propose a final remedial action plan with respect to the entire site.

5. **Site Hydrogeology**: The site is located within the Niles Cone groundwater area. The Newark Aquitard is the uppermost clay unit covering nearly all of the Niles subarea, and is underlain by three identified aquifers, namely, the Newark Aquifer, Centerville-Fremont and the Deep Aquifer. Each of these aquifers is separated by an extensive clay aquitard. The Newark Aquifer is the uppermost aquifer within the Niles subarea and ranges between 50 to 70 feet below ground surface (bgs). Lithologically, the site is characterized by a thin layer of fill materials underlain by three alluvial deposits units. These units are collectively termed as the Shallow Zone for the purpose of this Order. The shallow zone occurs at depths of approximately 5 to 20 feet below ground surface and is underlain by blue-gray, silty clay, and clay deposits, that extend to depths ranging from 45 to 50 feet. This clay sequence which ranges from 25 to 30 feet in thickness separates the shallow zone from the deeper Newark Aquifer. The Newark aquifer is approximately 20 feet thick beneath the site and extends from about 50 to 70 feet below ground surface. An isolated bedrock outcrop of serpentinite occurs near the southwestern corner of the site and acts as a barrier to groundwater movement in the shallow zone and the underlying Newark aquifer, especially near the southwestern portion of the site. In both cases, the net result is a deflection of the westerly groundwater flow direction to the north or northwest. Topographically, the site is relatively horizontal with an elevation of approximately 11 feet above Mean Sea Level (MSL). Groundwater levels in the shallow zone below the Site generally range between 0.5 and 8 feet bgs, and the groundwater flow varies between westerly and southwesterly.

6. **Remedial Investigation**: The discharger initiated investigations to characterize soil and groundwater conditions at the site in 1980. Several soil borings were installed between 1981 and

1985 in the EDB Area and over three hundred soil samples were analyzed for chemicals of concern. Monitoring wells were also installed between 1980 and 1987, primarily in the EDB Area, and were monitored in accordance with the 1985 Waste Discharge Requirements Order No. 85-113 and the 1989 Site Cleanup Requirements Order No. 89-055.

The current groundwater monitoring well network comprises 29 shallow zone monitoring wells and 6 monitoring wells completed in the Newark aquifer. In general, EDB was discovered in soil and groundwater at Parcels B and I, where EDB was historically manufactured. EDB was detected at concentrations of up to 490 parts per million in shallow groundwater zone (0-20 feet) beneath the EDB area. 1,2-dichloroethane (DCA) has also been detected at elevated concentrations in the shallow zone. Arsenic has been detected above MCLs in historic (early 1980s) and limited 1993 sampling in shallow groundwater monitoring wells in Parcel A. Chemical compounds found at lower concentrations in the shallow groundwater zone beneath the EDB area are bromoform, dibromochloromethane, diethyl ether, bromochloromethane, methylene bromide, 1-chloro-2-bromoethane, benzene, bromodichloromethane, chloroform, carbon tetrachloride, and trichloroethylene.

Lower levels of EDB, DCA and other chemicals have been found in the deeper Newark Aquifer which underlies the shallow groundwater zone. In the vicinity of the site the Newark Aquifer is located approximately 50-70 feet below the ground surface and is separated from the shallow zone by the Newark Aquitard (20-50 feet thick). The uppermost segment of this aquitard consists of a layer of heavy gray clay approximately 5 feet thick. This clay layer has halted the migration of EDB in the vertical direction across most of the site. However, because EDB has been detected in the Newark Aquifer, there appears to be some interconnection between the two zones. The mechanism for the migration of EDB to the Newark Aquifer is yet to be identified. Also the vertical extent of the EDB plume in the Newark Aquifer has to be further investigated and identified.

7. **Interim Remedial Measures**: The discharger has implemented remedial measures in accordance with the 1985 Waste Discharge Requirements Order No. 85-113 and Site Cleanup Requirements Order No. 89-055. In 1986 the discharger capped the EDB Area with asphalt and installed a concrete lined perimeter drainage ditch, to minimize precipitation infiltration and surface runon, and to control surface runoff of contact water from the EDB Area. The discharger also installed a system for extraction, treatment , and reinjection of Newark aquifer groundwater in 1985 and began operation of this system in January 1986. In 1989, the discharger installed 26 additional extraction wells for groundwater in the shallow water-bearing zone. The reinjection wells were shut down in 1987 due to operational difficulties. These wells have subsequently been closed in accordance with regulatory requirements. From July 1987 to January 1988, the discharger directed the treated groundwater to the NPDES permit system at the plant. Since October 1988, the discharger has discharged the treated groundwater to the Union Sanitary District (USD) sewer system under a USD permit. In addition, the storm water pond, phossy pond, TKPP pond, and former Acid Plant and Phosphate Plant facilities have been closed.

Some remedial activities have been conducted under the direction of other agencies. The following closures were conducted under the direction of the Newark Fire Department (NFD):

- Phosphorus Storage Pit Closure – 1993-1994;

- Hazardous Materials Storage Tanks, Phosphoric Acid and Phosphate Plant Area – 1995-1996;
- Former Phosphoric Acid Plant Elevator – 1995-1996;
- Final Phosphoric Acid Plant Closure Activities – 1995-1996; and
- Removal of an approximate 1,000-gallon underground gasoline storage tank in 1986.

A Closure Certification Report was submitted to the NFD on April 10, 1998, describing closure procedures for the former Acid Plant and Phosphate Plant Areas. This report included discussions of the closure of the former phosphorus storage pits and remediation of areas of soil that apparently had been affected by phosphoric acid, resulting in "heaving" conditions.

The discharger closed the former "phossy water" pond in 1986 under the direction of the California Department of Health Services (now DTSC). This pond had been taken out of service and filled with sand in the late 1970s. It was closed and remediated in 1986 under a plan approved by the Department of Health Services.

Additional remedial actions maybe needed to prevent the vertical migration of VOC, principally EDB from FMC sources to the deeper Newark Aquifer. Further evaluation of the effectiveness of the groundwater remediation system and proposal of final remedial actions and cleanup standards are still needed. The discharger plans to complete cleanup of the site, in accordance with these Site Cleanup Requirements and the standards developed under these requirements, and any amendments to or superceding Site Cleanup Requirements, for future use of the site.

8. **Adjacent Sites**: Four neighboring sites are currently conducting groundwater cleanup under Board Order. The sites are Jones-Hamilton, Romic Environmental Technologies (formerly known as Romic Chemicals), Ashland Chemicals and Baron Blakeslee/Allied-Signal. Three of these sites are located immediately up-gradient of the site. Ashland is cross-gradient of this facility and is in the process of implementing soil and groundwater remediation. Pollutants from the sites have comingled to some extent in the shallow groundwater zone. Coordination of remedial actions is therefore desirable.

9. **Groundwater Management**: The Alameda County Water District (ACWD) manages groundwater resources in the Newark, Union City, and Fremont area. On average 35% of the residents' water supply comes from groundwater, most of this from well fields located about 5 miles east of the site. ACWD's management activities address saltwater intrusion caused by past overdrafting of the Newark Aquifer and deeper aquifers for domestic and agricultural uses. ACWD has reversed the overdrafting by recharging imported water and operates several extraction wells to remove high salinity groundwater from the Newark Aquifer and deeper aquifers within the Niles Cone (Aquifer Reclamation Program or ARP). ACWD is planning on treating a portion of its ARP pumpage for potable use with a proposed desalination plant about 1.5 miles southeast of the site.

In the late 1970s, ACWD initiated construction of an alignment of extraction wells in the Newark Aquifer to serve as salinity barrier curtain. The curtain has been planned to expand in a north-south direction, just inland of the salt evaporation ponds, for the entire width of the Niles Cone. The Salinity Barrier Project (SBP) wells would serve two functions: (i) prevent salt water intrusion

during drought periods and (ii) hasten the removal of saline groundwater in the Newark Aquifer east of the SBP wells. At this time, ACWD has completed construction of five wells, including one within 1500 feet of the site. Installation of additional wells has been postponed pending a re-evaluation of the project.

Chloride concentrations in the Newark Aquifer beneath the site range from 15,000 to 20,000 ppm, mainly as a result of saltwater intrusion. The site is located west (or bayward) of the proposed SBP wells alignment. Chloride concentrations are therefore not expected to decline, even after extended operation of SBP wells.

However, implementing the SBP may accelerate the migration of VOCs in shallow groundwater, both laterally and vertically. If significant VOC concentrations migrate to the SBP wells, then ACWD may be required to treat SBP well pumpage prior to discharging it to surface waters or blending it with raw water for beneficial use. The potential beneficial uses of groundwater beneath the site exist only to the extent that this groundwater is actively managed by the ACWD as part of its salinity management program.

One option for remedial action at this site is to establish an enforceable mechanism requiring the discharger to provide (or pay for) wellhead treatment of VOCs at the SBP wells, if treatment is necessary to meet applicable water quality standards. This option should be addressed in a draft remedial action plan for the site.

10. **Risk Assessment**: The discharger conducted risk assessments in 1985 and 1986 to evaluate potential exposures from chemicals identified at the EDB Area including: long-term chronic health effects of EDB exposure to humans and wildlife; and the relative toxicity of EDB and other chemicals found in the EDB Area at the Site. These risk assessments concluded that remediation of EDB would effectively remediate the other compounds and that the presence of EDB in the shallow zone at levels of up to 1 ppm in soil (the highest level evaluated) would not pose a significant risk to human health or the environment. The discharger plans to perform a comprehensive risk assessment (under the proposed Task B.3.) to augment the previous risk assessments and develop Site Specific Cleanup Levels for both soil and groundwater.

11. **Basin Plan**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

The potential beneficial uses of groundwater underlying and adjacent to the site include:

a. Municipal and domestic water supply
b. Industrial process water supply
c. Industrial service water supply
d. Agricultural water supply

e. Freshwater replenishment to surface waters.

At present, there is no known use of groundwater underlying the site for the above purposes.

The existing and potential beneficial uses of the Plummer Creek, a tidal tributary of South San Francisco Bay, include:

a. Water contact and non-contact recreation
b. Wildlife habitat
c. Cold freshwater and warm freshwater habitat
d. Fish migration and spawning
e. Estuarine habitat

12. **Other Board Policies**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels.

13. **State Water Board Policies**: State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

14. **Preliminary Cleanup Goals**: The discharger will need to make assumptions about future cleanup standards for soil and groundwater, in order to determine the necessary extent of remedial investigation, interim remedial actions, the draft cleanup plan and evaluate and make recommendation relative to final remedial actions. Pending the establishment of site-specific cleanup standards, the following preliminary cleanup goals should be used for these purposes:

a. Groundwater: Applicable water quality objectives (e.g. maximum contaminant levels, or MCLs) or, in the absence of a chemical-specific objective, risk-based levels (e.g. drinking water equivalent levels).

b. Soil: 1 mg/kg total volatile organic compounds (VOCs), 10 mg/kg total semi-volatile organic compounds (SVOCs), and background concentrations of metals.

15. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

16. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.

17. **CEQA**: This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

18. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

19. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. **PROHIBITIONS**

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. **TASKS**

1. **REMEDIAL INVESTIGATION WORKPLAN**

COMPLIANCE DATE: September 1, 1998

Submit a workplan acceptable to the Executive Officer to further define the horizontal and vertical extent of pollution in soil and groundwater in the site vicinity. The workplan should summarize historic site use and all previous investigations at the site. The workplan shall specify investigation methods and a proposed time schedule.

2. **COMPLETION OF REMEDIAL INVESTIGATION**

COMPLIANCE DATE: April 1, 1999

Submit a technical report acceptable to the Executive Officer documenting completion of necessary tasks identified in the Task B.1. workplan. The technical report should define the vertical and lateral extent of pollution in both soil and groundwater.

3. **PROPOSED FINAL REMEDIAL ACTIONS AND CLEANUP STANDARDS**

COMPLIANCE DATE: September 1, 1999

Submit a technical report acceptable to the Executive Officer containing:

a. Results of the remedial investigation
b. Evaluation of the installed interim remedial actions
c. Feasibility study evaluating alternative final remedial actions
d. Risk assessment to develop site specific cleanup standards for both soil and groundwater and risk management plan for current and post-cleanup exposures
e. Recommended final remedial actions and cleanup standards
f. Implementation tasks and time schedule

Item c should include projections of cost, effectiveness, benefits, and impact on public health, welfare, and the environment of each alternative action. Item c should also address the wellhead treatment option cited in finding 9. Item c should consider additional remedial action to prevent vertical migration of pollutants in groundwater.

Items a through c should be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code Section 25356.1(c), and State Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

Items a through e should consider the preliminary cleanup goals for soil and groundwater identified in finding 14.

4. **Delayed Compliance**: If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

C. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good Operation and Maintenance (O&M)**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control

(QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

   a. City of Newark Fire Department
   b. Cal/EPA-Department of Toxic Substances Control
   c. Alameda County Water District
   d. Alameda County Health Department

   The Executive Officer may modify this distribution list as needed.

9. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

    This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order**: This Order supercedes and rescinds Order No. 89-055.

12. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary. The discharger may request revisions and upon review the Executive Officer may recommend that the Board revise these requirements.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 15, 1998.

Loretta K. Barsamian

Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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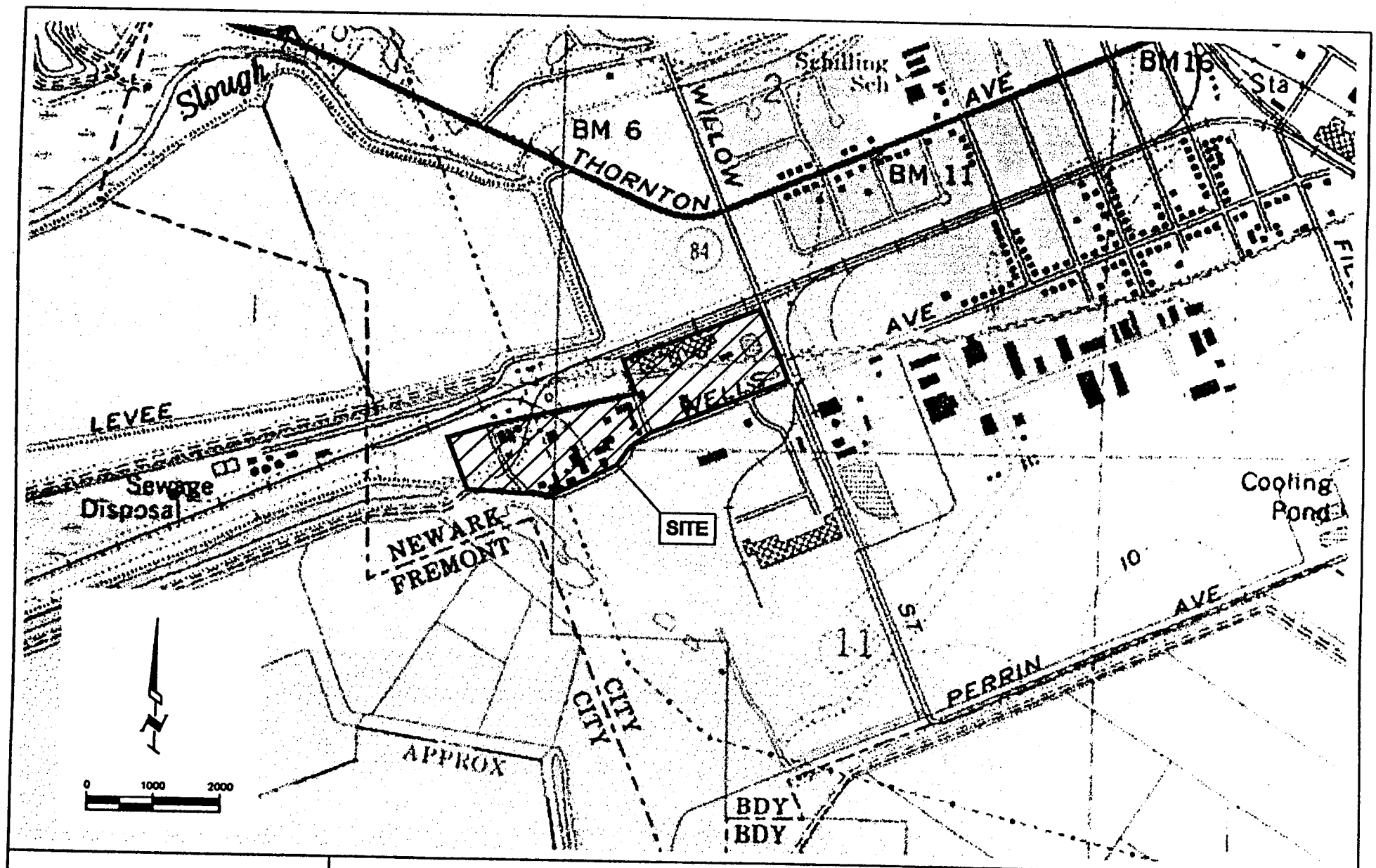
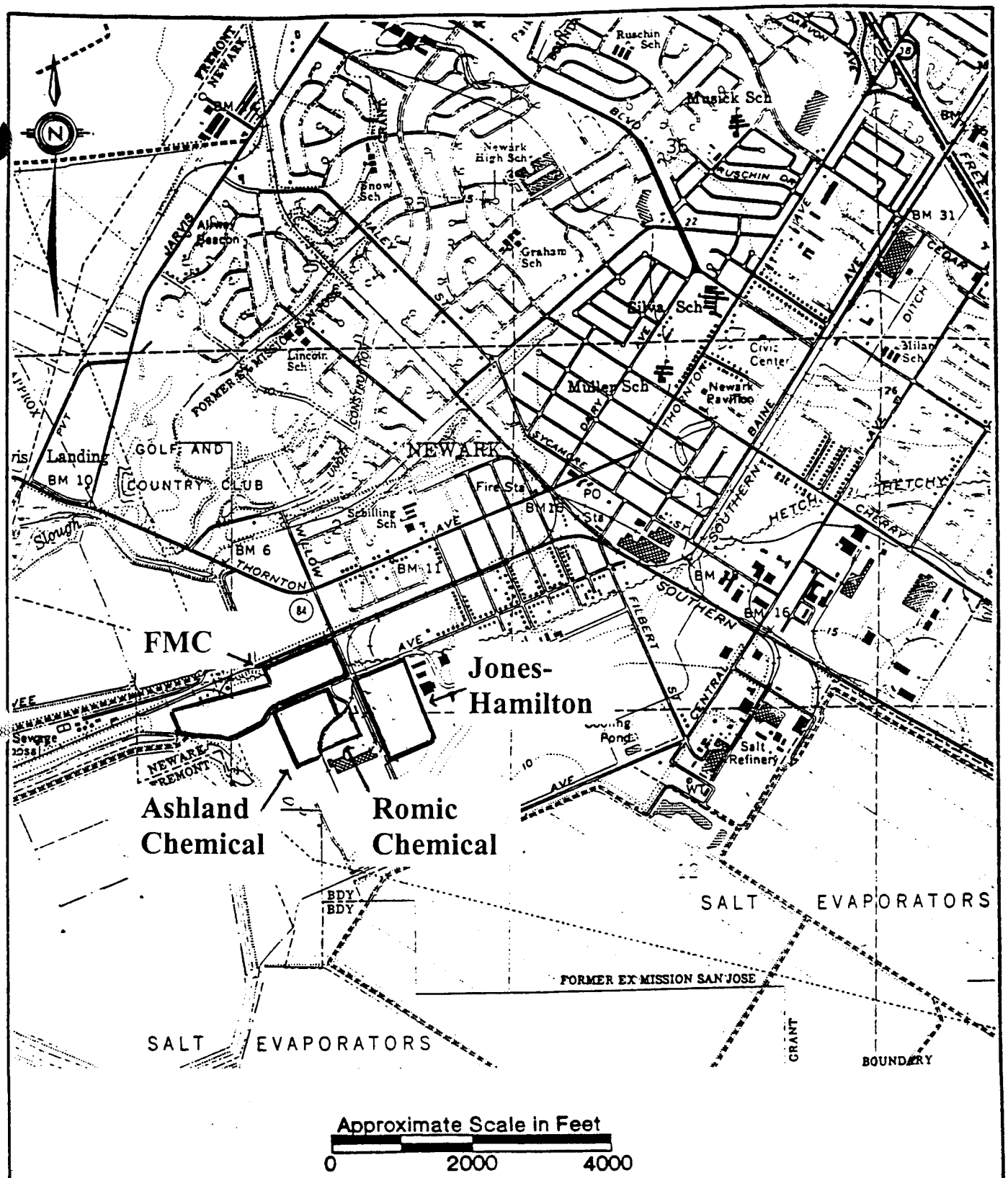
Attachments: Site Map
Self-Monitoring Program



FMC Corporation
1125 Coleman Avenue,
San Jose, CA 95110

NEWARK

FIGURE 1
SITE LOCATION MAP



BASE: Map From USGS 7.5' Newark Quadrangle

Location Map

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

FMC CORPORATION

for the property located at

8787 ENTERPRISE DRIVE
NEWARK, ALAMEDA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 98-066 (site cleanup requirements).

2. **Monitoring**: The discharger shall measure groundwater elevations semi-annually in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
W-4	SA	8010M	W-32	A	8010M
W-6	A	8010M	W-34	SA	8010M
W-7	SA	8010M	W-35	SA	8010M
W-8	A	8010M	W-37	SA	8010M
W-10	A	8010M	W-40	SA	8010M
W-12	SA	8010M	W-44	SA	8010M
W-13	SA	8010M	W-48	SA	8010M
W-19	A	8010M	W-54	SA	8010M
W-20	SA	8010M	DW-2	SA	8010M
W-24	SA	8010M	DW-3	SA	8010M
W-27	SA	8010M	DW-4	SA	8010M
W-28	SA	8010M	DW-6	SA	8010M
W-30	SA	8010M	DW-8	SA	8010M
W-31	SA	8010M	DW-11	SA	8010M

Key: SA = Semi-Annually A = Annually
8010M = EPA Method 8010 or equivalent, modified to include EDB

DW = Indicates Newark Aquifer well, all others are shallow groundwater wells,

The discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Monitoring Reports**: The discharger shall submit semi-annual monitoring reports to the Board no later than 30 days following the end of the semi-annual period (e.g. report for July through December period due January 31). The first semi-annual monitoring report shall be due on July 31, 1998. The reports shall include:

   a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

   b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the second semi-annual report each year.

   c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the second semi-annual report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

   d. Groundwater Extraction: If applicable, the report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the period. The report shall also include contaminant removal results, from groundwater extraction wells and from other remediation systems (e.g. soil vapor extraction), expressed in units of chemical mass per day and mass for the period. Historical mass removal results shall be included in the second report each year.

   e. Status Report: The quarterly report shall describe relevant work completed during the reporting period (e.g. interim remedial measures) and work planned for the following period.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on July 15, 1998.

Loretta K. Barsamian
Executive Officer