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OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

OPERABLE UNIT 2 WORK PLAN

Prepared For

Occidental Chemical Corporation

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OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

OPERABLE UNIT 2 WORK PLAN

SECTION 1

1.0 INTRODUCTION

The Therminol (PCB) spill, located in the center portion of the Hooker/Ruco site (figures 1-1 and 1-2), has been designated Operable Unit 2 by the United States Environmental Protection Agency (USEPA). Soils in the immediate vicinity of the spill contain polychlorinated biphenyls (PCB's).

Soils containing PCB's in excess of 10 ppm (parts per million) have been defined by previously completed studies. A Focused Feasibility Study (FFS) for the Therminol spill area was approved by the USEPA in June 1990. The FFS evaluated 14 remedial alternatives that achieved the objectives for the remediation of the spill in accordance with Federal and State laws, including the National Contingency Plan (NCP) and the Superfund Amendments and Reauthorization Act (SARA). On September 8, 1990, the USEPA issued a Record of Decision (ROD) for the PCB-impacted soils surrounding the pilot plant.

On December 27, 1990, Occidental Chemical Corporation (OCC) received a "special notice" from the USEPA, pursuant to Section 122(e) of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C §9622(e), which requested that OCC carry out the remedy set forth in the ROD. One element of the request was that OCC provide a Work Plan for the remedy.

This Work Plan presents the technical approach for implementing the selected remedy for the Therminol spill. The Work Plan describes project objectives for site remediation

and presents the technical approach. The Work Plan was prepared in accordance with USEPA Guidance for RI/FS Under CERCLA, Interim Final (EPA/540/G-89/004). This Work Plan outlines the tasks which will be undertaken to effectively remediate the Therminol spill. The Work Plan also presents project responsibilities and tentative schedules for completion.

1.1 Format

The Work Plan is divided into the following sections: Section 1 is the introduction; Section 2 summarizes the applicable site history and existing data on the Therminol spill area of the Hooker/Ruco site; Section 3 presents the remedial goals and data quality objectives (DQO's) for the site's remediation; Section 4 is a detailed discussion of major work tasks to be completed during the project; and Section 5 presents OCC's project management team and tentative schedule for completing the individual tasks.

SECTION 2

2.0 BACKGROUND

2.1 Site Description

The 14-acre site is an active chemical manufacturing facility located in Hicksville, Nassau County, New York. The surrounding area is composed of industrial and commercial land. The facility is currently owned and operated by the Ruco Polymer Corporation (Ruco) which manufactures polyesters, polyols and powder-coating resins.

2.2 Geology - Hydrogeology

The geology underlying the Therminol spill area is characterized as glacial outwash deposits ranging in thickness between 36 and 47 feet. The formation consists of fine to very coarse-grained sand, fine to medium gravel, cobbles and trace amounts of silt. There is little to no soil cover overlying the very coarse-grained soils. However, a large percentage of the Therminol spill area has been contained by pavement. The glacial deposits at the site occur above the regional water table and are unsaturated.

The Magothy Formation lies directly below the glacial formation and has not been impacted by the PCB spill. The local depth to ground water occurs below 50 feet, and PCB's have never been detected in the ground water at the site.

2.3 Existing Data

Prior to 1978, periodic discharges of PCB's occurred adjacent to the pilot plant and impacted an area of approximately 6 feet square. The extent of impacted soils was defined through soil sampling and analysis conducted in phases from June 1983 to October 1989. The investigations revealed that while only a relatively small area below the surface soils contained PCB's, the PCB's had been spread over a larger

area by mechanical and physical means. The three areas to be remedied are the direct spill area, a transport-related area surrounding the pilot plant, and an adjacent storm-water recharge basin (Sump 3). PCB's are also present in two piles of soil excavated during a tank removal program undertaken by Ruco adjacent to the pilot plant.

A total of 178 soil samples were collected from 102 sampling locations between 1983 and 1989. The direct spill area is defined as an area approximately 100 square feet in size along the pilot plant's western side. Soils with PCB concentrations from 9 to in excess of 1,000 ppm are present in this area. Around the direct spill area are soils containing PCB's as a result of truck traffic and storm-water runoff. The transport-related areas are generally shallow and limited to the upper one foot of soil, but in isolated instances, PCB's were detected to depths of 3 feet. Concentrations of PCB's decrease as the distance from the direct spill area increases.

The recharge basin, Sump 3, south of the pilot plant, receives storm-water runoff. Concentrations of PCB's range between 0.2 and 176.5 ppm in the shallow sump sediment, and from 0.1 to 49.7 ppm in the deeper sediment below 3 feet.

Soils excavated by Ruco during a tank removal project, completed in 1988, were stockpiled by Ruco south and southeast of the pilot plant. Concentrations of PCB's in the stockpiled soils range between 23 and 420 ppm.

The volume of soil containing PCB concentrations in excess of 10 ppm is approximately 1,100 cubic yards. Plate 1 presents the concentrations of PCB's in soils in the Therminol spill area and shows the extent of PCB's in the soil which exceed 10 ppm.

2.4 The Selected Remedy

The major components of the selected remedy for the spill (FFS Alternative 10) include:

1. Excavation of PCB soils in excess of 10 ppm in the direct spill area and the transport areas surrounding the pilot plant. Verification sampling will be performed to ensure soils that remain after the excavation will have PCB concentrations that do not exceed 10 ppm.

2. Soils at the bottom of the recharge basin (Sump 3) will be excavated to a depth of 10 feet below the existing surface. Verification sampling will be performed.

3. Excavated soils with PCB concentrations between 10 and 500 ppm, approximately 1,100 cubic yards, will be shipped for disposal to an offsite chemical waste landfill permitted under the Toxic Substance Control Act (TSCA).

4. Stockpiled soils (approximately 70 cubic yards), which were previously excavated during the removal of an underground storage fuel-oil tank, will be included in the disposal of PCB soils at the offsite chemical waste landfill.

5. Soils with PCB concentrations exceeding 500 ppm, approximately 36 cubic yards, will be shipped offsite to a TSCA-permitted incineration facility for thermal destruction of the PCB's.

6. Excavated areas will be graded and backfilled with clean soil. Certain areas, excluding the recharge basin, will be repaved with asphalt, as appropriate.

SECTION 3

3.0 SCOPE OF WORK FOR THE REMEDIAL DESIGN/REMEDIAL ACTION (RD/RA)

The following subsections identify the remedial goals of the RD/RA for the Therminol spill area of the Hooker/Ruco site; identify and provide a listing of the applicable or relevant and appropriate requirements (ARAR's); summarize the data needs, and present the DQO's.

3.1 RD/RA Objectives

The goal of the RD/RA for the Therminol spill area at the Hooker/Ruco site is to achieve the requirements of, and be consistent with, the ROD for the site. This objective will be met by confirming that soils containing in excess of 10 ppm of PCB's have been removed. Confirmation sampling will be accomplished using standardized sampling and analytical methodologies.

3.2 Identification of ARAR's

3.2.1 Remedial Action Criteria

- Applicable requirements: These pertain to those standards which specifically address a remedial action at a Superfund site.

- Relevant and appropriate requirements: These pertain to those standards, criteria or limitations addressing problems or situations sufficiently similar to those encountered at other Superfund sites.

- National Contingency Plan: The work will be performed in accordance with the NCP and any amendments thereto, and the standards, specifications and schedules of completion approved by the EPA.

3.2.2. Summary of ARAR's

Table 3-1 presents a summary of Federal and State statutes covering treatment, transportation and disposal of PCB's.

3.2.2.1 Toxic Substance Control Act (TSCA) 40 CFR Part 761

All sections of TSCA Part 761 have been considered ARAR's for the remedial action of the Therminol spill area. Part 761 specifically defines and discusses the applicability of PCB use, cleanup and disposal requirements. The individual subparts of 761 describe PCB spill cleanup policies, sampling requirements, storage and decontamination techniques. Waste disposal requirements are defined in this section and include offsite incineration or disposal at a chemical waste landfill.

3.2.2.2 Comprehensive Environmental Response Compensation and Liability Act (CERCLA)

- 40 CFR Part 300.65: The Therminol spill is part of a Superfund site. Therefore, Part 300.65 is applicable because it describes the factors requiring removal of waste material from CERCLA sites.

- 40 CFR Part 300.68: This section describes the remedial action process and objectives for the selected remedial alternative. Also described are appropriate response actions under CERCLA for waste material consisting of soils.

- 40 CFR Part 300.70: Available remedial methods for removing waste soils are provided in Part 300.70 of

CERCLA. Included in the listing of removal methodologies was the selected remedy for the Therminol spill area. The selected remedy requires excavation and either treating or disposing of the waste material at an approved treatment, storage or disposal facility (TSDF).

3.2.2.3 Resource Conservation and Recovery Act (RCRA)

- 40 CFR Part 261: This part identifies those solid wastes which are subject to regulation as hazardous wastes. Part 261 presents individual criteria, including toxicity, ignitability, reactivity or corrosivity, that are used to define the waste material. If by definition, the waste material is characterized as hazardous, the waste is then also subject to the regulations under Parts 262, 263, 264 and 265. Each Part is further discussed below.

- 40 CFR Part 262: Subpart A contains provisions, including applicability and definitions of Part 262. Subpart B describes the procedures for, and use of, hazardous waste manifests. The remedial process that is going to be completed at the Hooker/Ruco site will require the removal and offsite transport of hazardous waste. Manifests will be required. The manifest will provide a record of transport, storage and disposal of the PCB wastes. Subpart C describes the various transporter requirements that will be satisfied to transport the PCB soils. Guidance for packaging, labeling and marking of the transport vehicles is provided.

- 40 CFR Part 263: This section presents the applicable federal standards that are required for

the transport of PCB soils from the site to its treatment or disposal location.

- 40 CFR Part 264: Only permitted facilities will be contracted to receive the excavated waste material.

- 40 CFR Part 268: This part identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

3.2.2.4 New York State Solid Waste Management Regulations, 6NYCRR - Subchapter A Part 200 - Prevention and Control of Air Contamination and Air Pollution

Specific New York State regulations have been enacted to regulate levels of specific air constituents during excavation and storage activities. Maximum State action levels for PCB's in air will be observed.

3.2.2.5 6NYCRR - Subchapter B Part 360

Part 360 which imposes standards on owners and operators of hazardous waste treatment, storage or disposal abilities is applicable to the remedial action of the Therminol spill area. If the waste material generated during the site remediation is treated or disposed of in New York State, the facility must comply with this regulation.

- 6NYCRR Subpart B Part 364 - Waste Transporter Permits: This section of the New York State regulations is similar to RCRA 263. It presents the hazardous waste system in operation for transporters of waste within New York. It also presents permit and operating requirements for licensed waste transporters. Because the waste

material removed from the site will require transport in New York State, both Federal and State requirements for permitting and manifesting will be satisfied.

- 6NYCRR Subpart B Part 370 - Hazardous Waste Management System: This section describes the New York State method for tracking hazardous waste from its source through transport, treatment and disposal. Part 370 is similar to the Federal equivalent Part 260. Both Federal and State hazardous waste management systems will be required for treatment and disposal of the Therminol spill waste.

- 6NYCRR Subpart B Part 371 - Identification and Listing of Hazardous Waste: New York has developed its own criteria for identifying and characterizing hazardous waste. The State's criteria are derived from the RCRA definitions of waste, as defined in Part 261. The State also includes a special classification for PCB waste. Part 371.4(e) indicates that PCB articles, items or material with PCB concentrations greater than 50 ppm will be classified by the State of New York as hazardous waste. All PCB hazardous wastes will be identified with the appropriate New York State Department of Environmental Conservation waste number. The PCB waste material that will be removed from the Hooker/Ruco site will consist of soils. This waste will be identified as B007, which is defined as PCB waste consisting of soils, solids, sludges, rags and dredge material.

- 6NYCRR Subpart B Part 372 - Hazardous Waste Manifest System: This State regulation is similar to specific items within the Federal Parts 262 and 263. The State regulations define and provide specific criteria for New York State manifesting and related standards for generators, transporters and TSDF's. Both Federal and State requirements will be applicable to the remediation of the Therminol spill soils.

- 6NYCRR Subpart B Part 373 - Hazardous Waste Management Facilities: Only permitted facilities will be contracted to receive the excavated waste material.

3.2.2.6 49 CFR United States Department of Transportation (USDOT)

Parts 172, 173, 178, 262 and 263 all define the generator's requirements for packaging and shipping of waste material. These regulations will apply to both the offsite shipment of waste for disposal and also the shipping of laboratory samples for analysis.

3.2.2.7 29 CFR Occupational Safety and Health Act (OSHA)

All regulations in NIOSH 1985 and 29 CFR 1910.120 are applicable. These regulations will be applicable to the general site safety of construction workers, field crews and oversight personnel. The safety regulations will apply to the remedial effort in all phases, including mobilization, remediation, field sampling and site closure.

3.3 Data Needs for Remedial Design Implementation

The following data needs have been identified:

- Characterization of soils and construction debris excavated during the remedial process, to provide documentation for disposal.

- Verification of the residual levels of PCB's in the soils at the direct spill and transport-related areas following the cleanup activities.

- Monitoring of onsite air quality during the remediation.

3.4 Data Quality Objectives (DQO's)

Four levels of DQO's have been identified that must be achieved to effectively carry out the selected remedial option. A summary of the analytical levels for each data use is presented on table 3-2.

Level I data will be used as a screening tool to provide rapid results. Level I data will generally consist of monitoring by work crews for health and safety parameters. Expected Level I data will consist of a photoionization detector. Level I data will satisfy the data needs for identification of onsite air quality during the construction phases.

Level II data will consist of all field-generated data, not including health and safety monitoring. Field analysis results using gas chromatograph/electron capture detector (GC/ECD) instruments will provide rapid confirmation of soil chemistry. Level II data will be used to expedite the construction activities and guide work crews in determining the selection of soils for removal.

Level III data will be used to characterize the excavated soil and excavation debris. This data will provide documentation for manifesting and disposing of the waste. Level III data will consist of RCRA waste classification testing. This

data will be processed rapidly to ensure that proper storage and disposal of the waste is completed.

Level IV data will be used to confirm that the remediation has met the RD/RA objectives. Level IV data will be completed according to USEPA procedures and Contract Laboratory Protocols (CLP) methodologies, and will require data validation.

SECTION 4

4.0 TASK PLAN FOR THE THERMINOL SPILL AREA OF THE HOOKER/RUCO RD/RA

The following section presents the basic strategies for implementing the selected remedy for the Therminol spill area of the Hooker/Ruco site and steps to be undertaken to satisfy the remedial goals and DQO's for the site restoration. The proposed work has been divided into 12 major tasks. Task 1 describes the background planning that will be required prior to initiating the project and focuses on completion of the elements of the Remedial Design Plan (RDP). Tasks 2 through 10 outline the field work requirements. Tasks 10, 11 and 12 include sample analysis, data evaluation and the completion of the remedial action report.

4.1 Task 1 - Project Planning

The RDP will be prepared after the USEPA has reviewed and approved this Work Plan. The RDP will consist of four separate sections; The Remedial Operations Plan (ROP), the Field Sampling Plan (FSP), the Sample Analytical Plan (SAP) and the Health and Safety Plan (HASP). A general description of each section of the RDP is outlined below.

4.1.1 Remedial Operation Plan (ROP)

The ROP will expand the general construction details presented in this Work Plan. Elements of the ROP will focus on design criteria for various excavation, decontamination, storage and disposal/treatment activities. The ROP will provide design criteria, present construction quality assurances, engineering plans, drawings and sketches that depict construction and a project delivery strategy. The ROP will identify the contractors who will perform the work and the treatment and disposal locations.

4.1.2 Field Sampling Plan (FSP)

The FSP will provide detailed protocols for sample collection operations. The FSP will include a sampling design. All sampling techniques and sample equipment requirements will be provided. Media-specific sampling protocols will be identified for soil and air sampling. The number, type and location of all samples to be collected during the project will be presented, including all Quality Assurance and Quality Control (QA/QC) samples. Procedures for compositing will also be addressed in the FSP. The FSP will be designed according to the USEPA's approach provided in "Verification of PCB Spill Cleanup by Sampling and Analysis" (EPA-560/5-85-026) and "Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup" (EPA-560/5-86-017). The FSP will provide sample designations and protocols.

4.1.3 Sample Analytical Plan (SAP)

The SAP will follow guidelines for content from SW-846 third edition and include a comprehensive Quality Assurance Project Plan (QAPP). The SAP will describe the analytical project team and provide organization and responsibilities. The QA objectives will be presented, including the appropriate analytical methodologies and subsequent Practical Quantitation Limits (PQL's). Sample containers will be described and sample preservation methods will be discussed. Sample shipment and chain-of-custody procedures will be provided. The QAPP will address, at a minimum, the following:

- Sample custody
- Calibration procedures
- Analytical procedures
- Data reduction, validation and reporting
- Internal quality control
- Performance and system audits
- Preventative maintenance

- Specific routine procedures used to assess data
- Corrective actions
- Reporting requirements

The SAP will also provide a work/QA plan short form.

4.1.4 Health and Safety Plan (HASP)

The HASP will provide a description of the site specific hazards associated with the remedial work, a contingency plan that meets the requirements of 29 CFR 1910.120, monitoring procedures for general and task-specific operations, safety considerations and level of required protection, decontamination procedures and employee training assignments, along with key personnel and responsibilities.

4.2 Task 2 - Mobilization

Mobilization of all required equipment, including excavation machines, storage facilities and a decontamination pad will be coordinated and assigned to specific areas. During mobilization, specific site control measures will be used to limit access to the exclusion zones in the excavation areas. A pre-excavation meeting will be held to ensure that all personnel are familiar with the HASP and are aware of their specific responsibilities and chain of command for field decisions.

4.3 Task 3 - Remedial Construction

4.3.1 Excavation

The spill site at Hooker/Ruco is irregular in shape and encompasses all four sides of the pilot plant, and the interior of Sump 3. Because of the complex shape, large area, and distribution of the PCB concentrations, a compartmental approach to the soil excavation will be used.

4.3.2 Direct Spill Area

The direct spill area comprises an area of approximately 12 feet by 20 feet. The asphalt covering the area will be cut out and removed. The asphalt material will be stored in a separate pile for disposal (non-hazardous) as demolition debris. The underlying trap rock, which has been in contact with soils containing PCB's, will be excavated and disposed of with the soils. Sheet piling will be installed along the perimeter of the defined spill area to a depth of 15 feet. After the shoring is in place, the first 5 feet of soil, which contains PCB's in excess of 500 ppm, will be excavated from the shored area. Verification sampling at the base of the excavation will be completed according to the FSP to ensure that all soils in excess of 500 ppm have been removed. In the event that soil with PCB concentrations above 500 ppm are still remaining in the base of the excavation, additional soil will be removed from the affected area in 1-foot lifts (or in depth increments determined in the field) until verification sampling indicates that the remaining soils contain PCB's below the 500 ppm level. The positioning of the sheet piling along the perimeter has been determined from previous sampling completed in the direct spill area.

The +500 ppm soil will be segregated and stored separately. After all of the +500 ppm soil has been removed from the supported area, excavation of the soil will continue in the direct spill area to a depth of approximately 10 feet below grade. After reaching this depth, field sampling of the excavation according to the FSP will be completed. The verification sampling will either verify that the desired target level of 10 ppm has been achieved or, if not, additional excavations in 1-foot lifts (or in depth increments determined in the field) will be completed until a level below 10 ppm is achieved.

4.3.2.1 Foundations

The pilot plant's foundation has been in contact with soils in the direct spill area. The concrete surface will be cleaned if oil residue is visually observed. Wipe samples will be taken and analyzed for PCB's if residue is not observed. Decontamination would proceed if the PCB concentration in the wipe samples is in excess of 10 ppm, on an equivalent basis.

The decontamination procedure for concrete will require the removal of a thin layer, approximately 1/16 of an inch, using standard scarifying techniques. The scarifying equipment would operate pneumatically using high-speed, reciprocity tungston-carbide tipped piston needles to pulverize the concrete surface. Each scarring machine would be equipped with a vacuum flow designed to ensure that dust, debris and airborne contaminants would not be emitted. The scarified material from the concrete surface would be vacuumed into a controlled disposal drum that would be filled, sealed, removed and replaced under vacuum conditions to minimize the possibility of airborne contaminants. All waste generated during the scarifying activities would be stored and disposed of as PCB soils in accordance with procedures discussed in the Work Plan. Confirmation wipe samples will be obtained after the scarification process.

4.3.2.2 Non-Porous Media

Non-porous surfaces within the direct spill area such as steel flashings, railings and steel piping and conduits may have also been in contact with PCB's. The non-porous external surfaces of each object will be decontaminated by swabbing the surfaces which have contacted PCB's with a solvent containing 5-percent solubility or more by weight to PCB's. All solvent and swabbing material shall be disposed of as PCB material in accordance with disposal procedures outlined in the Work Plan.

4.3.3 Transport-Related Area

The transport-related area, covering approximately 7,000 square feet of soils, has been impacted by vehicular traffic. This area has been subdivided into nine working areas designated as Areas A through I. Each work area will be staked out in the field. A site map showing the individual work areas is presented as plate 2. The excavation of each work unit will be completed in the following manner.

1. Excavation activities will begin adjacent to the pilot plant and proceed away from the building.

2. Excavation activities will continue until the desired excavation depth of the work area is achieved. Excavation depths will be based upon the extent of PCB's presented on plate 1. Because of the network of utilities that underlie the impacted area, extreme care will be taken when exposing these utilities, if they are expected to be within the excavation target depth. Hand digging, if required, will be employed to minimize physical damage to the utilities.

3. Designated completion depths will be deepest adjacent to the pilot plant and grade away from the building. The designated depth will be determined in the field by direct measurements. Soils presented in plate 1 as being between the 0- and 1-foot contour line will, at a minimum, be excavated to a depth of 10 inches.

4. All removed soil will be stored and stockpiled for offsite treatment and disposal according to the disposal requirements outlined in Section 4.5.

5. After the designated depth of each work area has been reached, verification sampling will be completed in accordance with procedures outlined in the FSP. In the event that the remedial criterion is not achieved, then the affected area will be re-excavated. Re-excavation will be completed in depth increments to be determined in the field, and the verification process will be repeated.

6. Because the Ruco site is an active manufacturing facility, the sequence of soil removal will be coordinated with plant operations, to enable remediation to continue uninterrupted. Exclusion zones will be delineated during the excavation process.

4.3.4 Existing Excavated Soil Piles

The existing excavated soil piles will be removed from the site first. The excavated soil will be loaded and removed from the site for disposal according to the disposal plan in Section 4.5.

Verification sampling will be completed in the area directly below the piles. Samples will be collected according to the procedures outlined in the FSP. If a result is obtained which exceeds the remedial objective, the area will be re-excavated to a field-determined depth.

4.3.5 Sump 3

The bottom of Sump 3 is approximately 20 feet below grade surface and contains storm-water runoff. Previous water-quality results completed during the RI showed that the surface water in the sump does not contain PCB's and is non-hazardous. The sump will be dewatered to allow for insertion of the required shoring and subsequent excavation. All water in the base of Sump 3 will be pumped out and discharged into Sump 2. Sheet piling will be installed along the base of the

sump to a depth of 12 feet. Approximately 150 linear feet of shoring will be installed. The location of the proposed shoring is shown on plate 2. After the shoring is in place, the interior area will be excavated to a depth of 10 feet below the bottom of the existing sump, in accordance with the ROD. Confirmation samples will be obtained from the bottom of the excavation for analysis of PCB's.

The remaining area of Sump 3 consists of steep sidewalls. These sidewalls have been periodically scraped in the past, and have been subject to erosion for many years. The sidewalls, therefore, will be left undisturbed. However, samples will be obtained from the sidewalls.

4.4 Task 4 - Potential Obstructions

4.4.1 Utilities

The spill and transport areas are underlain by buried underground utilities. With the exception of the shallow storm sewer, these utilities are expected to be below the expected depths of excavation. In the event that utilities are encountered, all work will be completed by hand in the immediate vicinity of the utility lines. Utility lines will be supported in areas that are unearthed during excavation or, in the case of the storm sewer, removed from service and replaced with a new sewer line.

4.5 Task 5 - Storage and Disposal Requirements

4.5.1 Storage

Onsite storage of PCB soils or decontamination materials will be in conformance with 40 CFR 761.65 and 6NYCRR Part 372. PCB's may be stored onsite for up to 30 days from the date of removal, subject to receiving approval from the disposal facility. All excavated soil will be immediately transferred to containers for direct shipment offsite, with little or no

storage of the waste onsite. However, in the event that temporary storage is needed, a designated storage area at the site will be located and marked. Details of soil handling will be presented in the ROP after the remediation contractor has been selected.

All cleanup equipment in the PCB storage areas will not be removed from the storage area without being decontaminated. Procedures for equipment decontamination will be present in the ROP.

Decontamination liquids or wipes shall be stored for disposal in containers. All PCB containers will be dated and managed in the storage area so that they can be located by date. Records of storage will be maintained in accordance with 40 CFR 761.80.

4.5.2 Disposal

Offsite treatment and disposal of the excavated soils and waste material generated by decontamination and sampling will comply with the ARARs. Notification prior to transport and disposal will include a written statement of the following:

1. Name and location of the facility which will receive the waste.

2. Types and quantities of waste.

3. The expected shipping schedule.

4. Method of waste transport.

PCB waste containing concentrations of PCB's in excess of 500 ppm, approximately 36 cubic yards, will be destroyed in an incinerator in accordance with 40 CFR 761.60 disposal requirements. PCB soils with a PCB content less than 500 ppm, comprising approximately 1,100 cubic yards, will be disposed

of in a chemical waste landfill which complies with 40 CFR 761.75.

4.6 Task 6 - Site Closure

The closure activities will include regrading and, where necessary, backfilling, drainage and repaving to control storm-water runoff. Open excavations will be regraded and, where necessary, filled with clean fill. All backfill will be compacted in appropriate lifts to provide acceptable stability. Any utilities removed, e.g., a section of storm sewer, will be replaced with materials, e.g., drainage piping, of performance equivalence.

The presently paved area (plate 1) will be resurfaced with asphalt of a quality and thickness equivalent to current conditions. Asphalt will be graded to conform with existing site pavement conditions. Because of the operational nature of Sump 3 as a surface-water retention basin, this area will not be revegetated or paved.

4.7 Task 7 - Methods to Mitigate Soil Dispersal During Excavation

Site security measures will be implementated to minimize the potential for unauthorized site access. An exclusion zone will be identified for each work area. Equipment and personnel will only enter the exclusion zone in appropriate protective clothing, as outlined in the site HASP. Prior to removal of personnel and construction equipment from the exclusion zone, appropriate decontamination steps, outlined in the ROP and HASP, will be completed to prohibit the potential migration of PCB soils beyond the exclusion zone.

4.7.1 Fugitive Dust

Fugitive dust, potentially including PCB's on particulate matter, might become airborne due to wind erosion or physical activities during remedial activities. Measures to control fugitive dust during the physical excavation will include

wetting of the excavation surfaces. Wetting will be done on an as-needed basis to mitigate dust.

During the actual transport of waste material in and around the exclusion zone, plant speed limits of 5 mph will be observed in order to minimize the possibility of fugitive dust. To minimize the potential for wind erosion, all PCB soils will be containerized and open excavations will be covered with plastic tarps at the end of each work day.

4.7.2 Surface Runoff

Soil dispersion will be controlled by diverting surface-water runoff away from the excavations. During excavations in the direct spill and transport-related areas, diversions will be installed prior to excavation activities, as required. Dikes will be installed in the areas surrounding each work area in such a manner as to divert surface runoff away from the open excavation.

The direct spill and transport areas, as well as other parts of the plant, drain to Sump 3. To minimize runoff from all surface drains, sewers and catch basins, which are directly connected to Sump 3, will be removed from operation prior to beginning work in Sump 3. Runoff will be diverted to Sump 2. Notification will be made to the NYSDEC.

Areas of the excavation that require backfilling, but are left open awaiting analytical confirmation, will be covered by tarps to prevent direct precipitation from entering the excavated area. The previously-installed dikes will be left in place during this period to prohibit surface runoff from entering the excavations.

4.8 Task 8 - Contingency Plan

A contingency plan will be included in the ROP to respond to conditions, which if present, would require halting or revising the remedial work. The plan will also address the steps to be taken if there is an accidental release of PCB soils or decontamination liquids to the environment.

4.9 Task 9 - Field Sampling

Based upon the data requirements and DQO's, a variety of samples will be collected during the remedial activities. Field sampling is broken down into four categories: monitoring during implementation; waste classification; verification sampling; and confirmation sampling. The following subsections outline the sampling activities and define the rationale for each sampling program. A detailed FSP will be completed for the individual sample programs.

4.9.1 Monitoring During Implementation

Site conditions will be monitored during the actual construction activities. Air monitoring will be conducted for particulates and Aroclor 1248 on particulates throughout the excavation activities. The exact air monitoring locations will be determined in the field, but will at a minimum include one upwind and two downwind locations.

4.9.2 Waste Classification Sampling

Grab samples of the waste material will be collected during the construction activities. Seven representative waste material samples will be collected. Waste classification samples will be collected as follows: one sample of the excavated soil piles, two samples from the direct spill area, two samples from the transport-related areas and two samples from the recharge basin sediment. All waste classification samples will be tested for RCRA hazardous waste characteristics and toxicity by the Toxicity Characteristic Leaching Procedure (TCLP) to meet the disposal requirements.

4.9.3 Verification Sampling

Post-excavation soil sampling will be completed to confirm that the site cleanup objectives have been met. The results of the verification sampling will be used to quantify residual PCB concentrations and to determine when excavation activities have achieved the remedial objectives. The

following section outlines the sampling plan that will be employed to verify that remediation of the site has been completed.

4.9.3.1 Verification Sampling Design

The verification sampling plan has been designed based upon guidance from two USEPA Technical Operations Guidance Sources (TOGS), EPA-560/5-85-026 Verification of PCB Spill Cleanup by Sampling and Analysis and EPA-560/5-86-017 Field Manual for Grid Sampling of PCB Spill Sites to Verify Cleanup.

Soil samples will be collected from specific locations within each excavation. Soil sample locations will be selected based upon a hexagonal grid sampling pattern that is unique to the individual excavations. Procedures for constructing the sampling grids will be presented in the FSP. Once the sample locations have been staked out in the excavation, verification soil samples will be collected. Specific soil sampling procedures will be described in the FSP. Verification sampling will be collected from the direct spill, transport-related areas and Sump 3.

The number of soil samples that will be collected from each excavation is a function of the excavations' size and location with respect to the direct spill area. Described in the following subsections are the three soil sampling grids that will be used during the verification sampling process.

4.9.3.1.1 Seven Point Sample Plan

A hexagonal sampling plan, composed of seven sample points will be used when the excavation area is equal to or less than 50 square feet in size. The seven point sample plan will likely be used when initial verification samples indicate that a specific location within an excavation requires further soil removal. The seven point plan will be used to assess the success of the re-excavation.

4.9.3.1.2 Nineteen Point Sampling Plan

A nineteen point hexagonal sampling grid will be used to collect the verification samples from the majority of the transport-related excavations. The nineteen point sample plan will also be used to collect soil samples in the surfical excavation beneath the stockpiled soil piles.

4.9.3.1.3 Thirty-Seven Point Sampling Plan

The thirty-seven point hexagonal sample plan will be used to collect soil samples for verification analysis from the direct spill area and the adjacent transport-related excavations.

4.9.3.2 Compositing

Soil samples collected from the grid sampling plans for verification analysis will be composited. Composite samples will be formed from five individual samples or less to avoid potentially diluting a batched sample below the analytical PQL's. Composite soil samples will be formed from roughly equal number of soil samples from adjacent sample points. Composite samples will be analyzed for Aroclor 1248 using a gas chromatograph. Specific procedures that will be completed to form composite samples will be described in the FSP.

4.9.4 Confirmation Sampling

During the verification sampling process, sufficient quantities of soil will be collected from the individual sample locations to form two composites. One of the composite samples will be analyzed in the field for verification purposes. Once the verification sampling results show that the remedial action objectives have been met, the duplicate composite soil sample will be submitted for analytical testing. One duplicate composite soil sample from each of the proposed 11 excavations will be submitted for confirmation analysis of Aroclor 1248 using CLP methodologies.

4.9.5 Sampling Methodologies

The media to be sampled include soil and air. Sample protocols for specific sample collection will be presented in the FSP.

4.10 Task 10 - Analytical Program

Based upon the proposed sampling plan, analytical techniques will be required for two sample matrixes. The types of samples requiring analysis include soils and air samples. The sensitivity of the selected analytical methods will provide sufficient sensitivity, precision and accuracy to quantify low-level PCB concentrations, probably in the 1 to 20 ppm range. The analytical methods will also be adapted to field laboratory conditions.

Because the primary use of all generated data will be to reliably determine if the remediation has been effective, a GC/ECD will be used. Standard methods for each sample matrix anticipated to be collected from the Therminol spill area are discussed below.

4.10.1 Soil Samples

4.10.1.1 Verification Soil Analysis

Soil samples collected from the excavated areas for verification purposes, will be analyzed using a GC/ECD. Verification soil samples will be analyzed for Aroclor 1248 using EPA Method 8080. The GC/ECD will be used to obtain measurements of residual PCB concentrations, enabling rapid decision making during the cleanup operation.

4.10.1.2 Confirmation Soil Analysis

One composite soil sample from each excavation will be duplicated during the verification sampling process. The

duplicate composite sample will be submitted for analytical testing of PCBs using CLP methodologies. The CLP results will be used to confirm the results of the verification sampling.

4.10.2 Air Monitoring

Ambient 8-hour air monitoring samples will be analyzed for particulates and Aroclor 1248 on particulates. Air monitoring of total particulates will be conducted in accordance with procedures presented in NIOSH Method 0500. Collection filters for the measurement of total particulates will be gravimetrically analyzed for total mass according to NIOSH Method 0500. The analysis of Aroclor 1248 on particulates will be conducted using procedures presented in NIOSH Method 5503. The analysis of air samples for Aroclor 1248 will involve a solvent extraction and PCB concentrations will be determined using GC/ECD instruments.

4.10.3 Waste Classification Samples

All samples collected for RCRA waste classification will be subjected to testing, in accordance with 40 CFR 261 which requires identification and characterization of the waste. Each sample will be tested for ignitability, corrosivity, reactivity, and the amended TCLP test Method 1311 for toxicity.

4.11 Task 11 - Data Evaluations, Compliance/Non-Compliance of Verification Sampling

The objective of the verification sampling program is to determine if remedial actions have been effective in removing impacted soils above the target cleanup level of 10 ppm. The PCB concentration in a single soil sample, therefore would be the target cleanup level of 10 ppm. Therefore, single soil samples analyzed and found to have PCB concentrations equal to

or greater than 10 ppm will be considered to be above the project objectives, and PCB concentrations less than 10 ppm will be determined to be in accordance with project objectives.

Composite soil samples will be addressed similarly. PCB concentrations in the composite sample will be a result of the average concentration of all pooled samples. The composite sample concentration will be reviewed with respect to the statistical cutoff level of 10 ppm. If the results of the composite sample are at concentrations equal to or greater than 10 ppm, then at least one, if not more of the samples will have exceeded the compliance limit. However, if the resulting concentration is less than 10 ppm/N, where N = the number of samples pooled to create the composite, not to exceed five samples, then all soil samples in the composite meet the remedial objectives. If the composite concentration results in some medium value, each sample used to form the composite will be analyzed individually to reach a decision. Analysis of all of the remaining samples will be terminated as soon as an analytical result is obtained on a single sample which does not meet the remedial objectives.

If a reading in excess of 10 ppm is obtained by either the single sample analysis or the composite approach, the location of the sample or samples will be re-excavated to a limit of the radius of the smallest circle to be sampled. The re-excavation will be completed in 1-foot lifts or at depth increments to be determined in the field. Re-sampling to confirm that the remedial objective has been achieved will be completed according to procedures outlined in the FSP.

4.12 Task 12 - Final Field Inspection and Remedial Action Report

Fourteen days prior to the completion of the remedial action, OCC field representatives will be available to assist the USEPA during the final inspection of the remedial work.

After completion of the remedial action, and authorization from the USEPA, a draft remedial action report describing the remediation will be prepared and submitted. The report will verify that the required work has satisfied the objectives of the selected remedial alternative.

SECTION 5

5.0 PROJECT TEAM

The project team which will conduct and implement the selected remedial remedy will be defined. Copies of the curricular vitae will be provided. Names of the remedial contractor and laboratories will be supplied once selection has been completed.

5.1 Schedule

The preliminary schedule for tasks described in this Work Plan are presented on figure 5-1. The starting date for the schedule is the date of USEPA approval of the RDP. A more detailed time schedule will be prepared and submitted in the RDP.

cb
April 24, 1991
occifsp/91-6

TABLES

TABLE 3-1

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Summary of Applicable or Relevant and Appropriate Requirements for Remediation of Soils with PCB's

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Toxic Substance Control Act (TSCA)

40 CFR, Chapter II, - excludes spills previous to May 4, 1987 under TSCA
40 CFR, Chapter IV 761 (40 CFR 765.60) - removal; disposal limits
40 CFR 761.75, chemical waste landfills
40 CFR 761.70, PCB destruction limits in incinerator

Comprehensive Environmental Response Compensation and Liability Act (CERCLA)

40 CFR 300.65, removals
40 CFR 300.68, remedial action
40 CFR 300.70, methods of remedying releases.

National Contingency Plan (NCP)
Amendments to CERCLA

40 CFR 300

Superfund Amendments and Reauthorization Act (SARA)
Amendments to CERCLA

40 CFR 300

Resource Conservation and Recovery Act (RCRA)

40 CFR 261-ID: listing hazardous waste
40 CFR 262, L
40 CFR 265, L

Hazardous and Solid Waste Amendments to RCRA

RCRA Remedial Facility Investigation (RFI) Guidance

Volume I EPA 530/SW-87-001, July 1987, draft

TABLE 3-1
(continued)

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Summary of Applicable or Relevant and Appropriate Requirements for Remediation of Soils with PCB's

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New York State Solid Waste Management Regulations

6NYCRR Part 212 - general process emission sources

6NYCRR Part 360
6NYCRR Part 370-373(4)
6NYCRR Part 364 - generator requirements

United States Department of Transportation (USDOT)

49 CFR 172, 173, generator requirements
49 CFR 263, generator requirements
49 CFR 262.3, shipping and packing
49 CFR 173, shipping and packing
49 CFR 178, containers

Occupational Safety and Health Act (OSHA)

29 CFR 1910.120

National Institute of Occupational Safety and Health (NIOSH)

all regulations including NIOSH 1985

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TABLE 3-2

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

Summary of Analytical Levels for Each Data Use

Data use	Analytical level	Types of Analysis
Monitoring during implementation	Level I	Portable instruments
Monitoring during implementation	Level II	GC/ECD
Determinations for transport and disposal	Level III	RCRA characteristic tests
Verification	Level IV	Method specific USEPA procedures following CLP methodology compound specific

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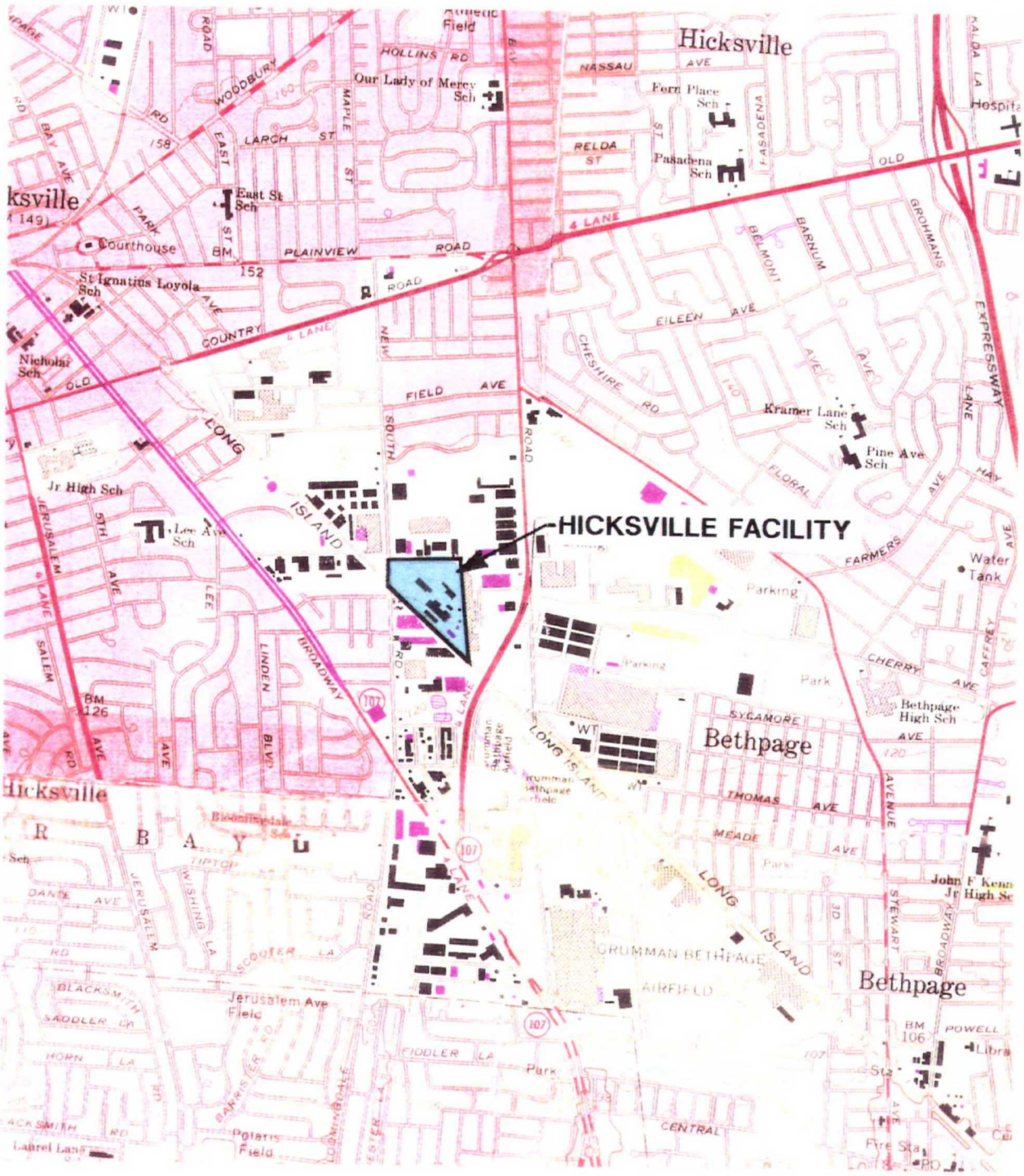
FIGURES



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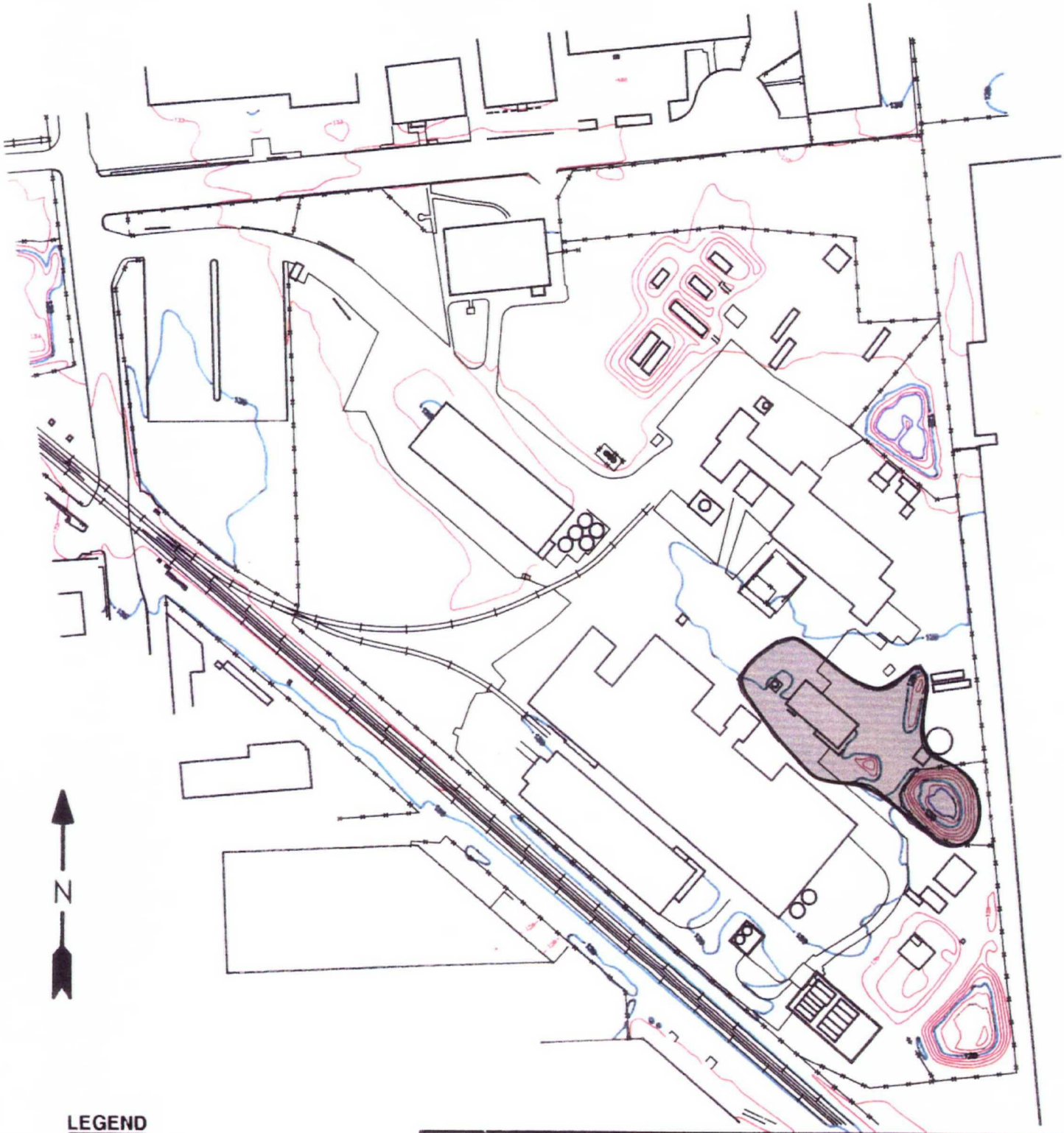
SCALE IN FEET

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

SITE LOCATION MAP

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: FIGURE 1.1



LEGEND

THERMINOL SPILL AREA

0 150

SCALE IN FEET

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

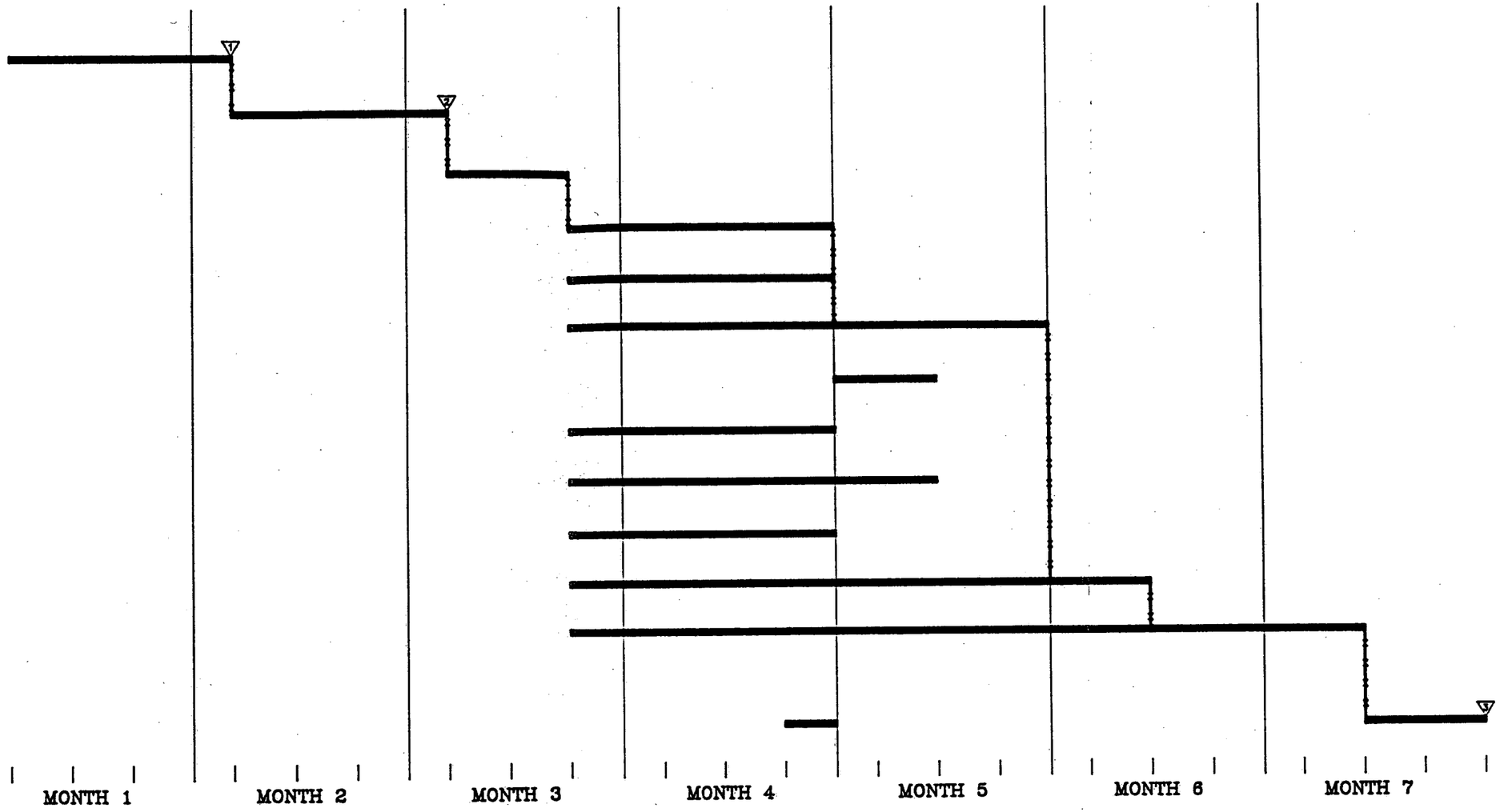
SITE BASE MAP

DATE	REVISIONS

PREPARED BY:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE:

FIGURE 1.2



x
x CRITICAL PATH
x

▽ WITHIN 30 DAYS OF ISSUING THE CONSENT DEGREE A DRAFT REMEDIAL DESIGN WORK PLAN WILL BE SUBMITTED. TIME SCHEDULING IS BASED UPON APPROVAL.

▽ WITHIN 30 DAYS OF REMEDIAL DESIGN WORK PLAN APPROVAL, SITE WORK WILL COMMENCE.

▽ WITH IN 30 DAYS OF COMPLETION OF THE SELECTED REMEDIATION, A DRAFT REMEDIAL ACTION REPORT WILL BE SUBMITTED TO THE EPA FOR REVIEW AND APPROVAL.

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

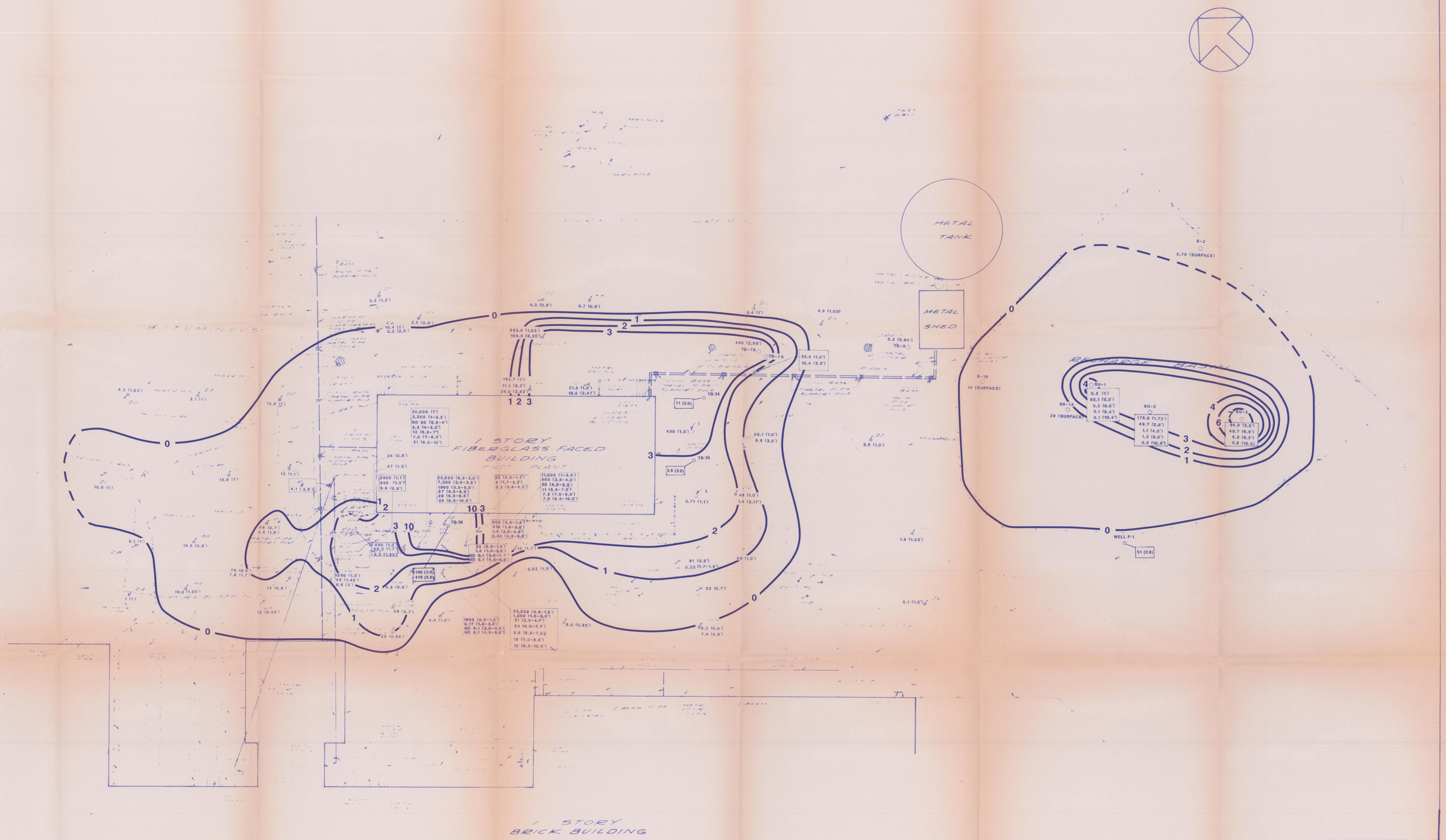
PROPOSED SCHEDULE FOR REMEDIATION OF THE THERMINOL SPILL AREA

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

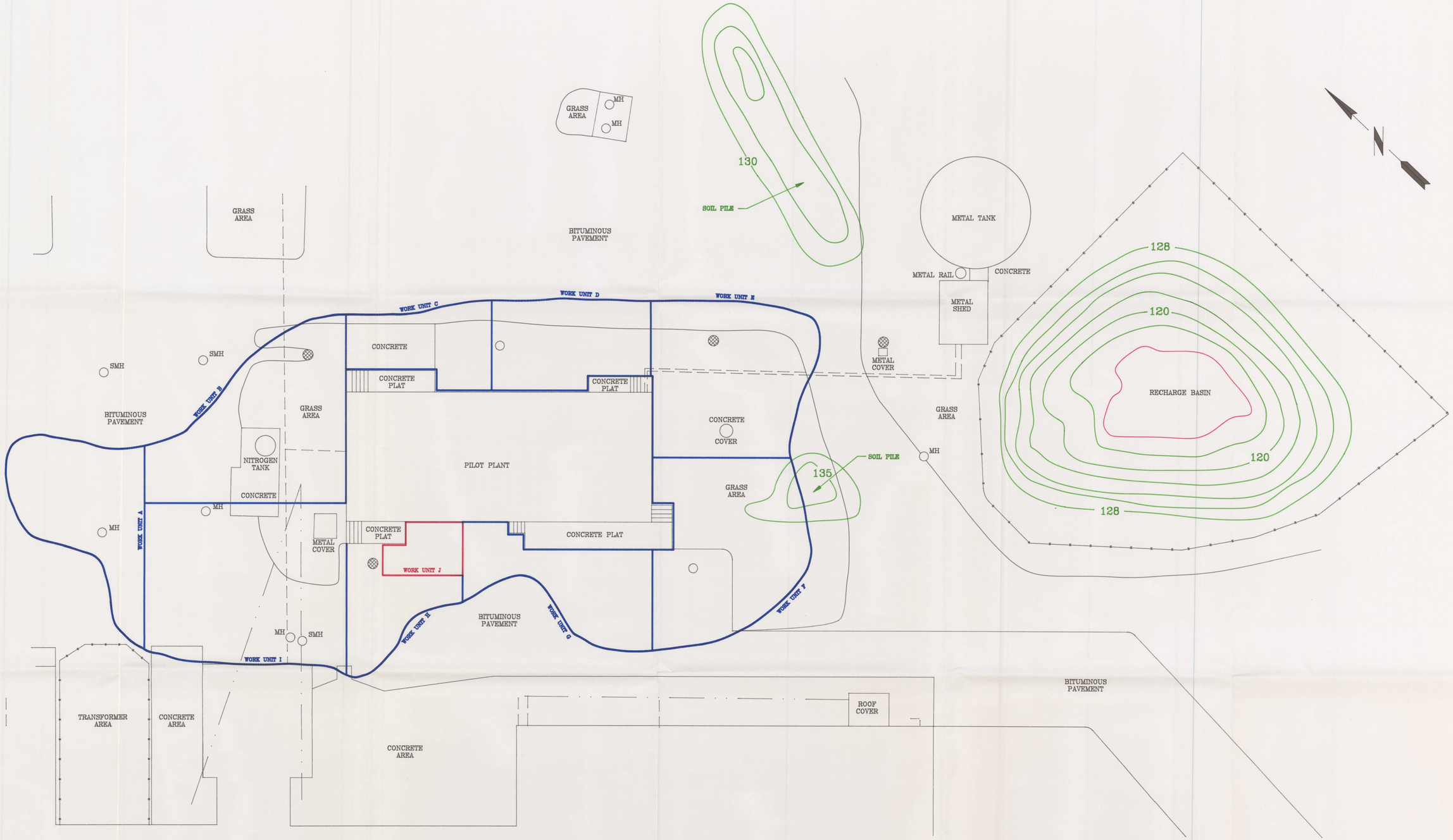
DATE: 2/4/91 FIGURE: 5-1



OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

APPROXIMATE DEPTH OF SOILS WHICH CONTAIN PCB'S IN EXCESS OF 10 PARTS PER MILLION

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water Consultants 72 Danbury Road Wilton, CT 06897 203-762-1207
		DATE: 5/22/90 — PLATE 1 OF 2



DRAWN: D.A.H.	CHECKED: R.L.

OCCIDENTAL CHEMICAL CORPORATION
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

THERMINOL SPILL AREA
CONCEPTUAL REMEDIAL EXCAVATION WORK AREAS

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE: 2/15/91 PLATE 2 OF 2