[DATE]

Mr. James M. Kinane
Quality Assurance Manager
Tetra Pak Materials LP
1616 West 31st Street
Vancouver, WA 98660

Re: No Further Action at the following Site:

- **Site Name:** Tetra Pak
- **Site Address:** 3125 Thompson Avenue, Vancouver
- **Facility/Site No.:** 34822454
- **Cleanup Site ID No.:** 2615
- **VCP Project No.:** SW0377

Dear Mr. Kinane:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Tetra Pak facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Pentachlorophenol (PCP) and dioxin and furan congeners into the Soil.
- PCP into the Groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. Historical groundwater data indicated that tetrachloroethylene (PCE) and trichloroethylene (TCE) were present above MTCA Method A cleanup levels in on-Site monitoring wells. There are no known sources of PCE and TCE at the Site, and the data suggested that the impacts were likely from an off-Site source, namely the Cadet Manufacturing site (Facility/Site# 85381664), located about 2,000 feet southwest of Tetra Pak. Subsequent groundwater monitoring has shown a decrease of PCE and TCE to below cleanup levels in on-Site wells. As such, Ecology no longer considers the Site to be impacted by Cadet Manufacturing. Please note this opinion does not apply to any contamination associated with Cadet Manufacturing.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Request for No Further Action and Transmittal of the Draft Environmental Covenant for the Former Strebor Site, dated September 2, 2011 by Kennedy/Jenks Consultants.

2. Long Term Groundwater Monitoring Plan, Former Strebor Site, dated January 9, 2009 by Kennedy/Jenks Consultants.

3. Additional Investigation Report, Former Strebor Site, dated January 9, 2009 by Kennedy/Jenks Consultants.

4. Remedial Action Report, Former Strebor Site, dated March 9, 2007 by Kennedy/Jenks Consultants.

5. Remedial Investigation, Risk Assessment, and Feasibility Study Report, Former Strebor Facility, Tetra Pak Materials, dated August 2004 by Kennedy/Jenks Consultants.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The Site encompasses a single tax parcel (Clark County Parcel #50000). This parcel is one of multiple parcels that make up the Tetra Pak facility. Prior to 1974, the Site was undeveloped rural land and was owned by the former Burlington Northern Railroad, now the BNSF Railway Company. Roberts Consolidated Industries constructed a facility on the Site in 1974 to formulate wood treatment products, and subsequently closed their facility in March 1986. The Site was transferred to Beecham Home Improvement Products in 1986, and to Strebor Incorporated in late 1987. Tetra Pak purchased the Site in 1989. Tetra Pak manufactures, prints on, and stores beverage containers made from paper products (milk and juice cartons) at their main facility located adjacent to the east of the Site. The 14,000-square-foot building located on Site is currently known as the West Warehouse Building and is used by Tetra Pak for office space, maintenance activities, and certain photolithographic (label making) processes.

Until 1986, Site operations consisted primarily of receiving raw material, and mixing, packaging, and storing of wood-treating solutions, consisting of 91 % naphtha, 6.4 % water repellents and inert material, approximately 2 % pentachlorophenol (PCP), 0.2 % other chlorinated phenols, and 0.3 % bis-tri-butyltin oxide. Raw material was delivered to the Site by trucks, tanker trucks, and rail tanker cars. A former railroad spur on the east side of the building was primarily used for receiving bulk shipments of petroleum hydrocarbon-based raw materials such as naphtha and mineral spirits used as carriers for the wood preservatives.

Known and suspected releases that have occurred at the Site include the following:

- Spill of 100 to 200 gallons of wood-treating solution in 1980 to an earthen sump below one of the tanks.

- Spill of 40 to 100 gallons of wood-treating solution at an unknown location in March 1983.

- Spill of about 17 gallons of wood-treating solution containing PCP in the tank farm in February 1984.

- Spill of 40 to 45 gallons of wood-treating solution containing PCP when a tanker truck was overfilled in June 1984. The product reportedly flowed into one of the catchbasins west of the tank farm area.

- Spill of 40 gallons of wood-treating solution containing PCP in the tank farm in March 1985.

- Spill of 15 gallons of wood-treating solution containing PCP in the tank farm in October 1985.

- Spill of up to 5,000 gallons of wood-treating solution reportedly occurred sometime prior to 1987. Much of the spill reportedly flowed into the catchbasins (dry wells) in the parking lot.

Based on the known operations and locations of spills and releases, the Site consists of the following areas of concern:

- **Soil and underground storage tanks (USTs) beneath the former mixing room:** Wood-treating solution containing PCP was mixed in this area *(see attached Figure 2)*. In 1986, two 10,000-gallon USTs located beneath the concrete floor of this room and used for the storage of raw materials and products were decommissioned in place. The USTs were rinsed with mineral spirits and then filled with cement grout. Soil samples collected in 1987 and 1988 from around the USTs identified concentrations of PCP above MTCA cleanup levels as deep as 16 feet below ground surface (bgs). Detected concentrations ranged from 400 to 15,200 milligrams per kilogram (mg/kg), the latter of which was detected between the USTs at 6.5 to 7 feet bgs. The MTCA Method B cleanup level for PCP in soil (based on protection of direct contact) is 2.5 mg/kg.

- **Former Tank Farm:** This area was located outside the former mixing room on the north side of the building *(see attached Figure 2)*. In this area, eleven 10,000-gallon USTs were used to store product and raw materials. The USTs were removed in

February 1986. This area is elevated approximately 3 feet above the adjacent railroad spur and paved driveway entrance and parking area. This area is paved and is currently used for temporary storage of pallets, miscellaneous equipment, and employee parking. Shallow (1 to 2 feet bgs) soil samples collected from the tank farm area in 1985 contained PCP ranging in concentration from 3.6 to 35.3 mg/kg.

- **Former Rail Spur:** A rail spur on the east side of the building was formerly used for receiving bulk shipments of petroleum-hydrocarbon-based raw materials such as naphtha and mineral spirits. The rail spur and associated contaminated soil was removed in September 2006. Analytical results of confirmation soil samples, as well as samples from subsequent soil borings, indicated the presence of residual dioxin ranging in concentration from 14.76 to 597.57 nanograms per kilogram (ng/kg). The MTCA Method B cleanup level for dioxin in soil (based on protection of direct contact) is 11 ng/kg.

- **Catchbasins (Dry Wells):** There are four stormwater catchbasins located on the west side of the building in a paved parking area. These catchbasins are connected to individual dry wells located adjacent to each catchbasin. Some historical spills reportedly flowed into the catchbasins. Soil samples collected in 2002 from a boring advanced next to the catchbasin closest to the tank farm detected dioxin at 64.8 and 5.5 ng/kg at 20 and 23 feet bgs, respectively.

A total of eight monitoring wells are located on Site. Groundwater data collected in 2002 and 2003 identified concentrations of PCP ranging from 1.48 to 7.58 micrograms per liter (µg/L). The current MTCA Method B cleanup level for PCP in groundwater is 0.22 µg/L. Other contaminants detected in groundwater include tetrachloroethylene (PCE) and trichloroethylene (TCE). PCE was historically detected in MW-3 (6 µg/L) and MW-5 (11 µg/L), and TCE was historically detected in MW-3 (up to 8.7 µg/L), MW-5 (up to 26 µg/L), and MW-6 (up to 9.69 µg/L). The MTCA Method A cleanup level for both PCE and TCE is 5 µg/L.

There are no indications that PCE or TCE have been used at the Site and the on-Site detections were likely from an off-Site source. These compounds and concentration levels were similar to those seen in off-Site wells installed for the investigation of the nearby Cadet Manufacturing Company PCE/TCE plume. Regardless, subsequent monitoring of groundwater from these wells has seen a drop in concentration of PCE and TCE to below cleanup levels, and they are no longer considered contaminants of concern.

Concentrations of total arsenic and total chromium have also been historically detected in groundwater beneath the Site at concentrations exceeding MTCA Method A cleanup levels. However, analytical results of subsequent sampling of these wells for dissolved

arsenic and chromium were non-detect suggesting the detections were related to suspended solids in the sample due to the historical sampling techniques used (bailers) rather than from on-Site sources, of which there are none.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

MTCA Method B cleanup levels for unrestricted land uses for PCP and dioxin in soil and groundwater were used for the Site.

Standard points of compliance were used for the Site. The point of compliance for protection of groundwater was established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance was established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater was established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions conducted at the Site to date have included source removal, excavation and off-Site disposal of contaminated soil, and capping with asphalt.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site. This determination is dependent on the continued performance and effectiveness of the post-cleanup controls and monitoring specified below.

In 1986, the USTs in the tank farm were removed. Some contaminated soil was reportedly also removed from the former tank farm and clean soil was used to backfill the excavation although there is no specific documentation of soil removal activities. The other two USTs beneath the building were decommissioned in place by rinsing with mineral spirits and filling with a cement grout, and remain beneath the floor of the former mixing room in the on-Site building.

In October 2002, Kennedy/Jenks contracted with West Coast Marine Cleaning to remove and properly dispose of the contaminated sediment materials from each of the four on-Site catchbasins.

In September 2006, the rail spur was removed from the Site. An estimated 104 tons of soil and debris were transported off Site to the Hillsboro Landfill in Hillsboro, Oregon for disposal. Four confirmation soil samples were collected from the excavation for analysis for dioxin. Dioxin exceeded the MTCA Method B cleanup level in all four confirmation soil samples at concentrations ranging from 14.22 to 597.57 ng/kg. No additional soil was removed.

Soil sampling in May 2008 delineated the extent of residual dioxin in soil in the former rail spur area. In February 2011, an engineered asphalt cap was placed over the former rail spur area, covering areas where dioxin-impacted soils are present and preventing exposure to the soil via direct contact *(see Attachment C of Enclosure B).* While the cap is also likely to prevent leaching to groundwater, dioxin has not been detected in groundwater beneath the Site to date, nor is it expected to impact groundwater given its low solubility.

In August 2012, an environmental covenant *(attached as Enclosure B)* was filed with Clark County for the Site documenting the use of institutional controls for the soil containing PCP below the floor of the former mixing room in the on-Site building, as well as soil containing dioxin beneath the asphalt cap in the former rail spur area. Although PCP has not been present in groundwater since 2010 *(see attached Table 2)*, groundwater monitoring on an 18-month frequency is required as part of the institutional controls.

Post-Cleanup Controls and Monitoring

Post-cleanup controls and monitoring are remedial actions performed after the cleanup to maintain compliance with cleanup standards. This opinion is dependent on the continued performance and effectiveness of the following:

1. Compliance with institutional controls.

Institutional controls prohibit or limit activities that may interfere with the integrity of engineered controls or result in exposure to hazardous substances. The following institutional controls are necessary at the Site:

- Restrictions on activities that may alter, modify, or remove the building or asphalt cap.
- Restrictions on groundwater use.

To implement those controls, an Environmental Covenant has been recorded on the following parcel of real property in Clark County:

- 50000

Ecology approved the recorded Covenant. A copy of the Covenant is included in **Enclosure B**.

2. Operation and maintenance of engineered controls.

Engineered controls prevent or limit movement of, or exposure to, hazardous substances. The following engineered controls are necessary at the Site:

- West Warehouse Building.
- Asphalt cap in former rail spur area.

3. Performance of confirmational monitoring.

Confirmational monitoring is necessary at the Site to confirm the long-term effectiveness of the cleanup. The monitoring data will be used by Ecology during periodic reviews of post-cleanup conditions. Ecology has approved the monitoring plan you submitted. A copy of the plan is included as an exhibit to the Covenant in **Enclosure B**.

Periodic Review of Post-Cleanup Conditions

Ecology will conduct periodic reviews of post-cleanup conditions at the Site to ensure that they remain protective of human health and the environment. If Ecology determines, based on a periodic review, that further remedial action is necessary at the Site, then Ecology will withdraw this opinion.

Listing of the Site

Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.

That process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW0377).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me at (360) 407-6347 or via email at sros461@ecy.wa.gov.

Sincerely,

Scott Rose, L.G.
VCP Unit Supervisor
SWRO Toxics Cleanup Program

SIR: [SECRETARY INITIALS]

Enclosures (2): A – Description and Diagrams of the Site
B – Environmental Covenant for Institutional Controls

cc:
Steve Misner – Kennedy/Jenks Consultants, 200 SW Market Street, Suite 500, Portland, OR 97201
Bryan DeDoncker – Clark County Health Dept.
Panjini Balaraju – Ecology
Dolores Mitchell – Ecology

Enclosure A

Description and Diagrams of the Site

Site Description

The Tetra Pak site is located at 3125 Thompson Avenue in Vancouver, Clark County, Washington. The site is located on 3.7 acres in the Vancouver Lake/Columbia River lowland area about 0.25 miles north of the Port of Vancouver property and Cadet Manufacturing Company site, and about 1 mile north of the Columbia River. The site topography is flat, and the area not covered with buildings is comprised of grassy areas or parking areas paved with asphalt. There are four stormwater catchbasins located on the west side of the building in a paved parking area. These catchbasins are connected to individual dry wells located adjacent to the catchbasin.

Hydrogeologic data has been collected throughout the investigative history of the site. Bay West, Inc. reported that there is a west-northwesterly flow direction with a relatively flat gradient of 0.00026 to 0.00019 feet/feet when monitoring was done in June 1988. Kennedy/Jenks Consultants reported that groundwater levels varied from 38 to 50 feet below ground surface (bgs) between February 2002 and February 2003 and that the groundwater flow direction was to the southeast/south-southeast during February, March, and April 2002; to the north-northwest during May and August 2002; and to the west-southwest during November 2002 and February 2003.

An evaluation by Ecology of the water level data generally confirms the northwesterly groundwater flow during June to November and southwesterly and south during February to April. In two of the nine groundwater level monitoring events (May 2002 and February 2003) the groundwater flow direction could not be determined from the water level data. For those two months, the groundwater flow is split at the site with flow in northwesterly and southeasterly directions.

Kennedy/Jenks indicated that a flat gradient of about 0.0002 feet/feet existed. The flat gradient is confirmed by extensive work done at the nearby Port of Vancouver, ST Services, and Cadet Manufacturing sites. Interpretation of groundwater flow direction at these sites is difficult because of the very flat gradient and cyclic changes in water levels from tidal fluctuations in the Columbia River. Water level data indicates the tidal effect becomes more dampened with increased distance from the Columbia River. Tidal influence on groundwater levels at the Tetra Pak site is suspected although data was not furnished to indicate that there is a tidal influence.

Enclosure B

Environmental Covenant for Institutional Controls