EPA/ROD/R02-91/137
1991

EPA Superfund
Record of Decision:

ENDICOTT VILLAGE WELL FIELD
EPA ID: NYD980780746
OU 03
VILLAGE OF ENDICOTT, NY
03/29/1991

03/29/91
REGIONAL ADMINISTRATOR

#SLAD
I. SITE NAME, LOCATION, AND DESCRIPTION

THE ENDICOTT WELL FIELD SITE (THE "SITE") IS LOCATED IN THE VILLAGE OF ENDICOTT, BROOME COUNTY, NEW YORK. THE SITE CONSISTS OF THE RANNEY WELL, WHICH IS A MUNICIPAL DRINKING WATER WELL, AND ITS ZONE OF INFLUENCE ON AREA GROUND WATER. THE BOUNDARIES OF THIS ZONE HAVE BEEN GENERALLY DELINEATED BY MAIN STREET TO THE NORTH, THE EASTERN BOUNDARY OF THE EN-JOIE GOLF COURSE TO THE EAST, THE SUSQUEHANNA RIVER TO THE SOUTH AND THE TRI-CITIES AIRPORT AND AIRPORT ROAD TO THE WEST. THE SOUTHERLY FLOWING NANTICOKE CREEK GENERALLY BISECTS THE AREA.

THE PROJECT STUDY AREA IS COMPRISED PRIMARILY OF OPEN LAND ASSOCIATED WITH THE EN-JOIE GOLF COURSE AND THE FACILITIES OF THE VILLAGE OF ENDICOTT SEWAGE TREATMENT PLANT ("STP") AND THE ENDICOTT LANDFILL ("LF #1"). THERE ARE TWO INACTIVE LANDFILLS ("LF #2" AND "LF #3") AND A FEW INDUSTRIAL TRACTS IN THE NORTHERN PORTION OF THE STUDY AREA (FIGURE 1). PRIVATES HOMES ARE NOT LOCATED WITHIN THE STUDY AREA.

#SHEA
II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

A. SITE HISTORY

MOST OF THE SITE IS ON LAND OWNED BY THE VILLAGE OF ENDICOTT (EN-JOIE GOLF COURSE, THE ENDICOTT LANDFILL, SEWAGE TREATMENT PLANT, AND THE TRI-CITIES AIRPORT). TWO OTHER INACTIVE LANDFILLS EXIST JUST NORTH AND EAST OF LF #1 ALONG NANTICOKE CREEK. LF #2 IS TO THE WEST OF NANTICOKE CREEK AND IS PRIVATELY OWNED AND IS ZONED HEAVY INDUSTRIAL. THE LANDFILL TO THE EAST OF NANTICOKE CREEK (LF #3), IS REPORTEDLY A PRIVATELY OWNED INDUSTRIAL FILL AREA AND IS ALSO ZONED HEAVY INDUSTRIAL.

THE VILLAGE OF ENDICOTT OPERATED LF #1 FROM THE LATE 1950'S UNTIL 1975 WITH CONCURRENT OPERATION BY THE TOWN OF UNION DURING A PORTION OF THAT PERIOD. DURING THAT TIME, THE LANDFILL ACCEPTED PRIMARILY MUNICIPAL REFUSE, THOUGH INDUSTRIAL WASTES WERE ALSO DISPOSED OF THERE. IN 1982, LF #1 WAS REOPENED FOR THE DISPOSAL OF COMPOSTED SLUDGE FROM THE STP. THE VOLUME OF SLUDGE AND WASTES DISPOSED OF AT THE ENDICOTT LANDFILL IS NOT KNOWN.

THE RANNEY WELL IS GENERALLY PUMPED AT 3,700 GALLON PER MINUTE ("GPM") AND PROVIDES APPROXIMATELY 47 PERCENT OF THE TOTAL WATER SUPPLY TO THE VILLAGE OF ENDICOTT MUNICIPAL SYSTEM. THE MUNICIPAL SYSTEM SERVES AN ESTIMATED 45,000 PEOPLE IN THE AREA. THE RANNEY WELL OPERATED WITHOUT MAJOR PROBLEMS UNTIL MAY 1981, WHEN THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY ("EPA") DETECTED VINYL CHLORIDE AND TRACE AMOUNTS OF OTHER VOLATILE ORGANIC COMPOUNDS ("VOCS") IN THE WELL'S DISCHARGE. SUBSEQUENT SAMPLING BY THE NEW YORK STATE DEPARTMENT OF HEALTH CONFIRMED THE INITIAL RESULTS.

B. PREVIOUS STUDIES

FOLLOWING THE DISCOVERY OF THE VOCS IN THE RANNEY WELL, INVESTIGATIONS WERE CONDUCTED SEPARATELY BY THE VILLAGE OF ENDICOTT AND THE NYSDEC. THESE INVESTIGATIONS; KUDGES, (1983); ADAMS AND GRANT (1984); AND GRANT (1984, 1985); EVALUATED THE HYDROGEOLOGIC SETTING AND VOC DISTRIBUTION AND IDENTIFIED PRELIMINARY REMEDIAL MEASURES.

BETWEEN MARCH, 1986 AND JULY, 1987, PURSUANT TO A COOPERATIVE AGREEMENT WITH EPA, NYSDEC CONDUCTED A REMEDIAL INVESTIGATION AND FEASIBILITY STUDY ("RI/FS") AT THE SITE. THE PURPOSE OF THIS STUDY WAS TO INVESTIGATED THE NATURE AND EXTENT OF CONTAMINATION OF THE RANNEY WELL AND THE REMEDIAL ACTION THAT SHOULD BE TAKEN TO FURTHER DIMINISH THE CONCENTRATION OF VOCS IN THE RANNEY WELL DISCHARGE. ON SEPTEMBER 25, 1987, THE EPA ISSUED A ROD WHICH SELECTED AIR STRIPPING AT THE RANNEY WELL AND THE CONTINUED USE OF THE EXISTING PURGE WELL SYSTEM, WHICH IS DESCRIBED BELOW.

HOWEVER, THE RI/FS STUDY CONCLUDED THAT THE INFORMATION OBTAINED TO DATE WAS INADEQUATE TO CONFIRM THE

SOURCE OR SOURCES OF THE VOCS IN THE GROUND WATER REACHING THE RANNEY WELL. THEREFORE, THE ROD STIPULATED THAT A SUPPLEMENTAL RI/FS BE INITIATED TO FURTHER INVESTIGATE THE NATURE AND EXTENT OF CONTAMINATION IN SUSPECTED SOURCE AREAS AND TO EVALUATE POSSIBLE SOURCE CONTROL MEASURES.

C. PREVIOUS REMEDIAL MEASURES

IN MARCH, 1983, THE VILLAGE INSTALLED DIFFUSED AERATION EQUIPMENT IN THE RANNEY WELL TO AIR STRIP VOLATILE ORGANIC COMPOUNDS. IN JULY 1984, A PURGE WELL WAS INSTALLED TO CAPTURE THE CONTAMINANT PLUME BEFORE IT IMPACTED THE RANNEY WELL. THE PURGE WELL CURRENTLY PUMPS AN ESTIMATED 600 GPM.

PRESENTLY, THE REMEDIAL ALTERNATIVE (AS SELECTED IN THE 1987 ROD) OF A PACKED COLUMN AIR STRIPPER TO TREAT THE RAW WATER FROM THE RANNEY WELL IS IN THE CONSTRUCTION PHASE AND IS SCHEDULED FOR START-UP IN SPRING, 1991.

D. ENFORCEMENT

EPA IDENTIFIED FOUR POTENTIALLY RESPONSIBLE PARTIES ("PRPS") AS GENERATORS, OWNERS, AND/OR OPERATORS. NOTICE LETTERS INFORMING THE PRPS OF THEIR POTENTIAL LIABILITIES WERE MAILED ON FEBRUARY 1, 1988 TO THE VILLAGE OF ENDICOTT (THE "VILLAGE"), ENDICOTT JOHNSON CORPORATION, AND INTERNATIONAL BUSINESS MACHINES CORPORATION ("IBM"), FOR IMPLEMENTATION OF THE SEPTEMBER 15, 1987 ROD FOR THE CONSTRUCTION OF THE AIR STRIPPER. SUBSEQUENTLY, NOTICE LETTERS WERE MAILED TO THE SAME THREE PRPS ON FEBRUARY 23, 1988, ALSO FOR IMPLEMENTATION OF THE 1987 ROD FOR CONDUCTING THE SUPPLEMENTAL RI/FS. EPA PROVIDED SIMILAR NOTICE TO THE TOWN OF UNION ("THE TOWN") ON MARCH 24, 1988.

SEVERAL NEGOTIATION MEETINGS WERE HELD TO DISCUSS TECHNICAL AND LEGAL ISSUES OF A CONSENT DECREE FOR THE CONSTRUCTION OF THE STRIPPER AND AN ADMINISTRATIVE ORDER ON CONSENT ("AO") FOR THE CONDUCT OF THE SUPPLEMENTAL RI/FS.

A SETTLEMENT WAS REACHED WHICH INCLUDED A CONSENT DECREE, CIVIL ACTION NO. 88-1067, FOR CONSTRUCTION OF THE AIR STRIPPER AT THE RANNEY WELL, BETWEEN EPA, THE TOWN, AND THE VILLAGE WAS ENTERED IN US DISTRICT COURT FOR THE NORTHERN DISTRICT OF NEW YORK ON JANUARY 10, 1989. IN ADDITION, EPA ISSUED AN AO, INDEX NO. II CERCLA-89214, FOR PERFORMANCE OF THE SUPPLEMENTAL RI/FS, TO IBM, THE VILLAGE OF ENDICOTT, AND THE TOWN OF UNION ON SEPTEMBER 19, 1988. ENDICOTT JOHNSON DECLINED TO PARTICIPATE IN THE SETTLEMENTS.

LOZIER/GROUND WATER ASSOCIATES PERFORMED THE SUPPLEMENTAL RI/FS ON BEHALF OF IBM. FIELD WORK FOR PHASE I OF THE RI/FS WAS INITIATED IN OCTOBER, 1989. THE INTERIM RI REPORT FOR THE PHASE I STUDY WAS APPROVED BY EPA IN NOVEMBER, 1990. A SECOND PHASE TO FURTHER DELINEATE GROUND WATER CONTAMINANT PLUMES IS ONGOING AND IS EXPECTED TO BE COMPLETED BY THE SUMMER OF 1991.

#HCP
III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

THE RI, TECHNICAL MEMORANDUM AND THE PROPOSED PLAN WERE RELEASED TO THE PUBLIC IN FEBRUARY, 1991. THESE DOCUMENTS WERE MADE AVAILABLE AT TWO INFORMATION REPOSITORIES MAINTAINED AT THE ENDICOTT VILLAGE CLERK'S OFFICE AND THE EPA REGION II OFFICE IN NEW YORK CITY. THE NOTICE OF AVAILABILITY FOR THESE DOCUMENTS WAS PUBLISHED IN THE ENDICOTT VALLEY NEWS ON FEBRUARY 22 AND ON MARCH 1, 1991. A PUBLIC COMMENT PERIOD WAS HELD FROM FEBRUARY 22, 1991 THROUGH MARCH 23, 1991. IN ADDITION, A PUBLIC MEETING WAS HELD ON MARCH 6, 1991 TO PRESENT THE PREFERRED ALTERNATIVE AS PRESENTED IN THE PROPOSED PLAN FOR THE SITE. AT THIS MEETING, REPRESENTATIVES FROM EPA PRESENTED THE PROPOSED PLAN REGARDING THE INTERIM REMEDY. AFTERWARDS, EPA ANSWERED QUESTIONS AND RESPONDED TO COMMENTS CONCERNING SUCH PLAN AND OTHER DETAILS RELATED TO THE VARIOUS REPORTS. RESPONSES TO THE COMMENTS AND QUESTIONS RECEIVED DURING THE PUBLIC COMMENT PERIOD ARE INCLUDED IN THE RESPONSIVENESS SUMMARY, WHICH IS INCLUDED IN THIS ROD AS APPENDIX 4.

#SRIR
IV. SCOPE AND ROLE OF INTERIM REMEDY

THE RI/FS FOR THE FIRST OPERABLE UNIT DETERMINED THE REMEDIAL ACTION FOR THE RANNEY WELL. THEREFORE, ANY

POTENTIAL THREAT POSED BY CONTAMINATION WILL BE ADDRESSED BY THE REMEDIAL ACTION (AS SELECTED IN THE 1987 ROD) OF A PACKED COLUMN AIR STRIPPER TO TREAT THE RAW WATER FROM THE RANNEY WELL DISCHARGE.

THIS ROD RESULTS FROM DATA COLLECTED DURING PHASE I OF THE SUPPLEMENTAL RI/FS CONDUCTED SUBSEQUENT TO THE FIRST OPERABLE UNIT ROD. THIS OPERABLE UNIT IS AN INTERIM REMEDIAL ACTION TO EXPEDITE CLEANUP OF THE GROUND WATER AQUIFER AND TO RESTRICT MIGRATION OF THE GROUND WATER CONTAMINANT PLUME EMANATING FROM THE ENDICOTT LANDFILL. EPA WILL IMPLEMENT AN INTERIM REMEDIAL ACTION TO INCREASE THE EFFICIENCY OF THE EXISTING PURGE WELL SYSTEM AND TO AID IN AQUIFER CLEANUP BY REDUCTION OF THE CONTAMINANT PLUME. BASED UPON AVAILABLE DATA, THE MAJORITY OF THE CONTAMINATED GROUND WATER IS BEING INTERCEPTED BY THE EXISTING PURGE WELL LOCATED EAST OF NANTICOKE CREEK. HOWEVER, IT APPEARS THAT THE EXISTING PURGE WELL IS NOT FULLY EFFECTIVE IN CAPTURING THE VOC CONTAMINATED GROUND WATER PLUME EMANATING FROM THE ENDICOTT LANDFILL AND THAT MIGRATION OF THE PLUME IS MORE CONTROLLED BY THE RANNEY WELL INFLUENCE.

ADDITIONALLY, LOW LEVELS OF VOCS WERE DETECTED DOWNGRADIENT OF THE PURGE WELL. THEREFORE, IT IS ALSO POSSIBLE THAT VOCS MAY POTENTIALLY BE MIGRATING AROUND, AND UNDER THE CATCHMENT AREA OF THE EXISTING PURGE WELL SYSTEM UNDER THE PUMPING INFLUENCES OF THE RANNEY WELL. THE EXISTING PURGE WELL SYSTEM APPEARS TO BE INADEQUATE IN FULLY CONTROLLING THE MIGRATION OF VOCS FROM THE ENDICOTT LANDFILL.

EPA'S DECISION TO ADDRESS THE GROUND WATER CONTAMINATION PROBLEM AS AN INTERIM REMEDIAL ACTION WILL SERVE TO FURTHER REDUCE MIGRATION OF CONTAMINATED GROUND WATER AND THE POTENTIAL THREAT TO THE RANNEY WELL. THIS REMEDY DOES NOT CONSTITUTE A FINAL ACTION FOR THE GROUND WATER. TO THE EXTENT POSSIBLE, THIS INTERIM REMEDIAL ACTION WILL BE CONSISTENT WITH ANY PLANNED FUTURE ACTIONS.

THE OVERALL SUPPLEMENTAL RI WHICH IS ONGOING WILL ADDRESS SOURCE CONTROL AND AQUIFER RESTORATION. EPA EXPECTS TO SELECT A REMEDY FOR THE SOURCE CONTROL/AQUIFER RESTORATION NEXT YEAR.

#SSC

V. SUMMARY OF SITE CHARACTERISTICS

A. HYDROGEOLOGY

IN ORDER TO FURTHER EVALUATE THE HYDROGEOLOGY AT THE SITE, 26 MONITORING WELLS WERE INSTALLED DURING THE PHASE I RI. THE LOCATIONS OF THE MONITORING WELLS ARE SHOWN IN FIGURE 2. DATA ON EACH OF THE MONITORING WELLS IS SUMMARIZED IN TABLE 1. THE GEOLOGIC SETTING OF THE SITE IS RELATIVELY COMPLEX. THE SITE IS LOCATED IN THE SUSQUEHANNA RIVER VALLEY THAT HAS BEEN FILLED WITH GLACIAL AND ALLUVIAL SEDIMENTS UP TO 200 FEET THICK. THE GLACIAL SEDIMENTS CONSIST OF FINE-GRAINED SEDIMENTS, COARSE-GRAINED SEDIMENTS, COARSE-GRAINED OUTWASH AND ICE CONTACT DEPOSITS, OVERLYING A DENSE HETEROGENOUS TILL.

THE ICE CONTACT DEPOSITS AND THE OUTWASH DEPOSITS COLLECTIVELY MAKE UP THE MAIN AQUIFER SYSTEM IN THE PROJECT STUDY AREA. THIS IS THE AQUIFER FROM WHICH THE RANNEY WELL OBTAINS ITS WATER. GROUND WATER FLOW WITHIN THE MAIN AQUIFER HAS BEEN DRASTICALLY CHANGED BY THE PUMPING INFLUENCE OF THE RANNEY AND THE EXISTING PURGE WELLS. UNDER NON-PUMPING CONDITIONS, GROUND WATER FLOW IN THE AQUIFER IS FROM NORTHEAST TO SOUTHWEST, IN THE DIRECTION OF FLOW IN THE SUSQUEHANNA RIVER. HOWEVER, THE RANNEY WELL AND THE EXISTING PURGE WELL COMBINED PUMPING INFLUENCE OF 4,300 GPM, HAVE LOCALLY REVERSED GROUND WATER FLOW. GROUND WATER IN THE VICINITY OF THESE WELLS NOW FLOWS GENERALLY FROM THE NORTHWEST TO THE SOUTHEAST.

B. CHEMICAL CHARACTERISTICS

THE FULL EXTENT OF CONTAMINATION AT THE SITE IS BEING EVALUATED IN THE PHASE II OF THE ON-GOING RI/FS. THREE ROUNDS OF GROUND WATER SAMPLING WERE COLLECTED FROM MONITORING WELLS INSTALLED DURING PHASE I OF THE RI AND FROM SELECTED MONITORING WELLS INSTALLED DURING PREVIOUS INVESTIGATIONS. IN ADDITION, THE EXISTING PURGE AND RANNEY WELLS WERE ALSO SAMPLED. THE ANALYTICAL RESULTS FOR VOCS DETECTED ARE SUMMARIZED IN TABLE 2.

GROUND WATER SAMPLES COLLECTED AT VARIOUS LOCATIONS INDICATED CONTAMINATION BY VARIOUS VOCS. IT IS ALSO EVIDENT FROM THE DATA THAT THE CHLORO-ALKENE VOCS; TETRACHLOROETHENE (PCE), TRICHLOROETHENE (TCE), 1,2-DICHLOROETHENE (DCE) (TOTAL), 1,1-DCE, AND VINYL CHLORIDE AND THE CHLORO-ALKANE VOCS;

1,1,1,-TRICHLOROETHANE (TCA), 1,2-DICHLOROETHANE (DCA), 1,1-DCA, AND CHLOROETHANE ARE THE PRIMARY CONTAMINANTS IN GROUND WATER.

THE DISTRIBUTION OF THE CHLORO-ALKENE VOCS IN GROUND WATER IS SHOWN IN FIGURE 3 BY THE LIGHTLY SHADED CONTOURS. AS SHOWN, TWO CHLORO-ALKENE PLUMES WERE DETECTED, CONSISTING PRIMARILY OF VINYL CHLORIDE AND 1,2-DCE. ONE PLUME IS IN THE GLACIAL AQUIFER NEAR THE STP EXTENDING TO THE PURGE WELL; THE OTHER IS IN THE ALLUVIAL DEPOSIT NEAR MW-5.

THE LARGEST CHLORO-ALKENE PLUME WAS OBSERVED IN THE OUTWASH AND ICE CONTACT DEPOSITS AND APPEARS TO HAVE ITS CORE NEAR THE NORTHERN CORNER OF LF #1 NEAR MONITORING WELL EW-15. THE HIGHEST CHLORO-ALKENE CONCENTRATION ENCOUNTERED IN THIS PLUME WAS AT 356 PPB (VINYL CHLORIDE, 86 PPB AND 1,2-DCE, 270 PPB) IN MONITORING WELL EW-15. UNDER THE PUMPING INFLUENCES OF THE RANNEY AND PURGE WELLS, THE PLUME HAS MIGRATED IN THE AQUIFER, EASTWARD TOWARD THE PURGE WELL. THE EXISTING PURGE WELL APPEARS TO BE CAPTURING A MAJOR PORTION OF THIS PLUME WITH THE HIGHEST CONCENTRATION ENCOUNTERED OF 73 PPB. GIVEN THE NUMBER OF WELLS MONITORING THIS PLUME, ITS HORIZONTAL EXTENT IS WELL-DEFINED. SOME QUESTIONS STILL EXIST AS TO ITS VERTICAL EXTENT AND WHETHER UNDERFLOW UNDER THE EXISTING PURGE WELL EXISTS. EVIDENCE OF THIS UNDERFLOW IS SEEN IN THE CONTAMINATION IN DEEP MONITORING WELLS MW-2 (160 FEET) INSTALLED DURING THIS INVESTIGATION AND REPORTED IN MONITORING WELL EW-2D.

ANOTHER CHLORO-ALKENE PLUME IS SEEN NEAR MONITORING WELL MW-5 IN THE SHALLOW ALLUVIAL DEPOSITS. TCE (600 PPB) AND 1,2-DCE (320 PPB) ARE THE PRIMARY CONSTITUENTS OF THIS PLUME. THE LIMITED NUMBER OF WELLS MONITORING THIS PLUME PREVENTED FULL DEFINITION OF ITS EXTENT.

AS SEEN IN FIGURE 4 BY THE LIGHTLY SHADED CONTOURS, THE CHLORO-ALKANES (PRIMARILY CHLOROETHANE) APPEARS TO BE WIDE-SPREAD ACROSS LF #1. A DEFINITE PLUME IN THE GLACIAL AQUIFER IS APPARENT NEAR THE STP EXTENDING TO THE PURGE WELL. THE HIGHEST CONCENTRATIONS WITHIN THIS PLUME WERE DETECTED IN MONITORING WELLS EW-6 (187 PPB) AND EW-8 (102 PPB). THE EXISTING PURGE WELL DETECTED 54 PPB. AS WITH THE CHLORO-ALKENE PLUME, THE CHLORO-ALKANE PLUME IN THE GLACIAL AQUIFER APPEARS TO BE WELL-DEFINED. AGAIN, UNDERFLOW UNDER THE PURGE WELL MAY BE OCCURRING BASED ON VINYL CHLORIDE CONCENTRATIONS AT LEVELS ABOVE THE MAXIMUM CONTAMINANT LEVELS ("MCLS") ESTABLISHED UNDER THE SAFE DRINKING WATER ACT, AT 66 PPB IN GROUND WATER MONITORING WELL MW-2, LOCATED DOWNGRADIENT OF THE EXISTING PURGE WELL. ALL DATA GAPS WILL BE FURTHER EVALUATED DURING PHASE II OF THE SUPPLEMENTAL RI.

#SSR
VI. SUMMARY OF SITE RISKS

AN ANALYSIS OF THE RESULTS OF THE PHASE I RI REPORT WAS CONDUCTED BY EPA TO DETERMINE HEALTH IMPACTS WHICH COULD POTENTIALLY RESULT FROM THE CONTAMINATION DETECTED AT THE ENDICOTT WELL FIELD SITE.

THE DATA REVEALED THAT NUMEROUS VOCS WERE DETECTED IN GROUND WATER SAMPLES ABOVE MCLS, EPA HEALTH ADVISORIES, AND OTHER CRITERIA. SOME OF THESE CHEMICALS ARE SUSPECTED CARCINOGENS (CANCER CAUSING) IN HUMANS OR ARE KNOWN CARCINOGENS IN ANIMALS (1,2-DICHLOROETHANE, TETRACHLOROETHYLENE, TRICHLOROETHYLENE). OTHER CHEMICALS DETECTED IN THE SAMPLES ARE KNOWN HUMAN CARCINOGENS (VINYL CHLORIDE AND BENZENE). ALL OF THESE COMPOUNDS ARE HAZARDOUS SUBSTANCES WITHIN THE MEANING OF CERCLA.

A QUANTITATIVE RISK ASSESSMENT ("RA") WAS NOT PERFORMED FOR THIS INTERIM REMEDIAL ACTION. HOWEVER, ONE WAS PERFORMED FOR THE FIRST OPERABLE UNIT FOR THE SITE. RESULTS OF THAT RA DETERMINED THAT INGESTION OF CONTAMINATED RANNEY WELL WATER POSED THE GREATEST HUMAN HEALTH RISK AT THE SITE. THE RANNEY WELL DRAWS WATER PRIMARILY FROM THE SUSQUEHANNA RIVER, WITH THE BALANCE DERIVED FROM AREA GROUND WATER. THE START-UP OF THE AIR-STRIPPER THAT IS BEING CONSTRUCTED PURSUANT TO THE FIRST OPERABLE UNIT ROD WILL SIGNIFICANTLY REDUCE THE RISK. HOWEVER, THE RESULTS OF THE PHASE I RI INDICATED THAT THE EXISTING REMEDIAL MEASURES MAY NOT BE EFFECTIVE IN CURTAILING THE SOURCE OF THE CONTAMINATION TO THE RANNEY WELL. A DETAILED RA WILL BE PERFORMED AS PART OF THE SUPPLEMENTAL INVESTIGATION FOR THE SITE.

ACTUAL OR THREATENED RELEASES OF HAZARDOUS SUBSTANCES FROM THIS SITE MAY PRESENT AN IMMINENT AND SUBSTANTIAL THREAT TO PUBLIC HEALTH, WELFARE, OR THE ENVIRONMENT. THE INTERIM REMEDIAL ACTION SELECTED IN THIS ROD WILL HELP TO ABATE THAT THREAT. A SOURCE CONTROL REMEDIAL ACTION, WHICH WILL FURTHER ABATE

THAT THREAT, WILL BE SELECTED IN A SUBSEQUENT ROD.

VII. DESCRIPTION OF REMEDIAL ALTERNATIVES

THE OBJECTIVE OF THE PRESENT REMEDY IS TO ENHANCE GROUND WATER CLEANUP WHILE AN ADDITIONAL INVESTIGATION TO CURTAIL THE SOURCE(S) OF GROUND WATER CONTAMINATION AND TO EVALUATE AQUIFER RESTORATION IS UNDERTAKEN. WHILE THE PURPOSE OF THIS INTERIM REMEDY IS TO WORK TOWARD THE GOAL OF RESTORATION, IT DOES NOT CONSTITUTE A FINAL ACTION FOR THE SITE.

ALTERNATIVE 1: NO ACTION

THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA), AS AMENDED BY SARA, REQUIRES THAT THE "NO-ACTION" ALTERNATIVE BE CONSIDERED AT EVERY SITE TO ESTABLISH A BASELINE AGAINST WHICH OTHER ALTERNATIVES MAY BE COMPARED. UNDER THIS ALTERNATIVE, THE SITE WOULD REMAIN IN ITS PRESENT CONDITION WITH CONTINUED OPERATION OF THE EXISTING SYSTEMS (I.E. PURGE WELL AND AERATION SYSTEM AND THE AIR STRIPPER) AND ASSOCIATED MONITORING. NO REMEDIATION MEASURES WOULD BE IMPLEMENTED AT THIS TIME.

CAPITAL COST:	$0
ANNUAL OPERATION & MAINTENANCE:	$22,000
ESTIMATED PRESENT WORTH:	$207,000
TIME TO IMPLEMENT:	IMMEDIATE

ALTERNATIVE 2: SUPPLEMENTAL PURGE WELL

THIS ALTERNATIVE CONSISTS OF UPGRADING THE EXISTING PURGE WELL SYSTEM WITH THE INSTALLATION OF AN ADDITIONAL PURGE WELL, TO BE INSTALLED WEST OF NANTICOKE CREEK ESSENTIALLY BETWEEN THE SUSPECTED SOURCE OF THE VOCS TO THE AQUIFER (ENDICOTT LANDFILL) AND THE RECEPTOR (THE RANNEY WELL). THE PROPOSED LOCATION OF THE PURGE WELL IS CHOSEN TO INTERCEPT THE PLUME NEAR ITS SUSPECTED SOURCE AND TO BEGIN REMEDIATION OF THE AQUIFER.

THE PROPOSED WELL IS ESTIMATED TO BE 110 FEET DEEP AND WOULD BE SCREENED ACROSS THE MAJORITY OF THE AQUIFER BETWEEN THE DEPTHS OF APPROXIMATELY 50 AND 110 FEET. THIS DESIGN WOULD INTERCEPT THE MAJORITY OF THE FLOW WITHIN THE CONTAMINATED PORTION OF THE AQUIFER, AND PREVENT CONTAMINATED GROUND WATER FROM CONTINUING TO MOVE UNDER THE PURGE WELL SYSTEM, AS MAY BE HAPPENING WITH THE EXISTING PURGE WELL. HOWEVER, THE ACTUAL DESIGN WILL BE BASED UPON A PILOT HOLE DRILLED AT THE PROPOSED LOCATION DURING THE PHASE II RI. OPERATION AND MAINTENANCE COST FOR THIS ALTERNATIVE ONLY APPLIES TO THE ADDITIONAL PURGE WELL. THE ESTIMATED PRESENT WORTH COST ASSUMES THAT NO TREATMENT OF THE WATER WILL BE REQUIRED.

CAPITAL COST:	$150,000
ANNUAL OPERATION & MAINTENANCE:	$24,000
ESTIMATED PRESENT WORTH:	$376,000
TIME TO IMPLEMENT:	24 MONTHS (THIS INCLUDES THE DESIGN PHASE)

VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

IN ACCORDANCE WITH THE NCP, A DETAILED ANALYSIS OF EACH ALTERNATIVE IS REQUIRED. IN ORDER TO DETERMINE THE MOST APPROPRIATE ALTERNATIVE THAT IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT, ATTAINS ARARS, IS COST-EFFECTIVE, AND UTILIZES PERMANENT SOLUTIONS AND TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE, THE TWO ALTERNATIVES WERE EVALUATED AGAINST EACH OTHER. THE NINE EVALUATION CRITERIA AGAINST WHICH THE ALTERNATIVES ARE EVALUATED ARE AS FOLLOWS:

THRESHOLD CRITERIA - THE FIRST TWO CRITERIA MUST BE SATISFIED IN ORDER FOR AN ALTERNATIVE TO BE ELIGIBLE FOR SELECTION.

1. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT ADDRESSES

WHETHER A REMEDY PROVIDES ADEQUATE PROTECTION AND DESCRIBES HOW RISKS POSED THROUGH EACH PATHWAY ARE ELIMINATED, REDUCED, OR CONTROLLED THROUGH TREATMENT, ENGINEERING CONTROLS, OR INSTITUTIONAL CONTROLS.

2. COMPLIANCE WITH APPLICABLE, OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARS) IS USED TO DETERMINE WHETHER EACH ALTERNATIVE WILL MEET ALL OF ITS FEDERAL AND STATE ARARS. WHEN AN ARAR IS NOT MET, THE DETAILED ANALYSIS SHOULD DISCUSS WHETHER ONE OF SIX STATUTORY WAIVERS IS APPROPRIATE.

PRIMARY BALANCING CRITERIA - THE NEXT FIVE "PRIMARY BALANCING CRITERIA" ARE TO BE USED TO WEIGH MAJOR TRADE-OFFS AMONG THE DIFFERENT HAZARDOUS WASTE MANAGEMENT STRATEGIES.

3. LONG-TERM EFFECTIVENESS AND PERMANENCE FOCUSES ON ANY RESIDUAL RISK REMAINING AT THE SITE AFTER THE COMPLETION OF THE REMEDIAL ACTION. THIS ANALYSIS INCLUDES CONSIDERATION OF THE DEGREE OF THREAT POSED BY THE HAZARDOUS SUBSTANCES REMAINING AT THE SITE AND THE ADEQUACY OF ANY CONTROLS (FOR EXAMPLE, ENGINEERING AND INSTITUTIONAL) USED TO MANAGE THE HAZARDOUS SUBSTANCES REMAINING AT THE SITE.

4. REDUCTION OF TOXICITY, MOBILITY, OR VOLUME THROUGH TREATMENT IS THE ANTICIPATED PERFORMANCE OF THE TREATMENT TECHNOLOGIES A PARTICULAR REMEDY MAY EMPLOY.

5. SHORT-TERM EFFECTIVENESS ADDRESSES THE PERIOD OF TIME NEEDED TO ACHIEVE PROTECTION AND ANY ADVERSE IMPACTS ON HUMAN HEALTH AND THE ENVIRONMENT THAT MAY BE POSED DURING THE CONSTRUCTION AND IMPLEMENTATION PERIOD UNTIL CLEANUP GOALS ARE ACHIEVED.

6. IMPLEMENTABILITY ADDRESSES THE TECHNICAL AND ADMINISTRATIVE FEASIBILITY OF IMPLEMENTING AN ALTERNATIVE AND THE AVAILABILITY OF VARIOUS SERVICES AND MATERIALS REQUIRED DURING ITS IMPLEMENTATION.

7. COST INCLUDES ESTIMATED CAPITAL, AND OPERATION AND MAINTENANCE COSTS, BOTH TRANSLATED TO A PRESENT-WORTH BASIS. THE DETAILED ANALYSIS EVALUATES AND COMPARES THE COST OF THE RESPECTIVE ALTERNATIVES, BUT DRAWS NO CONCLUSIONS AS TO THE COST-EFFECTIVENESS OF THE ALTERNATIVES. COST-EFFECTIVENESS IS DETERMINED IN THE REMEDY SELECTION PHASE, WHEN COST IS CONSIDERED ALONG WITH THE OTHER BALANCING CRITERIA.

MODIFYING CRITERIA - THE FINAL TWO CRITERIA ARE REGARDED AS "MODIFYING CRITERIA," AND ARE TO BE TAKEN INTO ACCOUNT AFTER THE ABOVE CRITERIA HAVE BEEN EVALUATED. THEY ARE GENERALLY TO BE FOCUSED UPON AFTER PUBLIC COMMENT IS RECEIVED.

8. STATE ACCEPTANCE INDICATES WHETHER BASED UPON ITS REVIEW OF THE RI/FS AND THE PROPOSED PLAN, THE STATE CONCURS WITH THE SELECTED REMEDY.

9. COMMUNITY ACCEPTANCE REFERS TO THE COMMUNITY'S COMMENTS ON THE REMEDIAL ALTERNATIVES UNDER CONSIDERATION, ALONG WITH THE PROPOSED PLAN. COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD, AND EPA'S RESPONSES TO THOSE COMMENTS, ARE SUMMARIZED IN THE RESPONSIVENESS SUMMARY WHICH IS A PART OF THIS ROD.

THE FOLLOWING IS A SUMMARY OF THE COMPARISON OF THE TWO ALTERNATIVE'S STRENGTHS AND WEAKNESSES WITH RESPECT TO THE NINE EVALUATION CRITERIA.

1. OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE NO-ACTION ALTERNATIVE WOULD NOT ENSURE THAT THE RANNEY WELL WILL NOT BE IMPACTED BY VOCS EMANATING FROM THE ENDICOTT LANDFILL. HOWEVER, THE OPERATION OF THE AIR-STRIPPER IS DESIGNED TO REMOVE VOCS TO BELOW MCLS.

IMPLEMENTATION OF THE INTERIM REMEDY SHOULD SERVE TO EXPEDITE REMEDIATION OF THE AQUIFER BY INCREASING THE VOLUME OF CONTAMINANTS REMOVED FROM THE GROUND WATER. IN ADDITION, UPGRADING THE EXISTING PURGE WELL SYSTEM WOULD BE BENEFICIAL IN MAINTAINING THE PROTECTION OF PUBLIC HEALTH AND THE ENVIRONMENT. ALTHOUGH THE EXISTING PURGE WELL APPEARS TO BE CAPTURING A MAJORITY OF THE VOCS EMANATING FROM THE LANDFILL, RESULTS FROM THE PHASE I RI INDICATES THAT THE POTENTIAL EXISTS FOR VOCS TO MIGRATE UNDER, AND AROUND THE PURGE WELL TO THE RANNEY WELL. THE ADDITIONAL PURGE WELL WILL BE LOCATED AND DESIGNED TO BE MORE EFFECTIVE IN INTERCEPTING AND REMOVING THE CONTAMINANT PLUME CLOSER TO ITS SUSPECTED SOURCE. THIS SHOULD REDUCE THE POTENTIAL FOR VOCS TO MIGRATE TO THE RANNEY WELL, THUS FURTHER PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT. THIS INTERIM SYSTEM MAY BE INCORPORATED INTO THE DESIGN OF THE SOURCE CONTROL REMEDY FOR THE SITE.

2. COMPLIANCE WITH ARARS

CERCLA PROVIDES THAT IF AN INTERIM MEASURE IS CONDUCTED, CERTAIN ARARS MAY BE WAIVED FOR THE DURATION OF THE INTERIM ACTION, SINCE THESE REQUIREMENTS WILL BE ACHIEVED UPON COMPLETION OF THE PERMANENT REMEDY. BECAUSE BOTH ALTERNATIVES CONSTITUTE INTERIM ACTIONS, FINAL CLEANUP STANDARDS FOR CONTAMINANTS IN GROUND WATER DO NOT HAVE TO BE SET OR ACHIEVED DURING THIS ACTION; THE FINAL REMEDY FOR THE SITE WILL ADDRESS SOURCE CONTROL AND GROUND WATER RESTORATION AS WELL AS POTENTIAL IMPACTS TO WETLAND AREAS, CULTURAL RESOURCES, OR ENDANGERED SPECIES.

HOWEVER, OTHER ARARS RELATED TO IMPLEMENTATION OF THE INTERIM ACTION WOULD HAVE TO BE ACHIEVED. AT THIS TIME IT IS ASSUMED THAT THE WATER FROM THE ADDITIONAL PURGE WELL CAN BE ROUTED THROUGH THE STP.

3. LONG-TERM EFFECTIVENESS

UNCERTAINTIES STILL EXIST IN THE NO-ACTION ALTERNATIVE'S EFFECTIVENESS TO REMEDIATE THE AQUIFER. UPGRADING THE PURGE WELL SYSTEM WITH THE INSTALLATION OF AN ADDITIONAL PURGE WELL WILL BE EFFECTIVE IN CONTROLLING PLUME MIGRATION AS LONG AS IT IS OPERATIONAL.

4. REDUCTION OF TOXICITY, MOBILITY, OR VOLUME

THE NO-ACTION ALTERNATIVE WILL NOT FURTHER REDUCE THE TOXICITY, MOBILITY, OR VOLUME OF THE CONTAMINATED GROUND WATER. INSTALLATION OF AN ADDITIONAL PURGE WELL WILL INITIATE REDUCTION IN THE VOLUME OF GROUND WATER CONTAMINATED BY VOCS THROUGH ITS REMOVAL FROM THE AQUIFER AND SUBSEQUENT TREATMENT. IN ADDITION, THE PURGE WELL WILL ALSO REDUCE THE MOBILITY OF THE CONTAMINANTS BY CAPTURING CONTAMINATED GROUND WATER WITHIN ITS CONE OF INFLUENCE.

DATA TO SUPPORT THE EXTENT TO WHICH THE MOBILITY, AND VOLUME ARE REDUCED WILL BE FURTHER EVALUATED FOLLOWING INSTALLATION AND TESTING OF THE ADDITIONAL PURGE WELL.

5. SHORT-TERM EFFECTIVENESS

SHORT-TERM RISKS ASSOCIATED WITH IMPLEMENTATION ARE NOT EXPECTED TO BE A PROBLEM FOR EITHER ALTERNATIVE. BOTH ALTERNATIVES WILL RESULT IN CONTAMINATED MATERIAL BEING BROUGHT TO THE SURFACE. HOWEVER, NO APPRECIABLE RISKS TO RESIDENTS ARE EXPECTED, SINCE THERE IS A LARGE AMOUNT OF OPEN, PUBLICLY-OWNED LAND AVAILABLE, AND THERE ARE NO RESIDENCES IN THE IMMEDIATE AREA. ADDITIONALLY, WORKERS WILL USE CONVENTIONAL PERSONNEL PROTECTIVE GEAR.

6. IMPLEMENTABILITY

INSTALLATION OF THE ADDITIONAL PURGE WELL CAN BE ACHIEVED USING STANDARD AND READILY AVAILABLE TECHNOLOGY. THE TECHNOLOGY TO MONITOR THE PERFORMANCE AND ADEQUACY OF THE ADDITIONAL PURGE WELL IS RELIABLE AND PROVEN FOR THE TYPES OF CHEMICALS FOUND AT THE SITE. SUBSEQUENT TESTING OF THE ADDITIONAL

PURGE WELL WOULD PROVIDE THE DATA NECESSARY TO EVALUATE THE TECHNICAL FEASIBILITY OF THE PURGE WELL SYSTEM AS A CONTROL FOR THE MIGRATION OF THE CONTAMINANT PLUME.

7. COST

THE COSTS FOR THE TWO ALTERNATIVES ARE LISTED ON THE PREVIOUS PAGES. COMPARISON OF THE PRESENT WORTH COSTS FOR THE TWO ALTERNATIVES INDICATES THAT THE NO-ACTION ALTERNATIVE IS THE LEAST COSTLY AT $207,000. CAPITAL COST IS THE PRESENT WORTH VALUE FOR IMPLEMENTING THE REMEDIAL ACTION. ANNUAL OPERATION AND MAINTENANCE ("O&M") COSTS ARE USED TO QUANTIFY THE YEARLY EXPENSE OF O&M. THE 30 YEAR ANNUAL COST IS THEN CALCULATED AND EXPRESSED IN CURRENT VALUE TERMS.

THE CAPITAL COST FOR THE ADDITIONAL PURGE WELL INCLUDE THE DRILLING AND INSTALLATION OF THE PURGE WELL AND PUMP, WELL PIT, ELECTRIC INSTALLATION, METER AND CONTROLS, AND A DISCHARGE LINE TO NANTICOKE CREEK. THE ESTIMATED CAPITAL COSTS FOR THESE ITEMS IS $150,000.

THE O&M OF THE ALTERNATIVE INCLUDE ENERGY COST FOR THE PUMP, TWO SAMPLE ANALYSES PER MONTH, AND WELL MAINTENANCE. THESE COSTS ARE ESTIMATED TO BE $24,000. THE NET PRESENT WORTH OF THE ADDITIONAL PURGE WELL IS ESTIMATED TO BE $376,000. THIS ASSUMES NO TREATMENT OF THE DISCHARGE WATER WILL BE REQUIRED.

8. STATE ACCEPTANCE

THE STATE OF NEW YORK CONCURS WITH THE SELECTED INTERIM REMEDY.

9. COMMUNITY ACCEPTANCE

ALL COMMENTS SUBMITTED DURING THE PUBLIC COMMENT PERIOD WERE EVALUATED AND ARE ADDRESSED IN THE ATTACHED RESPONSIVENESS SUMMARY.

#SR

IX. THE SELECTED REMEDY

BASED ON THE RESULTS OF THE PHASE I RI REPORT AND THE TECHNICAL MEMORANDUM FOR IMPLEMENTATION OF THE INTERIM REMEDIAL MEASURES, EPA HAS SELECTED ALTERNATIVE 2, SUPPLEMENTAL PURGE WELL, AS THE INTERIM REMEDY AT THE ENDICOTT WELL FIELD SITE. THE COST OF THIS REMEDY IS ESTIMATED TO BE $376,000.

THE SELECTED REMEDY WILL INCLUDE THE FOLLOWING ACTIVITIES:

* UPGRADING THE EXISTING PURGE WELL SYSTEM, LOCATED ON THE EN-JOIE GOLF COURSE, WITH THE INSTALLATION OF AN ADDITIONAL PURGE WELL, TO BE INSTALLED WEST OF NANTICOKE CREEK BETWEEN THE SUSPECTED SOURCE OF THE VOCS TO THE AQUIFER (ENDICOTT LANDFILL) AND THE RECEPTOR (THE RANNEY WELL);

* THE LOCATION OF THE ADDITIONAL PURGE WELL WILL BE CHOSEN TO INTERCEPT THE PLUME NEAR ITS SUSPECTED SOURCE AND TO EXPEDITE REMEDIATION OF THE AQUIFER;

* THE PROPOSED WELL IS ESTIMATED TO BE 110 FEET DEEP AND WILL BE SCREENED ACROSS THE MAJORITY OF THE AQUIFER BETWEEN THE DEPTHS OF APPROXIMATELY 50 AND 110 FEET;
* THE DESIGN WILL BE BASED UPON A PILOT HOLE DRILLED AT THE PROPOSED LOCATION DURING THE PHASE II SUPPLEMENTAL RI;

* IMPLEMENTATION OF A SUPPLEMENTAL PURGE WELL MONITORING PROGRAM TO MONITOR THE EFFECTS OF THE ADDITIONAL PURGE WELL ON CONTAMINANT MIGRATION IN THE AQUIFER, OF CONCERN AND TO EVALUATE THE EFFECTIVENESS OF THE INTERIM ACTION.

THE PROGRAM WILL INCLUDE PROVISIONS FOR TAKING CHEMICAL ANALYSIS AND GROUND WATER ELEVATIONS OF THE PURGE WELL AND SURROUNDING MONITORING WELLS;

* FOLLOWING INSTALLATION OF THE SUPPLEMENTAL PURGE WELL, A DETAILED AQUIFER PUMP TEST WILL BE CONDUCTED USING THE PURGE WELL AS THE PUMPING WELL. IT IS ENVISIONED THAT THE DISCHARGE FROM THE TEST CAN BE ROUTED THROUGH THE SEWAGE TREATMENT PLANT. BASED UPON THE ANALYSIS OF THE SUPPLEMENTAL PURGE WELL WATER, THE TREATMENT REQUIREMENTS FOR THE PURGE WELL DISCHARGE WILL BE DETERMINED.

THIS INTERIM REMEDY IS NOT INTENDED TO REPLACE THE EXISTING REMEDIAL MEASURES, BUT IS DESIGNED TO INCREASE THEIR ABILITY TO PROTECT PUBLIC HEALTH AND THE ENVIRONMENT. THE GOAL OF THIS ACTION IS TO FURTHER REDUCE MIGRATION OF CONTAMINATED GROUND WATER AND TO COLLECT DATA ON AQUIFER AND CONTAMINANT RESPONSE TO REMEDIATION MEASURES. THE ULTIMATE GOAL OF REMEDIATION WILL BE DETERMINED IN A FINAL REMEDIAL ACTION FOR THE SITE. UPON COMPLETION OF THE PHASE II RI/FS, THIS INTERIM REMEDY MAY BE INCORPORATED INTO THE DESIGN OF THE SOURCE CONTROL REMEDY FOR THE SITE.

#SD

X. STATUTORY DETERMINATIONS

1. PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

THE SELECTED INTERIM REMEDY IS PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. THE INTERIM REMEDY, INSTALLATION OF A SUPPLEMENTAL PURGE WELL WITH MONITORING AND MAINTENANCE, WILL REDUCE THE POTENTIAL FOR VOCS TO MIGRATE TO THE RANNEY WELL. THE USE OF A PURGE WELL SYSTEM IN THE SHORT-TERM IS A PROVEN METHOD OF REDUCING THE CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS.

2. ATTAINMENT OF ARARS

GIVEN THE LIMITED SCOPE OF THIS INTERIM ACTION, THE SELECTED INTERIM REMEDY WILL ATTAIN APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS DIRECTLY RELATED TO IMPLEMENTATION OF THIS ACTION.

THE SELECTED INTERIM REMEDY WILL NOT EFFECTIVELY RESTORE THE GROUND WATER TO ITS BENEFICIAL USES. THE RESTORATION OF GROUND WATER WILL BE ADDRESSED WHEN EPA ISSUES THE FINAL ROD FOR THIS SITE.

3. COST EFFECTIVENESS

WHILE ALTERNATIVE 1, NO ACTION, IS THE LEAST EXPENSIVE REMEDY, IT IS NOT PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT. THEREFORE, ALTERNATIVE 2 IS THE MOST COST EFFECTIVE REMEDY THAT WILL PROVIDE RELIABLE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT.

4. UTILIZATION OF PERMANENT SOLUTIONS EMPLOYING ALTERNATIVES TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE

THE SELECTED INTERIM ACTION DOES NOT REPRESENT A PERMANENT SOLUTION WITH RESPECT TO THE REMEDIATION OF GROUND WATER. SINCE AN AIR STRIPPER TREATMENT SYSTEM WILL BE INSTALLED AT THE RANNEY WELL DISCHARGE TO PROVIDE A PERMANENT SOURCE OF CLEAN DRINKING WATER TO RESIDENTS AFFECTED OR POTENTIALLY AFFECTED BY THE SITE, THE SELECTED INTERIM REMEDY DOES UTILIZE PERMANENT SOLUTIONS TO THE MAXIMUM EXTENT PRACTICABLE, GIVEN THE LIMITED SCOPE OF THIS ACTION. SELECTION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE WILL BE ADDRESSED FURTHER IN THE FINAL REMEDY FOR THE SITE.

5. PREFERENCE FOR TREATMENT AS A PRINCIPLE ELEMENT

SINCE THIS ACTION CONSTITUTES A MEASURE TO AID IN GROUND WATER CLEAN UP, AND DOES NOT CONSTITUTE THE

FINAL REMEDY FOR THE SITE, THE STATUTORY PREFERENCE FOR TREATMENT AS A PRINCIPLE ELEMENT WILL BE ADDRESSED IN THE SELECTION OF THE FINAL REMEDY FOR THE SITE.

XI. EXPLANATION OF SIGNIFICANT CHANGES

THE PROPOSED PLAN FOR THE INTERIM ACTION FOR THE ENDICOTT WELLFIELD SITE WAS RELEASED FOR PUBLIC COMMENT ON FEBRUARY 22, 1991. THE PROPOSED PLAN IDENTIFIED ALTERNATIVE 2, SUPPLEMENTAL PURGE WELL, AS THE PREFERRED ALTERNATIVE. EPA REVIEWED ALL WRITTEN AND VERBAL COMMENTS SUBMITTED DURING THE PUBLIC COMMENT PERIOD. UPON REVIEW OF THESE COMMENTS, IT WAS DETERMINED THAT NO SIGNIFICANT CHANGES TO THE REMEDY, AS IT WAS ORIGINALLY IDENTIFIED IN THE PROPOSED PLAN, WERE NECESSARY.

#TA
+++

TABLE 1

DRILLING SUMMARY

WELL	DEPTH DRILLED	SCREENED INTERVAL	LAB SIMPLE DEPTH
MW-1	100	70 -75	20 - 22
MW-2	162	154 -159	45 - 47
MW-3	33	27 - 32	N/A
MW-3D	180	NONE	30 - 32 (DUP)
MW-4	100	91 - 96	18 - 20
MW-5	27	17.5 - 22.5	15 - 17
MW-6S	24	17 - 22	N/A
MW-6D	100	88 - 93	20 - 22
MW-7	25	19 - 24	17 - 19
MW-8S	115	108 - 113	N/A
MW-8D	182	139 - 154	17 - 19
MW-9S	20	14 - 19	N/A
MW-9D	100	65 - 70	20 - 22
MW-10S	26	20 - 25	N/A
MW-10D	150	57.5 - 62.5	15 - 17
MW-11	100	39 - 44	17 - 19
MW-12	100	35 - 40	25 - 27 (DUP)
MW-13S	20	14 - 19	N/A
MW-13D	100	78 - 83	10 -12
MW-14	100	84 - 89	14 - 20
MW-15S	15	9 - 14	N/A
MW-15D	50	30 - 35	10 - 12
MW-16	50	25 - 30	25 - 27
MW-17	50	42 - 47	30 - 32
MW-18	34	17 - 22	20 - 22
MW-19	30	21 - 26	25 - 27
MW-20	47	30 - 35	25 - 27

ALL DEPTHS REFERENCED IN FEET BELOW GRADE.