

EPA Superfund
Record of Decision Amendment:

WESTERN PROCESSING CO., INC.

EPA ID: WAD009487513

OU 02

KENT, WA

09/04/1986

1) SPECIFIC WASTE EXCAVATION CRITERIA AND TIMING; 2) CONTAINERIZED WASTE DISPOSAL; AND 3) RCRA COMPLIANT CAP AND MAINTENANCE.

THE SEPTEMBER 1985 ROD STATED THAT THE RESULTS OF A TESTING AND SAMPLING PROGRAM WOULD DEFINE THE SELECTIVE EXCAVATION OF HIGHLY CONTAMINATED (NON-CONTAINERIZED) SOIL AND NON-SOIL MATERIAL. THE PURPOSE OF THE EXCAVATION WAS TO REDUCE THE SOURCE STRENGTH, BUT NO CRITERIA WAS SPECIFIED. THE COST-ESTIMATE WAS BASED ON EXCAVATING AND DISPOSING OFF-SITE 10,650 CUBIC YARDS, BUT THE ROD WENT ON TO SAY THAT THE QUANTITY (AND THUS THE COST) COULD NOT BE ACCURATELY DETERMINED UNTIL THE SAMPLING IS COMPLETED.

THE PROPOSED REMEDY CONTINUES TO BASE THE SELECTION OF THE MATERIAL TO BE EXCAVATED ON THE RESULTS OF AN AREA 1 SOIL AND WASTE SAMPLING AND ANALYSIS PROGRAM. THE PRIMARY DIFFERENCE IS THAT THE CONSENT DECREE SPECIFIES THE CRITERIA WHICH SHOULD BE USED TO SELECT THE MOST TROUBLESOME SOURCE MATERIAL. THE CRITERIA INCLUDE 1) THE CONTAMINANTS MAY NOT BE COST-EFFECTIVELY REMOVED BY IN-SITU LEACHING AND WHICH COULD, BY THEIR PRESENCE, PREVENT COMPLIANCE WITH THE MILL CREEK WATER QUALITY PERFORMANCE STANDARDS; OR 2) THE CONTAMINANTS MAY, BECAUSE OF THEIR LOCATION OR PHYSICAL OR CHEMICAL PROPERTIES, MIGRATE BEYOND THE HYDROGEOLOGIC BOUNDARY OF MILL CREEK; OR 3) THE MATERIAL MAY ADVERSELY AFFECT THE STABILITY OF A CAP OVER AREA 1. THE SECONDARY DIFFERENCE IS THAT THE CONSENTING DEFENDANTS ARE REQUIRED TO REMOVE 10,000 CUBIC YARDS PRIOR TO PUMPING. THE GOVERNMENTS MAY REQUIRE ADDITIONAL EXCAVATION AT ANY TIME IF COMPLIANCE WITH MILL CREEK STANDARDS OR THE STABILITY OF THE CAP IS AT RISK.

THE SEPTEMBER 1985 ROD ASSUMES THAT ALL EXHUMED DRUMS AND OTHER CONTAINERIZED MATERIALS WOULD BE DISPOSED OFF-SITE IN AN APPROVED FACILITY. THE PROPOSED REMEDY WILL REQUIRE OFF-SITE DISPOSAL OF ALL RCRA HAZARDOUS WASTES AND ECOLOGY DANGEROUS OR EXTREMELY HAZARDOUS WASTES. HOWEVER, IF THE EXHUMED CONTAINERIZED MATERIAL IS NOT HAZARDOUS, THE MATERIAL MAY BE REPLACED INTO AREA 1 UNDER THE CLEAN COVER AND EVENTUAL RCRA CAP.

ALL OF THE ABOVE CHANGES ARE CONSISTENT WITH THE ORIGINAL PURPOSE OF THE AREA 1 EXCAVATION. HOWEVER, THESE CHANGES WILL THE REMEDY MORE COST-EFFECTIVE WHILE MAINTAINING THE SAME PUBLIC HEALTH AND ENVIRONMENTAL PROTECTIONS AS THE ORIGINAL REMEDY.

THE THIRD CHANGE IS THE ADDITION OF A CAP CONSISTENT WITH THE CRITERIA IN THE RCRA REGULATIONS FOR CLOSURE OF A LAND DISPOSAL FACILITY (LANDFILL) IN EFFECT AT THE TIME OF ENTRY OF THE CONSENT DECREE. THE SEPTEMBER 1985 ROD ENVISIONED SITE CLOSE-OUT TO INCLUDE SUCH A CAP. ALSO, COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS AND STANDARDS REQUIRE THAT SUCH A CAP BE PLACED OVER AREA 1 AS SOME HAZARDOUS WASTES WILL BE LEFT ON SITE. THE 1985 FEASIBILITY STUDY ESTIMATED THAT THE COST OF THE CAP WOULD BE APPROXIMATELY \$2,900,000. THE CAP MAINTENANCE PROVISIONS ARE ALSO CONSISTENT WITH RCRA.

OFF-PROPERTY SOILS AND ISSUES

THE RECOMMENDED ALTERNATIVE FOR THE OFF-PROPERTY SOILS IS IDENTICAL TO THE ALTERNATIVE IN THE SEPTEMBER 1985 ROD EXCEPT THE PERIOD OF MAINTENANCE FOR THE COVER IS SPECIFIED. BOTH ALTERNATIVES REQUIRE THAT SOILS CONTAMINATED WITH ABOVE BACKGROUND CONCENTRATIONS OF CONTAMINANTS WHICH MAY HAVE COME FROM WESTERN PROCESSING ACTIVITIES BE COVERED. THIS COVER MAY BE SOIL OR ASPHALT BUT MUST HAVE A PERMEABILITY LESS THAN OR EQUAL TO THE PERMEABILITY OF THE SUBSOIL. THE SEPTEMBER 1985 ROD ACKNOWLEDGES THAT THE COVER WILL HAVE TO BE MAINTAINED FOR A MINIMUM OF 30 YEARS, BUT THE SELECTED REMEDY COVERED BY THAT ROD COVERED ONLY THE FIRST 5 YEARS. THE CONSENT DECREE REQUIRES THE CONSENTING DEFENDANTS PROVIDE FOR THE MAINTENANCE OF THE COVER FOR A PERIOD OF 30 YEARS. THIS REQUIREMENT MAY BE MODIFIED FOR SPECIFIC OFF-PROPERTY AREAS IF, FOR EXAMPLE, THE PROPERTY OWNER DEVELOPS OR PAVES A PARCEL FOR HIS OWN BENEFIT OR USE.

THE OTHER PROPOSED OFF-PROPERTY ACTIONS FOR DIRECT CONTACT HAZARDS (CLEANING THE LEAD CONTAMINATED HOUSE IN AREA 8 AND INSPECTION AND CLEANING UTILITY VAULTS) ARE ALSO UNCHANGED FROM THE SEPTEMBER 1985 ROD.

SELECTION DISPOSAL FACILITY

THE PROPOSED ALTERNATIVE IS VIRTUALLY IDENTICAL WITH THE SEPTEMBER 1985 ROD. BOTH ALTERNATIVES INVOLVE BOTH AREA 1 AND OFF-SITE DISPOSAL. GOVERNMENT APPROVAL FOR THE USE OF ANY PARTICULAR OFF-SITE FACILITY WILL STILL BE BASED ON THE REQUIREMENTS SPECIFIED IN THE MAY 6, 1985 MEMORANDUM ENTITLED "PROCEDURES FOR PLANNING AND IMPLEMENTING OFF-SITE RESPONSE ACTIONS" FROM JACK W. MCGRAW, EPA ACTING ASSISTANT ADMINISTRATOR FOR SOLID WASTE AND EMERGENCY RESPONSE, OR ANY AMENDMENTS OR SUPPLEMENTS. IF, HOWEVER, GOVERNMENT APPROVED FACILITIES IN REGION 10 ARE UNAVAILABLE, A VARIETY OF STEPS MUST BE TAKEN BY THE CONSENTING DEFENDANTS, INCLUDING CONSIDERATION OF TEMPORARY STORAGE AND CONSIDERATION OF GOVERNMENT APPROVED DISPOSAL FACILITIES IN REGIONS 8 AND 9. IF ALL THESE OPTIONS ARE OUT OF THE QUESTION, THE CONSENTING DEFENDANTS AND THE GOVERNMENT WILL NEGOTIATE TO DEVELOP AN ACCEPTABLE ALTERNATIVE. THE ALTERNATIVES TO BE CONSIDERED WOULD INCLUDE TREATMENT AND DESTRUCTION. IF THE SELECTED REMEDIAL ACTION IS ANYTHING OTHER THAN DISPOSAL AT A GOVERNMENT APPROVED HAZARDOUS WASTE FACILITY, A PUBLIC COMMENT PERIOD AND AN AMENDED ROD MAY BE NECESSARY.

SHALLOW GROUNDWATER

THE SHALLOW GROUNDWATER PROPOSED ACTIONS IN THE CONSENT DECREE ARE LARGELY SIMILAR TO THE SELECTED ACTIONS IN THE SEPTEMBER 1985 ROD. TO ENSURE THAT THERE WILL BE NO DEGRADATION OF THE SHALLOW GROUNDWATER BEYOND THE CURRENTLY CONTAMINATED ZONE, THE CONSENTING DEFENDANTS WILL BE REQUIRED, THROUGHOUT THE PUMPING PERIOD, TO ACHIEVE A SHALLOW GROUNDWATER FLOW INWARD FROM THE BOUNDARIES OF THE CONTAMINATED ZONE. (SEE FIGURE 3.) COMPLIANCE WITH THIS PERFORMANCE STANDARD WILL BE MONITORED BY CHECKING THE WATER LEVELS IN NEW AND EXISTING MONITORING WELLS. AN EXCEPTION HAS BEEN ADDED FOR A 50 FOOT SET-BACK FROM MILL CREEK TO AVOID DRYING UP THE CREEK. THIS CHANGE IS MORE COST-EFFECTIVE AND PROTECTIVE OF THE ENVIRONMENT.

MILL CREEK PERFORMANCE STANDARDS (SEE BELOW) MUST ALSO BE MET DURING AND AFTER PUMPING. A DEMONSTRATION THAT THE MILL CREEK PERFORMANCE STANDARDS WILL BE MET ON A PERMANENT BASIS AFTER CEASING PUMPING IS THE KEY CRITERIA FOR DETERMINING WHEN THE SHALLOW GROUNDWATER PUMPING MAY TERMINATE. THIS CRITERIA FOR DETERMINING WHEN GROUNDWATER EXTRACTION MAY CEASE IS CONSISTENT WITH THE SEPTEMBER 1985 ROD. THE SEPTEMBER 1985 ROD INCLUDED A PERIOD OF FIVE YEARS OF PUMPING, TO BE FOLLOWED BY A MAJOR REASSESSMENT OF THIS ACTIVITY. THE CONSENT DECREE'S MINIMUM PUMPING PERIOD OF 5 TO 7 YEARS WILL PROVIDE A LARGE DEGREE OF IMPROVEMENT IN THE SHALLOW GROUNDWATER QUALITY, PARTICULARLY IN THE MORE MOBILE ORGANICS.

THE SELECTED REMEDY IN THE SEPTEMBER 1985 ROD ALLOWED LOW CAPITAL COST IN-SITU CHEMICAL LEACHING TECHNIQUES TO BE USED AFTER MONITORING THE SITE TO ENSURE THAT ADEQUATE GRADIENT CONTROL HAD BEEN ESTABLISHED AND AFTER SUFFICIENT LABORATORY SCALE TESTING. THESE TECHNIQUES MAY ALSO BE APPLIED BY THE CONSENTING DEFENDANTS UNDER THE CONSENT DECREE AFTER THEY SPECIFICALLY ASK FOR AND RECEIVE THE GOVERNMENTS PER MISSION. THE CONSENTING DEFENDANTS MAY ALSO ASK FOR PERMISSION TO APPLY OTHER TECHNIQUES WHICH MAY BECOME MORE FEASIBLE IN THE FUTURE, SUCH AS IN SITU SOLIDIFICATION, BUT A MORE DETAILED REVIEW, INCLUDING PUBLIC COMMENT AND AN AMENDED ROD, WOULD BE NECESSARY PRIOR TO THE GOVERNMENTS' APPROVAL.

REGIONAL GROUNDWATER

THE SEPTEMBER 1985 ROD STATED THAT ADDITIONAL REMEDIAL ACTIVITIES MAY BE REQUIRED TO COMPLETE THE SITE RESPONSE IF CONTAMINATION FROM WESTERN PROCESSING IS FOUND IN THE REGIONAL AQUIFER. THE PROPOSED ALTERNATIVE ADDRESSES REGIONAL GROUNDWATER CONTAMINATION IN 4 WAYS; 1) CLEAN-UP OF THE ONLY KNOWN PLUME; 2) REVERSE REGIONAL GROUNDWATER FLOW ALONG APPROXIMATELY 1800 FEET OF MILL CREEK, OR ESTABLISH AN HYDRAULIC BARRIER TO REGIONAL GROUNDWATER FLOW ALONG THE SAME LINE; 3) EXTENSIVE REGIONAL GROUNDWATER MONITORING; AND 4) GROUNDWATER USE RESTRICTIONS.

THE CONSENT DECREE REQUIRES THAT THE CONCENTRATION OF TRANS 1,2-DICHLOROETHYLENE BE REDUCED TO BELOW 70 PPB THROUGHOUT THE PLUME PRIOR TO TERMINATION OF THE GROUNDWATER EXTRACTION SYSTEM FOR THIS PORTION OF THE CLEAN-UP. THE PROPOSED RECOMMENDED MAXIMUM CONCENTRATION LIMIT IN DRINKING WATER (50 FR 4688, NOVEMBER 13, 1985) FOR TRANS 1,2-DICHLOROETHYLENE IS 70 PPB. WHILE NO ONE IS CURRENTLY USING OR DRINKING THIS GROUNDWATER, THIS PROPOSED DRINKING WATER CRITERIA IS THE RELEVANT ENVIRONMENT STANDARD. THIS LEVEL OF CLEAN-UP IS TO BE ACHIEVED BY SOURCE REMOVAL FROM AREA 1 DURING THE SPECIFIC WASTE REMOVAL AND BY INSTALLING WELLS SPECIFICALLY PLACED AND DESIGNED TO EXTRACT THE TRANS 1,2-DICHLOROETHYLENE ALREADY BEYOND THE BOUNDARY OF AREA 1.

THE REQUIREMENT TO REVERSE GROUNDWATER FLOW AT A DEPTH OF 40 TO 70 FEET AT APPROXIMATELY MILL CREEK, OR TO ESTABLISH AN HYDRAULIC BARRIER TO THE REGIONAL GROUNDWATER FLOW AT APPROXIMATELY THE SAME LOCATION, WILL INSURE THAT NO NEW REGIONAL GROUNDWATER PLUMES WILL ESCAPE FROM AREA 1 AND PASS UNDER MILL CREEK. IN ADDITION, THE EXTRACTION WELLS IN THE REGIONAL GROUNDWATER MAY PROVIDE FOR EARLIER AND EASIER DETECTION OF ANY PLUME WHICH HAS BYPASSED THE CREEK AND THE EXISTING MONITORING NET. THESE STEPS ARE NECESSARY TO PROTECT THE GROUNDWATER FOR FUTURE USE. THEY ARE ALSO COST-EFFECTIVE AS IT IS LESS EXPENSIVE TO CLEAN-UP A SMALLER AREA OF GROUNDWATER CONTAMINATION THAN TO CLEAN-UP A LARGE PLUME. THE GROUNDWATER FLOW REVERSAL WOULD PROBABLY BE ACHIEVED BY PLACING EXTRACTION WELLS SCREENED AT THE 50 TO 70 FOOT DEPTH WITHIN AREAS I AND IX. THE HYDRAULIC BARRIER WOULD BE ACHIEVED BY PLACING EXTRACTION WELLS VERY NEAR THE CREEK, INCLUDING THE WEST SIDE OF THE CREEK.

THE CONSENT DECREE ALSO DOES NOT GIVE THE CONSENTING DEFENDANTS ANY RELEASE OF LIABILITY FOR REGIONAL GROUNDWATER CONTAMINATION EXCEPT FOR THEIR CLEAN-UP OF THE ONLY KNOWN PLUME. IF FURTHER REGIONAL GROUNDWATER CONTAMINATION IS EVER DETECTED, ALL PRPS MAY BE HELD LIABLE AND REQUIRED TO REMEDY THE SITUATION AND/OR REPAY THE GOVERNMENTS COSTS.

DISCHARGE OF EXTRACTED GROUNDWATER

THE COST ESTIMATES IN THE SEPTEMBER 1985 ROD ASSUMES THAT ALL EXTRACTED GROUNDWATER WOULD BE PRE-TREATED AND DISCHARGED TO THE METRO SEWER AND TREATMENT SYSTEM. THIS IS STILL THE MOST LIKELY DISPOSAL OPTION FOR ALL GROUNDWATER EXTRACTED FROM AREA 1 OR ANY OTHER HIGHLY CONTAMINATED AREA. THE PROPOSED ALTERNATIVE EXPANDS THE DISPOSAL OPTIONS FOR THE UNCONTAMINATED OR ONLY SLIGHTLY CONTAMINATED GROUNDWATER WHICH MAY BE EXTRACTED AS PART OF THE REGIONAL OR EVEN SHALLOW OFF-PROPERTY GROUNDWATER EXTRACTION SYSTEM. THESE ADDITIONAL OPTIONS ARE DISCHARGE INTO A SURFACE WATER BODY IN COMPLIANCE WITH THE REQUIREMENTS OF ECOLOGY PURSUANT TO THE NPDES SYSTEM, OR INFILTRATION INTO AREA 1 TO ASSIST THE LEACHING PROCESS. THESE ALTERNATIVES WERE RAISED WHEN IT

WAS REALIZED THAT THE QUANTITY OF WATER THAT MAY BE PRODUCED FROM THE NEWLY REQUIRED REGIONAL GROUNDWATER ACTIONS MAY EXCEED THE CAPACITY OF THE LOCAL SEWER SYSTEM. THESE CHANGES ARE CONSISTENT WITH APPLICABLE AND RELEVANT ENVIRONMENTAL STANDARDS AND CRITERIA. FOR UNCONTAMINATED OR SLIGHTLY CONTAMINATED WATER, THESE ALTERNATIVES MAY BE MORE COST-EFFECTIVE THAN DISCHARGE TO METRO. INFILTRATION OF STORMWATER INTO AREA I PRIOR TO CAP PLACEMENT TO AID THE LEACHING PROGRAM WAS THE RECOMMENDED STORMWATER ALTERNATIVE IN THE SEPTEMBER 1985 ROD. INFILTRATION OF GROUNDWATER PRIOR TO CAP PLACEMENT TO ALSO AID THE LEACHING PROGRAM IS A EXTENSION OF THE SAME IDEA.

MILL CREEK

THE OBJECTIVES FOR REMEDIAL ACTION IN MILL CREEK ARE STILL THE OBJECTIVES IN THE SEPTEMBER 1985 ROD. THE OBJECTIVES WILL STILL BE MET BY GROUNDWATER CONTROL, SHALLOW GROUNDWATER QUALITY IMPROVEMENT (FROM SPECIFIC WASTE EXCAVATION, LEACHING, AND GROUNDWATER EXTRACTION), AND SEDIMENT EXCAVATION.

AS A RESULT OF NEGOTIATIONS, NUMERICAL PERFORMANCE STANDARDS FOR WATER QUALITY IN MILL CREEK WERE DEVELOPED. (TABLE 2.) THESE NUMERICAL PERFORMANCE STANDARDS ARE CONSISTENT WITH THE APPROACH DESCRIBED IN THE SEPTEMBER 1985 ROD. THE CALCULATION OF THE MAXIMUM ALLOWABLE DOWNSTREAM CONCENTRATION FOR EACH POLLUTANT CONSIDERS BOTH THE AMBIENT WATER QUALITY CRITERIA FOR AQUATIC ORGANISMS AND THE UPSTREAM (BACKGROUND) CONCENTRATION. AS ECOLOGY'S LONG-TERM GOALS OF IMPROVING UPSTREAM WATER QUALITY ARE ACHIEVED, THE CONSENTING DEFENDANTS WILL BE REQUIRED TO MEET MORE RIGOROUS MILL CREEK PERFORMANCE STANDARDS.

AS IN THE SEPTEMBER 1985 ROD, THE SHALLOW GROUNDWATER CONCENTRATIONS WHICH WILL ALLOW THESE MILL CREEK PERFORMANCE STANDARDS TO BE PERMANENTLY ACHIEVED WILL REQUIRE OVER 99 PERCENT OF THE AVAILABLE (MOBILE) ZINC AND A HIGH PERCENTAGE OF THE AVAILABLE (MOBILE) CADMIUM TO BE REMOVED FROM THE SITE.

THE RECOMMENDED ALTERNATIVE STILL INCLUDES THE MILL CREEK AND EAST DRAIN SEDIMENT TESTING AND EXCAVATION PROGRAM. THE MINIMUM REACH WHICH WILL BE TESTED HAS BEEN SLIGHTLY SHORTENED AT THE DOWNSTREAM END, BUT WILL STILL INCLUDE 300 FEET DOWNSTREAM OF THE EAST DRAIN DISCHARGE INTO MILL CREEK.

STORMWATER CONTROLS

THE RECOMMENDED STORMWATER REMEDIAL ACTIONS ARE UNCHANGED.

MONITORING

THE RECOMMENDED MONITORING PROGRAM IS UNCHANGED. THE CONSENTING DEFENDANTS ARE REQUIRED TO CONTINUE THE EXTENSIVE MONITORING PROGRAM FOR AT LEAST 30 YEARS FROM THE CESSATION OF PUMPING TO DEMONSTRATE FULL COMPLIANCE WITH THE CONSENT DECREE.

LAND AND GROUNDWATER USE RESTRICTIONS

THE CONSENT DECREE REQUIRES THE CONSENTING DEFENDANTS TO USE THEIR BEST EFFORTS TO PLACE GROUNDWATER, AND, IN THE CASE OF AREA I, LAND USE RESTRICTIONS IN THE COUNTY PROPERTY RECORDS. THE SEPTEMBER 1985 ROD FORESAW THE NEED FOR SUCH RESTRICTIONS. THE LAND USE RESTRICTION ON AREA I FOLLOWS THE WORDING IN THE RCRA REGULATIONS AT 40 CFR 264.120 AND 264.117(C) AND STATES THAT POST-REMEDIAL ACTION LAND USE IS RESTRICTED SUCH THAT USE OF THE PROPERTY MUST NEVER BE ALLOWED TO DISTURB THE INTEGRITY OF THE FINAL COVER, OR ANY OTHER COMPONENT OF ANY CONTAINMENT SYSTEM, OR THE FUNCTION OF THE MONITORING SYSTEM.

THE GROUNDWATER USE RESTRICTIONS WILL ALSO BE PLACED IN THE COUNTY PROPERTY RECORDS. THE GROUNDWATER RESTRICTIONS WILL ENSURE THAT THERE WILL BE NO THREATS TO PUBLIC HEALTH FROM ANY CONTAMINATED GROUNDWATER.

COMMUNITY RELATIONS

PROPOSED COMMUNITY RELATIONS ACTIVITIES ARE UNCHANGED FROM THE SEPTEMBER 1986 ROD. THE GOVERNMENTS WILL MAINTAIN THE LEAD FOR THE COMMUNITY RELATIONS ACTIVITIES, BUT THE CONSENT DECREE OUTLINES ACTIVITIES WHERE THE CONSENTING DEFENDANTS AND THEIR CONTRACTORS WILL COOPERATE WITH THE GOVERNMENTS' ACTIVITIES.

OTHER ISSUES

FLOODPLAIN PROTECTION IS UNCHANGED FROM THE SEPTEMBER 1985 ROD.

COSTS

NO COST BREAKDOWNS ARE AVAILABLE. THE CONSENTING DEFENDANTS HAVE ESTIMATED THAT THE COST OF THE REMEDY IS APPROXIMATELY \$40,000,000. THIS COST ESTIMATE IS CONSISTENT WITH THE COST ESTIMATES IN THE SEPTEMBER 1986 ROD.

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CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

THE LIST OF FEDERAL AND STATE APPLICABLE AND RELEVANT ENVIRONMENTAL STANDARDS, CRITERIA, GUIDANCE, AND ADVISORIES ARE UNCHANGED FROM THE SEPTEMBER 1985 ROD.

THE RECOMMENDED ALTERNATIVE IS CURRENTLY CONSIDERED A FINAL REMEDY. HOWEVER, AS SUMMARIZED UNDER FUTURE ACTIONS, ITEMS WHICH ARE CURRENTLY UNKNOWN MAY REQUIRE FUTURE EVALUATION AND ACTIONS.

ASPECTS OF THE RECOMMENDED ALTERNATIVE WHICH ARE CONSISTENT WITH THE APPLICABLE AND RELEVANT PORTIONS OF RCRA REGULATIONS INCLUDE;

- A CAP OVER AREA 1 DESIGNED TO BE CONSISTENT WITH RCRA REGULATIONS FOR CLOSURE OF A LAND DISPOSAL FACILITY, AND MAINTENANCE OF THIS CAP
- THE OFF-SITE SOIL COVER DESIGN AND MAINTENANCE
- GROUNDWATER MONITORING
- LAND AND GROUNDWATER USE RESTRICTIONS IN AREA 1 AND OTHER AREAS.

THE RECOMMENDED ALTERNATIVE IS STILL CONSISTENT WITH THE ASSISTANT ADMINISTRATOR'S APPLICATION OF RCRA TO THE CRYSTAL CHEMICAL CERCLA SITE. THE FEDERAL WATER QUALITY CRITERIA FOR AQUATIC ORGANISMS ARE STILL USED TO SET MILL CREEK PERFORMANCE STANDARDS, BUT A FACTOR HAS BEEN ADDED TO REFLECT THE VARIABLE QUALITY OF THE UPSTREAM (BACKGROUND) WATER QUALITY. THE PERFORMANCE STANDARD FOR THE TRANS 1,2-DICHLOROETHYLENE IS CONSISTENT WITH THE RMCL PROPOSED UNDER THE SAFE DRINKING WATER ACT. ALL OTHER ELEMENTS ARE CONSISTENT WITH THE STATEMENTS IN THE SEPTEMBER 1985 ROD.

ECOLOGY HAS BEEN AN ACTIVE PARTICIPANT IN THE NEGOTIATIONS AND SUPPORTS THE REMEDY DESCRIBED IN THE CONSENT DECREE AND THIS AMENDED ROD SUMMARY.

#OM

OPERATION AND MAINTENANCE (O&M)

THE O&M ACTIVITIES REQUIRED TO ENSURE EFFECTIVENESS OF THE REMEDY INCLUDE;

- OPERATION OF THE GROUNDWATER EXTRACTION AND TREATMENT SYSTEMS AS LONG AS NECESSARY
- MAINTENANCE OF THE RCRA CAP, OFF PROPERTY COVERS, AND THE STORMWATER CONTROL SYSTEM FOR 30 YEARS
- LONG-TERM MONITORING OF THE SHALLOW AND DEEP GROUNDWATER AND MILL CREEK, INCLUDING 30 YEARS OF MONITORING AFTER TERMINATION OF GROUNDWATER EXTRACTION

ALL O&M ACTIVITIES WILL BE THE RESPONSIBILITY OF THE CONSENTING DEPENDENTS.

SCHEDULE

SOIL AND WASTE SAMPLING PROGRAM

STIPULATION FILED	AUGUST 15, 1986
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SOIL AND WASTE SAMPLING	SEPTEMBER TO NOVEMBER 1986
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CONSENT DECREE LODGED	SEPTEMBER 1986
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DETAILED WORK PLANS RECEIVED FROM THE CONSENTING DEFENDANT'S CONTRACTOR	FEBRUARY 1987
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START CONSTRUCTION	SPRING-SUMMER 1987
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START GROUNDWATER EXTRACTION	1988
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FUTURE ACTIONS

NO FUTURE ACTIONS ARE PRESENTLY EXPECTED. HOWEVER AS DISCUSSED ABOVE, MECHANISMS ARE IN PLACE FOR INITIATING NEW OR REVISED ACTIONS IF THEY ARE NECESSARY. AREAS WHERE ADDITIONAL ACTIONS MAY BE NECESSARY INCLUDE;

- REGIONAL GROUNDWATER IF ANOTHER PLUME IS DETECTED.
- NEW TECHNOLOGIES FOR SOIL STABILIZATION OR TREATMENT THAT MAY ARISE AS A RESULT OF CONDITIONALLY REQUIRED ACTIONS, APPLICATION OF THE MCGRAW POLICY, OR AT THE REQUEST OF THE CONSENTING DEPENDENTS.

TABLE 1
MAIN ELEMENTS OF THE CONSENT DECREE SELECTED REMEDY

	SIMILAR TO SEPTEMBER 1985 ROD	DIFFERENT FROM SEPTEMBER 1985 ROD
GENERAL REQUIREMENTS		
HEALTH AND SAFETY PLAN		
QUALITY CONTROL/QUALITY		ALWAYS REQUIRED
ASSURANCE PLAN FOR SAMPLES AND ANALYSIS		ALWAYS REACQUIRED
SELECTION OF OFF-SITE DISPOSAL FACILITY	X	
FLOODPLAIN PROTECTION	X	
AREA 1 STORMWATER SYSTEM	X	
AREA 1 SOILS		
NON-DESTRUCTIVE SUBSURFACE GEOPHYSICAL SURVEY	X	
SOIL/WASTE SAMPLING AND ANALYSIS PROGRAM	X	
EXCAVATE CONTAINERIZED WASTES		X(2)*
EXCAVATE SPECIFIC WASTES		X(2)
EXCAVATE AND DISPOSE OFF-SITE ALL PCB'S OVER 50 PPM	X	
PLUG OR EXCAVATE UTILITIES	X	
CONTROL STORMWATER RUNOFF	X	
CLEAN FILL FOR A WORK SURFACE	X	
RCRA CAP AND MAINTENANCE		X(1)
OFF-PROPERTY SOILS ISSUES		
SOIL SAMPLING AND ANALYSIS PROGRAM	X	
NON-DESTRUCTIVE GEOPHYSICAL SURVEY	X	
EXCAVATE HOTS SPOTS OVER ADI OR OVER 10-5 EXCESS CANCER RISK OR PCB'S OVER 2 PPM IF CONTAMINATION MAY HAVE BEEN FROM WESTERN PROCESSING	X	

COVER SOILS WITH CONCENTRATIONS OVER BACKGROUND IF CONTAMINA- TION MAY HAVE BEEN FROM WESTERN PROCESSING	X	
NON-EXTREMELY HAZARDOUS WASTE MAY BE BROUGHT ONTO AREA I AND PLACED UNDER THE CAP	X	
MAINTAIN COVER		X(1)
CLEAN THE HOUSE IN AREA VIII	X	
TEST AND CLEAN LIVE UTILITIES	X	
GROUNDWATER AND MILL CREEK		
SPECIFIC ACTIONS		
SHALLOW GROUNDWATER EXTRACTION FROM THE CONTAMINATED ON AND OFF-PROPERTY AREAS		X(2)
REGIONAL GROUNDWATER EXTRACTION WELLS FOR TRANS 1,2 DICHLORO ETHYLENE EXTRACTION, AND TO REVERSE THE FLOW OR TO ESTA- BLISH A HYDRAULIC BARRIER		X(3)
DISCHARGE GROUNDWATER TO:		
METRO	X	
SURFACE WATER		X(2)
AREA 1 INFILTRATION		X(2)
MINIMUM 5-7 YEARS OF PUMPING		X(2)
IN-SITU ENHANCED LEACHING	X	
MONITORING PROGRAMS	X	
30 YEAR POST-PUMPING COMPLIANCE PERIOD		X(1)
GROUNDWATER USE RESTRICTIONS		X(1)
EXCAVATE AND RESTORE MILL CREEK AND THE EAST DRAIN		X(2)
PERFORMANCE CRITERIA TO CEASE PUMPING ACHIEVE MILL CREEK PERFORMANCE STANDARDS FOR AQUATIC ORGANISMS		X(2)
REDUCE TRANS 1,2-DICHLOROETHYLENE TO 70 PPB THROUGHOUT THE PLUME		X(3)

OTHER ISSUES

ON-GOING COMMUNITY RELATIONS
ACTIVITIES

X

DEED/TITLE RESTRICTIONS

X(1)

- (1) THE ACTIONS HAD BEEN FORESEEN AS PART OF THE REMEDY IN THE SEPTEMBER 1985 ROD, BUT WERE PLANNED TO OCCUR AFTER THE FIRST 5 TO 7 YEARS OF REMEDIAL ACTION WHICH WERE COVERED BY THAT ROD.
- (2) THE CONCEPTS AND FINAL CRITERIA OR PROTECTION ARE SIMILAR TO THE SELECTED REMEDY IN THE SEPTEMBER 1985 ROD, BUT THE APPROACH OR PHASING IS DIFFERENT.
- (3) BECAUSE REGIONAL GROUNDWATER CONTAMINATION BY TRANS 1,2 DICHLOROETHELENE FROM WESTERN PROCESSING HAS BEEN CONFIRMED, NEW ELEMENTS ARE BEING ADDED TO THE SELECTED REMEDY.

TABLE 2
MILL CREEK PERFORMANCE STANDARDS

CONSENT DECREE, APPENDIX B

SECTION IV. D. 4. ALLOWABLE CONCENTRATIONS IN MILL CREEK

- A. IF THE CONCENTRATION OF A MILL CREEK INDICATOR CHEMICAL OR OTHER PRIORITY POLLUTANT AT THE UPSTREAM (BACKGROUND) MONITORING POINT IN MILL CREEK IS LESS THAN TWO-THIRDS OF THE APPLICABLE UPSTREAM FEDERAL AMBIENT WATER QUALITY CRITERION FOR AQUATIC ORGANISMS (WATER QUALITY CRITERION), THE MAXIMUM ALLOWABLE CONCENTRATION AT THE DOWNSTREAM COMPLIANCE POINT SHALL BE THE DOWNSTREAM WATER QUALITY CRITERION.
- B. IF A WATER QUALITY CRITERION IS NOT ACHIEVABLE BECAUSE THE UPSTREAM (BACKGROUND) CONCENTRATION OF A CHEMICAL IS NEAR OR ABOVE THE WATER QUALITY CRITERION, THE MAXIMUM ALLOWABLE CONCENTRATION AT THE DOWNSTREAM COMPLIANCE POINT SHALL BE THE LEVEL DESCRIBED BELOW:
- (I) IF THE CONCENTRATION OF A MILL CREEK INDICATOR CHEMICAL OR OTHER PRIORITY POLLUTANT AT THE UPSTREAM (BACKGROUND) MONITORING POINT IN MILL CREEK IS AT OR ABOVE TWO THIRDS OF THE UPSTREAM WATER QUALITY CRITERION, THE MAXIMUM ALLOWABLE CONCENTRATION AT THE DOWNSTREAM COMPLIANCE POINT SHALL BE NO MORE THAN THE BACKGROUND CONCENTRATION PLUS FIFTY PERCENT OF THE BACKGROUND CONCENTRATION; OR
- (II) IF THE CONCENTRATION OF A MILL CREEK INDICATOR CHEMICAL OR OTHER PRIORITY POLLUTANT AT THE UPSTREAM (BACKGROUND) MONITORING POINT IN MILL CREEK IS AT OR ABOVE THE UPSTREAM WATER QUALITY CRITERION, THE MAXIMUM ALLOWABLE CONCENTRATION AT THE DOWNSTREAM COMPLIANCE POINT SHALL BE NO GREATER THAN BACKGROUND PLUS EIGHTY PERCENT OF THE UPSTREAM WATER QUALITY CRITERION.

THE APPLICABLE WATER QUALITY CRITERIA SHALL BE THOSE FINAL CRITERIA PUBLISHED IN THE FEDERAL REGISTER AS OF THE DATE OF ENTRY OF THIS CONSENT DECREE.