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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

MAR 2 1995

Reply to
Attn of: HW-113

MEMORANDUM

SUBJECT: Request for Approval of a Removal Action for the McCormick and Baxter Creosoting Site, City of Portland, Multnomah County, Oregon

FROM: Allison Hiltner
Remedial Project Manager

Bruce Gilles, Project Manager
Oregon Department of Environmental Quality

TO: Randall Smith, Director
Hazardous Waste Division

THROUGH: Michael Stoner, Chief
Superfund Site Management Section 1

Michael Gearheard, Chief
Superfund Remedial Branch

Site ID: P9

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein for the McCormick and Baxter Creosoting Site, City of Portland, Multnomah County, Oregon. The removal action would be performed by the Oregon Department of Environmental Quality (DEQ) under a Superfund Cooperative Agreement with EPA.

The objective of the removal action is to continue non-aqueous phase liquid (NAPL) extraction activities initiated by DEQ under State authorities in January 1993. NAPL extraction will minimize discharges to Willamette River and underlying sediments from two NAPL plumes originating from on-site source areas.

Funding of $850,000 for the removal action will be provided from the Remedial Action Set-Aside Fund.

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II. SITE CONDITIONS AND BACKGROUND

The CERCLIS ID number for the McCormick and Baxter Site is ORD009020603. This is a non-time-critical removal action for the McCormick and Baxter NPL site.

A. Site Description

1. Removal Site Evaluation

The McCormick and Baxter site is a 43-acre wood treating facility which operated from 1944 until 1991 on the banks of the Willamette River in Portland, Oregon. Wood treating products used at the site include creosote/oil mixtures, pentachlorophenol/oil mixtures, and a variety of water based solutions containing arsenic, chromium, copper, and zinc.

McCormick & Baxter reported possible environmental problems to DEQ in 1983. A preliminary site assessment was completed by the company in 1985, and a site assessment and remedial action report completed in 1987. DEQ and McCormick & Baxter signed an order in 1987 requiring a number of actions to clean up contamination and minimize further releases. McCormick & Baxter filed Chapter 11 bankruptcy protection in December 1988, emerging under a reorganization plan in November 1990. McCormick & Baxter completed two cleanup assessments in 1990: *Groundwater Collection and Treatment*, and *Bioremediation of Creosote and PCP Contaminated Soils*. DEQ began funding the RI/FS through the State Hazardous Substances Remedial Action Fund in 1990 and completed the RI and FS in September 1992.

DEQ's RI showed that there is extensive contamination of the site through spills, drippage from treated wood products, leakage from tanks and pressure retorts, and land disposal of process wastes. Process waste waters were discharged to the Willamette River between 1945 and 1969, and were discharged at various times to on-site soils. Process waste sludges were released in an onsite disposal area in the western corner of the site between 1968 and 1971.

All wood preserving chemicals were stored in above-ground storage tanks. Most tanks had no secondary containment and were in direct contact with soil. Organic preservative solutions included creosote, creosote mixtures (creosote with medium aromatic oil) and pentachlorophenol mixtures (PCP with oil or butane and ether). Inorganic preservatives have included water-borne chromium, ammoniacal copper arsenate and ammoniacal copper zinc arsenate.

Several large creosote spills reportedly occurred in the vicinity of the tank farm in the 1950s. A major release was also reported for the large creosote storage tank. Liquid process wastes were discharged to the ground in several areas, including a "waste pond" in the western corner of the site and a trench parallelling the river through the middle of

the site. Several butt dip tanks were used at the site and appear to be related to areas of contamination. Pentachlorophenol (PCP) crystals were washed or released to surface soils in several areas. PCP solutions were released to soils near mixing equipment. Incidental releases have occurred over large portions of the site.

The nature and extent of contamination at the site is described in detail in the RI report and is summarized as follows:

- **Onsite Surface Soils.** Surface soils across the entire site are contaminated with wood treating chemicals including metals (primarily arsenic), pentachlorophenol, and polycyclic aromatic hydrocarbons (PAHs). Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDDs/PCDFs) were also found in soil samples. Contamination is heaviest near the central process and tank farm areas.

- **Subsurface Soils.** Subsurface soils onsite are contaminated underneath major source areas, including the tank farm/central process area and the areas where wastes were disposed onsite. These areas are primarily contaminated with PAHs and pentachlorophenol. Subsurface soil contamination has migrated to depths of approximately 80 feet in some areas and has migrated from the source areas onsite into subsurface sediments of the Willamette River adjacent to the site.

- **Groundwater.** Groundwater at the site is contaminated with PAHs, pentachlorophenol, PCDDs/PCDFs, carrier oils and metals in and downgradient of the source areas described above. Two pools of migrating light and dense non-aqueous phase liquids (LNAPLs and DNAPLs) have been characterized in the shallow and intermediate aquifer zones at the site. Total PAH concentrations as high as 325,000 mg/l and pentachlorophenol concentrations as high as 8,300 mg/l have been detected in NAPL. NAPL contamination has migrated laterally into Willamette River sediments.

- **Sediments**. Both surface and subsurface sediments near the site are primarily contaminated with PAHs and carrier oils. Total PAH concentrations as high as 10,400 mg/kg have been detected in sediments. Limited contamination of sediments with chlorinated phenols, PCDDs/PCDFs, and arsenic has also occurred. Two major areas of sediment contamination are located downgradient of the tank farm/central process area and the former waste disposal area. Sediments in these two areas were found to be toxic to organisms tested using two bioassay methods.

2. Physical Location and Site Characteristics

The McCormick & Baxter Creosoting site is located in north Portland, on the east bank of the Willamette River at River Mile 7 and immediately upstream of the Burlington Northern Railroad Bridge. The McCormick and Baxter site covers approximately 58

acres (43 acres on land and 15 acres in the river). The property was created around the 1900s by placing sandy dredge spoils on a marshy area. Located on a flat plateau about 30 feet above the river level, it is above the 100 year flood plain in virtually all areas.

A residential neighborhood is located atop a 120 foot-high bluff to the northeast of the site. Vacant industrial property is located to the northwest, and the former Riedel International facility is to the southeast. Several schools are located within 1 mile of the site. St. Johns Park is located one mile downstream from the site.

Numerous species are known to inhabit the Willamette River near the site, including northern squawfish, largescale sucker, chinook salmon, coho salmon, and steelhead. Crayfish and clams are also found near the site. The Willamette River supports recreational fishing in the area.

DEQ has occupied the site for the purpose of conducting investigations and interim remedial activities since the plant closed in October 1991. Wood treating chemicals, tanks, process equipment, retorts, several other site structures, treated and untreated poles and ties have been removed by DEQ, leaving large areas of the site barren. The site was seeded with grass in August 1992 to reduce storm water runoff and dust resuspension.

The McCormick and Baxter Creosoting Co., although bankrupt, still holds title to the property.

3. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant.

The RI report documented the release of contaminants to on-site soil, groundwater, and sediments in the Willamette River. Contaminants are chemicals used in the wood preserving industry, including polycyclic aromatic hydrocarbons (PAHs, comprising about 85% of creosote constituents), pentachlorophenol (PCP), arsenic, chromium, copper and zinc. Polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDDs/PCDFs), which are trace constituents of PCP, were also found on the site.

4. NPL Status

The McCormick and Baxter site was added to the NPL on May 31, 1994. DEQ completed an RI/FS under State authorities in 1992 and held a 60-day public comment period on a proposed plan in September 1992. DEQ is currently revising the 1992 FS Report. The Revised FS Report will address EPA comments on the 1992 RI and FS Reports and refine remedial alternatives based on current site conditions following interim removal activities and additional site characterization results.

DEQ and EPA will issue a proposed plan following concurrence on a proposed remedy for the site. A CERCLA ROD is projected to be issued in September 1995.

5. Maps, pictures, and other graphic representations

The attached figures include a map of the site location, cross sections illustrating the extent of NAPL contamination in the subsurface, a map illustrating the areal extent and thickness of NAPL contamination, and NAPL extraction well networks for the tank farm and former waste disposal area NAPL plumes.

B. Other Actions to Date

1. Previous Actions

McCormick & Baxter reportedly removed various contaminated soils during the past decade, and dredged sediments near the dock during the 1960s or 1970s. Underground storage tanks were removed from the site in 1989. Security fencing, buoys, and warning signs were erected at the site in 1990. Recovery of pure phase NAPL from several wells was initiated by McCormick & Baxter in 1989.

DEQ initiated a number of interim response actions (IRAs) on the McCormick and Baxter site following plant closure in October 1991. Initial IRAs included contaminant mass removal by NAPL extraction, site access control by fencing, buoys along the river, and placement of warning signs; dust control through grass seeding and limitation of site traffic; storm water containment through diversion and collection of sump water; and maintenance, sale and transfer of remaining wood treating chemicals.

Between July 1993 and March 1994, DEQ initiated site demolition activities, expanded the NAPL extraction well network, conducted pilot tests for enhanced NAPL extraction, prepared a preliminary engineering analysis for a pilot-scale wastewater treatment plant, removed and disposed of wastes and laboratory chemicals left at the site by McCormick and Baxter, and conducted additional site characterization activities.

Between May 1994 and October 1994, DEQ conducted plant demolition and disposal of approximately 800 tons of sludges and contaminated debris, treated and disposed of approximately 400,000 gallons of storm water contained on-site, collected and analyzed 650 surface soil samples for PAHs, PCP, and metals, removed 378 tons of highly contaminated soil from three "hot spot" areas, and constructed the pilot wastewater treatment plant.

2. Current Actions

DEQ is currently continuing NAPL extraction using State funds. The pilot-scale wastewater treatment plant was installed at the site in September 1994. Pilot testing of

the treatment plant began in October 1994. Pilot testing is expected to continue through June 1995 to ensure the system will consistently meet NPDES discharge limits.

DEQ is revising the 1992 Feasibility Study to reflect current site conditions following demolition of the plant, additional site characterization data collected since 1992, new information on treatment technologies and costs, and to address EPA comments on the 1992 RI and FS Reports. A revised FS Report is scheduled to be issued in March 1995. DEQ will also prepare a proposed plan and will submit both the FS Report and a draft proposed plan to EPA for review and comment in March 1995. The FS Report and proposed plan will be finalized following EPA review and approval and will proceed with implementation of community relations requirements in the NCP for the proposed plan. DEQ will prepare a Record of Decision for DEQ and EPA signature.

DEQ is also currently evaluating options for removal of remaining non-essential outbuildings, rail spurs, miscellaneous equipment, and treated and non-treated scrap lumber and poles which was not removed during plant demolition in 1994. DEQ's goal is to have this work completed with no cost to DEQ (costs offset by recycling/scrap profits to contractor). If implemented, this work is projected to be completed by summer 1995.

C. State and Local Authorities' Role

1. State and Local Actions to Date

Oregon DEQ has been the lead agency for all actions taken at the site to date, except for NPL listing.

2. Potential for Continued State Response

The proposed removal action would be implemented by DEQ as the lead agency under a Superfund Cooperative Agreement with EPA.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health and Welfare

Key exposure scenarios to site contaminants which pose a significant threat to human health include direct contact to surface soils and NAPL seeps along the Willamette River beach. During the summer of 1989, two teenagers received chemical burns to their legs and feet from direct contact with contaminated sediments while wading along the McCormick and Baxter beach. Several of the PAH compounds found in sediments are classified as probable human carcinogens.

B. Threats to the Environment

Contaminated groundwater and NAPL from the site discharges to the Willamette River. NAPL discharges directly to the Willamette River can create concentrated releases of contaminants to surface waters and pose a significant risk to aquatic species. Sediments adjacent to the site are toxic to test organisms. Further uncontrolled discharges of NAPL to sediments could result in increasing the aerial extent of heavily contaminated sediment areas. The toxicity of sediments at the site to other types of wildlife have not been quantified or directly studied, though wading shore birds, raccoons, and beavers are considered at the greatest potential risk.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants and contaminants from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COST

A. Proposed Actions

1. Description

The proposed removal action would be conducted by DEQ under a Cooperative Agreement with EPA. The 1994 *NAPL Extraction System Operations and Maintenance Manual*, prepared by DEQ and their contractor, PTI, describes the work in detail.

The removal action will consist of extraction of pure-phase NAPL and enhanced NAPL extraction by pumping total fluids from the existing extraction well network shown on the attached figures. The extraction network consists of 16 wells in the tank farm area and 9 wells in the former waste disposal area. An additional 5 extraction wells associated with a beach cut-off trench and 5 wells installed in Willamette River sediments will be pumped periodically to assess whether NAPL is present at recoverable levels.

The removal action includes operation of a pilot-scale water treatment system for removal of organic and inorganic contaminants from total fluids extraction. The system consists of units for influent, dissolved air flotation (DAF), equalization, filtration, ion exchange (for metals removal), and treatment of dissolved/colloidal organic compounds using granular activated carbon (GAC). Effluent is held in two storage tanks prior to discharge to the Willamette River under National Pollution Discharge Elimination System (NPDES) permit limits.

The treatment plant is designed to operate at a flow capacity of 10 gallons per minute (gpm). This small scale treatment system was selected by DEQ for pilot operation because the NAPL extraction wells have small yields (less than 3 gpm) and the effective lifetime of a given well for productive NAPL extraction is unknown.

Waste generated from NAPL extraction and wastewater treatment plant operation includes pure-phase NAPL, NAPL and sludges in the sludge tank, spent filter media, spent ion exchange resins, and spent granulated activated carbon. DEQ has characterized NAPL and NAPL sludges from the treatment system as F032/F034 listed hazardous wastes. The NAPL and NAPL sludges will be disposed of off-site in accordance with RCRA regulations. Spent filter wastes, ion exchange resins, and carbon will be evaluated for chemical concentrations and physical parameters to determine recycling or disposal options. Final disposition of these materials will be made following consultation with DEQ's RCRA program. All disposal of CERCLA hazardous substances, pollutants, and contaminants will be in compliance with the CERCLA Off-Site Rule.

2. Contribution to Remedial Performance

This removal action is consistent with long-term remedial goals for the McCormick and Baxter site and with CERCLA guidance. Although a final remedy has not been selected at this time, NAPL extraction will be part of the remedial action at the site. Continued implementation of NAPL extraction will expedite removal of NAPL to the maximum extent practical. Furthermore, preventing continued discharge of NAPL to sediments should also benefit the sediment remedy by limiting the area of sediment contamination to be excavated and/or capped.

3. Description of Alternative Technologies

The 1992 FS included an evaluation of NAPL extraction and groundwater treatment technologies and process options which are components of the proposed removal action. Treatment technologies evaluated for dissolved organic compounds in groundwater included activated carbon, UV photooxidation, and biological treatment. UV photooxidation was not selected because this system would require a high level of operator attention and equipment maintenance, and would require influent water to be essentially free of separate-phase oil and low suspended solids and metals. Biological treatment was not selected based on previous pilot testing conducted by McCormick and Baxter which showed the process to be sensitive to influent shock loading. DEQ, therefore, selected carbon adsorption as the treatment process option because of its overall reliability. Biological treatment will be reevaluated in the 1995 FS and final remedy selection.

4. EE/CA

The FS evaluated alternatives for groundwater cleanup at the McCormick and Baxter site including extraction of non-aqueous phase liquids (NAPL). The 1992 RI and FS reports addresses all elements of an Engineering Evaluation/Cost Analysis (EE/CA).

DEQ completed a public comment period on the RI/FS and DEQ's proposed remedial action at the site in September 1992. DEQ provided written responses to public comments received during the 60-day public comment period.

5. ARARS

This action will comply with all federal and state ARARs to the extent practicable considering the exigencies of the situation. ARARs for this action include Resource Conservation and Recovery Act (RCRA) Subtitle C regulations (40 CFR Parts 260-266 and 268) and NPDES regulations (40 CFR Parts 122, 125 and 136) under the Clean Water Act. State ARARs for the RCRA and NPDES are Oregon Revised Statues 468 (Water Pollution Control Laws) and 466 (Oregon Hazardous Waste Management Act).

6. Project Schedule

This removal action will begin with the signature of the Action Memorandum and issuance of a cooperative agreement between DEQ and EPA and will continue through December 1995. EPA and DEQ hope to have completed a ROD in September 1995. Following a transition phase, during the fall of 1995, NAPL removal will continue using Remedial Action funds.

7. Community Relations

Oregon DEQ has conducted extensive community relations efforts at the site. It has substantially complied with the NCP public participation requirements of 40 CFR 300.415(m) for a non-time critical removal action in conjunction with completion of the RI and FS reports in 1992. DEQ established two information repositories near the site, and made documents available for review at DEQ offices in Portland. On January 4, 1993, DEQ published a notice of availability of the RI/FS and other documents on which the removal action is based in the Oregonian newspaper. In this publication, DEQ provided a description of this proposed response action, along with other proposed remedial activities. DEQ provided the public with an opportunity to comment on the proposed plan between January 1 and March 8, 1993, and held two public meetings, on January 12, and February 2, 1993. DEQ has prepared a response to all public comments submitted during the comment period, and has made the comments and DEQ responses available for public review. DEQ has also prepared a Community Relations Plan detailing past and future community relations activities at the site.

DEQ will send fact sheets to addressees on the community relations mailing list for the site on at least a semi-annual basis. Public informational meetings with the local community, held on a quarterly basis since 1990, will be continued by DEQ. Community relations activities associated with this removal action will be coordinated with community relations activities associated with issuance of a revised FS Report, ATSDR's draft Public Health Assessment, public notice and comment period of a DEQ and EPA proposed plan, and final ROD.

B. Estimated Costs

EPA's estimate for removal action implementation is $850,000. The estimate includes the following:

EXTRAMURAL COSTS	
DEQ Oversight	$60,000
Contractor Cost	$695,000
Extramural Contingency (10%)	$ 75,000
Total Extramural Costs	**$830,000**
INTRAMURAL COSTS	
Intramural Direct	$ 7,500
Intramural Indirect	$ 12,500
Total Intramural Costs	**$ 20,000**
TOTAL PROJECT COSTS	**$850,000**

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Discontinuing NAPL extraction removal action will result in further migration of NAPL to the Willamette River and sediments and may increase the cost of groundwater and sediment remedial actions and implementation time for remediation at the site.

VII. OUTSTANDING POLICY ISSUES

EPA intends to fund DEQ to perform this removal action through a Superfund Cooperative Agreement. Our review of current and past State activities indicates that DEQ has strong program capability and fiscal accountability. DEQ has managed the site for several years and has developed a high level of institutional knowledge about the site. They have also built a good rapport with the community through extensive community

relations efforts. The removal action includes ongoing activities for which DEQ already has a contract in place to perform the work. DEQ's contractor has been working on the site since 1990 and has been operating the NAPL extraction system since 1993. There would be a significant costs savings in allowing DEQ and their contractor to continue the work rather than transitioning to an EPA contractor. The Cooperative Agreement will also provide for EPA oversight of IRA activities.

EPA has requested, and Oregon has agreed, to pay a 10% State cost match for this action. EPA considers this action, although pre-ROD, to be essentially a remedial action. It is an action selected by DEQ following a state-lead RI and FS and public comment on the proposed cleanup plan.

VIII. ENFORCEMENT

Enforcement issues have been addressed. DEQ's and EPA's Potentially Responsible Party search efforts have not identified any PRPs other than the bankrupt McCormick and Baxter Creosoting Co. at this time. The McCormick and Baxter Creosoting Co. is in the midst of litigation with previous insurance carriers concerning claims for environmental damages.

IX. RECOMMENDATION

Conditions at the McCormick and Baxter Creosoting site meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your approval of the proposed removal action. The total project ceiling, if approved, will be $850,000. Funding would be provided from EPA's $50 Million Remedial Action Set-Aside Fund to EPA Region 10's Removal budget.

X. APPROVAL/DISAPPROVAL

I approve the removal action recommended in Section V:

M Beaverhead for R Smith Date: 3-2-95

I do not approve the submitted recommendations for the following reasons, and I direct the following actions to be taken:

_____ Date: _____

Attachments

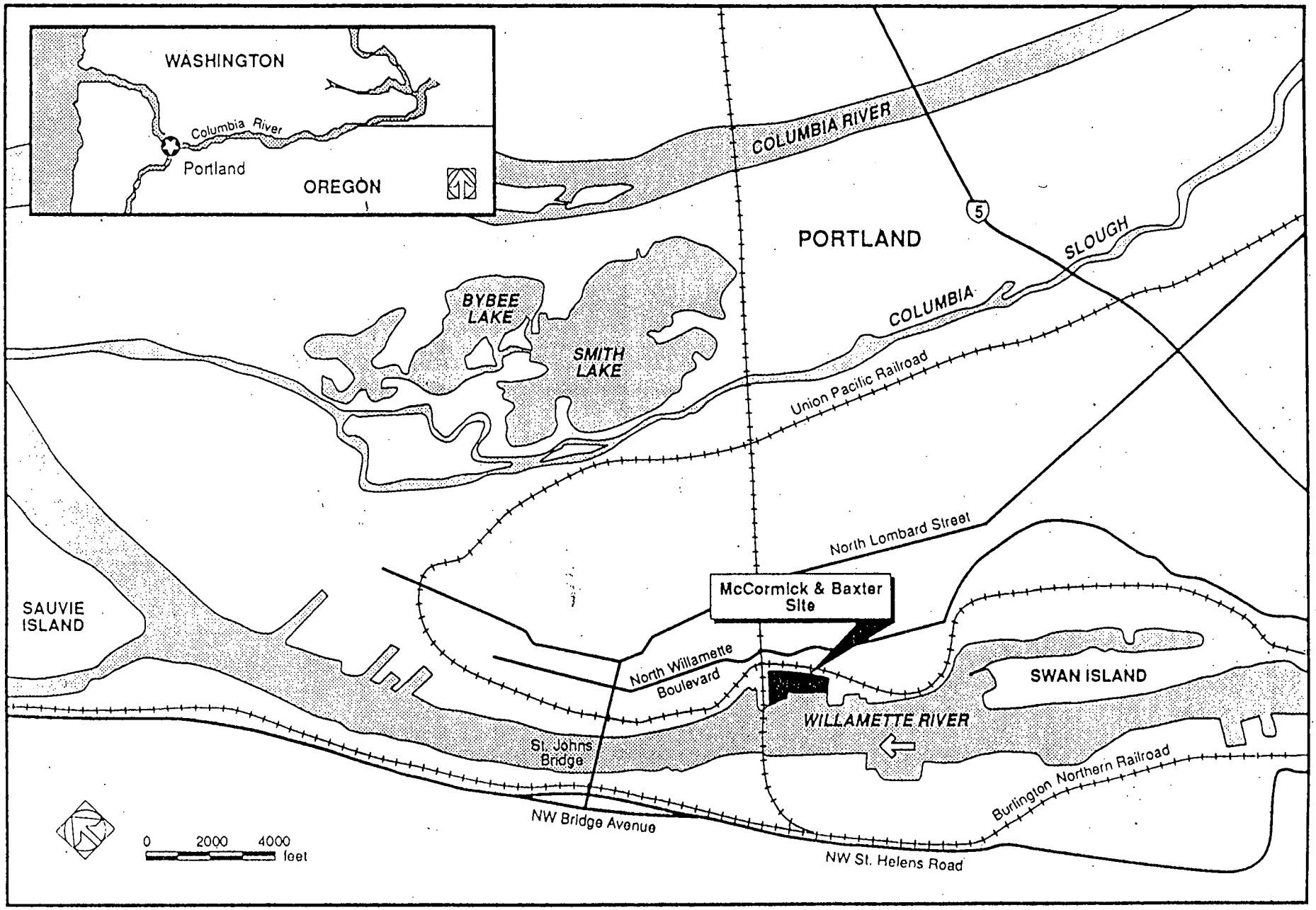

Figure 1-1. McCormick & Baxter site location.

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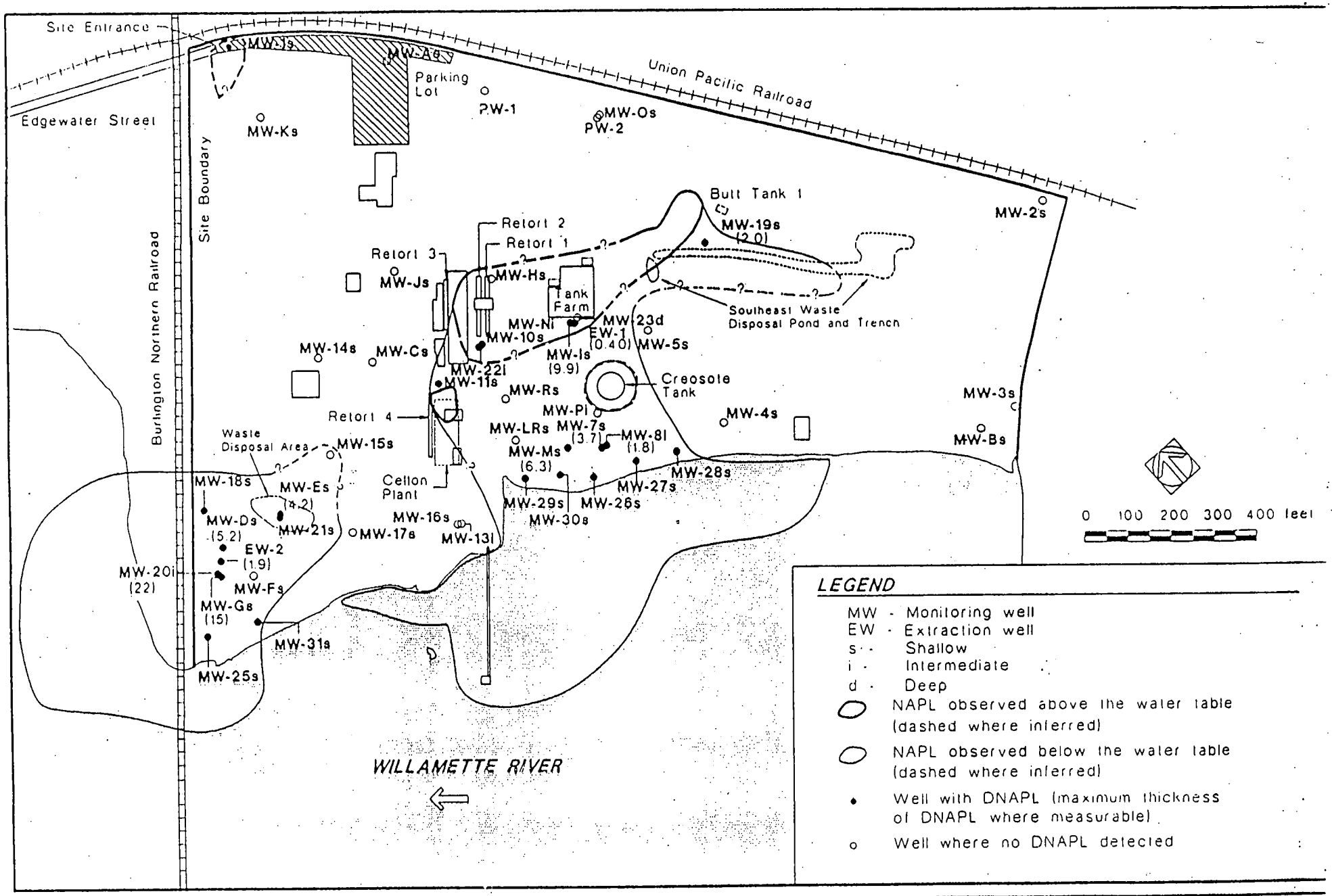

Figure 2-6. Location and thickness of DNAPL - McCormick & Baxter site.

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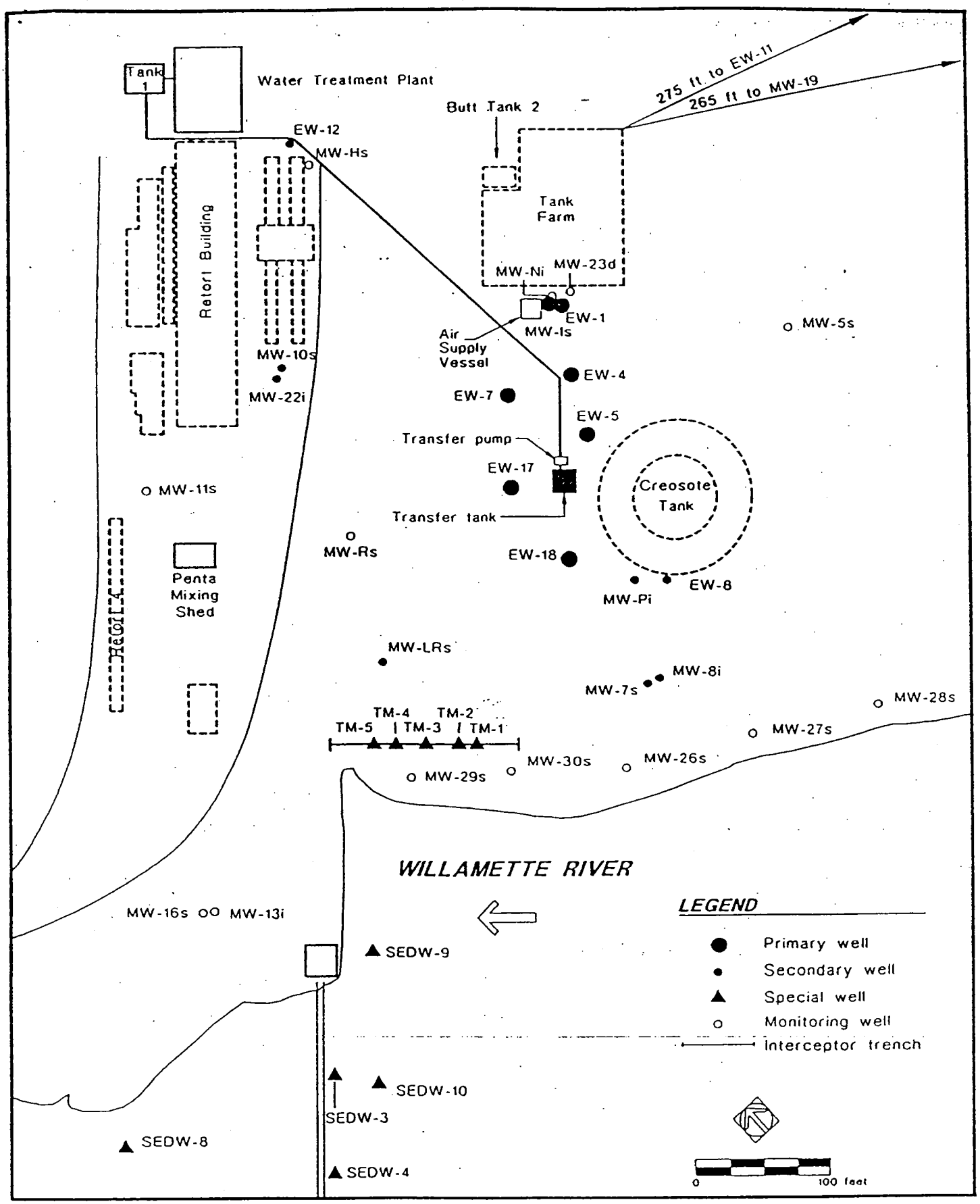

Figure 3. Tank farm area (TFA) creosote extraction system.

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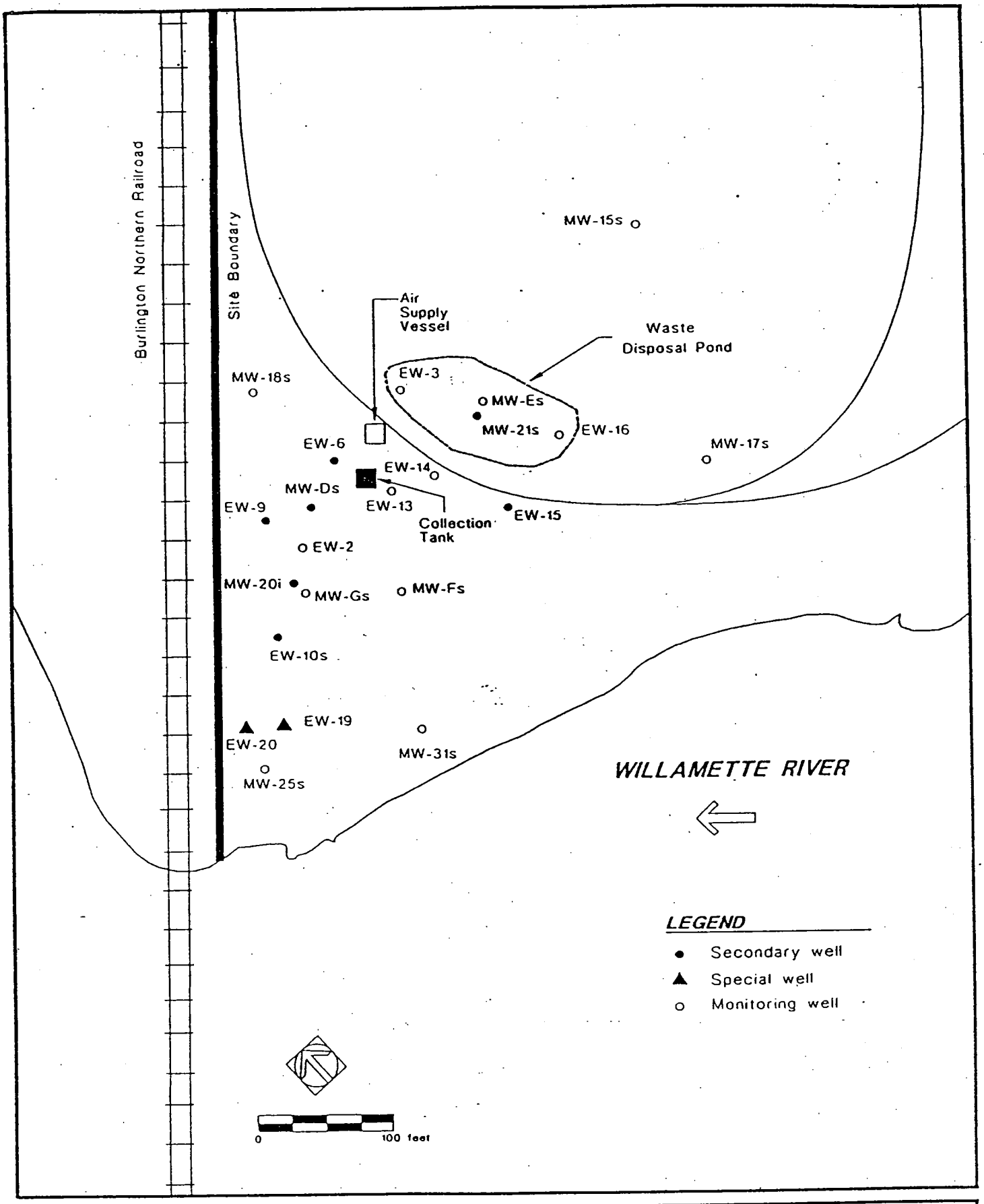

Figure 5. Former waste disposal area (FWDA) creosote extraction system.

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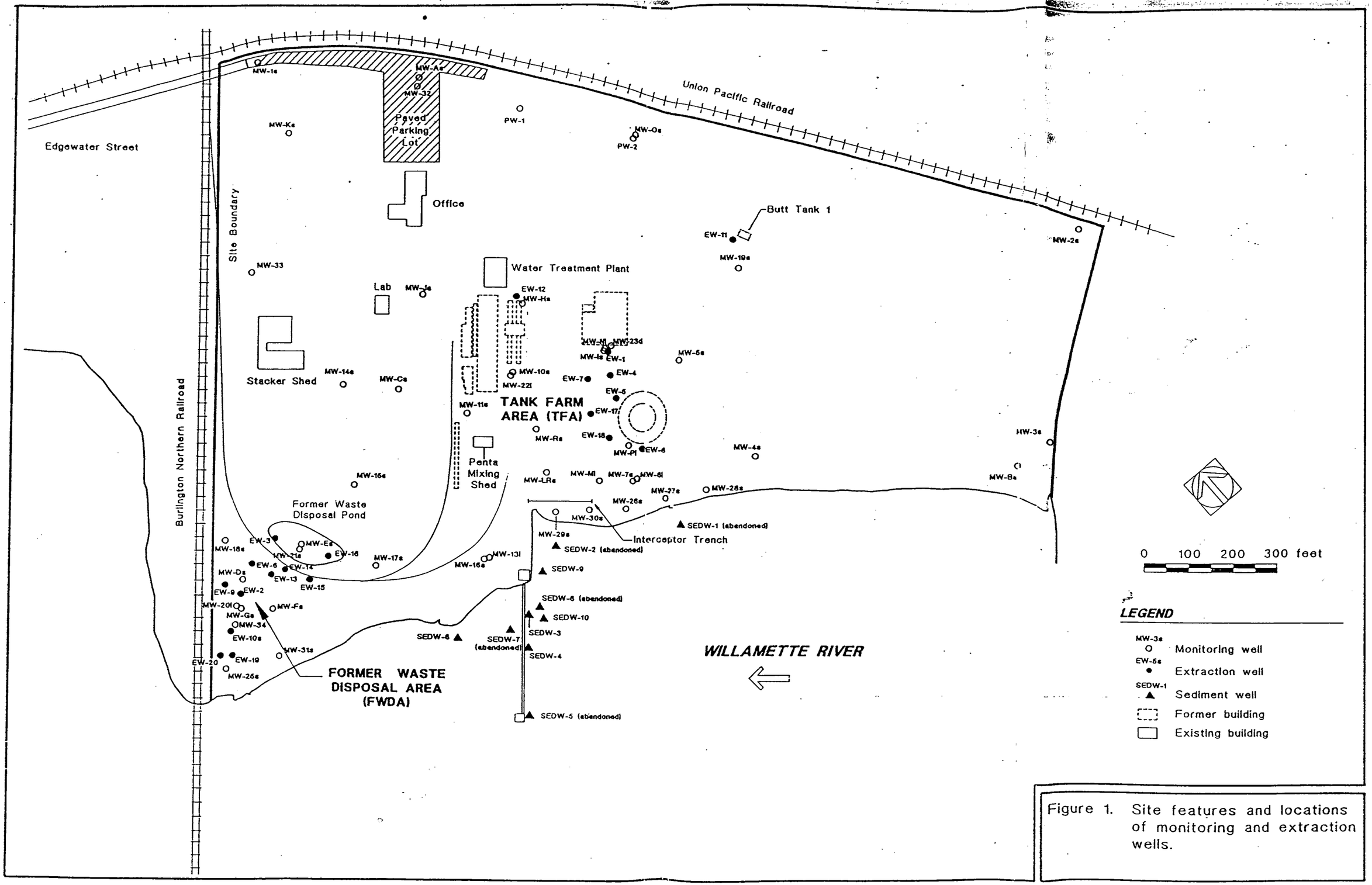

Figure 1. Site features and locations of monitoring and extraction wells.

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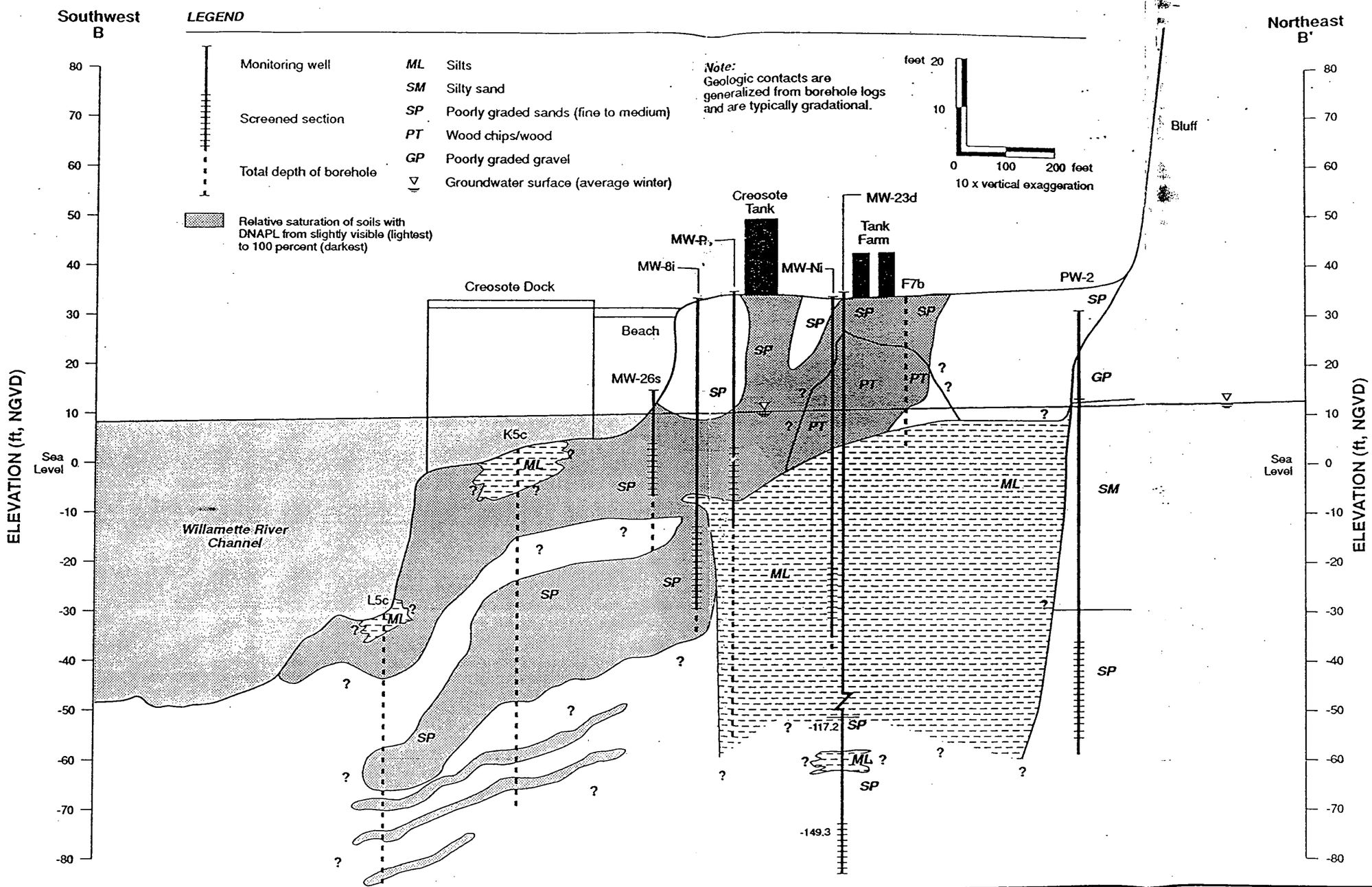

Figure 2-14. Extent of DNAPL in the tank farm area – McCormick & Baxter site.

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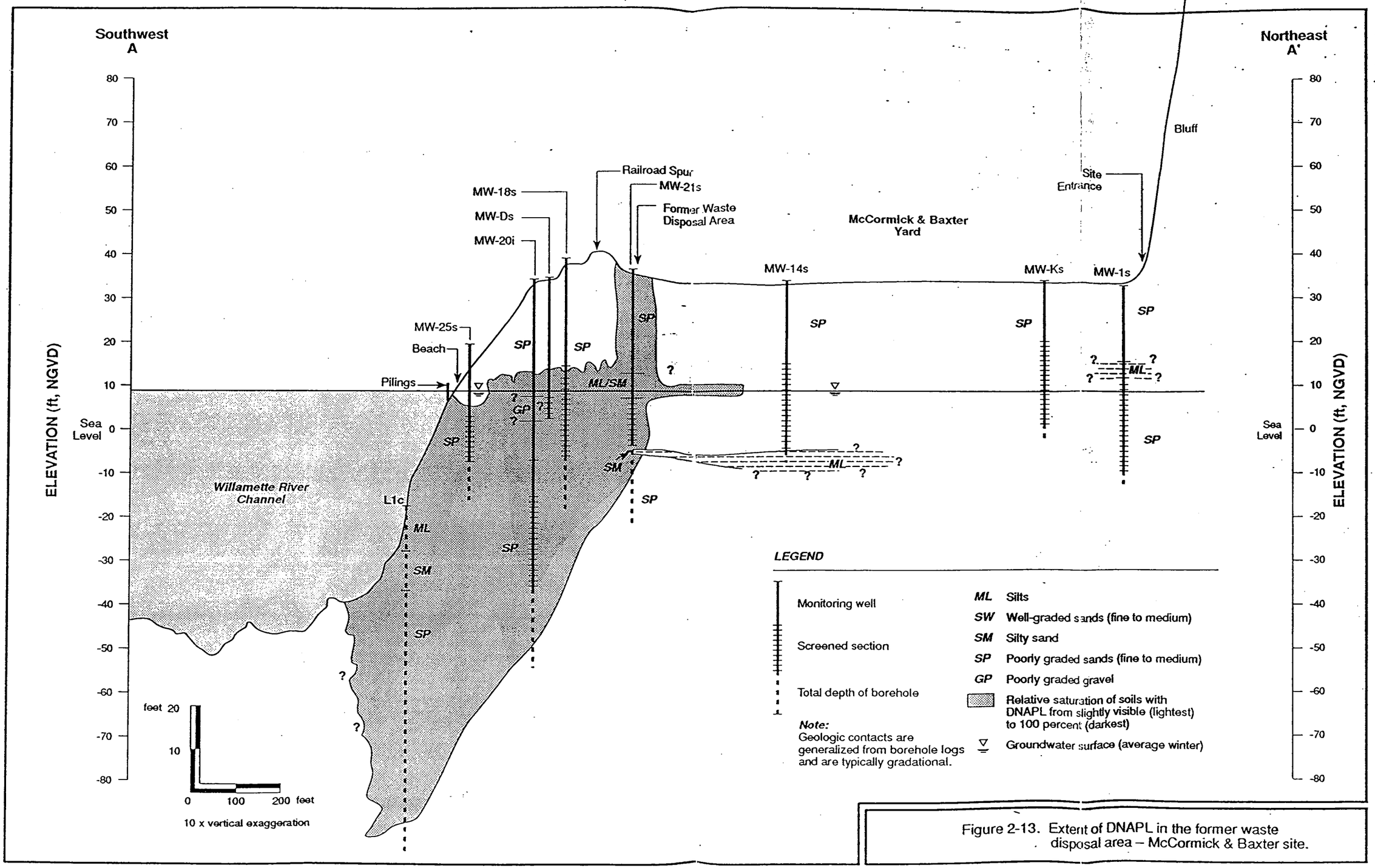

Figure 2-13. Extent of DNAPL in the former waste disposal area – McCormick & Baxter site.