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MEMORANDUM

TO: Brian Sato - Ecology **CLIENT:** JAG Development, Inc.
FROM: John Ryan *nr* **TASK:** 3-2438-580
DATE: February 25, 1997 **RE:** Waste Designations Memorandum -
Process Summary

Based on discussions with the Washington State Department of Ecology (Ecology) on January 17 and 21, Remediation Technologies, Inc. (RETEC) has developed this Waste Designations Memorandum for the proposed JAG Development, Inc. (JAG) redevelopment in Renton, Washington. This document represents the second part of the Waste Designations Memorandum and provides a summary description of processes that occurred at the J.H. Baxter and Quendall properties. The first part of this memorandum was distributed on January 27, 1997.

J.H. Baxter Process Summary

All property histories indicate that both creosote and pentachlorophenol treating solutions were used on the Baxter property. Creosote was used to treat railroad ties and pilings, whereas PCP solutions were used to treat utility poles. Treated wood was stored predominantly on the southern portion of the Baxter property, and distributed to purchasers by rail or by truck. Figure 1 provides the locations of the process areas discussed below.

Butt Tanks

The plant was built in 1955 and originally operated with three butt tanks, using creosote as a preservative. No secondary containment structures were placed around the butt tanks. Two of the butt tanks (approximately 12 feet deep, 8 feet wide, and 16 feet long) and a smaller tank were used. The butts of the pilings were placed into the tank, and the pilings were supported by 60-foot high timber scaffolding. Hot creosote oil, heated by a boiler near the tank farm, was pumped into the butt tank through underground piping from the creosote storage tank in the tank farm. The hot oil was then pumped out and replaced with cold creosote oil. After treatment was complete, the creosote was drained from the tank. The butt tanks were taken out of service in December 1970 and were abandoned in-place in 1979 according to Baxter records. A 1971 waste discharge permit application indicated that saturated soil surrounding the butt tanks had been cleaned up.



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Small Retort

In approximately 1960, a small retort, estimated to be 6 feet in diameter by 45 feet long, was installed using pentachlorophenol for the preservative. It was located between the butt tanks and the lake and the door of the retort faced to the south. No secondary containment structures were constructed around the retort. Wood poles were treated by the Boulton process using a dilute solution of pentachlorophenol in an aromatic carrier oil. The wood was chemically pre-conditioned and treated, and the treated wood was drained all in the same vessel. Use of this retort was discontinued in April 1970 and the retort was removed from the site in 1977 according to Baxter records.

Large Retort

In 1965, the large retort (8 feet diameter by 144 feet) was installed for use with pentachlorophenol and creosote. Creosote was no longer used following 1975. Also, light solvent treatment using mineral spirits as a carrier was used at the plant for one charge only. In August of 1981, the plant was shut down and the retort was moved to the Arlington, Washington plant.

Drip Tracks

Former drip tracks are assumed to be associated with the large retort. The exact location and dimensions of the area are unknown, although stained soil has been observed near the railroad tracks to the north of the large retort.

Tank Farm

During the course of plant operation, five to eleven aboveground storage tanks of varying capacity were located near the operations buildings in the tank farm. The tank farm consisted of a concrete slab and concrete berm. Wood preserving chemicals stored in the tank farm included crystalline PCP, aromatic carrier oils, five percent PCP in solution, and creosote. A map from 1962 indicates that Tank No. 1 contained petroleum, Tank Nos. 2 and 3 contained creosote, Tank No. 4 contained concentrated PCP, and Tank No. 5 was the working PCP tank.

Process Wastes

A 1965 waste discharge permit for Baxter (Permit No. 2164) indicated that discharge of up to 21,000 gallons per day of cooling and contaminated waters was allowed. The

permit also required that oils and other wastes should be prevented from entering the lake. Chemical sludges or sludge contaminated oils were to be disposed of on land and not discharged to a State waterway.

A later waste discharge permit from 1970 allowed discharge of up to 24,400 gallons of waste per day following treatment and in-plant control. The permit application described the on-site use of creosote from Reilly Tar, PCP from Monsanto Chemical, and medium aromatic oil from Shell. The application also described a separating tank from which oil components of treatment condensate were drained and pumped back to the storage tank. The water from the separating tank was then drained into a skimming and settling pond where any remaining oil was eliminated by skimming of the surface oil and settling of any oil heavier than water. The effluent from this pond siphoned off below the surface into a pipe going to Lake Washington. The application further indicated that the plant was investigating the feasibility of piping the effluent from the small retort treating system into the existing closed system of the new large retort installation.

A waste discharge permit from 1971 covered only discharge of sanitary wastes to a septic system on site. Baxter indicated on the application that there was no cooling water or process water discharge to the Lake at the time of the application. The permit indicated that "no industrial wastes are being discharged directly into state waters, only storm water run-off." The permit application included a schematic which supported the no-discharge claims. The permit also indicated that collection troughs had been installed in front of the butt tanks and all oily wastes and water from the butt tank area are pumped into the decantation system as part of the non-discharge recirculating cooling tower system.

A March 1972 permit (#4004) for septic tank discharge of sanitary wastes and boiler blowdown included some discussion of the area later known as the "stormwater pond". The discussion references actions taken to minimize oil discharge into the lake including regular inspection, oil skimming, and periodic clean out.

State inspections of the Baxter facility were conducted in April and August of 1972. The April inspection noted a small quantity of oil in the outer pond to Lake Washington. The August inspection indicated that there were two ponds on the property. The inspection noted the presence of oil in the first pond that resulted from previous soil contamination, since no oil was currently discharged. The oil in the first pond appeared to be stopped by wooden baffles. Effluent discharged to the second pond which was open to Lake Washington.

An NPDES permit (WA-002992-1) for the stormwater pond outfall to Lake Washington from April of 1975 indicated that oil was accumulated in a contained area to prevent any discharge. At intervals of 2 to 4 times annually, this waste oil was disposed through Chempro in Seattle. The estimated quantity was 5,000 to 6,000 gallons per year.

Quendall Terminals Process Summary

This process summary was prepared based on information provided in the Hart Crowser Remedial Investigation Report and was supplemented with information obtained independently by RETEC. Original industrial operations at the Quendall property were initiated in about 1917 with the establishment of Republic Creosoting by Peter Reilly. The 1917 date is one year after the lowering of the Lake elevation, and is the same year that manufactured gas plant operations were moved from downtown Seattle (the present site of Union Station at the intersection of 4th Avenue and King Street) to Lake Union (Gas Works Park). Apparently, tars generated by the Lake Union gas plant were shipped by barge to the Quendall site and refined to produce creosote and other refined tar products. The plant also received tars from Bellingham, Tacoma and elsewhere. Figure 2 provides the locations of the process areas discussed below.

Republic Creosoting and Reilly Tar & Chemical

The DNR maps compiled in 1920 clearly show the original Republic Creosoting refinery and storage tanks. The still house was located to the west of the brick office building which still exists at the site. Four above-ground storage tanks were located to the southwest of the office. The 1920 maps show a pipeline connecting the short dock to the still house, and another line connecting the still house and the storage tanks. The original bed of May Creek was present immediately to the south (approximately 100 feet) of the four storage tanks.

By 1936 (first available aerial photograph), the operations of Republic Creosoting had expanded. The photograph shows that the bed of May Creek had been rerouted to the south by this time. Additional storage tanks had been constructed, including the two largest tanks (reportedly 2-million gallons each in volume). The tanks of the north tank farm had not been constructed, nor had berms been constructed around the large tanks. The still house and adjacent buildings had been expanded, a sump was installed to the northwest, and the T-dock was constructed for off-loading of tankers.

Records at the Washington Archives identify the construction dates for the largest tanks, the T-dock and several of the buildings. The pipeline from the T-dock to the shore is shown in these records as a 6-inch diameter pipe. The tar was commonly shipped to the site and pumped through a transfer line that ran along a former wharf and pipe trestle to two 2 million gallon storage tanks (Tanks 23 and 26) located in the west central tank area. Tankers were offloaded at the T-dock and barges were offloaded at the short pier. The tanks contained heating elements that would allow the liquid material to be transferred to the still house where the tars were refined to produce creosote and distillates. The products were stored in tanks until shipment by either rail, tanker truck, or ship. The tar distillates were further refined to generate naphthalenes, xylenes, benzene, toluene mix, and other organic products.

Tanks 1 through 5, located immediately south of the still house, were installed in 1916 to store creosote-related products. Tanks 23 and 26, installed in 1926, were used to store raw coal tar products. Tanks 35 through 38, located in the west central site area, were constructed in 1956 and were used primarily for storage of creosote-related products.

Potential sources of soil and groundwater contamination include the following:

- the still house
- the underground pipes in the still house
- disposal of waste pitches and "Saturday coke" by running them out onto the ground
- spills at the end of the docks, including a release in which an estimated 30,000-40,000 gallons was lost into the lake off the end of the T-pier circa 1937.
- the flush box and sanitary sewer outfall
- pitch bays (40 feet wide by 150 feet long & 4 feet deep) constructed with concrete bottoms and wooden sides and used for cooling of pitches
- the old bed of May Creek where dumping of tank cleaning residues occurred
- former sumps which received effluent from cooling lines sometimes contaminated with creosotes and tars

Operations at Reilly Tar & Chemical ceased in 1969, prior to enactment of RCRA. The name of the refinery had been changed to Reilly Tar & Chemical in 1956. Tar refining operations declined after 1957 with the eventual closing of the gas works facility on Lake Union.

A PLP search conducted by the Department of Ecology indicated that in 1970 (prior to the property sale) Reilly leased the site to J.H. Baxter who in turn subleased several of the storage tanks to Boeing and other parties for storage of diesel, Bunker C and petroleum products. In 1971 (June 15), the Reilly Tar property was sold to Quendall Terminals under a real estate contract. The terms of the contract were fulfilled in 1975 (July 16) when the property was finally deeded from Reilly Tar & Chemical to Quendall Terminals.

Petroleum Storage

The PLP search performed by the Department of Ecology tracked land use at the site between 1970 and 1982, listing the following companies that were reported to have stored products at the facility:

- Boeing
- Lidcoa Company
- Superior Refinery
- Seattle Rendering (tallow only)
- QED Corporation
- United Drain Oil, METRO, King County, Fort Lewis
- Golden Penn Refineries
- Western States, Willamette Industries
- Turbo Energy Systems
- Northwest Services, Inland Transportation, Pacific Gamble Robinson

Tanks 23 and 26 were used for about 18 months around 1974 for the storage of Bunker Crude oil. Otherwise Tanks 35 through 38 were the principal tanks used until 1978 for storage of diesel and waste oils.

The PLP search document indicated that the large tanks from the north and south tank farms were dismantled and sent to a disposal facility in Idaho in 1983. The document also indicates that after the tanks were removed, Quendall Terminals placed approximately 3 feet of fill material comprised of sawdust and dirt over most of the site. This fill material was apparently obtained from a METRO sewer project at Coal Creek.

Aerial photographs from 1974, 1985 and 1990 support the observations made in the PLP search report. Photographs from 1974 show the containment berms, tanks and the two ponds into which the berms drained. The still house building and nearby tanks and structures had been removed by this time and this area was used for log storage, along

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with areas to the south of the tank farm. Photographs from 1985 show only one pond remaining, and by 1990, both ponds had been filled in. A site survey was conducted by Baylis, Brand and Wagner in the mid-1970's and shows the site layout and elevations prior to tank removal and filling/grading.

Recent Land Use

The Quendall property has been used since 1983 for log storage, bark storage, and wood cutting. Additionally, storage of dredging and aquatic construction equipment has been performed on the aquatic lands adjacent to the property.

Prior to 1984, the aquatic lands in between the inner and outer harbor lines had been leased by Reilly Tar and then Quendall Terminals from the Port of Seattle. In 1984, administration of these lands was transferred to the Washington DNR. A lease was signed permitting log storage on these lands through October of 1996. In 1991 the DNR was contacted by the Department of Ecology regarding potential liability for sediment contamination.

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