SCM CORTLANDVILLE SITE
CORTLANDVILLE (T), CORTLAND COUNTY, NEW YORK
SITE NO. 7-12-006

RECORD OF DECISION

MARCH 1994

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF HAZARDOUS WASTE REMEDIATION

DECLARATION STATEMENT - RECORD OF DECISION (ROD)

SCM Cortlandville Site
Cortlandville (T), Cortland County
Site No. 7-12-006

Statement of Purpose and Basis

The Record of Decision (ROD) sets forth the selected Remedial Action Plan for the off-site portion of the SCM Cortlandville inactive hazardous waste site. This Remedial Action Plan was developed in accordance with the New York State Environmental Conservation Law (ECL). The selected remedial plan is not inconsistent with the National Oil and Hazardous Substance Pollution Contingency Plan of March 8, 1990 (40 CFR Part 300).

Assessment of the Site

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the SCM Cortlandville Site and upon public input provided through the public participation process. A bibliography of the documents included as a part of the Administrative Record is included an Appendix to this ROD.

Description of Selected Remedy

Off-site contamination has been addressed through a program of public water line extension, provision for air stripping of the public water supply which is located in the down gradient direction from the site, and ongoing environmental monitoring. These actions, in combination with on-site activities undertaken by Smith Corona Corporation (SCC, formerly SCM Corporation), control the source of contamination and limit public exposure and environmental impact.

The selected remedial action plan will provide for the protection of human health and the environment. Based on the remedial activities undertaken and completed on-site, the selected remedy calls for no further action off-site provided that the on-site remediation continues to be operated as designed and environmental quality continues to be monitored both on and off-site. Since the selected remedy results in monitoring only for the off-site portion, a periodic review of the effectiveness of the remedy is a minimum requirement. The reviews will be conducted to evaluate whether the implemented remedy continues to provide adequate protection of human health and the environment.

Proper closure of this site is required and will be enforced pursuant to the consent agreement entered into by SCM Corporation and the State of New York.

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.

March 24, 1994
DATE

Ann DeBarbieri
Deputy Commissioner

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SECTION 1: SITE LOCATION AND DESCRIPTION

The SCM Cortlandville site is located on an approximately 130 acre portion of an originally 640 acre parcel in the Town of Cortlandville, Cortland County, New York. The site is along New York State Route 13, approximately 1.5 miles southwest of the City of Cortland. (See Figure 1.) A plume of ground water contamination extends northward approximately 1.5 miles from the boundary of the site.

The site lies in a portion of the Town of Cortlandville, which is currently experiencing an increase in commercial and residential development. It is bordered on the north by Lime Hollow Road and a largely residential neighborhood, on the east by Route 13 and commercial land use, and on the south and west by agricultural land. There are, however, several other industrial facilities located within a one mile radius of the site.

Approximately 20% of the site is occupied by industrial buildings and parking lots, and includes a main processing building approximately 415,000 square feet in size. The remainder of the site is predominately lawn. (See Figure 2.) The terrain at the site consists of two generally flat portions, separated by a topographic decline which runs roughly parallel to the facility's structures and is located behind them. The site is partially wooded along the south and west extremes and contains open grass fields elsewhere.

The facility overlies the Otter Creek/Dry Creek aquifer. There are no natural surface waters existing within the property boundaries. The facility uses public water for potable and sanitary use. Originally, two process wells west of the main building supplied water for production and non-contact cooling purposes. Soils underlying the site consist of sandy and gravelly materials with glacial till at a depth of approximately 100 feet, and groundwater is encountered at a depth of approximately 50 feet. Groundwater migration is towards the north. Rapid groundwater flow rates have been measured and are attributed to the high hydraulic conductivity of the gravels in the aquifer.

Municipal water wells belonging to the Town of Cortlandville are located on a 5-acre parcel adjacent to and about 1200 feet southwest of the site. Cortlandville also maintains an older wellfield near the Town Hall on Terrace Road. These wells supply potable water to the residents of the Town of Cortlandville as well as numerous industrial customers. The City of Cortland Water Board operates a wellfield for municipal drinking water adjacent to the Dry Creek, approximately 1.5 miles north-northeast of the site.

Additional details of the site physiography have been included in Appendix A of the O'Brien & Gere Report "Site Investigation and Interim Remedial Action Plan" dated November 1988.

This Record of Decision (ROD) addresses the migration of ground water contaminants (trichloroethene, or "TCE", and its decomposition products) from the facility boundary into the aquifer down gradient of the site. There is a plume of contaminated ground water in the aquifer which extends from the site boundary approximately 1.5 miles down gradient.

SECTION 2: SITE HISTORY

Smith Corona Corporation (SCC) was previously known as SCM Corporation. For consistency the site retains the original name. For clarity, the term "SCC" will be used throughout this report to refer to the present corporation, and "SCM" will be used to refer to the site. The site has been occupied by SCC since 1959. Until 1993 it was a site for manufacture of typewriters and related parts and equipment. This involved the production of injection molded plastic parts, assembly of circuit boards, pressing, milling, and preparing metallic parts, limited plating operations, assembly of final products, and materials receiving, handling, and shipping.

In 1986 the investigation of an unrelated petroleum spill resulted in detection of a plume of contaminated ground water. A sampling survey of private water wells carried out by the Cortland County Health Department in cooperation with the NYSDOH confirmed the existence of this plume. The contaminants in the plume (TCE and related decomposition products) were typical of degreasing technology used at the time and were not associated with the petroleum products that were spilled. Further investigation indicated that the plume extended from the SCC site down gradient (northeastward) toward the City of Cortland municipal well field.

A legal action was brought against SCC in federal district court by the New York State Attorney General, under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or "Superfund Law"). (The Attorney General's office will be referred to in the remainder of this R.O.D. as the New York State Department of Law, or NYSDOL.) The lawsuit included several other parties: Cortland County and the Cortland County Board of Health, the Town of Cortlandville, and the Water Board of the City of Cortland.

The purpose of the lawsuit was to achieve cleanup of the contamination by SCC. Without admitting responsibility for causing the environmental contamination, SCC and NYSDOL reached an agreement, memorialized in a Consent Decree, whereby SCC would carry out specific steps to mitigate the environmental impact from on-site contamination, and would fund steps to be taken by local governments to deal with the aquifer contamination off-site. The on-site activities have been undertaken and completed. They are summarized in the following sections as a basis for understanding the conclusions of this Record of Decision. However, it is the related off-site activities that are the subject of this ROD.

On-site remediation comprises "Operable Unit #1", while off-site activities comprise "Operable Unit #2". Operable Unit #1 has already been implemented and was the subject of a memorandum prepared in January 1989, and titled "Basis for Settlement on Remedial Plan: Smith Corona Cortlandville Site", which performed the function of a ROD. An understanding of Operable Unit #1 aids in understanding the selection of the "No Further Action" alternative for Operable Unit #2 (off-site). Taken together, the State believes that the combined remedial actions now in place for both Operable Units #1 and #2 comprise all the remediation for the site required at this time.

2.1: Interim Remedial Measure

Past material storage practices by SCC utilized underground tanks for storage of fuel oil, waste oil, and spent solvents. These tanks were excavated and removed, along with the visibly contaminated soil surrounding them, as part of an Underground Storage Tank Removal Program initiated in 1988. The

removal of these underground tanks constituted an Interim Remedial Measure (IRM), which was undertaken concurrently with the investigation that defined the full nature and extent of on-site contamination. Details of the IRM are contained in Appendix D of the report "Site Investigation and Interim Remedial Action Plan" dated November 1988.

2.2: Operable Unit #1

An on-site remedial investigation revealed contamination of the ground water aquifer which underlies the site. Investigation and remediation of this on-site ground water contamination comprises Operable Unit #1.

2.2.1 Remedial Investigation

Operable Unit #1 was investigated pursuant to the CERCLA action, and SCC issued its findings in the report Site Investigation and Interim Remedial Action Plan dated November 1988. The purpose of the investigation was to define the nature and extent of the on-site contamination, which appeared to be moving off-site. The investigation was followed up with a Supplemental Site Investigation, the results of which were reported in Supplemental Site Investigation, also dated November, 1988.

The Site Investigation activities consisted of the following:

- Collection of surface soil samples for chemical analysis.
- Installation of soil borings for analysis of soils and evaluation of physical properties of soil and hydrogeologic conditions.
- Installation of groundwater wells in order to define areas of ground water contamination.
- Excavation to identify extent of underground contamination associated with former underground tanks.

The Site Investigation results were compared to the applicable standards, criteria, and guidance (SCGs) which were then current or pending, to establish a list of possible remedial alternatives for the on-site contamination. Ground water and drinking water SCGs identified for the SCC Cortlandville site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code (which parallels the requirements of the federal Safe Drinking Water Act). Based upon this comparison and potential public health and environmental exposure routes, certain areas of the site were identified which required soil or ground water remediation.

The selected remediation employs ground water pump-and-treat technology in combination with soil vapor extraction. Pump-and-treat consists of removing large quantities of ground water from an industrial sized well and passing it through an air stripper, which removes, or "strips off" volatile organic contaminants. Soil vapor extraction is used to withdraw volatile organic contaminants from the unsaturated zone of soils, above the water table.

2.2.2: Phase I Remediation

Implementation of the pump-and-treat remedy was divided into two phases. Phase I consisted of the investigation, design, construction, and installation of a recovery well for groundwater treatment. This well was designed to withdraw water from a specific cone of influence within the aquifer.

Construction activities included drilling the well, constructing a pump house and installing a large well. The well is installed at the rear of the plant to address the highest zone of contamination. The well is located slightly down-gradient of the highest concentrations of contamination. The well and its pump are designed to produce a flow of up to 1,000 gallons per minute.

2.2.3: Phase II Remediation

The recovered ground water is treated by air stripping which removes nearly all of the volatile contaminants. Phase II of the pump-and-treat system included construction of the air stripper, distribution piping associated with it, and the infiltration lagoons which re-introduce the treated ground water back into the ground. Phase II also included a soil vapor extraction system.

The air stripper has a capacity in excess of 1,000 gallons per minute to match the maximum design output from the pumping well. It consists of a 42 foot high tower, where the ground water is placed in contact with large volumes of fresh air.

The air stripper portion of the pump-and-treat facility was constructed and brought on-line in 1989. It has operated successfully since then, limiting or eliminating continued release from what the State considers to be the source area. A portion of the treated water is used by the plant as non-contact cooling water, before being sent to engineered infiltration lagoons on site for reintroduction to the ground water regime. (See Figure 2 for location of equipment and Figure 3 for flow diagram of the pump-and-treat process.)

The heat exchanger for non-contact cooling was added to the ground water system in 1991. Two existing wells which formerly produced water for plant processes were shut down at that time, but they have been retained for standby and fire protection purposes. The heat exchanger removes heat generated by plant equipment by transferring it into the treated ground water. The ground water passes on to the infiltration lagoons. The new closed loop system prevents direct contact between the coolants in plant equipment and the treated ground water.

Following a pilot study and installation of a semi-permeable cover, SCC chose to supplement the pump-and-treat system with a soil vapor extraction system. This system strips volatile organic contaminants from the soil zone above the water table.

2.2.4: Operation and Maintenance

Post-remediation measures consist of operation and maintenance of the equipment and periodic ground water monitoring. The remedial works must be operated and maintained until ground water quality meets the clean-up criteria for the site.

The perimeter ground water monitoring wells are sampled quarterly. The consent decree requires that the data be reviewed after the completion of the first year of monitoring to determine what trend the data show. The State has determined, based on results from the specified perimeter groundwater monitoring wells, that contaminant concentrations do not exhibit a trend that requires reevaluation of the on-site remediation system.

Similarly, the deep wells and wells interior to the site boundary are being sampled quarterly until they meet the clean-up criteria. After this condition is reached the lower portion of the recovery well may be blocked off. Remediation will then continue until the clean-up criteria are consistently met for the monitoring wells MW-6, MW-8, MW-09, and MW-12S for a period of one year. (See Figure 3 for the location of these wells.) At that time the on-site ground water may be considered remediated; however, it is likely that source area treatment will continue beyond this point in time. SCC has indicated its intention to continue utilizing the recovery well water for the closed loop cooling water system after the remediation by removing the air stripping tower from the system. When this occurs, SCC will apply for a SPDES permit to allow utilization of the infiltration lagoons for this purpose.

When the ground water remediation is considered complete monitoring will be continued for a period of five years. This will be reduced to semi-annual monitoring if no exceedances are detected. Semi-annual monitoring will be continued for two years and if no further degradation is detected, the monitoring will thereafter be conducted on an annual basis.

This five year post shut-down monitoring program would be reinitiated if any of the clean-up criteria were exceeded. Currently the monitoring data are evaluated for exceedances using the statistical data analysis procedure described in the "Focused Feasibility Study" (O'Brien & Gere, 1988).

The 1989 Settlement Agreement sets the conditions for reclassifying and delisting this site and says in part: "Upon the fulfillment of all of the requirements of the Remedial Plan, except any follow up monitoring, DEC shall approve a petition by Smith Corona to reclassify the site from Class 2 to Class 4 on the Registry of New York State Inactive Hazardous Waste Disposal Sites. If, after periodic monitoring, the site shows no additional degradation of groundwater quality, Smith Corona may petition DEC to reclassify the site as a Class 5. (sic) If, after one year, no additional degradation is shown, DEC shall, upon proper petition by Smith Corona, remove the site from the Registry."

SECTION 3: CURRENT STATUS

The off-site contamination comprises Operable Unit #2. It has been addressed by three actions, funded by SCC but instituted by local government. These actions are the subject of this ROD and are set forth in more detail below. The governmental parties which implemented the off-site portion of the settlement agreement are: NYSDEC, NYSDOH, Cortland County, Town of Cortlandville, and the City of Cortland Water Board.

3.1: Operable Unit #2

The on-site investigations confirmed the existence of a significant threat to the highly productive Otter Creek/Dry Creek Aquifer which underlies the SCM site. This portion of the aquifer extends northward from the site for approximately three miles to the confluence of the Otter Creek and the Tioughnioga River, and is the only drinking water source for both individual homes and municipal public water supplies in the area. For this reason the area has been designated a "sole source aquifer" by the United States Environmental Protection Agency.

These factors identify the importance of this ground water resource. As a result the governments have placed a special emphasis on its protection. Careful studies have been made concerning the extent of contamination.

TCE and its degradation products were not found more than 1 mile down gradient of the site. The City of Cortland wellfield (approximately 1.5 miles down gradient) is not presently impacted by the contaminant plume. Neither the Town of Cortlandville wellfield along Route 13 nor the one on Lime Hollow Road is presently impacted and both wellfields appear to be out of the path of the plume. (See Figure 1.)

As a result of these factors three activities were undertaken by affected local governments. (1) The City of Cortland installed an air stripper on its public water supply. (2) The Pheasant Run residential neighborhood was supplied with municipal water by an extension of the Cortlandville water district mains. (3) In accordance with the Settlement Agreement, the off-site parties initiated a scientific study of the Otter/Dry Creek Aquifer which was designed to: (a) define the extent of the TCE plume; (b) investigate other sources of contamination; and (c) remediate other sources as necessary.

A large portion of the scientific study was accomplished through a cooperative agreement between Cortland County and the U.S. Geological Survey. Professor Peter Jeffers of the Chemistry Department at SUNY College at Cortland provided much analytical support to the off-site investigations.

3.2: Summary of Human Exposure Pathways

The situation of deteriorating ground water quality first became known as the result of investigation into an unrelated petroleum spill. The investigation detected trichloroethene (TCE) and its degradation products in monitoring wells and private water supplies down gradient of the site. The TCE contamination in ground water used as drinking water provided all five elements of an exposure pathway: source of contamination, transport mechanism, route of exposure, point of exposure, and receptor population. Thus the existence of ground water contamination at this site was of primary concern to New York State, as well as the local governments and their citizens.

Following the off-site investigations which defined the nature and extent of contamination, and the on- and off-site remedial activities which mitigated it, the State now believes that the pathway for human exposure has essentially been eliminated.

The basis for this belief is: (1) private residences and businesses within the plume area have been taken off private water supply wells and placed on public water supply through a program of water line extension; (2) the City of Cortland public water supply wells have been equipped with an air stripper to remove any contaminants in the event the plume should reach there; (3) The wellfields serving the Town of Cortlandville are not impacted; (4) the levels of contaminants detected in surface water bodies are so small as to be negligible. The three municipal wellfields are monitored periodically, as are test wells located at other points within the aquifer. Should there be a degradation of water quality, protective measures can be taken.

3.3: Summary of Environmental Exposure Pathways

Environmental exposure from the contamination associated with the site can occur in the following two ways. First, contaminated ground water can migrate and spread off-site, resulting in contamination of the ground water resource. Second, contaminated ground water can reach the surface at springs or

seep into streams through their banks and bottoms, and thus expose flora and fauna which contact those surface water bodies.

The State also believes that the contamination of the natural resource (the Otter Creek Aquifer) is confined to a small portion of the total aquifer, and that the contaminant levels within the plume will dissipate with time. This dissipation will take place as the result of the remedial control measures now in place on site. Thus, it is the removal of the source and control of the plume at its origin which will lead to eventual improvement of ground water quality in that portion of the aquifer which has been impacted by the contamination.

The State also believes that the pathway for exposure of flora and fauna to the contaminated ground water is negligible. The contaminant plume flows through a gravel deposit. Therefore wildlife can be exposed to it only where it reaches the surface. The off-site study has shown that the only places where the current off-site plume interacts with surface waters, the surface water flow dilutes the contaminants below the level of concern. The water table is approximately forty feet below the surface at the site, which is below the level penetrated by the roots of plants indigenous to the area. Although the water table becomes shallower down gradient of the site, the exposure experienced by plant life is minimal.

This information, combined with the remediation on-site, which limits the amount of contamination which can migrate off-site, gives every indication that the situation with respect to flora and fauna does not pose a risk to plant or animal life.

SECTION 4: ENFORCEMENT STATUS

The Potentially Responsible Party (PRP) for the site is the Smith Corona Corporation. The following is the chronological enforcement history of this site.

In February, 1987 the New York State Department of Law brought an action against SCC in Federal District Court in Albany under CERCLA (the federal Superfund law). As a result of this action, SCC entered into a settlement agreement with the State to effect a remediation of the contaminated ground water on site. Notwithstanding, SCC has not acknowledged responsibility for causing the release(s) of contamination which resulted in the need for remediation.

4.1: Orders on Consent

The State of New York and the SCC entered into a Consent Order in January, 1990. (U.S. District Court for Albany, NY case number 86 CV 1404, continued as 87 CV 0190.) The Order obligates the responsible party to implement a focused site investigation and feasibility study, and to implement a remedial program for on-site contamination. In addition, the order required SCC to create an Otter/Dry Creek Aquifer Reimbursement, Assessment and Remediation Fund in the amount of $355,000, to be managed by the County of Cortland, the City of Cortland, and the Town of Cortlandville. The purpose of this fund is to investigate and remediate off-site contamination, including other potential sources of off site contamination. The Agreement specifies additional funds amounting to $645,000 for extension of water lines, treatment of contaminated ground water, and reimbursement of legal costs to local government.

SECTION 5: SUMMARY of the REMEDIAL GOALS and SELECTED ACTION

The selected remedy for any site should, at a minimum, eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste present at the site. The State believes that the remediation now in place will accomplish this objective, provided that it continues to be operated and maintained in a manner consistent with its design.

SECTION 6: NO FURTHER ACTION ALTERNATIVE

The alternative which is stated in the ROD is the No Further Action alternative. Choosing this alternative means that no further remedial works are required to be constructed in order to control the off-site contamination from the site. Choosing this alternative also means continuing to operate the remedial works now in place, and continuing to monitor the quality of the affected environment, both on- and off-site, until such time as SCGs are consistently met.

This alternative is considered to be: protective of human health and the environment, cost-effective, and permanent in its solution of the problem. The No Further Action Alternative recognizes the remediation of the site previously undertaken and completed. It requires continued operation of the existing remedial works until SCGs are consistently met, and includes monitoring to evaluate the effectiveness of the remediation completed pursuant to the consent order.

This selection is based upon the nature and extent of the contamination relating to the site and the requirement for on-going monitoring of conditions both on- and off site. It presupposes continued proper operation of the remedial works now in place and that the results of monitoring reveal improvement, or at least no further degradation, in the environmental conditions associated with the site.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Contamination of a primary aquifer occurs under the SCC Cortlandville site. The preferred remedy has been to (1) remove the possible source; (2) to control the migration of residual ground water contamination in Operable Unit #1; (3) to monitor the ground water quality in Operable Unit #1; and (4) to monitor the ground water quality in Operable Unit #2.

This remedy includes a recommendation that use of ground water from the contaminated portion of the aquifer be restricted through local controls. For example, the Cortland County Department of Health has a permitting program in place for drinking water wells. Additional measures may be instituted by the local government to prohibit future use as residential water supply and to inform future landowners of this limitation.

Source removal has been addressed through a two phase effort comprising an IRM of tank and soil removal, followed by installation and operation of a soil vapor extraction system as part of Operable Unit #1. The migration of ground water contamination is being controlled through a pump and treat system which extracts contaminated ground water, removes contaminants by air stripping, and reintroduces the treated water to the ground water regime.

Within Operable Unit #2 off-site contamination has been mapped and measured to define its extent. Public water supply has been extended into affected areas. A public water supply source that is located where there is a potential for future impact has been protected by installation of special equipment.

Because ground water both under the site and beyond contains residual contamination, a long term monitoring program has been instituted. This program will allow the effectiveness of the selected remedy to be monitored. The program is a component of operations and maintenance for the site and has been developed in cooperation with the Cortland County Departments of Health and Planning, the United States Geological Survey and the New York State Department of Health, and was negotiated with SCC by the State of New York through its Departments of Law, Environmental Conservation and Health.

Under the long term monitoring program SCC must sample and analyze ground water from selected wells within the site and at its perimeter until SCGs are consistently met. In addition Cortland County in cooperation with the State University of New York at Cortland, samples a number of off-site locations on a regular basis and compares those results to the on-site results. Public water supplies are also periodically monitored. It is early to draw definitive conclusions from the available data. However, the governmental entities, especially Cortland County, will be monitoring the situation carefully and will continue to report to the public on a periodic basis.

Long term monitoring will continue into the foreseeable future. The Settlement Agreement contains provision for reopening the issues addressed by this ROD should conditions change. Such a change could result from either new information about the impact of the contaminants or new discoveries regarding the SCM site. The parties to the agreement know of no such new information at this time.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

Annual public meetings have been held as required by the Settlement Agreement (September 24, 1990, December 5, 1991, December 1, 1992, and December 16, 1993). The status of the on-site work was discussed at the public meetings as well as the progress of the off-site study. The off-site report from Cortland County, the USGS, and Dr. Peter Jeffer should be complete by June 1995.

This remediation plan is a part of the concluding phase of the Settlement Agreement between the various parties. Details of the off-site investigation will be included in the report referred to above.

APPENDIX A

Responsiveness Summary

Responsiveness Summary

The Proposed Remedial Action Plan (PRAP) was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on December 10, 1993. This Plan outlined the preferred remedial measures proposed for remediation of Operable Unit #2 at the SCM Cortlandville site. The preferred remedy consists of:

* No further action at this time, based on the continued operation and maintenance of the remedial works in place for Operable Unit #1 and ongoing long term monitoring both on- and off-site.

* Should conditions change significantly at Operable Unit #1 or #2, the situation would be re-evaluated.

The release of the PRAP was announced via press release issued by the Cortland County Planning Department, informing the public of the PRAP's availability.

A public meeting was held on December 16, 1993 which included a presentation of the PRAP and discussion of the proposed remedy. At the meeting comments of the proposed remedy were recorded and transcribed. These comments have become part of the administrative record for this site. No written comments on the PRAP were received from the general public.

This responsiveness summary responds to all questions and comments raised at the December 16, 1993 public meeting, with the State's response.

Q: The plume seems to always be in the same place on the map. What causes plumes to move, and why doesn't this one seem to be changing shape?

A: Ground water moves remarkably fast in Cortland County compared to most other places in New York State, and the chemicals move with it. As a result the plume took on a certain shape early-on. In the down gradient direction, the plume ends at Otter Creek. When the creek is flowing the plume discharges into it; when Otter Creek is dry, the plume extends slightly beyond the creek. When the water table rises, the plume again discharges to Otter Creek. That is why the terminus appears to be fixed from year to year.

Q: Now that the flow patterns of the aquifer are understood, can you estimate how long the private wells along Pheasant Run were contaminated before the contamination was discovered?

A: The graph of results from the PTM well steepens upward in the beginning of 1987. Thus the spill can be dated from this period plus the travel time it took to get there. The U.S. Geological Survey model suggests that the travel time for this distance is about 1.5 years, so the spill must have occurred in mid-1985. Pheasant Run is about 700 feet distant, so the contamination reached there much earlier. The Pace well is the closest to the site and the ground water model suggests that it took about two to two-and-one-half months to reach that point.

Q: Given the inevitability of personnel changes with time, what reassurance is there that the government will continue to monitor the status of the aquifer in the indefinite future?

A: In DEC's Hazardous Waste Remediation Program, after a site passes through the process of investigation and remediation, it is reclassified. The SCM site is a Class 2 site because of its threat to ground water quality. This classification pertains to both Operable Units #1 and #2. When remedial construction is completed and the only remaining action is to operate and maintain the remedial works and perform long term monitoring, sites are normally re-classified to Class 4. A Class 5 site is one where the site has been completely cleaned up, and no further attention is required.

The SCM site is one where remediation has been completed, but operation, maintenance, and long term monitoring must be performed. Thus it is a candidate for being moved from Class 2 to Class 4. When this happens, site review will be transferred to a separate group within DEC whose only function is to ensure that operation, maintenance and long term monitoring are conducted. This is the vehicle that will ensure that the SCM site receives the follow-up attention it requires.

In addition to the NYSDEC, Cortland County has a comprehensive monitoring well network. This network has been in existence for many years, and continues to be used. The County's commitment to this network suggests that it will continue being used as long as there is local concern about the quality of the County's drinking water resources.

Q: How often will the off-site wells be sampled, and who will review the results?

A: The off-site wells will be monitored for water levels by Cortland County approximately monthly. Selected wells will be sampled for chemical analysis periodically. The data will be reviewed by Cortland County and shared with the other governmental agencies.

Q: How will this be paid for?

A: As a result of the settlement a trust fund of $355,000 was set up to examine the aquifer in total. Much of this money was spent for the USGS study, which identified not only the extent of the plume associated with the SCM site but also identified other possible sources of contamination to the aquifer. In addition Cortland County drew on other sources for assistance, in order to maximize the life of the trust fund. For example, the USEPA conducted a "Class 5 injection well inspection" which identified floor drains in auto body shops and other sources that drained directly to the ground. Another example is the analytical work that has been done by Dr. Peter Jeffers of the Chemistry Department at SUNY Cortland.

Q: Do local elected officials understand that there are other threats to the aquifer in addition to the SCM site?

A: The work of the USGS has been helpful in providing an understanding about how the ground water system works. Their reports provide a basis for educating public officials, especially newly elected ones. The Cortlandville Planning Board has received briefings specific to the Aquifer over the past twenty years. Public officials, along with the general public, have been kept informed of progress at the SCM site through annual update meetings held each of the last four years.

Q: What authority does the NYSDEC have to direct local officials to take action?

A: The NYSDEC has very little authority over local officials where land use issues are involved. This is because in the State of New York land use controls reside at the local (town, village or city) level.

One vehicle for possible State involvement is the requirement of an Environmental Impact Statement for major projects. The wealth of work that has been done on the Aquifer can feed into the environmental review process.

Q: Some chemicals have volatilized and migrated up into the unsaturated zone. Do these actually leave the soil and migrate into the air, or do they stay in the unsaturated zone?

A: Some of the vapors from volatilized chemicals continue their upward movement through the soil of the unsaturated zone into the air. Another portion of the vapors adhere onto the soil particles. This second group remains on the soil and is available to be removed by surface water (such as precipitation) as it percolates downward from the surface to the saturated zone.

Q: Does this mechanism become part of the natural clean-up as well?

A: Yes.

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

1. O'Brien and Gere Reports

    a) FOCUSED FEASIBILITY STUDY, November 1988.

    b) SITE INVESTIGATION AND INTERIM REMEDIAL ACTION PLAN, November, 1988.

    c) SUPPLEMENTAL SITE INVESTIGATION, November 1988.

    d) ANALYTICAL REPORT, 2 volumes, October 1989.

    e) REMEDIAL SYSTEM AS-BUILT REPORT, February 1990.

    f) SUPPLEMENTAL SITE INVESTIGATION, February 1990.

2. United States Geological Survey

    a) WORK PLAN: Estimating Zones of Contribution to Wells and Ground-Water Flow Paths form Contamination Sources in a Glacial Aquifer at Cortland, New York, February 1989

    b) Verbal report: annual update meeting, December 1993

3. New York State Department of Environmental Conservation

    a) BASIS FOR SETTLEMENT ON REMEDIAL PLAN: Smith Corona Cortlandville Site, NYSDEC Registry I.D. # 712006, January 1989

    b) PRELIMINARY REMEDIAL ACTION PLAN, December 1993

4. Policy Documents

    a) TECHNICAL and ADMINISTRATIVE GUIDANCE MEMORANDA (TAGMs)

5. Legal Agreements

    a) SETTLEMENT AGREEMENT: State of New York, et. al., versus Smith Corona Corporation; Index No. 87 CV 0190, January 1989

6. Correspondence

a) Albert M. Bronson, Assistant Attorney General, to Jean H. McCreary, Esquire, Nixon Hargrave Devans & Doyle, re: Supplemental Remedial Investigation report (especially "confining layer" issue)

b) Nancy Jarvis, Cortland County Groundwater Management Coordinator, to David Foster, NYSDEC, re: Newspaper Articles Pertaining to the Smith Corona Cortlandville Site.

7. Public Notices

a) SITE REMEDIAL STATUS REPORT: SCM Cortlandville, NYSDEC, November 1993

b) PRESS RELEASE: "NYS DEC Issues Smith Corona Report", December 6, 1993

c) NEWSPAPER ARTICLES:

"Corona Pact To Be Explained: Hearing Set For Thursday", The Cortland Standard, February 11, 1989.

"State Sets Date For Smith Corona Public Hearing", The Syracuse Post-Standard, February, 1989.

"Public Meeting On Aquifer Investigation", The Cortland Democrat, September 13, 1990.

"Corona Cleanup Update Thursday", The Cortland Standard, December 3, 1991.

"Otter Creek Aquifer Report Planned", The Cortland Standard, November 16, 1992.

"Smith Corona Pollution Clean-Up A Success"; Cortland Sunday Democrat, January 9, 1994