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GROUNDWATER - RESTORATION OF GROUNDWATER QUALITY TO ITS INTENDED USE (CLASS IIB AND GA-POTENTIAL SOURCE OF DRINKING WATER) BY REDUCING CONTAMINANT LEVELS BELOW STATE AND FEDERAL DRINKING WATER STANDARDS WHERE POSSIBLE (SEE TABLE I). IN THE CASE WHERE UPGRADIENT CONTRIBUTIONS PROHIBIT SUCH RESTORATION FOR A PARTICULAR COMPOUND, THE CONTAMINANT LEVEL WILL BE REDUCED TO THE UPGRADIENT LEVEL.

SOIL - IN ORDER FOR THE SOIL NOT TO BE A CONTRIBUTOR TO GROUNDWATER CONTAMINATION, THE DEGREE TO WHICH THE CONTAMINANTS HAVE TO BE REDUCED IS DIFFERENT FOR EACH COMPONENT. FOR THE COMPONENTS OF INTEREST, HOWEVER, THE CONTAMINANTS SUCH AS TRICHLOROETHYLENE, XYLENES, TETRACHLOROETHYLENE AND 1,2 TRANS DICHLOROETHYLENE HAVE TO BE REDUCED BELOW 10 PPB. THESE CONTAMINANTS ARE CONSIDERED TO BE THE MOST MOBILE AND MOST TOXIC.

THE ALTERNATIVES CONSIDERED ARE PRESENTED BELOW:

MIGRATION MANAGEMENT

ALTERNATIVE 1A: NO ACTION (SOURCE UNTREATED)
ALTERNATIVE 1B: NO ACTION (SOURCE TREATED)

ALTERNATIVE 2A: GROUNDWATER EXTRACTION, TREATMENT AND DISCHARGE (SOURCE UNTREATED)
ALTERNATIVE 2B: GROUNDWATER EXTRACTION, TREATMENT AND REINJECTION (SOURCE TREATED)

SOURCE CONTROL

ALTERNATIVE 3: NO ACTION
ALTERNATIVE 4A: SOURCE REMOVAL AND OFFSITE DISPOSAL
ALTERNATIVE 4B: SOURCE REMOVAL AND OFFSITE INCINERATION
ALTERNATIVE 5: LOW TEMPERATURE SOIL STRIPPING
ALTERNATIVE 6: IN SITU STEAM TREATMENT

THE COSTS FOR THE ALTERNATIVES CONSIDERED ARE SHOWN IN TABLE III.

MIGRATION MANAGEMENT ALTERNATIVES

TWO MANAGEMENT OF MIGRATION ALTERNATIVES ARE DISCUSSED: A NO ACTION ALTERNATIVE AND A GROUNDWATER TREATMENT ALTERNATIVE. SINCE THE SOURCE OF CONTAMINATION (I.E., SOIL) DIRECTLY IMPACTS THE EXTENT OF CONTAMINATION IN THE GROUND WATER, THE ACTUAL IMPLEMENTATION OF THESE ALTERNATIVES WILL VARY DEPENDING ON WHETHER OR NOT THE SOURCE OF CONTAMINATION IS REMEDIED. TWO AREAS OF IMPLEMENTATION THAT ARE SIGNIFICANTLY IMPACTED ARE THE LOCATION AND MEANS OF DISCHARGING THE TREATED GROUNDWATER, AND THE TIME REQUIRED TO REMEDIATE THE GROUNDWATER (RESTORATION TIME FRAME).

THEREFORE, THE MANAGEMENT OF MIGRATION ALTERNATIVES WERE EVALUATED UNDER TWO SCENARIOS, THE FIRST ONE (A) ASSUMES THAT THE SOURCE HAS NOT BEEN REMEDIED WHILE THE SECOND ONE (B) ASSUMES THAT THE SOURCE HAS BEEN REMEDIED BY ANY ONE OF THE SOURCE CONTROL REMEDIES (ALTERNATIVES 4-6).

ALTERNATIVE 1A: NO ACTION (SOURCE UNTREATED)

THE NO-ACTION ALTERNATIVE IS REQUIRED BY THE NATIONAL CONTINGENCY PLAN (NCP) TO BE CONSIDERED THROUGH THE DETAILED ANALYSIS. IT PROVIDES A BASELINE FOR COMPARISON OF OTHER ALTERNATIVES. NO REMEDIAL ACTION WILL BE IMPLEMENTED UNDER THIS ALTERNATIVE. A LONG-TERM MONITORING PROGRAM TO PROVIDE INFORMATION ON THE EXTENT OF CONTAMINANT MIGRATION OVER TIME WILL BE CONDUCTED. FIVE WELLS WILL BE MONITORED SEMIANNUALLY FOR VOLATILES, SEMIVOLATILES, AND VARIOUS METALS. THIS ACTION INVOLVES THE IMPLEMENTATION OF INSTITUTIONAL CONTROLS FOR WATER USE RESTRICTIONS TO PREVENT THE USE OF THE CONTAMINATED GROUNDWATER AS A POTABLE WATER SOURCE. THESE CONTROLS WOULD BE IMPOSED ON ANY RESIDENCES OR BUSINESSES UP TO ONE-HALF MILE DOWNGRADIENT OF THE SITE THAT MAY BE POTENTIAL RECEPTORS. A CAPITAL COST OF $70,400 WILL BE REQUIRED AND THE ANNUAL OPERATION AND MAINTENANCE (0&M) COST WILL BE $13,600. THE PERIODIC COST, WHICH CONSISTS OF MONITORING AND REVIEWING THE PERFORMANCE OF THE UNIT AND ALSO EVALUATING THE PUBLIC HEALTH RISK EVERY FIVE YEARS, IS EVALUATED AT $7,500. THE RESTORATION TIME FRAME WILL BE OF A VERY LONG DURATION, PROBABLY MORE THAN 20 YEARS.

ALTERNATIVE 1B: NO ACTION (SOURCE TREATED)

THIS ALTERNATIVE IS THE SAME AS ALTERNATIVE 1A, EXCEPT THAT THE SOURCE WILL BE TREATED BY ONE OF THE FOUR ALTERNATIVES, 4A, 4B, 5 OR 6. THIS IS SIGNIFICANT IN THAT THE RESTORATION TIME FRAME WILL BE REDUCED BY APPROXIMATELY 10 YEARS.

ALTERNATIVE 2A: GROUNDWATER EXTRACTION, TREATMENT, AND DISCHARGE (SOURCE UNTREATED)

AN EXTRACTION WELL WILL CAPTURE THE PLUME OF CONTAMINATED GROUNDWATER EMANATING FROM THE SMS INSTRUMENTS SITE. USING THE AVERAGE HYDRAULIC CONDUCTIVITY OBTAINED FROM SLUG TESTS PERFORMED DURING THE RI, A PUMPING RATE OF 500 GPM WAS ESTIMATED TO CAPTURE THE CONTAMINANT PLUME. THE APPROXIMATE LOCATION OF THE EXTRACTION WELL IS ON THE RIGHT-OF-WAY OF COMMACK ROAD, AS SHOWN IN FIGURE 5. THE LOCATION WAS SELECTED BASED ON THE PLOT OF THE CONTAMINANT PLUME GENERATED FROM THE COMPUTER MODELING CONDUCTED IN THE RI. THE EXTRACTED GROUNDWATER WILL BE CONVEYED UNDER PRESSURE VIA AN UNDERGROUND PIPE INSTALLED IN THE ROAD RIGHT-OF-WAY. THE PRESSURIZED MAIN CONSISTING OF AN 8-INCH POLYVINYL CHLORIDE (PVC) PIPE WILL DELIVER THE GROUNDWATER TO THE TREATMENT SYSTEM AT THE LOCATION SHOWN IN FIGURE 6. A COMPUTER MODEL WAS USED TO SIZE AN AIR STRIPPING TREATMENT SYSTEM.

THE CONCEPTUAL DESIGN OF THIS SYSTEM IS BASED UPON REPRESENTATIVE CONCENTRATIONS OF CONTAMINANTS IN THE GROUND WATER AS DETERMINED DURING THE RI. TWO AIR STRIPPING TOWERS HANDLING 250 GPM EACH WITH PACKING DEPTHS OF 15.5 FT WERE SELECTED TO REDUCE THE INFLUENT CONCENTRATIONS OF VOLATILES TO LESS THAN THE SELECTED CHEMICAL-SPECIFIC ARAR VALUES LISTED IN TABLE I AND TO INCLUDE ALSO SURFACE WATER AND STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) DISCHARGE REQUIREMENTS. THE WATER FROM THE AIR STRIPPING SYSTEM WILL THEN BE FILTERED USING MULTIMEDIA DEEP BED FILTERS TO REMOVE IRON, AS WELL AS OTHER SUSPENDED SOLIDS. IRON WILL BE REMOVED TO MEET ACTION-SPECIFIC ARARS FOR SURFACE WATER DISCHARGE. THE GROUNDWATER WILL THEN BE DISCHARGED TO SURFACE WATER. THE CLOSEST SURFACE WATER IS AT BIRCHWOOD PARK WHICH IS APPROXIMATELY ONE HALF MILE SOUTHEAST OF THE SITE. A SCHEMATIC OF AN AIR STRIPPER IS SHOWN IN FIGURE 7. IN ADDITION, AIR EMISSIONS FROM THE AIR STRIPPER WILL BE TREATED USING A CARBON SYSTEM.

THE CAPITAL COST FOR THE PROJECT WILL BE $544,100 AND THE ANNUAL O&M WILL BE $128,200. A PERIODIC COST OF $7,500 WILL BE ALSO REQUIRED. RESIDUAL FILTERS WILL BE TREATED AS HAZARDOUS WASTE AND WILL BE DISPOSED OF ACCORDINGLY. THE ESTIMATED TIMEFRAME TO RESTORE THE AQUIFER TO ACTION LEVELS IS 12 YEARS.

ALTERNATIVE 2B: GROUNDWATER EXTRACTION, TREATMENT AND REINJECTION (SOURCE TREATED)

THIS ALTERNATIVE IS THE SAME AS ALTERNATIVE 2A, EXCEPT THAT THE SOURCE WILL BE TREATED BY ONE OF THE FOUR ALTERNATIVES: 4A, 4B, 5, OR 6 AND THE GROUNDWATER WILL BE REINJECTED THROUGH WELLS LOCATED ONSITE BELOW NYS GROUNDWATER INJECTION STANDARDS. THE RESTORATION TIME FRAME IS THEREBY SIGNIFICANTLY REDUCED AND IS ESTIMATED TO TAKE 4 YEARS. THE COSTS FOR THIS ALTERNATIVE ARE $365,300 FOR CAPITAL COST, $123,400 FOR ANNUAL O&M AND $7,500 FOR PERIODIC COSTS.

SOURCE CONTROL ALTERNATIVES

ALTERNATIVE 3: SOURCE CONTROL -- NO ACTION

THIS NO ACTION ALTERNATIVE WAS DEVELOPED FOR SOURCE CONTROL MEASURES. IMPLEMENTATION OF THIS ALTERNATIVE IS ACHIEVED BY INCORPORATING MONITORING AND LAND USE/DEED RESTRICTIONS ON THE SITE PROPER. THE ELEMENTS NECESSARY FOR THIS IMPLEMENTATION ALTERNATIVE ARE:

- INSTALLATION OF MONITORING WELLS,
- OBTAINING LAND USE AND DEED RESTRICTIONS,
- PERIODIC SAMPLING OF GROUNDWATER FROM MONITORING WELLS,
- PERIODIC SUBSURFACE SOIL SAMPLING,
- PATCHING AND SEALING OF ASPHALT PAVEMENT ABOVE SOURCE AREAS, AND
- FIVE-YEAR REVIEW OF THE SITE CONDITIONS

COSTS ARE APPROXIMATELY THE SAME AS ALTERNATIVE 1A.

ALTERNATIVE 4A: SOURCE REMOVAL AND OFFSITE DISPOSAL

THIS ALTERNATIVE INVOLVES THE EXCAVATION AND OFFSITE DISPOSAL OF THE CONTAMINATED SOIL PRESENT AT THE FORMER LEACHING POOL AND UST AREAS. APPROXIMATELY 1,250 CUBIC YARDS (YD:) OF SOIL, INVOLVING AN AREA OF 1700 SQUARE FEET BY 20 FEET DEEP, CONTAMINATED WITH VOLATILE AND SEMIVOLATILE ORGANICS WILL BE EXCAVATED AND THEN TRANSPORTED TO AN OFFSITE RCRA-PERMITTED LANDFILL FOR DISPOSAL. THE ESTIMATED QUANTITY OF SOIL REQUIRING TREATMENT WILL BE REFINED DURING THE REMEDIAL DESIGN AND WILL INCLUDE ADDITIONAL SOIL FROM THE DRUM STORAGE AREA. ACTION LEVELS IN THE SOIL WILL BE MET BY REDUCING THE VOC CONTAMINATION TO 10 PPB. PRIOR TO EXCAVATION OF THE CONTAMINATED SOIL, THE EXISTING PAVEMENT WILL BE REMOVED. THE PAVEMENT WOULD THEN BE LOADED INTO COVERED TRUCKS AND TRANSPORTED TO A DEBRIS LANDFILL FOR DISPOSAL. IF NECESSARY, THE PAVEMENT WILL BE DECONTAMINATED BEFORE BEING TRANSPORTED TO AN OFFSITE RCRA-PERMITTED LANDFILL. IT IS ALSO ANTICIPATED THAT A SMALL QUANTITY OF SOIL WILL NEED TO BE EXCAVATED FROM THE DRUM STORAGE AREA.

IF THIS REMEDY CAN BE IMPLEMENTED PRIOR TO NOVEMBER 1990, NO TREATMENT OF THE SOIL WILL BE REQUIRED PRIOR TO DISPOSAL. HOWEVER, AFTER THAT DATE THE SOIL MUST BE TREATED BEFORE DISPOSAL TO COMPLY WITH THE RCRA LAND DISPOSAL RESTRICTION. THE CAPITAL COST FOR THIS ALTERNATIVE IS $520,200 AND THE ACTUAL EXCAVATION WORK IS EXPECTED TO TAKE APPROXIMATELY 30 DAYS.

ALTERNATIVE 4B: SOURCE REMOVAL AND OFFSITE INCINERATION

THIS ALTERNATIVE INVOLVES THE SAME EXCAVATION OF CONTAMINATED SOIL DESCRIBED IN ALTERNATIVE 4A. ONCE THE CONTAMINATED SOIL IS EXCAVATED, IT WILL BE PLACED IN FIBER DRUMS. EACH FIBER DRUM WILL BE FILLED WITH APPROXIMATELY 300 LBS OF CONTAMINATED SOIL. THE DRUMS WILL BE LOADED ONTO TRUCKS AND TRANSPORTED TO AN OFFSITE INCINERATOR. FOR COSTING PURPOSES, IT IS ASSUMED THAT AN INCINERATOR IN BRIDGEPORT, LOGAN TOWNSHIP, NEW JERSEY WILL BE USED. THE EXCAVATED AREAS WILL BE THEN FILLED WITH CLEAN SOIL. THE SOIL WILL BE TREATED TO COMPLY WITH THE LAND DISPOSAL RESTRICTIONS. THE CAPITAL COST FOR THIS ALTERNATIVE IS ESTIMATED TO BE $2,036,500 AND THE ACTUAL CONSTRUCTION TIME IS THE SAME AS ALTERNATIVE 4A (30 DAYS).

ALTERNATIVE 5: LOW TEMPERATURE SOIL STRIPPING

IN THIS ALTERNATIVE, CONTAMINATED SOIL WOULD BE EXCAVATED ACCORDING TO THE PROCEDURES PREVIOUSLY OUTLINED AND THEN STOCKPILED IN AN AREA ADJACENT TO THE THERMAL TREATMENT UNIT FOR FEEDING INTO A SCREEN TO REMOVE OVERSIZE (+2 INCH) MATERIAL AND DEBRIS SCREENED MATERIAL WILL THEN BE TRANSPORTED BY A CONVEYOR TO A HOPPER THAT DIRECTLY FEEDS THE THERMAL PROCESSOR. AFTER PROCESSING, THE SOIL WOULD BE TRANSFERRED BY ENCLOSED SCREW CONVEYORS FOR USE ONSITE AS BACKFILL. THE VAPORIZED CONTAMINANTS COULD EITHER BE DESTROYED THROUGH A SECONDARY HIGH-TEMPERATURE COMBUSTER OR COLLECTED THROUGH CONDENSATE OR ADSORBED ONTO ACTIVATED CARBON. STACK EMISSIONS WOULD BE MONITORED TO VERIFY THAT THEY WERE IN COMPLIANCE WITH FEDERAL AND STATE REGULATIONS, INCLUDING THOSE FOR VOLATILE ORGANIC COMPOUNDS (VOCS), HYDROGEN CHLORIDE (HCL), CARBON MONOXIDE (CO) AND PARTICULATES. PRIOR TO RETURNING THE TREATED SOIL IT MUST BE TESTED USING THE TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) TO ENSURE THAT LAND DISPOSAL TREATMENT LEVELS ARE MET. AT THIS POINT IN TIME, IT CANNOT BE DETERMINED WHETHER THESE LEVELS CAN BE MET. IF LEVELS CANNOT BE MET, A TREATABILITY VARIANCE MAY BE REQUIRED. UNLESS THE MATERIAL IS DELISTED (I.E., CERTIFIED AS NON-HAZARDOUS), THE MATERIAL WOULD HAVE TO BE COVERED IN ACCORDANCE WITH LANDFILL CLOSURE REQUIREMENTS. MONITORING WOULD ALSO BE REQUIRED. A TREATABILITY STUDY WILL BE REQUIRED FOR THIS ALTERNATIVE. CAPITAL COSTS ARE ESTIMATED TO BE $629,800, AND ANNUAL O&M AT $14,100. TIME REQUIRED FOR ONSITE CONSTRUCTION AND TREATMENT ACTIVITIES IS LESS THAN 90 DAYS.

ALTERNATIVE 6: IN SITU STEAM STRIPPING

A TYPICAL IN SITU STEAM STRIPPING SYSTEM INVOLVES THE INTRODUCTION OF STEAM INTO THE CONTAMINATED SOILS FOLLOWED BY AIR AND VAPOR EXTRACTION IN A VACUUM. IN FIGURE 8, A TYPICAL SCHEMATIC OF AN IN SITU STRIPPING SETUP IS SHOWN. THE INJECTION WELLS AND THE EXTRACTION WELLS ARE SEPARATELY MANIFOLDED. AN AIR AND STEAM MIXTURE IS INTRODUCED INTO THE CONTAMINATED SOIL AND A VACUUM EXTRACTION PUMP PROVIDES THE NECESSARY PRESSURE DIFFERENCE TO INSURE THE PASSAGE OF THE MIXTURE THROUGH THE SOIL. THE CONDENSATE IS SEPARATED FROM THE VAPOR IN A TREATMENT UNIT AND THE AIR IS FURTHER TREATED BY MEANS OF A CARBON FILTER. SPENT CARBON FROM THE TREATMENT UNIT, AS WELL AS THE CONDENSATE, WOULD BE TREATED/DISPOSED AS HAZARDOUS WASTE. DUE TO THE PROXIMITY OF THE LOCATIONS OF CONTAMINATED SOIL (UST, LEACHING POOL AND STORAGE DRUM AREAS), ONE COMMON ABOVEGROUND INJECTION SYSTEM, EXTRACTION SYSTEM, AND VAPOR PHASE SEPARATION SYSTEM WILL BE USED. AFTER

ORGANIC EMISSIONS RATES HAVE DECREASED TO NEGLIGIBLE LEVELS, SOIL SAMPLES WOULD BE COLLECTED TO CONFIRM THAT SOIL CONTAMINANT-SPECIFIC ACTION LEVELS HAVE BEEN MET. UPON COMPLETION OF THE IN SITU STEAM STRIPPING OPERATIONS, ALL EQUIPMENT WOULD BE DECONTAMINATED AND REMOVED FROM THE SITE. WASTES GENERATED DURING DECONTAMINATION WOULD BE COLLECTED AND TRANSPORTED TO A LICENSED FACILITY FOR TREATMENT/DISPOSAL.

THE CONDITION OF THE SOIL AT THE SMS SITE (HOMOGENEITY, HIGH POROSITY, ABSENCE OF CLAYS) LENDS ITSELF IDEALLY TO STEAM STRIPPING. A STUDY AT A SUPERFUND SITE IN SAN JOSE, CALIFORNIA, CONDUCTED BY THE UNIVERSITY OF CALIFORNIA AT BERKELEY, SHOWED THAT THE ORGANICS IN THE SOIL WERE REDUCED BY AS MUCH AS 99.3%, AT A FASTER RATE THAN AIR (ALONE) STRIPPING. IT IS ESTIMATED THAT THIS PROCEDURE WOULD REDUCE THE CONTAMINANT LEVELS IN THE SOIL BY MORE THAN 99%. IF THIS IS THE CASE, IT WILL RESULT IN AN AVERAGE SOIL CONTAMINANT LEVEL OF LESS THAN 10 PPB FOR ALL CONTAMINANTS OF CONCERN. A TREATABILITY STUDY WILL BE CONDUCTED TO ESTABLISH DIFFERENT PROCESS VARIABLES SUCH AS STEAM AND AIR RATIO, TEMPERATURES AND PRESSURES, FOR A SUCCESSFUL IMPLEMENTATION OF THIS ALTERNATIVE. IT SHOULD BE MADE CLEAR THAT IF ANY DIFFICULTIES ARE ENCOUNTERED, THE SAME EQUIPMENT CAN BE USED TO TREAT THE SOIL WITH AIR ONLY. THE LATTER ONE, ALTHOUGH INNOVATIVE, IS A PROVEN TECHNOLOGY AND HAS BEEN USED WITH SUCCESS DURING ACTUAL FIELD REMEDIATION. THE CAPITAL COST FOR THIS ALTERNATIVE IS $353,200. THE TIME REQUIRED TO CONSTRUCT AND TREAT THE CONTAMINATED SOILS IS APPROXIMATELY FIVE MONTHS USING AIR ONLY WILL RESULT IN A SIMILAR, BUT LOWER, CAPITAL COST BUT WILL REQUIRE THREE TO SIX MONTHS LONGER TO COMPLETE THE REMEDIATION.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

THE ALTERNATIVES WERE EVALUATED BASED ON THE FOLLOWING NINE CRITERIA:

- OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT;
- COMPLIANCE WITH ALL FEDERAL AND STATE APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS);
- LONG-TERM EFFECTIVENESS AND PERMANENCE;
- SHORT-TERM EFFECTIVENESS;
- REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF CONTAMINANTS;
- IMPLEMENTABILITY;
- COST;
- COMMUNITY ACCEPTANCE; AND,
- STATE ACCEPTANCE.

A SUMMARY OF THE RELATIVE PERFORMANCE OF THE ALTERNATIVES WITH RESPECT TO EACH OF THE NINE CRITERIA IS PROVIDED IN THE NEXT SECTION.

I. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

A) MIGRATION MANAGEMENT

ALL MIGRATION MANAGEMENT ALTERNATIVES ARE CONSIDERED TO BE PROTECTIVE OVER THE LONG TERM; HOWEVER, BOTH GROUNDWATER EXTRACTION AND TREATMENT ALTERNATIVES AFFORD GREATER PROTECTION SHOULD THE GROUND WATER EVER BE USED FOR POTABLE PURPOSES. ALTERNATIVE 2B PROVIDES THE HIGHEST OVERALL PROTECTION TO HUMAN HEALTH AND THE ENVIRONMENT IN THE SHORTEST PERIOD OF TIME (4 YRS.) VERSUS NO ACTION WHICH WOULD REQUIRE MORE THAN 20 YEARS FOR ACTION LEVELS TO BE ACHIEVED THROUGH NATURAL ATTENUATION.

B) SOURCE CONTROL

ALL THE SOURCE CONTROL ALTERNATIVES ARE CONSIDERED TO BE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. ALTERNATIVES 4A, 4B, 5, AND 6, IN THAT ORDER, ARE CONSIDERED PROTECTIVE SINCE THEY REMOVE AND DESTROY THE CONTAMINANTS AT THE SMS INSTRUMENTS SITE. ALTERNATIVES 4A, 4B, 5 AND 6, IN THAT ORDER, ARE CONSIDERED PROTECTIVE SINCE THEY REMOVE AND DESTROY THE CONTAMINANTS AT THE SMS INSTRUMENTS SITE. ALTERNATIVES 4A, 4B, AND 6 WOULD NOT REQUIRE ANY LONG TERM MAINTENANCE OR DEED RESTRICTIONS. ALTERNATIVE 5 WOULD REQUIRE SOME MONITORING AND MAINTENANCE, AS REQUIRED UNDER LANDFILL CLOSURE. ALTERNATIVE 3 DOES NOT PROVIDE ANY ADDITIONAL LEVEL OF PROTECTION ABOVE THAT DEFINED IN THE BASELINE RISK ASSESSMENT. THIS ALTERNATIVE WOULD REQUIRE THAT THE LEVEL OF PROTECTION BE MAINTAINED BY PREVENTING FUTURE ACTIVITIES AT THE SITE, SUCH AS

EXCAVATIONS, WHICH MAY CAUSE WORKER EXPOSURE.

2. COMPLIANCE WITH ARARS

A) MIGRATION MANAGEMENT

NONE OF THE ALTERNATIVES WILL ACHIEVE ALL CHEMICAL-SPECIFIC ARARS FOR GROUNDWATER RATED IIB, POTENTIAL DRINKING WATER, UNLESS OFF-SITE UPGRADIENT SOURCES ARE REMOVED. ALTHOUGH THE SELECTED REMEDIAL ACTION FOR THE FIRST OPERABLE UNIT WILL NOT MEET CHEMICAL-SPECIFIC ARARS, IT IS ONLY PART OF A TOTAL REMEDIAL ACTION THAT WILL ATTAIN SUCH CLEAN-UP LEVELS WHEN FULLY COMPLETED. A SECOND OPERABLE UNIT WILL BE CONDUCTED IN AN ATTEMPT TO IDENTIFY UPGRADIENT SOURCES OF CONTAMINATION. IN THE EVENT THE SECOND OPERABLE UNIT FAILS TO IDENTIFY OR CONTROL UPGRADIENT SOURCES, A WAIVER FOR TECHNICAL IMPRACTICABILITY (UNDER SARA SECTION 12(D)4(C)) WILL BE SOUGHT.

UNTIL THE TIME THAT UPGRADIENT CONTRIBUTIONS CAN BE TREATED, CLEANUP LEVELS FOR TRICHLOROETHYLENE (TCE), 1,1 DICHLOROETHANE, TRANS 1,2 DICHLOROETHANE, AND 1,1,1 TRICHLOROETHANE WILL BE SET AT THE UPQRADIENT LEVELS, AS DETERMINED FROM ADDITIONAL MONITORING TO BE CONDUCTED DURING THE REMEDIAL DESIGN AND/OR REMEDIAL ACTION. THE TREATMENT UNIT DISCHARGE WILL MEET ALL ARARS. AIR EMISSIONS FROM THE AIR STRIPPER WILL ALSO BE TREATED TO MEET ALL ARARS.

B) SOURCE CONTROL

THERE ARE NO CHEMICAL-SPECIFIC ARARS APPLICABLE FOR SOILS. ALL ALTERNATIVES, EXCEPT NO ACTION, WILL MEET ACTION SPECIFIC ARARS IF PERFORMED PRIOR TO NOVEMBER 1990. AFTER THAT DATE ONLY ALTERNATIVES 4B AND 6 WILL MEET ARARS. ALTERNATIVE 4A COULD NOT BE IMPLEMENTED DUE TO LAND DISPOSAL RESTRICTIONS. ALTERNATIVE 5 WILL REQUIRE THAT TREATED SOIL BE TESTED USING TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP), PRIOR TO BACKFILLING, TO INSURE THAT LAND DISPOSAL LEVELS ARE MET. AT THIS POINT IN TIME, IT CANNOT BE DETERMINED WHETHER THESE LEVELS CAN BE MET. IF LEVELS CANNOT BE MET, A TREATABILITY VARIANCE MAY BE REQUIRED.

3. LONG-TERM EFFECTIVENESS

A) MIGRATION MANAGEMENT

ALTERNATIVE 2B, GROUNDWATER AND SOURCE REMEDIATION, WILL PROVIDE THE GREATEST PROTECTION TO THE COMMUNITY, SINCE IT REMOVES AND/OR TREATS ALL CONTAMINATION AT THE SITE. ALTERNATIVE 2A IS LESS EFFECTIVE, SINCE IT LEAVES THE SOURCE UNTREATED AND WOULD REQUIRE LAND USE RESTRICTIONS ONSITE IN ORDER TO BE PROTECTIVE. SIMILARLY, UNDER ALTERNATIVES 1A AND 1B, IF GROUNDWATER AND LAND USE RESTRICTIONS ARE COMPLETELY IMPLEMENTED AND ENFORCED, THESE ALTERNATIVES WILL BE EFFECTIVE IN PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT, SINCE NO RECEPTOR OR EXPOSURE POINTS WILL EXIST. HOWEVER, THE UPPER AQUIFER WILL BE RESTORED ONLY BY NATURAL ATTENUATION, A PROCESS WHICH WILL TAKE OVER 20 YEARS TO REACH ACTION LEVELS, ACCORDING TO RESULTS OBTAINED FROM GROUNDWATER MODELING.

B) SOURCE CONTROL

ALTERNATIVES 4A, 4B, 5 AND 6 REMOVE CONTAMINANTS FROM THE SITE AND DO NOT LEAVE ANY UNTREATED WASTE. ALTERNATIVES 4A, 4B AND 6 DO NOT LEAVE ANY RESIDUALS THAT REQUIRE MANAGING TO ENSURE AN ADEQUATE LEVEL OF PROTECTION. ALTERNATIVE 3, HOWEVER, LEAVES THE CONTAMINANTS IN PLACE AND REQUIRES MANAGEMENT BEYOND THE IMPLEMENTATION PHASE TO MONITOR THE REMAINING LEVEL OF RISK, AS WELL AS MAINTENANCE OF THE ASPHALT COVER ALTERNATIVE 5 WOULD ALSO REQUIRE SOME POST CLOSURE CARE TO COMPLY WITH LANDFILL CLOSURE REQUIREMENTS.

4. SHORT-TERM EFFECTIVENESS

A) MIGRATION MANAGEMENT

ALTERNATIVE 2B, GROUNDWATER AND SOURCE REMEDIATION, WILL ACHIEVE ACTION LEVELS PROTECTION FOR THE COMMUNITY IN FOUR YEARS. ALTERNATIVES 2A WILL TAKE TEN YEARS TO ACHIEVE ACTION LEVELS DUE TO THE LACK OF SOURCE CONTROL MEASURES. BOTH ALTERNATIVES CREATE POTENTIALLY NEW MIGRATION AND EXPOSURE PATHWAYS BY EXTRACTING

GROUNDWATER, BUT THE REMEDIAL TREATMENT PROCESSES ARE CONSIDERED TO KEEP THE RISK OF EXPOSURE BELOW SIGNIFICANT LEVELS. ALTERNATIVES 1A AND 1B, THE NO ACTION ALTERNATIVES, WILL TAKE SIGNIFICANTLY LONGER, E.G., TWENTY YEARS OR MORE, TO ACHIEVE ACTION LEVELS. THERE ARE NO RISKS INVOLVED DURING IMPLEMENTATION, SINCE NO ACTION WOULD BE TAKEN.

B) SOURCE CONTROL

ALTERNATIVES 4A, 4B, 5 AND 6, THE SOURCE REMOVAL/TREATMENT ALTERNATIVES, MAY POTENTIALLY INCREASE THE RISK TO THE COMMUNITY DURING THEIR IMPLEMENTATION BECAUSE THEY EXTRACT CONTAMINANTS AND CREATE NEW POTENTIAL EXPOSURE ROUTES NOT IDENTIFIED IN THE BASELINE RISK ASSESSMENT. PROPER SAFETY PROCEDURES AND ONSITE MONITORING, HOWEVER, ARE EXPECTED TO ENSURE THAT THE COMMUNITY IS NOT SUBJECTED TO ANY SIGNIFICANT RISK FROM EXPOSURE TO THE CONTAMINANTS. ALTERNATIVE 6 WILL HAVE THE LEAST NEGATIVE IMPACT ON THE COMMUNITY DURING IMPLEMENTATION, SINCE IT WILL BE CONDUCTED IN SITU. SIMILARLY, ALTERNATIVE 5 WILL BE CONDUCTED ONSITE AND WILL HAVE MINIMAL IMPACT ON THE OUTSIDE COMMUNITY. THE COMMUNITY WILL ALSO BE IMPACTED TO A MINOR DEGREE BY TRUCK TRAFFIC. THE TRUCK TRAFFIC FOR ALTERNATIVES 4A AND 4B HAS BEEN ESTIMATED TO BE 10 TRUCKS PER DAY FOR APPROXIMATELY 20 DAYS.

5. REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF CONTAMINANTS

A) MIGRATION MANAGEMENT

ALTERNATIVES 2A AND 2B, GROUNDWATER REMEDIATION, WILL REDUCE THE TOXICITY OF CONTAMINATED GROUNDWATER BY REMOVING THE CONTAMINANTS AND ADSORBING THEM ON ACTIVATED CARBON. THE MOBILITY OF CONTAMINATED GROUNDWATER WILL BE REDUCED TO THE AREA INFLUENCED BY THE EXTRACTION WELL. IN ALTERNATIVE 2A, AS WELL AS ALTERNATIVE 2B, THE TREATMENT UNIT WILL BE PROVIDED WITH AIR CONTROLS TO ELIMINATE THE MIGRATION OF CONTAMINANTS TO THE ATMOSPHERE EVEN THOUGH THE AIR EMISSIONS ARE EXPECTED TO BE MINIMAL, LESS THAN 1 LB. PER DAY. THE FILTERED SOLIDS AND THE ACTIVATED CARBON IN THE TREATMENT UNIT DURING REMEDIATION WILL BE CONSIDERED HAZARDOUS WASTE AND DISPOSED OF ACCORDINGLY.

ALTERNATIVES 1A AND 1B, ON THE OTHER HAND, WILL NOT AFFORD ANY REDUCTION IN THE MOBILITY, TOXICITY, OR VOLUME OF CONTAMINATED GROUNDWATER.

B) SOURCE CONTROL

ALTERNATIVE 4B, EXCAVATION AND OFFSITE INCINERATION, WILL PROVIDE THE GREATEST DEGREE OF DESTRUCTION OF CONTAMINANTS AND, THEREFORE, THE GREATEST DEGREE OF REDUCTION OF TOXICITY, MOBILITY, AND VOLUME ALTERNATIVE 5 WILL PROVIDE THE SAME OR VERY CLOSE TO THE SAME REDUCTION AS ALTERNATIVE 4B. ALTERNATIVE 4B WILL PRODUCE ASH THAT WILL REQUIRE DISPOSAL. ALTERNATIVE 6 WILL NOT PROVIDE AS GREAT A DEGREE OF CONTAMINANT DESTRUCTION OR REDUCTION IN CONTAMINANT MOBILITY AS ALTERNATIVES 4B AND 5. HOWEVER, IT IS EXPECTED TO PROVIDE AN ADEQUATE DEGREE OF CONTAMINANT DESTRUCTION AND BE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. ALTERNATIVE 3 DOES NOTHING TO REDUCE THE MOBILITY, TOXICITY, OR VOLUME OF CONTAMINANTS, AND ALTERNATIVE 4A MERELY TRANSFERS THE PROBLEM ELSEWHERE.

6. IMPLEMENTABILITY

A) MIGRATION MANAGEMENT

ALL ALTERNATIVES ARE TECHNICALLY FEASIBLE AND RELATIVELY EASY TO IMPLEMENT; HOWEVER, EACH ALTERNATIVE REQUIRES A DIFFERENT AMOUNT OF TIME TO CONSTRUCT OR IMPLEMENT. ALTERNATIVE 1A REQUIRES THE LEAST TIME TO CONSTRUCT AND IMPLEMENT, SINCE ONLY ALTERNATIVE LA,AND, TO A LESSER EXTENT, ALTERNATIVES 2A AND LB, IN THAT ORDER, IT WILL BE DIFFICULT TO ENFORCE THE ADMINISTRATIVE/INSTITUTIONAL CONTROLS, SUCH AS RESTRICTIONS ON NEW PRIVATE WELLS DEVELOPMENT. SIMILARLY, ALTERNATIVES 2A AND 2B MAY PRESENT SOME IMPLEMENTATION PROBLEMS. FOR ALTERNATIVE 2A, THE REQUISITION OF RIGHT-OF-WAY AND/OR EASEMENT FOR THE PIPING NETWORK NEEDED FOR GROUNDWATER TRANSPORT FROM THE ONSITE TREATMENT SYSTEM TO THE DISCHARGE POINT MAY BE PARTICULARLY DIFFICULT AND COMPLICATED. BOTH ALTERNATIVES 2A AND 2B REQUIRE INSTALLATION OF AN OFFSITE EXTRACTION WELL AS WELL AS A PIPING NETWORK CONNECTING THIS WELL TO THE ONSITE TREATMENT UNIT.

B) SOURCE CONTROL

OF THE SOURCE CONTROL ALTERNATIVES, ALTERNATIVES 4A AND 4B WOULD REQUIRE THE LEAST TIME TO IMPLEMENT. ALTERNATIVES 3, 5 AND 6 ARE CONSIDERED TO TAKE RELATIVELY THE SAME AMOUNT OF TIME TO CONSTRUCT AND IMPLEMENT (I.E., 70 TO 150 DAYS) ALTERNATIVE 6 HAS BEEN IMPLEMENTED WITH SUCCESS IN A PRELIMINARY STUDY CONDUCTED AT A PROPOSED SUPERFUND SITE NEAR SAN JOSE, CALIFORNIA. IT IS A NOVEL BUT VERY EFFECTIVE WAY FOR SOIL REMEDIATION AND SUITED IDEALLY FOR THE SOIL PRESENT AT SMS INSTRUMENTS ALTERNATIVES 5 AND 6 WOULD TAKE MORE TIME TO IMPLEMENT SINCE BOTH WILL REQUIRE A TREATABILITY STUDY. A POTENTIAL DIFFICULTY FOR ALTERNATIVE 6 IMPLEMENTATION MAY BE THE AVAILABILITY OF THE TECHNOLOGY FOR THIS PROCESS SINCE IT IS A NOVEL TECHNOLOGY. SHOULD SOME DIFFICULTIES ARISE, THE SAME EQUIPMENT CAN BE USED FOR AIR STRIPPING THE SOIL, WHICH IS A PROVEN TECHNOLOGY.

7. COST

THE PRESENT WORTH AND CAPITAL COSTS FOR EACH ALTERNATIVE ARE SHOWN IN TABLE III.

8. COMMUNITY ACCEPTANCE

THE COMMUNITY SUPPORTS THE PREFERRED ALTERNATIVE (ALTERNATIVES 2B AND 6). COMMUNITY COMMENTS CAN BE REVIEWED IN THE PUBLIC MEETING TRANSCRIPT WHICH IS INCLUDED IN THE ADMINISTRATIVE RECORD. A RESPONSIVENESS SUMMARY WHICH SUMMARIZES ALL COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD IS ATTACHED TO THIS DOCUMENT.

9. STATE ACCEPTANCE

THE STATE OF NEW YORK, THROUGH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC), CONCURS WITH THE SELECTED REMEDY.

#SR
THE SELECTED REMEDY

BASED UPON CONSIDERATION OF THE REQUIREMENTS OF CERCLA, THE DETAILED ANALYSIS OF ALTERNATIVES, AND PUBLIC COMMENTS, BOTH EPA AND THE STATE OF NEW YORK HAVE DETERMINED THAT A COMBINATION OF ALTERNATIVE 2B, GROUNDWATER EXTRACTION, TREATMENT AND REINJECTION, AND ALTERNATIVE 6, IN SITU STEAM STRIPPING OF THE CONTAMINATED SOIL, IS THE MOST APPROPRIATE REMEDY FOR THE SMS INSTRUMENTS SITE IN DEER PARK, NEW YORK.

APPROXIMATELY TWELVE HUNDRED FIFTY (1250) CUBIC YARDS OF CONTAMINATED SOIL WILL BE TREATED BY IN SITU STEAM STRIPPING VOCS WILL BE REMOVED BY THIS TREATMENT PROCESS TO AN AVERAGE LEVEL OF APPROXIMATELY 10 PPB. THE ACTUAL VOC CONTAMINANT TO BE UTILIZED AS AN INDICATOR AND THE APPROPRIATE CLEAN UP CONCENTRATION WILL BE DETERMINED DURING THE TREATABILITY STUDY. THE GROUNDWATER WILL BE REMEDIATED BY EXTRACTION, TREATMENT AND REINJECTION TO MEET EITHER FEDERAL OR STATE DRINKING WATER LEVELS EXCEPT IN THOSE CASES WHERE THE UPGRADIENT CONCENTRATION ARE ABOVE SUCH STANDARDS. IN SUCH A CASE, THE CONTAMINATION WILL BE REDUCED TO UPGRADIENT LEVELS SO AS TO ELIMINATE ANY SIGNIFICANT CONTRIBUTION FROM THE SMS SITE. THE TREATED GROUNDWATER WILL MEET ALL STATE AND FEDERAL DRINKING WATER STANDARDS PRIOR TO REINJECTION. THIS IS THE MOST PROTECTIVE ALTERNATIVE IN TERMS OF THE TOXICITY, MOBILITY AND VOLUME REDUCTION AND FOR THE PERMANENCE AND LONG-TERM EFFECTIVENESS THEY ACHIEVE. THESE TECHNIQUES WOULD PERMANENTLY REDUCE THE CONTAMINANTS OF CONCERN AT THE SITE, SUCH AS VOLATILE ORGANIC COMPOUNDS IN THE SOIL AS WELL AS IN THE GROUND WATER. GROUNDWATER REMEDIATION UNDER THIS ALTERNATIVE CAN BE EXPECTED IN 4 YEARS, AS OPPOSED TO MORE THAN 20 YEARS FOR THE NO-ACTION ALTERNATIVE (1A) AND 15 YEARS AND 10 YEARS FOR ALTERNATIVES 2A AND 1B, RESPECTIVELY.

THE ESTIMATED COST FOR THE SELECTED REMEDIATION ALTERNATIVE (I.E., ALTERNATIVES 2B AND 6) IS $1,195,800. A DETAILED COST SUMMARY OF THE SELECTED REMEDY IS SHOWN IN TABLES IV AND V.

A TREATABILITY STUDY WILL BE CONDUCTED DURING THE DESIGN STAGE OF THE REMEDY TO ENSURE THAT THE IN SITU STEAM STRIPPING TECHNOLOGY CAN BE UTILIZED EFFECTIVELY. ALSO, DURING DESIGN, ADDITIONAL SAMPLING WILL BE CONDUCTED TO FURTHER REFINE THE TREATMENT AREA (I.E. THOSE AREAS ABOVE THE ACTION LEVELS SPECIFIED IN THE FS) AND WILL INCLUDE SAMPLING IN THE FORMER DRUM STORAGE AREA.

SHOULD ANY PROBLEMS ARISE WITH THIS TECHNOLOGY, HOWEVER, ONE CAN SWITCH TO SOIL STRIPPING WITH HOT AIR WHICH IS A VARIATION OF THIS METHOD AND USES EXACTLY THE SAME EQUIPMENT. SOIL STRIPPING WITH HOT AIR, ALTHOUGH INNOVATIVE, IS A PROVEN TECHNOLOGY AND HAS BEEN USED IN ACTUAL REMEDIATIONS.

STEAM AND AIR STRIPPING ARE INNOVATIVE TECHNOLOGIES AND REQUIRE TREATABILITY STUDIES. SINCE A CERTAIN DEGREE OF UNCERTAINTY EXISTS REGARDING THE IMPLEMENTABILITY OF THESE TECHNOLOGIES, A CONTINGENCY PLAN FOR THE REMEDIATION OF THE SOILS WILL BE IMPLEMENTED IF THE TREATABILITY STUDIES INDICATE THAT THESE TECHNOLOGIES WOULD NOT BE EFFECTIVE. THE CONTINGENCY FOR SOIL REMEDIATION IS ALTERNATIVE 4B, SOURCE REMOVAL AND OFFSITE INCINERATION. ALTHOUGH MORE COSTLY, THIS ALTERNATIVE IS FULLY PROTECTIVE AND WILL ACHIEVE THE REMEDIAL GOALS SPECIFIED IN THIS DECISION SUMMARY .

#SD
STATUTORY DETERMINATIONS

UNDER ITS LEGAL AUTHORITY, EPA'S PRIMARY RESPONSIBILITY AT SUPERFUND SITES IS TO UNDERTAKE REMEDIAL ACTIONS THAT PROTECT HUMAN HEALTH AND THE ENVIRONMENT. WHEN COMPLETE, THE SELECTED REMEDIAL ACTION FOR THIS SITE WILL COMPLY WITH APPLICABLE OR RELEVENT AND APPROPRIATE ENVIRONMENTAL STANDARDS ESTABLISHED UNDER FEDERAL AND STATE ENVIRONMENTAL LAWS UNLESS A STATUTORY WAIVER IS JUSTIFIED. THE SELECTED REMEDY IS COST EFFECTIVE AND UTILIZES PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE. FINALLY, THE REMEDY EMPLOYS TREATMENT THAT PERMANENTLY AND SIGNIFICANTLY REDUCES THE VOLUME, TOXICITY, OR MOBILITY OF HAZARDOUS WASTES AS ITS PRINCIPAL ELEMENT .

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE SELECTED REMEDY AND CONTINGENCY REMEDY ELIMINATE ALL OUTSTANDING THREATS POSED BY THE SITE. BOTH REDUCE CONTAMINATION OF SITE MATERIALS DOWN TO HEALTH BASED LEVELS EXCEPT IN THOSE CASES WERE THE UPGRADIENT CONCENTRATIONS EXCEED THESE LEVELS. IT IS ASSUMED THAT THE REMEDY FOR THE 2ND OPERABLE UNIT WILL REDUCE THE UPGRADIENT CONTAMINANT CONCENTRATIONS. BOTH THE SELECTED REMEDY AND THE CONTINGENCY REMEDY REMOVE A CONTINUING THREAT TO GROUNDWATER POSED BY THE ON-SITE CONTAMINATED SOILS .

COMPLIANCE WITH ARARS

AT THE COMPLETION OF RESPONSE ACTIONS, THE SELECTED REMEDY AND THE CONTINGENCY REMEDY WILL BOTH HAVE COMPLIED WITH THE FOLLOWING ARARS AND CONSIDERATIONS:

ACTION-SPECIFIC ARARS

SDWA MAXIMUM CONTAMINANT LEVELS (40 CFR 141.11-141.16) AND 6 NYCRR GROUNDWATER QUALITY REGULATIONS (PART 703.5, 703.6, 703.7) PROVIDE STANDARDS FOR TOXIC COMPOUNDS FOR PUBLIC DRINKING SYSTEMS. THE REINJECTION PROCESS FOR THE TREATED GROUNDWATER WILL MEET UNDERGROUND INJECTION WELL REGULATIONS BY ITS STATUS AS A SUPERFUND REMEDIAL ACTION UNDER 40 CFR 147. THE EXTRACTED GROUNDWATER WILL BE TREATED TO MEET THE ABOVE REFERENCED DRINKING WATER STANDARDS PRIOR TO REINJECTION.

SPENT CARBON FROM THE GROUND WATER TREATMENT SYSTEM FOR REMOVAL OF ORGANICS WILL BE DISPOSED OF OFFSITE, AS WELL AS ANY TREATMENT RESIDUALS, CONSISTENT WITH APPLICABLE RCRA LAND DISPOSAL RESTRICTIONS UNDER 40 CFR 268.

THE TREATMENT UNIT WILL COMPLY WITH THE REQUIREMENTS OF 40 CFR PART 264, SUBPART X (MISCELLANEOUS UNITS).

IF, AFTER REMEDIATION, ANY HAZARDOUS WASTE CONSTITUENTS REMAINING IN THE GROUNDWATER AND SOIL ARE ABOVE HEALTH BASED STANDARDS, THEN CLOSURE OF THE LEACHING POOL UNDER 40 CFR PART 264, SUBPART G AND SECTION 264.228 OF SUBPART K WILL BE APPLICABLE.

IF IT IS DETERMINED THAT THE CONTINGENCY REMEDY WILL BE IMPLEMENTED, THE REMEDY WILL COMPLY WITH THE FOLLOWING ADDITIONAL ARARS:

- RCRA 40 CFR PART 263 - STANDARDS APPLICABLE TO TRANSPORT OF HAZARDOUS WASTES

- RCRA 40 CFR PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

- 6 NYCRR PART 372 - HAZARDOUS WASTE MANIFEST SYSTEM & RELATED STANDARDS FOR GENERATORS, TRANSPORTERS AND FACILITIES

- 6 NYCRR SUBPART 373-2 - FINAL STATE STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

CHEMICAL-SPECIFIC ARARS:

SINCE THE GROUND WATER AT THE SITE IS CLASSIFIED AS IIB (GA BY NYSDEC), DRINKING WATER STANDARDS ARE RELEVANT AND APPROPRIATE. AGAIN, THESE INCLUDE, SWDA MCLS AND 6NYCRR GROUNDWATER QUALITY REGULATIONS.

ALL AIR EMISSIONS WILL BE IN COMPLIANCE WITH 6 NYCRR PARTS 200, 201, 202, 211, 212 AND 231.

LOCATION-SPECIFIC ARARS:

NONE APPLICABLE

OTHER CRITERIA, ADVISORIES, OR GUIDANCE TO BE CONSIDERED

NY TOGS 2.1.2 AND 1.1.1 PROVIDE STANDARDS FOR REINJECTION OF TREATED GROUNDWATER AND ARE TO BE CONSIDERED.

COST EFFECTIVENESS

THE SELECTED REMEDY IS COST EFFECTIVE BECAUSE IT PROVIDES OVERALL EFFECTIVENESS PROPORTIONAL TO ITS COST. THE PRESENT WORTH IS $1,195,800. THE ESTIMATED COSTS OF THE SELECTED REMEDY ARE HALF AS MUCH, AS THE SOIL INCINERATION ALTERNATIVE; AND, YET, IT IS AS EFFECTIVE IN THE LONG RUN FOR IT PROVIDES A PERMANENT SOLUTION BY SIGNIFICANTLY REDUCING THE TOXICITY AND MOBILITY OF THE CONTAMINANTS.

UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES OR RESOURCE RECOVERY TECHNOLOGIES TO THE MAXIMUM EXTENT POSSIBLE

EPA HAS DETERMINED THAT THE SELECTED REMEDY, AS WELL AS THE CONTINGENCY REMEDY, REPRESENT THE MAXIMUM EXTENT TO WHICH PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES CAN BE UTILIZED IN A COST EFFECTIVE MANNER FOR THE SMS SITE. THIS IS EVIDENT BY THE SELECTION OF IN SITU STEAM STRIPPING, CLEARLY AN INNOVATIVE TECHNOLOGY. THE SELECTED REMEDY REPRESENTS THE BEST BALANCE OF THE NINE EVALUATION CRITERIA USED TO JUDGE ALL ALTERNATIVES.

THE GROUNDWATER TREATMENT USED IN BOTH THE SELECTED AND CONTINGENCY REMEDIES WILL REDUCE THE CONTAMINANTS OF CONCERN TO HEALTH PROTECTIVE LEVELS PRIOR TO REINJECTION. AFTER TREATMENT IS COMPLETE, THE SITE WILL NO LONGER BE CONTRIBUTING CONTAMINANTS TO THE UNDERLYING AQUIFER.

PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

BY TREATING THE VOC CONTAMINATED SOILS AND GROUNDWATER VIA IN SITU STEAM STRIPPING AND AIR STRIPPING RESPECTIVELY, THE SELECTED REMEDY ADDRESSES THE PRINCIPAL THREAT POSED BY THE SITE THROUGH THE USE OF TREATMENT TECHNOLOGIES. THEREFORE, THE STATUTORY PREFERENCE FOR REMEDIES THAT EMPLOY TREATMENT AS A PRINCIPAL ELEMENT IS SATISFIED.

DOCUMENTATION OF SIGNIFICANT CHANGES

THE PROPOSED PLAN FOR THE SMS INSTRUMENTS SITE WAS RELEASED TO THE PUBLIC IN JULY 1989. THE PROPOSED PLAN IDENTIFIED ALTERNATIVE 2B AND ALTERNATIVE 6 AS THE PREFERRED GROUNDWATER AND SOIL REMEDIES, RESPECTIVELY. EPA REVIEWED ALL COMMENTS SUBMITTED DURING THE PUBLIC COMMENT PERIOD. UPON REVIEW OF THESE COMMENTS, IT WAS DETERMINED THAT NO SIGNIFICANT CHANGES TO THE SELECTED REMEDY, AS IT WAS ORIGINALLY IDENTIFIED IN THE

PROPOSED PLAN, WERE NECESSARY. HOWEVER, BASED ON THE PUBLIC CONCERN REGARDING THE INNOVATIVE NATURE OF ALTERNATIVE 6, EPA HAS DECIDED THAT ALTERNATIVE 4 (EXCAVATION AND OFF-SITE THERMAL DESTRUCTION) SHOULD BE ADDED AS A CONTINGENCY REMEDY FOR SOILS TREATMENT IN THE EVENT ALTERNATIVE 6 IS NOT EFFECTIVE. THE PUBLIC WAS CONFIDENT THAT ALTERNATIVE 6 WOULD BE EFFECTIVE AND WAS SUPPORTIVE OF THE CONTINGENCY REMEDY CONCEPT.

#RS

APPENDIX V
RESPONSIVENESS SUMMARY

FINAL RESPONSIVENESS SUMMARY

SMS INSTRUMENTS SITE
DEER PARK, NEW YORK

THE US ENVIRONMENTAL PROTECTION AGENCY (EPA) HELD A PUBLIC COMMENT PERIOD FROM JULY 10, 1989 THROUGH AUGUST 10, 1989 FOR INTERESTED PARTIES TO COMMENT ON EPA'S FINAL REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) AND PROPOSED REMEDIAL ACTION PLAN (PRAP) FOR THE SMS INSTRUMENTS SITE, LOCATED IN DEER PARK, NEW YORK.

EPA HELD A PUBLIC MEETING AT 7:00 PM. ON AUGUST 2, 1989 AT THE DEER PARK LIBRARY IN DEER PARK, NEW YORK TO OUTLINE THE REMEDIAL ALTERNATIVES DESCRIBED IN THE RI/FS AND PRESENT EPA'S PROPOSED REMEDIAL ALTERNATIVES FOR THE SMS INSTRUMENTS SITE.

THE RESPONSIVENESS SUMMARY IS REQUIRED BY SUPERFUND POLICY. IT PROVIDES A SUMMARY OF CITIZEN'S COMMENTS AND CONCERNS RECEIVED DURING THE PUBLIC COMMENT PERIOD, AND EPA'S RESPONSES TO THOSE CONCERNS. ALL COMMENTS SUMMARIZED IN THIS DOCUMENT HAVE BEEN FACTORED INTO EPA'S FINAL DECISION FOR SELECTION OF THE REMEDIAL ALTERNATIVES FOR CLEANUP OF THE SMS INSTRUMENTS SITE.

THIS RESPONSIVENESS SUMMARY IS ORGANIZED IN FIVE SECTIONS. EACH OF THESE SECTIONS IS DESCRIBED BRIEFLY BELOW.

I. RESPONSIVENESS SUMMARY OVERVIEW. THIS SECTION BRIEFLY DESCRIBES THE BACKGROUND OF THE SMS INSTRUMENTS SITE AND OUTLINES THE PROPOSED REMEDIAL ALTERNATIVES FOR THE SITE.

II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS. THIS SECTION PROVIDES A BRIEF HISTORY OF COMMUNITY CONCERNS AND INTERESTS REGARDING THE SMS INSTRUMENTS SITE.

III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA. RESPONSES TO THESE COMMENTS. THIS SECTION SUMMARIZES ORAL COMMENTS RECEIVED BY EPA AT THE AUGUST 2, 1989 PUBLIC MEETING AND PROVIDES EPA'S RESPONSES TO THESE COMMENTS.

IV. REMAINING CONCERNS. THIS SECTION DISCUSSES COMMUNITY CONCERNS TO BE CONSIDERED AS EPA PREPARES TO UNDERTAKE THE REMEDIAL DESIGNS AND REMEDIAL ACTIONS AT THE SMS INSTRUMENTS SITE.

V. WRITTEN COMMENTS RECEIVED BY EPA AND EPA RESPONSES TO THESE COMMENTS. THIS SECTION CONTAINS THE WRITTEN COMMENTS RECEIVED BY EPA DURING THE PUBLIC COMMENT PERIOD, AND EPA'S WRITTEN RESPONSES TO THESE COMMENTS.

I. RESPONSIVENESS SUMMARY OVERVIEW

THE SMS INSTRUMENTS SITE IS LOCATED AT 120 MARCUS BOULEVARD, DEER PARK IN SUFFOLK COUNTY, NEW YORK. IT IS IN A LIGHT INDUSTRIAL AND RESIDENTIAL AREA. THE SITE IS AN ACTIVE INDUSTRIAL FACILITY THAT CONSISTS OF A 34,000 SQUARE FOOT BUILDING ON A 1.5 ACRE LOT. APPROXIMATELY 80% OF THE LOT IS PAVED WITH ASPHALT. MORE THAN 50 INDUSTRIAL FACILITIES ARE LOCATED WITHIN A ONE-MILE RADIUS, AND A LARGE GROUNDWATER RECHARGE BASIN IS LOCATED DIRECTLY ADJACENT TO THE EAST SIDE OF THE SMS INSTRUMENTS SITE.

EPA CONDUCTED A REMEDIAL INVESTIGATION (RI) FROM JULY 1987 TO MAY 1989 TO CHARACTERIZE THE EXTENT AND NATURE OF CONTAMINATION OF THE SITE. THE RI FOUND EXTENSIVE SOIL AND GROUNDWATER CONTAMINATION AT THE SITE. THE MAJOR SOURCE OF GROUNDWATER AND SOIL CONTAMINATION IS BELIEVED TO BE INDUSTRIAL WASTE GENERATED FROM METAL DEGREASING AND OTHER METAL FINISHING OPERATIONS CONDUCTED FROM 1967 TO THE PRESENT. THESE WASTES WERE ROUTINELY DISCHARGED TO A LEACHING POOL ON THE SOUTH SIDE OF THE BUILDING UNTIL 1980. ANOTHER SOURCE WAS A 6,000 GALLON UNDERGROUND STORAGE TANK USED FOR JET FUEL STORAGE. THE LEACHING POOL WAS PUMPED OUT, FILLED WITH SAND, AND SEALED IN 1983. THE UNDERGROUND TANK WAS REMOVED FROM THE SITE BY THE OWNER ON FEBRUARY 17,

1988 DURING THE RI.

THE RESULTS OF THE RI ARE SUMMARIZED BELOW:

GROUNDWATER CONTAMINATION

- GROUNDWATER BELOW THE SITE IS HIGHLY CONTAMINATED. THE CHEMICALS OF CONCERN ARE MAINLY CHLORINATED HYDROCARBONS AND SOME AROMATICS, SUCH AS XYLENE
- GROUNDWATER UPGRADIENT OF THE SITE IS CONTAMINATED WITH VOLATILE ORGANIC COMPOUNDS (VOCS)
- CONTAMINATION IN THE SOIL IS CONTINUALLY RELEASED INTO THE GROUNDWATER. LEVELS OF CONTAMINATION INDICATE THAT GROUNDWATER TREATMENT WILL BE REQUIRED IN THE UPPER GLACIAL AQUIFER.

SOIL CONTAMINATION

- GROSS CONTAMINATION OF SURFACE AND SUBSURFACE SOILS IS PRESENT AROUND THE LEACHING POOL AND UNDERGROUND STORAGE TANK AREAS.
- THE PRIMARY SOIL CONTAMINANTS INCLUDE XYLENE, CHLOROBENZENE, ETHYLBENZENE, TRANS-1,2 DICHLOROETHENE, AND TETRACHLOROETHENE.

THE REMEDIAL ALTERNATIVES EVALUATED BY EPA IN THE FEASIBILITY STUDY ARE SUMMARIZED IN THE FOLLOWING SECTION. THE FINAL ALTERNATIVE HAS BEEN SELECTED AFTER EVALUATING PUBLIC COMMENTS AND ANY OTHER ADDITIONAL INFORMATION GATHERED DURING THE PUBLIC COMMENT PERIOD ON THE RI/FS AND THE PROPOSED REMEDIAL ACTION PLAN.

CLEANUP ALTERNATIVES HAVE BEEN SELECTED TO ADDRESS GROUNDWATER AND SOIL REMEDIATION. THE ALTERNATIVES FOR GROUNDWATER CLEANUP ARE CATEGORIZED AS MANAGEMENT OF MIGRATION ALTERNATIVES. ALTERNATIVES FOR REMEDIATING CONTAMINATED SOILS ARE CATEGORIZED AS SOURCE CONTROL ALTERNATIVES. THE ALTERNATIVES FOR THESE TWO CATEGORIES ARE AS FOLLOWS:

MANAGEMENT OF MIGRATION ALTERNATIVES

ALTERNATIVE 1A: NO ACTION (SOURCE UNTREATED)

CAPITAL COST:	$70,400
ANNUAL OPERATIONS AND MAINTENANCE (O&M):	$13,600
PERIODIC O&M:	$ 7,500
CONSTRUCTION TIME FRAME:	45 DAYS
RESTORATION TIME FRAME:	MORE THAN 20 YEARS

NO REMEDIAL ACTION WOULD BE IMPLEMENTED UNDER THIS ALTERNATIVE. A LONG-TERM MONITORING PROGRAM WOULD BE CONDUCTED TO PROVIDE INFORMATION ON THE EXTENT OF CONTAMINANT MIGRATION OVER TIME. FIVE WELLS WOULD BE MONITORED SEMI-ANNUALLY FOR VOLATILES, SEMI-VOLATILES, AND VARIOUS METALS. THIS ALTERNATIVE WOULD REQUIRE THE IMPLEMENTATION OF WATER USE RESTRICTIONS TO PREVENT THE USE OF CONTAMINATED GROUNDWATER AS A POTABLE WATER SOURCE. THE RESTRICTIONS WOULD BE IMPOSED ON ANY RESIDENCE, BUSINESS OR FUTURE PLANS FOR WELL INSTALLATIONS WITHIN ONE-HALF MILE DOWNGRADIENT OF THE SITE.

ALTERNATIVE 1B: NO ACTION (SOURCE TREATED)

CAPITAL COST:	$70,400
ANNUAL O&M:	$13,600
PERIODIC O&M (EVERY 5 YEARS):	$ 7,500
CONSTRUCTION TIME FRAME:	150 DAYS
RESTORATION TIME FRAME:	10 YEARS

THIS ALTERNATIVE IS THE SAME AS ALTERNATIVE 1A, EXCEPT THAT THE SOURCE WOULD BE TREATED BY ONE OF THE FOUR ALTERNATIVES: 4A, 4B, 5 OR 6. IF SOURCE TREATMENT IS IMPLEMENTED THE AQUIFER RESTORATION TIME FRAME WOULD BE REDUCED BY APPROXIMATELY 10 YEARS.

ALTERNATIVE 2A: GROUNDWATER EXTRACTION, TREATMENT AND DISCHARGE (SOURCE UNTREATED)

CAPITAL COST:	$544,100
ANNUAL O&M:	$128,200
PERIODIC O&M:	$ 7,500
CONSTRUCTION TIME FRAME:	45 DAYS
RESTORATION TIME FRAME	MORE THAN 15 YEARS

AN EXTRACTION WELL LOCATED OFF-SITE WOULD CAPTURE THE PLUME OF CONTAMINATED GROUNDWATER EMANATING FROM THE SMS INSTRUMENTS SITE. THE EXTRACTED GROUNDWATER WOULD TREATED IN AIR STRIPPING TOWERS TO REDUCE THE LEVEL OF CONTAMINATION TO MEET OR EXCEED THE SELECTED CLEANUP STANDARDS. THE TREATED WATER WOULD THEN BE DISCHARGED TO A SURFACE WATER BODY, SPECIFICALLY, THE POND IN BIRCHWOOD PARK, 1/2 MILE SOUTHEAST OF THE SITE.

ALTERNATIVE 2B: GROUNDWATER EXTRACTION, TREATMENT AND REINJECTION (SOURCE TREATED)

CAPITAL COST	$365,300
ANNUAL O&M:	$123,400
PERIODIC O&M (EVERY 5 YEARS):	$ 7,500
CONSTRUCTION TIME FRAME:	45 DAYS
RESTORATION TIME FRAME:	4 YEARS

THIS ALTERNATIVE IS THE SAME AS ALTERNATIVE 2A, EXCEPT THAT THE SOURCE WOULD BE TREATED BY ONE OF THE FOUR ALTERNATIVES: 4A, 4B, 5 OR 6 AND THE GROUNDWATER WOULD BE REINJECTED THROUGH WELLS LOCATED ON-SITE. THE RESTORATION TIME FRAME WOULD THEREBY BE SIGNIFICANTLY REDUCED AS A RESULT OF CONCURRENT SOURCE TREATMENT. THIS IS EPA'S PREFERRED ALTERNATIVE FOR TREATING THE CONTAMINANT MIGRATION.

SOURCE CONTROL ALTERNATIVES

ALTERNATIVE 3: SOURCE CONTROL -- NO ACTION

CAPITAL COST:	$73,200
ANNUAL O&M:	$14,100
PERIODIC O&M (EVERY 5 YEARS):	$14,600
CONSTRUCTION TO COMPLETION OF CLEANUP:	90 DAYS

IMPLEMENTATION OF THIS ALTERNATIVE WOULD BE ACHIEVED BY INCORPORATING MONITORING AND LAND USE/DEED RESTRICTIONS ON THE SITE. THE ELEMENTS NECESSARY FOR ITS IMPLEMENTATION ARE: INSTALLING MONITORING WELLS; OBTAINING LAND USE AND DEED RESTRICTIONS; SAMPLING OF GROUNDWATER FROM MONITORING WELLS PERIODICALLY; SAMPLING SUBSURFACE SOILS PERIODICALLY; PATCHING AND SEALING OF ASPHALT PAVEMENT ABOVE THE SOURCE AREAS; AND REVIEWING THE SITE CONDITIONS AFTER FIVE YEARS.

ALTERNATIVE 4A: SOURCE REMOVAL AND OFF-SITE DISPOSAL

CAPITAL COST:	$520,200
ANNUAL O&M:	0
CONSTRUCTION TO COMPLETION OF CLEANUP	30 DAYS

THIS ALTERNATIVE WOULD INVOLVE THE EXCAVATION AND OFF-SITE DISPOSAL OF THE CONTAMINATED SOIL PRESENT AT THE FORMER LEACHING POOL AND UNDERGROUND STORAGE TANK AREAS. APPROXIMATELY 1,250 CUBIC YARDS OF SOIL CONTAMINATED WITH VOLATILE AND SEMI-VOLATILE ORGANICS WOULD BE EXCAVATED AND TRANSPORTED TO AN OFF-SITE. FEDERALLY APPROVED LANDFILL FOR DISPOSAL.

PRIOR TO EXCAVATION OF THE CONTAMINATED SOIL, THE EXISTING PAVEMENT WOULD BE REMOVED, LOADED INTO COVERED

TRUCKS AND TRANSPORTED TO A DEBRIS LANDFILL FOR DISPOSAL. IF NECESSARY, THE PAVEMENT WOULD BE DECONTAMINATED BEFORE BEING TRANSPORTED OFF-SITE OR TRANSPORTED TO AN OFF-SITE FEDERALLY APPROVED LANDFILL.

IF THIS REMEDY CAN BE IMPLEMENTED PRIOR TO NOVEMBER 1990, WHEN THE NEW LAND BAND REGULATIONS GO INTO EFFECT, NO TREATMENT OF THE SOIL WILL BE REQUIRED PRIOR TO DISPOSAL. HOWEVER, AFTER THAT DATE, THE TREATMENT OF SOIL WOULD BE REQUIRED BEFORE DISPOSAL.

ALTERNATIVE 4B: SOURCE REMOVAL AND OFF-SITE INCINERATION

CAPITAL COST:	$2,036,500
ANNUAL O&M:	0
CONSTRUCTION TO COMPLETION OF CLEANUP:	30 DAYS

THIS ALTERNATIVE WOULD INVOLVE THE EXCAVATION OF CONTAMINATED SOIL DESCRIBED IN ALTERNATIVE 4A. ONCE THE CONTAMINATED SOIL IS EXCAVATED, IT WOULD BE PLACED IN FIBER DRUMS. EACH FIBER DRUM WOULD BE FILLED WITH APPROXIMATELY 300 POUNDS OF CONTAMINATED SOIL. THE DRUMS WOULD BE LOADED ONTO TRUCKS AND TRANSPORTED TO AN OFF-SITE INCINERATOR. TO DETERMINE COSTS, EPA ASSUMED THAT AN INCINERATOR IN BRIDGEPORT, LOGAN TOWNSHIP, NEW JERSEY WOULD BE USED. THE EXCAVATED AREAS WOULD BE BACKFILLED WITH CLEAN SOIL.

ALTERNATIVE 5: LOW TEMPERATURE SOIL STRIPPING

CAPITAL COST:	$629,800
ANNUAL O&M:	$14,000
PERIODIC O&M:	$14,000
CONSTRUCTION TO COMPLETION OF CLEANUP:	70 DAYS

CONTAMINATED SOIL WOULD BE EXCAVATED AS DESCRIBED IN ALTERNATIVES 4A AND 4B. IT WOULD THEN BE STOCKPILED IN AN AREA ADJACENT TO THE TREATMENT UNIT WHERE IT WOULD BE FED INTO A SCREEN TO REMOVE OVERSIZED (GREATER THAN A 2 INCH DIAMETER) MATERIAL AND DEBRIS. THE SCREENED MATERIAL WOULD BE TRANSPORTED TO USE ON-SITE AS BACKFILL. THE VAPORIZED CONTAMINANTS COULD EITHER BE DESTROYED THROUGH A SECONDARY HIGH-TEMPERATURE COMBUSTER OR COLLECTED THROUGH CONDENSATE OR ADSORBED ONTO ACTIVATED CARBON. STACK EMISSIONS WOULD BE MONITORED TO VERIFY COMPLIANCE WITH FEDERAL AND STATE REGULATIONS, INCLUDING THOSE FOR VOLATILE ORGANIC COMPOUNDS (VOCS), HYDROGEN CHLORIDE (HCL), CARBON MONOXIDE (CO) AND PARTICULATES. PRIOR TO BACKFILLING THE TREATED SOIL, THE SOIL WOULD BE TESTED USING THE TOXIC CHARACTERISTIC LEACHING PROCEDURE (TCLP) TO ENSURE THAT LAND DISPOSAL LEVELS ARE ACHIEVED. AT THIS POINT IN TIME IT CANNOT BE DETERMINED WHETHER THESE LEVELS CAN BE ACHIEVED. IF LEVELS CANNOT BE ACHIEVED, A TREATABILITY VARIANCE MAY BE REQUIRED. UNLESS THE MATERIAL IS DELISTED (I.E. CERTIFIED AS NON-HAZARDOUS), THE MATERIAL WOULD HAVE TO BE COVERED IN ACCORDANCE WITH FEDERAL LANDFILL CLOSURE REQUIREMENTS. MONITORING WOULD ALSO BE REQUIRED.

ALTERNATIVE 6: IN-SITU STEAM STRIPPING

CAPITAL COST:	$386,800
ANNUAL O&M:	0
CONSTRUCTION TO COMPLETION OF CLEANUP	150 DAYS

A TYPICAL IN SITU STEAM STRIPPING SYSTEM WOULD INVOLVE THE INTRODUCTION OF STEAM INTO THE CONTAMINATED SOILS, FOLLOWED BY AIR AND VAPOR EXTRACTION USING VACUUM PUMPS. IN ORDER TO COMPLY WITH AIR EMISSION REQUIREMENTS, AN ABOVEGROUND VAPOR PHASE TREATMENT UNIT WOULD BE REQUIRED TO REMOVE ORGANICS FROM THE OFF GASES. SPENT CARBON FROM THE TREATMENT UNIT WOULD BE TREATED AND DISPOSED AS HAZARDOUS WASTE. DUE TO THE CLOSE PROXIMITY OF THE TWO ON-SITE SOURCES (UNDERGROUND STORAGE TANKS AND LEACHING POOL AREA), ONE COMMON ABOVEGROUND INJECTION SYSTEM, EXTRACTION SYSTEM, AND VAPOR PHASE SEPARATION SYSTEM WOULD BE USED. AFTER ORGANIC EMISSION RATES HAVE DECREASED TO NEGLIGIBLE LEVELS, SOIL SAMPLES WOULD BE COLLECTED TO CONFIRM THAT SOIL CONTAMINANT-SPECIFIC ACTION LEVELS ARE ACHIEVED. UPON COMPLETION OF THE IN-SITU STEAM TRIPPING OPERATIONS, ALL EQUIPMENT WOULD BE DECONTAMINATED AND REMOVED FROM THE SITE. WASTES GENERATED DURING DECONTAMINATION WOULD BE COLLECTED AND TRANSPORTED TO A LICENSED FACILITY FOR TREATMENT AND DISPOSAL.

THE SOIL CONDITIONS AT THE SMS SITE (HOMOGENEOUS, HAVE A HIGH POROSITY, AND CLAY LENSES ARE ABSENT) ARE

IDEALLY SUITED FOR STEAM STRIPPING. A STUDY AT A SUPERFUND SITE IN SAN JOSE, CALIFORNIA CONDUCTED BY THE UNIVERSITY OF CALIFORNIA AT BERKELEY, SHOWED THAT THE ORGANICS IN SOIL WERE REDUCED BY AS MUCH AS 99.3% AND AT A RATE FORTY TIMES FASTER THAN AIR STRIPPING. EPA WOULD CONDUCT A VOLATILIZATION PILOT STUDY BEFORE THE ACTUAL REMEDIATION. IF ANY DIFFICULTIES ARE ENCOUNTERED IMPLEMENTING THIS ALTERNATIVE, THE SAME EQUIPMENT CAN BE USED TO TREAT THE SOIL WITH AIR ONLY. THE LATTER PROCESS IS A PROVEN TECHNOLOGY AND HAS BEEN USED SUCCESSFULLY DURING ACTUAL REMEDIATION. THIS IS EPA'S PREFERRED ALTERNATIVE FOR SOURCE CONTROL.

EVALUATION OF ALTERNATIVES

EPA'S SELECTION FOR REMEDIATION AT THE SMS INSTRUMENTS SITE IS BASED ON THE REQUIREMENTS OF CERCLA, WHICH PROVIDES THAT A SELECTED SITE REMEDY BE PROTECTIVE OF HUMAN HEALTH AND OF THE ENVIRONMENT, COST EFFECTIVE, AND IN ACCORDANCE WITH OTHER STATUTORY REQUIREMENTS.

EPA POLICY ALSO EMPHASIZES PERMANENT SOLUTIONS INCORPORATING ON-SITE REMEDIATION OF HAZARDOUS WASTE CONTAMINATION WHENEVER POSSIBLE.

EPA'S FINAL DECISION ON THE REMEDIAL ALTERNATIVE IS DOCUMENTED IN THE RECORD OF DECISION (ROD). THE PUBLIC WILL BE KEPT INFORMED OF THE ROD THROUGH A PRESS RELEASE AND FACT SHEET THAT WILL BE DISTRIBUTED TO RECIPIENTS ON THE CURRENT MAILING LIST. THE FACT SHEET WILL ALSO BE PLACED WITH A COPY OF THE ROD AT THE INFORMATION REPOSITORIES DEVELOPED FOR THE SITE. THE INFORMATION REPOSITORIES ARE DOCUMENTED IN APPENDIX C.

II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

THERE WAS HIGH PUBLIC CONCERN REGARDING THE SMS INSTRUMENTS SITE IN 1984 WHEN THE SITE WAS FIRST NOMINATED BY THE STATE OF NEW YORK FOR INCLUSION ON THE NATIONAL PRIORITIES LIST (NPL). ABOUT THE SAME TIME, THE NEW YORK CITIZEN ACTION NETWORK (NYCAN) BEGAN CANVASSING IN DEER PARK FOR FUNDS. THE DEER PARK COMMUNITY ACTION NETWORK, AN ORGANIZATION ASSOCIATED WITH NYCAN, SPONSORED SEVERAL MEETINGS. IN THE SUMMER OF 1984 A "COMMUNITY HEALTH FORUM" WAS HELD AND APPROXIMATELY 120 CITIZENS ATTENDED.

COMMUNITY INTEREST DECLINED FROM THE SUMMER OF 1984 TO THE PRESENT. ACCORDING TO LOCAL OFFICIALS AND RESIDENTS WHO WERE INTERVIEWED, THE MAJOR REASON FOR THE REDUCED LEVEL OF COMMUNITY CONCERN WAS THE ANNOUNCEMENT THAT EPA HAD OFFICIALLY DESIGNATED THE SITE AS A FEDERAL SUPERFUND SITE AND THAT A CLEANUP WOULD BE CONDUCTED.

LEVELS OF PUBLIC CONCERN HAVE RECENTLY RISEN DUE TO CONCERNS ABOUT THE EFFECTIVENESS OF THE PREFERRED ALTERNATIVES RECOMMENDED BY EPA FOR CLEANUP OF THE SMS INSTRUMENTS SITE. THE PRIMARY CONCERNS OF RESIDENTS AND LOCAL OFFICIALS AS CITED IN THE COMMUNITY RELATIONS PLAN ARE AS FOLLOWS:

- THERE IS A GENERAL CONCERN ABOUT PROTECTING GROUNDWATER RESOURCES AND THE POTENTIAL FOR REGIONAL GROUNDWATER CONTAMINATION.
- RESIDENTS ARE CONCERNED ABOUT THE LENGTH OF TIME FROM THE INITIAL SITE DISCOVERY TO THE COMPLETION OF THE FINAL REMEDY AT THE SMS INSTRUMENTS SITE.
- BUSINESSES SURROUNDING THE SITE ARE CONCERNED WITH THE POTENTIAL DISRUPTION OF DAILY BUSINESS ACTIVITIES DURING REMEDIATION OF THE SITE.
- OFFICIALS, CIVIC LEADERS, AND RESIDENTS STATED THAT THEY WOULD LIKE EPA TO INFORM THEM OF ALL EPA MEETINGS AND SITE ACTIVITIES.
- LOCAL OFFICIALS RAISED CONCERNS ABOUT THE POTENTIAL NEGATIVE EFFECTS ON PROPERTY VALUES.

III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS

ORAL COMMENTS RAISED DURING THE AUGUST 10, 1989 PUBLIC MEETING AND COMMENTS RECEIVED DURING THE PUBLIC

COMMENT PERIOD FOR THE SMS INSTRUMENTS SITE REMEDIATION ARE SUMMARIZED BELOW. THE PUBLIC COMMENT PERIOD WAS HELD FROM JULY 10, 1989 THROUGH AUGUST 10, 1989. COMMENTS RECEIVED DURING THIS TIME WERE ORGANIZED INTO ISSUES; AND HEALTH RISK ASSESSMENTS.

TECHNICAL QUESTIONS AND/OR CONCERNS RAISED AT AUGUST 2, 1989 PUBLIC MEETING

COMMENT: ONE RESIDENT WAS INTERESTED IN THE PROCESS EPA USED TO DETERMINE THE EFFECTS THE REINJECTION SYSTEM WOULD HAVE ON THE RECHARGE BASIN AND IF THE REINJECTION SYSTEM WAS IMPLEMENTED, WOULD THERE BE ANY DETRIMENTAL EFFECTS ON THE RECHARGE BASIN.

EPA'S RESPONSE: EPA REPLIED THAT GROUNDWATER MODELING WAS USED TO DETERMINE THE EFFECTS OF THE REINJECTION SYSTEM. EPA ALSO STATED THAT GROUNDWATER MODELING INDICATED THAT THE REINJECTION SYSTEM WOULD NOT HAVE DETRIMENTAL EFFECTS ON THE RECHARGE BASIN. THE LOCATION OF THE WELLS WOULD BE FAR ENOUGH AWAY THAT WHEN THE BASIN IS RECHARGING, WHICH IT NORMALLY DOES, THERE WOULD BE ENOUGH FORCE TO DRIVE THE NEWLY INJECTED WATER PAST THE RECHARGE BASIN. IN ADDITION, EPA WOULD CONDUCT FURTHER TESTS DURING THE REMEDIAL DESIGN PHASE TO DELINEATE GROUNDWATER FLOW CHARACTERISTICS. THIS INFORMATION WOULD BE USED TO DEFINE EPA'S PRESENT CHOICE FOR THE LOCATION OF THE EXTRACTION WELLS, REINJECTION WELLS AND/OR THE SIZE OF THE AIR STRIPPER.

COMMENT: ONE RESIDENT WANTED TO KNOW THE SIZE OF THE REINJECTION WELLS.

EPA'S RESPONSE: EPA STATED THAT DETAILS OF THE REMEDY WOULD BE FINALIZED DURING REMEDIAL DESIGN BUT CURRENT PLANS CALL FOR REINJECTION WELLS TO BE SIX INCHES IN DIAMETER. THE WELLS WOULD BE SCREENED AT 20-30 FEET BELOW THE WATER TABLE.

COMMENT: SEVERAL RESIDENTS INQUIRED WHETHER THE WATER WOULD BE TESTED FOR CONTAMINANTS PRIOR TO REINJECTION.

EPA'S RESPONSE: EPA STATED THAT THE WATER WOULD BE MONITORED PRIOR TO REINJECTION. THE TREATED GROUNDWATER WOULD ONLY BE REINJECTED IF MONITORING RESULTS MET CLEANUP STANDARDS.

COMMENT: A RESIDENT NOTED THAT EPA HAD STATED THERE WERE A NUMBER OF VOLATILE AND SEMI-VOLATILE CONTAMINANTS IN THE SOIL AND GROUNDWATER. THE RESIDENT ASKED IF EPA ALSO FOUND INORGANICS SUCH AS METALS IN THE SOIL AND/OR GROUNDWATER.

EPA'S RESPONSE: EPA RESPONDED THAT IT FOUND LEVELS OF CHROMIUM AND LEAD IN ON-SITE SOILS AND IN GROUNDWATER. THE REPRESENTATIVE VALUES FOR THE CONCENTRATION LEVELS OF CHROMIUM AND LEAD DETECTED IN THE GROUNDWATER ON-SITE WERE 23 AND 33.0 MICROGRAMS/LITER, RESPECTIVELY CONCENTRATIONS OF THESE CHEMICALS IN THE EXTRACTED GROUNDWATER ARE NOT EXPECTED TO EXCEED ARARS. SIMILAR CONCENTRATIONS OF THESE METALS WERE FOUND BOTH DOWNGRADIENT AND UPGRADIENT OF THE SITE. THIS INDICATED, THERE WAS NOT A "HOT-SPOT" OF THE METALS ON THE SMS INSTRUMENTS SITE.

COMMENT: ONE RESIDENT WANTED TO KNOW WHAT METHOD EPA PROPOSED TO FILTER METALS SUCH AS IRON FROM THE GROUNDWATER AT THE SITE.

EPA'S RESPONSE: EPA STATED THAT A MULTI-MEDIA FILTRATION PROCESS WOULD REMOVE THE IRON FROM THE GROUNDWATER TO MEET THE ACTION SPECIFIC ARAR LEVELS.

COMMENT: ONE RESIDENT ASKED WHY EPA PREFERS THE IN-SITU STEAM STRIPPING ALTERNATIVE FOR SOIL REMEDIATION.

EPA'S RESPONSE: EPA INDICATED THAT, BECAUSE OF THE SANDY NATURE OF THE SOIL, STEAM STRIPPING WOULD BE AN INNOVATIVE, EFFECTIVE TECHNOLOGY, PERMITTING RAPID, EFFECTIVE TRANSMISSION OF THE STREAM THROUGH THE SOIL. IF THE SOILS CONTAINED A LOT OF CLAYS OR FINER SILTS, THIS METHOD MIGHT NOT BE EFFECTIVE.

COMMENT: A CITIZEN INQUIRED WHETHER THE IN-SITU STEAM STRIPPING METHOD FOR SOIL REMEDIATION HAS EVER BEEN USED BEFORE.

EPA REPLIED IN-SITU AIR STRIPPING HAS BEEN SUCCESSFUL AT SUPERFUND SITES. STEAM STRIPPING IS AN INNOVATIVE VARIATION OF A TECHNOLOGY THAT HAS BEEN TESTED AT THE UNIVERSITY OF CALIFORNIA AT BERKELEY. THE TEST RESULTS

SHOWED STEAM STRIPPING COULD BE COMPLETED FORTY TIMES FASTER THAN AIR STRIPPING GIVEN THE SOIL CONDITIONS AT THE SITE.

COMMENT: SEVERAL RESIDENTS WERE CONCERNED THAT THE STEAM STRIPPING ALTERNATIVE WAS SELECTED BECAUSE IT IS ONE OF THE LESS EXPENSIVE ALTERNATIVES PRESENTED BY EPA.

EPA'S RESPONSE: EPA AGREED THAT THIS ALTERNATIVE WAS ONE OF THE LEAST EXPENSIVE ALTERNATIVES IT PRESENTED. HOWEVER, EPA RESPONDED BY ASSURING RESIDENTS THAT THE ALTERNATIVE WOULD BE PROTECTIVE OF PUBLIC HEALTH AND THE ENVIRONMENT AND WOULD PROVIDE THE BEST BALANCE OF THE NINE SUPERFUND CRITERIA EVALUATED TO SELECT A REMEDIAL ALTERNATIVE. THIS IS CONSISTENT WITH STATUTORY REQUIREMENTS OF CERCLA FOR UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE.

THE NINE CRITERIA USED TO EVALUATE REMEDIAL ALTERNATIVES INCLUDE OVERALL PROTECTION OF HUMAN HEALTH AND ENVIRONMENT; COMPLIANCE WITH ARARS; LONG-TERM EFFECTIVENESS; SUBSTANTIAL REDUCTION OF TOXICITY, MOBILITY, OR VOLUME OF CONTAMINANTS; SHORT-TERM EFFECTIVENESS; IMPLEMENTABILITY; COST; STATE ACCEPTANCE; AND COMMUNITY ACCEPTANCE. A DISCUSSION OF THESE CRITERIA IS DOCUMENTED IN THE FEASIBILITY STUDY REPORT AND THE ROD, WHICH CAN BE REVIEWED AT THE INFORMATION REPOSITORIES. THE LOCATION OF THE INFORMATION REPOSITORIES IS LISTED IN APPENDIX C.

COST/FUNDING ISSUES

COMMENT: A RESIDENT ASKED WHO IS GOING TO PAY FOR THE CLEANUP.

EPA'S RESPONSE: IN GENERAL, EPA REPLIED WHERE VIABLE PRP'S EXIST, THEY ARE OFFERED THE OPTION OF PAYING FOR THE CLEANUP AND/OR MAY BE REQUIRED TO PERFORM THE CLEANUP. EPA HAS USED FEDERAL SUPERFUND MONIES FOR THE RI/FS AT THE SMS INSTRUMENTS SITE. IN THE EVENT THAT THE PRP HERE DOES NOT PERFORM OR FUND THE SELECTED REMEDY, EPA WILL PAY 90% OF THE COST AND THE STATE FOR COST RECOVERY.

COMMENT: ONE RESIDENT WANTED TO KNOW IF THE PRP WAS PAYING FOR THE CLEANUP, WOULD EPA HAVE CHOSEN ANOTHER, MORE EXPENSIVE ALTERNATIVE.

EPA'S RESPONSE: EPA RESPONDED THAT THE PREFERRED ALTERNATIVES WERE BASED ON NINE CRITERIA EPA USES FOR SELECTING REMEDIAL ALTERNATIVES FOR ALL SUPERFUND SITES AND THAT THE REMEDY SELECTION WOULD NOT BE DIFFERENT.

COMMENT: ONE RESIDENT INQUIRED WHETHER THE PRP WILL EVENTUALLY HAVE TO PAY FOR DAMAGES AT THE SITE.

EPA'S RESPONSE: EPA STATED THAT, THROUGH ADMINISTRATIVE AND/OR LEGAL ACTIONS, EPA MAY ATTEMPT TO RECOVER THE COSTS OF BOTH THE STUDY AND THE CLEANUP FROM THE POTENTIALLY RESPONSIBLE PARTY (PRP).

COMMENT: A CITIZEN ASKED EPA WHAT THE ESTIMATED COST IS FOR THE SITE CLEANUP.

EPA'S RESPONSE: EPA ESTIMATES THAT, AT THIS TIME, REMEDIATION WOULD COST 1.1 MILLION DOLLARS.

HEALTH/RISK ASSESSMENT

COMMENT: SEVERAL RESIDENTS WERE CONCERNED WHETHER PRIVATE WELLS WERE AFFECTED BY THE CONTAMINATION AND TO WHAT EXTENT PRIVATE WELL WATER COULD BE USED.

EPA'S RESPONSE: EPA RESPONDED THAT PRIVATE WELL OWNERS 1/2 MILE SOUTH OF THE SITE SHOULD BE AWARE THAT THEIR WELLS ARE WITHIN THE AREAS OF CONCERN. PRIVATE WELLS DRAWING WATER FROM THE UPPER GLACIAL AQUIFER, 30-50 FEET DEEP, WHICH ARE NOT GENERALLY USED FOR DRINKING WATER, ARE LIKELY TO BE CONTAMINATED. EPA ALSO STATED THAT PRIVATE WELLS WITHIN 1/2 MILE DOWNGRADIENT OF THE SITE ARE NOT CONSIDERED POTABLE WATER SOURCES. ACCORDING TO THE DEPARTMENT OF HEALTH, ALL RESIDENTS AND BUSINESSES IN THE VICINITY OF THE SITE ARE SERVED BY PUBLIC WATER. IF RESIDENTS CHOOSE TO MAINTAIN PRIVATE WELLS, THEY SHOULD DO SO FOR IRRIGATION PURPOSES AND NOT AS A SOURCE OF DRINKING WATER.

COMMENT: A CITIZEN INQUIRED WHETHER THE AIR EMISSIONS LEVELS WILL BE WITHIN CURRENT STATE AND FEDERAL

REGULATORY STANDARDS USING THE IN-SITU STEAM STRIPPING METHOD.

EPA'S RESPONSE: EPA STATED THAT IN ORDER TO COMPLY WITH AIR EMISSION REQUIREMENTS, AN ABOVE GROUND VAPOR-PHASE TREATMENT UNIT WOULD BE USED TO REMOVE ORGANICS FROM THE EMISSIONS. SPENT CARBON WOULD BE TREATED AND DISPOSED OF AN APPROVED HAZARDOUS WASTE FACILITY.

IV. REMAINING CONCERNS

CITIZENS AND LOCAL OFFICIALS REMAIN CONCERNED ABOUT THE INNOVATIVE ASPECTS OF THE IN-SITU STEAM STRIPPING TECHNOLOGY. THE CITIZENS' GREATEST CONCERN WAS THE POSSIBILITY OF UNEXPECTED PROBLEMS ASSOCIATED WITH THIS METHOD AND STRESSED THEIR CONCERN THAT IT COULD CAUSE EXTENSIVE DELAYS IN SITE REMEDIATION.

COMMENT: A CONCERNED CITIZEN ASKED IF THE STEAM STRIPPING ALTERNATIVE PROVES UNSUCCESSFUL, DOES EPA HAVE AN ALTERNATE REMEDIATION PLAN TO AVOID FURTHER CLEANUP DELAYS.

EPA'S RESPONSE: INNOVATIVE AIR STRIPPING HAS PROVEN SUCCESSFUL ON SUPERFUND SITES. THEREFORE, EPA DOES NOT EXPECT STEAM STRIPPING TO BE UNSUCCESSFUL. IN THE EVENT THAT STEAM STRIPPING IS UNSUCCESSFUL, STRIPPING OF THE SOIL WITH AIR COULD BE PERFORMED WITH THE SAME EQUIPMENT. SINCE THE RESIDENTS WERE CONCERNED WITH POTENTIAL PROBLEMS WITH BOTH AIR AND STEAM STRIPPING, EPA HAS DECIDED TO INCORPORATE A CONTINGENCY PLAN INTO THE REMEDY SELECTIONS. EPA HAS SELECTED ALTERNATIVE 4B (SOURCE REMOVAL AND OFF-SITE INCINERATION) AS A CONTINGENCY REMEDY. THIS CONTINGENCY REMEDY WOULD ELIMINATE ANY UNNECESSARY DELAYS IN THE REMEDIATION AT THE SMS INSTRUMENTS SITE AND WOULD STILL ACHIEVE REMEDIATION OF THE SOILS.

V. WRITTEN COMMENTS RECEIVED BY EPA AND EPA RESPONSES TO THESE COMMENTS.

THIS SECTION CONTAINS THE WRITTEN LETTERS RECEIVED BY EPA DURING THE PUBLIC COMMENT PERIOD, AND EPA'S WRITTEN RESPONSES TO THESE COMMENTS.

2. WRITTEN COMMENTS RECEIVED BY EPA

THE OFFICE OF REGIONAL COUNSEL AND THE EMERGENCY AND REMEDIAL RESPONSE DIVISION HAVE REVIEWED COMMENTS RECEIVED FROM MR. GLUCKSTERN'S DATED AUGUST 11, 1989 AND SEPTEMBER 5, 1989 (LETTERS ATTACHED). IT SHOULD BE NOTED THAT BOTH SETS OF COMMENTS WERE REVEIVED AFTER THE AUGUST 10, 1989 CLOSING DATE FOR PUBLIC COMMENT MR. GLUCKSTERN DID, HOWEVER, RECEIVE A FOUR DAY EXTENSION FROM EPA TO RESPOND. THEREFORE, ONLY THE SECOND SET OF COMMENTS WERE LATE.

A. RESPONSE TO AUGUST 11, 1989 GLUCKSTERN LETTER

RESPONSE TO COMMENT 3.A.

THIS COMMENT SUGGESTS THAT EPA'S IMPLEMENTION OF THE SELECTED REMEDY WILL NOT MEET THE REQUIREMENTS OF SECTION 121(B)(1) OF THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980, AS AMENDED ("CERCLA"), 42 USC$9621 (B)(1) AND THAT COSTS INCURRED BY EPA ARE THEREFORE NOT RECOVERABLE. SECTION 9621(B)(1) REQUIRES THAT REMEDIAL ACTIONS IN WHICH TREATMENT WHICH PERMANENTLY AND SIGNIFICANTLY REDUCES THE VOLUME, TOXICITY OR MOBILITY OF THE HAZARDOUS SUBSTANCES, POLLUTANTS AND CONTAMINANTS IS A PRINCIPAL ELEMENT, ARE TO BE PREFERRED OVER REMEDIAL ACTIONS NOT INVOLVING SUCH TREATMENT. THIS SECTION ALSO REQUIRES EPA TO ASSESS ALTERNATIVE TREATMENT TECHNOLOGIES AND SELECT A COST EFFECTIVE REMEDY THAT IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT.

EPA MAINTAINS THAT THE REMEDY SELECTED, AND THE CONTINGENCY REMEDY EMPLOY TREATMENT THAT PERMANENTLY AND SIGNIFICANTLY REDUCES THE VOLUME, TOXICITY, OR MOBILITY OF THE HAZARDOUS SUBSTANCES AS ITS PRINCIPAL ELEMENT. THE VOLUME AND TOXICITY OF HAZARDOUS SUBSTANCES AT THE SITE WILL BE REDUCED BY IN SITU STEAM STRIPPING OF CONTAMINATED SOILS AND GROUNDWATER EXTRACTION, TREATMENT AND REINJECTION. VOLATILE ORGANIC COMPOUNDS ("VOCS") WILL BE REMOVED TO AN AVERAGE LEVEL OF 10 PPB, A REDUCTION OF MORE THAN 99% OF CONTAMINANT LEVELS IN THE SOIL. THE GROUNDWATER WILL BE REMEDIATED TO MEET FEDERAL OR STATE DRINKING WATER LEVELS, EXCEPT IN THOSE CASES WHERE UPGRADIENT CONCENTRATIONS ARE ABOVE SUCH STANDARDS. IN SUCH A CASE, THE CONTAMINANTS WILL BE REDUCED TO UPGRADIENT LEVELS SO AS TO ELIMINATE ANY SIGNIFICANT CONTRIBUTION FROM THE SMS SITE.

THE SELECTED REMEDY, AS WELL AS THE CONTINGENCY REMEDY, REPRESENT THE MAXIMUM EXTENT TO WHICH PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES CAN BE USED IN A COST-EFFECTIVE MANNER FOR THE SMS SITE. IN SITU STEAM STRIPPING AND HOT AIR SOIL STRIPPING ARE INNOVATIVE TECHNOLOGIES. BOTH ARE COST EFFECTIVE WHEN COMPARED TO OTHER PERMANENT TREATMENT ALTERNATIVES. BASED ON THE ROD AND THE ABOVE EXPLANATION, EPA MAINTAINS THAT THE REQUIREMENTS OF SS 9621(B)(1) ARE SATISFIED AND THAT EPA COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENT 3,B.

THIS COMMENT SUGGESTS THAT EPA'S IMPLEMENTION OF THE SELECTED REMEDY DOES NOT COMPLY WITH SECTION 121(D)(1) OF CERCLA, IS INCONSISTENT WITH THIS SECTION AND THAT COSTS INCURRED BY EPA ARE THEREFORE NOT RECOVERABLE. SECTION 121(D)(1) REQUIRES THAT THE REMEDIAL ACTION SELECTED BY EPA ATTAIN A DEGREE OF CLEANUP OF HAZARDOUS SUBSTANCES, POLLUTANTS AND CONTAMINANTS RELEASED INTO THE ENVIRONMENT AND OF CONTROL OF FURTHER RELEASE AT A MINIMUM WHICH ASSURES PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT. THIS SECTION ALSO REQUIRES SUCH REMEDIAL ACTIONS BE RELEVANT AND APPROPRIATE UNDER THE CIRCUMSTANCES PRESENTED BY THE RELEASE OR THREATENED RELEASE.

THE SELECTED REMEDY AND THE CONTINGENCY REMEDY OUTLINED IN THE ROD ELIMINATE ALL OUTSTANDING THREATS POSED TO THE GROUNDWATER BY THE ON-SITE CONTAMINATED SOILS. BOTH REMEDIES REDUCE CONTAMINATION OF ON-SITE MATERIALS TO HEALTH BASED LEVELS EXCEPT IN THOSE CASES WHERE UPGRADIENT CONCENTRATIONS EXCEED THOSE LEVELS. THE REMEDY FOR THE SECOND OPERABLE UNIT WILL IDENTIFY AND ADDRESS ANY UPGRADIENT CONTAMINATION.

BASED ON THE ROD AND THE REST OF THE ADMINISTRATIVE RECORD, EPA MAINTAINS THAT THE REQUIREMENTS OF SS 9621(D)(1) ARE SATISFIED AND THAT EPA COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENT 3.C.

THIS COMMENT SUGGESTS THAT EPA'S IMPLEMENTION OF THE SELECTED REMEDY WILL NOT COMPLY WITH SECTION 9621(D) OF CERCLA AND IS INCONSISTENT WITH THIS SECTION AND THAT COSTS INCURRED BY EPA ARE THEREFORE NOT RECOVERABLE. SECTION 9621(D) REQUIRES THAT EPA CONSIDER THE DESIGNATED OR POTENTIAL USE OF THE SURFACE OR GROUNDWATER, THE ENVIRONMENTAL MEDIA AFFECTED, THE PURPOSES FOR WHICH SUCH CRITERIA WERE DEVELOPED AND THE LATEST INFORMATION WHEN DECIDING WHETHER OR NOT WATER QUALITY CRITERIA UNDER THE CLEAN WATER ACT ARE RELEVANT AND APPROPRIATE UNDER THE CIRCUMSTANCES OF THE RELEASE OR THREATENED RELEASE. THIS SECTION ALSO OUTLINES CRITERIA FOR ESTABLISHING ALTERNATE CONCENTRATION LIMITS TO THOSE OTHERWISE APPLICABLE FOR HAZARDOUS CONSTITUENTS.

THE SPECIFIC REMEDIAL ACTION OBJECTIVES FOR THIS SITE INCLUDE THE RESTORATION OF GROUNDWATER QUALITY TO ITS INTENDED USE AS A POTENTIAL SOURCE OF DRINKING WATER BY REDUCING CONTAMINANT LEVELS BELOW STATE AND FEDERAL DRINKING WATER STANDARDS WHERE POSSIBLE. IN THE CASE WHERE UPGRADIENT CONTRIBUTIONS PROHIBIT SUCH RESTORATION FOR A PATICULAR COMPOUND, THE CONTAMINENT LEVEL WILL BE REDUCED TO THE UPGRADIENT LEVEL. NONE OF THE RESIDENTS IN THE VICINITY OF THE SITE RELY ON PRIVATE WELLS FOR POTABLE WATER. THE NEAREST PUBLIC WELL IS LOCATED APPROXIMATELY ONE MILE SOUTHWEST AND DOWNGRADIENT FROM THE SITE. SINCE THE SITE IS LOCATED OVER A DEEP RECHARGE ZONE, THERE IS THE POTENTIAL FOR CROSS-CONTAMINATION OF THE MAGOTHY AQUIFER, WHICH IS THE PRIMARY SOURCE OF DRINKING WATER FOR THIS AREA. THE POSSIBILITY OF CONTAMINATING THE RECHARGE BASIN AND DRIVING THE CONTAMINANTS INTO THE MAGOTHY AQUIFER WILL BE PREVENTED BY PLACING THE REINJECTION WELLS INTO A RELATIVELY CLEAN UPPER AQUIFER AND INSTALLING SEVERAL REINJECTION WELLS, SO THAT THE TREATED WATER WILL BE DISTRIBUTED OVER A LARGER AREA. THIS WILL ELIMINATE THE EXCESSIVE RE-INJECTION FLOW AND WILL ALSO PREVENT THE CREATION OF A DOWNWARD GRADIENT.

BASED ON THE ROD AND THE ABOVE EXPLANATION, EPA MAINTAINS THAT THE REQUIREMENTS OF SS 9621(D)(2)(B) HAVE BEEN CONSIDERED AND THAT COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENT 3.D.

THIS COMMENT SUGGESTS THAT EPA'S IMPLEMENTION OF THE SELECTED REMEDY FAILS TO CONSIDER AND IMPLEMENT SECTION

121(D)(4)(E) OF CERCLA AND THAT COSTS INCURRED BY EPA ARE THEREFORE NOT RECOVERABLE. SECTION 121(D)(4)(E) ENABLES EPA TO SELECT A REMEDIAL ACTION THAT DOES NOT ATTAIN A STATE STANDARD WHERE THE STATE HAS NOT CONSISTENTLY APPLIED THE STANDARD. THE BASIS FOR THIS COMMENT IS UNCLEAR. THE COMMENTER DID NOT IDENTIFY ANY PARTICULAR STATE STANDARD WHICH IT BELIEVES EPA IS APPLYING OR NOT APPLYING HERE BUT WHICH NEW YORK STATE HAS NOT CONSISTENTLY APPLIED. THE SELECTED REMEDIAL ACTION AND THE CONTINGENCY REMEDY, WHEN COMPLETE, WILL MEET ARARS AS SPECIFIED IN THE ROD. EPA MAINTAINS THAT THE REQUIREMENTS OF SS 121(D) ARE BEING COMPLIED WITH HERE AND THAT EPA COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENT- 3.E.

THIS COMMENT SUGGESTS THAT EPA'S IMPLEMENTION OF THE SELECTED REMEDY FAILS TO CONSIDER AND IMPLEMENT SECTION 9621(D)(4)(F) OF CERCLA AND THAT COSTS INCURRED BY EPA ARE THEREFORE NOT RECOVERABLE. SECTION 121(D)(4)(F) ENABLES EPA TO SELECT A REMEDIAL ACTION THAT DOES NOT ATTAIN ARARS WHERE THE REMEDIAL ACTION IS TO BE PAID FOR BY THE HAZARDOUS SUBSTANCE SUPERFUND (THE "FUND") AND THE SELECTION OF A REMEDIAL ACTION THAT ATTAINS ARARS WILL NOT PROVIDE A BALANCE BETWEEN THE NEED TO PROTECT PUBLIC HEALTH, WELFARE AND THE ENVIRONMENT AND THE AVAILABLITY OF AMOUNTS FROM THE FUND TO RESPOND TO OTHER SITES WHICH PREVENT A THREAT TO PUBLIC HEALTH, WELFARE OR THE ENVIRONMENT.

THE SELECTED REMEDIAL ACTION AND THE CONTINGENCY REMEDY, WHEN COMPLETE, WILL COMPLY WITH APPLICABLE OR RELEVANT AND APPROPRIATE ENVIRONMENTAL STANDARDS SET FORTH IN THE ROD. IN SELECTING THE REMEDIAL ACTION FOR THIS SITE, IT WAS NOT NECESSARY FOR EPA TO APPLY LESS STRINGENT CLEANUP STANDARDS IN ORDER TO INCREASE THE AVAILABLILTY OF AMOUNTS FROM THE FUND TO RESPOND TO OTHER SITES. EPA MAINTAINS THAT THE REQUIREMENTS OF SS 121(D) ARE BEING COMPLIED WITH HERE THAT EPA COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENT 3.F.

THIS COMMENT SUGGESTS THAT THE SELECTED REMEDIAL ACTION IS INCONSISTENT WITH THE NATIONAL OIL AND HAZARDOUS SUBSTANCE POLLUTION CONTINGENCY PLAN ("NCP"), 40 CFR PART 300 AND THAT COSTS INCURRED BY EPA IN IMPLEMENTING THE REMEDY ARE THEREFORE NOT RECOVERABLE. AS IS THE CASE WITH RESPECT TO MANY OF THE COMMENTER'S OTHER COMMENTS, NO BASIS IS PROVIDED FOR THIS COMMENT. THE COMMENT SIMPLY MAKES A CONCLUSORY STATEMENT WITHOUT IDENTIFYING PARTICULAR PROVISIONS OF THE NCP WITH WHICH THE SELECTED REMEDY IS ALLEGEDLY INCONSISTENT.

EPA MAINTAINS THAT THE SELECTED REMEDIAL ACTION HAS BEEN CHOSEN IN ACCORDANCE, TO THE EXTENT PRACTIBLE, WITH THE NCP AND THAT EPA COSTS ASSOCIATED WITH THE REMEDIAL DESIGN/REMEDIAL ACTION AT THIS SITE ARE FULLY RECOVERABLE PURSUANT TO SS 9607(A).

RESPONSE TO COMMENTS 4, 5, AND 6

EPA BELIEVES THAT THE BASIS FOR CALCULATING THE PUMPING RATES OUTLINED IN THE ROD IS REASONABLE. IN ADDITION, A MARGIN OF SAFETY IS BUILT IN TO ENSURE THAT THE PLUME IS CAPTURED. ADDITIONAL PUMPING TESTS DURING THE REMEDIAL DESIGN PHASE WILL YIELD DATA BY WHICH A MORE ACCURATE ESTIMATE OF THE PUMPING RATES CAN BE OBTAINED (SEE FEASIBILITY STUDY REPORT OF JUNE 1989, PAGE 61). EPA WOULD LIKE TO SEE ANY DOCUMENTATION OF CALCULATIONS FOR THE PUMP RATES SET FORTH IN THE AUGUST 11, 1989 COMMENTS.

RESPONSE TO COMMENTS 7.A. AND 7.B.

THE POSSIBILITY OF CONTAMINATING THE RECHARGE BASIN AND DRIVING CONTAMINANTS INTO THE MAGOTHY AQUIFER WILL BE PREVENTED BY PLACING THE REINJECTION WELLS INTO A RELATIVELY CLEAN UPPER AQUIFER AREA AND INSTALLING SEVERAL REINJECTION WELLS, SO THAT THE TREATED WATER WILL BE EVENLY DISTRIBUTED OVER A LARGER AREA. THIS WILL ELIMINATE THE EXCESSIVE RE-INJECTION FLOW AND WILL ALSO PREVENT THE CREATION OF A DOWNWARD GRADIENT AS MENTIONED IN COMMENT 7.B.

RESPONSE TO COMMENT 8

ALL REINJECTED GROUNDWATER WILL BE BELOW ARARS.

RESPONSE TO COMMENT 9

PRIOR TO GROUNDWATER REINJECTION, THE IRON WILL BE REMOVED THROUGH MULTIMEDIA FILTERS. THERE ARE MANY WAYS OF DOING THIS, (E.G. PH CHANGE, FLOCCULATION, ETC.). AT ANY RATE, THE REINJECTION GROUNDWATER WILL MEET ARARS.

RESPONSE TO COMMENT 10

THE VALUE OF 1.1 PPB OF TRANS-1,2-DICHLOROETHENE IS THE EQUILIBRIUM VALUE AS CALCULATED FROM PARTITION COEFFICIENTS. THE ACTUAL VALUE TO ACHIEVE GROUNDWATER STANDARDS WILL BE IN THE VICINITY OF 10 PPB AS SPECIFIED IN THE ROD, BUT THIS CAN ONLY BE ESTABLISHED DURING PERMEABILITY STUDIOS. ONE CANNOT COMPARE THE CONTAMINANTS IN THE SOIL TO THAT OF THE GROUNDWATER ON A ONE TO ONE BASIS. THE FORMER VALUES ARE GIVEN ON A MASS BASIS, WHEREAS THE LATTER ARE EXPRESSED AS MASS PER VOLUME. THE DETECTION LIMIT FOR VOCS IS LESS THAN 1 PPB.

RESPONSE TO COMMENT 11

ORIGINALLY THE SOURCE OF CONTAMINANTS EXISTED ABOVE THE WATER TABLE. THE MODEL USED THIS INITIAL CONDITION TO SIMULATE THE SOURCE OF CONTAMINANTS CURRENTLY IN THE GLACIAL AQUIFER. ANALYTICAL RESULTS DURING THE REMEDIAL INVESTIGATION WERE USED TO CALIBRATE THE GROUNDWATER MODEL. THE PREDICTED RESULTS WERE CONSISTENT WITH ACTUAL DATA. NATURAL ATTENUATION, SUCH AS DILUTION AND DEGRADATION HAVE NOT BEEN CONSIDERED IN DETERMINING THE SOIL ACTION LEVELS. HOWEVER, ADSORPTION AND DISPERSION HAVE BEEN MODELED TO DETERMINE CONTAMINANT PLUME CONCENTRATION. THE VALUE OF 1.1 PPB OF TRANS-1,2-DICHLOROETHENE IS THE EQUILIBRIUM VALUE CALCULATED FROM THE PARTITION COEFFICIENT. SEE RESPONSE TO COMMENT 10 ABOVE.

RESPONSE TO COMMENTS 12 AND 13

SINCE MOST OF THE SITE IS PAVED, VOLATILIZATION OF VOCS WILL BE MINIMAL. IT IS UNLIKELY THAT THERE WILL BE A SUBSTANTIAL UPWARD MIGRATION OF THE CONTAMINANTS FROM THE GROUNDWATER THROUGH THE SOILS TO THE SURROUNDINGS. SPECIFIC CLEANUP LEVELS FOR THE CONTAMINATED SOILS ON SITE WILL BE ESTABLISHED DURING THE REMEDIAL DESIGN OF THE REMEDY. THESE ACTION LEVELS WILL BE ESTABLISHED USING SITE-SPECIFIC INFORMATION GENERATED DURING THE TREATABILITY STUDIES. IT IS ENVISIONED THAT THE ESTABLISHMENT OF SUCH LEVELS WILL CONSIDER ATTENUATION AND DILUTION OF CONTAMINANTS AND THE IMPACT OF SUCH FACTORS ON THE LOADING TO THE GROUNDWATER.

RESPONSE TO COMMENT 14

THE PRIVATE WELLS MENTIONED IN THIS COMMENT ARE DOWNGRADIENT OF THE SITE, NOT UPGRADIENT. THE SECOND OPERABLE UNIT WILL ADDRESS UPGRADIENT SOURCES OF CONTAMINATION.

RESPONSE TO COMMENT 15 THROUGH 17

SINCE OFFSITE CONTAMINATION UPGRADIENT OF THE SMS INSTRUMENTS SITE IS SUSPECTED TO BE CONTRIBUTING TO THE GROUNDWATER CONTAMINATION AT THE SITE, A SECOND OPERABLE UNIT WILL BE INITIATED TO INVESTIGATE THOSE SOURCES AND ALTERNATIVES FOR THEIR REMEDIATION. THIS WILL ALSO IDENTIFY ADDITIONAL PRPS IF ANY AND MAY ALSO PROVIDE ADDITIONAL INFORMATION REGARDING SMS'S CONTRIBUTION TO THE GROUNDWATER CONTAMINATION IN THE AREA. THE UPGRADIENT CONCENTRATION OF TRANS-1,2 DICHLOROETHENE HAS BEEN INCORPORATED INTO TABLE 1 OF THE ROD AND WAS CONSIDERED WHEN SELECTING THE REMEDY.

RESPONSE TO COMMENT 18, AND 19

IN CONDUCTING THE REMEDIAL ACTION, EPA MUST MEET SPECIFIC ACTION LEVELS INCLUDING SAFE DRINKING WATER ACT MAXIMUM CONTAMINANT LEVELS (40 CFR 141.11.- 141.16) OUTLINED IN THE ROD WHICH ARE NOT BASED ON CLASSES OR CATEGORIES OF COMPOUNDS, BUT RATHER ON SPECIFIC CHEMICALS.

RESPONSE TO COMMENT 20

SINCE THIS A SUPERFUND SITE LOCATED IN NEW YORK STATE, AND BECAUSE THE GROUNDWATER AT THE SITE IS CLASSIFIED

AS IIB, THE DRINKING WATER STANDARDS ESTABLISHED BY NEW YORK STATE ARE ARARS AND SHOULD BE ADHERED TO UNLESS A WAIVER IS JUSTIFIED. DUE TO THE EXISTENCE OF AN UPGRADIENT SOURCE, THE REMEDIAL ACTION SELECTED WILL NOT MEET CHEMICAL-SPECIFIC ARARS OR BE CAPABLE OF RESTORING THE AREA GROUNDWATER TO APPLICABLE GROUNDWATER QUALITY STANDARDS. THE UPGRADIENT SOURCE AREA WILL BE ADDRESSED AS PART OF THE SECOND OPERABLE UNIT.

RESPONSE TO COMMENT 21

AS MENTIONED BEFORE, THE REMEDIAL DESIGN STUDY WILL YIELD ADDITIONAL DATA, BY WHICH A MORE ACCURATE DESIGN OF THE TREATMENT SYSTEM CAN BE OBTAINED. SEE ALSO RESPONSE TO COMMENT 3.C. IT IS EPA AND NYSDEC POLICY TO REMEDY GROUNDWATER CLASSIFIED AS A CLASS I OR II AQUIFER. IF TREATED, THE UPPER AQUIFER COULD BE USED AS A POTABLE WATER SOURCE.

RESPONSE TO COMMENT 22

TREATABILITY STUDIES WILL BE CONDUCTED TO DETERMINE THE TIME AND EFFECTIVENESS INVOLVED IN THE SOIL REMEDIATION. THE CAPITAL COST FOR SOIL REMEDIATION VIA AIR STRIPPING WILL BE SIMILAR OR SLIGHTLY LOWER THAN THE ONE USING STEAM AS A STRIPPING AGENT. THE ESTIMATED 9 MONTH REMEDIATION TIME FOR AIR STRIPPING IS LONGER THAN THE FIVE MONTH ESTIMATED TIME FOR STEAM STRIPPING.

RESPONSE TO COMMENTS 23 AND 24

THE REMEDIATION TIMES ARE APPROXIMATE AND PROVIDE FOR REASONABLE MARGINS OF ERROR. THE REMEDIATION TIME OF 29.5 YEARS MENTIONED IN COMMENT 24 ASSUMES A 1400 PPB TRANS-1,2 DICHLOROETHENE CONCENTRATION THROUGHOUT THE PLUME. THIS CONTAMINANT CONCENTRATION IS A "HOT SPOT"; IT WAS DETECTED IN ONE LOCATION. EPA'S CALCULATIONS WERE PERFORMED USING A REPRESENTATIVE VALUE OF 580 PPB. THE REMEDIATION TIMES SPECIFIED IN THE ROD ARE THEREFORE REASONABLE.

RESPONSE TO COMMENTS 25 AND 26

THE 4 YEARS REMEDIATION TIME FOR THE SELECTED REMEDY AS PREDICTED BY GROUNDWATER MODELING ARE BASED ON BEST AVAILABLE CURRENT DATA. NEW DATA TO BE OBTAINED DURING THE REMEDIAL DESIGN AND ADDITIONAL GROUNDWATER MODELING WILL YIELD BETTER DATA BY WHICH A MORE ACCURATE ESTIMATE OF THE REMEDIATION TIME CAN BE MADE. EPA BELIEVES THAT REMEDIATION TIMES AS INDICATED IN THE PRAP ARE FAIRLY ACCURATE. THE NO-ACTION OPTION CANNOT BE SELECTED, SINCE IT WILL TAKE AN UNACCEPTABLE AMOUNT OF TIME, WELL OVER 20 YEARS, FOR THE GROUNDWATER TO REACH HEALTH BASED LEVELS. EPA IS REQUIRED TO REMEDY THE SOIL AS WELL AS THE GROUNDWATER TO PROTECT HUMAN HEALTH AND THE ENVIRONMENT. THE SELECTED REMEDY WILL ACHIEVE THIS GOAL.

RESPONSE TO THE CONCLUDING SECTION

EPA BELIEVES THAT THE CALCULATED PUMPING RATES, SOIL ACTION LEVELS TO ACHIEVE GROUNDWATER ARARS, REMEDIATION TIMES, CAPITAL AND PRESENT WORTH COSTS, OPERATION AND MAINTENANCE COSTS ARE REASONABLE BASED ON THE DATA OBTAINED DURING THE REMEDIAL INVESTIGATION CONDUCTED AT THE SITE. HOWEVER, THE RI/FS IS NOT INTENDED TO BE A DESIGN DOCUMENT AND AS SUCH THESE ESTIMATES MAY BE REFINED DURING THE DESIGN STAGE OF THE REMEDIAL ACTION.

B. RESPONSE TO SEPTEMBER 5, 1989 LETTER

A SECOND OPERABLE UNIT IS PLANNED WHICH WILL ADDRESS SUSPECTED UPGRADIENT SOURCES OF CONTAMINATION.

BEFORE THE REGIONAL ADMINISTRATOR
UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

IN THE MATTER OF

S.M.S. INSTRUMENTS, INC.

UNCONTROLLED HAZARDOUS SUBSTANCE: COMMENTS IN RESPONSE TO
RELEASE FACILITY, EPA'S PROPOSED

DEER PARK, NEW YORK REMEDIAL ACTION PLAN

COMMENTS, SUGGESTIONS AND OBJECTIONS OF SMS INSTRUMENTS, INC.
ON EPA REGION IT'S PROPOSED REMEDIAL ACTION PLAN

PLEASE TAKE NOTICE THAT SMS INSTRUMENTS, INC., APPEARING THROUGH ITS COUNSEL, KREINDLER & KREINDLER, HENRY GLUCKSTERN, OF COUNSEL, HEREBY SUBMITS ITS COMMENTS WITH RESPECT TO EPA'S FINAL REMEDIAL INVESTIGATION REPORT AND FINAL FEASIBILITY STUDY, RESPECTIVELY DATED FEBRUARY 1989 AND JUNE 1989, FOR THE SMS INSTRUMENTS, INC. UNCONTROLLED HAZARDOUS SUBSTANCE RELEASE FACILITY, DEER PARK, NEW YORK (HEREINAFTER, "THE FACILITY").

BY SUBMITTING THESE COMMENTS, SMS INSTRUMENTS, INC. NEITHER ADMITS NOR ACKNOWLEDGES THAT IT IS THE SOURCE OF CONTAMINANTS ALLEGEDLY IDENTIFIED ON PROPERTY IT CURRENTLY OWNS IN DEER PARK, NEW YORK. FURTHERMORE, SMS INSTRUMENTS, INC. ADMITS NO LIABILITY TO THE UNITED STATES OR TO ANY OTHER ENTITY FOR ANY CONDITION ALLEGED TO CURRENTLY CONSTITUTE A RELEASE TO THE ENVIRONMENT OF HAZARDOUS SUBSTANCES, POLLUTANTS OR CONTAMINANTS UNDER THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT, 42 USC SS 9601 ET SEQ., IDENTIFIED IN CONNECTION WITH PROPERTY IT OWNS IN DEER PARK, NEW YORK. MOREOVER, SMS INSTRUMENTS, INC. DENIES THAT ANY CONDITION OCCURRING ON ITS PROPERTY PRESENTS AN IMMINENT AND SUBSTANTIAL ENDANGERMENT TO HUMAN HEALTH, WELFARE OR THE ENVIRONMENT.

SMS INSTRUMENTS, INC. RESERVES ALL RIGHTS TO FURTHER COMMENT UPON OR OBJECT TO ACTIONS TAKEN BY THE UNITED STATES AT ITS FACILITY AS PERMITTED BY LAW, REGULATION OR AGENCY PRACTICE, AND TO DEFEND AGAINST ANY CLAIMS MADE WITH RESPECT TO SUCH ALLEGED RELEASES OF HAZARDOUS SUBSTANCES, POLLUTANTS OR CONTAMINANTS OR TO ANY CLAIMS MADE FOR COSTS ALLEGED TO HAVE BEEN INCURRED BY THE UNITED STATES OR ANY OTHER ENTITY IN REMOVING, REMEDYING, OR OTHERWISE RESPONDING TO ANY SUCH ALLEGED RELEASES.

COMMENTS, SUGGESTIONS AND OBJECTIONS WITH
RESPECT TO EPA'S PROPOSED MIGRATION
MANAGEMENT ALTERNATIVE

1. ON THE BASIS OF ITS RI/FS, EPA HAS ELECTED TO APPROACH THE CONTAMINATION ATTRIBUTED TO THE SITE ACTIVITIES OF SMS INSTRUMENTS, INC. BY INSTITUTING CONTROLS BASED PARTIALLY UPON MIGRATION MANAGEMENT. TO ACCOMPLISH THIS GOAL, EPA PROPOSES TO DESIGN, INSTALL, OPERATE AND MONITOR A GROUNDWATER EXTRACTION, TREATMENT AND RE-INJECTION SYSTEM, "ALTERNATIVE 2B" OF THE NUMEROUS REMEDIAL ALTERNATIVES SCOPED FOR THE SITE.

2. AN EXTRACTION WELL LOCATED OFFSITE WILL PURPORTEDLY CAPTURE THE CONTAMINATED GROUNDWATER PLUME AND CONVEY THE WATER SO OBTAINED TO AIR STRIPPING TOWERS WHICH WILL REDUCE THE LEVEL OF CONTAMINANTS OF THE INFLUENT CONCENTRATION TO LEVELS BELOW SELECTED ARARS. GROUNDWATER OBTAINED IN THIS MANNER IS PROPOSED TO BE RE-INJECTED TO SOILS OVERLYING THE UPPER GLACIAL AQUIFER THROUGH WELLS LOCATED GENERALLY AT OR NEAR THE NORTHERN PERIMETER OF THE FACILITY.

3. SMS INSTRUMENTS, INC. RESPECTFULLY SUGGESTS THAT THE IMPLEMENTATION OF THE MIGRATION MANAGEMENT SYSTEM CURRENTLY PROPOSED BY EPA WILL RESULT IN A REMEDY WHICH

A. FAILS TO MEET THE REQUIREMENTS OF, OR TO CONSIDER THE DECISIONAL ELEMENTS REQUIRED TO BE TAKEN INTO ACCOUNT UNDER, 42 USC SS 9621(B)(1), THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC SS 9607(A)(4)(A), THOSE COSTS INCURRED AT THE FACILITY;

B. FAILS TO COMPLY WITH, AND IS INCONSISTENT WITH, 42 USC SS 9621(D)(1), THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC SS 9607(A)(4)(A), THOSE COSTS INCURRED AT THE FACILITY;

C. FAILS TO COMPLY WITH, AND IS INCONSISTENT WITH, THE DECISIONAL FACTORS SET FORTH IN 42 USC SS 9621(D)(2)(B), THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC SS 9607(A)(4)(A), THOSE COSTS INCURRED AT THE FACILITY;

D. FAILS TO CONSIDER AND IMPLEMENT 42 USC SS 9621(D)(4)(E), THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC SS 9607(A)(4)(A), THOSE COSTS INCURRED AT THE FACILITY;

E. FAILS TO CONSIDER AND IMPLEMENT 42 USC SS 9621(D)(4)(F), THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC SS 9607(A)(4)(A), THOSE COSTS INCURRED AT THE FACILITY; AND

F. IS INCONSISTENT WITH THE NATIONAL CONTINGENCY PLAN, 40 CFR PART 300, THEREBY RENDERING UN-RECOVERABLE, PURSUANT TO THE LIMITATIONS ON COST RECOVERY IMPOSED UPON RESPONSES TO RELEASES TAKEN BY THE UNITED STATES IN 42 USC (4)(A), THOSE COSTS INCURRED AT THE FACILITY.

4. AS PART OF ITS MIGRATION MANAGEMENT PLAN, EPA HAS PROPOSED TO IMPLEMENT AN EXCESSIVE, INAPPROPRIATE AND UNSUITABLE GROUNDWATER PUMPING REGIME. AS A RESULT OF EPA'S ERROR IN CALCULATING GROUNDWATER PUMPING QUANTITIES APPROPRIATE TO THE CLEANUP GOALS WHICH EPA BELIEVES SHOULD BE ATTAINED AT THE SITE, THE ZONE OF INFLUENCE WHICH WILL BE DEVELOPED WILL CAPTURE A TOTAL OF APPROXIMATELY 900 (NINE HUNDRED) FEET OF EXTRANEOUS WATER LATERAL TO THE CENTER LINE OF THE MODELED PLUME. THROUGH WELL BORINGS, EPA HAS CONTENDED THAT IT HAS CONFIRMED THAT THE EXTENT OF THE CONTAMINANT PLUME HAS BEEN ACCURATELY MODELED. UNDER THE PROPOSED REMEDIAL ACTION PLAN, HOWEVER, MORE WATER WILL BE DRAWN FROM OUTSIDE THE PLUME THAN INSIDE THE PLUME. THIS IS CLEARLY IMPROPER AND WILL LEAD TO SELECTION AND IMPLEMENTATION OF AN INAPPROPRIATE REMEDY.

5. EPA'S SERIOUS ERROR WILL RESULT IN

A. OVERSIZING OF ALL PIPING, PUMPING, AND RELATED EQUIPMENT;

B. CONSUMPTION AND WASTE OF SEVERAL TIMES AS MUCH ELECTRICITY AS IS ACTUALLY NEEDED TO PROPERLY CLEANSE THE UPPER GLACIAL AQUIFER;

C. CONSTRUCTION, OPERATION, AND MAINTENANCE OF UNNECESSARY AIR STRIPPING AND RELATED RESIDUALS COLLECTION AND DISPOSAL EQUIPMENT FOR TREATMENT;

D. CONSTRUCTION, OPERATION AND MAINTENANCE OF AN INAPPROPRIATELY SIZED GROUNDWATER RE-INJECTION SYSTEM; AND

E. POSSIBLE ENTRAINMENT INTO THE TREATMENT REGIME OF UNKNOWN GLACIAL CONTAMINANTS, WITH ATTENDANT POTENTIAL FOR EXPOSURE OF THE UNCONFINED MAGOTHY AQUIFER TO CONTAMINANTS.

6. CALCULATIONS INDICATE THAT PUMPING OF GROUNDWATER REMOVED FROM THE PLUME AT A RATE OF APPROXIMATELY 180 GPM MAXIMUM WOULD CAPTURE THE PLUME UNDER IDEAL CONDITIONS, WHICH CONDITIONS EPA HAS APPARENTLY ASSUMED TO EXIST IN THE SOILS TYPICAL OF THE AFFECTED AREA. BY UTILIZING MORE THAN ONE PUMPING WELL, AN IDEA WHICH EPA HAS CONSIDERED ALREADY WITH RESPECT TO ITS IMPROPERLY SIZED GROUNDWATER TREATMENT SCHEME, EVEN A LOWER

PUMPING RATE COULD BE SUFFICIENT TO ACCOMPLISH EPA'S STATED GOALS. CALCULATIONS AND MODELING ON WHICH SMS INSTRUMENTS, INC. BASIS THESE COMMENTS ARE ATTACHED AS EXHIBIT A, APPENDED HERETO AND MADE A PART HEREOF.

7. BY PUMPING AT THE RATE CURRENTLY PROJECTED BY EPA AND RE-INJECTING WATER WITHDRAWN AT THE SOUTHERN PERIMETER OF THE FACILITY BOUNDARY, EPA RAISES THE POSSIBILITY OF

A. THE EXCESSIVE RE-INJECTION FLOW DISTURBING AND CONTAMINATING THE ADJACENT RECHARGE BASIN SYSTEM BY DRIVING UPGRADIENT POLLUTANTS FROM THEIR CURRENTLY UNDERSTOOD COURSE OF FLOW; AND/OR

B. CREATING AN UNKNOWN HYDRAULIC GRADIENT WHICH MAY HAVE THE POTENTIAL FOR DRIVING BOTH UPGRADIENT AND FACILITY-ORIGINATED CONTAMINANTS INTO THE MAGOTHY AQUIFER.

8. THE APPARENT LACK OF A CONFINING ZONE BETWEEN THE UPPER GLACIAL AND MAGOTHY AQUIFER IN THE VICINITY OF THE FACILITY REQUIRES THAT THE MANAGEMENT OF RE-INJECTED WATER CONTAINING CONTAMINANTS ABOVE ARAR LEVELS BE ESPECIALLY CAREFULLY SCRUTINIZED AND CONSERVATIVELY MANAGED SO THAT NO DRINKING WATER SUPPLY IS SUBJECTED TO THE POSSIBILITY OF CROSS-CONTAMINATION. THE OVERSIZED RE-INJECTION SYSTEM, AS PRESENTLY PROPOSED TO BE OPERATED, MAY POSE A THREAT TO THE MAGOTHY SYSTEM.

9. SMS INSTRUMENTS, INC. TAKES THE POSITION THAT HEAVY GROUNDWATER IRON BURDENS RECOGNIZED BY EPA IN ITS RI/FS AS PREVAILING IN THE LONG ISLAND UPPER GLACIAL AQUIFER GENERALLY, AND IN THE GEOGRAPHIC REGION OCCUPIED BY THE SMS INSTRUMENTS, INC. FACILITY IN PARTICULAR, WILL REQUIRE AN INFILTRATION-PERCOLATION LAGOON TO AVOID INTERFERENCE WITH SUCCESSFUL RE-INJECTION THROUGH CLOGGING OF WELL SCREENS. TREATMENT OF IRON PROPOSED BY EPA WILL NOT NECESSARILY ELIMINATE THE PROBLEM OF ADEQUATELY HANDLING RE-INJECTION FLOWS, AS WAS NOTED DURING THE PUBLIC HEARING ON THE PROPOSED REMEDIAL ACTION PLAN. THE SHEER VOLUMES OF WATER INVOLVED IN THE PROJECTED PUMPING REGIME, WHEN COMPARED TO THE REALISTIC POTENTIAL METHODS OF ACCOMPLISHING RE-INJECTION, COULD RENDER AN INJECTION WELL INFEASIBLE.

COMMENTS, SUGGESTIONS AND OBJECTIONS WITH RESPECT TO EPA'S PROPOSED SOIL CLEANUP CRITERIA, ACTION LEVELS AND APPLICATION OF ARARS

10. EPA HAS ESTABLISHED EXCESSIVELY AND UNNECESSARILY RESTRICTIVE AND CONSERVATIVE SOIL CLEANUP LEVELS FOR THE SMS INSTRUMENTS, INC. FACILITY. EPA'S THEORETICAL PARTITIONING COEFFICIENTS APPROACH FOR ESTIMATING MAXIMUM PERMISSIBLE SOIL CONCENTRATIONS, WHEN REDUCED TO ACTION LEVELS, YIELD RIDICULOUS RESULTS. FOR EXAMPLE, ESTABLISHMENT OF A TRANS-1,2-DICHLOROETHENE ACTION LEVEL AT 1 PPB IS INCONSISTENT WITH THE ACTUAL REPRESENTATIVE DETECTION LIMIT OF THAT CONTAMINANT IN SOILS, WHICH, FOR ESTABLISHED GC/MS METHODOLOGIES, IS IN THE RANGE OF 100 PPB. ADDITIONALLY, THE CALCULATIONS MADE IN THE RI/FS ARE INCORRECT. USING THE METHOD DESCRIBED IN THE RI/FS TO DETERMINE SOIL ACTION LEVELS, SOIL ACTION LEVELS MUST BE HIGHER THAN GROUNDWATER ACTION LEVELS. THE GROUNDWATER ACTION LEVEL IS 5 PPB; THE SOIL ACTION LEVEL MUST BE ABOVE THAT.

11. EPA'S APPROACH INCORRECTLY ASSUMES THAT THE ENTIRE SITE CONTAMINANT LOADING IS SITUATED DIRECTLY OVER THE WATER TABLE. EPA'S APPROACH FURTHERMORE FAILS TO TAKE INTO CONSIDERATION NATURAL ATTENUATION, DILUTION, AND BIODEGRADATION EFFECTS. CALCULATIONS PERFORMED BY EPA IN SUPPORT OF THE FS FAILED TO CONSIDER THE EFFECTS OF INFILTRATING RAINWATER IN THE UNSATURATED ZONE. AS A RESULT, EPA HAS INCORRECTLY CHARACTERIZED THE ACTUAL DISTRIBUTION OF SOIL CONTAMINANTS WITH RESPECT TO THE GLACIAL AQUIFER. THE 1 PPB LEVEL ESTABLISHED AS AN ACTION LEVEL FOR TRANS-1, 2-DICHLOROETHENE IS UNACHIEVABLE, BECAUSE IT IS UNMEASUREABLE BY ANY PRECISE (I.E., SCIENTIFICALLY REPEATABLE WITH A SUITABLE DEGREE OF ACCURACY) METHOD KNOWN TO SMS INSTRUMENTS, INC..

12. ADDITIONALLY, EPA HAS FAILED TO TAKE INTO CONSIDERATION THE EFFECTS OF THE VOLATILITY OF EACH OF THE VOCS ALLEGED TO BE PRESENT ON THE FACILITY. A CERTAIN LOSS OF THE ALLEGED CONTAMINANT LOADING WILL OCCUR OVER TIME AS A RESULT OF THE VOLATILIZATION PROCESS, AND SUCH NATURAL LOSS MECHANISMS MUST BE ACCOUNTED FOR IN EVALUATING AN ELEMENT OF A PREFERRED REMEDY.

13. ADDITIONAL DILUTION OF CONTAMINANT LOADINGS OCCURS AT SUCH TIME AS CONTAMINANTS REACH GROUNDWATER. A POINT OF COMPLIANCE FOR PURPOSES OF EVALUATING PERFORMANCE OF THE SELECTED REMEDY NEEDS TO BE ESTABLISHED IN LIGHT OF THE ABOVE-REFERENCED A MODELING OF THE MOVEMENT OF POLLUTANTS THROUGH THE UNSATURATED ZONE CAN BE PERFORMED, AND RATIONAL (I.E., MEASURABLE AND ATTAINABLE) SOIL CLEANUP CRITERIA CAN BE ESTABLISHED.

14. THE SMS INSTRUMENTS, INC. FACILITY HAS BEEN ACKNOWLEDGED BY EPA TO BE LOCATED IN AN AREA OF DEER PARK WHICH EXPERIENCES AREA-WIDE UPPER GLACIAL AQUIFER GROUNDWATER VOLATILE ORGANIC CONTAMINATION. THE CONTAMINATION WHICH EPA CONTENDS IT HAS DOCUMENTED AT THE SMS INSTRUMENTS, INC. FACILITY IS ACTUALLY ATTRIBUTABLE TO A VARIETY OF OFF-PREMISES RELEASE SOURCES. THE AVERAGE UPGRADIENT TOTAL VOLATILE ORGANIC CONTAMINANT LEVEL IS APPROXIMATELY 115 PPB, BASED UPON THE RESULTS OF SAMPLING POTABLE PRIVATE WELLS (WELLS 1-8 AS REFLECTED IN TABLE 5-2 OF THE RI) UPGRADIENT OF THE SMS INSTRUMENTS, INC. SITE.

15. DESPITE THE FACT THAT EPA HAS DOCUMENTED NUMEROUS SOURCES OF UPPER GLACIAL AQUIFER CONTAMINATION UPGRADIENT TO SMS INSTRUMENTS, INC., EPA HAS, TO DATE, CHOSEN TO CONSIDER SMS INSTRUMENTS, INC. AS A SINGLE PRP SITE. IF EPA PERSISTS IN MAINTAINING THIS POSITION AS A MATTER OF ENFORCEMENT STRATEGY, FINANCIAL RESOURCES WHICH OWNERS OR OPERATORS OF OTHER CONTAMINANT SOURCES MAY BE ABLE TO BRING TO BEAR ON IMPLEMENTATION OF A REMEDY WILL NOT BE TAPPED IN THE COURSE OF ADDRESSING ATTAINMENT OF ARARS AS APPLIED TO THE RELEASE ALLEGEDLY OCCURRING FROM WITHIN THE SMS INSTRUMENTS, INC. PROPERTY BOUNDARIES.

16. ACCORDINGLY, THE UPGRADIENT CONTAMINATION WHICH HAS BEEN DETECTED AND WHICH IS A NOT INSIGNIFICANT CONTRIBUTING SOURCE TO THE TOTAL IN-GROUND POLLUTANTS ALLEGED TO EXIST AT THE SMS INSTRUMENTS, INC. SITE SHOULD BE APPROPRIATELY REFLECTED IN ALL FINAL ACTION LEVELS APPLIED TO, AND EXPECTED TO BE ATTAINED BY, A REMEDY IMPLEMENTED AT THE SMS INSTRUMENTS, INC. SITE.

17. WHILE TABLE 10-2 OF THE FS REFLECTS AN ACTION LEVEL FOR TRICHLOROETHENE OF 14 PPB REPRESENTATIVE OF DETECTED OFFSITE UPGRADIENT BACKGROUND LEVELS, OTHER CONTAMINANTS OF INTEREST, SUCH AS TRANS-1,2-DICHLOROETHENE, ARE NOT SIMILARLY COMPENSATED FOR. TRANS-1,2-DICHLOROETHENE SHOULD HAVE BEEN REFLECTED AT NO LESS THAN 35 PPB UNDER A MORE REASONABLE APPROACH, AS APPLIED TO A SOLE PRP WHOSE SITE IS RECEIVING MORE THAN NEGLIGIBLE CONTAMINATION FROM UPGRADIENT SOURCES.

18. SMS INSTRUMENTS, INC. OBJECTS TO THE ACTION LEVELS CURRENTLY EXPRESSED IN THE FS AND SUGGESTS ADOPTION OF A TOTAL VOLATILE ORGANICS ACTION LEVEL EQUAL TO 100 PPB. EXISTING POLLUTANT SOURCES INDEPENDENT OF SMS INSTRUMENTS, INC. HAVE RENDERED THE UPPER GLACIAL AQUIFER UNSUITABLE AS A SOURCE OF POTABLE WATER. APPLICATION OF SMS INSTRUMENTS, INC.'S RECOMMENDATION OF A TOTAL VOLATILE ORGANIC LEVEL OF 100 PPB WILL, AT THE SAME TIME (A) ESTABLISH A FAIR BURDEN ON THE SOLE AREA PRP FROM WHICH EPA WILL BE DEMANDING CLEANUP OF AN AQUIFER ADMITTEDLY POLLUTED BY OTHER ENTITIES AND (B) ALSO ASSURE FULL PROTECTION OF THE PUBLIC HEALTH, WELFARE AND THE ENVIRONMENT, INCLUDING PREVENTION OF FURTHER DEGRADATION OF THE UPPER GLACIAL AQUIFER AND PREVENTION OF ANY INTRUSION INTO THE MAGOTHY AQUIFER.

19. FURTHERMORE, IF A 100 PPB TOTAL VOLATILE ORGANIC CONSTITUENT GOAL IS SELECTED, IT MAY BE POSSIBLE TO CAPTURE THE RELEVANT PLUME WITH A PUMP AND TREAT SYSTEM DOWNSCALED TO A PUMPING RATE OF 100 GPM, CAPTURING A PLUME APPROXIMATELY 150 FEET WIDE. BOTH RE-INJECTION COSTS AND TECHNICAL RE-INJECTION HURDLES STEMMING FROM RESIDUAL GROUNDWATER IRON WILL BE REDUCED. ONLY A SINGLE STRIPPING TOWER WILL BE NEEDED. FEWER FINAL IRREDUCIBLE WASTES REQUIRING ULTIMATE DISPOSAL WILL BE CREATED. CLEANUP TIME WILL BE REDUCED SIGNIFICANTLY. DISPERSION EFFECTS WILL DECREASE THE CONCENTRATION OF THE PLUME OVER A RELATIVELY SHORT DISTANCE. NO INCREMENTAL DEGRADATION OF THE UPPER GLACIAL AQUIFER WILL RESULT AS COMPARED TO THE SELECTED REMEDIAL ALTERNATIVE RESULTING FROM THE PRESENT FS. NO IMPACT ON THE MAGOTHY AQUIFER AT A LEVEL EXCEEDING A MAXIMUM CONTAMINANT LEVEL (MCL) FOR DRINKING WATER IS PROJECTED FROM SUCH A RE-SCALING OF THE GROUNDWATER TREATMENT SYSTEM, BUT COSTS AND SYSTEM COMPLEXITY WOULD BE MARKEDLY REDUCED.

20. XYLENE IS A NON-CARCINOGENIC VOLATILE ORGANIC CONSTITUENT OF THE IN-GROUND POLLUTANT LOADINGS WHICH EPA CLAIMS TO HAVE DETECTED AT THE SMS INSTRUMENTS, INC. FACILITY. THE 5 PPB ACTION LEVEL SELECTED FOR THIS CONSTITUENT IS BASED UPON A NEW YORK STATE STANDARD. CONSIDERING HEALTH-BASED CRITERIA, HOWEVER, AN APPROPRIATE LEVEL FOR XYLENE IN DRINKING WATER WOULD BE 44 PPB. FORTY-FOUR PARTS PER BILLION XYLENE IS THE HEALTH-BASED LEVEL ESTABLISHED BY THE STATE OF NEW JERSEY, FOR EXAMPLE. IF THE BASIS FOR ESTABLISHMENT OF THE ACTION LEVEL FOR XYLENE IS CLAIMED TO BE RELATED TO POTENTIAL FOR MIGRATION OF THAT CONSTITUENT TO THE MAGOTHY AQUIFER, OR TO HUMAN HEALTH EFFECTS, THEN SELECTION OF A MORE STRINGENT CRITERION, AS PRESENTLY IS THE CASE, IS UNWARRANTED.

21. THE UPPER GLACIAL AQUIFER HAS BEEN ESTABLISHED BY THE RI TO BE UNUSED AS A POTABLE WATER SOURCE. ITS NATURAL PROPERTIES, EXCLUSIVE OF ANY POLLUTANT LOADINGS, RENDER THE UPPER GLACIAL AQUIFER UNUSABLE AS A POTABLE WATER SOURCE. THE TDS MAXIMUM IN AN UPGRADIENT OFFSITE WELL WERE AT 3980 PPM, RENDERING THE SOURCE

NON-POTABLE. THE PROCESS OF ESTABLISHMENT OF LEVELS OF RESIDUAL CONTAMINANTS RESULTING FROM IMPLEMENTATION OF A GROUNDWATER CLEANSING PROGRAM IN THE VICINITY OF THE SMS INSTRUMENTS, INC. SITE SHOULD ACCOMPLISH TWO GOALS: FIRST, IT SHOULD BE PROTECTIVE OF THE MAGOTHY AQUIFER; SECOND, IT SHOULD BE PROTECTIVE OF ANY SURFACE WATERS TO WHICH DISCHARGE OF THE UPPER GLACIAL AQUIFER MAY OCCUR. BOTH THESE GOALS MAY BE MET WITH LESS STRINGENT CONTAMINANT ACTION LEVELS, WHILE AT THE SAME TIME LOWERING-THE COST OF PERFORMING THE PROJECTED REMEDIAL OPTION AND INCREASING THE PROBABILITY THAT COSTS INCURRED BY THE UNITED STATES MEET THE LEGAL REQUIREMENTS FOR RECOVERABILITY.

22. AS EPA READILY ADMITS, THE PREFERRED EPA SOIL REMEDIAL ALTERNATIVE FOR THE SMS INSTRUMENTS, INC. SITE IS NOT A PROVEN TECHNOLOGY. TIME ESTIMATES FOR COMPLETION ARE IMPOSSIBLE TO CALCULATE AT THE PRESENT TIME. O&M COSTS OF SUCH A SYSTEM ARE RELATIVELY HIGH. THE SYSTEM MAY NOT BE CAPABLE OF ATTAINING THE UNUSUALLY LOW (AND, SMS INSTRUMENTS, INC. CONTENDS, IMPROPERLY IMPOSED) SOIL REMEDIATION CRITERIA ESTABLISHED BY THE FS. AN INCREMENTAL COST FACTOR EQUAL TO THE PROJECTED COST OF THE VAPOR EXTRACTION O&M, WITHOUT ADDITION OF STEAM, SHOULD HAVE BEEN ADDED TO THE PROJECT COST AND CONSIDERED WHEN COMPARING THE SCREENED ALTERNATIVES TO ACCOMMODATE THE COST FACTOR OF UNKNOWN EFFICACY OF THE PROPOSED ALTERNATIVE.

COMMENTS, SUGGESTIONS AND OBJECTIONS WITH RESPECT TO EPA'S PROJECTED TIME FRAME FOR ACCOMPLISHING REMEDIAL GOALS AT THE SMS INSTRUMENTS, INC. SUPERFUND SITE

23. EPA HAS ESTABLISHED AN UNREALISTIC PROJECTION OF THE TIME REQUIRED TO ACCOMPLISH THE REMEDIAL OBJECTIVE THROUGH THE PROPOSED ALTERNATIVE SELECTION. AS A RESULT, EPA HAS COMPARED AND RANKED REMEDIAL ALTERNATIVES UNDER A SET OF FALSE PREMISES RELATED TO COST-EFFECTIVENESS. RE-ASSESSMENT OF ACTUAL COSTS AND PROJECTED EFFECTS ON THE RESOURCE DESIRED TO BE PROTECTED, THE MAGOTHY AQUIFER, COULD RESULT IN SELECTION OF A LOWER COST OPTION AT THE PROPOSED REMEDIAL ALTERNATIVE.

24. THAT EPA HAS MISJUDGED THE EFFECT OF OPERATION OF THE PROPOSED SYSTEM IS EASY TO SEE. A TOTAL AREA-WIDE VOLUME CALCULATION OF THE TRANS-1,2-DICHLOROETHENE PLUME SHOWS THAT THE CAPTURE AREA OF THE PROPOSED GROUNDWATER CONTROL WELL SYSTEM IS 64 MILLION CUBIC FEET. ADJUSTING FOR POROSITY AT THE POROSITY ASSUMPTION USED IN THE RI YIELDS 22.4 MILLION CUBIC FEET OF WATER PER PORE VOLUME FOR THE TRANS-1,2-DICHLOROETHENE PLUME. ADJUSTING THE PUMP RATE TO 182.25 GPM TO ALLOW FOR CAPTURE OF THE ACTUAL PLUME OF CONTAMINANTS OF CONCERN, AND DIVIDING THE RESULTING 35,083 FT3 OF DAILY FLOW THROUGH THE SYSTEM INTO THE VOLUME WHICH THE SCHEME MUST ADDRESS FOR A PORE VOLUME YIELDS A PUMP TIME OF 635 DAYS. UNDER THE RETARDATION FACTOR FOR TRANS-1,2-DICHLOROETHENE ASSUMED BY EPA IN ITS RI, 29% WILL BE IN THE DISSOLVED PHASE. ALTERNATIVELY, 71% WILL BE ATTENUATED IN A PORE VOLUME. THEREFORE, IT MAY REQUIRE UP TO 17 SUCH PORE VOLUMES TO REDUCE A 1,400 PPB PLUME CONCENTRATION OF TRANS-1,2-DICHLOROETHENE TO THE SELECTED ARAR FOR THAT CONSTITUENT MULTIPLYING THE TWO QUANTITIES, IT IS SEEN THAT IT COULD TAKE 29.5 YEARS TO ACCOMPLISH THIS GOAL IN A REASONABLY DESIGNED SYSTEM SIZED TO THE ACTUAL PLUME CONDITIONS.

25. FURTHERMORE, EPA'S OWN RESEARCH INTO PUMP AND TREAT REMEDIES HAS REVEALED THAT SUCH TECHNOLOGIES OFTEN TAKE SUBSTANTIALLY LONGER TO ACCOMPLISH THAN IS REVEALED BY CALCULATIONS.

26. IF THE O&M COSTS OF SUCH A SYSTEM ARE RECALCULATED AND THE TIME CONSUMED IN COMPLETING THE GOALS UNDER THE SELECTED ALTERNATIVE IS COMPARED TO THE UPPER GLACIAL AQUIFER CLEANSING ACCOMPLISHED WITH THE NO ACTION ALTERNATIVE (ALTERNATIVES 1A, 3), IT IS CLEAR THAT BEFORE THE REGIONAL ADMINISTRATOR CAN BE IN A POSITION TO SELECT A FACTUALLY-BASED REMEDY FOR THE SMS INSTRUMENTS, INC. SITE, THE REMEDIAL OPTIONS MUST BE RE-APPRAISED TO DETERMINE WHETHER ANOTHER OPTION, SUCH AS THE NO ACTION ALTERNATIVE, IS EQUALLY SUITABLE OR EVEN PREFERENTIAL TO THE CURRENTLY PROPOSED REMEDY FOR DEALING WITH THE POLLUTANT SITUATION WHICH EPA BELIEVES TO BE PRESENT AT THE SITE.

CONCLUSION

EPA MUST TAKE INTO ACCOUNT TWO MAJOR FACTORS PRIOR TO FINALIZING THE RI/FS AND ENTERING THE ROD STAGE. FIRST, THE AREA-WIDE GROUNDWATER CONTAMINATION PROBLEM MUST BE FULLY INTEGRATED INTO ANY CHOICE OF REMEDIAL ALTERNATIVES. CLEARLY, WHAT WE ARE DEALING WITH HERE -- THE UPPER GLACIAL AQUIFER -- IS NOT A POTABLE WATER AQUIFER, DUE TO NATURALLY HIGH TDS LEVELS AND OFF-SITE ANTHROPOGENIC SOURCES. SETTING GROUNDWATER AND SOIL CLEANUP CRITERIA TO BE AT OR BELOW EXISTING BACKGROUND WATER QUALITY AND HEALTH-BASED DRINKING WATER STANDARDS IS NEITHER COST-EFFECTIVE, REALISTIC OR ATTAINABLE. PURSUING SUCH A COURSE WILL RESULT ONLY IN

UNNECESSARY EXPENSE, WHILE AT THE SAME TIME CREATING FALSE AND UNJUSTIFIED EXPECTATIONS IN THE PUBLIC.

SMS INSTRUMENTS, INC.'S SECOND CONCERN IS THAT THE FS HAS SEVERAL MAJOR IMPORTANT TECHNICAL ERRORS. THESE INCLUDE INCORRECT SOIL ACTION LEVELS AS WELL AS INCORRECT PUMPING RATE DESIGN FOR PLUME REMEDIATION. THIS, ALONG WITH THE FORMERLY MENTIONED FS ERRORS, WILL RESULT IN THE EXPENDITURES OF LARGE SUMS FOR UNATTAINABLE RESULTS.

SMS INSTRUMENTS, INC. RESPECTFULLY REQUESTS THAT THE REGIONAL ADMINISTRATOR CONSIDER THE COMMENTS, SUGGESTIONS AND OBJECTIONS SET FORTH HEREIN, AND THAT APPROPRIATE RECONSIDERATION BE GIVEN TO, AND RE-EVALUATION MADE WITH RESPECT TO, THE PROPOSED REMEDIAL ACTION PRIOR TO THE REGIONAL ADMINISTRATOR'S SELECTION OF A REMEDIAL ACTION AND ITS EMBODIMENT IN A RECORD OF DECISION FOR THE SMS INSTRUMENTS, INC. SITE.

RESPECTFULLY SUBMITTED,
DATED: AUGUST 11, 1989 HENRY GLUCKSTERN

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TABLES AND ATTACHMENTS

TABLE 1

CONTAMINATION AND CONCENTRATIONS DETECTED IN VARIOUS MEDIA AT SMS INSTRUMENTS SITE

	MEDIA		
	SOURCE AREA		
	SOIL		
			GROUNDWATER
			OFFSITE*****
CONTAMINANT	SURFACE	SUBSURFACE	UPGRADIENT
VOLATILES			
TRANS-1,2 DICHLOROETHANE	----	1,500 (456)	35(28)
TETRACHLOROETHENE	540 (198)	6,500 (1,099)	5(-)
TRICHLOROETHENE	16,000 (5,388)	51 (20)	14(11.5)
TOTAL XYLENAE	1,500 (1,450)	1,200,000(306,139)	----
ETHYLBENZENE	720 (374)	150,000 (63,400)	----
CHLOROBENZENE	----	340,000 (152,286)	----
1,1-DICHLOROETHANE	----	----	80(35)
SEMI-VOLATILES			
1,4-DICHLOROBENZENE	----	330,000 (68,900)	----
1,3-DICHLOROBENZENE	----	64,000 (74,980)	----
1,2-DICHLOROBENZENE	98,000 (1)	1,800,000 (356,700)	----
NAPHTHELENE	----	16,000 (7,044)	----
INORGANICS			
CHROMIUM	16,000 (11,000)	52,000 (20,000)	28(21.3)
LEAD	50,000 (25,500)	7,900 (3,100)	37(20.8)

NOTE: ALL CONCENTRATIONS REPORTED AS MICROGRAMS PER LITER (UG/L) FOR WATER SAMPLES AND MICROGRAMS PER KILOGRAM (UG/KG) FOR SOILS. MAXIUM DETECTED CONCENTRATIONS AND REPRESENTATIVE VALUES IN PARENTHESES.
ARARS ARE MCLS OR MCLCS UNLESS INDICATED DIFFERENTLY.
---- BELOW DETECTION LIMIT.
* DOWNGRADIENT OFFSITE GROUNDWATER SAMPLES TAKEN FROM WELLS IDENTIFIED AS THE EXPOSURE POINT FOR THE PHE.
* CHROMIUM CONCENTRATIONS AT THE EXPOSURE POINT DO NOT EXCEED ARARS.
** NEW YORK STATE STANDARD, NYS SANITARY CODE, PART 5-1, JANUARY, 1989
** NEW YORK STATE STANDARD, 6NYCRR PART 703.5
**** NEW YORK STATE STANDARD, TOGS 1.1.1.
***** WELLS MW-08 AND MW-09 (SEE FIGURE 4)

TABLE 1 (CONTINUED)

CONTAMINATION AND CONCENTRATIONS DETECTED IN VARIOUS MEDIA AT SMS INSTRUMENTS SITE

CONTAMINANT	ONSITE	OFFSITE * DOWNGRADIENT	CHEMICAL-SPECIFIC ARAR FOR WATER
VOLATILES			
TRANS-1,2 DICHLOROETHANE	1,600 (530)	180 (35)	5**
TETRACHLOROETHENE	47 (20.8)	25 (10.4)	0.7****
TRICHLOROETHENE	24,000 (4,396)	60 (24)	5
TOTAL XYLENAE	2,200 (1,750)	69 (34.6)	5**
ETHYLBENZENE	240 (215)	13 (6.8)	5**
CHLOROBENZENE	670 (568)	493 (289.5)	5**
1,1-DICHLOROETHANE	12(7-2)	110 (40.3)	5**
SEMI-VOLATILES			
1,4-DICHLOROBENZENE	78 (59)	63 (46.5)	4.7***
1,3-DICHLOROBENZENE	28 (22.5)	11 (8.5)	5**
1,2-DICHLOROBENZENE	68 (60.5)	188 (140)	4.7***
NAPHTHELENE	45 (34.5)	7 (6.5)	5**
INORGANICS			
CHROMIUM	47 (23)	38 (24.7)*	50
LEAD	190 (33.0)	70 (24.6)	25**

TABLE 2

SUMMARY OF CARCINOGENIC RISK AND NONCARCINOGENIC HAZARD LEVELS
FOR SMS INSTRUMENTS SITE INDICATOR CHEMICALS

EXPOSURE PATHWAY/RECEPTOR	CARCINOGENIC RISK (CRL)	NONCARCINOGENIC HAZARD (HI)
MEASURED DATA		
POTABLE USE	2.27 X 10(-5)	6.86 X 10(-1)
CASUAL INGESTION	2.27 X 10(-7)	6.86 X 10(-3)
DERMAL ABSORPTION	1.80 X 10(-9)	5.44 X 10(-5)
VEGETABLE CONSUMPTION	3.66 X 10(-7)	5.70 X 10(-3)
MODELED DATA		
POTABLE USE	1.34 X 10(-5)	8.55 X 10(-1)
CASUAL INGESTION	1.34 X 10(-7)	8.55 X 10(-3)
DERMAL ABSORPTION	1.06 X 10(-9)	6.76 X 10(-5)
VEGETABLE CONSUMPTION	2.37 X 10(-7)	8.00 X 10(-3)

CRL = CANCER RISK LEVEL.
HI = HAZARD INDEX.