



W-3839
July 6, 2009

Scott Alfonse
City of New Bedford
Department of Environmental Stewardship
133 William Street, Room 304
New Bedford, MA 02740

Re: **Opinion of Probable Remediation Costs**
Former Polymerine
241 Duchaine Boulevard
New Bedford, MA
RTN 4-1347

Dear Scott:

Tighe & Bond has prepared this letter to summarize the anticipated remediation approach for the site and corresponding opinions of probable construction costs to remediate the site to meet the Toxic Control Substance Act (TSCA) and Massachusetts Contingency Plan (MCP) unrestricted reuse standards. The site was first developed in 1960 and was operated by Polyply, Inc., a manufacturer of composite fiberglass boards. For a majority of the operations history at the site, polychlorinated biphenyl (PCB) oil was used in the heat transfer system, which was subsequently released at the site. Assessment activities conducted at the site between 1993 and to date have identified elevated concentrations of PCBs in soil, sediment and building materials (masonry walls and concrete floors), as well as the surfaces of interior equipment. This letter summarizes the anticipated activities required to achieve site closure.

Remediation Approach

The proposed approach is to remediate contamination to unrestricted (high occupancy) standards per TSCA (PCBs reduced to soil less than 1 mg/kg). It should be noted that depending on the future use of the site, the residual soil contamination could be relocated to areas where a future structure and parking are located and managed with a TSCA cap. However, the relocation and capping scenario was not analyzed due to the uncertainty with future redevelopment plans for the property and the location of ecological receptors (wetlands) relative to soil contamination.

In general, PCBs in soil and sediment are located in near surface soils within the northern end of the property at concentration that exceed 1 mg/kg (TSCA unrestricted reuse standard), 2 mg/kg (MCP unrestricted reuse standard), 10 mg/kg (TSCA cap standard), and 50 mg/kg (TSCA standard related to disposal options). In addition to exterior PCB contamination, PCB impacts in soil were identified beneath the northern end of the building (former boiler room area).

Within the building, the majority of all concrete floor surfaces and masonry walls are contaminated with PCBs at concentration above applicable cleanup standards.

The primary remediation approach is to excavate and segregate PCB contaminated materials based on relative concentrations ranges (>1 mg/kg but <50pmm and >50 mg/kg). Segregation of these concentration ranges is necessary to control disposal costs.



Due to the presence of contaminated soil beneath the northern portion of the building, building demolition is necessary to access these contaminated soils. Although only partial demolition is necessary to access the contaminated soils, full demolition of the building will be necessary due to the condition of the building that would remain following partial demolition.

To implement the remediation approach, a series of design, permitting, and construction activities are necessary, which are summarized below.

Asbestos and Hazardous Material Abatement

Prior to the demolition of the building, asbestos containing materials (ACM) and miscellaneous containers of hazardous materials must be abated from the building by a qualified contractor. Based on site observations, approximately 15,000 gallons of water are located in two subsurface pits within the building (a subsurface pit in the boiler room and the hydraulic press pit) that contain low concentrations of PCBs. The water from these pits must be transported off-site for disposal as a TSCA waste.

Decontamination of Non-Porous Surfaces

Results of PCB wipe sampling identified elevated PCB concentration of the former hydraulic press. Additionally, since the PCBs are associated heat transfer fluid, the heat exchangers and associated piping are also assumed to have been impacted. Accessible non-porous surfaces must be decontaminated in accordance with 40 CFR 761.360 through 40 CFR 761.378 of the TSCA regulations. To confirm that the residual PCB concentrations following decontamination are less than the high occupancy standard of 10 micrograms per 100 square centimeters ($\mu\text{g}/100 \text{ cm}^2$), PCB wipe samples must be collected from the accessible surfaces.

Selective Demolition

Following the decontamination of the non-porous surfaces and asbestos and hazardous material abatements, selective demolition of the current structure is necessary. Based on concrete sample results, the concrete slab and masonry block walls have been impacted by PCBs with the highest concentrations (greater than 50 mg/kg) being detected in the boiler room, former machine shop and around the former hydraulic press. The building will be demolished in a manner that segregates the aggregate building materials containing PCBs greater than or equal to 50 mg/kg from the materials with PCB concentrations less than 50 mg/kg. The PCB remediation building waste from will be disposed of off-site.

Soil/Sediment Remediation

Soil and sediment assessment results have identified elevated PCB concentrations at the site, located mainly on the northwestern portion of the site, in the vicinity of the boiler room loading dock and beneath the boiler room floor. To remediate soil and sediment to the applicable cleanup standards, a contractor will initially excavate and segregate the grids where PCBs have been detected at concentrations greater than or equal to 50 mg/kg. Following the excavation of these grids, confirmatory soil samples will be collected to confirm that the residual PCB concentrations in the sidewall and base are less than 50 mg/kg. Upon receiving lab results confirming that PCBs are less than 50 mg/kg, soil remediation will commence for the remaining soil and sediment at the site. Confirmatory soil samples will be collected from limits of the excavation (base and sidewalls) and submitted for PCB analysis. Based on previous experiences, it is anticipated that an

alternative sampling plan, consisting of the collection of samples on a 10-foot by 10-foot grid sampling frequency for base and sidewall samples will be approved by EPA. Based on the area requiring remediation, it is anticipated that approximately 600 soil samples will be submitted for PCB analysis.

Since substantial excavation has been previously performed at the site by the EPA, the clean fill used to backfill these previous excavations will be segregated and re-used onsite. The fill will be excavated until the geotextile fabric (areas where confirmatory results indicated PCB concentrations greater than or equal to 2 mg/kg) is encountered.

Groundwater Management

Based on assessment activities conducted at the site, the excavation activities on the northern portion of the site will extend into the groundwater table. Laboratory results for groundwater samples collected at the site identified PCB at low concentrations (less than applicable MCP standards). Therefore, the excavation of contaminated soil will require the management of excavation groundwater. Based on the concentrations of PCBs detected in the groundwater samples, excavation groundwater will be pumped from sumps installed within the excavation area into fractionation (frac) tanks and will ultimately be treated for solids via a bag filter and discharged into infiltration trenches located upgradient of the excavation area (consistent with the MCP). To confirm the PCB concentrations following treatment, water samples will be collected periodically throughout the excavation activities and submitted for PCB analysis. It is anticipated that this approach will be acceptable to the EPA.

Environmental Permitting

Based on assessment results, excavation activities are proposed within the wetlands and the wetlands buffer zone. Prior to implementing remediation activities, an Order of Conditions (wetlands permit) will be required for the soil remediation work from the New Bedford Conservation Commission. The NOI will include appropriate application forms, a detailed narrative describing the project, site photographs, site plans and details, a wetlands restoration design, resource and municipal maps, certified property abutters list, and other required information. It is important to note that copies of the Notice of Intent are reviewed concurrently by the Massachusetts Department of Environmental Protection (MADEP), Wetlands & Waterways Program.

A Self Implementation Cleanup Plan (SIP) for review by the EPA and Phase IV Cleanup Plan for the MADEP will be necessary to summarize proposed cleanup actions. One comprehensive report can be prepared to satisfy these requirements.

Following completion of site remediation activities and assuming remediation endpoints have been achieved, a SIP Closure Report, Phase IV Completion Report, and Response Action Outcome statement will be prepared.

Construction Manual and Bidding

To solicit competitive public bids, a public bidding contract manual is necessary. The manual includes general project requirements, technical specifications, bid sheets, special provisions, measurement and payment sections, design plans and other information needed for solicitation of bids.

On-Site Support/Construction Observation

Following award and selection of a remediation contractor, construction administration is necessary to document compliance with the contract manual and to monitor and collect compliance samples.

Opinions of Probable Costs

The attached table summarizes the above activities and anticipated costs. A 20% contingency has been included due to some uncertainty with respect to environmental remediation projects

If you have any questions, please feel free to give me a call at 508-471-9621.

Very truly yours,

TIGHE & BOND, INC.



Marc J. Richards, P.E., LSP
Project Manager

Enclosures: Summary table

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TABLE 1: Opinion of Probable Remediation and Engineering Costs - Poly Ply

		Unit Cost	Unit	Quantity	Subtotal
Soil Remediation					
1	Site Set-up & Materials (erosion control, decon.)	\$8	lf	1,000	\$8,000
2	Utility disconnects	\$7,500	ls	1	\$7,500
3	Asbestos abatement	\$29,000	ls	1	\$29,000
4	OHM removal from building interior	\$8,000	ls	1	\$8,000
5	Full interior gut and disposal (non contaminated debris)	\$25,000	ls	1	\$25,000
6	Removal and segregation of PCB contaminated block walls (> 50 ppm PCBs)	\$0.75	sf	7,500	\$5,625
7	Removal and segregation of PCB contaminated block walls (< 50 ppm PCBs)	\$0.75	sf	36,000	\$27,000
8	Pump out of interior pit water and disposal as TSCA PCB waste	\$0.75	gal	15,000	\$11,250
9	Removal and triple washing of hydraulic press, NEP punch press, and other misc equipment in boiler room area	\$10,000	ls	1	\$10,000
10	Building demolition (exclusive of floor slab) 34k sf	\$100,000	ls	1	\$100,000
11	Slab removal and stockpiling (>50 ppm PCBs)	\$0.50	sf	6,000	\$3,000
12	Slab removal and stockpiling (<50 ppm PCBs)	\$0.50	sf	28,000	\$14,000
13	Excavation of clean overburden soil	\$10.00	cy	500	\$5,000
14	Groundwater management (on-site pumping, collection in frac-tank, filtering and re-infiltration)	\$20,000	ls	1	\$20,000
15	Excavation of contaminated soils >50 ppm	\$20	ton	300	\$6,000
16	Excavation of contaminated soils <50 ppm	\$15	ton	1,500	\$22,500
17	PCB Soil and Concrete (>50 ppm) Load, Trans and Disposal	\$375	ton	508	\$190,625
18	PCB Soil and Concrete (<50 ppm) Load, Trans and Disposal	\$120	ton	2,500	\$300,000
19	Backfill excavation with on-site clean soil and clean soil beneath elevated building slab	\$10	cy	700	\$7,000
20	Backfill with off-site clean soil	\$25	cy	500	\$12,500
21	Wetland restoration, including limited plantings	\$15,000	ls	1	\$15,000
22	Topsoil/seeding of disturbed areas	\$8,000	ls	1	\$8,000
23	Laboratory samples	\$50,000	ls	1	\$50,000
Subtotal:					\$885,000
Engineering/Permitting					
24	Design Specification/Bidding Document	\$20,000	ls	1	\$20,000
25	General Waterway/Wetland Permitting (NOI Only)	\$8,000	ls	1	\$8,000
26	Additional Delineation per EPA (if required)	\$10,000	ls	1	\$10,000
27	Method 3 Ecological Risk Assessment (if required)	\$25,000	ls	1	\$25,000
28	MCP/EPA Documentation/Project Oversight	\$80,000	ls	1	\$80,000
Subtotal:					\$143,000
Subtotal of Tasks:					\$1,028,000
Contingency (20%):					\$205,600
TOTAL:					\$1,233,600