

Inspection Summary for the Treoil Industries, Ltd. Site, Ferndale, WA.

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Time: 1000-1140

Site Description

The (abandoned) Treoil Industries, Ltd. site (hereinafter "Treoil" or "the site") is located at 4242 Alder Grove Road at Cherry Point, west of Ferndale, WA, near the Intalco aluminum facility and the Tosco oil refinery. A short gravel entry road off Alder Grove Rd. enters the facility at the southeast corner. There is a locked gate, and a chain link fence surrounds buildings and the process area at the site. There are two permanent buildings, a process area consisting of several aboveground tanks, condensers, reaction vessels and a fractionating column and associated piping. In addition there are a number of what appear to be unused 10-20,000 gallon tanks and smaller reaction vessels at various locations within the fence, and outside the fence to the north. There appear to be about 60-70 tanks and reaction vessels at the site. About 300 abandoned drums are located in about four locations at the site, one outside the fence. About 100 of those are full, roughly half with rain water (possibly contaminated with other materials) the remainder with unknown material. Some drums are leaking. There are several abandoned vehicles, including two mobile (truck-mounted) cranes, a large (~850 cfm) trailer mounted air compressor and other miscellaneous equipment. There are two mobile-home size trailers, about 12'x 50-60' near the northwest corner of the fenced area. One of those trailers was clearly used as a laboratory, containing a fume hood, glassware, and sufficient unknown reagents to fill an estimated 4-8 lab pack drums. The other trailer contains some materials in open glass jars, 5-gal. buckets (these are labeled as coatings) and other miscellaneous materials. Both trailers are unlocked. Near the center of the lab trailer on the west side is a partially buried drum that appears to be the discharge point for the drains from the trailer. There are about 7 drums at the front of the lab trailer, full or partially full of unknown material. See attached photos for additional details.



Treoil shows a large pile of what appears to be rosin in deteriorating fabric shipping totes immediately to the north of a row of large horizontal above-ground tanks north of and outside of the fenced area of the site. View is to the southwest. Photos by N. Peck

Treoil2 is a close-up of this pile. Sample Treoil 01 is of this waste. Another large tank (~20,000 gal.) just north of the rosin pile also appears to contain the same material. There are two large panels cut out the this tank making the contents visible. About 40' east of these rosin piles, near the railroad tracks and an abandoned car, are about 17 full 55 gal., bung-type drums and three empty 17-H-type open-top drums. There are also 3-4 empty 17-H drums between the rosin pile and the tank full of rosin totes. This area is accessible from the fenced area of the site through an area near the northeast corner of the site fence that has been removed. There is a track leading to this area from within the fenced area that has obviously been used for vehicle traffic. The area can also be accessed from the railroad tracks by the public.

Near the center of the fence at the north side of the fenced area is a horizontal aboveground tank surrounded by about 200 drums. This area is about 125' west of the back fence opening at the northeast corner of the fence. See photo Treoil6 and Treoil6a. Several drums in this area have leaked, and much of the area is overlain with a layer of what appears to be hardened spilled material. Near the middle of the drums on the east side of this tank/drum area (Treio17) is an area of spilled material that is not hardened. It is a thick, viscous, dark brown to amber liquid or semi-solid. This material was samples as Treoil 02. See also Treoil7-9 at the end of this report.



Treoil6a *Some of the 200 drums at this location are visible to the right of the truck-mounted crane. The south end of the lab trailer is visible behind the drums and approximately 20,000 gal. tank the drums surround. The area of extensive spillage and location of Sample Treoil02 is just in front of the crane. View is to the west from near the north opening in the chain link fence.*

The lab trailer is about 80-100 ft. west of the “200 drum area”, the second trailer just west of it, and near the west fence at the site. North of the trailers, at the northwest corner of and inside the fence are about 30-35 55-gal. drums, mostly empty. As previously mentioned, the lab trailer contains a fairly large volume of reagent jars, bottles and carboys, glassware (beakers, separatory funnels, flasks, etc.) and other materials associated with lab operations. This trailer is unlocked and accessible to anyone entering the unsecured site.

One of the permanent buildings (Building 1) on the site is apparently being used by a Canadian national for metal fabrication. Near the entry gate was a trailer mounted propane tank that appeared to be newly constructed and painted. Near the northeast corner of the Treoil process containment area was an area covered with a fairly large volume of copper slag sandblast grit;

possibly part of the metal fabrication operation. The second permanent building (Building 2) was not accessed, and the contents are unknown. There is process piping from the process area entering this building at the northeast corner of the building. The metal insulation casing is broken near the building, and a crumbling, yellow to reddish-orange insulation has fallen to the ground. This material was sampled (Treoil 04) and will be analyzed for asbestos content. There are 6-8 abandoned drums just north of Building 2 covered by a blue poly tarp. The contents of these drums are unknown.

Historic Site Use

The site was formerly used to process Tall Oil, a by-product of the kraft paper pulping process. Tall oil contains various wood components, including pitch, pine oil, fatty acids and resin acids and other wood breakdown by-products. All these feedstocks and products would have a high biological oxygen demand (BOD), and some are known to be fish toxic. Most are not known to be toxic to humans. Process chemistry, other feed chemicals, boiler maintenance, and equipment cleaning chemicals used at the site are unknown. A brief description of the operations indicates that steam and a steam/hot oil system were used to heat Tall Oil for processing in the fractionation tower, and cooling water was presumably used in the condensers following fractionation. Ecology Water Quality Program files indicates a history of spills and messy operations at the site between about 1989 and 1994. A penalty was issued for discharge of spilled material to a drainage ditch that runs along the railroad tracks east of the site and discharges to the roadside ditch along Alder Grove Rd. and subsequently to the Straits of Georgia (Pacific Ocean).

Potential Hazards

There are several leaking and/or bulging drums at the site. The contents of all the full or partially full drums at the site are unknown. The contents of tanks and reaction vessels at the site are also unknown, and it is unknown if there are any hazardous materials in Building 2. These spilled and drummed materials may constitute a threat to human health, and/or to the environment.

The abandoned chemicals in the Lab Trailer pose a potential toxic and/or reactive threat to any persons entering the site and trailer.

There may be a danger of asbestos at the site if some pipe lagging contains friable asbestos.

Copper Slag sandblast grit may contain metals at above MTCA cleanup standards, and pose a threat of a metals release to the environment.

Other issues potentially associated with the site:

Herring/herring egg mortality is unaccountably high in intertidal and subtidal areas near the site. The toxicants associated with this mortality do not appear to be associated with chemicals known to be used or produced at major industries at Cherry Point. There is therefor some potential for this site to be contributing to herring mortality.

Recommended actions:

Emergency Interim Actions to characterize and stabilize wastes and releases at the site.

- 1.) Inventory, segregate, lab-pack and dispose of chemical reagents and unknowns in the lab trailer.

- 2.) Sample and characterize contents of full drums at the site. Note that this is an "unknowns" characterization requiring Level B protective gear. At a minimum, overpack compromised or leaking drums and consolidate drum storage, preferably inside a structure.
- 3.) Sample and characterize spilled wastes/materials at the site.
- 4.) Sample and characterize nature and extent of groundwater contamination and/or surface water contamination associated with the site.
- 5.) Possible containment of spilled wastes at the site.

After the site is stabilized, proceed with normal site remediation starting with an RI/FS process.

Errata

Excerpts from emails from Bob Carrell, Manchester Lab.

"Tall oil is also called liquid rosin, Actinol C, tallol and talleol. Tall is Swedish for "pine". It is a by-product of the wood pulp industry and is usually recovered from pine wood "black liquor" of the sulfate or kraft paper process. It contains resin acids (primarily acids that are isomeric with abietic acid), fatty acids (primarily oleic and linoleic) and small amounts of long chain alcohols and sterols (especially phytosterol). The fatty acids make up 50%-60% and the resin acids about 34%-40% of the total. I have no information about the toxicity and to the best of my knowledge we have never analyzed any of it but we are able to analyze samples for both resin and fatty acids."

"I did a little more checking, and according to Dr. Knight (who used to work for Weyerhaeuser), both resin and fatty acids can cause fish mortality, the former at about 1 ppm levels. Jerald Dodo (who formerly worked for the NCASI) said that he was marginally involved in a study of the high molecular weight portion of "black liquor" and its effects on fertilization rates of purple sea urchin eggs. There was a linear correlation between concentration and effect. He also suggested that this material may increase mortality of the fertilized eggs by coating them and preventing membrane transport of oxygen, etc. It would seem that this effect would be a likely scenario for herring eggs as well."

Photos



Treoil2: Close-up of rosin pile in Treoil1



Treoil3a: drums in field north of fenced area near railroad tracks. Contents unknown. This photo is a cropped version of Treoil3. View is to the southeast.



Treoil4a: Abandoned ASTs at the site. Tanks in the background are also visible in Treoil1. The rosin pile in Treoil1 is just north of the background tanks. This photo is a cropped version of Treoil4. View is to the north. The north side of the site chain link fence is visible between the tanks in the foreground and the background tanks.



Treoil5a: Photo of opening at northeast corner of fenced area showing opening in the chain link fence that allows access to the site even when the entry gate is locked. Additional abandoned ASTs are shown in this photo. The drums outside the fenced area shown in Treoil3a are near the large section of fiberglass pipe in the upper center of this photo. View is to the north.



Treoil7: Detail of drums shown in Treoil6a, and spillage to the ground from drum leakage. Note bulging and leaking drums. View is towards the northwest.



Treoil8: More bulging and leaking drums in the “200 Drum Area” shown in Treoil6a and 7. View is to the northeast.



Treoil9: Sample Treoil2 was collected from the dark brown/amber viscous liquid/semisolid in the “V” between the two drums in this photo. This location is within the 200 Drum Area. View is to the northwest.