



March 11, 2013

Mr. Steve Teel  
Site Manager  
Washington State Department of Ecology  
Toxics Cleanup Program  
PO Box 47775  
Olympia, WA 98504-7775

Re: International Paper Company Comments  
Draft Augmented RI/FS Report  
Former Tacoma Metals Facility  
Tacoma, Washington

TRANSMITTED VIA E-MAIL AND U.S. MAIL

Dear Mr. Teel:

On behalf of International Paper Company (“International Paper”), URS Corporation (“URS”) has reviewed the *Draft Augmented Remedial Investigation and Feasibility Report* (February 2012) prepared by Kennedy/Jenks Consultants for Portland Avenue Associates, LLC c/o Eisenhower & Carlson, PLLC for the Former Tacoma Metals Site. International Paper does not oppose Alternative 2, the proposed cleanup alternative originally selected in the 2001 remedial investigation/feasibility study report (“RI/FS Report”). International Paper is however concerned that the draft augmented RI/FS Report contains inaccurate information regarding historic site uses, the locations of structures that are the sources of chemicals of concern (“COCs”), and the origin of COCs in the subsurface. This letter presents International Paper’s general comments on the above. More specific comments are presented in Attachment 1. To facilitate your review, proposed changes to the text are provided in italicized blue font. The general comments regarding the draft augmented RI/FS Report are as follows:

1. The draft augmented RI/FS Report incorporates into the original RI/FS Report (Kennedy/Jenks Consultants, June 2001) additional information obtained through supplemental investigation activities conducted within an area identified throughout the report as the “Creosoting Plant Area.” This area is depicted on Figure 2 of the draft augmented RI/FS Report and is included for ease of reference as Attachment 2. It is important to note that other operations, in addition to creosoting operations, occurred within the area being characterized as the “Creosoting Plant Area.” These other operations include the coke production conducted by the Defense Plant Corporation after “creosoting plant” structures

had been removed. Coke production typically generates by-products including coal gas, ammonia liquor, coal tar, and light oil (Coke Ovens: Industry Profile, Draft Report, Prepared by Research Triangle Institute for USEPA, November 1998). These by-products (specifically coal tar) are composed of similar chemicals also found in coal tar creosote used in wood treatment operations, such as polynuclear aromatic hydrocarbons (PAHs). Structures associated with Defense Plant Corporation's coking operations (e.g., the hexagonal AST) were documented (e.g., aerial photos and Sanborn fire insurance maps) within the "Creosoting Plant Area" in the 1940's. However, an equivalent evaluation of the operations and potential source contributions of the coke plant was not presented in the draft augmented RI/FS Report, and only a general statements regarding the location of coking equipment was provided. Thus, the extent to which both of these operations overlapped geographically was not depicted. Therefore, the use of the term "Creosoting Plant Area" is misleading as it does not take into account these other more recent site uses which were located above the area of the prior St. Paul & Tacoma Lumber Company operations. The creosoting operations were conducted by the St. Paul & Tacoma Lumber Company between 1912 and 1922, not until the early 1930's as stated in the draft augmented RI/FS Report. It is also important to note that at the time of the St. Paul & Tacoma Lumber Company operations, the surface grade at the site was approximately six feet lower than the current grade. Following demolition of the St. Paul & Tacoma Lumber Company structures, approximately 3-5 feet of fill was used to raise the site grade and the Defense Plant Corporation coke plant was subsequently constructed as indicated in Section 2.1.2 of the draft augmented RI/FS Report. This difference in historic surface grades is an important fact, as shallow soil contamination was identified at the Former Tacoma Metals site in the upper 6 feet of the site, and this material did not yet exist when the creosote plant was operated by the former St. Paul & Tacoma Lumber Company. Based on the above, references within the draft augmented RI/FS Report such as "related to the former creosoting plant" and "creosote-related impacts" should be deleted as inaccurate. Instead, terms such as "in the Creosoting Plant Area" and "PAH-impacted media," should be used as to location and contaminant indications. As has been discussed previously, other operations and other potential sources of impacts to environmental media involving similar contaminants have occurred in the "Creosoting Plant Area"

2. References to the former coke plant and other historical structures (including the former hexagonal AST identified on aerial photos and Sanborn fire insurance maps) should be included in text sections and on figures along with references to the former creosoting plant in the "Creosoting Plant Area." These various structures should also be discussed in text and shown on figures at different elevations corresponding to site grades appropriate for those structures. There appears to be a disproportionate evaluation of data presentation for the northern portion of the site (the Creosoting Plant Area) as compared to the southern half of

the site as no comprehensive data summary graphics have been updated for this portion of the site consistent with Appendix F (Figures 2A through 2D) of the draft augmented RI/FS Report. This also holds true for the presentation of the contaminant distribution in cross sections (Appendix F, Figures 3A through 3D). Complete presentation of all sitewide data consistent with the Creosoting Plant Area figures would help in the development of a more complete and accurate Conceptual Site Model (CSM). Figure 4 (Generalized Conceptual Site Model) of the draft augmented RI/FS Report does not adequately identify the locations of other historical potential source structures (e.g. the hexagonal AST observed in aerial photographs and on Sanborn fire insurance maps during coke plant operation) within the Creosoting Plant Area, or the relative locations at which those structures existed, as indicated on the marked-up version attached to this letter. A similar omission of other potential source structures exists in the cross sections supplied as Appendix A to the draft augmented RI/FS Report, which illustrate the “approximate former wood treatment facility location,” but does not illustrate other historical potential source structures (e.g. the hexagonal AST) in this area. In addition, the “approximate former wood treatment facility location,” in these cross sections is shown at the approximate elevation of the former hexagonal AST (approximately 2-3 feet below grade), rather than at approximately 6 feet below grade. If both these structures were depicted on these cross sections at their relative locations and elevations, these figures would more accurately illustrate impacted media in the upper fill associated with the former coke plant hexagonal AST located directly above the location of the former creosoting plant and the fill layers that existed during its operation.

Based on our review of the draft augmented RI/FS Report, we do not believe that the statements made in this report linking the impacts observed at the Tacoma Metals Site to historical operations by the former St. Paul & Tacoma Lumber Company are substantiated. Other operations (e.g. coke production) conducted in the same areas are more likely to have caused the majority of the contamination in the Creosoting Plant Area, based upon soil depths at which they have been observed (above the elevation at which the St. Paul & Tacoma Lumber Company operated). However, if residual impacts from creosoting plant operations were present, they would be limited to “Area B” and only at depths greater than 6 feet below the current ground surface.

Washington Department of Ecology  
March 11, 2013  
Page 4

Please contact us with any questions regarding these comments.

Sincerely,

URS CORPORATION



Paul E. Kalina, P.E.  
Project Manager

Copy: Mr. Philip Slowiak, International Paper Company  
Mr. Brian Heim, International Paper Company  
Mr. John Cermak, Jr., BakerHostetler

**Attachments:**

- Attachment 1 – Specific Comments to Draft Augmented RI/FS Report
- Attachment 2 – Draft Augmented RI/FS Report Figure 2 – Site Area Overview
- Attachment 3 – Draft Augmented RI/FS Report Figure 4 – Conceptual Site Model

## ATTACHMENT 1 – SPECIFIC COMMENTS:

1. Executive Summary, page ES-1, second paragraph, second sentence – “However, an additional historical site use as a creosoting plant (1910s to 1930s)” should be amended to “However, an additional historical site use as a creosoting plant (approximately 1912 to 1922)” both to keep in proper perspective the relatively short period of time during which the creosoting plant was operated, and to maintain chronological consistency.
2. Executive Summary, page ES-1, second paragraph, third sentence – “Impacts to environmental media **related to the creosoting plant** were identified, but not fully characterized, during the initial RI” should be amended to “Impacts to environmental media *in that portion of the site where both creosote plant and coke plant operations were identified*, but not fully characterized, during the initial RI” to appropriately recognize other similar operations that were conducted in the same area after creosoting operations occurred between 1912 and 1922.
3. Executive Summary, page ES-2, fifth paragraph – “although the volume of potentially affected environmental media **related to the former creosoting plant** increased based upon the results of the supplemental RI” should be amended to although the volume of potentially affected environmental media *in the southwestern portion of the site (Area B)* increased based upon the results of the supplemental RI” since the expansion of this area was due primarily to impacts within the upper six feet of fill material, which did not exist at the site while the creosoting plant was operated.
4. Section 1.3 Site Areas and Nomenclature, page 1-2, fourth bullet - “Creosoting Plant Area: That portion of the site **affected by historical releases from a former creosoting plant**” should be amended to “That portion of the site *in which structures related to a former creosoting plant, former coke plant, and other historical operations were once located*”
5. Section 2.1 Historical Site Uses, page 2-1, second paragraph, first bullet – Creosoting Plant (1900s to 1930s) should be amended to “Creosoting Plant (approximately 1912 to 1922).
6. Section 2.1.1 Creosoting Plant, page 2-2, second paragraph, second sentence – “Based on the available information, the two large ASTs **likely contained creosote** and the smaller AST was possibly used to mix wood treatment chemicals prior to use.” should be deleted unless referenced. Historical documents (e.g. 1912 Sanborn fire insurance map) identify these three ASTs as ‘Oil Tanks,’ with no reference to creosote.
7. Section 2.3.1 Initial RI/FS, page 2-7, third paragraph, first sentence – “environmental impacts **related to the creosoting plant**” should be amended to “environmental impacts *in the Creosoting Plant Area*”
8. Section 2.3.2.1 Creosoting Plant Area, page 2-8, second paragraph, first sentence – “extent of impacts to environmental media **related to the former creosoting plant facility**” should be amended to “extent of impacts to environmental media *in the Creosoting Plant Area*”
9. Section 3.2.1 Soil, page 3-4, fourth full paragraph, first sentence – the note “{Note: The deeper COC impacts in the Creosoting Plant Area shown on the initial RI maps in Appendix C (Figures 4-3 and 4-4) **are associated with the**

- former creosoting plant** (refer to Section 4.2) and are separate from the metals recycling related impacts]” *should be amended to “{Note: The deeper COC impacts in the Creosoting Plant Area shown on the initial RI maps in Appendix C (Figures 4-3 and 4-4) appear to be associated with the former creosoting plant or coke plant”*
10. Section 3.2.1 Soil, page 3-5, third full bulleted paragraph, third sentence – “Hydrocarbon impacts identified near the southwestern corner of the former Tacoma Metals Property to depths of 10 feet bgs **are associated with the former creosoting plant** rather than metals recycling uses, as previously discussed” *should be amended to “Hydrocarbon impacts identified near the southwestern corner of the former Tacoma Metals Property to depths of 10 feet bgs appear to be associated with the former creosoting or coke production uses rather than metals recycling uses”*
  11. Section 3.2.1 Soil, page 3-6, first paragraph, Note second sentence – “The results of this investigation, which are discussed later, indicated that hydrocarbons associated with the **creosoting plant** are derived from pyrogenic source (**i.e., creosote**) and are not petrogenic in nature.” *should be amended to “The results of this investigation, which are discussed later, indicated that hydrocarbons associated with the **Creosoting Plant Area** are derived from pyrogenic sources (*such as creosote, coking coal tar by-products, etc.*) and are not petrogenic in nature.”*
  12. Section 3.2.2 Groundwater, page 3-6, first paragraph – “As previously indicated, the groundwater impacts identified in the western portion of the former Tacoma Metals Property **appear to be primarily related to the former creosoting plant and are discussed in Section 4.2**” *should be amended to “As previously indicated, the groundwater impacts identified in the western portion of the former Tacoma Metals Property are further discussed in Section 4.2” with the specific reference to the former creosoting plant removed, since coking operations also occurred in this portion of the property.*
  13. Section 3.2.2 Groundwater, page 3-6, second paragraph, second sentence – “Naphthalene and hydrocarbon concentrations detected in the Creosoting Plant Area are **related to the former creosoting plant, as previously discussed, and were further evaluated in the Supplemental RI (refer to Section 4)**” *should be amended to “Naphthalene and hydrocarbon concentrations detected in the Creosoting Plant Area are further discussed in Section 4” with the specific reference to the former creosoting plant removed, since coking operations also occurred in this portion of the property.*
  14. Section 3.3.2 Preferred Cleanup Alternative, page 3-9, last paragraph – “as ORC is not expected to be effective for the treatment of **creosote-related COCs** because they are pyrogenic (coal tar based) rather than petrogenic (petroleum based) in origin” *should be amended to “as ORC is not expected to be effective for the treatment of **PAHs (e.g. creosote, coke plant by-products, etc.)**”*

15. Section 4.1.2 Forensic Evaluation of Hydrocarbons, page 4-3, second paragraph, second sentence – “FBI concluded that the contaminants were indicative of a pyrogenic (such as **coal-tar creosote**) origin rather than a petrogenic (e.g., petroleum hydrocarbon) source” should be amended to “FBI concluded that the contaminants were indicative of a pyrogenic (*such as coal-tar related to creosote or coke by-products*) origin rather than a petrogenic (e.g., petroleum hydrocarbon) source”
16. Section 4.2 Supplemental RI Findings, page 4-4, first paragraph – “The primary COCs associated with the **former creosoting plant include various chemical components of creosote, which is derived from the distillation of coal tar. The COCs relevant to the characterization of creosote impacts at the Creosoting Plant Area include naphthalene, cPAHs, and BTEX. Refer to the 2009 Response to Ecology Comments letter (Kennedy/Jenks Consultants 2009) for additional information regarding the origin and composition of creosote. Creosote-related COCs have been delineated in both soil and groundwater at the Creosoting Plant Area (both On-Property and Off-Property Areas)” should be amended to “The primary COCs associated with the *Creosoting Plant Area* include naphthalene, cPAHs, and BTEX. *COCs* have been delineated in both soil and groundwater at the Creosoting Plant Area (both On-Property and Off-Property Areas)” with the specific reference to the former creosoting plant removed, since these COCs are commonly associated with both the creosoting and coke production processes that occurred in this same area.**
17. Section 4.2 Supplemental RI Findings, page 4-4, second paragraph, first sentence – “The potential COCs for the PSRC investigation included the **creosote-related compounds** listed above for the Creosoting Plant Area.” should be amended to “The potential COCs for the PSRC investigation included the *COCs* listed above for the Creosoting Plant Area.” since these COCs are commonly associated with both the creosoting and coke production processes that occurred in this same area.
18. Section 4.2.1 Soil, page 4-4, first paragraph – “COC impacts **related to the former creosoting plant occur** in the western portion of the former Tacoma Metals Property and at Off-Property areas to the west (i.e., the Creosoting Plant Area). Soil impacts **related to the former creosoting plant are** initially encountered at approximately 5 feet bgs **at the former creosoting plant location, corresponding to the approximate base of the fill material installed after demolition of the former creosoting plant**, and are evident to depths of approximately 25 feet bgs. **Creosote-related impacts to soil extend away for the former creosoting plant location** primarily to the north and west, with impacts to the south and east diminishing over a relatively short distance.” should be amended to “COC impacts *were identified* in the western portion of the former Tacoma Metals Property and at Off-Property areas to the west (i.e., the Creosoting Plant Area). Soil impacts *were* initially encountered at approximately 5 feet bgs *or shallower in the vicinity of former creosoting plant, coke plant, and other structures (e.g. hexagonal AST)*, and are evident to depths of

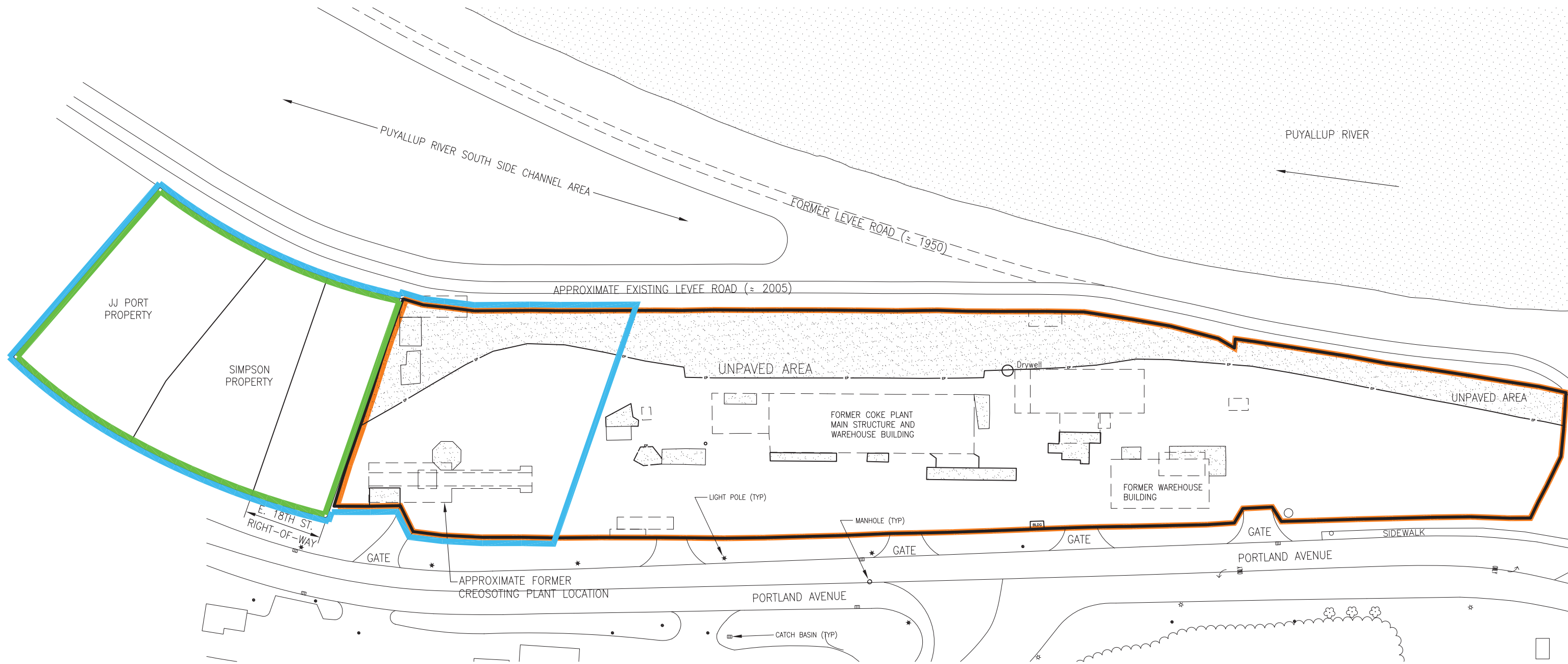
- approximately 25 feet bgs. *COCs in soil extend away from the former historical structure locations identified above primarily to the north and west, with impacts to the south and east diminishing over a relatively short distance.*”
19. Section 4.2.1 Soil, page 4-5, first full paragraph, first sentence – “The depth to the top of **creosote**-impacted soil increases with distance away from the former **creosoting plant location**” should be amended to “The depth to the top of *COC*-impacted soil increases with distance away from the former *creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations*”
  20. Section 4.2.1 Soil, page 4-5, first full paragraph, second sentence – “The maximum depth of **creosote**-impacted soil” should be amended to “The maximum depth of *COC*-impacted soil”
  21. Section 4.2.1 Soil, page 4-5, second full paragraph, first sentence – “Geologic cross-sections depicting the lateral and vertical distribution of **creosote-related** impacts to soil” should be amended to “Geologic cross-sections depicting the lateral and vertical distribution of *COC* impacts to soil”
  22. Section 4.2.1 Soil, page 4-5, second full paragraph, second sentence – “In addition, maps showing the distribution of **creosote**-impacted soil” should be amended to “In addition, maps showing the distribution of *COC*-impacted soil”
  23. Section 4.2.1 Soil, page 4-5, third full paragraph, second sentence – “The thickness of the areas of heavy soil impact decreases away from the former **creosoting plant location**, occurring in thin layers at the base of the wood-fill unit and just above the silty confining layer at some Off-Property locations (refer to the maps and cross sections in Appendix F which illustrate the distribution of subsurface soils affected by **creosote-related compounds**)” should be amended to “The thickness of the areas of heavy soil impact decreases away from the former *creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations*, occurring in thin layers at the base of the wood-fill unit and just above the silty confining layer at some Off-Property locations (refer to the maps and cross sections in Appendix F which illustrate the distribution of subsurface soils affected by *COCs*)”
  24. Section 4.2.1 Soil, page 4-5, fourth full paragraph – “Other **creosote-related COCs** (naphthalene and BTEX) were not detected in soil samples at concentrations above the proposed cleanup levels (refer to Table 3)” should be amended to “Other *COCs* (naphthalene and BTEX) were not detected in soil samples at concentrations above the proposed cleanup levels (refer to Table 3)”
  25. Section 4.2.2 Groundwater, page 4-6, third full paragraph, third sentence – “Naphthalene was also detected in Off-Property wells MW-24 and MW-28(R, west to northwest of the former **creosoting plant location**” should be amended to “Naphthalene was also detected in Off-Property wells MW-24 and MW-28(R, west to northwest of the former *creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations*”
  26. Section 4.2.2 Groundwater, page 4-7, first full paragraph, second sentence – “Groundwater samples in which the total cPAH concentration was above the



- proposed cleanup level were collected from wells and reconnaissance borings located at the former **creosoting plant location**” should be amended to “Groundwater samples in which the total cPAH concentration was above the proposed cleanup level were collected from wells and reconnaissance borings located at the former *creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations*”
27. Section 4.2.4 LNAPL and DNAPL, page 4-8, second paragraph, first sentence – “The LNAPL and DNAPL identified in the Creosoting Plant Area **appear to be creosote product**” should be deleted or further clarified with additional information (*e.g. contained COC concentrations consistent with soil impacts in that area based upon chemical analysis*), since creosoting, coking, and other operations with similar COCs all occurred in this area, and the conclusion presented here is not substantiated.
  28. Section 5.2.2.1 Updated Conceptual Site Model – Site Stratigraphy, page 5-3, second sentence – “Fill materials include **an upper gravel layer installed prior to the coke plant and metals recycling site operations, and wood waste material which likely accumulated at the site prior to construction of the former creosoting plant**” should be amended to “Fill materials include *an upper fill layer consisting primarily of debris with an average thickness of approximately two feet, underlain by a fill layer consisting primarily of sand and gravel with some debris with an average thickness of three to five feet, underlain by a fill layer consisting of 80 to 100 percent wood debris with an interstitial matrix of fine-grained material (silt, clay, and sand)*” in accordance with previously used terminology at this site. The current description in this section identifies two layers rather than three, and does not identify the intermediate fill layer upon which the coking operations were conducted, which was approximately two feet below the elevation upon which metals recycling operations were conducted.
  29. Section 5.2.3 Potential Exposure Pathways, page 5-5, second paragraph – “indicate the lateral migration of denser **creosote components** away from the former **creosoting plant location** the north and west along the upper surface of the fine-grained unit, as previously described (refer to Figure 4)” should be amended to “indicate the lateral migration of denser *COCs* away from the former *creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations* to the north and west along the upper surface of the fine-grained unit, as previously described (refer to Figure 4).”
  30. Figures 2, 3, 4, and 5 should be revised to include the location of former coke plant and other historical site structures (including the hexagonal AST) in the “Creosoting Plant Area” in addition to the former creosoting plant.
  31. Figure 4 should also be revised to the depths of those structures and to include migration pathways associated with historical site operations and observed contamination in addition to those shown for the former creosoting plant. The legend identifying “**Creosote-affected soil area**” should be amended to “*COC-*

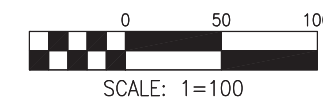
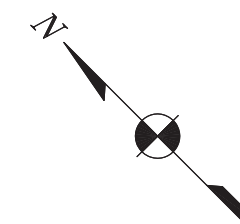
- impacted deeper soil area.*” An additional surface (approximately 2 feet below the grade of Portland Avenue) should be added to identify the former ground surface at which former coke plant and other historical structure (e.g. hexagonal AST) foundations were identified. The current figure does not identify the intermediate fill layer upon which the coking operations were conducted, and does not show the structures (e.g. hexagonal AST) that existing while those coking operations were conducted.
32. Figure 5 should also be revised to identify Area B and Area D as “**COC-IMPACTED SOIL**” rather than “**CREOSOTE IMPACTED SOIL**”
  33. Section 5.2.3 Potential Exposure Pathways, page 5-5, second paragraph, second sentence – “The denser **creosote components** appear to be associated with NAPL observed in wood waste fill and native soil materials as small blebs, mainly at locations at or near the former **creosoting plant location** but also in thin stingers along the base of the wood waste fill and along the upper surface of the fine-grained unit (refer to Figure 4 and to the maps and cross sections provided in Appendix F)” should be amended to “The denser **COCs** appear to be associated with NAPL observed in wood waste fill and native soil materials as small blebs, mainly at locations at or near the former **creosoting plant, coke plant, and other historical structure (e.g. hexagonal AST) locations** but also in thin stingers along the base of the wood waste fill and along the upper surface of the fine-grained unit (refer to Figure 4 and to the maps and cross sections provided in Appendix F)”
  34. Section 5.2.3 Potential Exposure Pathways, page 5-6, first full paragraph – “**Creosote-related COCs** do not appear to have migrated northward significantly beyond the northern site boundary, and **creosote-related impacts** to shallow groundwater were not identified along the southern margin of the PSRC” should be amended to “**COCs in the Creosoting Plant Area** do not appear to have migrated northward significantly beyond the northern site boundary, and **impacts** to shallow groundwater were not identified along the southern margin of the PSRC”
  35. Section 5.2.3 Potential Exposure Pathways, page 5-6, third full paragraph – “The proposed cleanup alternative also addresses the potential soil to groundwater pathway by removal of potential sources of **petroleum-hydrocarbon and creosote-related impacts** in shallow soil” should be amended to “The proposed cleanup alternative also addresses the potential soil to groundwater pathway by removal of potential sources of **COCs** in shallow soil” since the reference to creosote-related impacts pertains to PAHs that could also be attributed to coking operations at the site.
  36. Section 5.5.1 Source Control Excavation Areas, page 5-8, second paragraph – “The results of the investigation and evaluation activities performed since completion of the initial RI/FS indicate that proposed excavation area “B”, located at the approximate **former location of the creosoting plant**, did not include shallow soil impacts identified to the north of **the former creosoting**

- plant location**” should be amended to “The results of the investigation and evaluation activities performed since completion of the initial RI/FS indicate that proposed excavation area “B”, located at the approximate *locations of the former creosoting plant, coke plant, and other historical (e.g. hexagonal AST) structures*, did not include shallow soil impacts identified to the north of *those former structure locations*”
37. Section 5.5.1 Source Control Excavation Areas, page 5-9, first sentence – “because ORC is not expected to be an effective treatment for COCs of pyrogenic (**e.g., creosote derived from coal tar**) origin” should be amended to “because ORC is not expected to be an effective treatment for COCs of pyrogenic (**e.g., coal tar related to creosote or coke by-products**) origin”
38. Section 5.5.2 Long-Term Monitoring, page 5-9, second paragraph, third sentence – “Monitoring at Off-Property locations should include only the COCs identified **for creosote-related site impacts** (cPAHs, naphthalene, and BTEX)” should be amended to “Monitoring at Off-Property locations should include only the COCs identified *during investigations conducted at those locations* (cPAHs, naphthalene, and BTEX)”
39. Section 6 Summary, page 6-1, second paragraph – “During **RI** an additional previous site use was identified as a creosoting plant located in the southwestern portion of the site (designated **at** the Creosoting Plant Area). The extent of potential impacts to environmental media **related to the former creosoting plant** were not fully addressed in the initial RI; therefore supplemental RI activities were performed in the Creosoting Plant Area between 2002 and 2011 and the extent of **creosote-related** impacts to soil and groundwater was identified and characterized.” should be amended to “During *the initial RI* an additional previous site use was identified as a creosoting plant located in the southwestern portion of the site (designated *as* the Creosoting Plant Area). The extent of potential impacts to environmental media *in that area was* not fully addressed in the initial RI; therefore supplemental RI activities were performed in the Creosoting Plant Area between 2002 and 2011 and the extent of *COC* impacts to soil and groundwater was identified and characterized.”
40. Section 6 Summary, page 6-1, third paragraph – “excavation and offsite disposal of **hydrocarbon and creosote** impacted soil” should be amended to “excavation and offsite disposal of *COC*-impacted soil”



**LEGEND:**

- FORMER TACOMA METALS PROPERTY/ON PROPERTY AREA
- OFF PROPERTY AREA
- FORMER CREOSOTING PLANT AREA
- UNPAVED AREA
- APPROXIMATE PREVIOUS STRUCTURE LOCATION (IDENTIFIED IN HISTORICAL AERIAL PHOTOGRAPHS AND/OR SANBORN MAPS)  
REFER TO FIGURE 1-2 IN APPENDIX A FOR ADDITIONAL INFORMATION



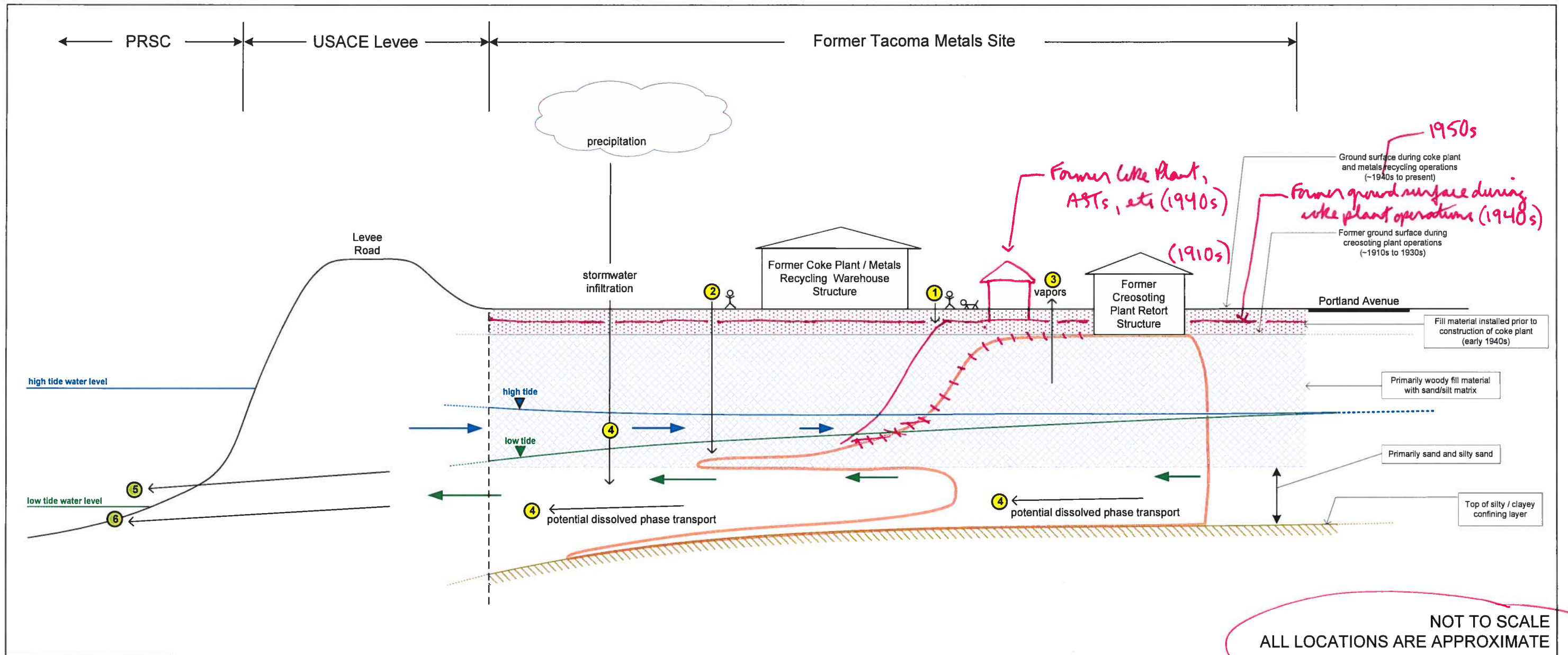
**Kennedy/Jenks Consultants**

FORMER TACOMA METALS FACILITY  
TACOMA, WA

**SITE AREA OVERVIEW**

996098.00\2011 RI UPDATE\FIG\_02

**FIGURE 2**



**Summary of Potential Exposure Pathways**

Potential Pathway	Potential Receptors	Exposure Scenarios
① Direct Contact Soil	Workers, Ecological Receptors	Possible direct contact/ingestion by workers doing invasive work; direct contact/ingestion by wildlife.
② Direct Contact Groundwater	Workers	Possible direct contact by workers doing invasive work; ingestion pathway incomplete because shallow groundwater is not a potable water source.
③ Vapor Inhalation	Workers	Possible inhalation by workers; vapor migration upward through unpaved surfaces and possibly through building foundations/slabs.
④ Soil to Groundwater Leaching	Aquatic Organisms in PRSC	Infiltration of stormwater through unpaved site surfaces; transport toward PRSC. Infiltration pathway will be eliminated by cleanup action.
⑤ Groundwater to Surface Water	Aquatic Organisms in PRSC	Incomplete Pathway. Groundwater discharge to surface water in PRSC; possible ingestion by aquatic organisms; possible ingestion or aquatic organisms by recreational users.
⑥ Groundwater to Sediment	Aquatic Organisms in PRSC	Incomplete Pathway. Groundwater discharge through to sediment in PRSC; possible ingestion by aquatic organisms; possible ingestion by aquatic organisms; possible ingestion or aquatic organisms by recreational users.

**Legend:**

- Shallow groundwater gradient (high tide)
  - ← Shallow groundwater gradient (low tide)
  - ▼ Shallow groundwater potentiometric surface (high tide)
  - ▼ Shallow groundwater potentiometric surface (low tide)
  - ① Potential exposure pathways (complete) (summarized in table)
  - ⑤ Potential exposure pathways (incomplete) (summarized in table)
  - Creosote-affected soil area
  - Metals recycling affected soil area (upper fill material)
- Deeper COC-impacted*  
*Shallower COC-impacted*

NOT TO SCALE  
ALL LOCATIONS ARE APPROXIMATE

Kennedy/Jenks Consultants

FORMER TACOMA METALS SITE  
TACOMA, WA

GENERALIZED CONCEPTUAL SITE MODEL

996098\*00/SiteModel.VSD

FIGURE 4