TSCA Completion Report
PCB Self-Implementing Cleanup
And Risk-Based Disposal
PCC Large Parts Campus
Portland, Oregon

December 31, 2019

Prepared for

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LIST OF ABBREVIATIONS AND ACRONYMS

ASTM ..... ASTM International
bgs ..... below ground surface
BMP ..... best management practice
CESF ..... chitosan-enhanced sand filtration
CFR ..... Code of Federal Regulations
COC ..... chain of custody
CWM ..... Chemical Waste Management
EPA ..... US Environmental Protection Agency
ft ..... feet, foot
LAI ..... Landau Associates, Inc.
LPC ..... PCC Large Parts Campus
mg/kg ..... milligrams per kilogram
NPDES ..... National Pollutant Discharge Elimination System
ODEQ ..... Oregon Department of Environmental Quality
PCB ..... polychlorinated biphenyl
PCC ..... PCC Structurals, Inc.
ppb ..... parts per billion
ppm ..... parts per million
RI ..... remedial investigation
STS ..... stormwater treatment system
TSCA ..... Toxics Substances Control Act
VCP ..... Voluntary Cleanup Program

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1.0 INTRODUCTION

This report documents polychlorinated biphenyl (PCB) cleanup activities conducted at PCC Structurals, Inc.'s (PCC) Large Parts Campus (LPC; site) located at 4600 SE Harney Drive in Portland, Oregon (Figure 1). This project completion report was prepared by Landau Associates, Inc. (LAI) on behalf of PCC. PCBs were identified at the site during the ongoing remedial investigation (RI), which is being conducted under a Voluntary Cleanup Program (VCP) Agreement between the Oregon Department of Environmental Quality (ODEQ) and PCC.

1.1 Regulatory Framework and Approvals

PCC initiated PCB source investigation sampling at the site in 2014 to identify potential sources of PCBs detected in solids in the storm drain system. PCBs were detected at concentrations greater than 50 milligrams per kilogram (mg/kg) in source identification soil and debris samples collected along the north side of the facility (Areas A, B, and C; Figure 2). The exceedance of 50 mg/kg triggered the requirement that the removal and disposal of PCB-contaminated material described in this report be conducted in accordance with the US Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA), under the requirements of both the self-implementing procedure for the cleanup and disposal of PCB remediation waste in accordance with 40 Code of Federal Regulations (CFR) § 761.61 (a) and the risk-based disposal approval framework in accordance with 40 CFR 761.61 (c). Removal and disposal of PCB remediation waste was conducted in accordance with the Supplemental PCB Self-Implementing and Risk-Based Notice to EPA (Supplemental Plan; LAI 2016b) and the following associated Notices of Change:

- Notice of Change to Supplemental PCB Self-Implementing Notice, Area B East (LAI 2018a)
- Notice of Change to Supplemental PCB Self-Implementing Notice, Area A (LAI 2018b)
- Notice of Change to Supplemental PCB Self-Implementing Notice, Area A Urea Area (LAI 2018c)
- Notice of Change to Supplemental PCB Self-Implementing Notice, Area A Cap (LAI 2018d).

EPA approved the Supplemental Plan on March 3, 2017 (EPA 2017). EPA subsequently provided the following approvals for the Notices of Change listed above:

- June 5, 2018 Approval of Change Notification to Self-Implementing Cleanup, Area B East (EPA 2018a)
- July 17, 2018 Approval of Change Notification to Self-Implementing Cleanup, Area A (EPA 2018b)
- October 19, 2018 Approval of Change Notification to Self-Implementing Cleanup, Area A Second (Area A Urea Area) and Third (Area A Cap) Change Notifications (EPA 2018c).

1.2 Timeline of Events

A timeline of events, which includes significant activities related to the PCB source investigation and cleanup activities at the site, is provided below. Detailed information related to the source investigation activities in the cleanup areas is provided in the Supplemental Plan and the associated Notices of Change; the cleanup activities are further discussed in detail in Section 3.0 of this report.

- October 2014:
  - Upland PCB Source Investigation sampling conducted in eight potential source areas (i.e., areas nearby and upslope from storm drain catch basins) identified by ODEQ on a site walk (LAI 2014a).
  - PCBs detected in four areas (Areas A, B, C, and D).
- November 2014–February 2015:
  - Area C cleaned of accumulated debris and surface depressions were filled with asphalt to prevent re-accumulation of debris.
- July 2015:
  - Notice and Certification of Self-Implementing Cleanup sent to EPA with plan for additional sampling in areas where PCBs were detected in surface debris (Areas A, B, C, and D).
- August 2015:
  - Approximately 1 foot (ft) of soil removed from Area A above the retaining wall and the pavement below the retaining wall cleaned with dry ice blasting.
  - Additional upland soil sampling conducted in Areas A, B, and D. Total PCBs above 50 mg/kg identified in Area A and Area B West.
- April 2016:
  - Cleaning (via dry-ice blasting) in Area C (paved)
  - Interim soil removal in Area B West (LAI 2016c)
- July 2016:
  - Supplemental PCB Self-Implementing Notice submitted to EPA, describing sampling and cleanup/removal activities to date and plan for further excavation and cleanup of Area A and capping of Area B West.
- September 2017:
  - Soil excavation and confirmation sampling in Area A at 1 ft below ground surface (bgs). Confirmation sampling indicated additional soil removal was warranted.
- November 2017:
  - End-of-pipe stormwater treatment system (STS) startup. The STS uses a chitosan-enhanced sand filter (CESF) to remove contaminants from stormwater prior to discharge from the site, including PCBs.
- December 2017:

  - Additional soil excavation and confirmation sampling in Area A.
  - Area A was backfilled and capped with concrete cloth.
- February 2018:
  - Soil characterization performed in Area B East in preparation for excavation and disposal associated with cooling tower construction. Total PCBs were below 50 mg/kg, consistent with previous characterization in Area B East.
- April 2018:
  - Engineering controls (capping, fencing, and signage) completed in Area A and Area B West. Fencing and signage in Area A were temporary pending construction of the new switchgear platform in this area.
- May 2018:
  - Notice of Change to the Supplemental Self-Implementing Plan related to soil excavation and disposal for Area B West submitted to EPA.
- June 2018:
  - Deed Restriction Notice filed for Area A, Area B West, and Area B East.
  - Soil characterization sampling in and adjacent to Area A related to upcoming switchgear project. Total PCBs were detected at concentrations above 50 mg/kg in some areas.
- July 2018:
  - Notice of Change to the Supplemental Self-Implementing Plan related to the expanded Area A excavation and disposal for Area A submitted to EPA.
  - Additional characterization sampling in Area A Urea Area (also referred to as the Wax Area) related to switchgear construction activities indicated concentrations of total PCBs in soil samples greater than 50 mg/kg.
- August 2018:
  - Notice of Change to the Supplemental Self-Implementing Plan related to excavation and disposal of PCB remediation waste in the Urea/Wax Area submitted to EPA.
  - Confirmation samples collected from the switchgear excavation area.
- September 2018:
  - Notice of Change to the Supplemental Self-Implementing Plan related to the final capping areas and design for Area A submitted to EPA.
- July 2019:
  - Confirmation samples collected from the Urea/Wax Area trench excavation; PCBs detected in saturated soil at the groundwater table.
- November 1, 2019:
  - Final cap sealing, fencing, and signage completed in Area A.

2.0 BACKGROUND AND NATURE OF CONTAMINATION

Historically, PCC used hydraulic oils that contained PCBs in its vacuum furnace hydraulic pump components. Additionally, many of the electrical transformers and capacitors used in the electrical system at the LPC contained dielectric fluid that contained PCBs (Hahn and Associates 1993).

2.1 Upland PCB Source Investigation

As described in the VCP Agreement with ODEQ, the initial focus of the RI was chlorinated solvents. Upland PCB source investigation was initiated in 2014 following stormwater system sampling during a City of Portland inspection (ODEQ 2014) that indicated sources of PCBs were present at the site. The highest concentrations of PCBs in stormwater and catch basins solids detected during the 2014 stormwater system sampling events (stormwater and catch basin solids) were near or downslope from former transformer locations and areas that may have formerly been used to store PCB-containing oil.

Six areas were initially identified for surface debris (e.g., soil, fine particulates, organic debris) and wipe sampling in the work plan submitted to ODEQ (LAI 2014a).[1] Prior to collecting the planned samples, LAI met with representatives from ODEQ and PCC at the site to discuss proposed sampling locations. During the site walk on October 8, 2014, two additional sampling areas were added by ODEQ to provide relevant data that would exclude these areas from further consideration as potential PCB sources. The eight areas were designated Areas A through H (Figure 2). The specific media and locations to be sampled within each of the eight areas were determined during the site walk based on the locations of transformers and oil storage areas, and the presence of soil, loose debris, and/or staining that could contribute to PCBs previously detected in catch basin solids. A total of 49 surface debris samples and 3 wipe samples were collected in October 2014. The results of the upland sampling investigation were summarized in the December 2014 technical memorandum submitted to ODEQ (LAI 2014b).

Results of the October 2014 upland PCB investigation and the two rounds of additional stormwater and catch basin solids sampling (November 2014 through January 2015) were used to identify areas where PCB concentrations were indicative of potential nearby sources. Of the eight potential PCB source areas evaluated in the October 2014 upland PCB investigation, four areas were identified as requiring additional work (i.e., Areas A through D). PCB concentrations in the other four areas were indicative of background concentrations for industrial areas, and not of specific sources.

On July 1, 2015, PCC submitted a Notice and Certification of Self-Implementing Cleanup letter to EPA (LAI 2015). EPA conditionally approved the proposed self-implementing cleanup for Area A and requested additional characterization in Areas B, C, and D (EPA 2015).

[1] The purpose of wipe samples in this program was to sample and analyze oily material on solid surfaces for the presence of PCBs.

On July 25, 2016, PCC submitted the Supplemental Plan to EPA (LAI 2016b). The report described the results of additional characterization sampling and assessment that occurred following the July 2015 notice, which indicated cleanup areas at the site meet the definition of low-occupancy based on actual use. A preliminary draft of the Supplemental Plan was submitted to EPA on February 19, 2016. EPA provided comments on March 10, 2016 (EPA 2016a) and June 23, 2016 (EPA 2016b), and approved the Supplemental Plan in March 2017 (EPA 2017).

The cleanup activities described in this report and prescribed in the Supplemental Plan relate to cleanup conducted in Area A, Area B (which was further divided into Area B West and Area B East), and Area C. Cleanup and additional characterization of Area D is described in the Supplemental Plan; as discussed in the Supplemental Plan, additional cleanup activities were not required in this area.

2.2 Applicable Cleanup Levels

PCB source areas were cleaned up to appropriate cleanup levels based upon the TSCA definition of the PCB remediation waste. Material removed during cleanup activities falls under TSCA's definition of *bulk PCB remediation waste*, which is defined as non-liquid PCB waste including soil, sediments, dredged materials, muds, PCB sewages sludge, and industrial sludge (40 CFR 761.61[a][4][i]).

Per TSCA regulations, cleanup levels for *bulk PCB remediation waste* are further categorized specific to *high-occupancy* and *low-occupancy* areas (40 CFR 761.3). A high-occupancy area is any area where PCB remediation waste has been disposed of onsite and where occupancy for any individual not wearing dermal and respiratory protection is 840 hours or more (an average of 16.8 hours or more per week) for non-porous surfaces and 335 hours or more (an average of 6.7 hours or more per week) during a calendar year. Examples cited in EPA guidance (EPA 2005) could include a residence, school, day care center, sleeping quarters, a single- or multiple-occupancy 40-hours-per-week work station, a school classroom, a cafeteria in an industrial facility, a control room, or a work station at an assembly line.

A low-occupancy area is any area where PCB remediation waste has been disposed of onsite and where occupancy for any individual not wearing dermal and respiratory protection is less than 840 hours (an average of 16.8 hours per week) for non-porous surfaces and less than 335 hours (an average of 6.7 hours per week) during a calendar year. Examples cited in EPA guidance (EPA 2005) could include an electrical substation or a location in an industrial facility where a worker spends small amounts of time per week (such as an unoccupied area outside a building, an electrical equipment vault, or in the non-office space in a warehouse where occupancy is transitory).

The July 1, 2015 Notice and Certification of Self-Implementing Cleanup letter (LAI 2015) indicated that the LPC cleanup areas would be designated as high-occupancy and that the associated lowest cleanup criteria would be achieved (for high-occupancy scenarios). Following the August 2015 sampling, it became apparent that cleanup to high-occupancy area levels was not practicable and further assessment was conducted to better classify the source areas. This assessment concluded that the

potential upland PCB source areas investigated (i.e., Areas A through D) are located in low-occupancy areas within the LPC as defined by 40 CFR 761.3. These areas are located in portions of the LPC that do not have foot traffic or regular operations that require long-term occupancy by employees, and are unoccupied areas outside of the facility buildings. Several of the areas (specifically portions of Areas A and B, and Area D) are on slopes behind retaining walls and covered in thick vine and brush growth, which limits accessibility. Furthermore, much of Area A is located beneath the switchgear building, and the western and eastern portions of Area B are located beneath the transformer platform and cooling towers, respectively. Therefore, cleanup of Areas A, B, and C was addressed based on the TSCA requirements for low-occupancy (with one exception where a high-occupancy designation was determined, as described in Section 3.2.2).

Cleanup requirements for management of PCB remediation waste under the self-implementing framework, based on the low-occupancy classification, are summarized below.

Low-Occupancy Area Cleanup Requirements

Cleanup Requirement	Low Occupancy
No Action	≤1 ppm (1.0 mg/kg)
Institutional Control (i.e., deed restriction)	>1 ppm to ≤25 ppm (>1.0 mg/kg to ≤25 mg/kg)
Fence and Signs	>25 ppm to ≤50 ppm (>25 mg/kg to ≤50 mg/kg)[a]
Cap (minimum 6 inches concrete or asphalt)	>25 ppm to ≤100 ppm (>25 mg/kg to ≤100 mg/kg)[a]
Removal	>100 ppm (>100 mg/kg)

[a] Institutional controls (i.e., deed restrictions) also required with cleanup requirements.
mg/kg = milligram per kilogram
ppm = parts per million

Cleanup requirements can range from no action, to institutional controls (e.g., deed restrictions, etc.), to isolation from the area (e.g., fencing), containment (e.g., capping), to physical removal depending on the concentration of PCBs in the remediation waste present in the area requiring cleanup. When a cleanup activity for low-occupancy areas includes a cap or fencing and signage, the owner of a site must also implement institutional controls (e.g., deed restriction as outlined under 40 CFR 761.61 [a][8]) in perpetuity so that potential future owners receive appropriate disclosure concerning the continued presence of bulk PCB remediation waste on the site. A deed restriction is also required for residual concentrations between 1 parts per million (ppm) and 25 ppm to ensure that the low occupancy use continues to apply.

3.0 TSCA CLEANUP ACTIVITIES

TSCA Cleanup activities were performed in Area A, Area B West, Area B East, and Area C as required by the Supplemental Plan and the associated Notices of Change. Detailed cleanup and confirmation sampling activities are described below. Laboratory analytical data packages for characterization and confirmation samples presented in the sections below are provided in Appendix A. Cleanup activities were performed by PCC's contractor, Terra Hydr, Inc.

3.1 Concrete Cap Selection

One significant aspect of the cleanup remedies discussed below in Area A, Area B West, and Area B East, is the placement of a cap following soil excavation and confirmation sampling activities. In some of the cleanup areas, it was determined that traditional capping with concrete or asphalt to the required 6-inch thickness would not be feasible or the best alternative for capping on the slope.

Alternatives were evaluated in the Supplemental Plan and concrete cloth was selected as the most feasible solution for cap construction to protect workers and the environment. The concrete cloth is a geosynthetic cementitious composite mat which provides a thin (0.5 inches), durable, waterproof, and fire/chemical resistant concrete layer upon hydration and curing per the manufacturer's specifications (Appendix B). Concrete cloth is lightweight and remains workable for 2 hours after the initial hydration, allowing for manipulation of the product to provide a tight seal to the underlying soils, adjacent infrastructure, and conduit perforations. Per the manufacturer's specifications, "concrete cloth can be used to protect slopes as a replacement for shotcrete, riprap, and other hard armor systems."

The concrete cloth meets the requirements outlined at 40 CFR 264.310(a) for a cap by:

- Providing long-term minimization of migration of liquids through the capped area,
- Functioning with minimal maintenance,
- Promoting drainage and minimize erosion or abrasion of the cap material,
- Accommodating settling and subsidence to maintain the cap's integrity, and
- Having a permeability less than or equal to the permeability of the underlying subsoils.

Independent hydrocarbon impermeability testing indicates that the concrete cloth can be classified as impervious with waterproofing properties similar to clay and an equivalent average coefficient of impermeability (k) of $1x10^{-9}$ meters/second (Appendix B), which complies with the technical requirements for cap permeability in 40 CFR 761.75 (b)(1)(ii). EPA approved the use of the concrete cloth cap in the March 2017 (EPA 2017) approval letter.

3.2 Area A Cleanup and Capping

Cleanup activities in Area A were performed in two areas: the Switchgear Area and the Urea/Wax Area.

3.2.1 Switchgear Area

Prior to the cleanup activities associated with the switchgear construction described below, soil excavation and confirmation sampling was completed in a small portion of Area A in accordance with the procedures outlined in the Supplemental Plan (see "Original Area A Cleanup Boundary"; Figure 3). The final excavation in this area was approximately 3.5 ft below the original grade. A composite confirmation sample collected from the bottom of the excavation prior to backfilling indicated total PCBs were present at a concentration of 41.1 mg/kg. Confirmation sample analytical data is provided in Table 1.

Following soil removal, the excavation was backfilled to grade with pea gravel and capped with concrete cloth. In April 2018, temporary fencing and signs were placed around the capped area (with the expectation that permanent fencing and signage would be placed following the switchgear construction activities).

In anticipation of the switchgear construction project, additional soil sampling was conducted in June 2018. Sample results were provided to the agencies in the Phase II Remedial Investigation Switchgear Soil Sampling Report (LAI 2018f). As summarized in the report, total PCBs were detected in 23 of the 32 samples at concentrations ranging from 0.0443 mg/kg to 903 mg/kg. The highest concentrations of PCBs were detected in samples collected from near-surface soil (0–1 ft bgs) in the footprint of the proposed switchgear building foundation. Sample locations are shown on Figure 3 and results are summarized in Table 1.

Samples were also collected from the "temporary access road" area and the "electrical feeder trench" area where soil would be disturbed during construction activities (Figure 3). Total PCBs in these areas were less than 1.0 mg/kg and TSCA-management of waste outside of the Area A/switchgear foundation footprint was not required.

Based on the results of the characterization sampling, and in accordance with the EPA-approved July 2018 Notice of Change, PCC excavated soil with PCB concentrations in excess of 1 mg/kg from the switchgear foundation area. The average excavation depth along the hillside was approximately 2.5 ft bgs. Based on weight disposal tickets, approximately 210 tons of material was disposed of at Chemical Waste Management (CWM) of the Northwest, a Subtitle C Hazardous Waste Landfill permitted to accept TSCA waste. It is estimated that this corresponds to approximately 205 cubic yards of material removed during construction activities. Waste disposal tickets are provided in Appendix C.

Following excavation, confirmation samples were collected from the area between the upper and lower switchgear foundations (see Figure 3, "Samples Left in Place") and analyzed for PCBs. The maximum concentration of PCBs remaining in place is 13.2 mg/kg (Table 1). While this concentration is below the low-occupancy cleanup criteria requiring a cap, PCC installed a cap over the area as part of the final switchgear foundation design and to prevent erosion of soil that could potentially be transported with stormwater runoff to the storm drain system.

The capping areas are shown on Figure 3, and the Switchgear Area cap includes both a concrete cloth cap (in the upper portion of the foundation) and a concrete slab cap (in the lower portion of the foundation). The cap was installed in accordance with the Supplemental Plan and the September Notice of Change, which finalized the planned cap design for the Area A switchgear foundation. The original concrete cloth cap placed in the smaller Area A cleanup portion was replaced in its entirety during design and installation of the final cap.

Institutional controls were implemented following installation of the concrete cloth cap. Fencing and signage were installed around the switchgear foundation to prevent unauthorized access to the area. Area A is also included in the deed restriction (Section 3.9) in accordance with 40 CFR 761.61 (a)(8).

Contamination control measures that were employed during cleanup activities are summarized in Section 3.6; equipment decontamination procedures are described in Section 3.7.

3.2.2 Urea/Wax Area

In August 2018, PCC performed additional characterization sampling in Area A adjacent to (south) of the Switchgear area, in an area known as the Urea/Wax Area (Figure 4). Concrete and soil samples were collected from three locations along a planned trench construction. The trench construction was required as part of the switchgear project, for installation of a new catch basin designed to collect water that accumulated in the vicinity of the primary power switchgear. As described in the August 2018 Notice of Change, each sample location included three samples from a depth profile, including a sample of the concrete, a sample from approximately 0.5 ft below the bottom of the concrete, and a sample from approximately 3.3 ft below the bottom of the concrete (corresponding to the planned trench depth).

Total PCBs were detected in the Urea/Wax area above 50 mg/kg in two samples as shown in Table 2. Based on these results, and in accordance with the Supplemental Plan and the August 2018 Notice of Change, soil removed from the trench was excavated and managed as TSCA-waste.

The trench was excavated to the approximate depth of groundwater (approximately 3.6 ft bgs). Based on waste disposal tickets, approximately 13 tons of material was disposed of at CWM of the Northwest, a Subtitle C Hazardous Waste Landfill permitted to accept TSCA waste. It is estimated that

this corresponds to approximately 12 cubic yards of material removed during construction activities. Waste disposal tickets are provided in Appendix C.

A confirmation sample was collected from one area of the trench at the groundwater table (characterization sampling indicated that other areas of the trench were below 1 mg/kg total PCBs at the excavation depths). The confirmation sample results indicate that total PCBs remain in place in saturated soil at 9.93 mg/kg. At EPA's request, and based on the results of the confirmation sample, the Urea/Wax area land use designation will be considered high-occupancy based on the location of the trench in the walkway adjacent to the slope (and the cleanup in the Urea/Wax area will be considered under the self-implementing cleanup regulations). Note that designation of the Urea/Wax Area as high-occupancy will require amendment of the current deed restriction (which designates Area A as low-occupancy), as described in Section 3.9.

With the presence of PCBs in soil at the groundwater table, PCC will complete additional groundwater monitoring as proposed in Section 5.2, to confirm that PCBs in soil at the groundwater table have not impacted groundwater quality at the site.

Following trench excavation and confirmation sample activities, the trench was backfilled and restored with a concrete slab cap at least 6 inches thick. Area A (including the Urea/Wax trench area) is included in the deed restriction (Section 3.9) in accordance with 40 CFR 761.61 (a)(8).

Contamination control measures that were employed during cleanup activities are summarized in Section 3.6; equipment decontamination procedures are described in Section 3.7.

3.3 Area B West Capping

Cleanup activities in Area B West were conducted under the TSCA risk-based disposal approval framework in accordance with 40 CFR 761.71 (c). Area B West is located beneath a transformer platform (Figure 5), and because of the presence of high-voltage electrical lines within the work area, constrained space, and adjacent slope, there were safety concerns associated with complete excavation of soil classified as PCB remediation waste.

The cleanup approach in Area B West consisted of two phases, as proposed in the Supplemental Plan. The first phase consisted of an interim soil removal measure that was completed in 2016 (details of which are provided in Appendix A of the Supplemental Plan; LAI 2016b). Soil beneath the transformers was removed to a maximum depth of approximately 18 inches bgs in the western-most area of Area B West where the highest total PCB concentrations were detected. Approximately 11 cubic yards of material was removed and disposed of as TSCA waste at US Ecology in Idaho, a Subtitle C Landfill permitted to accept TSCA waste; waste disposal records are provided in Appendix C. The area was graded and partially backfilled with pea gravel following soil removal in preparation for concrete cloth cap installation.

The second phase consisted of installation of a concrete cloth cap over the soil beneath the transformers in Area B West and the establishment of deed restrictions (Section 3.8). As described in the Supplemental Plan, placement of a concrete cloth cap was deemed the most feasible capping alternative; the cap was installed in accordance with the Supplemental Plan.

The capped area in Area B West is shown on Figure 5. The cloth was wrapped around and molded/secured to the existing penetrations beneath the transformer (e.g., electrical conduits, etc.) to form a boot that promotes drainage away from the penetrations. The boots were sealed around the penetrations with a silicon caulk to form a tight seal. Drainage features around the perimeter of the concrete cap were installed to support effective drainage.

Institutional controls were implemented following installation of the concrete cloth cap. Fencing and signage was installed around the transformer platform to prevent unauthorized access to the area. Area B West is also included in the deed restriction (Section 3.9) in accordance with 40 CFR 761.61 (a)(8).

Contamination control measures that were employed during cleanup activities are summarized in Section 3.6; equipment decontamination procedures are described in Section 3.7.

3.4 Area B East Cleanup

Source investigation sampling in Area B East indicated that total PCBs in this area did not exceed the applicable cleanup levels and further cleanup of the area was not required under the TSCA regulations (i.e., soil removal was not proposed in the Supplemental Plan). However, in early 2018, PCC indicated that it planned to excavate portions of Area B East, adjacent to the existing cooling towers, during construction of the foundation for new cooling towers. To further characterize soil in Area B East that would be excavated during these construction activities, PCC performed additional soil sampling. The sampling was performed in accordance with the Chiller Tower Sampling Work Plan (LAI 2018g) and results are summarized in the Chiller Tower Sampling Report (LAI 2018e). Area B East sampling locations are shown on Figure 6, and analytical results are provided in Table 3.

A total of 24 soil samples were collected from 10 borings; of the 24 samples, total PCBs were detected in only 2 samples at low concentrations (below 1 mg/kg; Table 3). Complete boring logs and validated analytical data packages were included in the Chiller Tower Sampling Report (LAI 2018e).

The EPA-approved Notice of Change related to Area B East indicated that soil removed from Area B East known to contain concentrations of PCBs less than 50 mg/kg would be managed in a Subtitle D landfill, permitted to accept non-hazardous waste. Based on waste disposal tickets, approximately 295 tons (approximately 200 cubic yards) of soil was disposed of at the Waste Management Hillsboro Landfill in Hillsboro, Oregon. Waste disposal tickets are provided in Appendix C.

Cooling tower construction activities were generally completed in 2018. As reviewed with EPA and ODEQ during a site walk on September 18, 2019, there is an exposed soil slope beneath the elevated foundation for the new cooling tower structures. Although capping is not required in this area under TSCA regulations because of the low or non-detect concentration of PCBs, PCC plans to place a concrete cloth cap over this area to prevent soil erosion and protect the integrity of the slope beneath the new cooling tower structure. Additionally, Area B East is included in the deed restriction discussed in Section 3.8.

3.5 Area C Cleanup

As described in the Supplemental Plan, PCB remediation waste in Area C consisted of surface debris that had collected on paved surfaces. Following initial source investigation activities, Area C was paved (i.e., a depression was filled with asphalt) to prevent accumulation of debris near the building and sloped away from the building to promote stormwater drainage. Area C was further cleaned using dry-ice blasting in April 2016. Debris generated during the dry-ice blasting was drummed and shipped to US Ecology in Idaho, a Subtitle C landfill permitted to accept TSCA waste; waste disposal records are provided in Appendix C. PCC employs housekeeping best management practices (BMPs) as part of the site NPDES permit to prevent re-accumulation of significant debris in Area C, and no additional PCBs sources have been identified in Area C for cleanup.

3.6 Contamination Control

Control measures were implemented to capture debris generated during the cleanup activities and to prevent potentially contaminated construction debris from entering the stormwater conveyance system, as follows:

- Plastic Sheeting/Liner: Plastic sheeting or liner was placed around the excavation areas to maintain segregation of excavated soil and the ground surface and prevent migration of contaminated material outside of the cleanup area. Plastic sheeting and liners were monitored for rips and tears caused by vehicle or foot traffic, and were replaced immediately if damage was observed.
- Dry-Ice Blasting: Dry-ice blasting was used to clean paved surfaces, as needed, in areas adjacent to soil removal and capping activities in Areas A, B, and C. Dry-ice blasting was used to clean the asphalt pavement in the upper parking lot (i.e., the truck and equipment loading area) at the completion of cleanup activities.
- Weather Restrictions: Removal of PCB remediation was not conducted during periods of significant rain.
- Catch Basin Seals or Other Control Devices: Prior to initiation of cleanup activities, catch basins and trench drains were blocked off with catch basin seals to eliminate the potential for debris to enter the storm drain system. Straw waddles were also used around structures adjacent to the cleanup areas.

3.7 Equipment Decontamination

Non-disposable and non-porous equipment, such as construction tools that came into contact with PCB-contaminated soil and debris, were decontaminated after each use. Decontamination of equipment was performed using hand-wiping with appropriate solvent in accordance with decontamination procedures required under 40 CFR 761.79, or by using the double wash/rinse method for decontaminating non-porous surfaces under 40 CFR 761 Subpart S. Disposable equipment and tools were managed as TSCA waste and disposed of at the authorized Subtitle C landfill permitted to accept TSCA waste under 40 CFR 761.75. Only parts of the tools that were reasonably likely to have been in contact with PCB-containing materials were decontaminated.

3.8 Greener Cleanup BMPs

Opportunities for the use of green and sustainable BMPs were reviewed based on the ASTM International (ASTM) Guide for Greener Cleanups (ASTM E2893-16E1). Green and sustainable remediation objectives established as part of the project BMPs included efforts to:

- Minimize the environmental footprint of remedy implementation;
- Reduce the demand on the environment and natural resources during cleanup;
- Integrate sustainable practices throughout the life cycle of the remediation project; and
- Achieve remedial action goals and comply with environmental regulations.

These objectives were achieved using the following BMPs, which were implemented during the removal of PCB remediation waste in the cleanup areas previously discussed.

- To reduce the environmental footprint associated with transportation impacts while maintaining compliance with environmental regulations:
  - When possible, confirmation samples were collected at multiple depths with the goal of meeting project cleanup requirements with one mobilization to reduce heavy equipment usage, truck transport to landfills, contractor trips to the project site, transportation of samples to the analytical laboratory, and sample processing.
  - Local staff was used during excavation and sample activities to minimize travel distance to the project site and benefit the local economy.
  - Equipment and materials used during excavation and sampling activities were purchased locally, when available.
  - A local laboratory (Apex Laboratories, LLC in Tigard, Oregon) was used for sample analysis to minimize sample transit, reduce transportation impacts, and benefit the local economy.
  - Operators of trucks and excavation equipment limited the amount of time idling while on the project site to conserve fuel and reduce air emissions form heavy equipment. When possible, truck and trailer combinations were used rather than solo trucks to transport excavated materials to the disposal facility.

  - Trucks drove directly from the site to the landfill to prevent double-handling of materials at transfer stations.
- To integrate sustainable practices throughout the life cycle of a remediation project:
  - When documents were printed, paper with recycled content and/or double-sided printing was used to minimize paper use.
  - Sample containers consisted of glass jars with recyclable plastic lids placed in cardboard boxes and reusable coolers, which reduced non-recyclable waste produced during sampling activities.
  - When feasible, electronic correspondence and submittals were used for project management to reduce paper waste. Additionally, teleconferences and virtual meetings reduced transportation emissions and associated impacts.

3.9 Deed Restriction

The required deed restriction notice was originally filed with Multnomah County in June 2018 and is provided in Appendix D ("Notice of Matter Affecting Title to Real Property" recorded June 15, 2018, Document No. 2018-063257). The areas included in the deed restriction are shown on Figure 7. The deed restriction specifies that the land use in Area A remain in compliance with low occupancy land use requirements. To address the change in land use in the Urea/Wax Area from low-occupancy to high-occupancy, PCC is amending the deed restriction to include a high-occupancy designation in the Urea/Wax Area. The amended deed restriction will be provided to EPA when it is filed with Multnomah County.

The deed restriction, combined with the capping, fencing, and signage, meets the TSCA requirements for implementation of institutional controls in the TSCA cleanup areas.

3.10 Recordkeeping

A complete record of significant field activities was maintained. Recordkeeping conformed to 40 CFR § 761.61(a)(9) and 40 CFR § 761.61(c)(5) requirements. Documentation included field reports, field sampling forms, photographs, sample labels, and chain-of-custody (COC) forms. Sample possession and handling was documented on the COCs so that the sample is traceable from the time of sample collection, to the laboratory, and through data analysis.

4.0 CAP OPERATION AND MAINTENANCE

As discussed in Section 3.0, the cleanup action included the placement of caps to prevent contact with soil remaining in place at the site following the cleanup and construction activities. The caps are a part of the approved cleanup actions and comply with the TSCA requirements for caps in accordance with 40 CFR 264.310(a). Capped areas are shown on Figure 8.

Scheduled operation and maintenance of the caps will ensure ongoing performance of the cap and maintain the intended function. The general approach to long-term maintenance of the protective caps will include:

- Conducting routine, periodic inspection and monitoring to identify any problems or areas of concern in a timely manner.
- Evaluating each identified problem, and, if required, identifying appropriate, cost-effective mitigation measures.
- Implementing repairs or corrective actions.

Cap inspections will be conducted at least annually, and after significant earthquakes, to identify the need for any maintenance or repair activities. The cap surface and adjacent areas will be inspected to identify conditions that may indicate potential or actual damage to the cap. Items and conditions that will be noted during the cap inspections will include:

- Integrity of the cap (including the presence of visible cracking and significant erosion or settlement).
- Presence of differential settlement and ponding of stormwater on top of or directly adjacent to the cap.
- Condition of stormwater collection, conveyance, and discharge structures.

If a significant problem with the cap or associated drainage structure is identified, PCC will make arrangements to evaluate and correct the problem(s). Substantial cracks or any conditions observed that adversely affect the performance of the cap will be evaluated and repaired as needed to maintain cap integrity and functionality. In complying with TSCA regulations, any necessary repairs shall begin within 72 hours of discovery or such other time as PCC becomes aware of the need for repairs, and will be completed in as timely a manner as practicable consistent with worker safety considerations.

5.0 COMPLIANCE MONITORING

Compliance monitoring will include catch basin solids sampling and proposed data gaps sampling activities to demonstrate post-cleanup compliance with the cleanup plan.

5.1 Catch Basin Solids Sampling

Catch basin solids sampling is being conducted to comply with ODEQ and EPA requests to monitor the effectiveness of the PCB cleanup actions described in this report, and to determine if any unidentified source areas remain that could be contributing PCBs to the storm drain system. The Catch Basin Solids Sampling Work Plan (Work Plan; LAI 2019a) was submitted to ODEQ and EPA and has been approved by ODEQ (Nelson 2019). Planned monitoring activities are described in detail in the Work Plan. Samples will be collected a minimum of three times from seven structures along the north side of the site as described in the Work Plan.

Baseline catch basin solids samples were collected in October 2019, prior to storm drain structure cleaning activities, as requested by ODEQ. PCBs were detected above laboratory reporting limits in only two of the structures, at low concentrations (less than 1 mg/kg). As described in the Work Plan, catch basin solids sampling will be discontinued after two post-cleanup sampling events, pending results that indicate significant recontamination is not occurring.

5.2 Proposed Data Gaps Sampling

As requested by ODEQ, PCC has completed a review of available soil data on the north side of the LPC site and has proposed additional sampling activities to address potential data gaps (LAI 2019b). PCC has proposed the following to address data gaps on the north side of the LPC site:

- Two additional soil investigation areas adjacent to Area B and Area C (Figure 9). Soil samples will be collected from shallow and deep soil using incremental sampling methodology (ISM) sampling techniques, and soil samples will be analyzed for PCBs by EPA Method 8082A, total metals (Priority Pollutant List, plus cobalt) by EPA Method 6020A, and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D.
- Groundwater sampling at monitoring wells MW-1 and MW-9 (Figure 9). Groundwater monitoring for PCBs is proposed as a follow up sampling requirement to the TSCA Cleanup Activities in Area A. Total PCBs were detected in soil in Area A at the groundwater table above 1 ppm (in the Wax/Urea Area trench excavation). MW-9 is located hydraulically downgradient and will provide data to confirm that PCBs in soil have not impacted groundwater in this area. Sampling is also proposed at MW-1. While MW-1 is not located in an area where PCB contamination has been identified in soil, MW-1 is located adjacent to the north slope of the LPC facility, and will provide an additional data point to confirm that there are no PCB impacts to groundwater in this area. Groundwater will be analyzed for PCBs by EPA Method 8082A. Groundwater results will be compared to the appropriate decision criteria for TSCA self-implementing cleanups in accordance with the decontamination standards in 40 CFR 761.79 (0.5 parts per billion [ppb]).

PCC will prepare a data gaps investigation work plan providing specific details on the sampling proposed above following agency concurrence with the proposed data gaps sampling areas. PCC is targeting Spring/Summer 2020 for completion of the field work, pending agency approval.

6.0 USE OF THIS REPORT

This report has been prepared for the exclusive use of PCC for specific application to the PCB Self-Implementing Cleanup and Risk-Based Disposal at the PCC Large Parts Campus. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of LAI. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by LAI, shall be at the user's sole risk. LAI warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

7.0 REFERENCES

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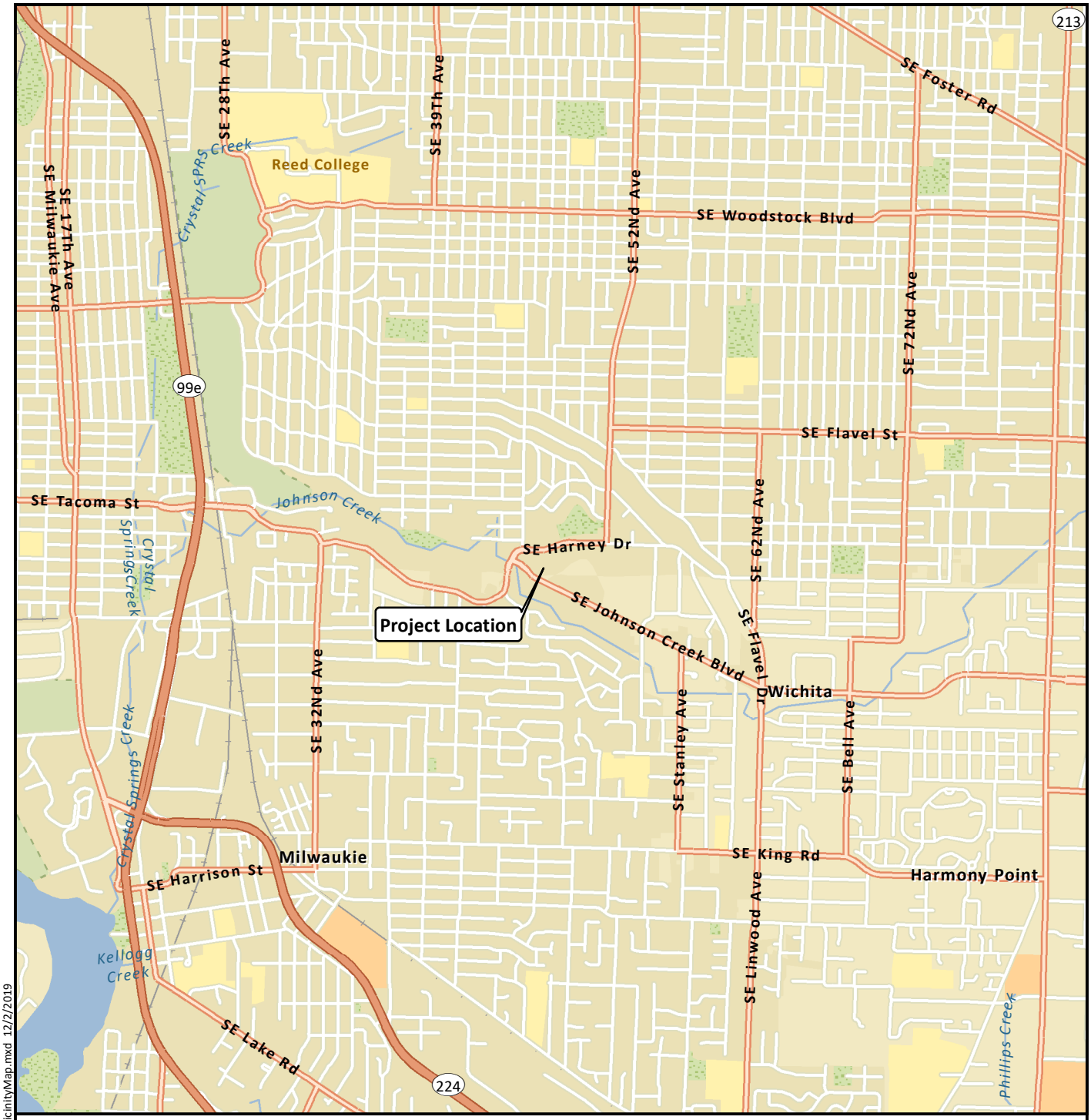

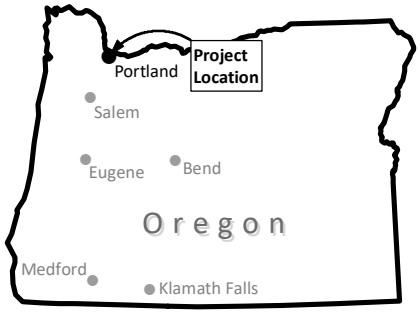

Data Source: Esri 2012

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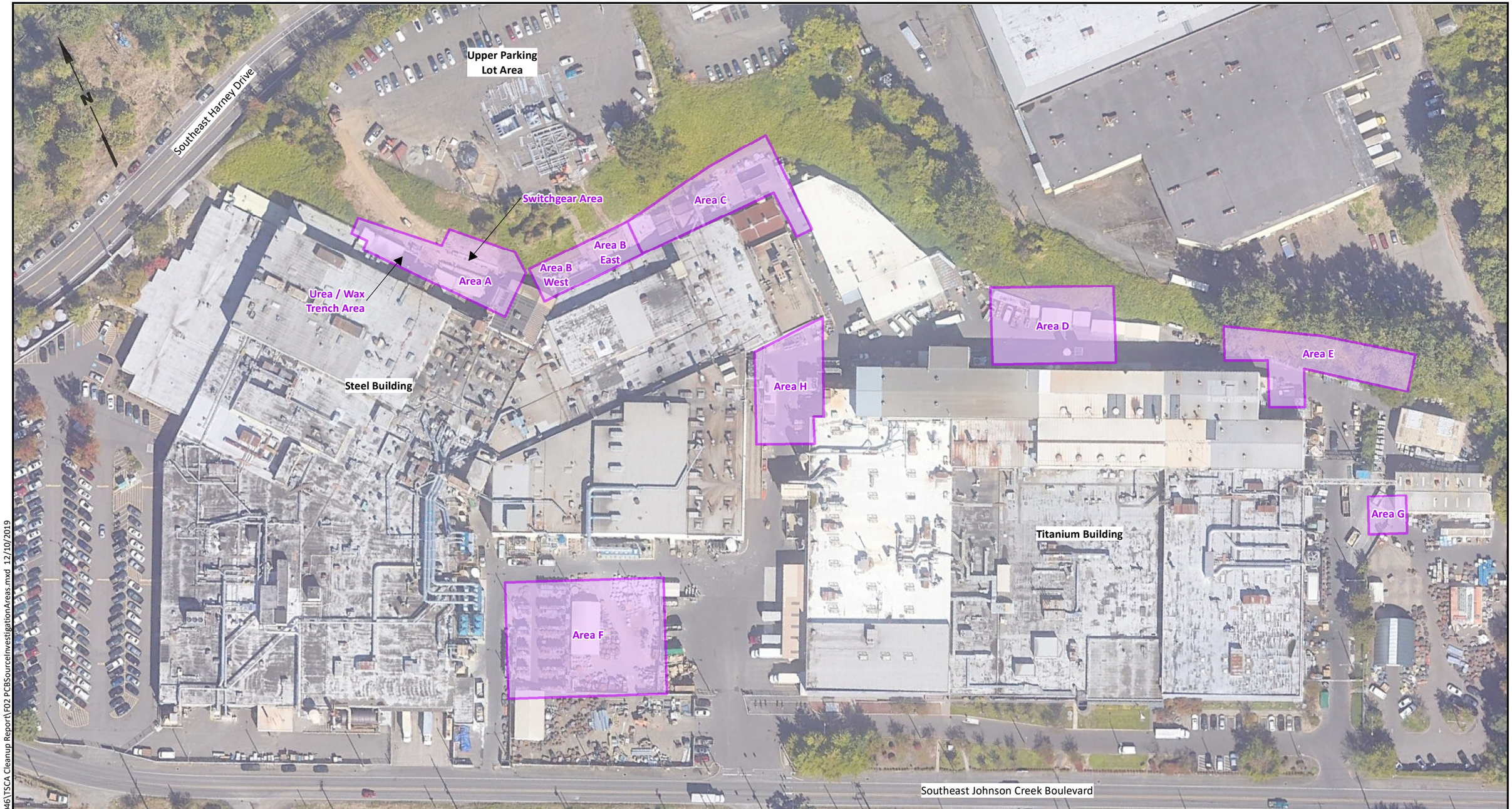
PCC Structurals, Inc. Large Parts Campus Portland, Oregon	**Vicinity Map**	Figure 1



Legend

Area of Investigation

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery.

0 100 200

Scale in Feet

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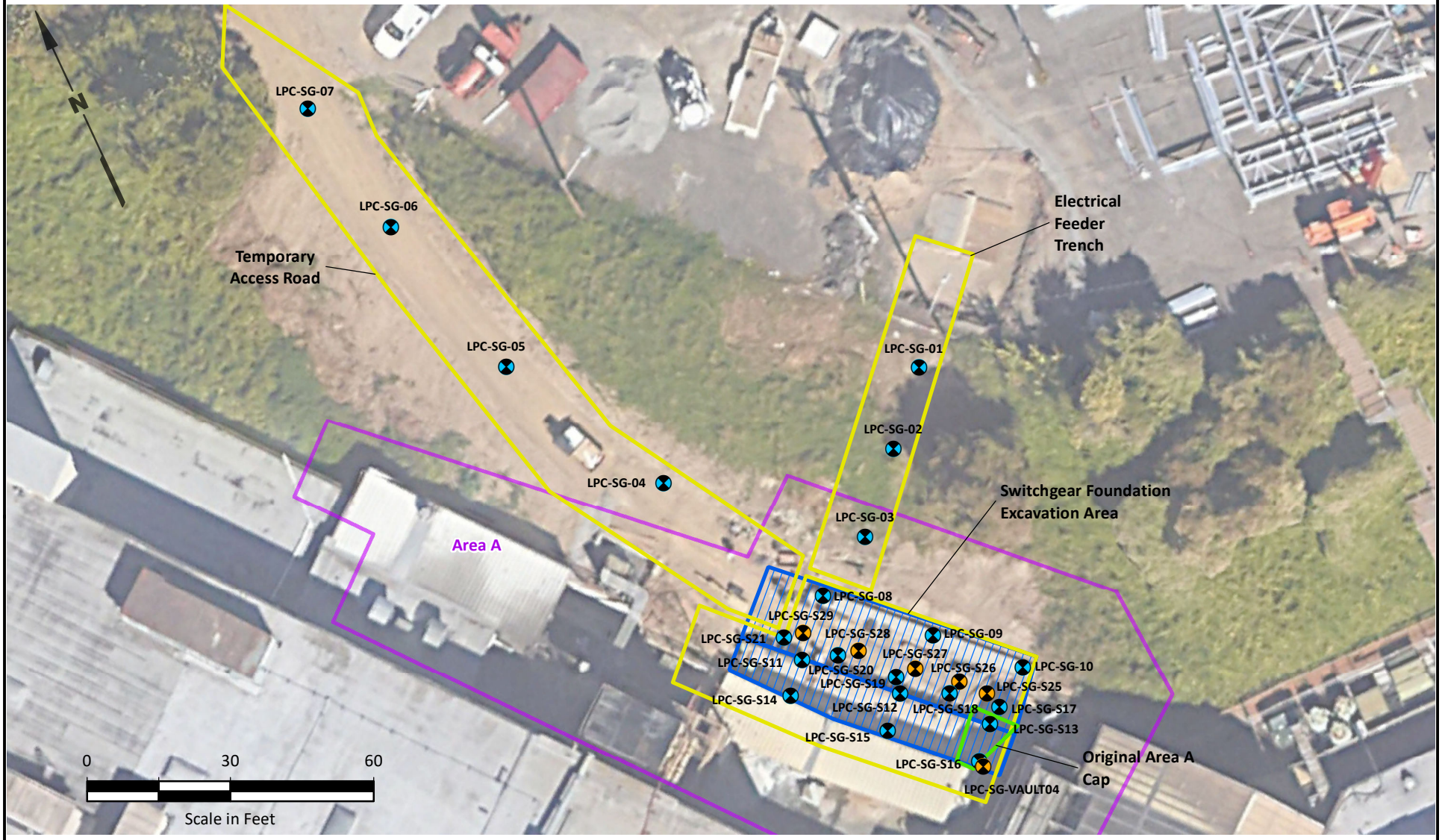
PCC Structurals, Inc. Large Parts Campus Portland, Oregon	**PCB Source Investigation Areas**	Figure 2

G:\Projects\883\002\040\046\TSCA Cleanup Report\F02 PCBSourceInvestigationAreas.mxd 12/10/2019

G:\Projects\883\002\040\046\TSCA Cleanup Report\F03 AreaASwitchgearProjectElements.mxd 12/30/2019 | JValluzzi



Legend

- Samples Removed
- Samples Left in Place
- Project Element Location
- Original Area A Cap
- Capped Area
- Area of Investigation

Notes

1. Composite Confirmation Samples collected from the Original Area A Cap include samples AA-C-1S, AA-C-2S, and AA-C-3S (shown on Table 1)
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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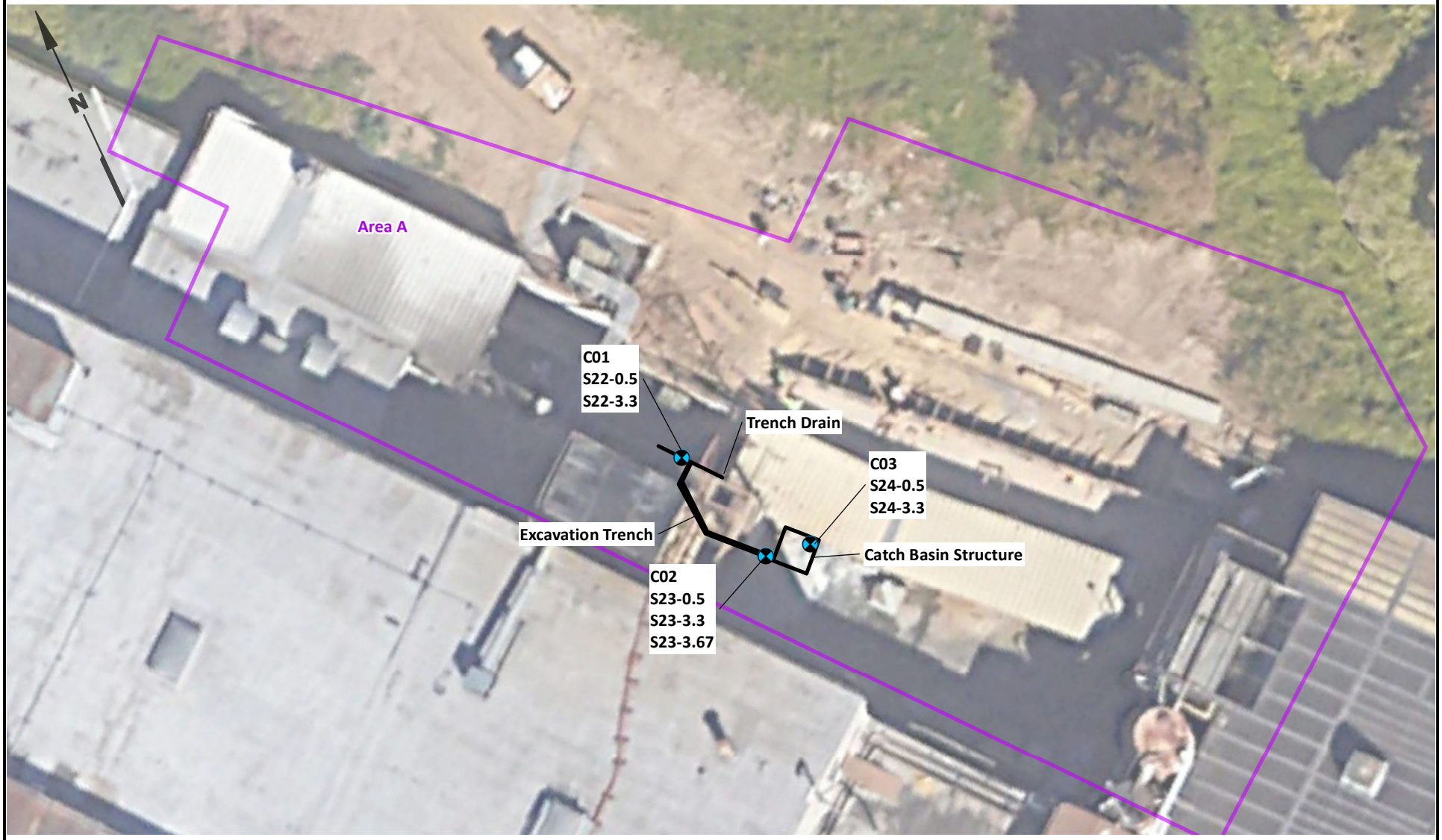
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Area A Switchgear Project Elements and Sample Locations

Figure 3

G:\Projects\883\002\040\046\TSCA Cleanup Report\F04 UreaWaxArea.mxd 12/30/2019 | JValluzzi



Legend

Sample Location

Area of Investigation

0 20 40

Scale in Feet

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Area A Urea / Wax Area Project Elements and Sample Locations

Figure 4

G:\Projects\883\002\040\046\TSCA Cleanup Report\F05 AreaBWestTransformerCapping.mxd 12/12/2019 | JValluzzi

Legend

Concrete Cloth Cap

Area of Investigation

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery

0 10 20

Scale in Feet

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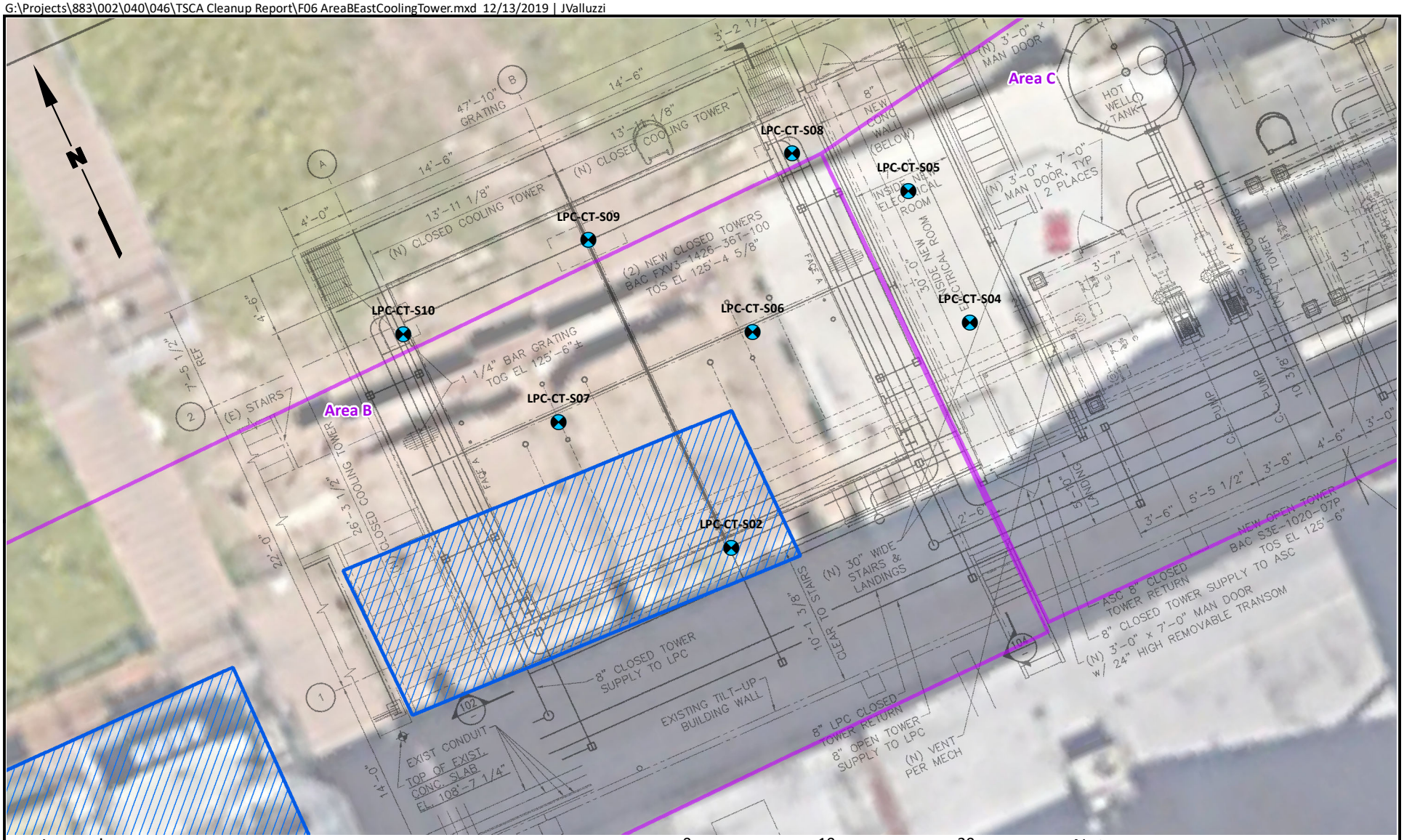
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Area B West
Transformer Capping

Figure
5

G:\Projects\883\002\040\046\TSCA Cleanup Report\F06 AreaBEastCoolingTower.mxd 12/13/2019 | JValluzzi



Legend

- Soil Sample Location
- Proposed Capped Area
- Area of Investigation
- Conceptual Cooling Tower Design Drawing Overlay

0 10 20

Scale in Feet

Data Source: Esri World Imagery

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

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PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Area B East Cooling Tower Project Elements and Sample Locations

Figure 6

Legend

- Area Requiring Deed Restriction
- Existing Ground Surface Contour

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery; USGS NED DEM 2009

0 100 200

Scale in Feet

LANDAU ASSOCIATES

PCC Structurals, Inc. Large Parts Campus Portland, Oregon	**Areas Requiring Deed Restriction**	Figure 7

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Legend

Capped Area

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery.

0 100 200

Scale in Feet

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PCC Structurals, Inc. Large Parts Campus Portland, Oregon	**PCB Cap Areas**	Figure 8

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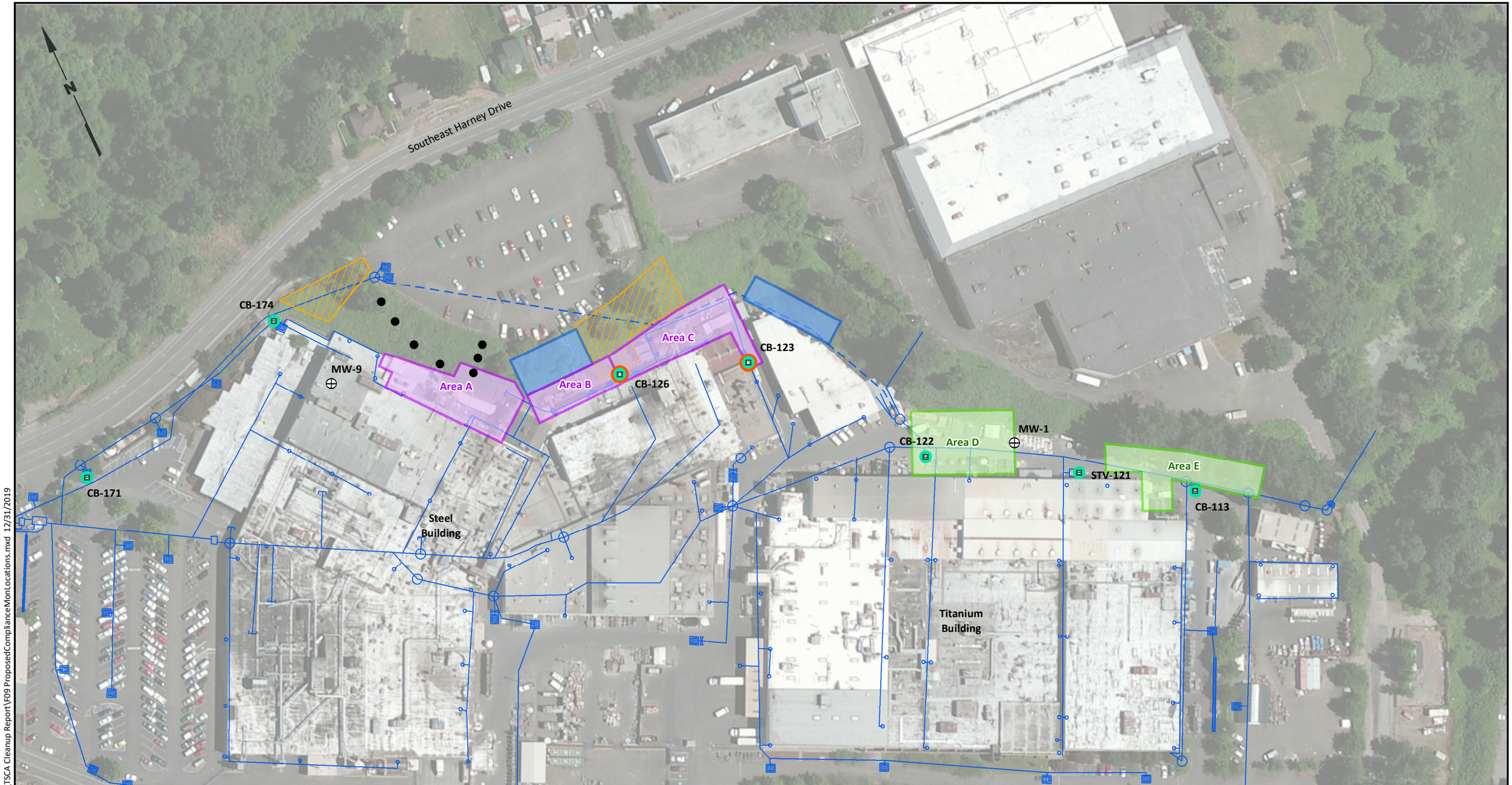

Legend

- Monitoring Wells Proposed for Data Gaps Sampling
- Soil Sample
- Catch Basin Solids Sampling Location, No PCBs detected October 2019
- Catch Basin Solids Sampling Location, Total PCBs detected October 2019 (less than 1ppm)
- DEQ ISM Soil Sampling Areas
- PCB Source Investigation Area (TSCA Cleanup not required)
- TSCA Investigation/Cleanup Areas
- Proposed Data Gaps Soil Investigation Area (Composite Sample)

0 120 240
Scale in Feet

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery.

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PCC Structurals, Inc. Large Parts Campus Portland, Oregon	**Proposed Compliance Monitoring Locations**	Figure 9

Table 1
Area A Switchgear Construction Area Total PCB Analytical Results
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Sample Location	Sample Depth (ft)	Excavation Status	Sample Date	Laboratory Sample ID	PCBs (SW-846 8082A; mg/kg)							
					Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
AA-C-1S	1	Removed	9/11/2017	A7I0398-01	0.507 U	0.507 U	0.507 U	0.507 U	0.507 U	**10.5**	0.507 U	**10.5**
AA-C-2S	2	Removed	9/11/2017	A7I0398-02	1.960 U	1.960 U	1.960 U	1.960 U	1.960 U	**40.6**	1.960 U	**40.6**
AA-C-3S	3.5		11/18/2017	A7K0753-01	1.45 U	1.45 U	1.45 U	1.45 U	1.45 U	**41.1**	1.45 U	**41.1**
LPC-SG-S01	0-2		6/19/2018	A8F0645-01	0.0282 U	0.0101 U	0.0413 U	0.0373 U	0.0393 U	0.14 U	0.16 U	0.16 U
LPC-SG-S02	0-2		6/19/2018	A8F0645-02	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	**0.0487 J**	**0.0818 J**	**0.1305 J**
LPC-SG-S03	0-2		6/19/2018	A8F0645-03	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	**0.0185 J**	**0.0258 J**	**0.0443 J**
LPC-SG-S04	0-1	Removed	6/19/2018	A8F0645-04	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	**0.163 J**	**0.152 J**	**0.315 J**
	3-4		6/19/2018	A8F0645-05	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U
LPC-SG-S05	0-1	Removed	6/19/2018	A8F0645-06	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	**0.115 J**	**0.107 J**	**0.222 J**
	3-4		6/19/2018	A8F0645-07	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U
LPC-SG-S06	0-1	Removed	6/19/2018	A8F0645-08	0.0109 U	0.0109 U	0.0109 U	0.0109 U	0.0109 U	**0.221 J**	**0.219 J**	**0.44 J**
	2.6-3.6		6/19/2018	A8F0645-09	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U	0.0106 U
LPC-SG-S07	0-1	Removed	6/19/2018	A8F0645-10	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U	**0.0268 J**	**0.0283 J**	**0.0551 J**
	3-4		6/19/2018	A8F0645-11	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	**0.0134 J**	**0.0134 J**
LPC-SG-S08	0-1	Removed	6/19/2018	A8F0645-12	0.0109 U	0.0109 U	0.0109 U	0.0109 U	0.0109 U	**0.0826 J**	**0.0857 J**	**0.1683 J**
LPC-SG-S09	0-1	Removed	6/19/2018	A8F0645-13	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	**0.282 J**	**0.298 J**	**0.58 J**
LPC-SG-S10	0-1	Removed	6/19/2018	A8F0645-14	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	**0.406 J**	**0.258 J**	**0.664 J**
LPC-SG-S11	0-1	Removed	6/19/2018	A8F0645-15	0.0107 U	0.0107 U	0.0107 U	0.0107 U	0.0107 U	**0.268 J**	**0.257 J**	**0.525 J**
	3-4	Removed	6/19/2018	A8F0645-16	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U
	5.7-6.7	Removed	6/19/2018	A8F0645-17	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U
LPC-SG-S12	0-1	Removed	6/19/2018	A8F0645-18	2.48 U	2.48 U	2.48 U	2.48 U	2.48 U	**80.2**	2.48 U	**80.2**
	3-4	Removed	6/19/2018	A8F0645-19	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	**0.245**	0.0118 U	**0.245**
	6-7	Removed	6/19/2018	A8F0645-20	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U	0.0112 U
LPC-SG-S13	0-1	Removed	6/19/2018	A8F0645-21	0.111 U	0.111 U	0.111 U	0.111 U	0.111 U	**2.92 J**	**0.456 J**	**3.376 J**
	3-4	Removed	6/19/2018	A8F0645-22	0.0108 U	0.0108 U	0.0108 U	0.0108 U	0.0108 U	**0.0327 J**	0.0108 U	**0.0327 J**
	5.3-6.3	Removed	6/19/2018	A8F0645-23	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	**0.0365**	0.0111 U	**0.0365**
LPC-SG-S14	0-1	Removed	6/19/2018	A8F0645-24	0.102 U	0.102 U	0.102 U	0.102 U	0.102 U	**2.74**	0.102 U	**2.74**
	4-5	Removed	6/19/2018	A8F0645-25	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	**0.0541**	0.0119 U	**0.0541**
	6-7	Removed	6/19/2018	A8F0645-26	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U
LPC-SG-S15	0-1	Removed	6/19/2018	A8F0645-27	4.68 U	4.68 U	4.68 U	4.68 U	4.68 U	**170**	4.68 U	**170**
	2-3	Removed	6/19/2018	A8F0645-28	0.0110 U	0.0110 U	0.0110 U	0.0110 U	0.0110 U	**0.107**	0.0110 U	**0.107**
	5.5-6.5	Removed	6/19/2018	A8F0645-29	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	**0.241**	0.0122 U	**0.241**

Table 1
Area A Switchgear Construction Area Total PCB Analytical Results
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Sample Location	Sample Depth (ft)	Excavation Status	Sample Date	Laboratory Sample ID	PCBs (SW-846 8082A; mg/kg)							
					Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
LPC-SG-S16	0-1	Removed	6/19/2018	A8F0645-30	38.1 U	38.1 U	38.1 U	38.1 U	38.1 U	**903**	38.1 U	**903**
	1.7-2.7	Removed	6/19/2018	A8F0645-31	0.0487 U	0.0487 U	0.0487 U	0.0487 U	0.0487 U	**0.868 J**	0.0487 U	**0.868 J**
	5.5-6.5	Removed	6/19/2018	A8F0645-32	0.0105 U	0.0105 U	0.0105 U	0.0105 U	0.0105 U	**0.157**	0.0105 U	**0.157**
LPC-SG-S17	1.5	Removed	8/16/2018	A8H0463-01	0.0952 U	0.0952 U	0.0952 U	0.0952 U	0.0952 U	**1.29**	0.0952 U	**1.29**
LPC-SG-S18	1.5	Removed	8/16/2018	A8H0463-02	9.05 U	9.05 U	9.05 U	9.05 U	9.05 U	**18.2**	9.05 U	**18.2**
LPC-SG-S19	1.5	Removed	8/16/2018	A8H0463-03	0.965 U	0.965 U	0.965 U	0.965 U	0.965 U	**44**	0.965 U	**44**
LPC-SG-S20	1.5	Removed	8/16/2018	A8H0463-04	5.09 U	5.09 U	5.09 U	5.09 U	5.09 U	**72.5**	5.09 U	**72.5**
LPC-SG-S21	1.5	Removed	8/16/2018	A8H0463-05	0.0989 U	0.0989 U	0.0989 U	0.0989 U	0.0989 U	**3.38**	0.0989 U	**3.38**
LPC-SG-S25	2.5		8/31/2018	A8H0920-01	0.0111 U	0.0111 U	0.0111 U	0.0111 U	0.0111 U	**0.0123 J**	0.0111 U	**0.0123 J**
LPC-SG-S26	2.5		8/31/2018	A8H0920-02	0.210 U	0.210 U	0.210 U	0.210 U	0.210 U	**13.2 J**	0.210 U	**13.2 J**
LPC-SG-S27	2.5		8/31/2018	A8H0920-03	0.0107 U	0.0107 U	0.0107 U	0.0107 U	0.0107 U	**0.0112 J**	0.0107 U	**0.0112 J**
LPC-SG-S28	2.5		8/31/2018	A8H0920-04	0.113 U	0.113 U	0.113 U	0.113 U	0.113 U	**3.6**	0.113 U	**3.6**
LPC-SG-S29	2.5		8/31/2018	A8H0920-05	0.203 U	0.203 U	0.203 U	0.203 U	0.203 U	**3.96**	0.203 U	**3.96**
LPC-SG-VAULT	0.5	Removed	8/16/2018	A8H0507-01	27.8 U	27.8 U	27.8 U	27.8 U	27.8 U	**482**	27.8 U	**482**
	1.5	Removed	8/16/2018	A8H0507-02	0.119 U	0.119 U	0.119 U	0.119 U	0.119 U	**2.75**	0.119 U	**2.75**
	3	Removed	8/16/2018	A8H0507-03	0.545 U	0.545 U	0.545 U	0.545 U	0.545 U	**31.3 J**	0.545 U	**31.3 J**
	3.5		8/31/2018	A8H0920-06	0.122 U	0.122 U	0.122 U	0.122 U	0.122 U	**1.49 J**	**0.829 J**	**2.319 J**

Notes:

Bold text indicates detected analyte

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Acronyms/Abbreviations:

ft = feet

ID = Identification

mg/kg = milligrams per kilogram

PCBs = polychlorinated biphenyls

Table 2
Area A Urea/Wax Area Total PCB Analytical Results
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Sample Location	Sample Depth (ft)	Excavation Status	Sample Date	Laboratory Sample ID	PCBs (mg/kg; SW-846 8082A)							
					Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
LPC-SG-C01		Removed	8/1/2018	A8H0244-02	0.0469 U	0.0469 U	0.0469 U	0.0469 U	0.0469 U	**0.24**	0.0469 U	**0.24**
LPC-SG-C02		Removed	8/1/2018	A8H0244-04	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	**53.9**	1.5 U	**53.9**
LPC-SG-C03		Removed	8/1/2018	A8H0244-06	0.0461 U	0.0461 U	0.0461 U	0.0461 U	0.0461 U	**1.5**	0.0461 U	**1.5**
LPC-SG-S22	0.5	Removed	8/1/2018	A8H0244-07	6.01 U	6.01 U	6.01 U	6.01 U	6.01 U	**125**	6.01 U	**125**
	3.3		8/1/2018	A8H0244-08	0.0131 U	0.0131 U	0.0131 U	0.0131 U	0.0131 U	**0.289 J**	**0.043 J**	**0.332**
LPC-SG-S23	0.5	Removed	8/1/2018	A8H0244-09	0.111 U	0.111 U	0.111 U	0.111 U	0.111 U	**2.08 J**	**0.657 J**	**2.737**
	3.3	Removed	8/1/2018	A8H0244-11	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	**0.898 J**	**0.199 J**	**1.097**
	3.67		7/11/2019	A9G0307-01	0.601 U	0.601 U	0.601 U	0.601 U	0.601 U	**9.93**	0.601 U	**9.93**
LPC-SG-S24	0.5	Removed	8/1/2018	A8H0244-10	0.0114 U	0.0114 U	0.0114 U	0.0114 U	0.0114 U	**0.417 J**	**0.123 J**	**0.54**
	3.3		8/1/2018	A8H0244-12	0.0137 U	0.0137 U	0.0137 U	0.0137 U	0.0137 U	**0.171 J**	**0.0195 J**	**0.1905**

Notes:

Bold text indicates detected analyte

U = The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Acronyms/Abbreviations:

ft = feet

ID = Identification

mg/kg = milligrams per kilogram

PCBs = polychlorinated biphenyls

Table 3
Area B East Cooling Tower Construction Area Total PCB Analytical Results
PCC Structurals, Inc.
Large Parts Campus
Portland, Oregon

Sample Location	Sample Depth (ft)	Excavation Status	Sample Date	Laboratory Sample ID	PCBs (SW-846 8082A; mg/kg)							
					Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs
LPC-CT-S01	6–7	Removed	2/2/2018	A8B0080-1	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U
LPC-CT-S02	0.5–2	Removed	2/2/2018	A8B0080-2	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	**0.0296 J**	0.0125 U	**0.0296 J**
	6–7	Removed	2/2/2018	A8B0080-3	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U
LPC-CT-S03	5.5–6.5	Removed	2/2/2018	A8B0080-4	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U
LPC-CT-S04	1–2	Removed	2/2/2018	A8B0080-5	0.0127 U	0.0127 U	0.0127 U	0.0127 U	0.0127 U	**0.0192 J**	0.0127 U	**0.0192 J**
	7.5–8.5	Removed	2/2/2018	A8B0080-6	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U
LPC-CT-S05	2.2–3.2	Removed	2/2/2018	A8B0080-7	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U
	4–5	Removed	2/2/2018	A8B0080-8	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U
	9–10	Removed	2/2/2018	A8B0080-9	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U
LPC-CT-S06	2–3	Removed	2/2/2018	A8B0080-10	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U
	8–9	Removed	2/2/2018	A8B0080-11	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U	0.0125 U
LPC-CT-S07	0.5–2	Removed	2/2/2018	A8B0080-12	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U	0.0122 U
	4–5	Removed	2/2/2018	A8B0080-13	0.0123 U	0.0123 U	0.0123 U	0.0123 U	0.0123 U	0.0123 U	0.0123 U	0.0123 U
	7.2–8.2	Removed	2/2/2018	A8B0080-14	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U	0.0113 U
LPC-CT-S08	2–3	Removed	2/2/2018	A8B0080-15	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U	0.0116 U
	6–7	Removed	2/2/2018	A8B0080-16	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U	0.0118 U
	11–12	Removed	2/2/2018	A8B0080-17	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U	0.0119 U
LPC-CT-S09	0.5–2	Removed	2/2/2018	A8B0080-18	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U
	4–5	Removed	2/2/2018	A8B0080-19	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U	0.0121 U
	6–7	Removed	2/2/2018	A8B0080-20	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U	0.0124 U
	11–12	Removed	2/2/2018	A8B0080-21	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U
LPC-CT-S10	1.5–2.5	Removed	2/2/2018	A8B0080-22	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U
	6–7	Removed	2/2/2018	A8B0080-23	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U	0.0117 U
	11–12	Removed	2/2/2018	A8B0080-24	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U	0.0115 U

Notes:

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J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Acronyms/Abbreviations:

ft = feet

ID = Identification

mg/kg = milligrams per kilogram

PCBs = polychlorinated biphenyls

APPENDIX A

Laboratory Data Packages for Confirmation Samples

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, October 2, 2017

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: PCC LPC / 883002.040.045

Enclosed are the results of analyses for work order A7I0398, which was received by the laboratory on 9/13/2017 at 11:08:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AA-C-1S-091117	A7I0398-01	Soil	09/11/17 09:40	09/13/17 11:08
AA-C-2S-091117	A7I0398-02	Soil	09/11/17 10:22	09/13/17 11:08

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL CASE NARRATIVE

Work Order: A7I0398

Amended Report Revision 1:

Additional Analysis-

This report supersedes all previous reports.

The final report has been amended to include additional PCBs by EPA8082 on sample AA-C-2S-091117 (A7I0398-02)

Kevin Friscia
Project Manager & Sample Control Supervisor
9/28/2017

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-1S-091117 (A7I0398-01RE1)			**Matrix: Soil**		**Batch: 7090711**			**C-07**
Aroclor 1016	ND	---	507	ug/kg dry	50	09/20/17 15:33	EPA 8082A	
Aroclor 1221	ND	---	507	"	"	"	"	
Aroclor 1232	ND	---	507	"	"	"	"	
Aroclor 1242	ND	---	507	"	"	"	"	
Aroclor 1248	ND	---	507	"	"	"	"	
Aroclor 1254	**10500**	---	507	"	"	"	"	
Aroclor 1260	ND	---	507	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 103 %*	*Limits: 72-126 %*	"	"	"	*S-05*
AA-C-2S-091117 (A7I0398-02RE1)			**Matrix: Soil**		**Batch: 7091069**			**C-07**
Aroclor 1016	ND	---	1960	ug/kg dry	200	09/28/17 10:46	EPA 8082A	
Aroclor 1221	ND	---	1960	"	"	"	"	
Aroclor 1232	ND	---	1960	"	"	"	"	
Aroclor 1242	ND	---	1960	"	"	"	"	
Aroclor 1248	ND	---	1960	"	"	"	"	
Aroclor 1254	**40600**	---	1960	"	"	"	"	
Aroclor 1260	ND	---	1960	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 118 %*	*Limits: 72-126 %*	"	"	"	*S-05*

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-1S-091117 (A7I0398-01)			**Matrix: Soil**		**Batch: 7090676**			
% Solids	**95.9**	---	1.00	% by Weight	1	09/18/17 07:52	EPA 8000C	
AA-C-2S-091117 (A7I0398-02)			**Matrix: Soil**		**Batch: 7091064**			
% Solids	**91.4**	---	1.00	% by Weight	1	09/28/17 11:28	EPA 8000C	

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7090711 - EPA 3546							**Soil**					
Blank (7090711-BLK1)					Prepared: 09/18/17 10:10		Analyzed: 09/18/17 17:13					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 112 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7090711-BS1)					Prepared: 09/18/17 10:10		Analyzed: 09/18/17 17:31					C-07, Q-18
EPA 8082A												
Aroclor 1016	187	---	10.0	ug/kg wet	1	250	---	75	47-134%	---	---	
Aroclor 1260	222	---	10.0	"	"	"	---	89	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 113 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7090711-DUP2)					Prepared: 09/18/17 10:10		Analyzed: 09/20/17 16:08					C-07
QC Source Sample: AA-C-1S-091117 (A7I0398-01RE1)												
EPA 8082A												
Aroclor 1016	ND	---	509	ug/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1254	**11200**	---	509	"	"	---	10500	---	---	6	30%	
Aroclor 1260	ND	---	509	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 72-126 %*			*Dilution: 50x*					*S-05*
Batch 7091069 - EPA 3546							**Soil**					
Blank (7091069-BLK1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:24					C-07
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	"	"	---	---	---	---	---	---	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7091069 - EPA 3546							**Soil**					
Blank (7091069-BLK1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:24					C-07
EPA 8082A												
Aroclor 1248	ND	---	8.33	ug/kg wet	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1262	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1268	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7091069-BS1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:41					C-07
EPA 8082A												
Aroclor 1016	195	---	10.0	ug/kg wet	1	250	---	78	47-134%	---	---	
Aroclor 1260	227	---	10.0	"	"	"	---	91	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 90 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7091069-DUP1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 10:10					C-07
QC Source Sample: AA-C-2S-091117 (A7I0398-02RE1)												
EPA 8082A												
Aroclor 1016	ND	---	1970	ug/kg dry	200	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1254	**35700**	---	1970	"	"	---	40600	---	---	13	30%	
Aroclor 1260	ND	---	1970	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 122 %*	*Limits: 72-126 %*			*Dilution: 200x*					*S-05*

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
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AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7090676 - Total Solids (Dry Weight)							**Soil**					
Batch 7091064 - Total Solids (Dry Weight)							**Soil**					
Duplicate (7091064-DUP1)					Prepared: 09/27/17 13:56 Analyzed: 09/28/17 11:28							
QC Source Sample: AA-C-2S-091117 (A7I0398-02)												
EPA 8000C												
% Solids	**92.3**	---	1.00	% by Weight	1	---	91.4	---	---	1	10%	

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AMENDED REPORT

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7090711							
A7I0398-01RE1	Soil	EPA 8082A	09/11/17 09:40	09/18/17 10:10	10.28g/5mL	10g/5mL	0.97
Batch: 7091069							
A7I0398-02RE1	Soil	EPA 8082A	09/11/17 10:22	09/27/17 14:53	11.16g/5mL	10g/5mL	0.90

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7090676							
A7I0398-01	Soil	EPA 8000C	09/11/17 09:40	09/15/17 16:57	1N/A/1N/A	1N/A/1N/A	NA
Batch: 7091064							
A7I0398-02	Soil	EPA 8000C	09/11/17 10:22	09/27/17 13:56	1N/A/1N/A	1N/A/1N/A	NA

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
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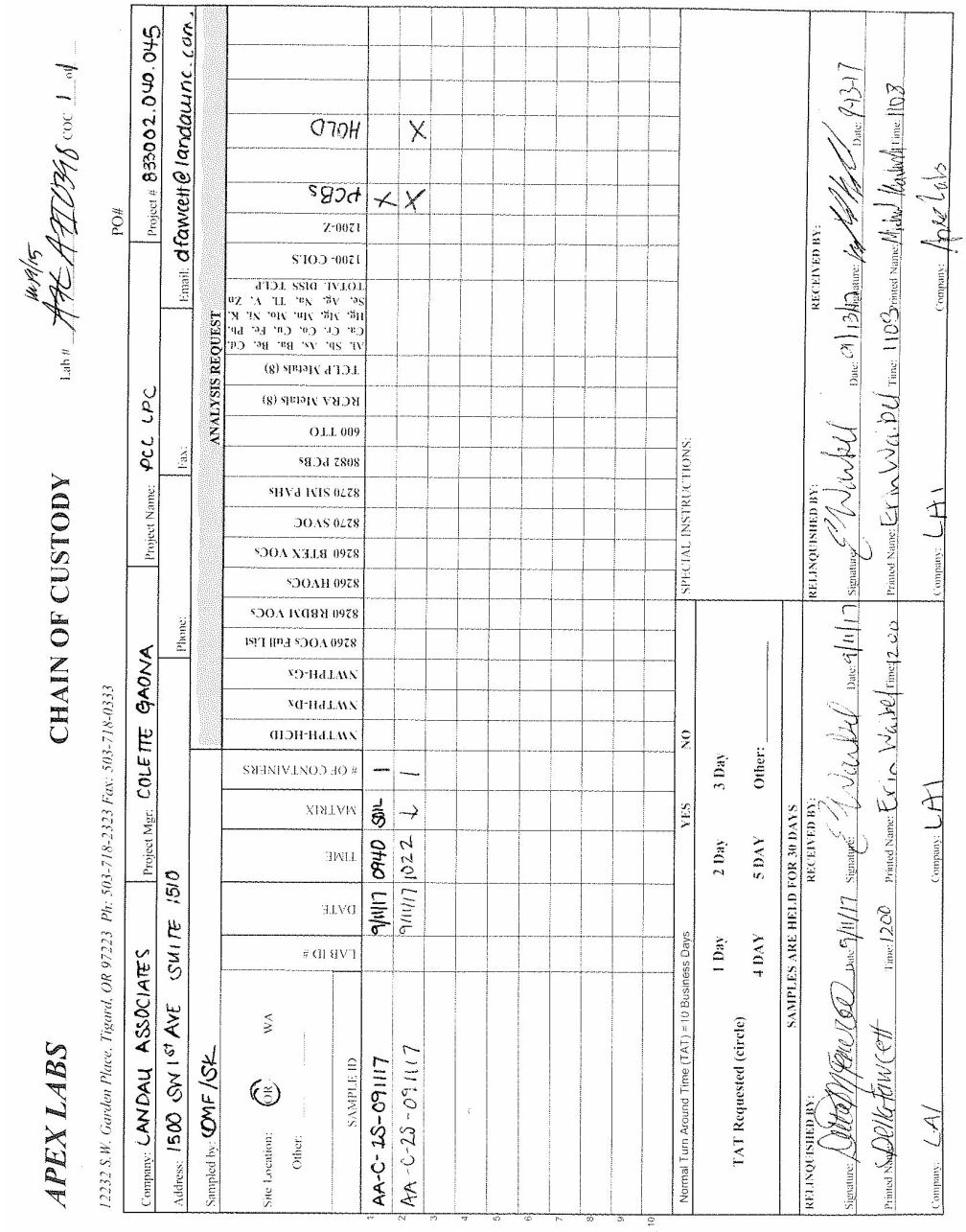
Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # AAC A7I0348 COC 1 of 1

PO#

Company: LANDAU ASSOCIATES | Project Mgr: COLETTE GAONA | Project Name: PCC LPC | Project # 833002.040.045

Address: 1500 SW 1st AVE SUITE 1510 | Phone: | Fax: | Email: dfawcett@landauinc.com

Sampled by: CMF/SK

Site Location: OR WA

Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z	PCBs	HOLD
1	AA-C-2S-091117		9/11/17	0940	SOIL	1																		
2	AA-C-2S-091117		9/11/17	1022	↓	1																		
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature: [signature] Date: 9/11/17 Printed Name: Colette Fawcett Time: 1200 Company: LA1

RECEIVED BY: Signature: E Waibel Date: 9/11/17 Printed Name: Erin Waibel Time: 1200 Company: LA1

RELINQUISHED BY: Signature: E Waibel Date: 9/13/17 Printed Name: Erin Waibel Time: 1103 Company: LA1

RECEIVED BY: Signature: [signature] Date: 9/13/17 Printed Name: Michael Kaufman Time: 1103 Company: Apex Labs

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A7 I0398

Project/Project #: PCC LPC / 883002.040.045

Delivery info:

Date/Time Received: 9-13-17 @ 1108 By: MM

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: MM : 9-13-17 @ 1358

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	–						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	2.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MM : 9/15/17 @ 11:47

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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Wednesday, December 6, 2017

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: PCC LPC / 883002.040.046

Enclosed are the results of analyses for work order A7K0753, which was received by the laboratory on 11/20/2017 at 2:20:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AA-C-35-111817	A7K0753-01	Soil	11/18/17 13:05	11/20/17 14:20

Apex Laboratories

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-35-111817 (A7K0753-01RE2)			**Matrix: Soil**		**Batch: 7120405**			**C-07**
Aroclor 1016	ND	---	1.45	mg/kg dry	500	12/05/17 11:19	EPA 8082A	
Aroclor 1221	ND	---	1.45	"	"	"	"	
Aroclor 1232	ND	---	1.45	"	"	"	"	
Aroclor 1242	ND	---	1.45	"	"	"	"	
Aroclor 1248	ND	---	1.45	"	"	"	"	
Aroclor 1254	**41.1**	---	1.45	"	"	"	"	
Aroclor 1260	ND	---	1.45	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: %*	*Limits: 44-120 %*	"	"	"	*S-01*

Apex Laboratories

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503-718-2323 Phone
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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-35-111817 (A7K0753-01)			**Matrix: Soil**		**Batch: 7111027**			
% Solids	**87.0**	---	1.00	% by Weight	1	11/27/17 07:38	EPA 8000C	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7120405 - EPA 3546							**Soil**					
Blank (7120405-BLK1)					Prepared: 12/04/17 18:20		Analyzed: 12/05/17 08:18					C-07
EPA 8082A												
Aroclor 1016	ND	---	0.00250	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.00250	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.00250	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.00250	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.00250	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.00250	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.00250	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 101 %*	*Limits: 44-120 %*			*Dilution: 1x*					
LCS (7120405-BS1)					Prepared: 12/04/17 18:20		Analyzed: 12/05/17 08:36					C-07, Q-18
EPA 8082A												
Aroclor 1016	0.185	---	0.00400	mg/kg wet	1	0.250	---	74	47-134%	---	---	
Aroclor 1260	0.230	---	0.00400	"	"	"	---	92	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 44-120 %*			*Dilution: 1x*					
Duplicate (7120405-DUP1)					Prepared: 12/04/17 18:20		Analyzed: 12/05/17 12:12					C-07
QC Source Sample: AA-C-35-111817 (A7K0753-01RE2)												
EPA 8082A												
Aroclor 1016	ND	---	1.45	mg/kg dry	500	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	1.45	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	1.45	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	1.45	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	1.45	"	"	---	ND	---	---	---	30%	
Aroclor 1254	**40.3**	---	1.45	"	"	---	41.1	---	---	2	30%	
Aroclor 1260	ND	---	1.45	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: %*	*Limits: 44-120 %*			*Dilution: 500x*					*S-01*

Apex Laboratories

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7111027 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7120405							
A7K0753-01RE2	Soil	EPA 8082A	11/18/17 13:05	12/04/17 18:20	15.84g/2mL	10g/2mL	0.63

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7111027							
A7K0753-01	Soil	EPA 8000C	11/18/17 13:05	11/22/17 17:46	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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Tigard, OR 97223
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503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

☐ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☒ Portland (503) 542-1080
☐ _____

LANDAU ASSOCIATES

Chain-of-Custody Record

AKL0753

Date 11/18/17
Page 1 of 1

Project Name PCC LPC
Project No. 883002.040.046
Project Location/Event PCC LPC PCB Cleanup
Sampler's Name Colette Gaona
Project Contact Colette Gaona
Send Results To Colette Gaona / Dani Jorgensen

Testing Parameters: PCBs 8082

Sample I.D.	Date	Time	Matrix	No. of Containers	PCBs 8082
AA-C-3S-111817	11/18/17	1305	Soil	1	X

Observations/Comments
X ~~Allow water samples to settle, collect aliquot from clear portion~~
X ~~NWTPH-Dx run acid/silica gel cleanup~~
___ run samples standardized to ___ product
___ Analyze for EPH if no specific product identified
VOC/BTEX/VPH (soil):
___ non-preserved
___ preserved w/methanol
___ preserved w/sodium bisulfate
___ Freeze upon receipt
___ Dissolved metal water samples field filtered
Other _____

Turnaround Time
☒ Standard
☐ Accelerated
☐ _____

Special Shipment/Handling or Storage Requirements

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature: [signature]	Signature: [signature]	Signature	Signature
Printed Name: Colette Gaona	Printed Name: Chris Palmer	Printed Name	Printed Name
Company: Landau Assoc.	Company: Apex Labs	Company	Company
Date 11/20/17 Time 1415	Date 11/20/17 Time 1420	Date ____ Time ____	Date ____ Time ____

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

Rev 8/09

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	12/06/17 13:22

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A7 K0753

Project/Project #: PCC LPC / 883002.040.046

Delivery info:

Date/Time Received: 11/20/17 @ 1420 By: CR

Delivered by: Apex ✓ Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CR : 11/20/17 @ 1455

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes ___ No ✓

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	3.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: [illegible] : 11/21/17 @ 11:25

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: [illegible] Witness: [illegible] Cooler Inspected by: CR See Project Contact Form: Y

Apex Labs

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503-718-2323 Phone
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Monday, February 19, 2018

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: PCC LPC Coolant / 883002.040.046

Enclosed are the results of analyses for work order A8B0080, which was received by the laboratory on 2/2/2018 at 3:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-CT-S01-7-020218	A8B0080-01	Soil	02/02/18 10:30	02/02/18 15:30
LPC-CT-S02-2-020218	A8B0080-02	Soil	02/02/18 10:35	02/02/18 15:30
LPC-CT-S02-7-020218	A8B0080-03	Soil	02/02/18 10:40	02/02/18 15:30
LPC-CT-S03-6.5-020218	A8B0080-04	Soil	02/02/18 10:55	02/02/18 15:30
LPC-CT-S04-2-020218	A8B0080-05	Soil	02/02/18 11:15	02/02/18 15:30
LPC-CT-S04-8.5-020218	A8B0080-06	Soil	02/02/18 11:30	02/02/18 15:30
LPC-CT-S05-3.2-020218	A8B0080-07	Soil	02/02/18 11:40	02/02/18 15:30
LPC-CT-S05-5-020218	A8B0080-08	Soil	02/02/18 11:50	02/02/18 15:30
LPC-CT-S05-10-020218	A8B0080-09	Soil	02/02/18 12:00	02/02/18 15:30
LPC-CT-S06-3-020218	A8B0080-10	Soil	02/02/18 12:10	02/02/18 15:30
LPC-CT-S06-9-020218	A8B0080-11	Soil	02/02/18 12:25	02/02/18 15:30
LPC-CT-S07-2-020218	A8B0080-12	Soil	02/02/18 12:30	02/02/18 15:30
LPC-CT-S07-5-020218	A8B0080-13	Soil	02/02/18 12:40	02/02/18 15:30
LPC-CT-S07-8.2-020218	A8B0080-14	Soil	02/02/18 12:45	02/02/18 15:30
LPC-CT-S08-3-020218	A8B0080-15	Soil	02/02/18 12:50	02/02/18 15:30
LPC-CT-S08-7-020218	A8B0080-16	Soil	02/02/18 12:55	02/02/18 15:30
LPC-CT-S08-12-020218	A8B0080-17	Soil	02/02/18 13:05	02/02/18 15:30
LPC-CT-S09-2-020218	A8B0080-18	Soil	02/02/18 13:25	02/02/18 15:30
LPC-CT-S09-5-020218	A8B0080-19	Soil	02/02/18 13:30	02/02/18 15:30
LPC-CT-S09-7-020218	A8B0080-20	Soil	02/02/18 13:35	02/02/18 15:30
LPC-CT-S09-12-020218	A8B0080-21	Soil	02/02/18 13:45	02/02/18 15:30
LPC-CT-S10-2.5-020218	A8B0080-22	Soil	02/02/18 13:55	02/02/18 15:30
LPC-CT-S10-7-020218	A8B0080-23	Soil	02/02/18 14:00	02/02/18 15:30
LPC-CT-S10-12-020218	A8B0080-24	Soil	02/02/18 14:10	02/02/18 15:30

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Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S01-7-020218 (A8B0080-01)			**Matrix: Soil**		**Batch: 8020633**			**C-07**
Aroclor 1016	ND	---	11.6	ug/kg dry	1	02/15/18 11:18	EPA 8082A	
Aroclor 1221	ND	---	11.6	"	"	"	"	
Aroclor 1232	ND	---	11.6	"	"	"	"	
Aroclor 1242	ND	---	11.6	"	"	"	"	
Aroclor 1248	ND	---	11.6	"	"	"	"	
Aroclor 1254	ND	---	11.6	"	"	"	"	
Aroclor 1260	ND	---	11.6	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S02-2-020218 (A8B0080-02RE2)			**Matrix: Soil**		**Batch: 8020581**			**C-07**
Aroclor 1016	ND	---	12.5	ug/kg dry	1	02/12/18 19:35	EPA 8082A	
Aroclor 1221	ND	---	12.5	"	"	"	"	
Aroclor 1232	ND	---	12.5	"	"	"	"	
Aroclor 1242	ND	---	12.5	"	"	"	"	
Aroclor 1248	ND	---	12.5	"	"	"	"	
Aroclor 1254	**29.6**	---	12.5	"	"	"	"	P-09
Aroclor 1260	ND	---	12.5	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 79 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S02-7-020218 (A8B0080-03RE2)			**Matrix: Soil**		**Batch: 8020581**			**C-07**
Aroclor 1016	ND	---	11.7	ug/kg dry	1	02/12/18 20:48	EPA 8082A	
Aroclor 1221	ND	---	11.7	"	"	"	"	
Aroclor 1232	ND	---	11.7	"	"	"	"	
Aroclor 1242	ND	---	11.7	"	"	"	"	
Aroclor 1248	ND	---	11.7	"	"	"	"	
Aroclor 1254	ND	---	11.7	"	"	"	"	
Aroclor 1260	ND	---	11.7	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 81 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S03-6.5-020218 (A8B0080-04)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Aroclor 1016	ND	---	12.4	ug/kg dry	1	02/07/18 16:28	EPA 8082A	
Aroclor 1221	ND	---	12.4	"	"	"	"	
Aroclor 1232	ND	---	12.4	"	"	"	"	
Aroclor 1242	ND	---	12.4	"	"	"	"	
Aroclor 1248	ND	---	12.4	"	"	"	"	
Aroclor 1254	ND	---	12.4	"	"	"	"	
Aroclor 1260	ND	---	12.4	"	"	"	"	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S03-6.5-020218 (A8B0080-04)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 76 %*	*Limits: 72-126 %*	1	"	EPA 8082A	
LPC-CT-S04-2-020218 (A8B0080-05)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Aroclor 1016	ND	---	12.7	ug/kg dry	1	02/07/18 17:04	EPA 8082A	
Aroclor 1221	ND	---	12.7	"	"	"	"	
Aroclor 1232	ND	---	12.7	"	"	"	"	
Aroclor 1242	ND	---	12.7	"	"	"	"	
Aroclor 1248	ND	---	12.7	"	"	"	"	
Aroclor 1254	**19.2**	---	12.7	"	"	"	"	P-09
Aroclor 1260	ND	---	12.7	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 79 %*	*Limits: 72-126 %*	"	"	"	
LPC-CT-S04-8.5-020218 (A8B0080-06)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Aroclor 1016	ND	---	11.7	ug/kg dry	1	02/07/18 17:39	EPA 8082A	
Aroclor 1221	ND	---	11.7	"	"	"	"	
Aroclor 1232	ND	---	11.7	"	"	"	"	
Aroclor 1242	ND	---	11.7	"	"	"	"	
Aroclor 1248	ND	---	11.7	"	"	"	"	
Aroclor 1254	ND	---	11.7	"	"	"	"	
Aroclor 1260	ND	---	11.7	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 72-126 %*	"	"	"	
LPC-CT-S05-3.2-020218 (A8B0080-07RE2)			**Matrix: Soil**		**Batch: 8020581**			**C-07**
Aroclor 1016	ND	---	12.2	ug/kg dry	1	02/12/18 21:24	EPA 8082A	
Aroclor 1221	ND	---	12.2	"	"	"	"	
Aroclor 1232	ND	---	12.2	"	"	"	"	
Aroclor 1242	ND	---	12.2	"	"	"	"	
Aroclor 1248	ND	---	12.2	"	"	"	"	
Aroclor 1254	ND	---	12.2	"	"	"	"	
Aroclor 1260	ND	---	12.2	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S05-5-020218 (A8B0080-08)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Aroclor 1016	ND	---	12.8	ug/kg dry	1	02/07/18 11:24	EPA 8082A	
Aroclor 1221	ND	---	12.8	"	"	"	"	
Aroclor 1232	ND	---	12.8	"	"	"	"	
Aroclor 1242	ND	---	12.8	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S05-5-020218 (A8B0080-08)			**Matrix: Soil**		**Batch: 8020420**			**C-07**
Aroclor 1248	ND	---	12.8	ug/kg dry	1	"	EPA 8082A	
Aroclor 1254	ND	---	12.8	"	"	"	"	
Aroclor 1260	ND	---	12.8	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 72-126 %*	"	"	"	
LPC-CT-S05-10-020218 (A8B0080-09)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	11.6	ug/kg dry	1	02/13/18 16:38	EPA 8082A	
Aroclor 1221	ND	---	11.6	"	"	"	"	
Aroclor 1232	ND	---	11.6	"	"	"	"	
Aroclor 1242	ND	---	11.6	"	"	"	"	
Aroclor 1248	ND	---	11.6	"	"	"	"	
Aroclor 1254	ND	---	11.6	"	"	"	"	
Aroclor 1260	ND	---	11.6	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S06-3-020218 (A8B0080-10)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	12.2	ug/kg dry	1	02/13/18 17:14	EPA 8082A	
Aroclor 1221	ND	---	12.2	"	"	"	"	
Aroclor 1232	ND	---	12.2	"	"	"	"	
Aroclor 1242	ND	---	12.2	"	"	"	"	
Aroclor 1248	ND	---	12.2	"	"	"	"	
Aroclor 1254	ND	---	12.2	"	"	"	"	
Aroclor 1260	ND	---	12.2	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 65 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S06-9-020218 (A8B0080-11)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	12.5	ug/kg dry	1	02/13/18 17:49	EPA 8082A	
Aroclor 1221	ND	---	12.5	"	"	"	"	
Aroclor 1232	ND	---	12.5	"	"	"	"	
Aroclor 1242	ND	---	12.5	"	"	"	"	
Aroclor 1248	ND	---	12.5	"	"	"	"	
Aroclor 1254	ND	---	12.5	"	"	"	"	
Aroclor 1260	ND	---	12.5	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 59 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	12.2	ug/kg dry	1	02/13/18 18:24	EPA 8082A	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1221	ND	---	12.2	ug/kg dry	1	"	EPA 8082A	
Aroclor 1232	ND	---	12.2	"	"	"	"	
Aroclor 1242	ND	---	12.2	"	"	"	"	
Aroclor 1248	ND	---	12.2	"	"	"	"	
Aroclor 1254	ND	---	12.2	"	"	"	"	
Aroclor 1260	ND	---	12.2	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S07-5-020218 (A8B0080-13)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	12.3	ug/kg dry	1	02/13/18 19:00	EPA 8082A	
Aroclor 1221	ND	---	12.3	"	"	"	"	
Aroclor 1232	ND	---	12.3	"	"	"	"	
Aroclor 1242	ND	---	12.3	"	"	"	"	
Aroclor 1248	ND	---	12.3	"	"	"	"	
Aroclor 1254	ND	---	12.3	"	"	"	"	
Aroclor 1260	ND	---	12.3	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	11.3	ug/kg dry	1	02/13/18 19:35	EPA 8082A	
Aroclor 1221	ND	---	11.3	"	"	"	"	
Aroclor 1232	ND	---	11.3	"	"	"	"	
Aroclor 1242	ND	---	11.3	"	"	"	"	
Aroclor 1248	ND	---	11.3	"	"	"	"	
Aroclor 1254	ND	---	11.3	"	"	"	"	
Aroclor 1260	ND	---	11.3	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S08-3-020218 (A8B0080-15)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Aroclor 1016	ND	---	11.6	ug/kg dry	1	02/13/18 20:11	EPA 8082A	
Aroclor 1221	ND	---	11.6	"	"	"	"	
Aroclor 1232	ND	---	11.6	"	"	"	"	
Aroclor 1242	ND	---	11.6	"	"	"	"	
Aroclor 1248	ND	---	11.6	"	"	"	"	
Aroclor 1254	ND	---	11.6	"	"	"	"	
Aroclor 1260	ND	---	11.6	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S08-3-020218 (A8B0080-15)			**Matrix: Soil**		**Batch: 8020462**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 68 %*	*Limits: 53-120 %*	1	"	EPA 8082A	
LPC-CT-S08-7-020218 (A8B0080-16)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	11.8	ug/kg dry	1	02/13/18 21:21	EPA 8082A	
Aroclor 1221	ND	---	11.8	"	"	"	"	
Aroclor 1232	ND	---	11.8	"	"	"	"	
Aroclor 1242	ND	---	11.8	"	"	"	"	
Aroclor 1248	ND	---	11.8	"	"	"	"	
Aroclor 1254	ND	---	11.8	"	"	"	"	
Aroclor 1260	ND	---	11.8	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 67 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S08-12-020218 (A8B0080-17)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	11.9	ug/kg dry	1	02/13/18 21:57	EPA 8082A	
Aroclor 1221	ND	---	11.9	"	"	"	"	
Aroclor 1232	ND	---	11.9	"	"	"	"	
Aroclor 1242	ND	---	11.9	"	"	"	"	
Aroclor 1248	ND	---	11.9	"	"	"	"	
Aroclor 1254	ND	---	11.9	"	"	"	"	
Aroclor 1260	ND	---	11.9	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 69 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	12.1	ug/kg dry	1	02/13/18 22:32	EPA 8082A	
Aroclor 1221	ND	---	12.1	"	"	"	"	
Aroclor 1232	ND	---	12.1	"	"	"	"	
Aroclor 1242	ND	---	12.1	"	"	"	"	
Aroclor 1248	ND	---	12.1	"	"	"	"	
Aroclor 1254	ND	---	12.1	"	"	"	"	
Aroclor 1260	ND	---	12.1	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 62 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	12.1	ug/kg dry	1	02/13/18 23:08	EPA 8082A	
Aroclor 1221	ND	---	12.1	"	"	"	"	
Aroclor 1232	ND	---	12.1	"	"	"	"	
Aroclor 1242	ND	---	12.1	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1248	ND	---	12.1	ug/kg dry	1	"	EPA 8082A	
Aroclor 1254	ND	---	12.1	"	"	"	"	
Aroclor 1260	ND	---	12.1	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 65 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S09-7-020218 (A8B0080-20)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	12.4	ug/kg dry	1	02/13/18 23:43	EPA 8082A	
Aroclor 1221	ND	---	12.4	"	"	"	"	
Aroclor 1232	ND	---	12.4	"	"	"	"	
Aroclor 1242	ND	---	12.4	"	"	"	"	
Aroclor 1248	ND	---	12.4	"	"	"	"	
Aroclor 1254	ND	---	12.4	"	"	"	"	
Aroclor 1260	ND	---	12.4	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 71 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	11.5	ug/kg dry	1	02/14/18 00:19	EPA 8082A	
Aroclor 1221	ND	---	11.5	"	"	"	"	
Aroclor 1232	ND	---	11.5	"	"	"	"	
Aroclor 1242	ND	---	11.5	"	"	"	"	
Aroclor 1248	ND	---	11.5	"	"	"	"	
Aroclor 1254	ND	---	11.5	"	"	"	"	
Aroclor 1260	ND	---	11.5	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S10-2.5-020218 (A8B0080-22)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	12.8	ug/kg dry	1	02/14/18 00:54	EPA 8082A	
Aroclor 1221	ND	---	12.8	"	"	"	"	
Aroclor 1232	ND	---	12.8	"	"	"	"	
Aroclor 1242	ND	---	12.8	"	"	"	"	
Aroclor 1248	ND	---	12.8	"	"	"	"	
Aroclor 1254	ND	---	12.8	"	"	"	"	
Aroclor 1260	ND	---	12.8	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 67 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S10-7-020218 (A8B0080-23)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	11.7	ug/kg dry	1	02/13/18 11:51	EPA 8082A	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S10-7-020218 (A8B0080-23)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1221	ND	---	11.7	ug/kg dry	1	"	EPA 8082A	
Aroclor 1232	ND	---	11.7	"	"	"	"	
Aroclor 1242	ND	---	11.7	"	"	"	"	
Aroclor 1248	ND	---	11.7	"	"	"	"	
Aroclor 1254	ND	---	11.7	"	"	"	"	
Aroclor 1260	ND	---	11.7	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 83 %*	*Limits: 53-120 %*	"	"	"	
LPC-CT-S10-12-020218 (A8B0080-24)			**Matrix: Soil**		**Batch: 8020508**			**C-07**
Aroclor 1016	ND	---	11.5	ug/kg dry	1	02/13/18 12:27	EPA 8082A	
Aroclor 1221	ND	---	11.5	"	"	"	"	
Aroclor 1232	ND	---	11.5	"	"	"	"	
Aroclor 1242	ND	---	11.5	"	"	"	"	
Aroclor 1248	ND	---	11.5	"	"	"	"	
Aroclor 1254	ND	---	11.5	"	"	"	"	
Aroclor 1260	ND	---	11.5	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 71 %*	*Limits: 53-120 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S02-2-020218 (A8B0080-02)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	12.6	ug/kg dry	1	02/06/18 18:11	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.6	"	"	"	"	
Anthracene	ND	---	12.6	"	"	"	"	
Benz(a)anthracene	ND	---	12.6	"	"	"	"	
Benzo(a)pyrene	ND	---	12.6	"	"	"	"	
Benzo(b)fluoranthene	ND	---	12.6	"	"	"	"	
Benzo(k)fluoranthene	ND	---	12.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	12.6	"	"	"	"	
Chrysene	ND	---	12.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	12.6	"	"	"	"	
Dibenzofuran	ND	---	12.6	"	"	"	"	
Fluoranthene	ND	---	12.6	"	"	"	"	
Fluorene	ND	---	12.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	12.6	"	"	"	"	
1-Methylnaphthalene	ND	---	12.6	"	"	"	"	
2-Methylnaphthalene	ND	---	12.6	"	"	"	"	
Naphthalene	ND	---	12.6	"	"	"	"	
Phenanthrene	ND	---	12.6	"	"	"	"	
Pyrene	ND	---	12.6	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 67 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*82 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S02-7-020218 (A8B0080-03)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	11.8	ug/kg dry	1	02/06/18 18:38	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.8	"	"	"	"	
Anthracene	ND	---	11.8	"	"	"	"	
Benz(a)anthracene	ND	---	11.8	"	"	"	"	
Benzo(a)pyrene	ND	---	11.8	"	"	"	"	
Benzo(b)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(k)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.8	"	"	"	"	
Chrysene	ND	---	11.8	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	11.8	"	"	"	"	
Dibenzofuran	ND	---	11.8	"	"	"	"	
Fluoranthene	ND	---	11.8	"	"	"	"	
Fluorene	ND	---	11.8	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.8	"	"	"	"	
1-Methylnaphthalene	ND	---	11.8	"	"	"	"	
2-Methylnaphthalene	ND	---	11.8	"	"	"	"	
Naphthalene	ND	---	11.8	"	"	"	"	
Phenanthrene	ND	---	11.8	"	"	"	"	
Pyrene	ND	---	11.8	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*82 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	12.3	ug/kg dry	1	02/06/18 19:04	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.3	"	"	"	"	
Anthracene	ND	---	12.3	"	"	"	"	
Benz(a)anthracene	ND	---	12.3	"	"	"	"	
Benzo(a)pyrene	ND	---	12.3	"	"	"	"	
Benzo(b)fluoranthene	ND	---	12.3	"	"	"	"	
Benzo(k)fluoranthene	ND	---	12.3	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	12.3	"	"	"	"	
Chrysene	ND	---	12.3	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	12.3	"	"	"	"	
Dibenzofuran	ND	---	12.3	"	"	"	"	
Fluoranthene	ND	---	12.3	"	"	"	"	
Fluorene	ND	---	12.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	12.3	"	"	"	"	
1-Methylnaphthalene	ND	---	12.3	"	"	"	"	
2-Methylnaphthalene	ND	---	12.3	"	"	"	"	
Naphthalene	ND	---	12.3	"	"	"	"	
Phenanthrene	ND	---	12.3	"	"	"	"	
Pyrene	ND	---	12.3	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*80 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-5-020218 (A8B0080-13)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	12.3	ug/kg dry	1	02/06/18 19:30	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.3	"	"	"	"	
Anthracene	ND	---	12.3	"	"	"	"	
Benz(a)anthracene	ND	---	12.3	"	"	"	"	
Benzo(a)pyrene	ND	---	12.3	"	"	"	"	
Benzo(b)fluoranthene	ND	---	12.3	"	"	"	"	
Benzo(k)fluoranthene	ND	---	12.3	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	12.3	"	"	"	"	
Chrysene	ND	---	12.3	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	12.3	"	"	"	"	
Dibenzofuran	ND	---	12.3	"	"	"	"	
Fluoranthene	ND	---	12.3	"	"	"	"	
Fluorene	ND	---	12.3	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	12.3	"	"	"	"	
1-Methylnaphthalene	ND	---	12.3	"	"	"	"	
2-Methylnaphthalene	ND	---	12.3	"	"	"	"	
Naphthalene	ND	---	12.3	"	"	"	"	
Phenanthrene	ND	---	12.3	"	"	"	"	
Pyrene	ND	---	12.3	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 81 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*90 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	11.8	ug/kg dry	1	02/06/18 19:57	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.8	"	"	"	"	
Anthracene	ND	---	11.8	"	"	"	"	
Benz(a)anthracene	ND	---	11.8	"	"	"	"	
Benzo(a)pyrene	ND	---	11.8	"	"	"	"	
Benzo(b)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(k)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.8	"	"	"	"	
Chrysene	ND	---	11.8	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	11.8	"	"	"	"	
Dibenzofuran	ND	---	11.8	"	"	"	"	
Fluoranthene	ND	---	11.8	"	"	"	"	
Fluorene	ND	---	11.8	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.8	"	"	"	"	
1-Methylnaphthalene	ND	---	11.8	"	"	"	"	
2-Methylnaphthalene	ND	---	11.8	"	"	"	"	
Naphthalene	ND	---	11.8	"	"	"	"	
Phenanthrene	ND	---	11.8	"	"	"	"	
Pyrene	ND	---	11.8	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*87 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	11.6	ug/kg dry	1	02/06/18 20:23	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.6	"	"	"	"	
Anthracene	ND	---	11.6	"	"	"	"	
Benz(a)anthracene	ND	---	11.6	"	"	"	"	
Benzo(a)pyrene	ND	---	11.6	"	"	"	"	
Benzo(b)fluoranthene	ND	---	11.6	"	"	"	"	
Benzo(k)fluoranthene	ND	---	11.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.6	"	"	"	"	
Chrysene	ND	---	11.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	11.6	"	"	"	"	
Dibenzofuran	ND	---	11.6	"	"	"	"	
Fluoranthene	ND	---	11.6	"	"	"	"	
Fluorene	ND	---	11.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.6	"	"	"	"	
1-Methylnaphthalene	ND	---	11.6	"	"	"	"	
2-Methylnaphthalene	ND	---	11.6	"	"	"	"	
Naphthalene	ND	---	11.6	"	"	"	"	
Phenanthrene	ND	---	11.6	"	"	"	"	
Pyrene	ND	---	11.6	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 72 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*86 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	10.6	ug/kg dry	1	02/06/18 20:50	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.6	"	"	"	"	
Anthracene	ND	---	10.6	"	"	"	"	
Benz(a)anthracene	ND	---	10.6	"	"	"	"	
Benzo(a)pyrene	ND	---	10.6	"	"	"	"	
Benzo(b)fluoranthene	ND	---	10.6	"	"	"	"	
Benzo(k)fluoranthene	ND	---	10.6	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	10.6	"	"	"	"	
Chrysene	ND	---	10.6	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	10.6	"	"	"	"	
Dibenzofuran	ND	---	10.6	"	"	"	"	
Fluoranthene	ND	---	10.6	"	"	"	"	
Fluorene	ND	---	10.6	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	10.6	"	"	"	"	
1-Methylnaphthalene	ND	---	10.6	"	"	"	"	
2-Methylnaphthalene	ND	---	10.6	"	"	"	"	
Naphthalene	ND	---	10.6	"	"	"	"	
Phenanthrene	ND	---	10.6	"	"	"	"	
Pyrene	ND	---	10.6	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 76 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*86 %*	*Limits: 54-127 %*	"	"	"	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-7-020218 (A8B0080-20)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	11.8	ug/kg dry	1	02/06/18 21:16	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.8	"	"	"	"	
Anthracene	ND	---	11.8	"	"	"	"	
Benz(a)anthracene	ND	---	11.8	"	"	"	"	
Benzo(a)pyrene	ND	---	11.8	"	"	"	"	
Benzo(b)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(k)fluoranthene	ND	---	11.8	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.8	"	"	"	"	
Chrysene	ND	---	11.8	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	11.8	"	"	"	"	
Dibenzofuran	ND	---	11.8	"	"	"	"	
Fluoranthene	ND	---	11.8	"	"	"	"	
Fluorene	ND	---	11.8	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.8	"	"	"	"	
1-Methylnaphthalene	ND	---	11.8	"	"	"	"	
2-Methylnaphthalene	ND	---	11.8	"	"	"	"	
Naphthalene	ND	---	11.8	"	"	"	"	
Phenanthrene	ND	---	11.8	"	"	"	"	
Pyrene	ND	---	11.8	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*88 %*	*Limits: 54-127 %*	"	"	"	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**		**Batch: 8020405**			
Acenaphthene	ND	---	11.5	ug/kg dry	1	02/06/18 21:42	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.5	"	"	"	"	
Anthracene	ND	---	11.5	"	"	"	"	
Benz(a)anthracene	ND	---	11.5	"	"	"	"	
Benzo(a)pyrene	ND	---	11.5	"	"	"	"	
Benzo(b)fluoranthene	ND	---	11.5	"	"	"	"	
Benzo(k)fluoranthene	ND	---	11.5	"	"	"	"	
Benzo(g,h,i)perylene	ND	---	11.5	"	"	"	"	
Chrysene	ND	---	11.5	"	"	"	"	
Dibenz(a,h)anthracene	ND	---	11.5	"	"	"	"	
Dibenzofuran	ND	---	11.5	"	"	"	"	
Fluoranthene	ND	---	11.5	"	"	"	"	
Fluorene	ND	---	11.5	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	---	11.5	"	"	"	"	
1-Methylnaphthalene	ND	---	11.5	"	"	"	"	
2-Methylnaphthalene	ND	---	11.5	"	"	"	"	
Naphthalene	ND	---	11.5	"	"	"	"	
Phenanthrene	ND	---	11.5	"	"	"	"	
Pyrene	ND	---	11.5	"	"	"	"	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 83 %*	*Limits: 44-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*88 %*	*Limits: 54-127 %*	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S02-2-020218 (A8B0080-02)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.34	mg/kg dry	10	02/14/18 22:52	EPA 6020A	
Arsenic	**4.29**	---	1.34	"	"	"	"	
Beryllium	**0.668**	---	0.267	"	"	"	"	
Cadmium	**0.401**	---	0.267	"	"	"	"	
Chromium	**32.5**	---	1.34	"	"	"	"	
Cobalt	**12.7**	---	0.267	"	"	"	"	
Copper	**26.4**	---	1.34	"	"	"	"	
Lead	**8.95**	---	0.267	"	"	"	"	
Mercury	ND	---	0.107	"	"	"	"	
Nickel	**30.0**	---	1.34	"	"	"	"	
Selenium	ND	---	1.34	"	"	"	"	
Silver	ND	---	0.267	"	"	"	"	
Thallium	ND	---	0.267	"	"	"	"	
Zinc	**75.0**	---	5.34	"	"	"	"	
LPC-CT-S02-7-020218 (A8B0080-03)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.33	mg/kg dry	10	02/14/18 22:55	EPA 6020A	
Arsenic	**22.8**	---	1.33	"	"	"	"	
Beryllium	**0.546**	---	0.266	"	"	"	"	
Cadmium	**0.759**	---	0.266	"	"	"	"	
Chromium	**14.9**	---	1.33	"	"	"	"	
Cobalt	**47.3**	---	0.266	"	"	"	"	
Copper	**24.5**	---	1.33	"	"	"	"	
Lead	**7.92**	---	0.266	"	"	"	"	
Mercury	ND	---	0.107	"	"	"	"	
Nickel	**21.8**	---	1.33	"	"	"	"	
Selenium	ND	---	1.33	"	"	"	"	
Silver	ND	---	0.266	"	"	"	"	
Thallium	ND	---	0.266	"	"	"	"	
Zinc	**64.1**	---	5.33	"	"	"	"	
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.28	mg/kg dry	10	02/14/18 22:59	EPA 6020A	
Arsenic	**1.87**	---	1.28	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**					
Beryllium	**0.332**	---	0.256	mg/kg dry	10	"	EPA 6020A	
Cadmium	ND	---	0.256	"	"	"	"	
Chromium	**20.0**	---	1.28	"	"	"	"	
Cobalt	**9.54**	---	0.256	"	"	"	"	
Copper	**7.82**	---	1.28	"	"	"	"	
Lead	**7.67**	---	0.256	"	"	"	"	
Mercury	ND	---	0.102	"	"	"	"	
Nickel	**35.5**	---	1.28	"	"	"	"	
Selenium	ND	---	1.28	"	"	"	"	
Silver	ND	---	0.256	"	"	"	"	
Thallium	ND	---	0.256	"	"	"	"	
Zinc	**31.8**	---	5.11	"	"	"	"	
LPC-CT-S07-5-020218 (A8B0080-13)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.22	mg/kg dry	10	02/14/18 23:02	EPA 6020A	
Arsenic	**2.40**	---	1.22	"	"	"	"	
Beryllium	**0.487**	---	0.243	"	"	"	"	
Cadmium	**0.243**	---	0.243	"	"	"	"	
Chromium	**27.1**	---	1.22	"	"	"	"	
Cobalt	**6.45**	---	0.243	"	"	"	"	
Copper	**11.9**	---	1.22	"	"	"	"	
Lead	**7.48**	---	0.243	"	"	"	"	
Mercury	ND	---	0.0973	"	"	"	"	
Nickel	**19.0**	---	1.22	"	"	"	"	
Selenium	ND	---	1.22	"	"	"	"	
Silver	ND	---	0.243	"	"	"	"	
Thallium	ND	---	0.243	"	"	"	"	
Zinc	**50.1**	---	4.87	"	"	"	"	
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.35	mg/kg dry	10	02/14/18 23:06	EPA 6020A	
Arsenic	**3.93**	---	1.35	"	"	"	"	
Beryllium	**0.606**	---	0.269	"	"	"	"	
Cadmium	**0.363**	---	0.269	"	"	"	"	
Chromium	**16.7**	---	1.35	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**					
Cobalt	**12.9**	---	0.269	mg/kg dry	10	"	EPA 6020A	
Copper	**27.4**	---	1.35	"	"	"	"	
Lead	**4.25**	---	0.269	"	"	"	"	
Mercury	ND	---	0.108	"	"	"	"	
Nickel	**17.6**	---	1.35	"	"	"	"	
Selenium	ND	---	1.35	"	"	"	"	
Silver	ND	---	0.269	"	"	"	"	
Thallium	ND	---	0.269	"	"	"	"	
Zinc	**50.5**	---	5.38	"	"	"	"	
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.38	mg/kg dry	10	02/14/18 23:09	EPA 6020A	
Arsenic	**3.95**	---	1.38	"	"	"	"	
Beryllium	**0.592**	---	0.276	"	"	"	"	
Cadmium	ND	---	0.276	"	"	"	"	
Chromium	**29.4**	---	1.38	"	"	"	"	
Cobalt	**8.24**	---	0.276	"	"	"	"	
Copper	**11.4**	---	1.38	"	"	"	"	
Lead	**8.09**	---	0.276	"	"	"	"	
Mercury	ND	---	0.110	"	"	"	"	
Nickel	**15.7**	---	1.38	"	"	"	"	
Selenium	ND	---	1.38	"	"	"	"	
Silver	ND	---	0.276	"	"	"	"	
Thallium	ND	---	0.276	"	"	"	"	
Zinc	**43.4**	---	5.51	"	"	"	"	
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.26	mg/kg dry	10	02/14/18 23:13	EPA 6020A	
Arsenic	**6.76**	---	1.26	"	"	"	"	
Beryllium	**0.704**	---	0.251	"	"	"	"	
Cadmium	**0.264**	---	0.251	"	"	"	"	
Chromium	**35.7**	---	1.26	"	"	"	"	
Cobalt	**10.3**	---	0.251	"	"	"	"	
Copper	**16.8**	---	1.26	"	"	"	"	
Lead	**8.23**	---	0.251	"	"	"	"	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**					
Mercury	ND	---	0.101	mg/kg dry	10	"	EPA 6020A	
Nickel	**18.6**	---	1.26	"	"	"	"	
Selenium	ND	---	1.26	"	"	"	"	
Silver	ND	---	0.251	"	"	"	"	
Thallium	ND	---	0.251	"	"	"	"	
Zinc	**58.9**	---	5.03	"	"	"	"	
LPC-CT-S09-7-020218 (A8B0080-20)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.30	mg/kg dry	10	02/14/18 23:17	EPA 6020A	
Arsenic	**4.28**	---	1.30	"	"	"	"	
Beryllium	**0.584**	---	0.260	"	"	"	"	
Cadmium	**0.454**	---	0.260	"	"	"	"	
Chromium	**30.0**	---	1.30	"	"	"	"	
Cobalt	**13.2**	---	0.260	"	"	"	"	
Copper	**25.0**	---	1.30	"	"	"	"	
Lead	**8.10**	---	0.260	"	"	"	"	
Mercury	ND	---	0.104	"	"	"	"	
Nickel	**15.4**	---	1.30	"	"	"	"	
Selenium	ND	---	1.30	"	"	"	"	
Silver	ND	---	0.260	"	"	"	"	
Thallium	ND	---	0.260	"	"	"	"	
Zinc	**84.2**	---	5.19	"	"	"	"	
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**					
Batch: 8020678								
Antimony	ND	---	1.26	mg/kg dry	10	02/14/18 23:20	EPA 6020A	
Arsenic	**3.85**	---	1.26	"	"	"	"	
Beryllium	**0.490**	---	0.251	"	"	"	"	
Cadmium	**0.364**	---	0.251	"	"	"	"	
Chromium	**20.3**	---	1.26	"	"	"	"	
Cobalt	**9.67**	---	0.251	"	"	"	"	
Copper	**23.3**	---	1.26	"	"	"	"	
Lead	**4.85**	---	0.251	"	"	"	"	
Mercury	ND	---	0.100	"	"	"	"	
Nickel	**12.7**	---	1.26	"	"	"	"	
Selenium	ND	---	1.26	"	"	"	"	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**					
Silver	ND	---	0.251	mg/kg dry	10	"	EPA 6020A	
Thallium	ND	---	0.251	"	"	"	"	
Zinc	**58.8**	---	5.02	"	"	"	"	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S01-7-020218 (A8B0080-01)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:22	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S02-2-020218 (A8B0080-02)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:26	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S02-7-020218 (A8B0080-03)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:29	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S03-6.5-020218 (A8B0080-04)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:33	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	

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Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S03-6.5-020218 (A8B0080-04)			**Matrix: Soil**					
Lead	ND	---	0.0500	mg/L	5	"	1311/6020A	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S04-2-020218 (A8B0080-05)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:47	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S04-8.5-020218 (A8B0080-06)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:51	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S05-3.2-020218 (A8B0080-07)			**Matrix: Soil**					
Batch: 8020625								
Arsenic	ND	---	0.100	mg/L	5	02/13/18 21:54	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S05-5-020218 (A8B0080-08)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 20:47	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S05-10-020218 (A8B0080-09)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 20:50	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S06-3-020218 (A8B0080-10)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 20:54	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	**0.126**	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S06-9-020218 (A8B0080-11)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:08	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S06-9-020218 (A8B0080-11)			**Matrix: Soil**					
Lead	ND	---	0.0500	mg/L	5	"	1311/6020A	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:12	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S07-5-020218 (A8B0080-13)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:15	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:19	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S08-3-020218 (A8B0080-15)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:23	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S08-7-020218 (A8B0080-16)			**Matrix: Soil**					
Batch: 8020661								
Arsenic	ND	---	0.100	mg/L	5	02/14/18 21:26	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S08-12-020218 (A8B0080-17)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:36	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:41	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**					
Lead	ND	---	0.0500	mg/L	5	"	1311/6020A	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:45	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	**0.139**	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S09-7-020218 (A8B0080-20)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:50	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:54	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S10-2.5-020218 (A8B0080-22)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 18:59	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	**0.120**	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S10-7-020218 (A8B0080-23)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 19:04	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	
LPC-CT-S10-12-020218 (A8B0080-24)			**Matrix: Soil**					
Batch: 8020707								
Arsenic	ND	---	0.100	mg/L	5	02/15/18 19:08	1311/6020A	
Barium	ND	---	0.500	"	"	"	"	
Cadmium	ND	---	0.0500	"	"	"	"	
Chromium	ND	---	0.100	"	"	"	"	
Lead	ND	---	0.0500	"	"	"	"	
Mercury	ND	---	0.00400	"	"	"	"	
Selenium	ND	---	0.100	"	"	"	"	
Silver	ND	---	0.0500	"	"	"	"	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S01-7-020218 (A8B0080-01)			**Matrix: Soil**		**Batch: 8020637**			
% Solids	**80.8**	---	1.00	% by Weight	1	02/14/18 08:17	EPA 8000C	
LPC-CT-S02-2-020218 (A8B0080-02)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**75.2**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S02-7-020218 (A8B0080-03)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**80.6**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S03-6.5-020218 (A8B0080-04)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.9**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S04-2-020218 (A8B0080-05)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**76.3**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S04-8.5-020218 (A8B0080-06)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**78.7**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S05-3.2-020218 (A8B0080-07)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**78.8**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S05-5-020218 (A8B0080-08)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**76.9**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S05-10-020218 (A8B0080-09)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.1**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S06-3-020218 (A8B0080-10)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**76.8**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S06-9-020218 (A8B0080-11)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**75.7**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S07-2-020218 (A8B0080-12)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**80.8**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S07-5-020218 (A8B0080-13)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.7**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S07-8.2-020218 (A8B0080-14)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**80.8**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S08-3-020218 (A8B0080-15)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**77.6**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S08-7-020218 (A8B0080-16)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.6**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	

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Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LPC-CT-S08-12-020218 (A8B0080-17)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**82.2**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S09-2-020218 (A8B0080-18)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**78.1**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S09-5-020218 (A8B0080-19)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.7**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S09-7-020218 (A8B0080-20)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**78.4**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S09-12-020218 (A8B0080-21)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**81.4**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S10-2.5-020218 (A8B0080-22)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**75.4**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S10-7-020218 (A8B0080-23)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**80.2**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	
LPC-CT-S10-12-020218 (A8B0080-24)			**Matrix: Soil**		**Batch: 8020386**			
% Solids	**79.4**	---	1.00	% by Weight	1	02/06/18 08:33	EPA 8000C	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020420 - EPA 3546							**Soil**					
Blank (8020420-BLK1)					Prepared: 02/06/18 09:37		Analyzed: 02/07/18 09:02					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 81 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (8020420-BS1)					Prepared: 02/06/18 09:37		Analyzed: 02/07/18 09:20					C-07
EPA 8082A												
Aroclor 1016	202	---	10.0	ug/kg wet	1	250	---	81	47-134%	---	---	
Aroclor 1260	205	---	10.0	"	"	"	---	82	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Matrix Spike (8020420-MS1)					Prepared: 02/06/18 09:37		Analyzed: 02/07/18 12:00					C-07
QC Source Sample: LPC-CT-S05-5-020218 (A8B0080-08)												
EPA 8082A												
Aroclor 1016	229	---	12.7	ug/kg dry	1	318	ND	72	47-134%	---	---	
Aroclor 1260	233	---	12.7	"	"	"	ND	73	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020462 - EPA 3546							**Soil**					
Blank (8020462-BLK2)					Prepared: 02/07/18 09:12		Analyzed: 02/12/18 08:37					C-07
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 87 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (8020462-BS2)					Prepared: 02/07/18 09:12		Analyzed: 02/12/18 08:55					C-07
EPA 8082A												
Aroclor 1016	192	---	10.0	ug/kg wet	1	250	---	77	47-134%	---	---	
Aroclor 1260	196	---	10.0	"	"	"	---	78	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020508 - EPA 3546							**Soil**					
Blank (8020508-BLK1)					Prepared: 02/08/18 09:12		Analyzed: 02/08/18 15:11					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 89 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (8020508-BS1)					Prepared: 02/08/18 09:12		Analyzed: 02/08/18 15:28					C-07
EPA 8082A												
Aroclor 1016	204	---	10.0	ug/kg wet	1	250	---	82	47-134%	---	---	
Aroclor 1260	208	---	10.0	"	"	"	---	83	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 88 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020581 - EPA 3546							**Soil**					
Blank (8020581-BLK1)					Prepared: 02/12/18 09:09		Analyzed: 02/12/18 17:10					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 97 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (8020581-BS1)					Prepared: 02/12/18 09:09		Analyzed: 02/12/18 17:28					C-07
EPA 8082A												
Aroclor 1016	160	---	10.0	ug/kg wet	1	250	---	64	47-134%	---	---	
Aroclor 1260	212	---	10.0	"	"	"	---	85	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 97 %*	*Limits: 72-126 %*			*Dilution: 1x*					

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020633 - EPA 3546							**Soil**					
Blank (8020633-BLK1)					Prepared: 02/13/18 11:28		Analyzed: 02/15/18 10:42					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 91 %*	*Limits: 53-120 %*			*Dilution: 1x*					
LCS (8020633-BS1)					Prepared: 02/13/18 11:28		Analyzed: 02/15/18 11:00					C-07
EPA 8082A												
Aroclor 1016	181	---	10.0	ug/kg wet	1	250	---	72	47-134%	---	---	
Aroclor 1260	195	---	10.0	"	"	"	---	78	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 92 %*	*Limits: 53-120 %*			*Dilution: 1x*					
Matrix Spike (8020633-MS1)					Prepared: 02/13/18 11:28		Analyzed: 02/15/18 11:55					C-07
QC Source Sample: LPC-CT-S01-7-020218 (A8B0080-01)												
EPA 8082A												
Aroclor 1016	210	---	11.7	ug/kg dry	1	292	ND	72	47-134%	---	---	
Aroclor 1260	209	---	11.7	"	"	"	ND	72	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 81 %*	*Limits: 53-120 %*			*Dilution: 1x*					

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020405 - EPA 3546							**Soil**					
Blank (8020405-BLK1)					Prepared: 02/05/18 16:58 Analyzed: 02/06/18 12:26							
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	"	"	---	---	---	---	---	---	
Anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	"	"	---	---	---	---	---	---	
Chrysene	ND	---	8.33	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	"	"	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	"	"	---	---	---	---	---	---	
Fluorene	ND	---	8.33	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
Naphthalene	ND	---	8.33	"	"	---	---	---	---	---	---	
Phenanthrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Pyrene	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 97 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*103 %*	*54-127 %*			*"*					
LCS (8020405-BS1)					Prepared: 02/05/18 16:58 Analyzed: 02/06/18 12:53							
EPA 8270D (SIM)												
Acenaphthene	734	---	10.0	ug/kg wet	1	800	---	92	40-122%	---	---	
Acenaphthylene	675	---	10.0	"	"	"	---	84	32-132%	---	---	
Anthracene	724	---	10.0	"	"	"	---	90	47-123%	---	---	
Benz(a)anthracene	715	---	10.0	"	"	"	---	89	49-126%	---	---	
Benzo(a)pyrene	724	---	10.0	"	"	"	---	90	45-129%	---	---	
Benzo(b)fluoranthene	747	---	10.0	"	"	"	---	93	45-132%	---	---	
Benzo(k)fluoranthene	752	---	10.0	"	"	"	---	94	47-132%	---	---	
Benzo(g,h,i)perylene	812	---	10.0	"	"	"	---	102	43-134%	---	---	
Chrysene	786	---	10.0	"	"	"	---	98	50-124%	---	---	
Dibenz(a,h)anthracene	806	---	10.0	"	"	"	---	101	45-134%	---	---	
Dibenzofuran	695	---	10.0	"	"	"	---	87	44-120%	---	---	

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1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020405 - EPA 3546							**Soil**					
LCS (8020405-BS1)						Prepared: 02/05/18 16:58	Analyzed: 02/06/18 12:53					
EPA 8270D (SIM)												
Fluoranthene	721	---	10.0	ug/kg wet	"	"	---	90	50-127%	---	---	
Fluorene	694	---	10.0	"	"	"	---	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	766	---	10.0	"	"	"	---	96	45-133%	---	---	
1-Methylnaphthalene	723	---	10.0	"	"	"	---	90	40-120%	---	---	
2-Methylnaphthalene	691	---	10.0	"	"	"	---	86	38-122%	---	---	
Naphthalene	704	---	10.0	"	"	"	---	88	35-123%	---	---	
Phenanthrene	738	---	10.0	"	"	"	---	92	50-121%	---	---	
Pyrene	739	---	10.0	"	"	"	---	92	47-127%	---	---	

Surr: 2-Fluorobiphenyl (Surr) *Recovery: 91 %* *Limits: 44-120 %* *Dilution: 1x*
p-Terphenyl-d14 (Surr) *92 %* *54-127 %* *"*

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020678 - EPA 3051A							**Soil**					
Blank (8020678-BLK1)					Prepared: 02/14/18 12:44		Analyzed: 02/14/18 21:37					
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.192	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.192	"	"	---	---	---	---	---	---	
Chromium	ND	---	0.962	"	"	---	---	---	---	---	---	
Cobalt	ND	---	0.192	"	"	---	---	---	---	---	---	
Copper	ND	---	0.962	"	"	---	---	---	---	---	---	
Lead	ND	---	0.192	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0769	"	"	---	---	---	---	---	---	
Nickel	ND	---	0.962	"	"	---	---	---	---	---	---	
Selenium	ND	---	0.962	"	"	---	---	---	---	---	---	
Silver	ND	---	0.192	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.192	"	"	---	---	---	---	---	---	
Zinc	ND	---	3.85	"	"	---	---	---	---	---	---	
LCS (8020678-BS1)					Prepared: 02/14/18 12:44		Analyzed: 02/14/18 21:44					
EPA 6020A												
Antimony	23.3	---	1.00	mg/kg wet	10	25.0	---	93	80-120%	---	---	
Arsenic	48.6	---	1.00	"	"	50.0	---	97	"	---	---	
Beryllium	24.8	---	0.200	"	"	25.0	---	99	"	---	---	
Cadmium	48.9	---	0.200	"	"	50.0	---	98	"	---	---	
Chromium	49.9	---	1.00	"	"	"	---	100	"	---	---	
Cobalt	50.1	---	0.200	"	"	"	---	100	"	---	---	
Copper	50.8	---	1.00	"	"	"	---	102	"	---	---	
Lead	50.5	---	0.200	"	"	"	---	101	"	---	---	
Mercury	0.977	---	0.0800	"	"	1.00	---	98	"	---	---	
Nickel	49.4	---	1.00	"	"	50.0	---	99	"	---	---	
Selenium	25.6	---	1.00	"	"	25.0	---	102	"	---	---	
Silver	25.3	---	0.200	"	"	"	---	101	"	---	---	
Thallium	24.5	---	0.200	"	"	"	---	98	"	---	---	
Zinc	48.5	---	4.00	"	"	50.0	---	97	"	---	---	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020625 - EPA 1311/3015							**Soil**					
Blank (8020625-BLK1)					Prepared: 02/13/18 10:03		Analyzed: 02/13/18 18:58					
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLP
Barium	ND	---	0.500	"	"	---	---	---	---	---	---	TCLP
Cadmium	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLP
Chromium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLP
Lead	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLP
Mercury	ND	---	0.00400	"	"	---	---	---	---	---	---	TCLP
Selenium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLP
Silver	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLP
LCS (8020625-BS1)					Prepared: 02/13/18 10:03		Analyzed: 02/13/18 19:02					
1311/6020A												
Arsenic	2.65	---	0.100	mg/L	5	2.50	---	106	80-120%	---	---	TCLP
Barium	2.62	---	0.500	"	"	"	---	105	"	---	---	TCLP
Cadmium	2.71	---	0.0500	"	"	"	---	108	"	---	---	TCLP
Chromium	2.68	---	0.100	"	"	"	---	107	"	---	---	TCLP
Lead	2.67	---	0.0500	"	"	"	---	107	"	---	---	TCLP
Mercury	0.0528	---	0.00400	"	"	0.0500	---	106	"	---	---	TCLP
Selenium	2.70	---	0.100	"	"	2.50	---	108	"	---	---	TCLP
Silver	1.33	---	0.0500	"	"	1.25	---	107	"	---	---	TCLP
Matrix Spike (8020625-MS2)					Prepared: 02/13/18 10:03		Analyzed: 02/13/18 21:58					
QC Source Sample: LPC-CT-S05-3.2-020218 (A8B0080-07)												
1311/6020A												
Arsenic	2.50	---	0.100	mg/L	5	2.50	ND	100	50-150%	---	---	
Barium	2.69	---	0.500	"	"	"	ND	107	"	---	---	
Cadmium	2.49	---	0.0500	"	"	"	ND	100	"	---	---	
Chromium	2.51	---	0.100	"	"	"	ND	100	"	---	---	
Lead	2.47	---	0.0500	"	"	"	ND	99	"	---	---	
Mercury	0.0483	---	0.00400	"	"	0.0500	ND	97	"	---	---	
Selenium	2.50	---	0.100	"	"	2.50	ND	100	"	---	---	
Silver	1.23	---	0.0500	"	"	1.25	ND	99	"	---	---	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020661 - EPA 1311/3015							**Soil**					
Blank (8020661-BLK1)					Prepared: 02/14/18 09:07		Analyzed: 02/14/18 20:36					
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLPa
Barium	ND	---	0.500	"	"	---	---	---	---	---	---	TCLPa
Cadmium	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPa
Chromium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLPa
Lead	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPa
Mercury	ND	---	0.00400	"	"	---	---	---	---	---	---	TCLPa
Selenium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLPa
Silver	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPa
LCS (8020661-BS1)					Prepared: 02/14/18 09:07		Analyzed: 02/14/18 20:39					
1311/6020A												
Arsenic	2.58	---	0.100	mg/L	5	2.50	---	103	80-120%	---	---	TCLPa
Barium	2.47	---	0.500	"	"	"	---	99	"	---	---	TCLPa
Cadmium	2.64	---	0.0500	"	"	"	---	106	"	---	---	TCLPa
Chromium	2.54	---	0.100	"	"	"	---	102	"	---	---	TCLPa
Lead	2.59	---	0.0500	"	"	"	---	104	"	---	---	TCLPa
Mercury	0.0511	---	0.00400	"	"	0.0500	---	102	"	---	---	TCLPa
Selenium	2.57	---	0.100	"	"	2.50	---	103	"	---	---	TCLPa
Silver	1.26	---	0.0500	"	"	1.25	---	101	"	---	---	TCLPa
Matrix Spike (8020661-MS1)					Prepared: 02/14/18 09:07		Analyzed: 02/14/18 21:30					
QC Source Sample: LPC-CT-S08-7-020218 (A8B0080-16)												
1311/6020A												
Arsenic	2.64	---	0.100	mg/L	5	2.50	ND	106	50-150%	---	---	
Barium	2.86	---	0.500	"	"	"	ND	114	"	---	---	
Cadmium	2.68	---	0.0500	"	"	"	ND	107	"	---	---	
Chromium	2.66	---	0.100	"	"	"	0.0570	104	"	---	---	
Lead	2.63	---	0.0500	"	"	"	ND	105	"	---	---	
Mercury	0.0513	---	0.00400	"	"	0.0500	ND	103	"	---	---	
Selenium	2.60	---	0.100	"	"	2.50	ND	104	"	---	---	
Silver	1.32	---	0.0500	"	"	1.25	ND	105	"	---	---	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020707 - EPA 1311/3015							**Soil**					
Blank (8020707-BLK1)					Prepared: 02/15/18 09:02		Analyzed: 02/15/18 18:03					
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLPb
Barium	ND	---	0.500	"	"	---	---	---	---	---	---	TCLPb
Cadmium	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPb
Chromium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLPb
Lead	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPb
Mercury	ND	---	0.00400	"	"	---	---	---	---	---	---	TCLPb
Selenium	ND	---	0.100	"	"	---	---	---	---	---	---	TCLPb
Silver	ND	---	0.0500	"	"	---	---	---	---	---	---	TCLPb
LCS (8020707-BS1)					Prepared: 02/15/18 09:02		Analyzed: 02/15/18 18:17					
1311/6020A												
Arsenic	2.57	---	0.100	mg/L	5	2.50	---	103	80-120%	---	---	TCLPb
Barium	2.53	---	0.500	"	"	"	---	101	"	---	---	TCLPb
Cadmium	2.68	---	0.0500	"	"	"	---	107	"	---	---	TCLPb
Chromium	2.48	---	0.100	"	"	"	---	99	"	---	---	TCLPb
Lead	2.62	---	0.0500	"	"	"	---	105	"	---	---	TCLPb
Mercury	0.0488	---	0.00400	"	"	0.0500	---	98	"	---	---	TCLPb
Selenium	2.57	---	0.100	"	"	2.50	---	103	"	---	---	TCLPb
Silver	1.27	---	0.0500	"	"	1.25	---	102	"	---	---	TCLPb
Matrix Spike (8020707-MS1)					Prepared: 02/15/18 09:02		Analyzed: 02/15/18 19:13					
QC Source Sample: LPC-CT-S10-12-020218 (A8B0080-24)												
1311/6020A												
Arsenic	2.59	---	0.100	mg/L	5	2.50	ND	104	50-150%	---	---	
Barium	2.63	---	0.500	"	"	"	ND	105	"	---	---	
Cadmium	2.62	---	0.0500	"	"	"	ND	105	"	---	---	
Chromium	2.53	---	0.100	"	"	"	ND	101	"	---	---	
Lead	2.62	---	0.0500	"	"	"	0.0368	103	"	---	---	
Mercury	0.0484	---	0.00400	"	"	0.0500	ND	97	"	---	---	
Selenium	2.50	---	0.100	"	"	2.50	ND	100	"	---	---	
Silver	1.25	---	0.0500	"	"	1.25	ND	100	"	---	---	

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020386 - Total Solids (Dry Weight)							**Soil**					
Duplicate (8020386-DUP5)					Prepared: 02/05/18 14:58		Analyzed: 02/06/18 08:33					
QC Source Sample: LPC-CT-S02-2-020218 (A8B0080-02)												
EPA 8000C												
% Solids	**75.5**	---	1.00	% by Weight	1	---	75.2	---	---	0.4	10%	
Duplicate (8020386-DUP6)					Prepared: 02/05/18 14:58		Analyzed: 02/06/18 08:33					
QC Source Sample: LPC-CT-S07-2-020218 (A8B0080-12)												
EPA 8000C												
% Solids	**80.8**	---	1.00	% by Weight	1	---	80.8	---	---	0.04	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8020637 - Total Solids (Dry Weight)							**Soil**					
Duplicate (8020637-DUP1)					Prepared: 02/13/18 13:03		Analyzed: 02/14/18 08:17					
QC Source Sample: LPC-CT-S01-7-020218 (A8B0080-01)												
EPA 8000C												
% Solids	**81.0**	---	1.00	% by Weight	1	---	80.8	---	---	0.2	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020420							
A8B0080-04	Soil	EPA 8082A	02/02/18 10:55	02/06/18 09:40	10.06g/5mL	10g/5mL	0.99
A8B0080-05	Soil	EPA 8082A	02/02/18 11:15	02/06/18 09:40	10.35g/5mL	10g/5mL	0.97
A8B0080-06	Soil	EPA 8082A	02/02/18 11:30	02/06/18 09:40	10.87g/5mL	10g/5mL	0.92
A8B0080-08	Soil	EPA 8082A	02/02/18 11:50	02/06/18 09:40	10.17g/5mL	10g/5mL	0.98
Batch: 8020462							
A8B0080-09	Soil	EPA 8082A	02/02/18 12:00	02/07/18 09:13	10.88g/5mL	10g/5mL	0.92
A8B0080-10	Soil	EPA 8082A	02/02/18 12:10	02/07/18 09:13	10.71g/5mL	10g/5mL	0.93
A8B0080-11	Soil	EPA 8082A	02/02/18 12:25	02/07/18 09:13	10.58g/5mL	10g/5mL	0.95
A8B0080-12	Soil	EPA 8082A	02/02/18 12:30	02/07/18 09:13	10.12g/5mL	10g/5mL	0.99
A8B0080-13	Soil	EPA 8082A	02/02/18 12:40	02/07/18 09:13	10.19g/5mL	10g/5mL	0.98
A8B0080-14	Soil	EPA 8082A	02/02/18 12:45	02/07/18 09:13	10.98g/5mL	10g/5mL	0.91
A8B0080-15	Soil	EPA 8082A	02/02/18 12:50	02/07/18 09:17	11.1g/5mL	10g/5mL	0.90
Batch: 8020508							
A8B0080-16	Soil	EPA 8082A	02/02/18 12:55	02/08/18 09:13	10.68g/5mL	10g/5mL	0.94
A8B0080-17	Soil	EPA 8082A	02/02/18 13:05	02/08/18 09:13	10.26g/5mL	10g/5mL	0.98
A8B0080-18	Soil	EPA 8082A	02/02/18 13:25	02/08/18 09:13	10.6g/5mL	10g/5mL	0.94
A8B0080-19	Soil	EPA 8082A	02/02/18 13:30	02/08/18 09:13	10.37g/5mL	10g/5mL	0.96
A8B0080-20	Soil	EPA 8082A	02/02/18 13:35	02/08/18 09:13	10.27g/5mL	10g/5mL	0.97
A8B0080-21	Soil	EPA 8082A	02/02/18 13:45	02/08/18 09:13	10.71g/5mL	10g/5mL	0.93
A8B0080-22	Soil	EPA 8082A	02/02/18 13:55	02/08/18 09:13	10.35g/5mL	10g/5mL	0.97
A8B0080-23	Soil	EPA 8082A	02/02/18 14:00	02/08/18 09:13	10.66g/5mL	10g/5mL	0.94
A8B0080-24	Soil	EPA 8082A	02/02/18 14:10	02/08/18 09:13	10.93g/5mL	10g/5mL	0.92
Batch: 8020581							
A8B0080-02RE2	Soil	EPA 8082A	02/02/18 10:35	02/12/18 09:09	10.63g/5mL	10g/5mL	0.94
A8B0080-03RE2	Soil	EPA 8082A	02/02/18 10:40	02/12/18 09:09	10.58g/5mL	10g/5mL	0.95
A8B0080-07RE2	Soil	EPA 8082A	02/02/18 11:40	02/12/18 09:09	10.44g/5mL	10g/5mL	0.96
Batch: 8020633							
A8B0080-01	Soil	EPA 8082A	02/02/18 10:30	02/13/18 11:28	10.63g/5mL	10g/5mL	0.94

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020405							

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Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

SAMPLE PREPARATION INFORMATION

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8B0080-02	Soil	EPA 8270D (SIM)	02/02/18 10:35	02/05/18 16:58	10.58g/5mL	10g/5mL	0.95
A8B0080-03	Soil	EPA 8270D (SIM)	02/02/18 10:40	02/05/18 16:58	10.49g/5mL	10g/5mL	0.95
A8B0080-12	Soil	EPA 8270D (SIM)	02/02/18 12:30	02/05/18 16:58	10.1g/5mL	10g/5mL	0.99
A8B0080-13	Soil	EPA 8270D (SIM)	02/02/18 12:40	02/05/18 16:58	10.23g/5mL	10g/5mL	0.98
A8B0080-14	Soil	EPA 8270D (SIM)	02/02/18 12:45	02/05/18 16:58	10.5g/5mL	10g/5mL	0.95
A8B0080-18	Soil	EPA 8270D (SIM)	02/02/18 13:25	02/05/18 16:58	11.04g/5mL	10g/5mL	0.91
A8B0080-19	Soil	EPA 8270D (SIM)	02/02/18 13:30	02/05/18 16:58	11.87g/5mL	10g/5mL	0.84
A8B0080-20	Soil	EPA 8270D (SIM)	02/02/18 13:35	02/05/18 16:58	10.79g/5mL	10g/5mL	0.93
A8B0080-21	Soil	EPA 8270D (SIM)	02/02/18 13:45	02/05/18 16:58	10.71g/5mL	10g/5mL	0.93

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020678							
A8B0080-02	Soil	EPA 6020A	02/02/18 10:35	02/14/18 12:44	0.498g/50mL	0.5g/50mL	1.00
A8B0080-03	Soil	EPA 6020A	02/02/18 10:40	02/14/18 12:44	0.466g/50mL	0.5g/50mL	1.07
A8B0080-12	Soil	EPA 6020A	02/02/18 12:30	02/14/18 12:44	0.484g/50mL	0.5g/50mL	1.03
A8B0080-13	Soil	EPA 6020A	02/02/18 12:40	02/14/18 12:44	0.516g/50mL	0.5g/50mL	0.97
A8B0080-14	Soil	EPA 6020A	02/02/18 12:45	02/14/18 12:44	0.46g/50mL	0.5g/50mL	1.09
A8B0080-18	Soil	EPA 6020A	02/02/18 13:25	02/14/18 12:44	0.465g/50mL	0.5g/50mL	1.08
A8B0080-19	Soil	EPA 6020A	02/02/18 13:30	02/14/18 12:44	0.499g/50mL	0.5g/50mL	1.00
A8B0080-20	Soil	EPA 6020A	02/02/18 13:35	02/14/18 12:44	0.491g/50mL	0.5g/50mL	1.02
A8B0080-21	Soil	EPA 6020A	02/02/18 13:45	02/14/18 12:44	0.489g/50mL	0.5g/50mL	1.02

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020625							
A8B0080-01	Soil	1311/6020A	02/02/18 10:30	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
A8B0080-02	Soil	1311/6020A	02/02/18 10:35	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
A8B0080-03	Soil	1311/6020A	02/02/18 10:40	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
A8B0080-04	Soil	1311/6020A	02/02/18 10:55	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
A8B0080-05	Soil	1311/6020A	02/02/18 11:15	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
A8B0080-06	Soil	1311/6020A	02/02/18 11:30	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00

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503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

SAMPLE PREPARATION INFORMATION

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8B0080-07	Soil	1311/6020A	02/02/18 11:40	02/13/18 10:03	5mL/50mL	5mL/50mL	1.00
Batch: 8020661							
A8B0080-08	Soil	1311/6020A	02/02/18 11:50	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-09	Soil	1311/6020A	02/02/18 12:00	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-10	Soil	1311/6020A	02/02/18 12:10	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-11	Soil	1311/6020A	02/02/18 12:25	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-12	Soil	1311/6020A	02/02/18 12:30	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-13	Soil	1311/6020A	02/02/18 12:40	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-14	Soil	1311/6020A	02/02/18 12:45	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-15	Soil	1311/6020A	02/02/18 12:50	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
A8B0080-16	Soil	1311/6020A	02/02/18 12:55	02/14/18 09:07	5mL/50mL	5mL/50mL	1.00
Batch: 8020707							
A8B0080-17	Soil	1311/6020A	02/02/18 13:05	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-18	Soil	1311/6020A	02/02/18 13:25	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-19	Soil	1311/6020A	02/02/18 13:30	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-20	Soil	1311/6020A	02/02/18 13:35	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-21	Soil	1311/6020A	02/02/18 13:45	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-22	Soil	1311/6020A	02/02/18 13:55	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-23	Soil	1311/6020A	02/02/18 14:00	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00
A8B0080-24	Soil	1311/6020A	02/02/18 14:10	02/15/18 09:02	5mL/50mL	5mL/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8020386							
A8B0080-02	Soil	EPA 8000C	02/02/18 10:35	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-03	Soil	EPA 8000C	02/02/18 10:40	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-04	Soil	EPA 8000C	02/02/18 10:55	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-05	Soil	EPA 8000C	02/02/18 11:15	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-06	Soil	EPA 8000C	02/02/18 11:30	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-07	Soil	EPA 8000C	02/02/18 11:40	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-08	Soil	EPA 8000C	02/02/18 11:50	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-09	Soil	EPA 8000C	02/02/18 12:00	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-10	Soil	EPA 8000C	02/02/18 12:10	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8B0080-11	Soil	EPA 8000C	02/02/18 12:25	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-12	Soil	EPA 8000C	02/02/18 12:30	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-13	Soil	EPA 8000C	02/02/18 12:40	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-14	Soil	EPA 8000C	02/02/18 12:45	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-15	Soil	EPA 8000C	02/02/18 12:50	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-16	Soil	EPA 8000C	02/02/18 12:55	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-17	Soil	EPA 8000C	02/02/18 13:05	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-18	Soil	EPA 8000C	02/02/18 13:25	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-19	Soil	EPA 8000C	02/02/18 13:30	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-20	Soil	EPA 8000C	02/02/18 13:35	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-21	Soil	EPA 8000C	02/02/18 13:45	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-22	Soil	EPA 8000C	02/02/18 13:55	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-23	Soil	EPA 8000C	02/02/18 14:00	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
A8B0080-24	Soil	EPA 8000C	02/02/18 14:10	02/05/18 14:58	1N/A/1N/A	1N/A/1N/A	NA
Batch: 8020637							
A8B0080-01	Soil	EPA 8000C	02/02/18 10:30	02/13/18 13:03	1N/A/1N/A	1N/A/1N/A	NA

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
P-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8020585.
TCLPa	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8020629.
TCLPb	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8020673.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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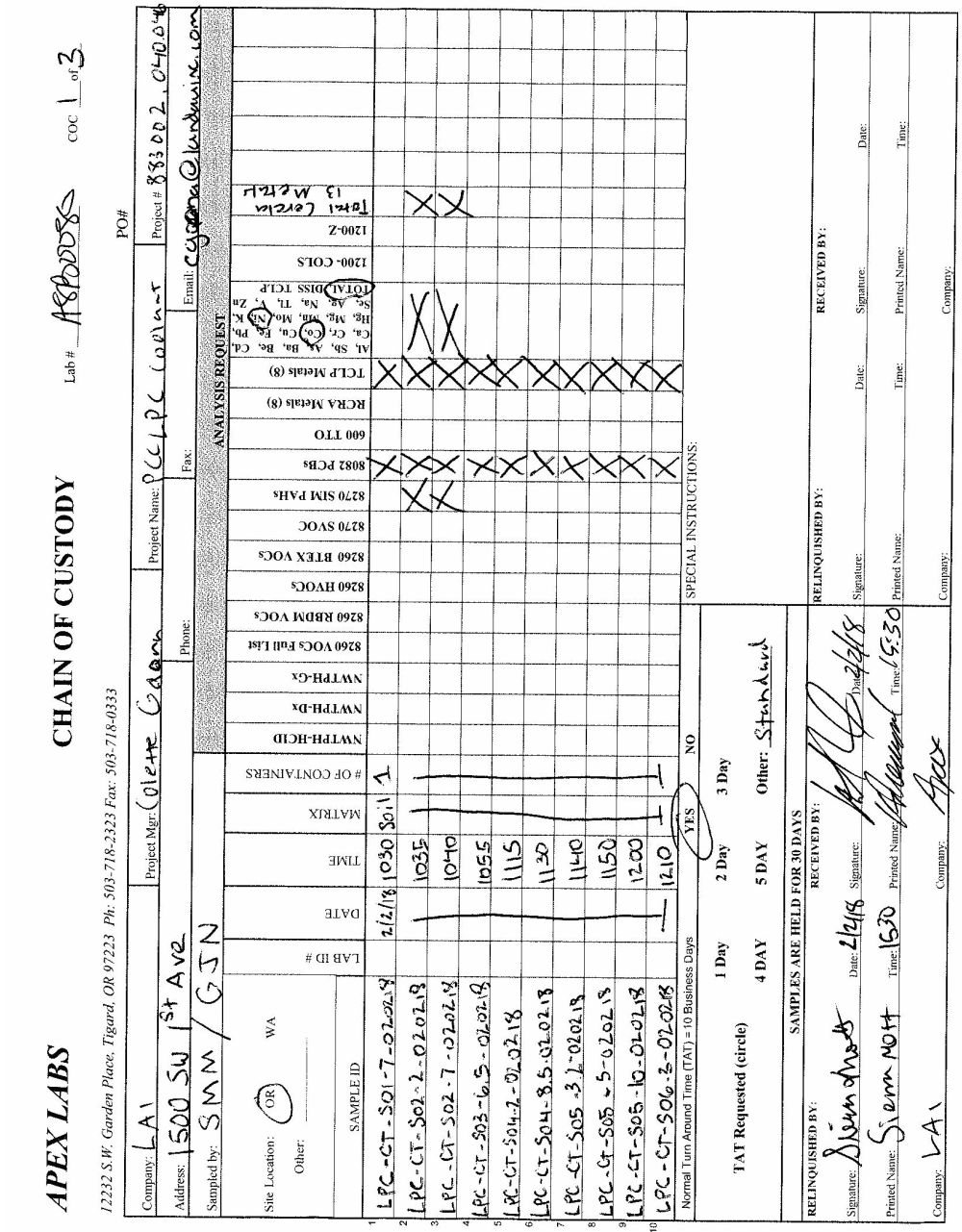
Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # ARPDOOSS COC 1 of 3

Company: LAI
Project Mgr: Colette Gaona
Project Name: PCC LPC Coolant
Project # 883002.040.046
Address: 1500 SW 1st Ave
Phone:
Fax:
Email: cgaona@landauinc.com
Sampled by: SMM / GJN
PO#

Site Location: OR WA
Other:

ANALYSIS REQUEST:

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	Total Criteria 13 Metals
1	LPC-CT-S01-7-020218		2/2/18	1030	SOIL	1										X			X				
2	LPC-CT-S02-2-020218			1035											X					X			
3	LPC-CT-S02-7-020218			1040											X					X			
4	LPC-CT-S03-6.5-020218			1055												X			X				
5	LPC-CT-S04-2-020218			1115												X			X				
6	LPC-CT-S04-8.5-020218			1120												X			X				
7	LPC-CT-S05-3.2-020218			1140												X			X				
8	LPC-CT-S05-5-020218			1150												X			X				
9	LPC-CT-S05-10-020218			1200												X			X				
10	LPC-CT-S06-2-020218			1210												X			X				

Normal Turn Around Time (TAT) = 10 Business Days YES NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: Standard

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:
Signature: Sierra Mott Date: 2/2/18 Time: 1630
Printed Name: Sierra Mott
Company: LAI

RECEIVED BY:
Signature: Date: 2/2/18 Time: 16:30
Printed Name:
Company: Apex

RELINQUISHED BY:
Signature: Date: Time:
Printed Name:
Company:

RECEIVED BY:
Signature: Date: Time:
Printed Name:
Company:

Apex Laboratories

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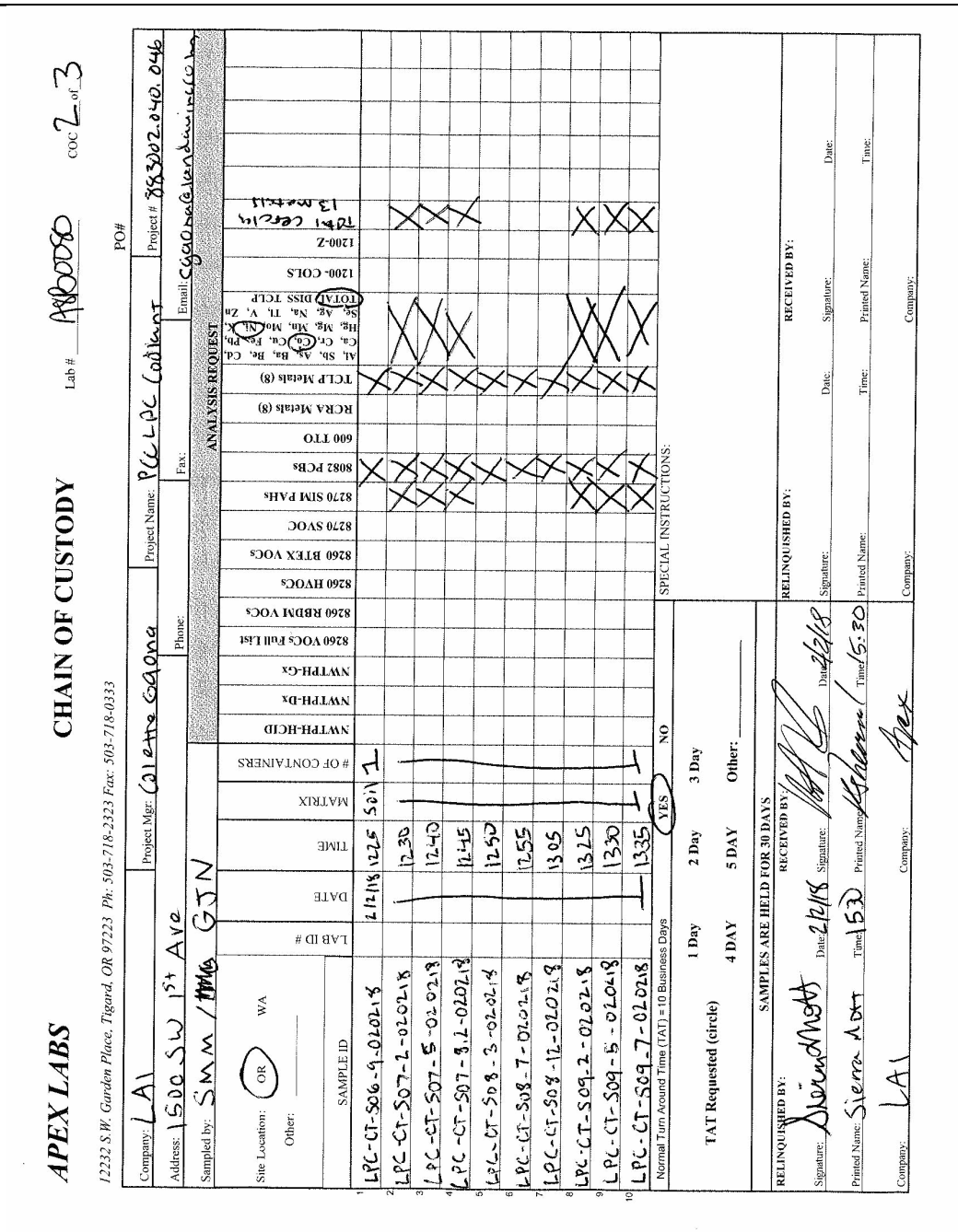
Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29



APEX LABS **CHAIN OF CUSTODY** Lab # A8B0080 COC 2 of 3

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: LAI | Project Mgr: Colette Gaona | Project Name: PCC LPC Coolant | Project # 883002.040.046

Address: 1500 SW 1st Ave | Phone: | Fax: | Email: cgaona@landauinc.com

Sampled by: SMM / GJN

Site Location: OR WA Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	TOTAL cesium 13 metals
1	LPC-CT-S06-9-020218		2/2/18	1225	soil	1									X			X					
2	LPC-CT-S07-2-020218			1230										X	X			X	X			X	
3	LPC-CT-S07-5-020218			1240										X	X			X	X			X	
4	LPC-CT-S07-8.2-020218			1245										X	X			X	X			X	
5	LPC-CT-S08-3-020218			1250											X			X					
6	LPC-CT-S08-7-020218			1255											X			X					
7	LPC-CT-S08-12-020218			1305											X			X					
8	LPC-CT-S09-2-020218			1325										X	X			X	X			X	
9	LPC-CT-S09-5-020218			1330										X	X			X	X			X	
10	LPC-CT-S09-7-020218			1335										X	X			X	X			X	

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other:

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature: [signature] Date: 2/2/18 Printed Name: Sierra Mott Time: 1530 Company: LAI

RECEIVED BY: Signature: [signature] Date: 2/2/18 Printed Name: [signature] Time: 15:30 Company: Apex

RELINQUISHED BY: Signature: Date: Printed Name: Time: Company:

RECEIVED BY: Signature: Date: Printed Name: Time: Company:

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

APEX LABS — **CHAIN OF CUSTODY** — Lab # A8B0080 — COC 3 of 3

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: LAI — Project Mgr: Colette Gaona — Project Name: PCC LPC Coolant — PO# — Project # 883002.040.046

Address: 1500 SW 1st Ave — Phone: — Fax: — Email: cgaona@landauinc.com

Sampled by: SMM / GJN

Site Location: (OR) WA — Other: _____

ANALYSIS REQUESTED

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TOTAL DISS TCLP	1200- COLS	1200-Z	Pb, Cr, Ba, Cd, Ag, Se, As, Hg, Na, Mn, Fe, Zn, Al, Cu, Mg, Ni, K, Mo, Co, Sb, B, Li, Sr, Ti, Mo, Ni, Se, Ag, Tl, Zn
1	LPC-CT-SB01-12-020218		2/2/18	1345	Soil	1									X	X			X					
2	LPC-CT-S10-2.5-020218			1355		1											X	X						
3	LPC-CT-S10-7-020218			1400		1											X	X						
4	LPC-CT-SD-12-020218			1410		1											X	X	X					
5																								
6																								
7																								
8																								
9																								
10																								

Normal Turn Around Time (TAT) = 10 Business Days — (YES) NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day — 2 Day — 3 Day — 4 DAY — 5 DAY — Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RECEIVED BY: Signature: [signature] Date: 2/2/18 Time: 1530 Printed Name: Sierra Mott Company: LAI

RELINQUISHED BY: Signature: [signature] Date: 2/2/18 Time: 1530 Printed Name: [signature] Company: Apex

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC Coolant**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.046	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	02/19/18 10:29

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A8B0080

Project/Project #: PCC LPC Coolant / 883002.040.046

Delivery info:

Date/Time Received: 2/2/18 @ 15:30 By: MJ

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: MJ : 2/2/18 @ 15:31

Chain of Custody Included? Yes X No ___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	5.6						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.6						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KAL : 2/2/18 @ 1605

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes ___ No X Comments: LPC-CT-S01-7 ~~020218~~ 020218
label reads: LPC-CT-S01-7-20180202

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___ No___ NA X

Comments:

Additional Information:

Labeled by: KAL Witness: (B) Cooler Inspected by: KAL See Project Contact Form: Y

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Friday, July 27, 2018

Della Fawcett
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: A8F0645 - PCC Structurals-Switch Gear - 883002.040.046

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8F0645, which was received by the laboratory on 6/19/2018 at 1:35:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-S01-2-061918	A8F0645-01	Soil	06/19/18 11:15	06/19/18 13:35
LPC-SG-S02-2-061918	A8F0645-02	Soil	06/19/18 11:05	06/19/18 13:35
LPC-SG-S03-2-061918	A8F0645-03	Soil	06/19/18 11:00	06/19/18 13:35
LPC-SG-S04-1-061918	A8F0645-04	Soil	06/19/18 11:16	06/19/18 13:35
LPC-SG-S04-4-061918	A8F0645-05	Soil	06/19/18 11:18	06/19/18 13:35
LPC-SG-S05-1-061918	A8F0645-06	Soil	06/19/18 11:28	06/19/18 13:35
LPC-SG-S05-4-061918	A8F0645-07	Soil	06/19/18 11:30	06/19/18 13:35
LPC-SG-S06-1-061918	A8F0645-08	Soil	06/19/18 11:40	06/19/18 13:35
LPC-SG-S06-3.6-061918	A8F0645-09	Soil	06/19/18 11:43	06/19/18 13:35
LPC-SG-S07-1-061918	A8F0645-10	Soil	06/19/18 11:50	06/19/18 13:35
LPC-SG-S07-4-061918	A8F0645-11	Soil	06/19/18 11:57	06/19/18 13:35
LPC-SG-S08-1-061918	A8F0645-12	Soil	06/19/18 12:20	06/19/18 13:35
LPC-SG-S09-1-061918	A8F0645-13	Soil	06/19/18 12:12	06/19/18 13:35
LPC-SG-S10-1-061918	A8F0645-14	Soil	06/19/18 12:10	06/19/18 13:35
LPC-SG-S11-1-061918	A8F0645-15	Soil	06/19/18 09:02	06/19/18 13:35
LPC-SG-S11-4-061918	A8F0645-16	Soil	06/19/18 09:05	06/19/18 13:35
LPC-SG-S11-6.7-061918	A8F0645-17	Soil	06/19/18 09:10	06/19/18 13:35
LPC-SG-S12-1-061918	A8F0645-18	Soil	06/19/18 09:35	06/19/18 13:35
LPC-SG-S12-4-061918	A8F0645-19	Soil	06/19/18 09:38	06/19/18 13:35
LPC-SG-S12-7-061918	A8F0645-20	Soil	06/19/18 09:40	06/19/18 13:35
LPC-SG-S13-1-061918	A8F0645-21	Soil	06/19/18 10:38	06/19/18 13:35
LPC-SG-S13-4-061918	A8F0645-22	Soil	06/19/18 10:40	06/19/18 13:35
LPC-SG-S13-6.3-061918	A8F0645-23	Soil	06/19/18 10:45	06/19/18 13:35
LPC-SG-S14-1-061918	A8F0645-24	Soil	06/19/18 09:20	06/19/18 13:35
LPC-SG-S14-5-061918	A8F0645-25	Soil	06/19/18 09:30	06/19/18 13:35
LPC-SG-S14-7-061918	A8F0645-26	Soil	06/19/18 09:33	06/19/18 13:35
LPC-SG-S15-1-061918	A8F0645-27	Soil	06/19/18 09:53	06/19/18 13:35
LPC-SG-S15-3-061918	A8F0645-28	Soil	06/19/18 10:05	06/19/18 13:35
LPC-SG-S15-6.5-061918	A8F0645-29	Soil	06/19/18 10:10	06/19/18 13:35
LPC-SG-S16-1-061918	A8F0645-30	Soil	06/19/18 10:15	06/19/18 13:35
LPC-SG-S16-2.7-061918	A8F0645-31	Soil	06/19/18 10:18	06/19/18 13:35
LPC-SG-S16-6.5-061918	A8F0645-32	Soil	06/19/18 10:20	06/19/18 13:35

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL CASE NARRATIVE

Work Order: A8F0645

Amended Report Revision 2:

Additional Testing-

This report supercedes all previous reports:

At the request of the client, additional metal suites were added after the final report was complete.

Lisa Domenighini
Client Services Manager
7/26/18

Amended Report Revision 1:

Corrected Results

This report supersedes all previous reports.

This report has been amended due to the reporting of non-reportable data for sample LPC-SG-S15-061918 for PCBs by EPA 8082.

Lisa Domenighini
Client Services Manger
6/28/18

Apex Laboratories, LLC
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S01-2-061918 (A8F0645-01)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	28.2	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Aroclor 1221	ND	---	10.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	41.3	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Aroclor 1242	ND	---	37.3	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Aroclor 1248	ND	---	39.3	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Aroclor 1254	ND	---	140	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Aroclor 1260	ND	---	160	ug/kg dry	1	06/22/18	EPA 8082A	R-02
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 78 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S02-2-061918 (A8F0645-02)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**48.7**	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**81.8**	---	12.5	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 67 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S03-2-061918 (A8F0645-03)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**18.5**	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**25.8**	---	12.1	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 64 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**163**	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**152**	---	11.5	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 63 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S04-4-061918 (A8F0645-05)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 71 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S05-1-061918 (A8F0645-06)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**115**	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**107**	---	12.8	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 73 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S05-4-061918 (A8F0645-07)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.3	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 71 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S06-1-061918 (A8F0645-08)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S06-1-061918 (A8F0645-08)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1248	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**221**	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**219**	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 77 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S06-3.6-061918 (A8F0645-09RE1)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	10.6	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 70 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S07-1-061918 (A8F0645-10RE1)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1254	**26.8**	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	**P-10**
Aroclor 1260	**28.3**	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 67 %*		*Limits: 53-120 %*	*1*	*06/25/18*	*EPA 8082A*	
LPC-SG-S07-4-061918 (A8F0645-11RE1)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1254	ND	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1260	**13.4**	---	11.8	ug/kg dry	1	06/25/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 68 %*		*Limits: 53-120 %*	*1*	*06/25/18*	*EPA 8082A*	
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1221	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**82.6**	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**85.7**	---	10.9	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 93 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**282**	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Aroclor 1260	**298**	---	11.7	ug/kg dry	1	06/22/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 86 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S10-1-061918 (A8F0645-14)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1248	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	**406**	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	**P-10**
Aroclor 1260	**258**	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 93 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	
LPC-SG-S11-1-061918 (A8F0645-15RE1)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1254	**268**	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	**P-10**
Aroclor 1260	**257**	---	10.7	ug/kg dry	1	06/25/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 53-120 %*	*1*	*06/25/18*	*EPA 8082A*	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S11-4-061918 (A8F0645-16RE1)		**Matrix: Soil**			**Batch: 8060953**			**C-07**
Aroclor 1016	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1254	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Aroclor 1260	ND	---	10.8	ug/kg dry	1	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 53-120 %*	*1*	*06/25/18*	*EPA 8082A*	
LPC-SG-S11-6.7-061918 (A8F0645-17)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.1	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 85 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S12-1-061918 (A8F0645-18RE2)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1254	**80200**	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Aroclor 1260	ND	---	2480	ug/kg dry	200	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: %*		*Limits: 53-120 %*	*200*	*06/25/18*	*EPA 8082A*	*S-01*
LPC-SG-S12-4-061918 (A8F0645-19)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**245**	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.8	ug/kg dry	1	06/22/18	EPA 8082A	

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S12-4-061918 (A8F0645-19)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 68 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S12-7-061918 (A8F0645-20)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.2	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 70 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S13-1-061918 (A8F0645-21RE1)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	111	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	111	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	111	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	111	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	111	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1254	**2920**	---	111	ug/kg dry	10	06/25/18	EPA 8082A	**P-10**
Aroclor 1260	**456**	---	111	ug/kg dry	10	06/25/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 53-120 %*	*10*	*06/25/18*	*EPA 8082A*	*S-05*
LPC-SG-S13-4-061918 (A8F0645-22)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1248	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	**32.7**	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	**P-09**
Aroclor 1260	ND	---	10.8	ug/kg dry	1	06/23/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 57 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	
LPC-SG-S13-6.3-061918 (A8F0645-23)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S13-6.3-061918 (A8F0645-23)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1248	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	**36.5**	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1260	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 84 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	
LPC-SG-S14-1-061918 (A8F0645-24RE1)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1254	**2740**	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Aroclor 1260	ND	---	102	ug/kg dry	10	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 104 %*		*Limits: 53-120 %*	*10*	*06/25/18*	*EPA 8082A*	*S-05*
LPC-SG-S14-5-061918 (A8F0645-25)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1248	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	**54.1**	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1260	ND	---	11.9	ug/kg dry	1	06/23/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 86 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	
LPC-SG-S14-7-061918 (A8F0645-26)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1248	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1260	ND	---	11.1	ug/kg dry	1	06/23/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 86 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	
LPC-SG-S15-1-061918 (A8F0645-27RE2)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S15-1-061918 (A8F0645-27RE2)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1221	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Aroclor 1254	**170000**	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Aroclor 1260	ND	---	4680	ug/kg dry	400	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: %*		*Limits: 53-120 %*	*400*	*06/25/18*	*EPA 8082A*	*S-01*
LPC-SG-S15-3-061918 (A8F0645-28)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**107**	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	11.0	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 93 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S15-6.5-061918 (A8F0645-29)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1221	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1232	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1242	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1248	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1254	**241**	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Aroclor 1260	ND	---	12.2	ug/kg dry	1	06/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 53-120 %*	*1*	*06/22/18*	*EPA 8082A*	
LPC-SG-S16-1-061918 (A8F0645-30RE2)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1254	**903000**	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Aroclor 1260	ND	---	38100	ug/kg dry	4000	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: %*		*Limits: 53-120 %*	*4000*	*06/25/18*	*EPA 8082A*	*S-01*

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S16-2.7-061918 (A8F0645-31RE1)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Aroclor 1221	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Aroclor 1232	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Aroclor 1242	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Aroclor 1248	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Aroclor 1254	**868**	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	**P-09**
Aroclor 1260	ND	---	48.7	ug/kg dry	5	06/25/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 89 %*		*Limits: 53-120 %*	*5*	*06/25/18*	*EPA 8082A*	*S-05*
LPC-SG-S16-6.5-061918 (A8F0645-32)		**Matrix: Soil**			**Batch: 8060979**			**C-07**
Aroclor 1016	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1221	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1232	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1242	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1248	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1254	**157**	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Aroclor 1260	ND	---	10.5	ug/kg dry	1	06/23/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 103 %*		*Limits: 53-120 %*	*1*	*06/23/18*	*EPA 8082A*	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S01-2-061918 (A8F0645-01)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	**18.3**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(a)pyrene	**30.3**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**40.4**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	**11.3**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(g,h,i)perylene	**28.8**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**33.8**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**56.2**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**24.1**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	**20.4**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**62.8**	---	10.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*89 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*77 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S02-2-061918 (A8F0645-02)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S02-2-061918 (A8F0645-02)		**Matrix: Soil**			**Batch: 8060945**			
2-Methylnaphthalene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	ND	---	12.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*86 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S03-2-061918 (A8F0645-03)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**11.4**	---	11.3	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*74 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*70 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**13.2**	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**			**Batch: 8060945**			
Benzo(g,h,i)perylene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**12.3**	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**23.1**	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	**14.0**	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**24.7**	---	11.1	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*86 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*78 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S05-1-061918 (A8F0645-06)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**12.6**	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**12.5**	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**18.1**	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**19.5**	---	12.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*83 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*81 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S06-1-061918 (A8F0645-08)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	**13.2**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**19.4**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**14.1**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**18.8**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**28.0**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**11.7**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	**16.3**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**30.3**	---	11.5	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*82 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*74 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S07-1-061918 (A8F0645-10)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	**14.4**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(a)pyrene	**24.1**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**30.7**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**25.1**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**22.9**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**31.7**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**20.9**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S07-1-061918 (A8F0645-10)		**Matrix: Soil**			**Batch: 8060945**			
2-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**43.8**	---	10.6	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*84 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*76 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**12.8**	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**16.4**	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**16.9**	---	10.9	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*85 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*79 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S09-1-061918 (A8F0645-13RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**14.1**	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S09-1-061918 (A8F0645-13RE1)		**Matrix: Soil**			**Batch: 8061021**			
Benzo(g,h,i)perylene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	**16.8**	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	**15.4**	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	**17.1**	---	12.9	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*73 %*	*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*89 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
LPC-SG-S10-1-061918 (A8F0645-14)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	**10.8**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**15.6**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**10.9**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	**14.5**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	**22.9**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	**16.6**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**25.3**	---	10.4	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*84 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*75 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**			**Batch: 8060945**			
Acenaphthene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Pyrene	**12.1**	---	11.0	ug/kg dry	1	06/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*82 %*	*Limits: 44-120 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*74 %*	*54-127 %*	*1*	*06/21/18*	*EPA 8270D (SIM)*	
LPC-SG-S12-1-061918 (A8F0645-18RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(a)pyrene	**15.7**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**27.1**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**19.2**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	**25.8**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	**37.1**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**15.1**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S12-1-061918 (A8F0645-18RE1)		**Matrix: Soil**			**Batch: 8061021**			
2-Methylnaphthalene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	**30.7**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	**38.7**	---	13.0	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*78 %*	*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
LPC-SG-S13-1-061918 (A8F0645-21RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(a)pyrene	**12.3**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**16.7**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**12.4**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	**13.5**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	**22.5**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	**13.9**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	**25.7**	---	11.5	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*79 %*	*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*93 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
LPC-SG-S14-1-061918 (A8F0645-24RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S14-1-061918 (A8F0645-24RE1)		**Matrix: Soil**			**Batch: 8061021**			
Benzo(g,h,i)perylene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery: 70 %*		*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*102 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
LPC-SG-S15-1-061918 (A8F0645-27RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	**11.6**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Benzo(a)pyrene	**14.8**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	**24.4**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Benzo(k)fluoranthene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	**15.7**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	**18.1**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	**M-05**
Dibenz(a,h)anthracene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	**27.3**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	**14.4**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	**14.3**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	**30.9**	---	11.3	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*109 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S16-1-061918 (A8F0645-30RE1)		**Matrix: Soil**			**Batch: 8061021**			
Acenaphthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Chrysene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Pyrene	ND	---	10.6	ug/kg dry	1	06/25/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*77 %*	*Limits: 44-120 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*108 %*	*54-127 %*	*1*	*06/25/18*	*EPA 8270D (SIM)*	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S01-2-061918 (A8F0645-01)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**6.41**	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.559**	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.406**	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**50.0**	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**21.2**	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**29.1**	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**66.4**	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.0934	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**221**	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.17	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.234	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**92.3**	---	4.67	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S02-2-061918 (A8F0645-02)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**7.70**	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.688**	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.535**	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**48.8**	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**22.6**	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**32.2**	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**19.4**	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.107	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**218**	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.33	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.267	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**89.2**	---	5.34	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S03-2-061918 (A8F0645-03)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**9.15**	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S03-2-061918 (A8F0645-03)		**Matrix: Soil**						
Beryllium	**0.794**	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.456**	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**62.6**	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**22.9**	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**29.3**	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**23.0**	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.116	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**250**	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.45	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.289	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**73.9**	---	5.79	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**4.87**	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.493**	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.360**	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**85.4**	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**26.4**	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**27.5**	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**32.2**	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.0959	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**357**	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.20	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.240	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**81.7**	---	4.80	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S04-4-061918 (A8F0645-05)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**5.83**	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.662**	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.519**	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**20.7**	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**14.1**	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S04-4-061918 (A8F0645-05)		**Matrix: Soil**						
Copper	**26.4**	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**9.44**	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.103	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**33.1**	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.28	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.257	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**60.3**	---	5.13	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S05-1-061918 (A8F0645-06)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**4.20**	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.474**	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	ND	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**62.2**	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**25.0**	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**23.5**	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**33.9**	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.112	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**271**	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Selenium	ND	---	1.40	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.281	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**100**	---	5.61	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S05-4-061918 (A8F0645-07)		**Matrix: Soil**						
Batch: 8060940								
Antimony	ND	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	
Arsenic	**4.31**	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	
Beryllium	**0.561**	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Cadmium	**0.507**	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Chromium	**17.9**	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	
Cobalt	**15.8**	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Copper	**22.9**	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	
Lead	**7.69**	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Mercury	ND	---	0.101	mg/kg dry	10	06/22/18	EPA 6020A	
Nickel	**21.7**	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S05-4-061918 (A8F0645-07)		**Matrix: Soil**						
Selenium	ND	---	1.26	mg/kg dry	10	06/22/18	EPA 6020A	
Silver	ND	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Thallium	ND	---	0.252	mg/kg dry	10	06/22/18	EPA 6020A	
Zinc	**55.1**	---	5.05	mg/kg dry	10	06/22/18	EPA 6020A	
LPC-SG-S06-1-061918 (A8F0645-08)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Arsenic	**4.82**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.276**	---	0.263	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**62.6**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**24.8**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**35.2**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.105	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**273**	---	2.63	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.263	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.263	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**86.9**	---	5.26	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S06-1-061918 (A8F0645-08RE1)		**Matrix: Soil**						
Batch: 8061010								
Beryllium	**0.419**	---	0.263	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**19.0**	---	0.263	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.32	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S06-3.6-061918 (A8F0645-09)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Arsenic	**4.77**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.572**	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**25.4**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**29.6**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**9.02**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0931	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**44.2**	---	2.33	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S06-3.6-061918 (A8F0645-09)		**Matrix: Soil**						
Zinc	**66.6**	---	4.66	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S06-3.6-061918 (A8F0645-09RE1)		**Matrix: Soil**						
Batch: 8061010								
Beryllium	**0.620**	---	0.233	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**18.7**	---	0.233	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.16	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S07-1-061918 (A8F0645-10)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Arsenic	**6.96**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.402**	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**36.9**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	**Q-42**
Copper	**28.7**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	**Q-42**
Lead	**63.4**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.102	mg/kg dry	10	06/23/18	EPA 6020A	Q-17
Nickel	**125**	---	2.55	mg/kg dry	10	06/23/18	EPA 6020A	**Q-42**
Silver	ND	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	Q-17
Thallium	ND	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**118**	---	5.11	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S07-1-061918 (A8F0645-10RE1)		**Matrix: Soil**						
Batch: 8061010								
Beryllium	**0.554**	---	0.255	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**16.6**	---	0.255	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S07-4-061918 (A8F0645-11)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.22	mg/kg dry	10	06/23/18	EPA 6020A	
Arsenic	**12.5**	---	1.22	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.410**	---	0.245	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**33.7**	---	1.22	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**26.2**	---	1.22	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**22.1**	---	1.22	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0979	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S07-4-061918 (A8F0645-11)		**Matrix: Soil**						
Nickel	**53.3**	---	2.45	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.245	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.245	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**97.3**	---	4.90	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S07-4-061918 (A8F0645-11RE1)		**Matrix: Soil**						
Batch: 8061010								
Beryllium	**0.678**	---	0.245	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**15.9**	---	0.245	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.22	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Arsenic	**4.44**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.352**	---	0.264	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**54.6**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**26.2**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**20.8**	---	1.32	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.106	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**261**	---	2.64	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.264	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.264	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**73.8**	---	5.28	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S08-1-061918 (A8F0645-12RE1)		**Matrix: Soil**						
Batch: 8061010								
Beryllium	**0.449**	---	0.264	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**23.8**	---	0.264	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.32	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.45	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.299**	---	0.290	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**148**	---	1.45	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**43.6**	---	1.45	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**						
Lead	**39.5**	---	1.45	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.116	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**780**	---	2.90	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.290	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.290	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**104**	---	5.81	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S09-1-061918 (A8F0645-13RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**3.43**	---	1.45	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.393**	---	0.290	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**35.1**	---	0.290	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.45	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S10-1-061918 (A8F0645-14)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.21	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.242**	---	0.242	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**95.3**	---	1.21	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**27.5**	---	1.21	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**27.5**	---	1.21	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0966	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**468**	---	2.42	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.242	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.242	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**73.5**	---	4.83	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S10-1-061918 (A8F0645-14RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**3.38**	---	1.21	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.426**	---	0.242	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**24.1**	---	0.242	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.21	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**						
Cadmium	**0.400**	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**53.5**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**27.3**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**21.1**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.100	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**207**	---	2.50	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**107**	---	5.01	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S11-1-061918 (A8F0645-15RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**4.44**	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.512**	---	0.250	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**19.6**	---	0.250	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S11-4-061918 (A8F0645-16)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.386**	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**15.3**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**24.0**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**6.43**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.103	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**14.7**	---	2.58	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**50.1**	---	5.16	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S11-4-061918 (A8F0645-16RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**4.08**	---	1.29	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.489**	---	0.258	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**9.91**	---	0.258	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.29	mg/kg dry	10	06/26/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S11-6.7-061918 (A8F0645-17)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.247**	---	0.231	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**16.9**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**19.6**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**2.92**	---	1.16	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0926	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**12.7**	---	2.31	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.231	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.231	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**37.4**	---	4.63	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S11-6.7-061918 (A8F0645-17RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**1.44**	---	1.16	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.325**	---	0.231	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**6.42**	---	0.231	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.16	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S12-1-061918 (A8F0645-18)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.46	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.355**	---	0.292	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**189**	---	1.46	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**40.8**	---	1.46	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**42.2**	---	1.46	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.117	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**877**	---	2.92	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.292	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.292	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**92.7**	---	5.84	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S12-1-061918 (A8F0645-18RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**2.96**	---	1.46	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.361**	---	0.292	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**25.3**	---	0.292	mg/kg dry	10	06/26/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S12-1-061918 (A8F0645-18RE1)		**Matrix: Soil**						
Selenium	ND	---	1.46	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S12-4-061918 (A8F0645-19)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.289**	---	0.249	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**16.8**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**17.4**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**6.57**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0997	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**13.8**	---	2.49	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.249	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.249	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**46.3**	---	4.98	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S12-4-061918 (A8F0645-19RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**5.69**	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.444**	---	0.249	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**10.6**	---	0.249	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S12-7-061918 (A8F0645-20)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.26	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.321**	---	0.251	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**10.8**	---	1.26	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**23.2**	---	1.26	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**3.13**	---	1.26	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.101	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**15.9**	---	2.51	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.251	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.251	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**41.4**	---	5.03	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S12-7-061918 (A8F0645-20RE1)		**Matrix: Soil**						
Batch: 8061010								

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S12-7-061918 (A8F0645-20RE1)		**Matrix: Soil**						
Arsenic	**1.91**	---	1.26	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.277**	---	0.251	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**9.07**	---	0.251	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.26	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S13-1-061918 (A8F0645-21)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.304**	---	0.256	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**102**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**27.6**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**32.7**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.102	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**457**	---	2.56	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.256	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.256	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**84.2**	---	5.11	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S13-1-061918 (A8F0645-21RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**3.01**	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.408**	---	0.256	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**22.5**	---	0.256	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S13-4-061918 (A8F0645-22)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.429**	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Chromium	**24.7**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**22.6**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**8.12**	---	1.29	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.103	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**23.9**	---	2.58	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.258	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**61.1**	---	5.17	mg/kg dry	10	06/23/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S13-4-061918 (A8F0645-22RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**3.29**	---	1.29	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.545**	---	0.258	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**10.9**	---	0.258	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.29	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S13-6.3-061918 (A8F0645-23)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.328**	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**21.3**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**2.93**	---	1.28	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.102	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**14.9**	---	2.55	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.255	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**38.6**	---	5.10	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S13-6.3-061918 (A8F0645-23RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**1.91**	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.285**	---	0.255	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**7.99**	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**9.01**	---	0.255	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.28	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S14-1-061918 (A8F0645-24)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.14	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.410**	---	0.228	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**27.5**	---	1.14	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**9.85**	---	1.14	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	**0.109**	---	0.0913	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**80.4**	---	2.28	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.228	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.228	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**92.0**	---	4.57	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S14-1-061918 (A8F0645-24RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**3.04**	---	1.14	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.355**	---	0.228	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**31.5**	---	1.14	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**10.5**	---	0.228	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.14	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S14-5-061918 (A8F0645-25)		**Matrix: Soil**						
Batch: 8061010								
Antimony	ND	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.269**	---	0.234	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**22.1**	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**3.50**	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0938	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**14.9**	---	2.34	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.234	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.234	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**38.6**	---	4.69	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S14-5-061918 (A8F0645-25RE1)		**Matrix: Soil**						
Batch: 8061010								
Arsenic	**1.93**	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.339**	---	0.234	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**11.5**	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**7.47**	---	0.234	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S14-7-061918 (A8F0645-26)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.34	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.419**	---	0.269	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**24.2**	---	1.34	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**3.37**	---	1.34	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.107	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**19.0**	---	2.69	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.269	mg/kg dry	10	06/23/18	EPA 6020A	

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Lisa A Domenighini

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S14-7-061918 (A8F0645-26)		**Matrix: Soil**						
Thallium	ND	---	0.269	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**49.4**	---	5.37	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S14-7-061918 (A8F0645-26RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**1.76**	---	1.34	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.323**	---	0.269	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**12.5**	---	1.34	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**10.2**	---	0.269	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.34	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S15-1-061918 (A8F0645-27)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.518**	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**39.0**	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**31.8**	---	1.17	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	**0.667**	---	0.0932	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**266**	---	2.33	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.233	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**87.6**	---	4.66	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S15-1-061918 (A8F0645-27RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**8.83**	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.394**	---	0.233	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**78.5**	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**19.1**	---	0.233	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.17	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S15-3-061918 (A8F0645-28)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.19	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.389**	---	0.237	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**21.8**	---	1.19	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**3.26**	---	1.19	mg/kg dry	10	06/23/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S15-3-061918 (A8F0645-28)		**Matrix: Soil**						
Mercury	ND	---	0.0949	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**12.8**	---	2.37	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.237	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.237	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**47.5**	---	4.75	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S15-3-061918 (A8F0645-28RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**3.15**	---	1.19	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.340**	---	0.237	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**14.4**	---	1.19	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**8.96**	---	0.237	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.19	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S15-6.5-061918 (A8F0645-29)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.36	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.406**	---	0.271	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**25.4**	---	1.36	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**5.27**	---	1.36	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.108	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**18.4**	---	2.71	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.271	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.271	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**58.2**	---	5.42	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S15-6.5-061918 (A8F0645-29RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**2.55**	---	1.36	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.445**	---	0.271	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**18.4**	---	1.36	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**10.9**	---	0.271	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.36	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S16-1-061918 (A8F0645-30)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.09	mg/kg dry	10	06/23/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S16-1-061918 (A8F0645-30)		**Matrix: Soil**						
Cadmium	**0.603**	---	0.217	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**35.9**	---	1.09	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**19.0**	---	1.09	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	**0.583**	---	0.0869	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**245**	---	2.17	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.217	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.217	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**92.7**	---	4.34	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S16-1-061918 (A8F0645-30RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**3.79**	---	1.09	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.386**	---	0.217	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**106**	---	1.09	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**18.2**	---	0.217	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.09	mg/kg dry	10	06/26/18	EPA 6020A	
LPC-SG-S16-2.7-061918 (A8F0645-31)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.18	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.361**	---	0.236	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**19.2**	---	1.18	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**3.59**	---	1.18	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0946	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**15.0**	---	2.36	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.236	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.236	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**49.6**	---	4.73	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S16-2.7-061918 (A8F0645-31RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**3.37**	---	1.18	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.370**	---	0.236	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**22.6**	---	1.18	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**9.27**	---	0.236	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.18	mg/kg dry	10	06/26/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S16-6.5-061918 (A8F0645-32)		**Matrix: Soil**						
Batch: 8061022								
Antimony	ND	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Cadmium	**0.609**	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Copper	**35.5**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Lead	**4.98**	---	1.25	mg/kg dry	10	06/23/18	EPA 6020A	
Mercury	ND	---	0.0999	mg/kg dry	10	06/23/18	EPA 6020A	
Nickel	**22.4**	---	2.50	mg/kg dry	10	06/23/18	EPA 6020A	
Silver	ND	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Thallium	ND	---	0.250	mg/kg dry	10	06/23/18	EPA 6020A	
Zinc	**62.8**	---	4.99	mg/kg dry	10	06/23/18	EPA 6020A	
LPC-SG-S16-6.5-061918 (A8F0645-32RE1)		**Matrix: Soil**						
Batch: 8061022								
Arsenic	**2.40**	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
Beryllium	**0.515**	---	0.250	mg/kg dry	10	06/26/18	EPA 6020A	
Chromium	**15.5**	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	
Cobalt	**13.9**	---	0.250	mg/kg dry	10	06/26/18	EPA 6020A	
Selenium	ND	---	1.25	mg/kg dry	10	06/26/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**						
Batch: 8070964								
Arsenic	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/24/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/24/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**						
Batch: 8070964								
Arsenic	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/24/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/24/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
LPC-SG-S10-1-061918 (A8F0645-14)		**Matrix: Soil**						
Batch: 8070964								
Arsenic	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/24/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/24/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**						
Batch: 8070964								
Arsenic	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/24/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**						
Chromium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/24/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/24/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/24/18	1311/6020A	
LPC-SG-S12-1-061918 (A8F0645-18)		**Matrix: Soil**						
Batch: 8071001								
Arsenic	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/25/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/25/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
LPC-SG-S13-1-061918 (A8F0645-21)		**Matrix: Soil**						
Batch: 8071001								
Arsenic	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/25/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/25/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
LPC-SG-S14-1-061918 (A8F0645-24)		**Matrix: Soil**						
Batch: 8071001								
Arsenic	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/25/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/25/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S15-1-061918 (A8F0645-27)		**Matrix: Soil**						
Batch: 8071001								
Arsenic	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/25/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/25/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
LPC-SG-S16-1-061918 (A8F0645-30)		**Matrix: Soil**						
Batch: 8071001								
Arsenic	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Barium	ND	---	0.500	mg/L	5	07/25/18	1311/6020A	
Cadmium	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Chromium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Lead	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	
Mercury	ND	---	0.00400	mg/L	5	07/25/18	1311/6020A	H-10
Selenium	ND	---	0.100	mg/L	5	07/25/18	1311/6020A	
Silver	ND	---	0.0500	mg/L	5	07/25/18	1311/6020A	

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Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S01-2-061918 (A8F0645-01)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**86.9**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S02-2-061918 (A8F0645-02)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**74.8**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S03-2-061918 (A8F0645-03)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**76.3**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S04-1-061918 (A8F0645-04)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**80.5**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S04-4-061918 (A8F0645-05)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**78.8**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S05-1-061918 (A8F0645-06)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**75.5**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S05-4-061918 (A8F0645-07)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**80.4**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S06-1-061918 (A8F0645-08)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**81.1**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S06-3.6-061918 (A8F0645-09)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**83.1**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S07-1-061918 (A8F0645-10)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**84.2**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S07-4-061918 (A8F0645-11)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**81.2**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S08-1-061918 (A8F0645-12)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**80.8**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**			**Batch: 8060874**			

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S09-1-061918 (A8F0645-13)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**73.9**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S10-1-061918 (A8F0645-14)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**86.0**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S11-1-061918 (A8F0645-15)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**83.2**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S11-4-061918 (A8F0645-16)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**80.9**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S11-6.7-061918 (A8F0645-17)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**83.4**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S12-1-061918 (A8F0645-18)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**74.4**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S12-4-061918 (A8F0645-19)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**79.0**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S12-7-061918 (A8F0645-20)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**78.5**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S13-1-061918 (A8F0645-21)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**82.2**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S13-4-061918 (A8F0645-22)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**81.3**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S13-6.3-061918 (A8F0645-23)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**82.0**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S14-1-061918 (A8F0645-24)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**88.9**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S14-5-061918 (A8F0645-25)		**Matrix: Soil**			**Batch: 8060874**			

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S14-5-061918 (A8F0645-25)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**82.7**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S14-7-061918 (A8F0645-26)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**78.1**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S15-1-061918 (A8F0645-27)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**84.3**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S15-3-061918 (A8F0645-28)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**84.8**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S15-6.5-061918 (A8F0645-29)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**73.5**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S16-1-061918 (A8F0645-30)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**89.6**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S16-2.7-061918 (A8F0645-31)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**90.4**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	
LPC-SG-S16-6.5-061918 (A8F0645-32)		**Matrix: Soil**			**Batch: 8060874**			
% Solids	**80.1**	---	1.00	% by Weight	1	06/21/18	EPA 8000C	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060953 - EPA 3546							**Soil**					
Blank (8060953-BLK1)		Prepared: 06/21/18 13:46	Analyzed: 06/22/18 10:25									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 90 %*	*Limits: 53-120 %*		*Dilution: 1x*							
LCS (8060953-BS1)		Prepared: 06/21/18 13:46	Analyzed: 06/22/18 10:43									**C-07**
EPA 8082A												
Aroclor 1016	203	---	10.0	ug/kg wet	1	250	---	81	47-134%	---	---	
Aroclor 1260	239	---	10.0	ug/kg wet	1	250	---	96	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 92 %*	*Limits: 53-120 %*		*Dilution: 1x*							

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060979 - EPA 3546							**Soil**					
Blank (8060979-BLK1)		Prepared: 06/22/18 07:15	Analyzed: 06/22/18 19:33									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 89 %*	*Limits: 53-120 %*		*Dilution: 1x*							
LCS (8060979-BS1)		Prepared: 06/22/18 07:15	Analyzed: 06/22/18 19:51									**C-07**
EPA 8082A												
Aroclor 1016	205	---	10.0	ug/kg wet	1	250	---	82	47-134%	---	---	
Aroclor 1260	240	---	10.0	ug/kg wet	1	250	---	96	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 88 %*	*Limits: 53-120 %*		*Dilution: 1x*							
Duplicate (8060979-DUP1)		Prepared: 06/22/18 07:15	Analyzed: 06/22/18 20:46									**C-07**
QC Source Sample: LPC-SG-S11-6.7-061918 (A8F0645-17)												
EPA 8082A												
Aroclor 1016	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1260	ND	---	11.1	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 92 %*	*Limits: 53-120 %*		*Dilution: 1x*							
Matrix Spike (8060979-MS2)		Prepared: 06/22/18 07:15	Analyzed: 06/25/18 14:17									**C-07, Q-43**
QC Source Sample: LPC-SG-S14-1-061918 (A8F0645-24RE1)												
EPA 8082A												
Aroclor 1016	363	---	99.8	ug/kg dry	10	249	ND	**145**	**47-134%**	---	---	
Aroclor 1260	1320	---	99.8	ug/kg dry	10	249	ND	**528**	**53-140%**	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060979 - EPA 3546							**Soil**					
Matrix Spike (8060979-MS2)		Prepared: 06/22/18 07:15		Analyzed: 06/25/18 14:17								**C-07, Q-43**
QC Source Sample: LPC-SG-S14-1-061918 (A8F0645-24RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 103 %*	*Limits: 53-120 %*			*Dilution: 10x*					S-05

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060945 - EPA 3546							**Soil**					
Blank (8060945-BLK1)		Prepared: 06/21/18 12:24	Analyzed: 06/21/18 15:10									
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	**16.4**	---	8.33	ug/kg wet	1	---	---	---	---	---	---	B
2-Methylnaphthalene	**31.7**	---	8.33	ug/kg wet	1	---	---	---	---	---	---	B
Naphthalene	**11.6**	---	8.33	ug/kg wet	1	---	---	---	---	---	---	B
Phenanthrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery:*	*95 %*	*Limits:*	*44-120 %*		*Dilution:*	*1x*				
p-Terphenyl-d14 (Surr)			*85 %*		*54-127 %*			*"*				
LCS (8060945-BS1)		Prepared: 06/21/18 12:24	Analyzed: 06/21/18 15:36									
EPA 8270D (SIM)												
Acenaphthene	774	---	10.0	ug/kg wet	1	800	---	97	40-122%	---	---	
Acenaphthylene	794	---	10.0	ug/kg wet	1	800	---	99	32-132%	---	---	
Anthracene	736	---	10.0	ug/kg wet	1	800	---	92	47-123%	---	---	
Benz(a)anthracene	759	---	10.0	ug/kg wet	1	800	---	95	49-126%	---	---	
Benzo(a)pyrene	781	---	10.0	ug/kg wet	1	800	---	98	45-129%	---	---	
Benzo(b)fluoranthene	724	---	10.0	ug/kg wet	1	800	---	90	45-132%	---	---	
Benzo(k)fluoranthene	705	---	10.0	ug/kg wet	1	800	---	88	47-132%	---	---	
Benzo(g,h,i)perylene	677	---	10.0	ug/kg wet	1	800	---	85	43-134%	---	---	
Chrysene	779	---	10.0	ug/kg wet	1	800	---	97	50-124%	---	---	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060945 - EPA 3546							**Soil**					
LCS (8060945-BS1)		Prepared: 06/21/18 12:24		Analyzed: 06/21/18 15:36								
Dibenz(a,h)anthracene	782	---	10.0	ug/kg wet	1	800	---	98	45-134%	---	---	
Dibenzofuran	771	---	10.0	ug/kg wet	1	800	---	96	44-120%	---	---	
Fluoranthene	757	---	10.0	ug/kg wet	1	800	---	95	50-127%	---	---	
Fluorene	752	---	10.0	ug/kg wet	1	800	---	94	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	696	---	10.0	ug/kg wet	1	800	---	87	45-133%	---	---	
1-Methylnaphthalene	732	---	10.0	ug/kg wet	1	800	---	91	40-120%	---	---	B
2-Methylnaphthalene	754	---	10.0	ug/kg wet	1	800	---	94	38-122%	---	---	B
Naphthalene	741	---	10.0	ug/kg wet	1	800	---	93	35-123%	---	---	B
Phenanthrene	735	---	10.0	ug/kg wet	1	800	---	92	50-121%	---	---	
Pyrene	772	---	10.0	ug/kg wet	1	800	---	96	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery:*	*96 %*	*Limits:*	*44-120 %*		*Dilution:*	*1x*				
p-Terphenyl-d14 (Surr)			*84 %*		*54-127 %*			*"*				
Matrix Spike (8060945-MS1)		Prepared: 06/21/18 12:24		Analyzed: 06/22/18 01:16								
QC Source Sample: LPC-SG-S16-1-061918 (A8F0645-30)												
EPA 8270D (SIM)												
Acenaphthene	680	---	9.91	ug/kg dry	1	793	ND	86	40-122%	---	---	
Acenaphthylene	716	---	9.91	ug/kg dry	1	793	ND	90	32-132%	---	---	
Anthracene	695	---	9.91	ug/kg dry	1	793	ND	88	47-123%	---	---	
Benz(a)anthracene	677	---	9.91	ug/kg dry	1	793	ND	85	49-126%	---	---	
Benzo(a)pyrene	690	---	9.91	ug/kg dry	1	793	ND	87	45-129%	---	---	
Benzo(b)fluoranthene	696	---	9.91	ug/kg dry	1	793	6.94	87	45-132%	---	---	
Benzo(k)fluoranthene	627	---	9.91	ug/kg dry	1	793	ND	79	47-132%	---	---	
Benzo(g,h,i)perylene	540	---	9.91	ug/kg dry	1	793	ND	68	43-134%	---	---	
Chrysene	718	---	9.91	ug/kg dry	1	793	6.98	90	50-124%	---	---	
Dibenz(a,h)anthracene	672	---	9.91	ug/kg dry	1	793	ND	85	45-134%	---	---	
Dibenzofuran	698	---	9.91	ug/kg dry	1	793	ND	88	44-120%	---	---	
Fluoranthene	777	---	9.91	ug/kg dry	1	793	10.3	97	50-127%	---	---	
Fluorene	693	---	9.91	ug/kg dry	1	793	ND	87	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	589	---	9.91	ug/kg dry	1	793	ND	74	45-133%	---	---	
1-Methylnaphthalene	654	---	9.91	ug/kg dry	1	793	10.0	81	40-120%	---	---	B
2-Methylnaphthalene	665	---	9.91	ug/kg dry	1	793	18.6	81	38-122%	---	---	B
Naphthalene	602	---	9.91	ug/kg dry	1	793	8.11	75	35-123%	---	---	B
Phenanthrene	697	---	9.91	ug/kg dry	1	793	10.8	87	50-121%	---	---	

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Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060945 - EPA 3546							**Soil**					
Matrix Spike (8060945-MS1)		Prepared: 06/21/18 12:24		Analyzed: 06/22/18 01:16								
QC Source Sample: LPC-SG-S16-1-061918 (A8F0645-30)												
Pyrene	847	---	9.91	ug/kg dry	1	793	7.95	106	47-127%	---	---	

Surr: 2-Fluorobiphenyl (Surr)	*Recovery:*	*82 %*	*Limits:*	*44-120 %*	*Dilution:*	*1x*
p-Terphenyl-d14 (Surr)		*63 %*		*54-127 %*		*"*

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061021 - EPA 3546							**Soil**					
Blank (8061021-BLK1)		Prepared: 06/22/18 15:22	Analyzed: 06/25/18 10:13									
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 99 %*	*Limits: 44-120 %*		*Dilution: 1x*							
p-Terphenyl-d14 (Surr)		*112 %*	*54-127 %*		*"*							
LCS (8061021-BS1)		Prepared: 06/22/18 15:22	Analyzed: 06/25/18 10:39									
EPA 8270D (SIM)												
Acenaphthene	745	---	10.0	ug/kg wet	1	800	---	93	40-122%	---	---	
Acenaphthylene	768	---	10.0	ug/kg wet	1	800	---	96	32-132%	---	---	
Anthracene	730	---	10.0	ug/kg wet	1	800	---	91	47-123%	---	---	
Benz(a)anthracene	736	---	10.0	ug/kg wet	1	800	---	92	49-126%	---	---	
Benzo(a)pyrene	731	---	10.0	ug/kg wet	1	800	---	91	45-129%	---	---	
Benzo(b)fluoranthene	772	---	10.0	ug/kg wet	1	800	---	97	45-132%	---	---	
Benzo(k)fluoranthene	727	---	10.0	ug/kg wet	1	800	---	91	47-132%	---	---	
Benzo(g,h,i)perylene	697	---	10.0	ug/kg wet	1	800	---	87	43-134%	---	---	
Chrysene	746	---	10.0	ug/kg wet	1	800	---	93	50-124%	---	---	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061021 - EPA 3546							**Soil**					
LCS (8061021-BS1)		Prepared: 06/22/18 15:22		Analyzed: 06/25/18 10:39								
Dibenz(a,h)anthracene	716	---	10.0	ug/kg wet	1	800	---	90	45-134%	---	---	
Dibenzofuran	728	---	10.0	ug/kg wet	1	800	---	91	44-120%	---	---	
Fluoranthene	686	---	10.0	ug/kg wet	1	800	---	86	50-127%	---	---	
Fluorene	724	---	10.0	ug/kg wet	1	800	---	90	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	707	---	10.0	ug/kg wet	1	800	---	88	45-133%	---	---	
1-Methylnaphthalene	716	---	10.0	ug/kg wet	1	800	---	89	40-120%	---	---	
2-Methylnaphthalene	717	---	10.0	ug/kg wet	1	800	---	90	38-122%	---	---	
Naphthalene	717	---	10.0	ug/kg wet	1	800	---	90	35-123%	---	---	
Phenanthrene	745	---	10.0	ug/kg wet	1	800	---	93	50-121%	---	---	
Pyrene	685	---	10.0	ug/kg wet	1	800	---	86	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*105 %*		*54-127 %*			*"*					

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060940 - EPA 3051A							**Soil**					
Blank (8060940-BLK1)		Prepared: 06/21/18 10:54	Analyzed: 06/22/18 20:27									
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cobalt	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (8060940-BS1)		Prepared: 06/21/18 10:54	Analyzed: 06/22/18 20:31									
EPA 6020A												
Antimony	24.3	---	1.00	mg/kg wet	10	25.0	---	97	80-120%	---	---	
Arsenic	50.8	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Beryllium	23.1	---	0.200	mg/kg wet	10	25.0	---	93	80-120%	---	---	
Cadmium	48.4	---	0.200	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Chromium	51.1	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cobalt	52.0	---	0.200	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Copper	52.9	---	1.00	mg/kg wet	10	50.0	---	106	80-120%	---	---	
Lead	51.2	---	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Mercury	0.984	---	0.0800	mg/kg wet	10	1.00	---	98	80-120%	---	---	
Nickel	52.4	---	1.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Selenium	24.6	---	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Silver	25.8	---	0.200	mg/kg wet	10	25.0	---	103	80-120%	---	---	
Thallium	24.8	---	0.200	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Zinc	50.9	---	4.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Matrix Spike (8060940-MS2)		Prepared: 06/21/18 10:54	Analyzed: 06/22/18 22:28									

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060940 - EPA 3051A							**Soil**					
Matrix Spike (8060940-MS2)		Prepared: 06/21/18 10:54	Analyzed: 06/22/18 22:28									
QC Source Sample: LPC-SG-S05-4-061918 (A8F0645-07)												
EPA 6020A												
Antimony	24.8	---	1.22	mg/kg dry	10	30.5	ND	82	75-125%	---	---	
Arsenic	65.0	---	1.22	mg/kg dry	10	61.0	4.31	100	75-125%	---	---	
Beryllium	29.9	---	0.244	mg/kg dry	10	30.5	0.561	96	75-125%	---	---	
Cadmium	60.8	---	0.244	mg/kg dry	10	61.0	0.507	99	75-125%	---	---	
Chromium	81.6	---	1.22	mg/kg dry	10	61.0	17.9	104	75-125%	---	---	
Cobalt	75.9	---	0.244	mg/kg dry	10	61.0	15.8	98	75-125%	---	---	
Copper	88.6	---	1.22	mg/kg dry	10	61.0	22.9	108	75-125%	---	---	
Lead	70.9	---	0.244	mg/kg dry	10	61.0	7.69	104	75-125%	---	---	
Mercury	1.24	---	0.0976	mg/kg dry	10	1.22	ND	101	75-125%	---	---	
Nickel	85.3	---	1.22	mg/kg dry	10	61.0	21.7	104	75-125%	---	---	
Selenium	29.7	---	1.22	mg/kg dry	10	30.5	ND	98	75-125%	---	---	
Silver	31.4	---	0.244	mg/kg dry	10	30.5	ND	103	75-125%	---	---	
Thallium	30.5	---	0.244	mg/kg dry	10	30.5	0.146	100	75-125%	---	---	
Zinc	127	---	4.88	mg/kg dry	10	61.0	55.1	117	75-125%	---	---	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061010 - EPA 3051A							**Soil**					
Blank (8061010-BLK1)		Prepared: 06/22/18 12:12	Analyzed: 06/23/18 13:25									
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	1.92	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
Blank (8061010-BLK2)		Prepared: 06/22/18 12:12	Analyzed: 06/26/18 16:23									
EPA 6020A												
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	Q-16
Cobalt	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	Q-16
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	Q-16
LCS (8061010-BS1)		Prepared: 06/22/18 12:12	Analyzed: 06/23/18 13:31									
EPA 6020A												
Antimony	27.8	---	1.00	mg/kg wet	10	25.0	---	111	80-120%	---	---	
Arsenic	57.7	---	1.00	mg/kg wet	10	50.0	---	115	80-120%	---	---	
Cadmium	55.5	---	0.200	mg/kg wet	10	50.0	---	111	80-120%	---	---	
Chromium	59.6	---	1.00	mg/kg wet	10	50.0	---	119	80-120%	---	---	
Lead	57.8	---	1.00	mg/kg wet	10	50.0	---	115	80-120%	---	---	
Mercury	1.06	---	0.0800	mg/kg wet	10	1.00	---	106	80-120%	---	---	
Silver	28.0	---	0.200	mg/kg wet	10	25.0	---	112	80-120%	---	---	
Thallium	27.8	---	0.200	mg/kg wet	10	25.0	---	111	80-120%	---	---	
LCS (8061010-BS2)		Prepared: 06/22/18 12:12	Analyzed: 06/26/18 16:37									
EPA 6020A												
Beryllium	21.9	---	0.200	mg/kg wet	10	25.0	---	88	80-120%	---	---	Q-16
Cobalt	46.9	---	0.200	mg/kg wet	10	50.0	---	94	80-120%	---	---	Q-16

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061010 - EPA 3051A							**Soil**					
LCS (8061010-BS2)		Prepared: 06/22/18 12:12		Analyzed: 06/26/18 16:37								
Copper	49.3	---	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	Q-16
Nickel	49.5	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	Q-16
Selenium	21.6	---	1.00	mg/kg wet	10	25.0	---	86	80-120%	---	---	Q-16
Zinc	48.6	---	4.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	Q-16
Duplicate (8061010-DUP1)		Prepared: 06/22/18 12:12		Analyzed: 06/23/18 14:00								
QC Source Sample: LPC-SG-S07-1-061918 (A8F0645-10)												
EPA 6020A												
Antimony	ND	---	1.19	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	**6.37**	---	1.19	mg/kg dry	10	---	6.96	---	---	9	40%	
Cadmium	**0.419**	---	0.238	mg/kg dry	10	---	0.402	---	---	4	40%	
Chromium	**39.4**	---	1.19	mg/kg dry	10	---	36.9	---	---	6	40%	
Copper	**28.1**	---	1.19	mg/kg dry	10	---	28.7	---	---	2	40%	
Lead	**76.2**	---	1.19	mg/kg dry	10	---	63.4	---	---	18	40%	
Mercury	ND	---	0.0954	mg/kg dry	10	---	0.0528	---	---	***	**40%**	Q-05
Nickel	**144**	---	2.38	mg/kg dry	10	---	125	---	---	14	40%	
Silver	ND	---	0.238	mg/kg dry	10	---	ND	---	---	---	**40%**	Q-05
Thallium	ND	---	0.238	mg/kg dry	10	---	0.152	---	---	***	40%	
Zinc	**115**	---	4.77	mg/kg dry	10	---	118	---	---	2	40%	
Duplicate (8061010-DUP2)		Prepared: 06/22/18 12:12		Analyzed: 06/26/18 21:12								
QC Source Sample: LPC-SG-S07-1-061918 (A8F0645-10RE1)												
EPA 6020A												
Beryllium	**0.517**	---	0.238	mg/kg dry	10	---	0.554	---	---	7	40%	Q-16
Cobalt	**15.2**	---	0.238	mg/kg dry	10	---	16.6	---	---	9	40%	Q-16
Selenium	ND	---	1.19	mg/kg dry	10	---	ND	---	---	---	40%	Q-16
Matrix Spike (8061010-MS1)		Prepared: 06/22/18 12:12		Analyzed: 06/23/18 14:06								
QC Source Sample: LPC-SG-S07-1-061918 (A8F0645-10)												
EPA 6020A												
Antimony	31.7	---	1.29	mg/kg dry	10	32.1	ND	99	75-125%	---	---	
Arsenic	82.3	---	1.29	mg/kg dry	10	64.3	6.96	117	75-125%	---	---	
Cadmium	72.0	---	0.257	mg/kg dry	10	64.3	0.402	111	75-125%	---	---	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061010 - EPA 3051A							**Soil**					
Matrix Spike (8061010-MS1)		Prepared: 06/22/18 12:12	Analyzed: 06/23/18 14:06									
QC Source Sample: LPC-SG-S07-1-061918 (A8F0645-10)												
Chromium	118	---	1.29	mg/kg dry	10	64.3	36.9	**127**	**75-125%**	---	---	Q-04
Copper	110	---	1.29	mg/kg dry	10	64.3	28.7	**127**	**75-125%**	---	---	Q-04
Lead	142	---	1.29	mg/kg dry	10	64.3	63.4	123	75-125%	---	---	
Mercury	1.46	---	0.103	mg/kg dry	10	1.29	0.0528	110	75-125%	---	---	
Nickel	214	---	2.57	mg/kg dry	10	64.3	125	**138**	**75-125%**	---	---	Q-04
Silver	36.4	---	0.257	mg/kg dry	10	32.1	ND	113	75-125%	---	---	
Thallium	36.6	---	0.257	mg/kg dry	10	32.1	0.152	113	75-125%	---	---	
Zinc	198	---	5.14	mg/kg dry	10	64.3	118	125	75-125%	---	---	
Matrix Spike (8061010-MS2)		Prepared: 06/22/18 12:12	Analyzed: 06/23/18 16:03									
QC Source Sample: LPC-SG-S14-5-061918 (A8F0645-25)												
EPA 6020A												
Antimony	34.1	---	1.27	mg/kg dry	10	31.6	ND	108	75-125%	---	---	
Cadmium	70.6	---	0.253	mg/kg dry	10	63.3	0.269	111	75-125%	---	---	
Copper	93.9	---	1.27	mg/kg dry	10	63.3	22.1	113	75-125%	---	---	
Lead	77.1	---	1.27	mg/kg dry	10	63.3	3.50	116	75-125%	---	---	
Mercury	1.36	---	0.101	mg/kg dry	10	1.27	ND	107	75-125%	---	---	
Nickel	90.1	---	2.53	mg/kg dry	10	63.3	14.9	119	75-125%	---	---	
Silver	35.6	---	0.253	mg/kg dry	10	31.6	ND	113	75-125%	---	---	
Thallium	35.6	---	0.253	mg/kg dry	10	31.6	ND	113	75-125%	---	---	
Zinc	111	---	5.06	mg/kg dry	10	63.3	38.6	114	75-125%	---	---	
Matrix Spike (8061010-MS3)		Prepared: 06/22/18 12:12	Analyzed: 06/26/18 21:16									
QC Source Sample: LPC-SG-S07-1-061918 (A8F0645-10RE1)												
EPA 6020A												
Beryllium	30.1	---	0.257	mg/kg dry	10	32.1	0.554	92	75-125%	---	---	Q-16
Cobalt	78.3	---	0.257	mg/kg dry	10	64.3	16.6	96	75-125%	---	---	Q-16
Selenium	29.8	---	1.29	mg/kg dry	10	32.1	ND	93	75-125%	---	---	Q-16
Matrix Spike (8061010-MS4)		Prepared: 06/22/18 12:12	Analyzed: 06/26/18 22:37									
QC Source Sample: LPC-SG-S14-5-061918 (A8F0645-25RE1)												
EPA 6020A												

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Apex Laboratories, LLC

12232 S.W. Garden Place
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061010 - EPA 3051A							**Soil**					
Matrix Spike (8061010-MS4)		Prepared: 06/22/18 12:12		Analyzed: 06/26/18 22:37								
QC Source Sample: LPC-SG-S14-5-061918 (A8F0645-25RE1)												
Arsenic	60.5	---	1.27	mg/kg dry	10	63.3	1.93	93	75-125%	---	---	Q-16
Beryllium	30.9	---	0.253	mg/kg dry	10	31.6	0.339	97	75-125%	---	---	Q-16
Chromium	70.7	---	1.27	mg/kg dry	10	63.3	11.5	93	75-125%	---	---	Q-16
Cobalt	69.6	---	0.253	mg/kg dry	10	63.3	7.47	98	75-125%	---	---	Q-16
Selenium	30.7	---	1.27	mg/kg dry	10	31.6	ND	97	75-125%	---	---	Q-16

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061022 - EPA 3051A							**Soil**					
Blank (8061022-BLK1)		Prepared: 06/22/18 15:33	Analyzed: 06/23/18 16:09									
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	1.92	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
Blank (8061022-BLK2)		Prepared: 06/22/18 15:33	Analyzed: 06/26/18 15:11									
EPA 6020A												
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	Q-16
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	Q-16
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	Q-16
Cobalt	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	Q-16
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	Q-16
LCS (8061022-BS1)		Prepared: 06/22/18 15:33	Analyzed: 06/23/18 16:15									
EPA 6020A												
Antimony	26.1	---	1.00	mg/kg wet	10	25.0	---	104	80-120%	---	---	
Cadmium	51.9	---	0.200	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Copper	55.7	---	1.00	mg/kg wet	10	50.0	---	111	80-120%	---	---	
Lead	54.3	---	1.00	mg/kg wet	10	50.0	---	109	80-120%	---	---	
Mercury	1.04	---	0.0800	mg/kg wet	10	1.00	---	104	80-120%	---	---	
Nickel	55.6	---	2.00	mg/kg wet	10	50.0	---	111	80-120%	---	---	
Silver	26.6	---	0.200	mg/kg wet	10	25.0	---	107	80-120%	---	---	
Thallium	26.2	---	0.200	mg/kg wet	10	25.0	---	105	80-120%	---	---	
Zinc	55.0	---	4.00	mg/kg wet	10	50.0	---	110	80-120%	---	---	
LCS (8061022-BS2)		Prepared: 06/22/18 15:33	Analyzed: 06/26/18 15:15									
EPA 6020A												
Arsenic	48.3	---	1.00	mg/kg wet	10	50.0	---	97	80-120%	---	---	Q-16

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061022 - EPA 3051A							**Soil**					
LCS (8061022-BS2)		Prepared: 06/22/18 15:33		Analyzed: 06/26/18 15:15								
Beryllium	22.5	---	0.200	mg/kg wet	10	25.0	---	90	80-120%	---	---	Q-16
Chromium	48.1	---	1.00	mg/kg wet	10	50.0	---	96	80-120%	---	---	Q-16
Cobalt	48.5	---	0.200	mg/kg wet	10	50.0	---	97	80-120%	---	---	Q-16
Selenium	22.9	---	1.00	mg/kg wet	10	25.0	---	92	80-120%	---	---	Q-16
Duplicate (8061022-DUP1)		Prepared: 06/22/18 15:33		Analyzed: 06/23/18 16:56								
QC Source Sample: LPC-SG-S15-3-061918 (A8F0645-28)												
EPA 6020A												
Antimony	ND	---	1.17	mg/kg dry	10	---	ND	---	---	---	40%	
Cadmium	**0.402**	---	0.234	mg/kg dry	10	---	0.389	---	---	3	40%	
Copper	**22.1**	---	1.17	mg/kg dry	10	---	21.8	---	---	1	40%	
Lead	**4.44**	---	1.17	mg/kg dry	10	---	3.26	---	---	31	40%	
Mercury	ND	---	0.0938	mg/kg dry	10	---	ND	---	---	---	40%	
Nickel	**15.9**	---	2.34	mg/kg dry	10	---	12.8	---	---	22	40%	
Silver	ND	---	0.234	mg/kg dry	10	---	ND	---	---	---	40%	
Thallium	ND	---	0.234	mg/kg dry	10	---	ND	---	---	---	40%	
Zinc	**50.6**	---	4.69	mg/kg dry	10	---	47.5	---	---	6	40%	
Duplicate (8061022-DUP2)		Prepared: 06/22/18 15:33		Analyzed: 06/26/18 15:56								
QC Source Sample: LPC-SG-S15-3-061918 (A8F0645-28RE1)												
EPA 6020A												
Arsenic	**3.12**	---	1.17	mg/kg dry	10	---	3.15	---	---	1	40%	Q-16
Beryllium	**0.368**	---	0.234	mg/kg dry	10	---	0.340	---	---	8	40%	Q-16
Chromium	**15.8**	---	1.17	mg/kg dry	10	---	14.4	---	---	9	40%	Q-16
Cobalt	**9.25**	---	0.234	mg/kg dry	10	---	8.96	---	---	3	40%	Q-16
Selenium	ND	---	1.17	mg/kg dry	10	---	ND	---	---	---	40%	Q-16
Matrix Spike (8061022-MS1)		Prepared: 06/22/18 15:33		Analyzed: 06/23/18 17:02								
QC Source Sample: LPC-SG-S15-3-061918 (A8F0645-28)												
EPA 6020A												
Antimony	32.8	---	1.24	mg/kg dry	10	30.9	ND	106	75-125%	---	---	
Cadmium	67.8	---	0.247	mg/kg dry	10	61.8	0.389	109	75-125%	---	---	
Copper	92.7	---	1.24	mg/kg dry	10	61.8	21.8	115	75-125%	---	---	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8061022 - EPA 3051A							**Soil**					
Matrix Spike (8061022-MS1)		Prepared: 06/22/18 15:33	Analyzed: 06/23/18 17:02									
QC Source Sample: LPC-SG-S15-3-061918 (A8F0645-28)												
Lead	73.4	---	1.24	mg/kg dry	10	61.8	3.26	113	75-125%	---	---	
Mercury	1.37	---	0.0989	mg/kg dry	10	1.24	ND	111	75-125%	---	---	
Nickel	85.1	---	2.47	mg/kg dry	10	61.8	12.8	117	75-125%	---	---	
Silver	34.2	---	0.247	mg/kg dry	10	30.9	ND	111	75-125%	---	---	
Thallium	34.3	---	0.247	mg/kg dry	10	30.9	ND	111	75-125%	---	---	
Zinc	118	---	4.95	mg/kg dry	10	61.8	47.5	113	75-125%	---	---	
Matrix Spike (8061022-MS2)		Prepared: 06/22/18 15:33	Analyzed: 06/26/18 16:01									
QC Source Sample: LPC-SG-S15-3-061918 (A8F0645-28RE1)												
EPA 6020A												
Arsenic	68.9	---	1.24	mg/kg dry	10	61.8	3.15	106	75-125%	---	---	Q-16
Beryllium	30.8	---	0.247	mg/kg dry	10	30.9	0.340	99	75-125%	---	---	Q-16
Chromium	79.5	---	1.24	mg/kg dry	10	61.8	14.4	105	75-125%	---	---	Q-16
Cobalt	73.1	---	0.247	mg/kg dry	10	61.8	8.96	104	75-125%	---	---	Q-16
Selenium	30.2	---	1.24	mg/kg dry	10	30.9	ND	98	75-125%	---	---	Q-16

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8070964 - EPA 1311/3015							**Soil**					
Blank (8070964-BLK1)		Prepared: 07/24/18 10:08	Analyzed: 07/24/18 16:07									
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLP
Barium	ND	---	0.500	mg/L	5	---	---	---	---	---	---	TCLP
Cadmium	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
Chromium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLP
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
Mercury	ND	---	0.00400	mg/L	5	---	---	---	---	---	---	TCLP
Selenium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLP
Silver	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLP
LCS (8070964-BS1)		Prepared: 07/24/18 10:08	Analyzed: 07/24/18 16:11									
1311/6020A												
Arsenic	2.70	---	0.100	mg/L	5	2.50	---	108	80-120%	---	---	TCLP
Barium	2.66	---	0.500	mg/L	5	2.50	---	106	80-120%	---	---	TCLP
Cadmium	2.64	---	0.0500	mg/L	5	2.50	---	106	80-120%	---	---	TCLP
Chromium	2.60	---	0.100	mg/L	5	2.50	---	104	80-120%	---	---	TCLP
Lead	2.69	---	0.0500	mg/L	5	2.50	---	108	80-120%	---	---	TCLP
Mercury	0.0538	---	0.00400	mg/L	5	0.0500	---	108	80-120%	---	---	TCLP
Selenium	2.56	---	0.100	mg/L	5	2.50	---	102	80-120%	---	---	TCLP
Silver	1.29	---	0.0500	mg/L	5	1.25	---	103	80-120%	---	---	TCLP
Matrix Spike (8070964-MS1)		Prepared: 07/24/18 10:08	Analyzed: 07/24/18 16:31									
QC Source Sample: LPC-SG-S10-1-061918 (A8F0645-14)												
1311/6020A												
Arsenic	2.83	---	0.100	mg/L	5	2.50	ND	113	50-150%	---	---	
Barium	3.02	---	0.500	mg/L	5	2.50	0.371	106	50-150%	---	---	
Cadmium	2.69	---	0.0500	mg/L	5	2.50	ND	108	50-150%	---	---	
Chromium	2.74	---	0.100	mg/L	5	2.50	ND	110	50-150%	---	---	
Lead	2.75	---	0.0500	mg/L	5	2.50	ND	110	50-150%	---	---	
Mercury	0.0550	---	0.00400	mg/L	5	0.0500	ND	110	50-150%	---	---	
Selenium	2.67	---	0.100	mg/L	5	2.50	ND	107	50-150%	---	---	
Silver	1.31	---	0.0500	mg/L	5	1.25	ND	105	50-150%	---	---	

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8071001 - EPA 1311/3015							**Soil**					
Blank (8071001-BLK1)		Prepared: 07/25/18 08:58	Analyzed: 07/25/18 13:35									
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLPa
Barium	ND	---	0.500	mg/L	5	---	---	---	---	---	---	TCLPa
Cadmium	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLPa
Chromium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLPa
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLPa
Mercury	ND	---	0.00400	mg/L	5	---	---	---	---	---	---	TCLPa
Selenium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	TCLPa
Silver	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	TCLPa
LCS (8071001-BS1)		Prepared: 07/25/18 08:58	Analyzed: 07/25/18 13:40									
1311/6020A												
Arsenic	2.60	---	0.100	mg/L	5	2.50	---	104	80-120%	---	---	TCLPa
Barium	2.67	---	0.500	mg/L	5	2.50	---	107	80-120%	---	---	TCLPa
Cadmium	2.71	---	0.0500	mg/L	5	2.50	---	109	80-120%	---	---	TCLPa
Chromium	2.43	---	0.100	mg/L	5	2.50	---	97	80-120%	---	---	TCLPa
Lead	2.63	---	0.0500	mg/L	5	2.50	---	105	80-120%	---	---	TCLPa
Mercury	0.0508	---	0.00400	mg/L	5	0.0500	---	102	80-120%	---	---	TCLPa
Selenium	2.58	---	0.100	mg/L	5	2.50	---	103	80-120%	---	---	TCLPa
Silver	1.32	---	0.0500	mg/L	5	1.25	---	105	80-120%	---	---	TCLPa
Matrix Spike (8071001-MS1)		Prepared: 07/25/18 08:58	Analyzed: 07/25/18 14:06									
QC Source Sample: LPC-SG-S16-1-061918 (A8F0645-30)												
1311/6020A												
Arsenic	2.61	---	0.100	mg/L	5	2.50	ND	104	50-150%	---	---	
Barium	2.90	---	0.500	mg/L	5	2.50	ND	116	50-150%	---	---	
Cadmium	2.76	---	0.0500	mg/L	5	2.50	ND	110	50-150%	---	---	
Chromium	2.50	---	0.100	mg/L	5	2.50	ND	100	50-150%	---	---	
Lead	2.73	---	0.0500	mg/L	5	2.50	ND	109	50-150%	---	---	
Mercury	0.0535	---	0.00400	mg/L	5	0.0500	ND	107	50-150%	---	---	
Selenium	2.65	---	0.100	mg/L	5	2.50	ND	106	50-150%	---	---	
Silver	1.33	---	0.0500	mg/L	5	1.25	ND	106	50-150%	---	---	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8060874 - Total Solids (Dry Weight)							**Soil**					
Duplicate (8060874-DUP3)		Prepared: 06/20/18 09:21		Analyzed: 06/21/18 09:17								
QC Source Sample: LPC-SG-S04-1-061918 (A8F0645-04)												
EPA 8000C												
% Solids	**80.2**	---	1.00	% by Weight	1	---	80.5	---	---	0.4	10%	
Duplicate (8060874-DUP4)		Prepared: 06/20/18 09:21		Analyzed: 06/21/18 09:17								
QC Source Sample: LPC-SG-S09-1-061918 (A8F0645-13)												
EPA 8000C												
% Solids	**74.8**	---	1.00	% by Weight	1	---	73.9	---	---	1	10%	
Duplicate (8060874-DUP5)		Prepared: 06/20/18 09:21		Analyzed: 06/21/18 09:17								
QC Source Sample: LPC-SG-S14-1-061918 (A8F0645-24)												
EPA 8000C												
% Solids	**88.0**	---	1.00	% by Weight	1	---	88.9	---	---	1	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8060953							
A8F0645-01	Soil	EPA 8082A	06/19/18 11:15	06/21/18 17:04	11.42g/5mL	10g/5mL	0.88
A8F0645-02	Soil	EPA 8082A	06/19/18 11:05	06/21/18 17:04	10.7g/5mL	10g/5mL	0.94
A8F0645-03	Soil	EPA 8082A	06/19/18 11:00	06/21/18 17:04	10.83g/5mL	10g/5mL	0.92
A8F0645-04	Soil	EPA 8082A	06/19/18 11:16	06/21/18 17:04	10.81g/5mL	10g/5mL	0.93
A8F0645-05	Soil	EPA 8082A	06/19/18 11:18	06/21/18 17:04	11.29g/5mL	10g/5mL	0.89
A8F0645-06	Soil	EPA 8082A	06/19/18 11:28	06/21/18 17:04	10.37g/5mL	10g/5mL	0.96
A8F0645-07	Soil	EPA 8082A	06/19/18 11:30	06/21/18 17:04	10.97g/5mL	10g/5mL	0.91
A8F0645-08	Soil	EPA 8082A	06/19/18 11:40	06/21/18 17:04	11.29g/5mL	10g/5mL	0.89
A8F0645-09RE1	Soil	EPA 8082A	06/19/18 11:43	06/21/18 17:04	11.39g/5mL	10g/5mL	0.88
A8F0645-10RE1	Soil	EPA 8082A	06/19/18 11:50	06/21/18 17:04	11g/5mL	10g/5mL	0.91
A8F0645-11RE1	Soil	EPA 8082A	06/19/18 11:57	06/21/18 17:04	10.41g/5mL	10g/5mL	0.96
A8F0645-12	Soil	EPA 8082A	06/19/18 12:20	06/21/18 17:04	11.32g/5mL	10g/5mL	0.88
A8F0645-13	Soil	EPA 8082A	06/19/18 12:12	06/21/18 17:04	11.54g/5mL	10g/5mL	0.87
A8F0645-14	Soil	EPA 8082A	06/19/18 12:10	06/21/18 17:04	11.06g/5mL	10g/5mL	0.90
A8F0645-15RE1	Soil	EPA 8082A	06/19/18 09:02	06/21/18 17:04	11.27g/5mL	10g/5mL	0.89
A8F0645-16RE1	Soil	EPA 8082A	06/19/18 09:05	06/21/18 17:04	11.4g/5mL	10g/5mL	0.88
Batch: 8060979							
A8F0645-17	Soil	EPA 8082A	06/19/18 09:10	06/22/18 07:15	10.8g/5mL	10g/5mL	0.93
A8F0645-18RE2	Soil	EPA 8082A	06/19/18 09:35	06/22/18 07:15	10.84g/5mL	10g/5mL	0.92
A8F0645-19	Soil	EPA 8082A	06/19/18 09:38	06/22/18 07:15	10.76g/5mL	10g/5mL	0.93
A8F0645-20	Soil	EPA 8082A	06/19/18 09:40	06/22/18 07:15	11.35g/5mL	10g/5mL	0.88
A8F0645-21RE1	Soil	EPA 8082A	06/19/18 10:38	06/22/18 07:15	10.96g/5mL	10g/5mL	0.91
A8F0645-22	Soil	EPA 8082A	06/19/18 10:40	06/22/18 07:15	11.42g/5mL	10g/5mL	0.88
A8F0645-23	Soil	EPA 8082A	06/19/18 10:45	06/22/18 07:15	10.98g/5mL	10g/5mL	0.91
A8F0645-24RE1	Soil	EPA 8082A	06/19/18 09:20	06/22/18 07:15	11g/5mL	10g/5mL	0.91
A8F0645-25	Soil	EPA 8082A	06/19/18 09:30	06/22/18 15:19	10.13g/5mL	10g/5mL	0.99
A8F0645-26	Soil	EPA 8082A	06/19/18 09:33	06/22/18 15:19	11.56g/5mL	10g/5mL	0.87
A8F0645-27RE2	Soil	EPA 8082A	06/19/18 09:53	06/22/18 15:19	10.13g/5mL	10g/5mL	0.99
A8F0645-28	Soil	EPA 8082A	06/19/18 10:05	06/22/18 15:19	10.74g/5mL	10g/5mL	0.93
A8F0645-29	Soil	EPA 8082A	06/19/18 10:10	06/22/18 15:19	11.17g/5mL	10g/5mL	0.90
A8F0645-30RE2	Soil	EPA 8082A	06/19/18 10:15	06/22/18 15:19	11.73g/5mL	10g/5mL	0.85
A8F0645-31RE1	Soil	EPA 8082A	06/19/18 10:18	06/22/18 15:19	11.35g/5mL	10g/5mL	0.88
A8F0645-32	Soil	EPA 8082A	06/19/18 10:20	06/22/18 15:19	11.94g/5mL	10g/5mL	0.84

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

SAMPLE PREPARATION INFORMATION

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8060945							
A8F0645-01	Soil	EPA 8270D (SIM)	06/19/18 11:15	06/21/18 12:24	11.39g/5mL	10g/5mL	0.88
A8F0645-02	Soil	EPA 8270D (SIM)	06/19/18 11:05	06/21/18 12:24	10.78g/5mL	10g/5mL	0.93
A8F0645-03	Soil	EPA 8270D (SIM)	06/19/18 11:00	06/21/18 12:24	11.58g/5mL	10g/5mL	0.86
A8F0645-04	Soil	EPA 8270D (SIM)	06/19/18 11:16	06/21/18 12:24	11.18g/5mL	10g/5mL	0.89
A8F0645-06	Soil	EPA 8270D (SIM)	06/19/18 11:28	06/21/18 12:24	11.05g/5mL	10g/5mL	0.91
A8F0645-08	Soil	EPA 8270D (SIM)	06/19/18 11:40	06/21/18 12:26	10.75g/5mL	10g/5mL	0.93
A8F0645-10	Soil	EPA 8270D (SIM)	06/19/18 11:50	06/21/18 12:26	11.17g/5mL	10g/5mL	0.90
A8F0645-12	Soil	EPA 8270D (SIM)	06/19/18 12:20	06/21/18 12:26	11.4g/5mL	10g/5mL	0.88
A8F0645-14	Soil	EPA 8270D (SIM)	06/19/18 12:10	06/21/18 12:26	11.22g/5mL	10g/5mL	0.89
A8F0645-15	Soil	EPA 8270D (SIM)	06/19/18 09:02	06/21/18 12:26	10.88g/5mL	10g/5mL	0.92
Batch: 8061021							
A8F0645-13RE1	Soil	EPA 8270D (SIM)	06/19/18 12:12	06/22/18 18:21	10.52g/5mL	10g/5mL	0.95
A8F0645-18RE1	Soil	EPA 8270D (SIM)	06/19/18 09:35	06/22/18 18:21	10.37g/5mL	10g/5mL	0.96
A8F0645-21RE1	Soil	EPA 8270D (SIM)	06/19/18 10:38	06/22/18 18:21	10.61g/5mL	10g/5mL	0.94
A8F0645-24RE1	Soil	EPA 8270D (SIM)	06/19/18 09:20	06/22/18 18:21	10.64g/5mL	10g/5mL	0.94
A8F0645-27RE1	Soil	EPA 8270D (SIM)	06/19/18 09:53	06/22/18 18:21	10.49g/5mL	10g/5mL	0.95
A8F0645-30RE1	Soil	EPA 8270D (SIM)	06/19/18 10:15	06/22/18 18:21	10.55g/5mL	10g/5mL	0.95

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8060940							
A8F0645-01	Soil	EPA 6020A	06/19/18 11:15	06/21/18 10:54	0.493g/50mL	0.5g/50mL	1.01
A8F0645-02	Soil	EPA 6020A	06/19/18 11:05	06/21/18 10:54	0.501g/50mL	0.5g/50mL	1.00
A8F0645-03	Soil	EPA 6020A	06/19/18 11:00	06/21/18 10:54	0.453g/50mL	0.5g/50mL	1.10
A8F0645-04	Soil	EPA 6020A	06/19/18 11:16	06/21/18 10:54	0.518g/50mL	0.5g/50mL	0.97
A8F0645-05	Soil	EPA 6020A	06/19/18 11:18	06/21/18 10:54	0.495g/50mL	0.5g/50mL	1.01
A8F0645-06	Soil	EPA 6020A	06/19/18 11:28	06/21/18 10:54	0.472g/50mL	0.5g/50mL	1.06
A8F0645-07	Soil	EPA 6020A	06/19/18 11:30	06/21/18 10:54	0.493g/50mL	0.5g/50mL	1.01
Batch: 8061010							
A8F0645-08	Soil	EPA 6020A	06/19/18 11:40	06/22/18 12:12	0.469g/50mL	0.5g/50mL	1.07
A8F0645-08RE1	Soil	EPA 6020A	06/19/18 11:40	06/22/18 12:12	0.469g/50mL	0.5g/50mL	1.07
A8F0645-09	Soil	EPA 6020A	06/19/18 11:43	06/22/18 12:12	0.517g/50mL	0.5g/50mL	0.97
A8F0645-09RE1	Soil	EPA 6020A	06/19/18 11:43	06/22/18 12:12	0.517g/50mL	0.5g/50mL	0.97

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8F0645-10	Soil	EPA 6020A	06/19/18 11:50	06/22/18 12:12	0.465g/50mL	0.5g/50mL	1.08
A8F0645-10RE1	Soil	EPA 6020A	06/19/18 11:50	06/22/18 12:12	0.465g/50mL	0.5g/50mL	1.08
A8F0645-11	Soil	EPA 6020A	06/19/18 11:57	06/22/18 12:12	0.503g/50mL	0.5g/50mL	0.99
A8F0645-11RE1	Soil	EPA 6020A	06/19/18 11:57	06/22/18 12:12	0.503g/50mL	0.5g/50mL	0.99
A8F0645-12	Soil	EPA 6020A	06/19/18 12:20	06/22/18 12:12	0.469g/50mL	0.5g/50mL	1.07
A8F0645-12RE1	Soil	EPA 6020A	06/19/18 12:20	06/22/18 12:12	0.469g/50mL	0.5g/50mL	1.07
A8F0645-13	Soil	EPA 6020A	06/19/18 12:12	06/22/18 12:12	0.466g/50mL	0.5g/50mL	1.07
A8F0645-13RE1	Soil	EPA 6020A	06/19/18 12:12	06/22/18 12:12	0.466g/50mL	0.5g/50mL	1.07
A8F0645-14	Soil	EPA 6020A	06/19/18 12:10	06/22/18 12:12	0.481g/50mL	0.5g/50mL	1.04
A8F0645-14RE1	Soil	EPA 6020A	06/19/18 12:10	06/22/18 12:12	0.481g/50mL	0.5g/50mL	1.04
A8F0645-15	Soil	EPA 6020A	06/19/18 09:02	06/22/18 12:12	0.48g/50mL	0.5g/50mL	1.04
A8F0645-15RE1	Soil	EPA 6020A	06/19/18 09:02	06/22/18 12:12	0.48g/50mL	0.5g/50mL	1.04
A8F0645-16	Soil	EPA 6020A	06/19/18 09:05	06/22/18 12:12	0.479g/50mL	0.5g/50mL	1.04
A8F0645-16RE1	Soil	EPA 6020A	06/19/18 09:05	06/22/18 12:12	0.479g/50mL	0.5g/50mL	1.04
A8F0645-17	Soil	EPA 6020A	06/19/18 09:10	06/22/18 12:12	0.518g/50mL	0.5g/50mL	0.97
A8F0645-17RE1	Soil	EPA 6020A	06/19/18 09:10	06/22/18 12:12	0.518g/50mL	0.5g/50mL	0.97
A8F0645-18	Soil	EPA 6020A	06/19/18 09:35	06/22/18 12:12	0.46g/50mL	0.5g/50mL	1.09
A8F0645-18RE1	Soil	EPA 6020A	06/19/18 09:35	06/22/18 12:12	0.46g/50mL	0.5g/50mL	1.09
A8F0645-19	Soil	EPA 6020A	06/19/18 09:38	06/22/18 12:12	0.508g/50mL	0.5g/50mL	0.98
A8F0645-19RE1	Soil	EPA 6020A	06/19/18 09:38	06/22/18 12:12	0.508g/50mL	0.5g/50mL	0.98
A8F0645-20	Soil	EPA 6020A	06/19/18 09:40	06/22/18 12:12	0.507g/50mL	0.5g/50mL	0.99
A8F0645-20RE1	Soil	EPA 6020A	06/19/18 09:40	06/22/18 12:12	0.507g/50mL	0.5g/50mL	0.99
A8F0645-21	Soil	EPA 6020A	06/19/18 10:38	06/22/18 12:12	0.476g/50mL	0.5g/50mL	1.05
A8F0645-21RE1	Soil	EPA 6020A	06/19/18 10:38	06/22/18 12:12	0.476g/50mL	0.5g/50mL	1.05
A8F0645-22	Soil	EPA 6020A	06/19/18 10:40	06/22/18 12:12	0.476g/50mL	0.5g/50mL	1.05
A8F0645-22RE1	Soil	EPA 6020A	06/19/18 10:40	06/22/18 12:12	0.476g/50mL	0.5g/50mL	1.05
A8F0645-23	Soil	EPA 6020A	06/19/18 10:45	06/22/18 12:12	0.478g/50mL	0.5g/50mL	1.05
A8F0645-23RE1	Soil	EPA 6020A	06/19/18 10:45	06/22/18 12:12	0.478g/50mL	0.5g/50mL	1.05
A8F0645-24	Soil	EPA 6020A	06/19/18 09:20	06/22/18 12:12	0.493g/50mL	0.5g/50mL	1.01
A8F0645-24RE1	Soil	EPA 6020A	06/19/18 09:20	06/22/18 12:12	0.493g/50mL	0.5g/50mL	1.01
A8F0645-25	Soil	EPA 6020A	06/19/18 09:30	06/22/18 12:12	0.516g/50mL	0.5g/50mL	0.97
A8F0645-25RE1	Soil	EPA 6020A	06/19/18 09:30	06/22/18 12:12	0.516g/50mL	0.5g/50mL	0.97
Batch: 8061022							
A8F0645-26	Soil	EPA 6020A	06/19/18 09:33	06/22/18 15:33	0.477g/50mL	0.5g/50mL	1.05
A8F0645-26RE1	Soil	EPA 6020A	06/19/18 09:33	06/22/18 15:33	0.477g/50mL	0.5g/50mL	1.05
A8F0645-27	Soil	EPA 6020A	06/19/18 09:53	06/22/18 15:33	0.509g/50mL	0.5g/50mL	0.98
A8F0645-27RE1	Soil	EPA 6020A	06/19/18 09:53	06/22/18 15:33	0.509g/50mL	0.5g/50mL	0.98

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8F0645-28	Soil	EPA 6020A	06/19/18 10:05	06/22/18 15:33	0.497g/50mL	0.5g/50mL	1.01
A8F0645-28RE1	Soil	EPA 6020A	06/19/18 10:05	06/22/18 15:33	0.497g/50mL	0.5g/50mL	1.01
A8F0645-29	Soil	EPA 6020A	06/19/18 10:10	06/22/18 15:33	0.502g/50mL	0.5g/50mL	1.00
A8F0645-29RE1	Soil	EPA 6020A	06/19/18 10:10	06/22/18 15:33	0.502g/50mL	0.5g/50mL	1.00
A8F0645-30	Soil	EPA 6020A	06/19/18 10:15	06/22/18 15:33	0.514g/50mL	0.5g/50mL	0.97
A8F0645-30RE1	Soil	EPA 6020A	06/19/18 10:15	06/22/18 15:33	0.514g/50mL	0.5g/50mL	0.97
A8F0645-31	Soil	EPA 6020A	06/19/18 10:18	06/22/18 15:33	0.468g/50mL	0.5g/50mL	1.07
A8F0645-31RE1	Soil	EPA 6020A	06/19/18 10:18	06/22/18 15:33	0.468g/50mL	0.5g/50mL	1.07
A8F0645-32	Soil	EPA 6020A	06/19/18 10:20	06/22/18 15:33	0.5g/50mL	0.5g/50mL	1.00
A8F0645-32RE1	Soil	EPA 6020A	06/19/18 10:20	06/22/18 15:33	0.5g/50mL	0.5g/50mL	1.00

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8070964							
A8F0645-12	Soil	1311/6020A	06/19/18 12:20	07/24/18 10:08	5mL/50mL	5mL/50mL	1.00
A8F0645-13	Soil	1311/6020A	06/19/18 12:12	07/24/18 10:08	5mL/50mL	5mL/50mL	1.00
A8F0645-14	Soil	1311/6020A	06/19/18 12:10	07/24/18 10:08	5mL/50mL	5mL/50mL	1.00
A8F0645-15	Soil	1311/6020A	06/19/18 09:02	07/24/18 10:08	5mL/50mL	5mL/50mL	1.00
Batch: 8071001							
A8F0645-18	Soil	1311/6020A	06/19/18 09:35	07/25/18 08:58	5mL/50mL	5mL/50mL	1.00
A8F0645-21	Soil	1311/6020A	06/19/18 10:38	07/25/18 08:58	5mL/50mL	5mL/50mL	1.00
A8F0645-24	Soil	1311/6020A	06/19/18 09:20	07/25/18 08:58	5mL/50mL	5mL/50mL	1.00
A8F0645-27	Soil	1311/6020A	06/19/18 09:53	07/25/18 08:58	5mL/50mL	5mL/50mL	1.00
A8F0645-30	Soil	1311/6020A	06/19/18 10:15	07/25/18 08:58	5mL/50mL	5mL/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8060874							
A8F0645-01	Soil	EPA 8000C	06/19/18 11:15	06/20/18 09:21			NA
A8F0645-02	Soil	EPA 8000C	06/19/18 11:05	06/20/18 09:21			NA
A8F0645-03	Soil	EPA 8000C	06/19/18 11:00	06/20/18 09:21			NA
A8F0645-04	Soil	EPA 8000C	06/19/18 11:16	06/20/18 09:21			NA
A8F0645-05	Soil	EPA 8000C	06/19/18 11:18	06/20/18 09:21			NA

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8F0645-06	Soil	EPA 8000C	06/19/18 11:28	06/20/18 09:21			NA
A8F0645-07	Soil	EPA 8000C	06/19/18 11:30	06/20/18 09:21			NA
A8F0645-08	Soil	EPA 8000C	06/19/18 11:40	06/20/18 09:21			NA
A8F0645-09	Soil	EPA 8000C	06/19/18 11:43	06/20/18 09:21			NA
A8F0645-10	Soil	EPA 8000C	06/19/18 11:50	06/20/18 09:21			NA
A8F0645-11	Soil	EPA 8000C	06/19/18 11:57	06/20/18 09:21			NA
A8F0645-12	Soil	EPA 8000C	06/19/18 12:20	06/20/18 09:21			NA
A8F0645-13	Soil	EPA 8000C	06/19/18 12:12	06/20/18 09:21			NA
A8F0645-14	Soil	EPA 8000C	06/19/18 12:10	06/20/18 09:21			NA
A8F0645-15	Soil	EPA 8000C	06/19/18 09:02	06/20/18 09:21			NA
A8F0645-16	Soil	EPA 8000C	06/19/18 09:05	06/20/18 09:21			NA
A8F0645-17	Soil	EPA 8000C	06/19/18 09:10	06/20/18 09:21			NA
A8F0645-18	Soil	EPA 8000C	06/19/18 09:35	06/20/18 09:21			NA
A8F0645-19	Soil	EPA 8000C	06/19/18 09:38	06/20/18 09:21			NA
A8F0645-20	Soil	EPA 8000C	06/19/18 09:40	06/20/18 09:21			NA
A8F0645-21	Soil	EPA 8000C	06/19/18 10:38	06/20/18 09:21			NA
A8F0645-22	Soil	EPA 8000C	06/19/18 10:40	06/20/18 09:21			NA
A8F0645-23	Soil	EPA 8000C	06/19/18 10:45	06/20/18 09:21			NA
A8F0645-24	Soil	EPA 8000C	06/19/18 09:20	06/20/18 09:21			NA
A8F0645-25	Soil	EPA 8000C	06/19/18 09:30	06/20/18 09:21			NA
A8F0645-26	Soil	EPA 8000C	06/19/18 09:33	06/20/18 09:21			NA
A8F0645-27	Soil	EPA 8000C	06/19/18 09:53	06/20/18 09:21			NA
A8F0645-28	Soil	EPA 8000C	06/19/18 10:05	06/20/18 09:21			NA
A8F0645-29	Soil	EPA 8000C	06/19/18 10:10	06/20/18 09:21			NA
A8F0645-30	Soil	EPA 8000C	06/19/18 10:15	06/20/18 09:21			NA
A8F0645-31	Soil	EPA 8000C	06/19/18 10:18	06/20/18 09:21			NA
A8F0645-32	Soil	EPA 8000C	06/19/18 10:20	06/20/18 09:21			NA

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
H-10	This sample was TCLP extracted (leached) outside of the recommended holding time.
M-05	Estimated results. Peak separation for structural isomers is insufficient for accurate quantification.
P-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8070925.
TCLPa	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8070967.

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab# A8F0645 COC 1 of 1

Company: Landau Project Mgr: Della Fawcett Project Name: LPL Switch Gear PO# Project #: 883002.040.046

Address: 1500 SW 1st Ave Portland OR Phone: Fax: Email:

Sampled by: Sierra Mott / Wolfgang Lopez

Site Location: OR WA Other: ____

#	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	PPMetals +Co
1	LPL-SG-501-2-061918		6/19/18	1115	Soil	1									X	X							X
2	LPL-SG-502-2-061918			1105											X	X							X
3	LPL-SG-503-2-061918			1100											X	X							X
4	LPL-SG-504-1-061918			1116											X	X							X
5	LPL-SG-504-4-061918			1118											X	X							X
6	LPL-SG-505-1-061918			1126											X	X							X
7	LPL-SG-505-4-061918			1130											X	X							X
8	LPL-SG-506-1-061918			1140											X	X							X
9	LPL-SG-506-3.6-061918			1143											X	X							X
10	LPL-SG-507-1-061918			1150		1									X	X							X

Normal Turn Around Time (TAT) = 10 Business Days: YES (circled) NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RECEIVED BY:
Signature: [illegible] Date: 6/19/18 Time: 1335
Printed Name: Sierra Mott
Company: LAI

RELINQUISHED BY:
Signature: [illegible] Date: 6/19/18 Time: 1335
Printed Name: [illegible]
Company: Apex Labs

RELINQUISHED BY:
Signature: ____ Date: ____
Printed Name: ____ Time: ____
Company: ____

RECEIVED BY:
Signature: ____ Date: ____
Printed Name: ____ Time: ____
Company: ____

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

APEX LABS — **CHAIN OF CUSTODY** — Lab # A8F0645 — COC 2 of 4

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Company: Landau Associates — Project Mgr: Della Fawcett — Project Name: PCC Switch Gear — PO# — Project # 883002.040.046

Address: 1500 SW 1st Ave Portland OR — Phone: — Fax: — Email:

Sampled by: Sierra Mott / Wolfgang Lopez

Site Location: OR WA — Other: _____

ANALYSIS REQUESTED

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	PP Metals + Co
1	LPC-SG-S07-4-061918		6/19/18	1157	Soil	1										X							X
2	LPC-SG-S08-1-061918			1220											X	X							X
3	LPC-SG-S09-1-061918			1212											X	X							X
4	LPC-SG-S10-1-061918			1210											X	X							X
5	LPC-SG-S11-1-061918			902											X	X							X
6	LPC-SG-S11-4-061918			905												X							X
7	LPC-SG-S11-6.7-061918			910												X							X
8	LPC-SG-S12-1-061918			935											X	X							X
9	LPC-SG-S12-4-061918			938												X							X
10	LPC-SG-S12-7-061918			940		1										X							X

Normal Turn Around Time (TAT) = 10 Business Days — YES — NO

TAT Requested (circle): 1 Day — 2 Day — 3 Day — 4 DAY — 5 DAY — Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: [signature] Date: 6/19/18 Time: 1335 Printed Name: Sierra Mott Company: LA1

RECEIVED BY: Signature: [signature] Date: 6/19/18 Time: 1335 Printed Name: [illegible] Company: Apex Labs

RELINQUISHED BY: Signature: [signature] Date: 6/19/18 Time: 1335 Printed Name: [illegible] Company: [illegible]

RECEIVED BY: Signature: [signature] Date: Time: Printed Name: Company:

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

APEX LABS — CHAIN OF CUSTODY

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A8F0645 COC 3 of 4

Company: Landau Associates | Project Mgr: Della Fawcett | Project Name: LPC Switch Gear | Project # 883002.040.046 | PO#

Address: 1500 SW 1st Ave Portland OR | Phone: | Fax: | Email:

Sampled by: Sierra Mott / Wolf Lopez

Site Location: OR WA
Other:

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z	PPMetals + Co
1	LPC-SG-S13-1-061918		6/19/18	0938	Soil	1									X	X							X
2	LPC-SG-S13-4-061918			1040												X							X
3	LPC-SG-S12-6.3-061918			1045												X							X
4	LPC-SG-S14-1-061918			0920											X	X							X
5	LPC-SG-S14.5-061918			930												X							X
6	LPC-SG-S14-7-061918			933												X							X
7	LPC-SG-S15-1-061918			953											X	X							X
8	LPC-SG-S15-3-061918			1005												X							X
9	LPC-SG-S15-6.5-061918			1010												X							X
10	LPC-SG-S16-1-061918			1015											X	X							X

Normal Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day | 2 Day | 3 Day | 4 DAY | 5 DAY | Other: ____

SPECIAL INSTRUCTIONS: YES NO

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY: Signature: Sierra Mott Date: 6/19/18 Time: 1335 Printed Name: Sierra Mott Company: LAI

RECEIVED BY: Signature: [illegible] Date: 6/19/18 Time: 1335 Printed Name: Melissa Kapa Company: Apex Labs

RELINQUISHED BY: Signature: Date: Time: Printed Name: Company:

RECEIVED BY: Signature: Date: Time: Printed Name: Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

APEX LABS

CHAIN OF CUSTODY

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A8F0645 COC 4 of 4

PO#

Company: Landau | Project Mgr: Della Fawcett | Project Name: LPC Switch Gear | Project # 883002.040.046

Address: 1500 SW 1st Ave Portland OR | Phone: | Fax: | Email:

Sampled by: Sierra Mott / Wolfgang Lopez

Site Location: OR WA Other: _____

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z	PP Metals + Co
1 LPC-SG-S16-2.7-061918		6/19/18	1018	Soil	1										X							X
2 LPC-SG-S16-6.5-061918		6/19/18	1020	Soil	1										X							X
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Sierra Mott	Date: 6/19/18 Signature: [signature]	Signature:	Date: Signature: Date:
Printed Name: Sierra Mott	Time: 1335 Printed Name: Alissa Kepa	Printed Name:	Time: Printed Name: Time:
Company: LAI	Company: Apex Labs	Company:	Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Della Fawcett**	**A8F0645 - 07 27 18 0831**

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A8F0645

Project/Project #: LPC Switch Gear / #883002.040.046

Delivery info:

Date/Time Received: 6/19/18 @ 1335 By: AKK

Delivered by: Apex____ Client X ESS____ FedEx____ UPS____ Swift____ Senvoy____ SDS____ Other____

Cooler Inspection Inspected by: AKK : 6/19/18 @ 1338

Chain of Custody Included? Yes X No ___ Custody Seals? Yes_____ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:_____

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: B : 6/19/18 @ 1736

All Samples Intact? Yes ✓ No ___ Comments:_____

Bottle Labels/COCs agree? Yes ___ No ✓ Comments: LPC-SG-S14-5-061918 container reads T of 933, LPC-SG-S14-7-061918 container reads T of 930

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments_____

Water Samples: pH Checked and Appropriate (except VOAs): Yes___ No___ NA ✓

Comments: _____

Additional Information: LPC-SG-S01-2-061918 no T on container

Labeled by: B Witness: AKK Cooler Inspected by: B See Project Contact Form: Y

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Tuesday, September 4, 2018

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: A8H0244 - PCC Structurals-Switch Gear - PCC Structurals-Soil

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8H0244, which was received by the laboratory on 8/9/2018 at 10:21:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-C01-080118 (As Received)	A8H0244-01	Concrete	08/01/18 13:30	08/09/18 10:21
LPC-SG-C01-080118 (After Processing)	A8H0244-02	Concrete	08/01/18 13:30	08/09/18 10:21
LPC-SG-C02-080118 (As Received)	A8H0244-03	Concrete	08/01/18 13:58	08/09/18 10:21
LPC-SG-C02-080118 (After Processing)	A8H0244-04	Concrete	08/01/18 13:58	08/09/18 10:21
LPC-SG-C03-080118 (As Received)	A8H0244-05	Concrete	08/01/18 14:00	08/09/18 10:21
LPC-SG-C03-080118 (After Processing)	A8H0244-06	Concrete	08/01/18 14:00	08/09/18 10:21
LPC-SG-S22-0.5-080118	A8H0244-07	Soil	08/01/18 13:40	08/09/18 10:21
LPC-SG-S22-3.3-080118	A8H0244-08	Soil	08/01/18 14:30	08/09/18 10:21
LPC-SG-S23-0.5-080118	A8H0244-09	Soil	08/01/18 15:05	08/09/18 10:21
LPC-SG-S24-0.5-080118	A8H0244-10	Soil	08/01/18 15:40	08/09/18 10:21
LPC-SG-S23-3.3-080118	A8H0244-11	Soil	08/01/18 15:07	08/09/18 10:21
LPC-SG-S24-3.3-080118	A8H0244-12	Soil	08/01/18 15:53	08/09/18 10:21

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL CASE NARRATIVE

Work Order: A8H0244

Amended Report Revision 1:

Additional Data-

This report supersedes all previous reports.

The final report has been amended to include additional TCLP RCRA 8 data by EPA methods 1311/6020 to sample LPC-SG-S22-0.5-080118 (Apex ID: A8H0244-07).

Lisa Domenighini
Client Services Manager
8/29/18

Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C01-080118 (After Processing) (A8H0244-02)				**Matrix: Concrete**			**Batch: 8080657**	**C-07**
Aroclor 1016	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1221	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1232	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1242	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1248	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1254	**240**	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1260	ND	---	46.9	ug/kg	1	08/13/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 106 %*		*Limits: 53-120 %*	*1*	*08/13/18*	*EPA 8082A*	
LPC-SG-C02-080118 (After Processing) (A8H0244-04RE1)				**Matrix: Concrete**			**Batch: 8080657**	**C-07**
Aroclor 1016	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1254	**53900**	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Aroclor 1260	ND	---	1500	ug/kg	20	08/14/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 111 %*		*Limits: 53-120 %*	*20*	*08/14/18*	*EPA 8082A*	*S-05*
LPC-SG-C03-080118 (After Processing) (A8H0244-06)				**Matrix: Concrete**			**Batch: 8080657**	**C-07**
Aroclor 1016	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1221	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1232	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1242	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1248	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1254	**1500**	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Aroclor 1260	ND	---	46.1	ug/kg	1	08/13/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 103 %*		*Limits: 53-120 %*	*1*	*08/13/18*	*EPA 8082A*	
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1254	**125000**	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	
Aroclor 1260	ND	---	6010	ug/kg dry	500	08/14/18	EPA 8082A	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: %*	*Limits: 53-120 %*	*500*	*08/14/18*	*EPA 8082A*	*S-01*
LPC-SG-S22-3.3-080118 (A8H0244-08)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1254	**289**	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Aroclor 1260	**43.0**	---	13.1	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 88 %*	*Limits: 53-120 %*	*1*	*08/14/18*	*EPA 8082A*	
LPC-SG-S23-0.5-080118 (A8H0244-09RE1)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	111	ug/kg dry	10	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	111	ug/kg dry	10	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	111	ug/kg dry	10	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	111	ug/kg dry	10	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	111	ug/kg dry	10	08/14/18	EPA 8082A	
Aroclor 1254	**2080**	---	111	ug/kg dry	10	08/14/18	EPA 8082A	**P-10**
Aroclor 1260	**657**	---	111	ug/kg dry	10	08/14/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 105 %*	*Limits: 53-120 %*	*10*	*08/14/18*	*EPA 8082A*	*S-05*
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1254	**417**	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Aroclor 1260	**123**	---	11.4	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 63 %*	*Limits: 53-120 %*	*1*	*08/14/18*	*EPA 8082A*	
LPC-SG-S23-3.3-080118 (A8H0244-11RE1)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S23-3.3-080118 (A8H0244-11RE1)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1248	ND	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	
Aroclor 1254	**898**	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	**P-10**
Aroclor 1260	**199**	---	63.0	ug/kg dry	5	08/14/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 53-120 %*	*5*	*08/14/18*	*EPA 8082A*	*S-05*
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**			**Batch: 8080682**	**C-07**
Aroclor 1016	ND	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1221	ND	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1232	ND	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1242	ND	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1248	ND	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	
Aroclor 1254	**171**	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Aroclor 1260	**19.5**	---	13.7	ug/kg dry	1	08/14/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 81 %*		*Limits: 53-120 %*	*1*	*08/14/18*	*EPA 8082A*	

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12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C01-080118 (After Processing) (A8H0244-02)				**Matrix: Concrete**		**Batch: 8080656**		
Acenaphthene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Anthracene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Chrysene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluorene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Naphthalene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Pyrene	ND	---	41.8	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*87 %*	*Limits: 44-120 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*99 %*	*54-127 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
LPC-SG-C02-080118 (After Processing) (A8H0244-04)				**Matrix: Concrete**		**Batch: 8080656**		
Acenaphthene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Anthracene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Chrysene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluorene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C02-080118 (After Processing) (A8H0244-04)				**Matrix: Concrete**		**Batch: 8080656**		
2-Methylnaphthalene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Naphthalene	ND	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Phenanthrene	**1140**	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Pyrene	**217**	---	195	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 44-120 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*101 %*	*54-127 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
LPC-SG-C03-080118 (After Processing) (A8H0244-06)				**Matrix: Concrete**		**Batch: 8080656**		
Acenaphthene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Anthracene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Chrysene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Fluorene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
1-Methylnaphthalene	**51.9**	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
2-Methylnaphthalene	**66.8**	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Naphthalene	**53.7**	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Phenanthrene	**50.6**	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Pyrene	ND	---	41.0	ug/kg	1	08/10/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 44-120 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*98 %*	*54-127 %*	*1*	*08/10/18*	*EPA 8270D (SIM)*	
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**		**Batch: 8080681**		
Benzo(g,h,i)perylene	**318**	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Naphthalene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	226	ug/kg dry	20	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*82 %*	*Limits: 44-120 %*	*20*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*102 %*	*54-127 %*	*20*	*08/13/18*	*EPA 8270D (SIM)*	
LPC-SG-S22-3.3-080118 (A8H0244-08)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	11.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*63 %*	*Limits: 44-120 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*96 %*	*54-127 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S23-0.5-080118 (A8H0244-09)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	10.9	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 44-120 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**		**Batch: 8080681**		
2-Methylnaphthalene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Naphthalene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	10.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*75 %*	*Limits: 44-120 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*87 %*	*54-127 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
LPC-SG-S23-3.3-080118 (A8H0244-11)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Naphthalene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	12.2	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*80 %*	*Limits: 44-120 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*97 %*	*54-127 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**		**Batch: 8080681**		
Acenaphthene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**		**Batch: 8080681**		
Benzo(g,h,i)perylene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Chrysene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
2-Methylnaphthalene	**17.6**	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Naphthalene	**56.7**	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Pyrene	ND	---	12.6	ug/kg dry	1	08/13/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*81 %*	*Limits: 44-120 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*94 %*	*54-127 %*	*1*	*08/13/18*	*EPA 8270D (SIM)*	

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C01-080118 (After Processing) (A8H0244-02)				**Matrix: Concrete**				
Batch: 8080647								
Antimony	**2.44**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Arsenic	**8.88**	---	2.10	mg/kg	10	08/13/18	EPA 6020A	
Beryllium	**0.328**	---	0.210	mg/kg	10	08/13/18	EPA 6020A	
Cadmium	**0.602**	---	0.210	mg/kg	10	08/13/18	EPA 6020A	
Chromium	**64.5**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Cobalt	**18.8**	---	0.210	mg/kg	10	08/13/18	EPA 6020A	
Copper	**34.2**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Lead	**11.0**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.0840	mg/kg	10	08/13/18	EPA 6020A	
Nickel	**169**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Silver	ND	---	0.210	mg/kg	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.210	mg/kg	10	08/13/18	EPA 6020A	
Zinc	**94.8**	---	4.20	mg/kg	10	08/13/18	EPA 6020A	
LPC-SG-C02-080118 (After Processing) (A8H0244-04)				**Matrix: Concrete**				
Batch: 8080647								
Antimony	ND	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Arsenic	**4.04**	---	1.94	mg/kg	10	08/13/18	EPA 6020A	
Beryllium	**0.343**	---	0.194	mg/kg	10	08/13/18	EPA 6020A	
Cadmium	**0.535**	---	0.194	mg/kg	10	08/13/18	EPA 6020A	
Chromium	**62.7**	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Cobalt	**16.7**	---	0.194	mg/kg	10	08/13/18	EPA 6020A	
Copper	**38.2**	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Lead	**3.95**	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.0775	mg/kg	10	08/13/18	EPA 6020A	
Nickel	**127**	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Selenium	ND	---	0.969	mg/kg	10	08/13/18	EPA 6020A	
Silver	ND	---	0.194	mg/kg	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.194	mg/kg	10	08/13/18	EPA 6020A	
Zinc	**211**	---	3.88	mg/kg	10	08/13/18	EPA 6020A	
LPC-SG-C03-080118 (After Processing) (A8H0244-06)				**Matrix: Concrete**				
Batch: 8080647								
Antimony	**1.84**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Arsenic	**8.95**	---	2.09	mg/kg	10	08/13/18	EPA 6020A	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C03-080118 (After Processing) (A8H0244-06)				**Matrix: Concrete**				
Beryllium	**0.549**	---	0.209	mg/kg	10	08/13/18	EPA 6020A	
Cadmium	**0.792**	---	0.209	mg/kg	10	08/13/18	EPA 6020A	
Chromium	**95.4**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	**Q-42**
Cobalt	**19.7**	---	0.209	mg/kg	10	08/13/18	EPA 6020A	
Copper	**57.4**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Lead	**6.72**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.0837	mg/kg	10	08/13/18	EPA 6020A	
Nickel	**223**	---	1.05	mg/kg	10	08/13/18	EPA 6020A	**Q-42**
Selenium	ND	---	1.05	mg/kg	10	08/13/18	EPA 6020A	
Silver	ND	---	0.209	mg/kg	10	08/13/18	EPA 6020A	Q-17
Thallium	ND	---	0.209	mg/kg	10	08/13/18	EPA 6020A	
Zinc	**107**	---	4.18	mg/kg	10	08/13/18	EPA 6020A	
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**				
Batch: 8080633								
Antimony	**1.32**	---	1.31	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**3.02**	---	1.31	mg/kg dry	10	08/13/18	EPA 6020A	
Beryllium	ND	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	**0.918**	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**545**	---	1.31	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**74.2**	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Copper	**104**	---	1.31	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**105**	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	**0.419**	---	0.105	mg/kg dry	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.31	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	**0.502**	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.263	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**383**	---	5.26	mg/kg dry	10	08/13/18	EPA 6020A	
LPC-SG-S22-0.5-080118 (A8H0244-07RE1)				**Matrix: Soil**				
Batch: 8080633								
Nickel	**1890**	---	13.1	mg/kg dry	100	08/13/18	EPA 6020A	
LPC-SG-S22-3.3-080118 (A8H0244-08)				**Matrix: Soil**				
Batch: 8080633								
Antimony	ND	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**2.07**	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	

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Lisa Domenighini, Client Services Manager

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503-718-2323
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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S22-3.3-080118 (A8H0244-08)				**Matrix: Soil**				
Beryllium	**0.470**	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	**0.406**	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**12.8**	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**12.8**	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Copper	**27.6**	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**4.50**	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.106	mg/kg dry	10	08/13/18	EPA 6020A	
Nickel	**20.3**	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.32	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	ND	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.264	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**57.5**	---	5.29	mg/kg dry	10	08/13/18	EPA 6020A	
LPC-SG-S23-0.5-080118 (A8H0244-09)				**Matrix: Soil**				
Batch: 8080633								
Antimony	ND	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**13.9**	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Beryllium	**0.371**	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	**0.350**	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**44.7**	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**49.3**	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Copper	**96.4**	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**4.78**	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.0935	mg/kg dry	10	08/13/18	EPA 6020A	
Nickel	**31.3**	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.17	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	ND	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.234	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**67.1**	---	4.68	mg/kg dry	10	08/13/18	EPA 6020A	
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**				
Batch: 8080633								
Antimony	ND	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**8.33**	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Beryllium	**0.393**	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	**0.447**	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**23.2**	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**13.3**	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**				
Copper	**30.2**	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**4.67**	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.0941	mg/kg dry	10	08/13/18	EPA 6020A	
Nickel	**17.9**	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.18	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	ND	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.235	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**57.7**	---	4.71	mg/kg dry	10	08/13/18	EPA 6020A	
LPC-SG-S23-3.3-080118 (A8H0244-11)				**Matrix: Soil**				
Batch: 8080633								
Antimony	ND	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**3.31**	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Beryllium	ND	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	ND	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**8.45**	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**8.25**	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Copper	**23.2**	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**7.20**	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.119	mg/kg dry	10	08/13/18	EPA 6020A	
Nickel	**9.65**	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Selenium	ND	---	1.49	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	ND	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.298	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**32.3**	---	5.97	mg/kg dry	10	08/13/18	EPA 6020A	
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**				
Batch: 8080633								
Antimony	ND	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	
Arsenic	**2.27**	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	
Beryllium	**0.428**	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Cadmium	**0.379**	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Chromium	**10.1**	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	
Cobalt	**12.2**	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Copper	**26.3**	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	
Lead	**3.98**	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Mercury	ND	---	0.113	mg/kg dry	10	08/13/18	EPA 6020A	
Nickel	**16.1**	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	

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12232 S.W. Garden Place
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**				
Selenium	ND	---	1.41	mg/kg dry	10	08/13/18	EPA 6020A	
Silver	ND	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Thallium	ND	---	0.283	mg/kg dry	10	08/13/18	EPA 6020A	
Zinc	**44.6**	---	5.65	mg/kg dry	10	08/13/18	EPA 6020A	

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**				
Batch: 8081245								
Arsenic	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Barium	ND	---	0.500	mg/L	5	08/29/18	1311/6020A	Q-44
Cadmium	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Chromium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Lead	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Mercury	ND	---	0.00400	mg/L	5	08/29/18	1311/6020A	Q-44
Selenium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Silver	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Sample Size Reduction - Grinding

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-C01-080118 (As Received) (A8H0244-01)				**Matrix: Concrete**			**Batch: 8080637**	
Sample Processing	0.00	---		N/A	1	08/09/18	Grind	
LPC-SG-C02-080118 (As Received) (A8H0244-03)				**Matrix: Concrete**			**Batch: 8080637**	
Sample Processing	0.00	---		N/A	1	08/09/18	Grind	
LPC-SG-C03-080118 (As Received) (A8H0244-05)				**Matrix: Concrete**			**Batch: 8080637**	
Sample Processing	0.00	---		N/A	1	08/09/18	Grind	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S22-0.5-080118 (A8H0244-07)				**Matrix: Soil**			**Batch: 8080650**	
% Solids	**82.2**	---	1.00	% by Weight	1	08/13/18	EPA 8000C	
LPC-SG-S22-3.3-080118 (A8H0244-08)				**Matrix: Soil**			**Batch: 8080608**	
% Solids	**75.4**	---	1.00	% by Weight	1	08/10/18	EPA 8000C	
LPC-SG-S23-0.5-080118 (A8H0244-09)				**Matrix: Soil**			**Batch: 8080650**	
% Solids	**86.2**	---	1.00	% by Weight	1	08/13/18	EPA 8000C	
LPC-SG-S24-0.5-080118 (A8H0244-10)				**Matrix: Soil**			**Batch: 8080650**	
% Solids	**84.7**	---	1.00	% by Weight	1	08/13/18	EPA 8000C	
LPC-SG-S23-3.3-080118 (A8H0244-11)				**Matrix: Soil**			**Batch: 8080650**	
% Solids	**72.9**	---	1.00	% by Weight	1	08/13/18	EPA 8000C	
LPC-SG-S24-3.3-080118 (A8H0244-12)				**Matrix: Soil**			**Batch: 8080650**	
% Solids	**71.5**	---	1.00	% by Weight	1	08/13/18	EPA 8000C	

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080657 - EPA 3546							**Concrete**					
Blank (8080657-BLK1)		Prepared: 08/10/18 10:10		Analyzed: 08/13/18 08:28								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 105 %*		*Limits: 53-120 %*			*Dilution: 1x*					
LCS (8080657-BS1)		Prepared: 08/10/18 10:10		Analyzed: 08/13/18 08:46								**C-07**
EPA 8082A												
Aroclor 1016	967	---	50.0	ug/kg	1	1250	---	77	47-134%	---	---	
Aroclor 1260	1120	---	50.0	ug/kg	1	1250	---	89	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 107 %*		*Limits: 53-120 %*			*Dilution: 1x*					

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080682 - EPA 3546							**Soil**					
Blank (8080682-BLK1)		Prepared: 08/13/18 07:11		Analyzed: 08/13/18 13:50								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 53-120 %*			*Dilution: 1x*					
LCS (8080682-BS1)		Prepared: 08/13/18 07:11		Analyzed: 08/13/18 14:07								**C-07**
EPA 8082A												
Aroclor 1016	184	---	10.0	ug/kg wet	1	250	---	73	47-134%	---	---	
Aroclor 1260	237	---	10.0	ug/kg wet	1	250	---	95	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 53-120 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080656 - EPA 3546							**Concrete**					
Blank (8080656-BLK1)		Prepared: 08/10/18 10:11		Analyzed: 08/10/18 15:44								
EPA 8270D (SIM)												
Acenaphthene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Anthracene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Chrysene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Fluoranthene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Fluorene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Naphthalene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Phenanthrene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Pyrene	ND	---	33.3	ug/kg	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 91 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*103 %*		*54-127 %*			*"*					
LCS (8080656-BS1)		Prepared: 08/10/18 10:11		Analyzed: 08/10/18 16:10								
EPA 8270D (SIM)												
Acenaphthene	3750	---	50.0	ug/kg	1	4000	---	94	40-122%	---	---	
Acenaphthylene	3850	---	50.0	ug/kg	1	4000	---	96	32-132%	---	---	
Anthracene	3830	---	50.0	ug/kg	1	4000	---	96	47-123%	---	---	
Benz(a)anthracene	3610	---	50.0	ug/kg	1	4000	---	90	49-126%	---	---	
Benzo(a)pyrene	3840	---	50.0	ug/kg	1	4000	---	96	45-129%	---	---	
Benzo(b)fluoranthene	3930	---	50.0	ug/kg	1	4000	---	98	45-132%	---	---	
Benzo(k)fluoranthene	4190	---	50.0	ug/kg	1	4000	---	105	47-132%	---	---	
Benzo(g,h,i)perylene	3560	---	50.0	ug/kg	1	4000	---	89	43-134%	---	---	
Chrysene	3740	---	50.0	ug/kg	1	4000	---	94	50-124%	---	---	

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080656 - EPA 3546							**Concrete**					
LCS (8080656-BS1)		Prepared: 08/10/18 10:11		Analyzed: 08/10/18 16:10								
Dibenz(a,h)anthracene	3850	---	50.0	ug/kg	1	4000	---	96	45-134%	---	---	
Dibenzofuran	3800	---	50.0	ug/kg	1	4000	---	95	44-120%	---	---	
Fluoranthene	3960	---	50.0	ug/kg	1	4000	---	99	50-127%	---	---	
Fluorene	3850	---	50.0	ug/kg	1	4000	---	96	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	3540	---	50.0	ug/kg	1	4000	---	88	45-133%	---	---	
1-Methylnaphthalene	3880	---	50.0	ug/kg	1	4000	---	97	40-120%	---	---	
2-Methylnaphthalene	3850	---	50.0	ug/kg	1	4000	---	96	38-122%	---	---	
Naphthalene	3580	---	50.0	ug/kg	1	4000	---	90	35-123%	---	---	
Phenanthrene	3790	---	50.0	ug/kg	1	4000	---	95	50-121%	---	---	
Pyrene	4030	---	50.0	ug/kg	1	4000	---	101	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*97 %*		*54-127 %*		*"*					
Duplicate (8080656-DUP1)		Prepared: 08/10/18 10:11		Analyzed: 08/10/18 17:03								
QC Source Sample: LPC-SG-C01-080118 (After Processing) (A8H0244-02)												
EPA 8270D (SIM)												
Acenaphthene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Acenaphthylene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Anthracene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Benz(a)anthracene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Benzo(a)pyrene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Benzo(b)fluoranthene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Benzo(k)fluoranthene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Benzo(g,h,i)perylene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Chrysene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Dibenz(a,h)anthracene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Dibenzofuran	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Fluoranthene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Fluorene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Indeno(1,2,3-cd)pyrene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
1-Methylnaphthalene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
2-Methylnaphthalene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Naphthalene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Phenanthrene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	

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AMENDED REPORT

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080656 - EPA 3546							**Concrete**					
Duplicate (8080656-DUP1)		Prepared: 08/10/18 10:11	Analyzed: 08/10/18 17:03									
QC Source Sample: LPC-SG-C01-080118 (After Processing) (A8H0244-02)												
Pyrene	ND	---	43.3	ug/kg	1	---	ND	---	---	---	30%	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery:*	*83 %*	*Limits:*	*44-120 %*		*Dilution:*	*1x*				
p-Terphenyl-d14 (Surr)			*95 %*		*54-127 %*			*"*				
Matrix Spike (8080656-MS1)		Prepared: 08/10/18 10:11	Analyzed: 08/10/18 18:24									
QC Source Sample: LPC-SG-C03-080118 (After Processing) (A8H0244-06)												
EPA 8270D (SIM)												
Acenaphthene	2990	---	41.8	ug/kg	1	3350	ND	89	40-122%	---	---	
Acenaphthylene	3160	---	41.8	ug/kg	1	3350	ND	94	32-132%	---	---	
Anthracene	3170	---	41.8	ug/kg	1	3350	ND	95	47-123%	---	---	
Benz(a)anthracene	3010	---	41.8	ug/kg	1	3350	ND	90	49-126%	---	---	
Benzo(a)pyrene	3160	---	41.8	ug/kg	1	3350	ND	94	45-129%	---	---	
Benzo(b)fluoranthene	3240	---	41.8	ug/kg	1	3350	ND	97	45-132%	---	---	
Benzo(k)fluoranthene	3300	---	41.8	ug/kg	1	3350	ND	98	47-132%	---	---	
Benzo(g,h,i)perylene	2660	---	41.8	ug/kg	1	3350	ND	79	43-134%	---	---	
Chrysene	3070	---	41.8	ug/kg	1	3350	ND	92	50-124%	---	---	
Dibenz(a,h)anthracene	2940	---	41.8	ug/kg	1	3350	ND	88	45-134%	---	---	
Dibenzofuran	3100	---	41.8	ug/kg	1	3350	ND	93	44-120%	---	---	
Fluoranthene	3400	---	41.8	ug/kg	1	3350	ND	102	50-127%	---	---	
Fluorene	3190	---	41.8	ug/kg	1	3350	22.7	95	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	2790	---	41.8	ug/kg	1	3350	ND	83	45-133%	---	---	
1-Methylnaphthalene	3160	---	41.8	ug/kg	1	3350	51.9	93	40-120%	---	---	
2-Methylnaphthalene	3180	---	41.8	ug/kg	1	3350	66.8	93	38-122%	---	---	
Naphthalene	2800	---	41.8	ug/kg	1	3350	53.7	82	35-123%	---	---	
Phenanthrene	3140	---	41.8	ug/kg	1	3350	50.6	92	50-121%	---	---	
Pyrene	3460	---	41.8	ug/kg	1	3350	28.6	102	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery:*	*87 %*	*Limits:*	*44-120 %*		*Dilution:*	*1x*				
p-Terphenyl-d14 (Surr)			*97 %*		*54-127 %*			*"*				

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080681 - EPA 3546							**Soil**					
Blank (8080681-BLK1)		Prepared: 08/13/18 07:04	Analyzed: 08/13/18 14:00									
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 73 %*	*Limits: 44-120 %*		*Dilution: 1x*							
p-Terphenyl-d14 (Surr)		*100 %*	*54-127 %*		*"*							
LCS (8080681-BS1)		Prepared: 08/13/18 07:04	Analyzed: 08/13/18 14:26									
EPA 8270D (SIM)												
Acenaphthene	775	---	10.0	ug/kg wet	1	800	---	97	40-122%	---	---	
Acenaphthylene	791	---	10.0	ug/kg wet	1	800	---	99	32-132%	---	---	
Anthracene	781	---	10.0	ug/kg wet	1	800	---	98	47-123%	---	---	
Benz(a)anthracene	742	---	10.0	ug/kg wet	1	800	---	93	49-126%	---	---	
Benzo(a)pyrene	794	---	10.0	ug/kg wet	1	800	---	99	45-129%	---	---	
Benzo(b)fluoranthene	827	---	10.0	ug/kg wet	1	800	---	103	45-132%	---	---	
Benzo(k)fluoranthene	825	---	10.0	ug/kg wet	1	800	---	103	47-132%	---	---	
Benzo(g,h,i)perylene	690	---	10.0	ug/kg wet	1	800	---	86	43-134%	---	---	
Chrysene	767	---	10.0	ug/kg wet	1	800	---	96	50-124%	---	---	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080681 - EPA 3546							**Soil**					
LCS (8080681-BS1)		Prepared: 08/13/18 07:04		Analyzed: 08/13/18 14:26								
Dibenz(a,h)anthracene	786	---	10.0	ug/kg wet	1	800	---	98	45-134%	---	---	
Dibenzofuran	778	---	10.0	ug/kg wet	1	800	---	97	44-120%	---	---	
Fluoranthene	823	---	10.0	ug/kg wet	1	800	---	103	50-127%	---	---	
Fluorene	798	---	10.0	ug/kg wet	1	800	---	100	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	705	---	10.0	ug/kg wet	1	800	---	88	45-133%	---	---	
1-Methylnaphthalene	791	---	10.0	ug/kg wet	1	800	---	99	40-120%	---	---	
2-Methylnaphthalene	787	---	10.0	ug/kg wet	1	800	---	98	38-122%	---	---	
Naphthalene	727	---	10.0	ug/kg wet	1	800	---	91	35-123%	---	---	
Phenanthrene	766	---	10.0	ug/kg wet	1	800	---	96	50-121%	---	---	
Pyrene	832	---	10.0	ug/kg wet	1	800	---	104	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)		*98 %*		*54-127 %*			*"*					

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080633 - EPA 3051A							**Soil**					
Blank (8080633-BLK1)		Prepared: 08/09/18 14:51	Analyzed: 08/13/18 12:52									
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cobalt	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (8080633-BS1)		Prepared: 08/09/18 14:51	Analyzed: 08/13/18 12:57									
EPA 6020A												
Antimony	26.6	---	1.00	mg/kg wet	10	25.0	---	106	80-120%	---	---	
Arsenic	52.3	---	1.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Beryllium	25.1	---	0.200	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Cadmium	51.7	---	0.200	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Chromium	52.4	---	1.00	mg/kg wet	10	50.0	---	105	80-120%	---	---	
Cobalt	51.1	---	0.200	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Copper	55.4	---	1.00	mg/kg wet	10	50.0	---	111	80-120%	---	---	
Lead	53.8	---	0.200	mg/kg wet	10	50.0	---	108	80-120%	---	---	
Mercury	1.08	---	0.0800	mg/kg wet	10	1.00	---	108	80-120%	---	---	
Nickel	53.6	---	1.00	mg/kg wet	10	50.0	---	107	80-120%	---	---	
Selenium	25.3	---	1.00	mg/kg wet	10	25.0	---	101	80-120%	---	---	
Silver	26.9	---	0.200	mg/kg wet	10	25.0	---	108	80-120%	---	---	
Thallium	26.0	---	0.200	mg/kg wet	10	25.0	---	104	80-120%	---	---	
Zinc	53.5	---	4.00	mg/kg wet	10	50.0	---	107	80-120%	---	---	
Duplicate (8080633-DUP1)		Prepared: 08/09/18 14:51	Analyzed: 08/13/18 13:19									

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080633 - EPA 3051A							**Soil**					
Duplicate (8080633-DUP1)		Prepared: 08/09/18 14:51	Analyzed: 08/13/18 13:19									
QC Source Sample: LPC-SG-S22-3.3-080118 (A8H0244-08)												
EPA 6020A												
Antimony	ND	---	1.29	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	**2.28**	---	1.29	mg/kg dry	10	---	2.07	---	---	10	40%	
Beryllium	**0.374**	---	0.258	mg/kg dry	10	---	0.470	---	---	23	40%	
Cadmium	**0.391**	---	0.258	mg/kg dry	10	---	0.406	---	---	4	40%	
Chromium	**10.8**	---	1.29	mg/kg dry	10	---	12.8	---	---	16	40%	
Cobalt	**11.2**	---	0.258	mg/kg dry	10	---	12.8	---	---	13	40%	
Copper	**23.2**	---	1.29	mg/kg dry	10	---	27.6	---	---	18	40%	
Lead	**3.73**	---	0.258	mg/kg dry	10	---	4.50	---	---	19	40%	
Mercury	ND	---	0.103	mg/kg dry	10	---	ND	---	---	---	40%	
Nickel	**14.5**	---	1.29	mg/kg dry	10	---	20.3	---	---	33	40%	
Selenium	ND	---	1.29	mg/kg dry	10	---	ND	---	---	---	40%	
Silver	ND	---	0.258	mg/kg dry	10	---	ND	---	---	---	40%	
Thallium	ND	---	0.258	mg/kg dry	10	---	ND	---	---	---	40%	
Zinc	**52.3**	---	5.15	mg/kg dry	10	---	57.5	---	---	10	40%	
Matrix Spike (8080633-MS1)		Prepared: 08/09/18 14:51	Analyzed: 08/13/18 13:24									
QC Source Sample: LPC-SG-S22-3.3-080118 (A8H0244-08)												
EPA 6020A												
Antimony	32.7	---	1.36	mg/kg dry	10	34.1	ND	96	75-125%	---	---	
Arsenic	70.4	---	1.36	mg/kg dry	10	68.2	2.07	100	75-125%	---	---	
Beryllium	34.6	---	0.273	mg/kg dry	10	34.1	0.470	100	75-125%	---	---	
Cadmium	68.9	---	0.273	mg/kg dry	10	68.2	0.406	100	75-125%	---	---	
Chromium	82.9	---	1.36	mg/kg dry	10	68.2	12.8	103	75-125%	---	---	
Cobalt	81.1	---	0.273	mg/kg dry	10	68.2	12.8	100	75-125%	---	---	
Copper	99.0	---	1.36	mg/kg dry	10	68.2	27.6	105	75-125%	---	---	
Lead	73.3	---	0.273	mg/kg dry	10	68.2	4.50	101	75-125%	---	---	
Mercury	1.44	---	0.109	mg/kg dry	10	1.36	ND	105	75-125%	---	---	
Nickel	88.3	---	1.36	mg/kg dry	10	68.2	20.3	100	75-125%	---	---	
Selenium	33.1	---	1.36	mg/kg dry	10	34.1	ND	97	75-125%	---	---	
Silver	35.9	---	0.273	mg/kg dry	10	34.1	ND	105	75-125%	---	---	
Thallium	34.4	---	0.273	mg/kg dry	10	34.1	ND	101	75-125%	---	---	
Zinc	122	---	5.46	mg/kg dry	10	68.2	57.5	95	75-125%	---	---	

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Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project:	**PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number:	**PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080633 - EPA 3051A							**Soil**					

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080647 - EPA 3051A							**Concrete**					
Blank (8080647-BLK1)		Prepared: 08/10/18 09:08		Analyzed: 08/13/18 13:56								
EPA 6020A												
Antimony	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Arsenic	ND	---	1.92	mg/kg	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Cobalt	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Lead	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg	10	---	---	---	---	---	---	
LCS (8080647-BS1)		Prepared: 08/10/18 09:08		Analyzed: 08/13/18 14:05								
EPA 6020A												
Antimony	25.6	---	1.00	mg/kg	10	25.0	---	103	80-120%	---	---	
Arsenic	52.2	---	2.00	mg/kg	10	50.0	---	104	80-120%	---	---	
Beryllium	25.2	---	0.200	mg/kg	10	25.0	---	101	80-120%	---	---	
Cadmium	50.2	---	0.200	mg/kg	10	50.0	---	100	80-120%	---	---	
Chromium	53.1	---	1.00	mg/kg	10	50.0	---	106	80-120%	---	---	
Cobalt	51.1	---	0.200	mg/kg	10	50.0	---	102	80-120%	---	---	
Copper	55.6	---	1.00	mg/kg	10	50.0	---	111	80-120%	---	---	
Lead	52.4	---	1.00	mg/kg	10	50.0	---	105	80-120%	---	---	
Mercury	1.03	---	0.0800	mg/kg	10	1.00	---	103	80-120%	---	---	
Nickel	55.7	---	1.00	mg/kg	10	50.0	---	111	80-120%	---	---	
Selenium	24.2	---	1.00	mg/kg	10	25.0	---	97	80-120%	---	---	
Silver	26.3	---	0.200	mg/kg	10	25.0	---	105	80-120%	---	---	
Thallium	25.3	---	0.200	mg/kg	10	25.0	---	101	80-120%	---	---	
Zinc	53.5	---	4.00	mg/kg	10	50.0	---	107	80-120%	---	---	
Duplicate (8080647-DUP1)		Prepared: 08/10/18 09:08		Analyzed: 08/13/18 14:24								

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080647 - EPA 3051A							**Concrete**					
Duplicate (8080647-DUP1)		Prepared: 08/10/18 09:08	Analyzed: 08/13/18 14:24									
QC Source Sample: LPC-SG-C03-080118 (After Processing) (A8H0244-06)												
EPA 6020A												
Antimony	**1.70**	---	1.05	mg/kg	10	---	1.84	---	---	8	40%	
Arsenic	**11.0**	---	2.11	mg/kg	10	---	8.95	---	---	21	40%	
Beryllium	**0.492**	---	0.211	mg/kg	10	---	0.549	---	---	11	40%	
Cadmium	**0.729**	---	0.211	mg/kg	10	---	0.792	---	---	8	40%	
Chromium	**55.1**	---	1.05	mg/kg	10	---	95.4	---	---	**54**	**40%**	Q-04
Cobalt	**17.1**	---	0.211	mg/kg	10	---	19.7	---	---	14	40%	
Copper	**55.9**	---	1.05	mg/kg	10	---	57.4	---	---	3	40%	
Lead	**6.37**	---	1.05	mg/kg	10	---	6.72	---	---	5	40%	
Mercury	ND	---	0.0844	mg/kg	10	---	ND	---	---	---	40%	
Nickel	**107**	---	1.05	mg/kg	10	---	223	---	---	**70**	**40%**	Q-04
Selenium	ND	---	1.05	mg/kg	10	---	ND	---	---	---	40%	
Silver	ND	---	0.211	mg/kg	10	---	0.119	---	---	***	**40%**	Q-05
Thallium	ND	---	0.211	mg/kg	10	---	ND	---	---	---	40%	
Zinc	**100**	---	4.22	mg/kg	10	---	107	---	---	6	40%	
Matrix Spike (8080647-MS1)		Prepared: 08/10/18 09:08	Analyzed: 08/13/18 14:28									
QC Source Sample: LPC-SG-C03-080118 (After Processing) (A8H0244-06)												
EPA 6020A												
Antimony	28.5	---	1.07	mg/kg	10	26.7	1.84	100	75-125%	---	---	
Arsenic	63.4	---	2.14	mg/kg	10	53.4	8.95	102	75-125%	---	---	
Beryllium	29.1	---	0.214	mg/kg	10	26.7	0.549	107	75-125%	---	---	
Cadmium	57.5	---	0.214	mg/kg	10	53.4	0.792	106	75-125%	---	---	
Chromium	117	---	1.07	mg/kg	10	53.4	95.4	**40**	**75-125%**	---	---	Q-04
Cobalt	70.5	---	0.214	mg/kg	10	53.4	19.7	95	75-125%	---	---	
Copper	113	---	1.07	mg/kg	10	53.4	57.4	103	75-125%	---	---	
Lead	61.5	---	1.07	mg/kg	10	53.4	6.72	103	75-125%	---	---	
Mercury	1.18	---	0.0855	mg/kg	10	1.07	ND	111	75-125%	---	---	
Nickel	160	---	1.07	mg/kg	10	53.4	223	**-119**	**75-125%**	---	---	Q-04
Selenium	26.2	---	1.07	mg/kg	10	26.7	ND	98	75-125%	---	---	
Silver	29.1	---	0.214	mg/kg	10	26.7	0.119	108	75-125%	---	---	
Thallium	27.4	---	0.214	mg/kg	10	26.7	ND	103	75-125%	---	---	
Zinc	154	---	4.27	mg/kg	10	53.4	107	89	75-125%	---	---	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project:	**PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number:	**PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080647 - EPA 3051A							**Concrete**					

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QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8081245 - EPA 1311/3015							**Solid**					
Blank (8081245-BLK1)		Prepared: 08/29/18 11:26	Analyzed: 08/29/18 16:20									
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Barium	ND	---	0.500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Cadmium	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Chromium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Mercury	**0.00571**	---	0.00400	mg/L	5	---	---	---	---	---	---	B, Q-44, TCLP
Selenium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Silver	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
LCS (8081245-BS1)		Prepared: 08/29/18 11:26	Analyzed: 08/29/18 16:24									
1311/6020A												
Arsenic	2.55	---	0.100	mg/L	5	2.50	---	102	80-120%	---	---	Q-44, TCLP
Barium	2.70	---	0.500	mg/L	5	2.50	---	108	80-120%	---	---	Q-44, TCLP
Cadmium	2.58	---	0.0500	mg/L	5	2.50	---	103	80-120%	---	---	Q-44, TCLP
Chromium	2.55	---	0.100	mg/L	5	2.50	---	102	80-120%	---	---	Q-44, TCLP
Lead	2.62	---	0.0500	mg/L	5	2.50	---	105	80-120%	---	---	Q-44, TCLP
Mercury	0.0548	---	0.00400	mg/L	5	0.0500	---	110	80-120%	---	---	B, Q-44, TCLP
Selenium	2.61	---	0.100	mg/L	5	2.50	---	104	80-120%	---	---	Q-44, TCLP
Silver	1.32	---	0.0500	mg/L	5	1.25	---	105	80-120%	---	---	Q-44, TCLP

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

QUALITY CONTROL (QC) SAMPLE RESULTS

Sample Size Reduction - Grinding

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080637 - Sample Size Reduction							**Concrete**					
Blank (8080637-BLK1)		Prepared: 08/09/18 18:18		Analyzed: 08/09/18 18:18								
Grind												
Sample Processing	**0.00**	---		N/A	1	---	---	---	---	---	---	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080608 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080650 - Total Solids (Dry Weight)							**Soil**					
Duplicate (8080650-DUP4)		Prepared: 08/10/18 09:41		Analyzed: 08/13/18 08:36								
QC Source Sample: LPC-SG-S24-3.3-080118 (A8H0244-12)												
EPA 8000C												
% Solids	**72.8**	---	1.00	% by Weight	1	---	71.5	---	---	2	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080657							
A8H0244-02	Concrete	EPA 8082A	08/01/18 13:30	08/10/18 10:10	2.13g/5mL	2g/5mL	0.94
A8H0244-04RE1	Concrete	EPA 8082A	08/01/18 13:58	08/10/18 10:10	2.67g/10mL	2g/5mL	1.50
A8H0244-06	Concrete	EPA 8082A	08/01/18 14:00	08/10/18 10:10	2.17g/5mL	2g/5mL	0.92
Batch: 8080682							
A8H0244-07	Soil	EPA 8082A	08/01/18 13:40	08/13/18 07:11	10.13g/5mL	10g/5mL	0.99
A8H0244-08	Soil	EPA 8082A	08/01/18 14:30	08/13/18 07:11	10.12g/5mL	10g/5mL	0.99
A8H0244-09RE1	Soil	EPA 8082A	08/01/18 15:05	08/13/18 07:11	10.46g/5mL	10g/5mL	0.96
A8H0244-10	Soil	EPA 8082A	08/01/18 15:40	08/13/18 07:11	10.4g/5mL	10g/5mL	0.96
A8H0244-11RE1	Soil	EPA 8082A	08/01/18 15:07	08/13/18 07:11	10.89g/5mL	10g/5mL	0.92
A8H0244-12	Soil	EPA 8082A	08/01/18 15:53	08/13/18 07:11	10.22g/5mL	10g/5mL	0.98

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080656							
A8H0244-02	Concrete	EPA 8270D (SIM)	08/01/18 13:30	08/10/18 10:11	2.39g/5mL	2g/5mL	0.84
A8H0244-04	Concrete	EPA 8270D (SIM)	08/01/18 13:58	08/10/18 10:11	2.56g/25mL	2g/5mL	3.91
A8H0244-06	Concrete	EPA 8270D (SIM)	08/01/18 14:00	08/10/18 10:11	2.44g/5mL	2g/5mL	0.82
Batch: 8080681							
A8H0244-07	Soil	EPA 8270D (SIM)	08/01/18 13:40	08/13/18 07:04	10.78g/5mL	10g/5mL	0.93
A8H0244-08	Soil	EPA 8270D (SIM)	08/01/18 14:30	08/13/18 07:04	11.88g/5mL	10g/5mL	0.84
A8H0244-09	Soil	EPA 8270D (SIM)	08/01/18 15:05	08/13/18 07:04	10.65g/5mL	10g/5mL	0.94
A8H0244-10	Soil	EPA 8270D (SIM)	08/01/18 15:40	08/13/18 07:04	11.59g/5mL	10g/5mL	0.86
A8H0244-11	Soil	EPA 8270D (SIM)	08/01/18 15:07	08/13/18 07:04	11.28g/5mL	10g/5mL	0.89
A8H0244-12	Soil	EPA 8270D (SIM)	08/01/18 15:53	08/13/18 07:04	11.08g/5mL	10g/5mL	0.90

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080633							
A8H0244-07	Soil	EPA 6020A	08/01/18 13:40	08/09/18 14:51	0.463g/50mL	0.5g/50mL	1.08
A8H0244-07RE1	Soil	EPA 6020A	08/01/18 13:40	08/09/18 14:51	0.463g/50mL	0.5g/50mL	1.08
A8H0244-08	Soil	EPA 6020A	08/01/18 14:30	08/09/18 14:51	0.502g/50mL	0.5g/50mL	1.00

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AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8H0244-09	Soil	EPA 6020A	08/01/18 15:05	08/09/18 14:51	0.496g/50mL	0.5g/50mL	1.01
A8H0244-10	Soil	EPA 6020A	08/01/18 15:40	08/09/18 14:51	0.502g/50mL	0.5g/50mL	1.00
A8H0244-11	Soil	EPA 6020A	08/01/18 15:07	08/09/18 14:51	0.46g/50mL	0.5g/50mL	1.09
A8H0244-12	Soil	EPA 6020A	08/01/18 15:53	08/09/18 14:51	0.495g/50mL	0.5g/50mL	1.01
Batch: 8080647							
A8H0244-02	Concrete	EPA 6020A	08/01/18 13:30	08/10/18 09:08	0.476g/50mL	0.5g/50mL	1.05
A8H0244-04	Concrete	EPA 6020A	08/01/18 13:58	08/10/18 09:08	0.516g/50mL	0.5g/50mL	0.97
A8H0244-06	Concrete	EPA 6020A	08/01/18 14:00	08/10/18 09:08	0.478g/50mL	0.5g/50mL	1.05

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8081245							
A8H0244-07	Soil	1311/6020A	08/01/18 13:40	08/29/18 11:26	5mL/50mL	5mL/50mL	1.00

Sample Size Reduction - Grinding

Prep: Sample Size Reduction

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080637							
A8H0244-01	Concrete	Grind	08/01/18 13:30	08/09/18 16:30	80g/80g	80g/80g	NA
A8H0244-03	Concrete	Grind	08/01/18 13:58	08/09/18 16:57	80g/80g	80g/80g	NA
A8H0244-05	Concrete	Grind	08/01/18 14:00	08/09/18 17:42	80g/80g	80g/80g	NA

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080608							
A8H0244-08	Soil	EPA 8000C	08/01/18 14:30	08/09/18 18:56			NA
Batch: 8080650							
A8H0244-07	Soil	EPA 8000C	08/01/18 13:40	08/10/18 09:41			NA
A8H0244-09	Soil	EPA 8000C	08/01/18 15:05	08/10/18 09:41			NA
A8H0244-10	Soil	EPA 8000C	08/01/18 15:40	08/10/18 09:41			NA
A8H0244-11	Soil	EPA 8000C	08/01/18 15:07	08/10/18 09:41			NA

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SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A8H0244-12	Soil	EPA 8000C	08/01/18 15:53	08/10/18 09:41			NA

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-44	Room temperature during the 18 hr. TCLP tumbling procedure exceeded EPA recommended temperature range by no more than +/-2 degrees C for a maximum of 5.5 hours
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8081215.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project:	**PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number:	**PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0244 - 09 04 18 1025**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
Concrete	**Grind**		**Sample Processing**	**NA**	

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
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LANDAU ASSOCIATES

☐ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☒ Portland (503) 542-1080

Chain-of-Custody Record

A8H0244

Date 8/1/18
Page 1 of 1

Project Name Switchgear Area Profile Project No. 993002.040.046
Project Location/Event PCC LPC
Sampler's Name Colette Gaona
Project Contact Bryan McCampbell/Colette Gaona
Send Results To "

Turnaround Time
☐ Standard
☒ Accelerated
☐ If possible 3-day

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	PCBs (8082) total metals (6020A)* PAHs (8270D)	Observations/Comments
LPC-SG-C01-080118	8/1/18	1330	Concrete	1	X X X	X Allow water samples to settle, collect aliquot from clear portion
LPC-SG-C02-080118	8/1/18	1358	Concrete	1	X X X	
LPC-SG-C03-080118	8/1/18	1400	Concrete	1	X X X	NWTPH-Dx - run acid wash silica gel cleanup
LPC-SG-S22-0.5-080118	8/1/18	1340	Soil	1	X X X	
LPC-SG-S22-3.3-080118	8/1/18	1430	Soil	1	X X X	Analyze for EPH if no specific product identified
LPC-SG-S23-0.5-080118	8/1/18	1505	Soil	1	X X X	
LPC-SG-S24-0.5-080118	8/1/18	1540	Soil	1	X X X	VOC/BTEX/VPH (soil):
LPC-SG-S23-3.3-080118	8/1/18	1507	Soil	1	X X X	non-preserved
LPC-SG-S24-3.3-080118	8/1/18	1553	Soil	1	X X X	preserved w/methanol
						preserved w/sodium bisulfate
						Freeze upon receipt
						Dissolved metal water samples field filtered
						Other

*priority pollutant list plus cobalt

*TCLP follow-up may be requested based on total metals results

Special Shipment/Handling or Storage Requirements: Cooler on ice

Method of Shipment

Relinquished by	Received by	Relinquished by	Received by
Signature [signature]	Signature Sierra Mott	Signature Sierra Mott	Signature [signature] Relinquished by: Received!
Printed Name Wolfgang Lopez	Printed Name Sierra Mott	Printed Name Sierra Mott	Printed Name Sean Monson Sean Monson
Company Landau Associates	Company LAI	Company LAI	Company LAI
Date 08/01/18 Time 4:27 (16:27)	Date 8/9/18 Time 810	Date 8/9/18 Time 830	Date 8/9/18 8:30am Time 8/9/18 8:21 am

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

8/9/18 10:24 am

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **PCC Structurals-Soil**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0244 - 09 04 18 1025**

APEX LABS COOLER RECEIPT FORM

Client: Landau

Element WO#: A8 H0244

Project/Project #: PCC LPC / 883004 2.040.04C

Delivery info:

Date/Time Received: 8/9/18 @ 10:21 By: WS

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy____SDS____Other_____

Cooler Inspection Inspected by: WS : 8/9/18 @ 10:21

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No X

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	5.6						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:_____

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: JS : 8/9/18 @ 1100

All Samples Intact? Yes X No ___ Comments:_____

Bottle Labels/COCs agree? Yes X No ___ Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments_____

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA X

Comments: _____

Additional Information:_____

Labeled by: JS Witness: OM Cooler Inspected by: JS See Project Contact Form: Y

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Monday, August 20, 2018

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: A8H0463 - LPC Switch Gear - 883002.040.046

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8H0463, which was received by the laboratory on 8/16/2018 at 11:53:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-S17-1.5-081618	A8H0463-01	Soil	08/16/18 11:00	08/16/18 11:53
LPC-SG-S18-1.5-081618	A8H0463-02	Soil	08/16/18 11:05	08/16/18 11:53
LPC-SG-S19-1.5-081618	A8H0463-03	Soil	08/16/18 11:10	08/16/18 11:53
LPC-SG-S20-1.5-081618	A8H0463-04	Soil	08/16/18 11:15	08/16/18 11:53
LPC-SG-S21-1.5-081618	A8H0463-05	Soil	08/16/18 11:20	08/16/18 11:53

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Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S17-1.5-081618 (A8H0463-01RE1)				**Matrix: Soil**		**Batch: 8080866**		**C-07**
Aroclor 1016	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1221	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1232	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1242	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1248	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1254	**1290**	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	**B**
Aroclor 1260	ND	---	95.2	ug/kg dry	10	08/17/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 74 %*		*Limits: 53-120 %*	*10*	*08/17/18*	*EPA 8082A*	*S-05*
LPC-SG-S18-1.5-081618 (A8H0463-02RE1)				**Matrix: Soil**		**Batch: 8080866**		**C-07**
Aroclor 1016	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Aroclor 1221	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Aroclor 1232	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Aroclor 1242	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Aroclor 1248	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Aroclor 1254	**18200**	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	**B**
Aroclor 1260	ND	---	9050	ug/kg dry	1000	08/20/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: %*		*Limits: 53-120 %*	*1000*	*08/20/18*	*EPA 8082A*	*S-01*
LPC-SG-S19-1.5-081618 (A8H0463-03RE1)				**Matrix: Soil**		**Batch: 8080866**		**C-07**
Aroclor 1016	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Aroclor 1221	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Aroclor 1232	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Aroclor 1242	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Aroclor 1248	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Aroclor 1254	**44000**	---	965	ug/kg dry	100	08/17/18	EPA 8082A	**B**
Aroclor 1260	ND	---	965	ug/kg dry	100	08/17/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 113 %*		*Limits: 53-120 %*	*100*	*08/17/18*	*EPA 8082A*	*S-05*
LPC-SG-S20-1.5-081618 (A8H0463-04RE1)				**Matrix: Soil**		**Batch: 8080866**		**C-07**
Aroclor 1016	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	
Aroclor 1221	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	
Aroclor 1232	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	
Aroclor 1242	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	
Aroclor 1248	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	
Aroclor 1254	**72500**	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	**B**
Aroclor 1260	ND	---	5090	ug/kg dry	500	08/20/18	EPA 8082A	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S20-1.5-081618 (A8H0463-04RE1)				**Matrix: Soil**			**Batch: 8080866**	**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: %*	*Limits: 53-120 %*	*500*	*08/20/18*	*EPA 8082A*	*S-01*
LPC-SG-S21-1.5-081618 (A8H0463-05)				**Matrix: Soil**			**Batch: 8080866**	**C-07**
Aroclor 1016	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1221	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1232	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1242	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1248	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Aroclor 1254	**3380**	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	**B**
Aroclor 1260	ND	---	98.9	ug/kg dry	10	08/17/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 104 %*	*Limits: 53-120 %*	*10*	*08/17/18*	*EPA 8082A*	*S-05*

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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S17-1.5-081618 (A8H0463-01)				**Matrix: Soil**		**Batch: 8080871**		
% Solids	**93.4**	---	1.00	% by Weight	1	08/20/18	EPA 8000C	
LPC-SG-S18-1.5-081618 (A8H0463-02)				**Matrix: Soil**		**Batch: 8080871**		
% Solids	**95.5**	---	1.00	% by Weight	1	08/20/18	EPA 8000C	
LPC-SG-S19-1.5-081618 (A8H0463-03)				**Matrix: Soil**		**Batch: 8080871**		
% Solids	**89.8**	---	1.00	% by Weight	1	08/20/18	EPA 8000C	
LPC-SG-S20-1.5-081618 (A8H0463-04)				**Matrix: Soil**		**Batch: 8080871**		
% Solids	**91.3**	---	1.00	% by Weight	1	08/20/18	EPA 8000C	
LPC-SG-S21-1.5-081618 (A8H0463-05)				**Matrix: Soil**		**Batch: 8080871**		
% Solids	**92.4**	---	1.00	% by Weight	1	08/20/18	EPA 8000C	

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080866 - EPA 3546							**Soil**					
Blank (8080866-BLK1)		Prepared: 08/17/18 07:35	Analyzed: 08/17/18 12:31									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	**13.5**	---	8.33	ug/kg wet	1	---	---	---	---	---	---	B
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 92 %*	*Limits: 53-120 %*		*Dilution: 1x*							
LCS (8080866-BS1)		Prepared: 08/17/18 07:35	Analyzed: 08/17/18 12:48									**C-07**
EPA 8082A												
Aroclor 1016	203	---	10.0	ug/kg wet	1	250	---	81	47-134%	---	---	
Aroclor 1260	248	---	10.0	ug/kg wet	1	250	---	99	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 92 %*	*Limits: 53-120 %*		*Dilution: 1x*							
Duplicate (8080866-DUP1)		Prepared: 08/17/18 07:35	Analyzed: 08/17/18 14:54									**C-07**
QC Source Sample: LPC-SG-S17-1.5-081618 (A8H0463-01RE1)												
EPA 8082A												
Aroclor 1016	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Aroclor 1254	**1140**	---	95.4	ug/kg dry	10	---	1290	---	---	12	30%	B
Aroclor 1260	ND	---	95.4	ug/kg dry	10	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 82 %*	*Limits: 53-120 %*		*Dilution: 10x*							S-05
Matrix Spike (8080866-MS1)		Prepared: 08/17/18 07:35	Analyzed: 08/17/18 16:05									**C-07, Q-43**
QC Source Sample: LPC-SG-S21-1.5-081618 (A8H0463-05)												
EPA 8082A												
Aroclor 1016	807	---	102	ug/kg dry	10	255	ND	**316**	**47-134%**	---	---	
Aroclor 1260	1400	---	102	ug/kg dry	10	255	ND	**549**	**53-140%**	---	---	

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080866 - EPA 3546							**Soil**					
Matrix Spike (8080866-MS1)		Prepared: 08/17/18 07:35		Analyzed: 08/17/18 16:05								**C-07, Q-43**
QC Source Sample: LPC-SG-S21-1.5-081618 (A8H0463-05)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 53-120 %*			*Dilution: 10x*					S-05

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080871 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080866							
A8H0463-01RE1	Soil	EPA 8082A	08/16/18 11:00	08/17/18 07:35	11.25g/5mL	10g/5mL	0.89
A8H0463-02RE1	Soil	EPA 8082A	08/16/18 11:05	08/17/18 07:35	11.58g/5mL	10g/5mL	0.86
A8H0463-03RE1	Soil	EPA 8082A	08/16/18 11:10	08/17/18 07:35	11.55g/5mL	10g/5mL	0.87
A8H0463-04RE1	Soil	EPA 8082A	08/16/18 11:15	08/17/18 07:35	10.75g/5mL	10g/5mL	0.93
A8H0463-05	Soil	EPA 8082A	08/16/18 11:20	08/17/18 07:35	10.95g/5mL	10g/5mL	0.91

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080871							
A8H0463-01	Soil	EPA 8000C	08/16/18 11:00	08/17/18 09:07			NA
A8H0463-02	Soil	EPA 8000C	08/16/18 11:05	08/17/18 09:07			NA
A8H0463-03	Soil	EPA 8000C	08/16/18 11:10	08/17/18 09:07			NA
A8H0463-04	Soil	EPA 8000C	08/16/18 11:15	08/17/18 09:07			NA
A8H0463-05	Soil	EPA 8000C	08/16/18 11:20	08/17/18 09:07			NA

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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Landau Associates	Project: **LPC Switch Gear**	
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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories, LLC

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Landau Associates	Project: **LPC Switch Gear**	
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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

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Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories, LLC

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Landau Associates	Project: **LPC Switch Gear**	
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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

APEX LABS — **CHAIN OF CUSTODY** — Lab # A8H0463 — COC 1 of 1

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

PO#

Company: Landau | Project Mgr: Colette Gaona | Project Name: Switchgear Soil Ex. | Project # 883002.040.046

Address: 1500 SW 1st Ave Portland OR | Phone: | Fax: | Email: cgaona@landauinc.com

Sampled by: Sierra Mott

Site Location: OR WA Other: _____

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	LPC-SG-S17-1.5-081618		8/16/18	1100	Soil	2										X						
2	LPC-SG-S18-1.5-081618			1105												X						
3	LPC-SG-S19-1.5-081618			1110												X						
4	LPC-SG-S20-1.5-081618			1115												X						
5	LPC-SG-S21-1.5-081618			1120												X						
6																						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) =10 Business Days YES NO

TAT Requested (circle): 1 Day 2 Day 3 Day if possible 4 DAY 5 DAY Other: _____

SPECIAL INSTRUCTIONS:

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Sierra Mott	Date: 8/16/18 Signature: [signature]	Signature:	Date: Signature: Date:
Printed Name: Sierra Mott	Time: 1153 Printed Name: K Shemel	Printed Name:	Time: Printed Name: Time:
Company: LAI	Company: Apex	Company:	Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0463 - 08 20 18 1453**

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A8H0463

Project/Project #: Switch gear Soil Ex

Delivery info:

Date/Time Received: 8/16/18 @ _____ By: MS

Delivered by: Apex____Client X ESS____FedEx____UPS____Swift____Senvoy ___SDS___Other_____

Cooler Inspection Inspected by: MS : 8/16/18 @ _____

Chain of Custody Included? Yes ✓ No ___ Custody Seals? Yes_____ No X

Signed/Dated by Client? Yes ✓ No ___

Signed/Dated by Apex? Yes ✓ No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	3.1						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	N						
Ice Type: (Gel/Real/Other)	Real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:_____

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: TG : 8/16/18 @ 16:10

All Samples Intact? Yes ✓ No ___ Comments:_____

Bottle Labels/COCs agree? Yes ✓ No ___ Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments_____

Water Samples: pH Checked and Appropriate (except VOAs): Yes___No___NA ✓

Comments: _____

Additional Information:_____

Labeled by: TG Witness: [illegible] Cooler Inspected by: TG See Project Contact Form: Y

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Tuesday, September 4, 2018

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: A8H0507 - LPC Switch Gear - 883002.040.046

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8H0507, which was received by the laboratory on 8/17/2018 at 11:00:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-VAULT01-081618	A8H0507-01	Soil	08/16/18 15:30	08/17/18 11:00
LPC-SG-VAULT02-081618	A8H0507-02	Soil	08/16/18 15:39	08/17/18 11:00
LPC-SG-VAULT03-081618	A8H0507-03	Soil	08/16/18 15:50	08/17/18 11:00

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL CASE NARRATIVE

Work Order: A8H0507

Amended Report Revision 1:

Additional Data-

This report supersedes all previous reports.

The final report has been amended to include additional TCLP RCRA 8 data by EPA methods 1311/6020 to all samples included in this work order.

Lisa Domenighini
Client Services Manager
8/29/18

Apex Laboratories, LLC
12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT01-081618 (A8H0507-01RE2)				**Matrix: Soil**		**Batch: 8080961**		**C-07**
Aroclor 1016	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1221	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1232	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1242	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1248	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1254	**482000**	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Aroclor 1260	ND	---	27800	ug/kg dry	2000	08/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: %*	*Limits: 53-120 %*	*2000*	*08/22/18*	*EPA 8082A*	*S-01*
LPC-SG-VAULT02-081618 (A8H0507-02RE1)				**Matrix: Soil**		**Batch: 8080961**		**C-07**
Aroclor 1016	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1221	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1232	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1242	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1248	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1254	**2750**	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Aroclor 1260	ND	---	119	ug/kg dry	10	08/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 107 %*	*Limits: 53-120 %*	*10*	*08/22/18*	*EPA 8082A*	*S-05*
LPC-SG-VAULT03-081618 (A8H0507-03RE1)				**Matrix: Soil**		**Batch: 8080961**		**C-07**
Aroclor 1016	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1221	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1232	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1242	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1248	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1254	**31300**	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Aroclor 1260	ND	---	545	ug/kg dry	50	08/22/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 130 %*	*Limits: 53-120 %*	*50*	*08/22/18*	*EPA 8082A*	*S-05*

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC
12232 S.W. Garden Place
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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT01-081618 (A8H0507-01RE1)				**Matrix: Soil**		**Batch: 8080947**		
Acenaphthene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Anthracene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Chrysene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Fluoranthene	**92.1**	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Fluorene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Naphthalene	ND	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Phenanthrene	**124**	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Pyrene	**78.2**	---	68.5	ug/kg dry	5	08/22/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 44-120 %*	*5*	*08/22/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*98 %*	*54-127 %*	*5*	*08/22/18*	*EPA 8270D (SIM)*	
LPC-SG-VAULT02-081618 (A8H0507-02)				**Matrix: Soil**		**Batch: 8080947**		
Acenaphthene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Apex Laboratories, LLC
12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT02-081618 (A8H0507-02)				**Matrix: Soil**		**Batch: 8080947**		
2-Methylnaphthalene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Pyrene	ND	---	12.0	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*71 %*	*Limits: 44-120 %*	*1*	*08/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*92 %*	*54-127 %*	*1*	*08/21/18*	*EPA 8270D (SIM)*	
LPC-SG-VAULT03-081618 (A8H0507-03)				**Matrix: Soil**		**Batch: 8080947**		
Acenaphthene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Acenaphthylene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Anthracene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benz(a)anthracene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(a)pyrene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(b)fluoranthene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(k)fluoranthene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Benzo(g,h,i)perylene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Chrysene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Dibenz(a,h)anthracene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Dibenzofuran	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Fluoranthene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Fluorene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Indeno(1,2,3-cd)pyrene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
1-Methylnaphthalene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
2-Methylnaphthalene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Naphthalene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Phenanthrene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Pyrene	ND	---	11.9	ug/kg dry	1	08/21/18	EPA 8270D (SIM)	
Surrogate: 2-Fluorobiphenyl (Surr)		*Recovery:*	*68 %*	*Limits: 44-120 %*	*1*	*08/21/18*	*EPA 8270D (SIM)*	
p-Terphenyl-d14 (Surr)			*84 %*	*54-127 %*	*1*	*08/21/18*	*EPA 8270D (SIM)*	

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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12232 S.W. Garden Place
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503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT01-081618 (A8H0507-01)				**Matrix: Soil**				
Batch: 8080924								
Antimony	ND	---	1.48	mg/kg dry	10	08/21/18	EPA 6020A	
Arsenic	**4.64**	---	1.48	mg/kg dry	10	08/21/18	EPA 6020A	
Beryllium	**0.342**	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Cadmium	**2.67**	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Chromium	**1330**	---	1.48	mg/kg dry	10	08/21/18	EPA 6020A	
Cobalt	**51.7**	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Copper	**374**	---	1.48	mg/kg dry	10	08/21/18	EPA 6020A	
Lead	**93.2**	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Mercury	**0.281**	---	0.118	mg/kg dry	10	08/21/18	EPA 6020A	
Selenium	ND	---	1.48	mg/kg dry	10	08/21/18	EPA 6020A	
Silver	**2.30**	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Thallium	ND	---	0.296	mg/kg dry	10	08/21/18	EPA 6020A	
Zinc	**847**	---	5.91	mg/kg dry	10	08/21/18	EPA 6020A	
LPC-SG-VAULT01-081618 (A8H0507-01RE1)				**Matrix: Soil**				
Batch: 8080924								
Nickel	**2500**	---	14.8	mg/kg dry	100	08/22/18	EPA 6020A	
LPC-SG-VAULT02-081618 (A8H0507-02)				**Matrix: Soil**				
Batch: 8080924								
Antimony	ND	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Arsenic	**1.90**	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Beryllium	**0.358**	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Cadmium	**0.453**	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Chromium	**15.9**	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Cobalt	**10.2**	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Copper	**21.4**	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Lead	**3.98**	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Mercury	ND	---	0.100	mg/kg dry	10	08/21/18	EPA 6020A	
Nickel	**20.2**	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Selenium	ND	---	1.25	mg/kg dry	10	08/21/18	EPA 6020A	
Silver	ND	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Thallium	ND	---	0.250	mg/kg dry	10	08/21/18	EPA 6020A	
Zinc	**50.5**	---	5.01	mg/kg dry	10	08/21/18	EPA 6020A	
LPC-SG-VAULT03-081618 (A8H0507-03)				**Matrix: Soil**				

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT03-081618 (A8H0507-03)				**Matrix: Soil**				
Batch: 8080924								
Antimony	ND	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	
Arsenic	**2.32**	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	
Beryllium	**0.335**	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Cadmium	**0.816**	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Chromium	**103**	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	**Q-42**
Cobalt	**15.0**	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Copper	**49.3**	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	
Lead	**10.6**	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Mercury	ND	---	0.0995	mg/kg dry	10	08/21/18	EPA 6020A	
Nickel	**188**	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	**Q-42**
Selenium	ND	---	1.24	mg/kg dry	10	08/21/18	EPA 6020A	
Silver	ND	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Thallium	ND	---	0.249	mg/kg dry	10	08/21/18	EPA 6020A	
Zinc	**175**	---	4.98	mg/kg dry	10	08/21/18	EPA 6020A	**Q-42**

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

ANALYTICAL SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT01-081618 (A8H0507-01)				**Matrix: Soil**				
Batch: 8081245								
Arsenic	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Barium	ND	---	0.500	mg/L	5	08/29/18	1311/6020A	Q-44
Cadmium	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Chromium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Lead	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Mercury	ND	---	0.00400	mg/L	5	08/29/18	1311/6020A	Q-44
Selenium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Silver	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
LPC-SG-VAULT02-081618 (A8H0507-02)				**Matrix: Soil**				
Batch: 8081245								
Arsenic	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Barium	ND	---	0.500	mg/L	5	08/29/18	1311/6020A	Q-44
Cadmium	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Chromium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Lead	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Mercury	ND	---	0.00400	mg/L	5	08/29/18	1311/6020A	Q-44
Selenium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Silver	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
LPC-SG-VAULT03-081618 (A8H0507-03)				**Matrix: Soil**				
Batch: 8081245								
Arsenic	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Barium	ND	---	0.500	mg/L	5	08/29/18	1311/6020A	Q-44
Cadmium	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Chromium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Lead	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44
Mercury	ND	---	0.00400	mg/L	5	08/29/18	1311/6020A	Q-44
Selenium	ND	---	0.100	mg/L	5	08/29/18	1311/6020A	Q-44
Silver	ND	---	0.0500	mg/L	5	08/29/18	1311/6020A	Q-44

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
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ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-VAULT01-081618 (A8H0507-01)				**Matrix: Soil**			**Batch: 8080983**	
% Solids	**68.5**	---	1.00	% by Weight	1	08/22/18	EPA 8000C	
LPC-SG-VAULT02-081618 (A8H0507-02)				**Matrix: Soil**			**Batch: 8080983**	
% Solids	**80.0**	---	1.00	% by Weight	1	08/22/18	EPA 8000C	
LPC-SG-VAULT03-081618 (A8H0507-03)				**Matrix: Soil**			**Batch: 8080919**	
% Solids	**79.7**	---	1.00	% by Weight	1	08/21/18	EPA 8000C	

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080961 - EPA 3546							**Soil**					
Blank (8080961-BLK1)		Prepared: 08/21/18 10:09	Analyzed: 08/21/18 17:25									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 109 %*	*Limits: 53-120 %*		*Dilution: 1x*							
LCS (8080961-BS1)		Prepared: 08/21/18 10:09	Analyzed: 08/21/18 17:43									**C-07, Q-18**
EPA 8082A												
Aroclor 1016	170	---	10.0	ug/kg wet	1	250	---	68	47-134%	---	---	
Aroclor 1260	208	---	10.0	ug/kg wet	1	250	---	83	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 110 %*	*Limits: 53-120 %*		*Dilution: 1x*							

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AMENDED REPORT

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080947 - EPA 3546							**Soil**					
Blank (8080947-BLK1)		Prepared: 08/21/18 07:11	Analyzed: 08/21/18 10:56									
EPA 8270D (SIM)												
Acenaphthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Chrysene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluoranthene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Fluorene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Naphthalene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Phenanthrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Pyrene	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 95 %*	*Limits: 44-120 %*		*Dilution: 1x*							
p-Terphenyl-d14 (Surr)		*101 %*	*54-127 %*		*"*							
LCS (8080947-BS1)		Prepared: 08/21/18 07:11	Analyzed: 08/21/18 11:22									
EPA 8270D (SIM)												
Acenaphthene	768	---	10.0	ug/kg wet	1	800	---	96	40-122%	---	---	
Acenaphthylene	807	---	10.0	ug/kg wet	1	800	---	101	32-132%	---	---	
Anthracene	792	---	10.0	ug/kg wet	1	800	---	99	47-123%	---	---	
Benz(a)anthracene	757	---	10.0	ug/kg wet	1	800	---	95	49-126%	---	---	
Benzo(a)pyrene	772	---	10.0	ug/kg wet	1	800	---	96	45-129%	---	---	
Benzo(b)fluoranthene	799	---	10.0	ug/kg wet	1	800	---	100	45-132%	---	---	
Benzo(k)fluoranthene	830	---	10.0	ug/kg wet	1	800	---	104	47-132%	---	---	
Benzo(g,h,i)perylene	689	---	10.0	ug/kg wet	1	800	---	86	43-134%	---	---	
Chrysene	771	---	10.0	ug/kg wet	1	800	---	96	50-124%	---	---	

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080947 - EPA 3546							**Soil**					
LCS (8080947-BS1)		Prepared: 08/21/18 07:11		Analyzed: 08/21/18 11:22								
Dibenz(a,h)anthracene	788	---	10.0	ug/kg wet	1	800	---	98	45-134%	---	---	
Dibenzofuran	814	---	10.0	ug/kg wet	1	800	---	102	44-120%	---	---	
Fluoranthene	826	---	10.0	ug/kg wet	1	800	---	103	50-127%	---	---	
Fluorene	819	---	10.0	ug/kg wet	1	800	---	102	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	711	---	10.0	ug/kg wet	1	800	---	89	45-133%	---	---	
1-Methylnaphthalene	757	---	10.0	ug/kg wet	1	800	---	95	40-120%	---	---	
2-Methylnaphthalene	781	---	10.0	ug/kg wet	1	800	---	98	38-122%	---	---	
Naphthalene	737	---	10.0	ug/kg wet	1	800	---	92	35-123%	---	---	
Phenanthrene	775	---	10.0	ug/kg wet	1	800	---	97	50-121%	---	---	
Pyrene	836	---	10.0	ug/kg wet	1	800	---	104	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*96 %*		*54-127 %*		*"*					
Matrix Spike (8080947-MS1)		Prepared: 08/21/18 07:11		Analyzed: 08/21/18 19:17								
QC Source Sample: LPC-SG-VAULT03-081618 (A8H0507-03)												
EPA 8270D (SIM)												
Acenaphthene	796	---	11.8	ug/kg dry	1	946	ND	84	40-122%	---	---	
Acenaphthylene	827	---	11.8	ug/kg dry	1	946	ND	87	32-132%	---	---	
Anthracene	910	---	11.8	ug/kg dry	1	946	ND	96	47-123%	---	---	
Benz(a)anthracene	960	---	11.8	ug/kg dry	1	946	ND	101	49-126%	---	---	
Benzo(a)pyrene	961	---	11.8	ug/kg dry	1	946	ND	102	45-129%	---	---	
Benzo(b)fluoranthene	1020	---	11.8	ug/kg dry	1	946	ND	108	45-132%	---	---	
Benzo(k)fluoranthene	975	---	11.8	ug/kg dry	1	946	ND	103	47-132%	---	---	
Benzo(g,h,i)perylene	788	---	11.8	ug/kg dry	1	946	ND	83	43-134%	---	---	
Chrysene	973	---	11.8	ug/kg dry	1	946	ND	103	50-124%	---	---	
Dibenz(a,h)anthracene	878	---	11.8	ug/kg dry	1	946	ND	93	45-134%	---	---	
Dibenzofuran	829	---	11.8	ug/kg dry	1	946	ND	88	44-120%	---	---	
Fluoranthene	1120	---	11.8	ug/kg dry	1	946	ND	118	50-127%	---	---	
Fluorene	866	---	11.8	ug/kg dry	1	946	ND	92	43-125%	---	---	
Indeno(1,2,3-cd)pyrene	811	---	11.8	ug/kg dry	1	946	ND	86	45-133%	---	---	
1-Methylnaphthalene	814	---	11.8	ug/kg dry	1	946	ND	86	40-120%	---	---	
2-Methylnaphthalene	827	---	11.8	ug/kg dry	1	946	ND	87	38-122%	---	---	
Naphthalene	765	---	11.8	ug/kg dry	1	946	10.5	80	35-123%	---	---	
Phenanthrene	946	---	11.8	ug/kg dry	1	946	ND	100	50-121%	---	---	

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080947 - EPA 3546							**Soil**					
Matrix Spike (8080947-MS1)		Prepared: 08/21/18 07:11		Analyzed: 08/21/18 19:17								
QC Source Sample: LPC-SG-VAULT03-081618 (A8H0507-03)												
Pyrene	1100	---	11.8	ug/kg dry	1	946	9.45	116	47-127%	---	---	
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 77 %*	*Limits: 44-120 %*			*Dilution: 1x*					
p-Terphenyl-d14 (Surr)			*91 %*	*54-127 %*			*"*					

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Lisa A Domenighini

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080924 - EPA 3051A							**Soil**					
Blank (8080924-BLK1)		Prepared: 08/20/18 10:24	Analyzed: 08/21/18 22:25									
EPA 6020A												
Antimony	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Arsenic	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Beryllium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Cobalt	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Copper	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0769	mg/kg wet	10	---	---	---	---	---	---	
Nickel	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	0.962	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Thallium	ND	---	0.192	mg/kg wet	10	---	---	---	---	---	---	
Zinc	ND	---	3.85	mg/kg wet	10	---	---	---	---	---	---	
LCS (8080924-BS1)		Prepared: 08/20/18 10:24	Analyzed: 08/21/18 22:32									
EPA 6020A												
Antimony	24.8	---	1.00	mg/kg wet	10	25.0	---	99	80-120%	---	---	
Arsenic	49.0	---	1.00	mg/kg wet	10	50.0	---	98	80-120%	---	---	
Beryllium	24.6	---	0.200	mg/kg wet	10	25.0	---	98	80-120%	---	---	
Cadmium	49.4	---	0.200	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Chromium	50.8	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Cobalt	50.6	---	0.200	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Copper	51.6	---	1.00	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Lead	51.3	---	0.200	mg/kg wet	10	50.0	---	103	80-120%	---	---	
Mercury	0.983	---	0.0800	mg/kg wet	10	1.00	---	98	80-120%	---	---	
Nickel	52.0	---	1.00	mg/kg wet	10	50.0	---	104	80-120%	---	---	
Selenium	24.5	---	1.00	mg/kg wet	10	25.0	---	98	80-120%	---	---	
Silver	26.1	---	0.200	mg/kg wet	10	25.0	---	105	80-120%	---	---	
Thallium	24.9	---	0.200	mg/kg wet	10	25.0	---	100	80-120%	---	---	
Zinc	49.5	---	4.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Duplicate (8080924-DUP1)		Prepared: 08/20/18 10:24	Analyzed: 08/21/18 23:10									

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Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080924 - EPA 3051A							**Soil**					
Duplicate (8080924-DUP1)		Prepared: 08/20/18 10:24	Analyzed: 08/21/18 23:10									
QC Source Sample: LPC-SG-VAULT03-081618 (A8H0507-03)												
EPA 6020A												
Antimony	ND	---	1.29	mg/kg dry	10	---	ND	---	---	---	40%	
Arsenic	**1.90**	---	1.29	mg/kg dry	10	---	2.32	---	---	20	40%	
Beryllium	**0.357**	---	0.258	mg/kg dry	10	---	0.335	---	---	6	40%	
Cadmium	**0.766**	---	0.258	mg/kg dry	10	---	0.816	---	---	6	40%	
Chromium	**95.9**	---	1.29	mg/kg dry	10	---	103	---	---	7	40%	
Cobalt	**14.0**	---	0.258	mg/kg dry	10	---	15.0	---	---	7	40%	
Copper	**48.8**	---	1.29	mg/kg dry	10	---	49.3	---	---	0.9	40%	
Lead	**10.3**	---	0.258	mg/kg dry	10	---	10.6	---	---	3	40%	
Mercury	ND	---	0.103	mg/kg dry	10	---	ND	---	---	---	40%	
Nickel	**155**	---	1.29	mg/kg dry	10	---	188	---	---	19	40%	
Selenium	ND	---	1.29	mg/kg dry	10	---	ND	---	---	---	40%	
Silver	ND	---	0.258	mg/kg dry	10	---	0.169	---	---	***	40%	
Thallium	ND	---	0.258	mg/kg dry	10	---	ND	---	---	---	40%	
Zinc	**165**	---	5.16	mg/kg dry	10	---	175	---	---	6	40%	
Matrix Spike (8080924-MS1)		Prepared: 08/20/18 10:24	Analyzed: 08/21/18 23:17									
QC Source Sample: LPC-SG-VAULT03-081618 (A8H0507-03)												
EPA 6020A												
Antimony	27.4	---	1.25	mg/kg dry	10	31.2	ND	88	75-125%	---	---	
Arsenic	60.2	---	1.25	mg/kg dry	10	62.3	2.32	93	75-125%	---	---	
Beryllium	30.2	---	0.249	mg/kg dry	10	31.2	0.335	96	75-125%	---	---	
Cadmium	59.5	---	0.249	mg/kg dry	10	62.3	0.816	94	75-125%	---	---	
Chromium	140	---	1.25	mg/kg dry	10	62.3	103	**60**	**75-125%**	---	---	Q-04
Cobalt	73.6	---	0.249	mg/kg dry	10	62.3	15.0	94	75-125%	---	---	
Copper	106	---	1.25	mg/kg dry	10	62.3	49.3	91	75-125%	---	---	
Lead	73.8	---	0.249	mg/kg dry	10	62.3	10.6	101	75-125%	---	---	
Mercury	1.28	---	0.0997	mg/kg dry	10	1.25	ND	103	75-125%	---	---	
Nickel	189	---	1.25	mg/kg dry	10	62.3	188	**3**	**75-125%**	---	---	Q-04
Selenium	28.6	---	1.25	mg/kg dry	10	31.2	ND	92	75-125%	---	---	
Silver	31.3	---	0.249	mg/kg dry	10	31.2	0.169	100	75-125%	---	---	
Thallium	29.4	---	0.249	mg/kg dry	10	31.2	ND	94	75-125%	---	---	
Zinc	219	---	4.99	mg/kg dry	10	62.3	175	**71**	**75-125%**	---	---	Q-04

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080924 - EPA 3051A							**Soil**					

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

TCLP Metals by EPA 6020 (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8081245 - EPA 1311/3015							**Solid**					
Blank (8081245-BLK1)		Prepared: 08/29/18 11:26	Analyzed: 08/29/18 16:20									
1311/6020A												
Arsenic	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Barium	ND	---	0.500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Cadmium	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Chromium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Lead	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Mercury	**0.00571**	---	0.00400	mg/L	5	---	---	---	---	---	---	B, Q-44, TCLP
Selenium	ND	---	0.100	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
Silver	ND	---	0.0500	mg/L	5	---	---	---	---	---	---	Q-44, TCLP
LCS (8081245-BS1)		Prepared: 08/29/18 11:26	Analyzed: 08/29/18 16:24									
1311/6020A												
Arsenic	2.55	---	0.100	mg/L	5	2.50	---	102	80-120%	---	---	Q-44, TCLP
Barium	2.70	---	0.500	mg/L	5	2.50	---	108	80-120%	---	---	Q-44, TCLP
Cadmium	2.58	---	0.0500	mg/L	5	2.50	---	103	80-120%	---	---	Q-44, TCLP
Chromium	2.55	---	0.100	mg/L	5	2.50	---	102	80-120%	---	---	Q-44, TCLP
Lead	2.62	---	0.0500	mg/L	5	2.50	---	105	80-120%	---	---	Q-44, TCLP
Mercury	0.0548	---	0.00400	mg/L	5	0.0500	---	110	80-120%	---	---	B, Q-44, TCLP
Selenium	2.61	---	0.100	mg/L	5	2.50	---	104	80-120%	---	---	Q-44, TCLP
Silver	1.32	---	0.0500	mg/L	5	1.25	---	105	80-120%	---	---	Q-44, TCLP
Matrix Spike (8081245-MS1)		Prepared: 08/29/18 11:26	Analyzed: 08/29/18 17:07									
QC Source Sample: LPC-SG-VAULT03-081618 (A8H0507-03)												
1311/6020A												
Arsenic	2.65	---	0.100	mg/L	5	2.50	ND	106	50-150%	---	---	Q-44
Barium	2.71	---	0.500	mg/L	5	2.50	ND	108	50-150%	---	---	Q-44
Cadmium	2.59	---	0.0500	mg/L	5	2.50	ND	104	50-150%	---	---	Q-44
Chromium	2.56	---	0.100	mg/L	5	2.50	ND	103	50-150%	---	---	Q-44
Lead	2.63	---	0.0500	mg/L	5	2.50	ND	105	50-150%	---	---	Q-44
Mercury	0.0536	---	0.00400	mg/L	5	0.0500	ND	107	50-150%	---	---	B, Q-44
Selenium	2.59	---	0.100	mg/L	5	2.50	ND	104	50-150%	---	---	Q-44
Silver	1.31	---	0.0500	mg/L	5	1.25	ND	104	50-150%	---	---	Q-44

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080919 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8080983 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080961							
A8H0507-01RE2	Soil	EPA 8082A	08/16/18 15:30	08/21/18 10:09	10.52g/5mL	10g/5mL	0.95
A8H0507-02RE1	Soil	EPA 8082A	08/16/18 15:39	08/21/18 10:09	10.49g/5mL	10g/5mL	0.95
A8H0507-03RE1	Soil	EPA 8082A	08/16/18 15:50	08/21/18 10:09	11.51g/5mL	10g/5mL	0.87

Polyaromatic Hydrocarbons (PAHs) by EPA 8270D SIM

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080947							
A8H0507-01RE1	Soil	EPA 8270D (SIM)	08/16/18 15:30	08/21/18 07:11	10.65g/5mL	10g/5mL	0.94
A8H0507-02	Soil	EPA 8270D (SIM)	08/16/18 15:39	08/21/18 07:11	10.43g/5mL	10g/5mL	0.96
A8H0507-03	Soil	EPA 8270D (SIM)	08/16/18 15:50	08/21/18 07:11	10.58g/5mL	10g/5mL	0.95

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080924							
A8H0507-01	Soil	EPA 6020A	08/16/18 15:30	08/20/18 10:24	0.494g/50mL	0.5g/50mL	1.01
A8H0507-01RE1	Soil	EPA 6020A	08/16/18 15:30	08/20/18 10:24	0.494g/50mL	0.5g/50mL	1.01
A8H0507-02	Soil	EPA 6020A	08/16/18 15:39	08/20/18 10:24	0.499g/50mL	0.5g/50mL	1.00
A8H0507-03	Soil	EPA 6020A	08/16/18 15:50	08/20/18 10:24	0.504g/50mL	0.5g/50mL	0.99

TCLP Metals by EPA 6020 (ICPMS)

Prep: EPA 1311/3015

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8081245							
A8H0507-01	Soil	1311/6020A	08/16/18 15:30	08/29/18 11:26	5mL/50mL	5mL/50mL	1.00
A8H0507-02	Soil	1311/6020A	08/16/18 15:39	08/29/18 11:26	5mL/50mL	5mL/50mL	1.00
A8H0507-03	Soil	1311/6020A	08/16/18 15:50	08/29/18 11:26	5mL/50mL	5mL/50mL	1.00

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

AMENDED REPORT

Landau Associates	Project: **LPC Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

SAMPLE PREPARATION INFORMATION

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8080919							
A8H0507-03	Soil	EPA 8000C	08/16/18 15:50	08/20/18 21:03			NA
Batch: 8080983							
A8H0507-01	Soil	EPA 8000C	08/16/18 15:30	08/21/18 20:07			NA
A8H0507-02	Soil	EPA 8000C	08/16/18 15:39	08/21/18 20:07			NA

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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B	Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-44	Room temperature during the 18 hr. TCLP tumbling procedure exceeded EPA recommended temperature range by no more than +/-2 degrees C for a maximum of 5.5 hours
S-01	Surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
TCLP	This batch QC sample was prepared with TCLP or SPLP fluid from preparation batch 8081215.

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

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Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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AMENDED REPORT

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

LANDAU ASSOCIATES

☐ Seattle/Edmonds (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
X Portland (503) 542-1080
☐ _____

Chain-of-Custody Record

A8H0507

Date 08/16/18

Page 1 of 1

Project Name: Switchgear Burried Vault PCB investigation
Project No.: 883002.040.046
Project Location/Event: PCB Site Soil Sampling
Sampler's Name: Wolfgang Lopez
Project Contact: Bryan McCampbell / Colette Gaona
Send Results To: "

Turnaround Time
☐ Standard
X Accelerated
X 3-day

Testing Parameters

Sample I.D.	Date	Time	Matrix	No. of Containers	PCBs (8082)	Metals (6020A)	PAHs (8270D)	Observations/Comments
LPC-SG-VAULT01-081618	8/16/18	15:30	Soil	1	X	X	X	X Allow water samples to settle, collect aliquot from clear portion
LPC-SG-VAULT02-081618	8/16/18	15:39	"	1	X	X	X	
LPC-SG-VAULT03-081618	8/16/18	15:50	"	1	X	X	X	

Observations/Comments:
- X Allow water samples to settle, collect aliquot from clear portion
- ___ NWTPH-Dx - run acid wash, silica gel cleanup
- Analyze for EPH if no specific product identified
- VOC/BTEX/VPH (soil):
  - ___ non-preserved
  - ___ preserved w/methanol
  - ___ preserved w/sodium bisulfate
  - ___ Freeze upon receipt
  - ___ Dissolved metal water samples field filtered
- Other
  - X POSSIBLE HIGH PCB CON.
  - X priority pollutant list + plus Cobalt
  - Tier 1 follow up may be required based on total metal results

Special Shipment/Handling or Storage Requirements: Cooler on ice

Method of Shipment

Relinquished by
Signature: Wolfgang Lopez
Printed Name: Wolfgang Lopez
Company: Landau
Date: 08/16/18 Time: 1700

Received by
Signature: [signature]
Printed Name: Chris Hagan
Company: Apex Labs
Date: 8/17/18 Time: 1100

Relinquished by
Signature: _____
Printed Name: _____
Company: _____
Date: _____ Time: _____

Received by
Signature: _____
Printed Name: _____
Company: _____
Date: _____ Time: _____

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative

12/2014

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AMENDED REPORT

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0507 - 09 04 18 1040**

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A8 H0507

Project/Project #: Switch Gear Buried Vault PCB Investigation 883002.040.046

Delivery info:

Date/Time Received: 8/17/18 @ 1100 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: CFH : 8/17/18 @ 1249

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	1.4						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	Y						
Ice Type: (Gel/Real/Other)	Real						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: JS : 8/17/18 @ 1540

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: JS Witness: TG Cooler Inspected by: JS See Project Contact Form: Y

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Thursday, September 6, 2018

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: A8H0920 - PCC Structurals-Switch Gear - 883002.040.046

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A8H0920, which was received by the laboratory on 8/31/2018 at 4:05:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

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Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-S25-2.5-083118	A8H0920-01	Soil	08/31/18 10:57	08/31/18 16:05
LPC-SG-S26-2.5-083118	A8H0920-02	Soil	08/31/18 10:55	08/31/18 16:05
LPC-SG-S27-2.5-083118	A8H0920-03	Soil	08/31/18 10:50	08/31/18 16:05
LPC-SG-S28-2.5-083118	A8H0920-04	Soil	08/31/18 10:42	08/31/18 16:05
LPC-SG-S29-2.5-083118	A8H0920-05	Soil	08/31/18 10:38	08/31/18 16:05
LPC-SG-Vault04-083118	A8H0920-06	Soil	08/31/18 11:00	08/31/18 16:05

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S25-2.5-083118 (A8H0920-01RE2)				**Matrix: Soil**			**Batch: 8090464**	**C-07**
Aroclor 1016	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1221	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1232	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1242	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1248	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1254	**12.3**	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	**P-09**
Aroclor 1260	ND	---	11.1	ug/kg dry	1	09/06/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 79 %*		*Limits: 53-120 %*	*1*	*09/06/18*	*EPA 8082A*	
LPC-SG-S26-2.5-083118 (A8H0920-02RE1)				**Matrix: Soil**			**Batch: 8090418**	**C-07**
Aroclor 1016	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1221	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1232	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1242	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1248	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1254	**13200**	---	210	ug/kg dry	20	09/05/18	EPA 8082A	**B-02, Q-42**
Aroclor 1260	ND	---	210	ug/kg dry	20	09/05/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 53-120 %*	*20*	*09/05/18*	*EPA 8082A*	*S-05*
LPC-SG-S27-2.5-083118 (A8H0920-03RE2)				**Matrix: Soil**			**Batch: 8090464**	**C-07**
Aroclor 1016	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1221	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1232	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1242	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1248	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Aroclor 1254	**11.2**	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	**P-10**
Aroclor 1260	ND	---	10.7	ug/kg dry	1	09/06/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 53-120 %*	*1*	*09/06/18*	*EPA 8082A*	
LPC-SG-S28-2.5-083118 (A8H0920-04RE1)				**Matrix: Soil**			**Batch: 8090390**	**C-07**
Aroclor 1016	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1221	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1232	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1242	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1248	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1254	**3600**	---	113	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1260	ND	---	113	ug/kg dry	10	09/05/18	EPA 8082A	

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503-718-2323
EPA ID: OR01039

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S28-2.5-083118 (A8H0920-04RE1)				**Matrix: Soil**			**Batch: 8090390**	**C-07**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 92 %*		*Limits: 53-120 %*	*10*	*09/05/18*	*EPA 8082A*	*S-05*
LPC-SG-S29-2.5-083118 (A8H0920-05RE1)				**Matrix: Soil**			**Batch: 8090390**	**C-07**
Aroclor 1016	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1221	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1232	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1242	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1248	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1254	**3960**	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Aroclor 1260	ND	---	203	ug/kg dry	20	09/05/18	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 53-120 %*	*20*	*09/05/18*	*EPA 8082A*	*S-05*
LPC-SG-Vault04-083118 (A8H0920-06RE1)				**Matrix: Soil**			**Batch: 8090390**	**C-07**
Aroclor 1016	ND	---	122	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1221	ND	---	122	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1232	ND	---	122	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1242	ND	---	122	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1248	ND	---	122	ug/kg dry	10	09/05/18	EPA 8082A	
Aroclor 1254	**1490**	---	122	ug/kg dry	10	09/05/18	EPA 8082A	**P-10**
Aroclor 1260	**829**	---	122	ug/kg dry	10	09/05/18	EPA 8082A	**P-10**
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 90 %*		*Limits: 53-120 %*	*10*	*09/05/18*	*EPA 8082A*	*S-05*

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EPA ID: OR01039

Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	A8H0920 - 09 06 18 1412

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S25-2.5-083118 (A8H0920-01)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**82.2**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	
LPC-SG-S26-2.5-083118 (A8H0920-02)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**84.9**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	
LPC-SG-S27-2.5-083118 (A8H0920-03)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**82.5**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	
LPC-SG-S28-2.5-083118 (A8H0920-04)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**85.0**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	
LPC-SG-S29-2.5-083118 (A8H0920-05)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**84.3**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	
LPC-SG-Vault04-083118 (A8H0920-06)				**Matrix: Soil**			**Batch: 8090386**	
% Solids	**72.9**	---	1.00	% by Weight	1	09/05/18	EPA 8000C	

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Lisa A Domenighini

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EPA ID: OR01039

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1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090390 - EPA 3546							**Soil**					
Blank (8090390-BLK2)		Prepared: 09/04/18 10:18	Analyzed: 09/05/18 11:06									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 104 %*	*Limits: 53-120 %*		*Dilution: 1x*							
LCS (8090390-BS2)		Prepared: 09/04/18 10:18	Analyzed: 09/05/18 11:24									**C-07**
EPA 8082A												
Aroclor 1016	207	---	10.0	ug/kg wet	1	250	---	83	47-134%	---	---	
Aroclor 1260	238	---	10.0	ug/kg wet	1	250	---	95	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 104 %*	*Limits: 53-120 %*		*Dilution: 1x*							
Duplicate (8090390-DUP2)		Prepared: 09/04/18 10:18	Analyzed: 09/05/18 12:17									**C-07**
QC Source Sample: LPC-SG-S25-2.5-083118 (A8H0920-01RE1)												
EPA 8082A												
Aroclor 1016	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Aroclor 1254	**16.8**	---	11.5	ug/kg dry	1	---	15.0	---	---	11	30%	P-09
Aroclor 1260	ND	---	11.5	ug/kg dry	1	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 89 %*	*Limits: 53-120 %*		*Dilution: 1x*							
Matrix Spike (8090390-MS2)		Prepared: 09/04/18 10:18	Analyzed: 09/05/18 12:17									**C-07, Q-43**
QC Source Sample: LPC-SG-Vault04-083118 (A8H0920-06RE1)												
EPA 8082A												
Aroclor 1016	634	---	122	ug/kg dry	10	306	ND	**207**	**47-134%**	---	---	
Aroclor 1260	821	---	122	ug/kg dry	10	306	829	**-3**	**53-140%**	---	---	

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Landau Associates	Project:	**PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number:	**883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0920 - 09 06 18 1412**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090390 - EPA 3546							**Soil**					
Matrix Spike (8090390-MS2)		Prepared: 09/04/18 10:18		Analyzed: 09/05/18 12:17								**C-07, Q-43**
QC Source Sample: LPC-SG-Vault04-083118 (A8H0920-06RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 103 %*	*Limits: 53-120 %*			*Dilution: 10x*					S-05

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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090418 - EPA 3546							**Soil**					
Blank (8090418-BLK1)		Prepared: 09/05/18 07:15		Analyzed: 09/05/18 11:11								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	B-02
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 91 %*		*Limits: 53-120 %*			*Dilution: 1x*					
LCS (8090418-BS1)		Prepared: 09/05/18 07:15		Analyzed: 09/05/18 11:28								**C-07**
EPA 8082A												
Aroclor 1016	195	---	10.0	ug/kg wet	1	250	---	78	47-134%	---	---	
Aroclor 1260	214	---	10.0	ug/kg wet	1	250	---	86	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 87 %*		*Limits: 53-120 %*			*Dilution: 1x*					
Duplicate (8090418-DUP1)		Prepared: 09/05/18 07:15		Analyzed: 09/05/18 12:22								**C-07**
QC Source Sample: LPC-SG-S26-2.5-083118 (A8H0920-02RE1)												
EPA 8082A												
Aroclor 1016	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Aroclor 1254	**8920**	---	197	ug/kg dry	20	---	13200	---	---	**38**	**30%**	B-02, Q-17
Aroclor 1260	ND	---	197	ug/kg dry	20	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 86 %*		*Limits: 53-120 %*			*Dilution: 20x*					S-05
Matrix Spike (8090418-MS1)		Prepared: 09/05/18 07:15		Analyzed: 09/05/18 13:33								**C-07**
QC Source Sample: LPC-SG-S27-2.5-083118 (A8H0920-03RE1)												
EPA 8082A												
Aroclor 1016	199	---	11.3	ug/kg dry	1	281	ND	71	47-134%	---	---	
Aroclor 1260	225	---	11.3	ug/kg dry	1	281	7.98	77	53-140%	---	---	

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1500 SW First Avenue Suite 1015	Project Number:	**883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0920 - 09 06 18 1412**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090418 - EPA 3546							**Soil**					
Matrix Spike (8090418-MS1)		Prepared: 09/05/18 07:15		Analyzed: 09/05/18 13:33								**C-07**
QC Source Sample: LPC-SG-S27-2.5-083118 (A8H0920-03RE1)												
Surr: Decachlorobiphenyl (Surr)			*Recovery: 75 %*	*Limits: 53-120 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090464 - EPA 3546							**Soil**					
Blank (8090464-BLK1)		Prepared: 09/05/18 15:36		Analyzed: 09/06/18 08:24								**C-07**
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 96 %*		*Limits: 53-120 %*			*Dilution: 1x*					
LCS (8090464-BS1)		Prepared: 09/05/18 15:36		Analyzed: 09/06/18 08:42								**C-07**
EPA 8082A												
Aroclor 1016	188	---	10.0	ug/kg wet	1	250	---	75	47-134%	---	---	
Aroclor 1260	245	---	10.0	ug/kg wet	1	250	---	98	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 97 %*		*Limits: 53-120 %*			*Dilution: 1x*					
Matrix Spike (8090464-MS1)		Prepared: 09/05/18 15:36		Analyzed: 09/06/18 10:11								**C-07**
QC Source Sample: LPC-SG-S27-2.5-083118 (A8H0920-03RE2)												
EPA 8082A												
Aroclor 1016	195	---	10.8	ug/kg dry	1	270	ND	72	47-134%	---	---	
Aroclor 1260	260	---	10.8	ug/kg dry	1	270	5.45	94	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 94 %*		*Limits: 53-120 %*			*Dilution: 1x*					

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QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 8090386 - Total Solids (Dry Weight)							**Soil**					

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

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SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8090390							
A8H0920-04RE1	Soil	EPA 8082A	08/31/18 10:42	09/04/18 10:18	10.42g/5mL	10g/5mL	0.96
A8H0920-05RE1	Soil	EPA 8082A	08/31/18 10:38	09/04/18 10:18	11.68g/5mL	10g/5mL	0.86
A8H0920-06RE1	Soil	EPA 8082A	08/31/18 11:00	09/04/18 10:18	11.26g/5mL	10g/5mL	0.89
Batch: 8090418							
A8H0920-02RE1	Soil	EPA 8082A	08/31/18 10:55	09/05/18 07:15	11.21g/5mL	10g/5mL	0.89
Batch: 8090464							
A8H0920-01RE2	Soil	EPA 8082A	08/31/18 10:57	09/05/18 15:36	11.01g/5mL	10g/5mL	0.91
A8H0920-03RE2	Soil	EPA 8082A	08/31/18 10:50	09/05/18 15:36	11.3g/5mL	10g/5mL	0.89

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 8090386							
A8H0920-01	Soil	EPA 8000C	08/31/18 10:57	09/04/18 09:45			NA
A8H0920-02	Soil	EPA 8000C	08/31/18 10:55	09/04/18 09:45			NA
A8H0920-03	Soil	EPA 8000C	08/31/18 10:50	09/04/18 09:45			NA
A8H0920-04	Soil	EPA 8000C	08/31/18 10:42	09/04/18 09:45			NA
A8H0920-05	Soil	EPA 8000C	08/31/18 10:38	09/04/18 09:45			NA
A8H0920-06	Soil	EPA 8000C	08/31/18 11:00	09/04/18 09:45			NA

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QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

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B-02	Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
P-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
Q-43	Matrix Spike recovery is not applicable due to interfering Aroclor(s) in source sample.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.
ND Analyte NOT DETECTED at or above the detection or reporting limit.
NR Result Not Reported
RPD Relative Percent Difference

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.
" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.
" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the blank results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories, LLC

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Landau Associates	Project:	**PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number:	**883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager:	**Colette Gaona**	**A8H0920 - 09 06 18 1412**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC Structurals-Switch Gear**	
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Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

APEX LABS — **CHAIN OF CUSTODY**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A8H0920 COC 1 of 1

Company: Landau — Project Mgr: Colette Gaona — Project Name: Switchgear Soil Ex. — PO#

Address: 1500 SW 1st Ave. Portland OR — Phone: — Fax: — Email: cgaona@landauinc.com — Project # 883002.040.046

Sampled by:

Site Location: OR WA

Other: _____

ANALYSIS REQUESTED

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200- COLS	1200-Z
1	LPC-SG-S25-2.5-083118		08/31/18	1057	Soil	1										X						
2	LPC-SG-S26-2.5-083118			1055												X						
3	LPC-SG-S27-2.5-083118			1050												X						
4	LPC-SG-S28-2.5-083118			1042												X						
5	LPC-SG-S29-2.5-083118			1038												X						
6	LPC-SG-Vault04-083118			1100												X						
7																						
8																						
9																						
10																						

Normal Turn Around Time (TAT) = 10 Business Days — YES — NO

SPECIAL INSTRUCTIONS:

TAT Requested (circle): 1 Day — 2 Day — 3 Day — 4 DAY — 5 DAY — Other: _____

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:
Signature: [illegible] Date: 8/31/18 Time: 1605
Printed Name: Wilfredo Lopez
Company: LAI

RECEIVED BY:
Signature: [illegible] Date: 8/31/18 Time: 1605
Printed Name: [illegible]
Company: Apex

RELINQUISHED BY:
Signature: [illegible] Date: Time:
Printed Name:
Company:

RECEIVED BY:
Signature: Date:
Printed Name: Time:
Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Landau Associates	Project: **PCC Structurals-Switch Gear**	
1500 SW First Avenue Suite 1015	Project Number: **883002.040.046**	**Report ID:**
Portland, OR 97201	Project Manager: **Colette Gaona**	**A8H0920 - 09 06 18 1412**

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A8 H0920

Project/Project #: Switchgear Soil Ex 883002.040.046

Delivery info:

Date/Time Received: 8/31/18 @ 1605 By: JS

Delivered by: Apex___ Client X ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: JS : 8/31/18 @ 1608

Chain of Custody Included? Yes X No ___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	3.3						
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	N						
Ice Type: (Gel/Real/Other)	Real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: COB : 8/31/18 @ 1630

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes___ No___ NA X

Comments:

Additional Information:

Labeled by: COB Witness: JS Cooler Inspected by: COB See Project Contact Form: Y

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

Monday, July 15, 2019

Bryan McCampbell
PCC Structurals
4600 SE Harney Dr
Portland, OR 97206

RE: A9G0307 - Switchgear Urea profile - 0883002.040.046

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A9G0307, which was received by the laboratory on 7/11/2019 at 11:52:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of final reporting, unless prior arrangements have been made.

Cooler Receipt Information

(See Cooler Receipt Form for details)

Cooler#1	0.4 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LPC-SG-S23-3.67-071119	A9G0307-01	Soil	07/11/19 08:35	07/11/19 11:52

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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EPA ID: OR01039

PCC Structurals	Project: **Switchgear Urea profile**	
4600 SE Harney Dr	Project Number: **0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager: **Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S23-3.67-071119 (A9G0307-01)				**Matrix: Soil**		**Batch: 9070856**		**C-07**
Aroclor 1016	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Aroclor 1221	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Aroclor 1232	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Aroclor 1242	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Aroclor 1248	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Aroclor 1254	**9.93**	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	**Q-42**
Aroclor 1260	ND	---	0.601	mg/kg dry	50	07/15/19 09:22	EPA 8082A	
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 115 %*		*Limits: 60-125 %*	*50*	*07/15/19 09:22*	*EPA 8082A*	*S-05*

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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EPA ID: OR01039

PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
LPC-SG-S23-3.67-071119 (A9G0307-01)				**Matrix: Soil**		**Batch: 9070862**		
% Solids	**79.0**	---	1.00	% by Weight	1	07/15/19 08:28	EPA 8000C	

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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PCC Structurals	Project: **Switchgear Urea profile**	
4600 SE Harney Dr	Project Number: **0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager: **Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9070856 - EPA 3546							**Soil**					
Blank (9070856-BLK1)		Prepared: 07/12/19 07:16	Analyzed: 07/15/19 08:46									**C-07**
EPA 8082A												
Aroclor 1016	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1232	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1242	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1248	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1254	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Aroclor 1260	ND	---	0.00909	mg/kg wet	1	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 100 %*	*Limits: 60-125 %*		*Dilution: 1x*							
LCS (9070856-BS1)		Prepared: 07/12/19 07:16	Analyzed: 07/15/19 09:04									**C-07, Q-18**
EPA 8082A												
Aroclor 1016	0.184	---	0.0100	mg/kg wet	1	0.250	---	74	47 - 134%	---	---	
Aroclor 1260	0.206	---	0.0100	mg/kg wet	1	0.250	---	82	53 - 140%	---	---	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 95 %*	*Limits: 60-125 %*		*Dilution: 1x*							
Duplicate (9070856-DUP2)		Prepared: 07/12/19 07:16	Analyzed: 07/15/19 09:40									**C-07**
QC Source Sample: LPC-SG-S23-3.67-071119 (A9G0307-01)												
EPA 8082A												
Aroclor 1016	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1254	**7.10**	---	0.593	mg/kg dry	50	---	9.93	---	---	**33**	**30%**	Q-17
Aroclor 1260	ND	---	0.593	mg/kg dry	50	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)		*Recovery: 93 %*	*Limits: 60-125 %*		*Dilution: 50x*							S-05

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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503-718-2323
EPA ID: OR01039

PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 9070862 - Total Solids (Dry Weight)							**Soil**					
Duplicate (9070862-DUP2)		Prepared: 07/12/19 09:22		Analyzed: 07/15/19 08:28								
QC Source Sample: LPC-SG-S23-3.67-071119 (A9G0307-01)												
EPA 8000C												
% Solids	**79.0**	---	1.00	% by Weight	1	---	79.0	---	---	0.05	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

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EPA ID: OR01039

PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9070856							
A9G0307-01	Soil	EPA 8082A	07/11/19 08:35	07/12/19 07:16	10.53g/5mL	10g/5mL	0.95

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 9070862							
A9G0307-01	Soil	EPA 8000C	07/11/19 08:35	07/12/19 09:22			NA

Apex Laboratories

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PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-17	RPD between original and duplicate sample is outside of established control limits.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

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REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported.

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) are not included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).
-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.
-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Laboratories, LLC

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PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks (Cont.):

Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

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Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories, LLC

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PCC Structurals	Project:	**Switchgear Urea profile**	
4600 SE Harney Dr	Project Number:	**0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager:	**Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

LABORATORY ACCREDITATION INFORMATION

TNI Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

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Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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Tigard, OR 97223
503-718-2323
EPA ID: OR01039

PCC Structurals	Project: **Switchgear Urea profile**	
4600 SE Harney Dr	Project Number: **0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager: **Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

APEX LABS
6700 SW Sandburg St., Tigard, OR 97223 Ph: 503-718-2323

CHAIN OF CUSTODY

Lab # A9G0307 COC ___ of ___

Company: PCC Structurals
Project Mgr: Bryan McCampbell
Project Name: Switchgear Urea profile
Project # 0883002.040.046
Address: ~~[illegible]~~ 4600 SE Harney Drive, Portland, OR 97206
Phone: 5035934434
Email: Bryan.McCampbell@pccstructurals.com
PO #
Sampled by: Wolfgang Lopez

Site Location: (OR) WA CA AK ID ___

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 BTEX	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs Full List	8270 SIM PAHs	8270 Semi-Vols Full List	8082 PCBs	8081 Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS. TCLP	TCLP Metals (8)	Archive
LPC-SG-523-367-071119		7/11/19	8:35	Soil	1										X						

ANALYSIS REQUEST

Normal Turn Around Time (TAT) = 10 Business Days

TAT Requested (circle): 1 Day, (2 Day), 3 Day, 4 DAY, 5 DAY, Other: ___

SPECIAL INSTRUCTIONS:
Also Email results to: cgagna@landdvinc.com / wlopez@landdvinc.com

SAMPLES ARE HELD FOR 30 DAYS

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]	Signature:	Signature:
Date: 7/11/19	Date: 7/11/19	Date:	Date:
Time: 11:52	Time: 11:52	Time:	Time:
Printed Name: Wolfgang Lopez	Printed Name: Charles Horton	Printed Name:	Printed Name:
Company: Landdv Associates	Company: Apex Labs	Company:	Company:

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
EPA ID: OR01039

PCC Structurals	Project: **Switchgear Urea profile**	
4600 SE Harney Dr	Project Number: **0883002.040.046**	**Report ID:**
Portland, OR 97206	Project Manager: **Bryan McCampbell**	**A9G0307 - 07 15 19 1344**

APEX LABS COOLER RECEIPT FORM

Client: PCC Element WO#: A9G0307

Project/Project #: Switchgear Uren Profile 0883002.040.046

Delivery Info:

Date/time received: 7/11/19 @ 1152 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Date/time inspected: 7/11/19 @ 1330 By: CFH

Chain of Custody included? Yes X No ___ Custody seals? Yes ___ No X

Signed/dated by client? Yes X No ___

Signed/dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	0.4						
Received on ice? (Y/N)	Y						
Temp. blanks? (Y/N)	N						
Ice type: (Gel/Real/Other)	Real						
Condition:	Good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dots applied to out of temperature samples? Yes/No/NA

Out of temperature samples form initiated? Yes/No/NA

Samples Inspection: Date/time inspected: 7/11/19 @ 14:05 By: TMY

All samples intact? Yes ✓ No ___ Comments: ___

Bottle labels/COCs agree? Yes ✓ No ___ Comments: ___

COC/container discrepancies form initiated? Yes ___ No ___ NA ✓

Containers/volumes received appropriate for analysis? Yes ✓ No ___ Comments: ___

Do VOA vials have visible headspace? Yes ___ No ___ NA ✓

Comments ___

Water samples: pH checked: Yes ___ No ___ NA ✓ pH appropriate? Yes ___ No ___ NA ✓

Comments: ___

Additional information: write out on COC

Labeled by: TMY Witness: CFH Cooler Inspected by: TMY See Project Contact Form: Y

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

APPENDIX B

Concrete Cloth Cap Specifications

CONCRETE CANVAS®

Concrete Impregnated Fabric

1510.EN.IG

MADE IN UK

CONCRETECANVAS INSTALLATION GUIDE: REMEDIATION

RAIL ROAD MINING PETROCHEM AGRO UTILITIES MUNICIPAL DEFENCE DESIGN

2014 Fast Track 100 16th fastest growing company in the UK.

2014 Queen's Award for Enterprise in Innovation

2013 Macrobert Award Finalist

2013 Innovation Award Winner Railtex Exhibition

2012 R&D 100 Award winner R&D Magazine

2011 Expert's Choice Winner Most Innovative Product

2011 Brit Insurance Designs of the Year Nominee

2009 Winner Material Connexion Medium Award Material of the Year

2007 Winner D&AD Yellow Pencil Award Product Design

www.concretecanvas.com

CONCRETE CANVAS INSTALLATION GUIDE: REMEDIATION

Concrete Canvas® GCCM* (CC) can be used to create a hard wearing surface as an effective remediation for old or damaged concrete. CC is typically used where existing concrete structures have experienced cracking or spalling, and would otherwise require extensive repair or complete replacement.

The following guide provides information for installers, customers and specifiers of CC and an overview of the installation techniques required for using CC for concrete remediation. The versatile nature of CC means that this document is not exhaustive and is intended for guidance purposes only.

Here are some key questions you may need to consider before specifying or purchasing CC.

Which Thickness?

CC is available in three thicknesses; CC5™ (5mm), CC8™ (8mm), and CC13™ (13mm).

- CC5™ is most commonly used to line concrete structures that will not be regularly trafficked (e.g. by maintenance contractors). CC5™ is the most commonly specified thickness for concrete remediation projects.
- CC8 and CC13™ are recommended for remediating water courses with high flow rates, areas of highly turbulent flow (e.g. the base of a weir), where there is expected to be regular traffic, or when lining access points.

Which Format?

CC is available as large bulk rolls (1.5T to 1.6T) or as smaller man-portable batched rolls (60-70kg CC5™ & CC8™ only). Installation is fastest using bulk rolls dispensed using a spreader beam (available for hire/purchase from Concrete Canvas Ltd). For sites where heavy lifting equipment is not available or access is limited the batched, man-portable rolls should be used. See the table below for exact specifications.

CC Type	Thickness (mm)	Roll Width (m)	Dry Weight (kg/sqm)	Batched Roll Coverage (sqm)	Batched Roll Length (m)	Bulk Roll Coverage (sqm)	Bulk Roll Length (m)
CC5™	5	1.0	7	10	10	200	200
CC8™	8	1.1	12	5	4.55	125	114
CC13™	13	1.1	19	N/A	N/A	80	73

Table 1

Batched rolls

Bulk roll

*Geosynthetic Cementitious Composite Mat

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Which Fixing Method?

When installing over a smooth, rigid substrate such as poured/pre-cast concrete or asphalt, CC must be firmly anchored to the substrate to mitigate the potential effects of drying shrinkage. The most secure method for fixing the end of a length of CC is with a poured concrete anchor trench. Where this is not practical, appropriate concrete fixings such as fired concrete 'Hilti' nails, wedge anchors or masonry bolts can be used (see figure 1).

CC captured with a poured concrete curb

CC anchored using a fired concrete nail with a 20mm washer

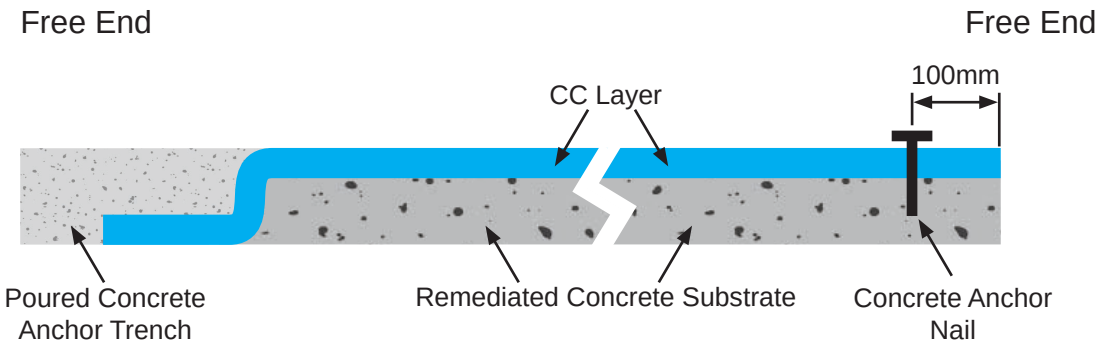

Figure 1. Typical installation of a continuous long section of CC over an extensive concrete substrate. Where anchoring is required either poured concrete anchor trenching or concrete anchor nailing may be used as appropriate

The following rules should be followed to determine the location of fixings:

1. Fixings are required at the 'free-ends' of all lengths of CC.

2. Intermediate fixings are required at a 'concave profile change' when the distance from the profile change to the next fixing is greater than 5m. The fixings should be located approximately 100mm from the profile change (see examples below).

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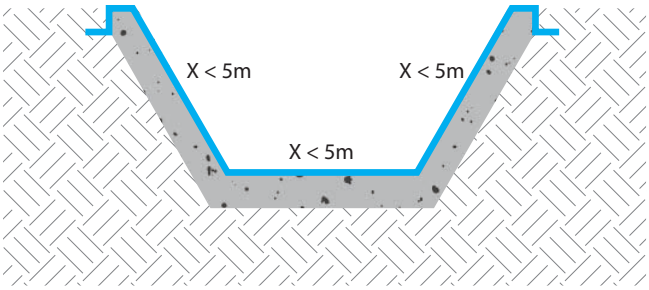

Figure 2.1 Fixing only of free ends.

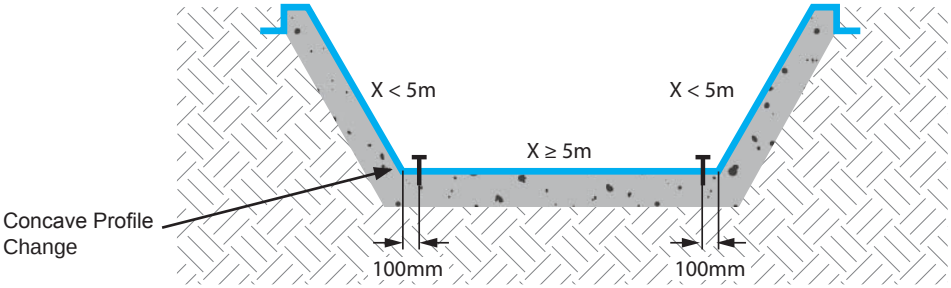

Figure 2.2 Base ≥ 5m fixing at 100mm from concave profile change.

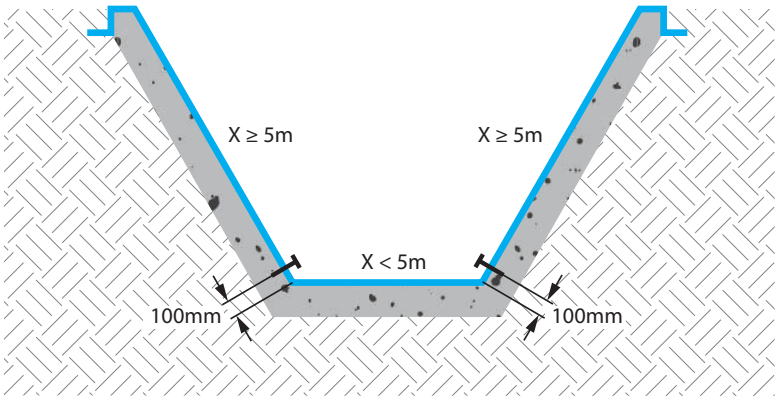

Figure 2.3 Sides ≥ 5m fixing at 100mm from concave profile change.

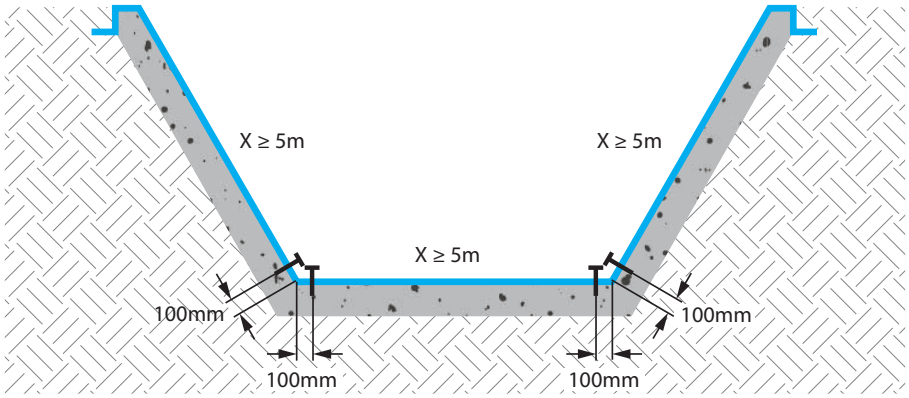

Figure 2.4 Sides and base ≥ 5m fixing at 100mm from both sides of concave profile change.

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Fixing Specification

- CC must always be fixed with a poured concrete anchor trench or in accordance with the following:
- The fixings must have a shank Ø>3mm, washer Ø>16mm.
- The minimum number of fixings required for a given thickness of CC is shown in table 2.
- More fixings may be required as a sufficient number of fixings must be used to withstand a total shear force (V_{REC}/m) per 1m width of CC, as shown in the table 2 below. See fixing manufacturers specification for V_{REC} per fixing in a given strength of concrete.
- The fixings should be 100mm from the end of the CC or the apex of the concave profile change.

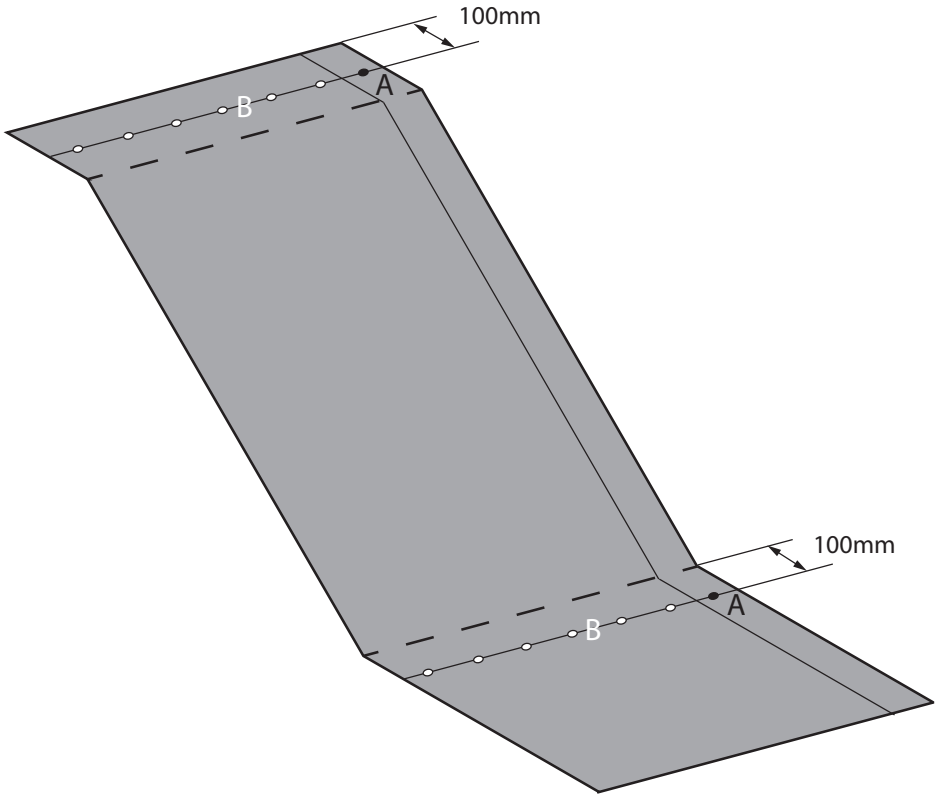

Figure 3. Anchoring at terminal ends and at concave profile changes, should include a fixing through the overlap joint abutting the adjacent strip of CC (A) and the number of fixings (B) shown in the table 2 below for the thickness of CC, equally spaced across the remaining width.

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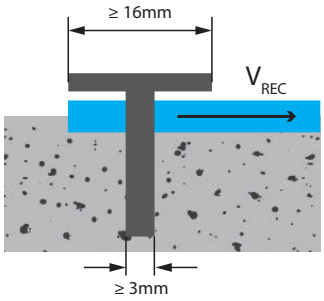
	Number of Fixings (A)	(B)	V_{REC}/width (total shear force per width of CC - A + B)
CC5™	1	5	8 kN
CC8™	1	7	16 kN
CC13™	1	9	25 kN
Total profile length <3.0m (CC5, CC8, CC13)	1	3	N/A

Table 2. Minimum bolt requirements for the three CC thicknesses', and their total shear capacity. Ensure sufficient fixings are used to resist hydraulic sheer forces resulting from peak designed flow velocity (Mannings No. n = 0.011). Additional fixings may be required in areas of turbulent flow.



For example: to fix a width of CC8™ to a 20MPa concrete structure. Table 1 shows a minimum of 1 fixing through the 100mm overlap joint (A) and a minimum of 7 fixings through the body of the CC. It is proposed to use Hilti DBZ 6/35 Wedge Anchors as these have a 6mm shank and a 16mm washer. The Design Resistance (V_{REC}) of this fixing in 20MPa concrete is 2.2kN and table 2 shows a total shear force requirement of 16kN per 1.1m width of CC. Therefore: 16kN/2.2kN = 7.3 fixings required per width of CC8™. 7.3 is rounded up to give a total of 8 fixings that will be required: 1 through the joint (A) and 7 evenly spaced through the body of the CC (B).

Ensure sufficient fixings are used to resist the hydraulic shear force resulting from the peak design flow velocity. (mannings no n=0.011). Additional fixings may be required in areas of turbulent flow.

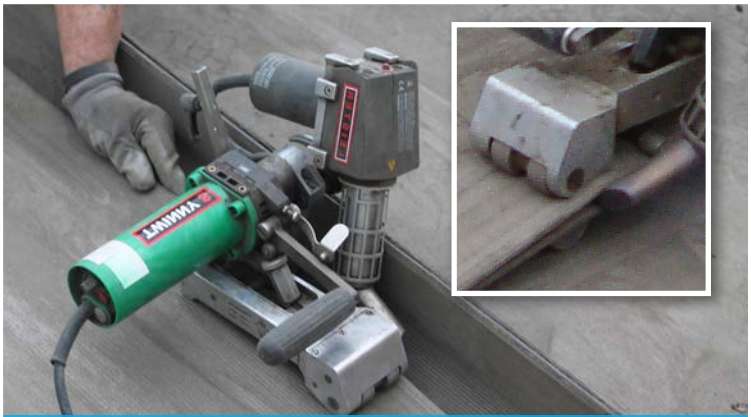
Which Jointing Method?

Adjacent layers of CC should be overlapped by a minimum of 100mm in the direction of water flow and CC can be jointed in the in the length or width direction along the overlap using masonary fixings, adhesive sealant, grout or by thermal welding. Typically an adhesive sealant joint is used for remediation applications. Please see the CC *User Guide: Jointing and Fixing* for the full range of jointing methods available.

Masonry fixings

Double bead of adhesive sealant

Grouted joint applied using a hand tool


Automatic thermal welding machine

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Installation

1. Ground Preparation

Failing concrete must be cleaned and mortar applied to larger cracks (typically anything larger than 50mm in any direction) to eliminate voids under the CC. Any loose soil, rocks, concrete debris, and vegetation should be removed.

2. Laying CC

Unroll the CC onto the surface to be remediated, with the fibrous surface facing up and the PVC membrane in contact with the ground. Tuck the CC into any corners, ensuring there is intimate contact with the substrate - once in position cut the material to length.

3. Positioning and Fixing

Ensure a minimum overlap of 100mm in the direction of water flow when jointing adjacent layers of CC. Apply fixings as per the guidance above.

4. Jointing

Adhesive sealant is the most commonly used method of jointing for remediation projects. *See CC User Guide: Jointing and Fixing* for detailed instructions and alternative jointing methods. Where possible CC should be hydrated under the overlaps prior to jointing.

5. Hydration

Once positioned, CC should be hydrated by spraying with water (sea water may be used). Refer to the CC *Hydration Guide* for full hydration and setting instructions.

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CONCRETE CANVAS

DATA SHEET

Concrete Canvas® GCCM Material Data

Concrete Canvas® GCCM Physical Properties*

Product	Thickness (mm)	Batch Roll Size (sqm)	Bulk Roll Size (sqm)	Roll Width (m)
CC5™	5	10	200	1.0
CC8™	8	5	125	1.1
CC13™	13	N/A	80	1.1

Product	Mass (unset) (kg/m²)	Density (unset) (kg/m³)	Density (set) (kg/m³)
CC5™	7	1500	+30-35%
CC8™	12	1500	+30-35%
CC13™	19	1500	+30-35%

Pre-Set Concrete Canvas® GCCM Properties

Setting

Working Time

1-2 hours subject to ambient temperature

CC will achieve 80% strength at 24 hours after hydration.

Method of Hydration

Spray the fibre surface with water until it feels wet to touch for several minutes after spraying.

Re-spray the CC again after 1 hour if:

- Installing CC5™
- Installing on a steep or vertical surface

Notes:

- An excess of water is always recommended. CC will set underwater and in seawater.
- CC must be actively hydrated. For example do not rely on rainfall or snowmelt.
- Use a spray nozzle for the best results (see CC equipment list). Do not jet high pressure water directly onto the CC as this may wash a channel in the unset CC.
- CC has a working time of 1-2 hours after hydration. Do not move or traffic CC once it has begun to set.
- Working time will be reduced in hot climates and increased in very cold climates.
- CC will set hard in 24 hours but will continue to gain strength over time.
- If CC is not sufficiently wetted, or dries out in the first 5 hours, the set may be delayed and strength reduced. If the set is delayed avoid trafficking the material and re-wet with an excess of water.

Refer to the *Concrete Canvas Hydration Guide* for installation in low temperatures or drying conditions.

- Low Temperature Conditions occur the ground surface temperature is between 0 and 5°C and rising or is expected to fall below 0°C in the 8 hours following hydration.

- Drying Conditions occur when there is one or more of: high air temperature (>22°C), wind (> 12km/h), strong direct sunlight or low humidity (<70%).

Post Set Concrete Canvas® GCCM Properties

Based on Concrete Canvas GCCM ® hydrated in accordance with the Concrete Canvas® Hydration Guide.

Strength

Very high early strength is a fundamental characteristic of CC. Typical strengths and characteristics are as follows:

Compressive tests based on ASTM C109 – 02 (initial crack)
- 10 day compressive failure stress (MPa) 40

Bending tests based on BS EN 12467:2004 (initial crack)
- 10 day bending failure stress (MPa) 3.4

Tensile data (initial crack)

	Length direction (kN/m)	Width direction (kN/m)
CC5™	6.7	3.8
CC8™	8.6	6.6
CC13™	19.5	12.8

Reaction to Fire

CC has achieved **Euroclass B certification**:
BS EN 13501-1:2007+A1:2009 B-s1, d0

Flame Resistance: **MSHA ASTP-5011**
Vertical and Horizontal Certification Passed

Age Testing (minimum 50 year expected life)

Freeze-Thaw testing (ASTM C1185) 200 Cycles

Freeze-Thaw testing (BS EN 12467:2004 part 7.4.1) Passed

Soak-Dry testing (BS EN 12467:2004 part 5.5.5) Passed

Heat-Rain testing (BS EN 12467:2004 part 7.4.2) Passed

Water impermeability (BS EN 12467:2004 part 5.4.4) Passed**

Other

Abrasion Resistance (ASTM C-1353)
Approximately 7.5x greater than 17MPa OPC Passed

Manning's Value (ASTM D6460) n = 0.011

Root Resistance (DD CEN/TS 14416:2005) Passed

Chemical Resistance (BS EN 14414)
- Acid (pH 1.0) (56 day immersion at 50°C) Passed
- Alkaline (pH 13.0) (56 day immersion at 50°C) Passed
- Hydrocarbon (56 day immersion at 50°C) Passed
- Sulfate Resistance (28 day immersion at pH 7.2) Passed

Impact Resistance of Pipeline Coatings
ASTM G13 (CC13™ only) Passed

Permissible Shear & Velocity CC8™ (ASTM D-6460)
- Shear (Pa) 1200
- Velocity (m/s) 10.7

Product exceeded large scale testing capabilities and was not tested to failure.

To achieve these permissible values, the CC material must be properly anchored with a system designed to meet or exceed these values.

Other Information

* Occasionally there will be a Beam Fault (fabric imperfection under 100mm wide running across the width) in a Bulk Roll. This fault is unavoidable due to the manufacturing process and the fault will be clearly marked with a white tag, there will be a maximum of (1) one Beam Fault in any Bulk Roll. A joint may need to be made on site where there is a Beam Fault as the material at a fault will not reach the performance specified in this Data Sheet. The maximum un-useable material due to any Beam Fault will be 100mm. There are no beam faults in standard batched rolls.

* Indicative values

** For containment applications it is recommended to use CC Hydro™

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CE

Concrete Canvas Ltd.
CF37 5SP, United Kingdom
11

EN12467:2004
Concrete Canvas:
Fibre cement sheet
NT
Oversize sheets
Class 1, Category A
Reaction to Fire B-s1,d0

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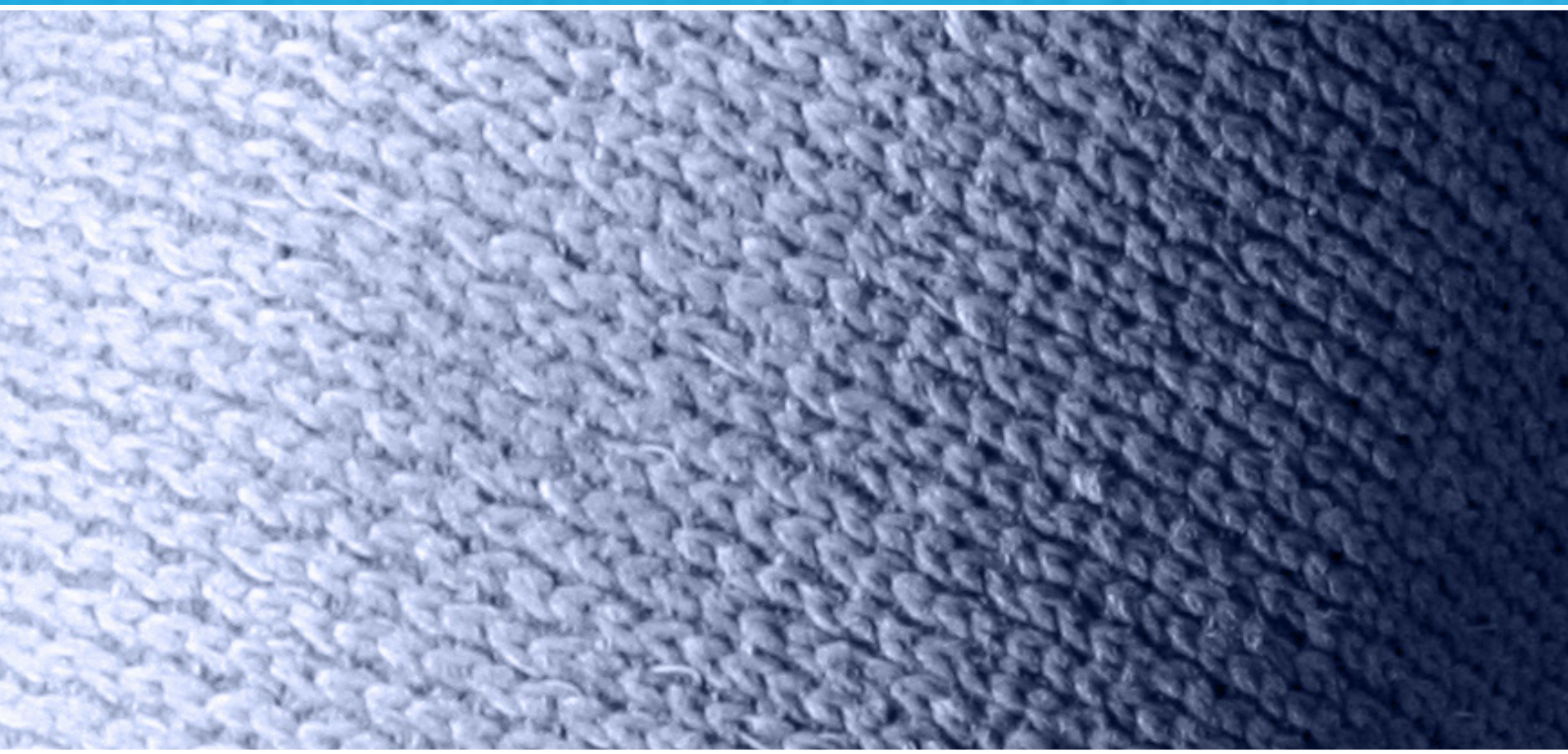
MADE IN UK



CONCRETE CANVAS™

Concrete Impregnated Fabric...

HYDROCARBON IMPERMEABILITY TESTING

ROAD RAIL AGRO POWER PETROCHEM MINING DESIGN OTHER

www.concretecanvas.com

HYDROCARBON IMPERMEABILITY TESTING

Hydrocarbon Impermeability Testing

Based on testing to BS EN 1377 : Part 6 : Clause 6 : 1990 "Determination of Permeability in a Triaxial Cell".

Concrete Canvas GCCM (Geosynthetic Cementitious Composite Mat) products have been independently tested by Geolabs Ltd UK, to assess the effect of exposure to hydrocarbons on the permeability of 5mm Concrete Canvas GCCL (CC5). The test method used is based on BS EN EN 1377: Part 6: Clause 6: 1990 "Determination of Permeability in a Triaxial Cell".

The test method involves placing a fully cured sample of CC5 of diameter 100mm and thickness 5mm into a triaxial cell. The cell was loaded with a fluid (in this case water or Benzine*) and then pressurised in order to measure the flow perpendicular to the CC5 disc. Three samples of CC5 were tested using water and three samples of CC5 using Benzine over a period of up to 2 days.

Summary of Results

	Test 1	Test 2	Test 3
CC5 - Water k (m/s)	1.0×10^{-11}	1.3×10^{-11}	2.6×10^{-10}
CC5 - Benzine k (m/s)	3.0×10^{-11}	8.1×10^{-11}	2.1×10^{-10}

Previous testing of the impermeability of CC5, CC8 and CC13 conducted using a large number of samples has shown that Concrete Canvas GCCM can be classified as 'impervious' with water proofing properties similar to clay. This is equivalent to an average coefficient of impermeability of $k=1 \times 10^{-9}$ m/s.

The above tests have shown that CC5 when tested for impermeability to Benzine has a k value equivalent to, or better than, $k=1 \times 10^{-9}$ m/s.

* Commercially available unleaded petrol

+ 44 (0) 845 680 1908 info@concretecanvas.com www.concretecanvas.com
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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type: CC5 Sample ID: Disk 1 Permeant: Petrol	Description: Cured CC5 product

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in unleaded Petrol under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	101.2	101.2
Height	*mm*	5.1	5.1
Moisture Content	*%*	n/a	n/a
Bulk Density	*Vlg/m³*	1.89	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	0.1

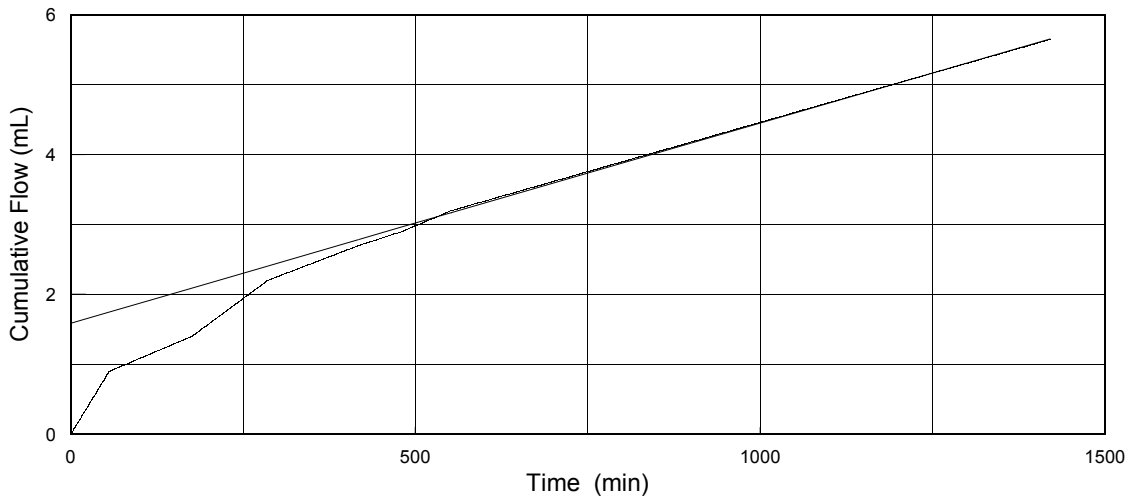
PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20ºC =

3.0×10^{-11} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 199.6



The quoted permeability is equivalent to 0.4 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP Date: 20/05/14	**GEO / 21090** Project Name: **4.5.1CC Chemical Resistance - 56 Day**	GEOLABS®

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type:	CC5	Description:
Sample ID:	Disk 2	Cured CC5 product
Permeant:	Petrol	

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in unleaded Petrol under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	100.4	100.4
Height	*mm*	5.2	5.2
Moisture Content	*%*	n/a	n/a
Bulk Density	*Mg/m³*	1.91	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

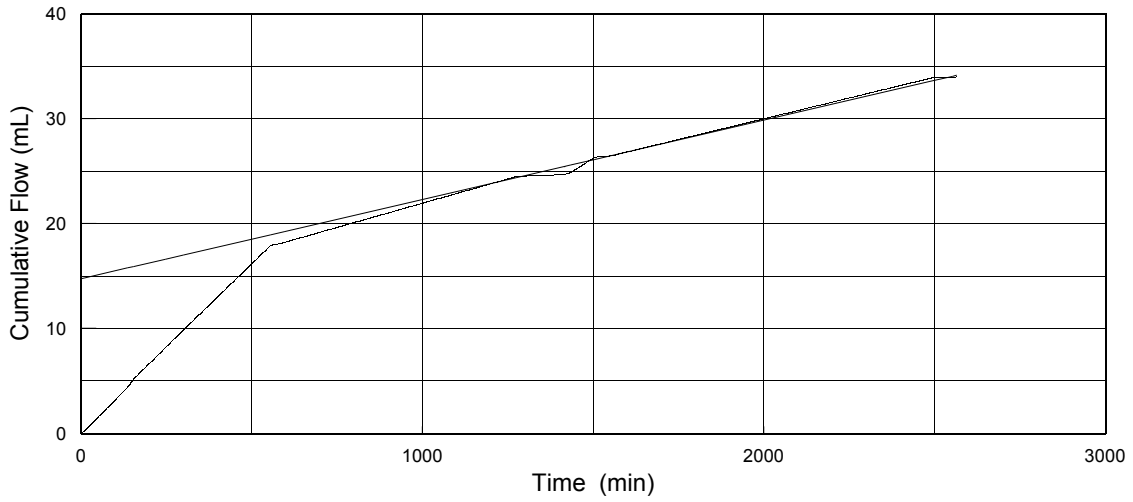
CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	0.1

PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20°C = 8.1×10^{-11} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 197.9



The quoted permeability is equivalent to 0.9 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP	**GEO / 21090**	
Date: 20/05/14	Project Name: **4.5.1CC Chemical Resistance - 56 Day**	

UKAS TESTING 1982

GEOLABS®

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type:	CC5	Description:
Sample ID:	Disk 3	Cured CC5 product
Permeant:	Petrol	

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in unleaded Petrol under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	100.4	100.4
Height	*mm*	5.2	5.2
Moisture Content	*%*	n/a	n/a
Bulk Density	*Vg/m³*	1.91	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	0.0

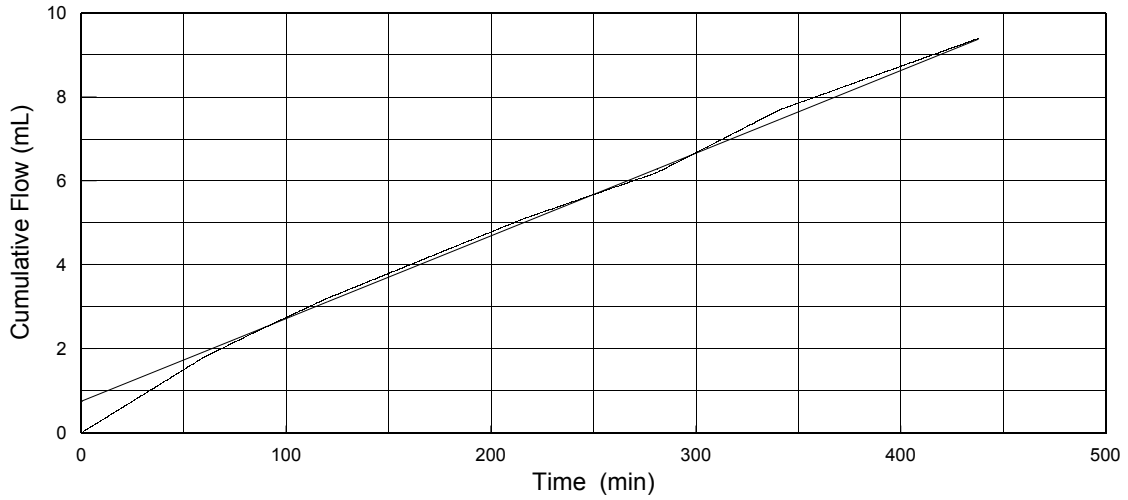
PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20ºC =

2.1×10^{-10} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 197.9



The quoted permeability is equivalent to 2.5 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP	**GEO / 21090**	
Date: 09/06/14	Project Name: **4.5.1CC Chemical Resistance - 56 Day**	

UKAS TESTING 1982

GEOLABS®

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type:	CC5
Sample ID:	Disk 4
Permeant:	Water

Description:
Cured CC5 product

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in water under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	100.3	100.3
Height	*mm*	5.1	5.1
Moisture Content	*%*	n/a	n/a
Bulk Density	*Mg/m³*	1.86	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

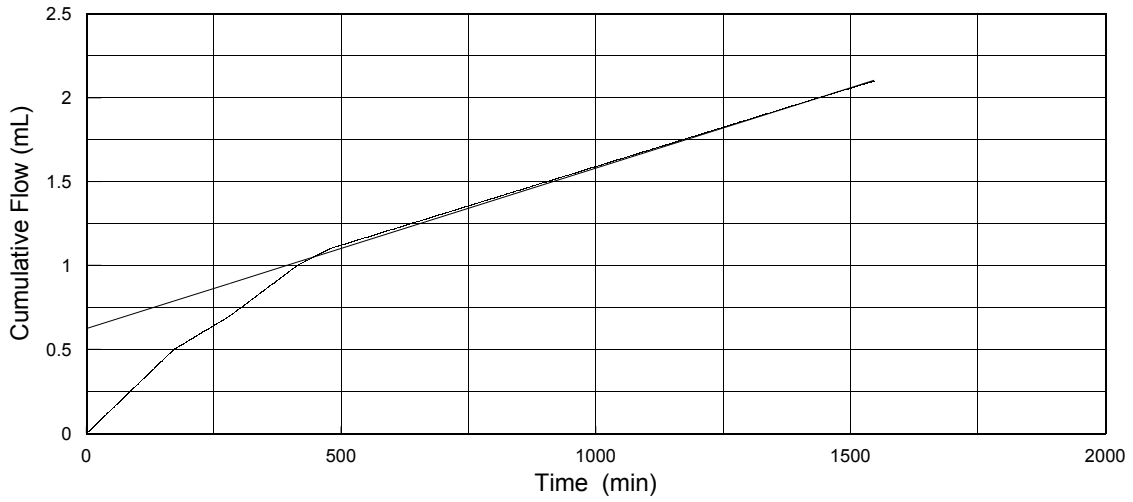
CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	0.8

PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20°C = 1.0×10^{-11} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 198.4



The quoted permeability is equivalent to 0.1 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP	**GEO / 21090**	
Date: 20/05/14	Project Name: **4.5.1CC Chemical Resistance - 56 Day**	

UKAS TESTING 1982

GEOLABS®

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type:	CC5
Sample ID:	Disk 5
Permeant:	Water

Description:
Cured CC5 product

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in water under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	100.5	100.5
Height	*mm*	5.1	5.1
Moisture Content	*%*	n/a	n/a
Bulk Density	*Vlg/m³*	1.90	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	1.6

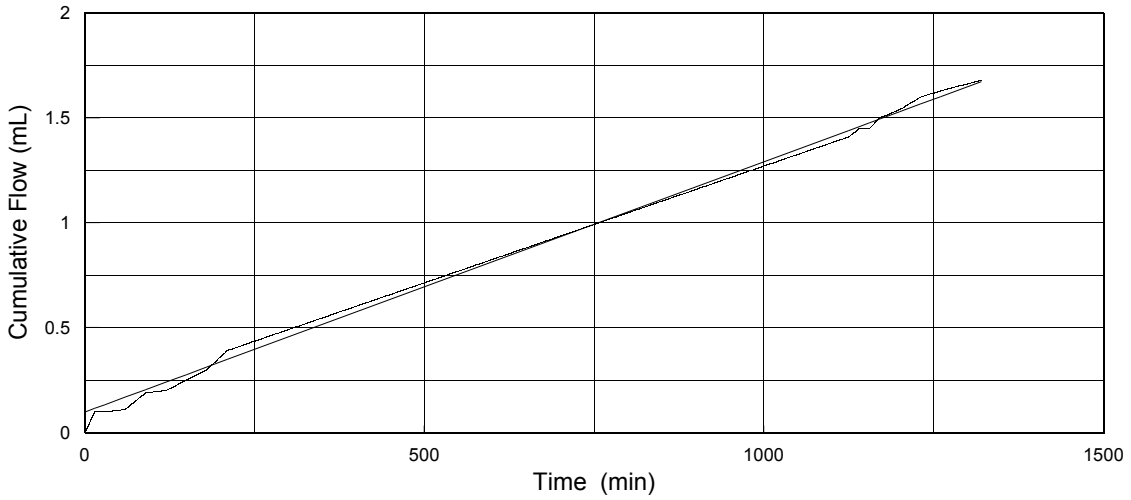
PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20ºC =

1.3×10^{-11} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 198.5



The quoted permeability is equivalent to 0.1 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP	**GEO / 21090**	
Date: 20/05/14	Project Name: **4.5.1CC Chemical Resistance - 56 Day**	

UKAS TESTING 1982

GEOLABS®

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Product Type:	CC5
Sample ID:	Disk 6
Permeant:	Water

Description:
Cured CC5 product

SPECIMEN DETAILS	
Depth within original sample	n/a
Orientation within original	Flow perpendicular to membrane
Specimen preparation	Prepared disc saturated in water under a vacuum prior to test set up. Periphery of disc sealed with nitrile mebrane.

TEST DETAILS			
Cell Preparation		Performed in accordance with Clause 3.5	
		INITIAL	FINAL
Diameter	*mm*	99.9	99.9
Height	*mm*	5.2	5.2
Moisture Content	*%*	n/a	n/a
Bulk Density	*Mg/m³*	1.89	n/a
Dry Density	*Mg/m³*	n/a	n/a

SATURATION STAGE		
Saturation by constant moisture content.		
'B' value	n/a	n/a

CONSOLIDATION STAGE		
Effective pressure	*kPa*	50
Volume change	*mL*	0.0

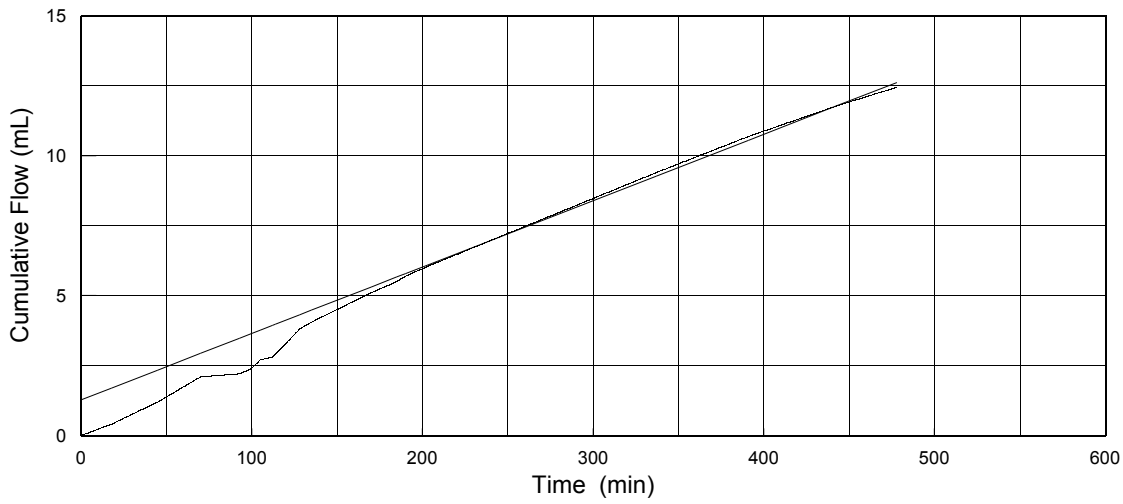
PERMEABILITY STAGE		
Pressure difference across specimen		10
Mean effective stress	*kPa*	45

Coefficient of permeability at 20°C =

2.6×10^{-10} m/s

TEST DURATIONS		
Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Hydraulic Gradient = 197.8



The quoted permeability is equivalent to 3.0 ml/min flow rate per square metre of product resisting a 1 metre head of water at 20°C

Checked and Approved	Project Number:	
Initials: RJP	**GEO / 21090**	
Date: 20/05/14	Project Name: **4.5.1CC Chemical Resistance - 56 Day**	

UKAS TESTING 1982

GEOLABS®

CONCRETE CANVAS®
Concrete Impregnated Fabric...

ENVIRONMENTAL BENEFITS

Concrete Canvas® is part of a revolutionary new class of construction materials called Geosynthetic Cementitious Composite Mats (GCCMs). It is a flexible, concrete impregnated fabric that hardens on hydration to form a thin, durable, water proof and fire resistant concrete layer. Essentially, it's concrete on a roll.

CO^2 Saving

Concrete Canvas® GCCM (CC) enables up to 150mm of poured concrete to be replaced with just 8mm for many surfacing applications. As a result, material savings of 95% can be achieved for a typical construction project. In addition CC reduces the transportation requirement of construction work. A single pallet of 8mm thick CC (CC8™) material contains 125sqm of concrete surfacing; the same coverage using poured concrete would require 2 seventeen ton ready-mix trucks. In other words, a single truck load of CC Bulk rolls replaces 34 ready-mix trucks.

Low Washout

CC traps dry concrete powder in a 3-dimensional fibre matrix. Testing based on BS8443 to indicate the effect of underwater setting, shows that CC loses only 3% by mass. By comparison, specialist underwater concretes typically lose between 10-15% whilst also requiring much larger initial volumes.

CC has been independently tested by the CTL Group laboratories in the US which measured leachates from CC both during hydration and post-set. All leachate levels were found to be below the levels set by the US Environmental Protection Agency (EPA).

Limited Alkaline Reserve

CC uses a specialist high early strength concrete with a limited alkaline reserve. Unlike most concretes, it is not classified as an irritant and is less damaging to the environment.

EA Approval (UK)

CC was approved for use by the Environment Agency (EA) Biodiversity team in 2010 for the Church Village Bypass Project. Benefits cited included 'surface roughness to provide diversity in the channel's morphology' and its ability to introduce 'sinuosity in the channel line'.

Since 2010 multiple projects have been granted approval on a case-by-case basis including projects for the Environment Agency (EA), Natural Resources Wales (NRW) and Scottish Environmental Protection Agency (SEPA).

Greening

Untreated CC will naturally 'green' over time as the textured top surface allows moss growth, whilst the fibre-reinforced concrete layer will prevent root-growing vegetation, which would otherwise restrict water flow and increase maintenance costs.

Manufacture

Concrete Canvas Ltd is ISO9001 certified; we pride ourselves on the responsible sourcing and production of our products. The manufacture of CC is powered in part by a 90kWp solar array on the roof of the factory and all materials are sourced to minimise environmental impact. For example, the PVC we use is a high grade phthalate free (no DOP) compound. This is designed to maximise the products life expectancy and minimise its impact on the environment.

CONCRETE CANVAS®
Concrete Impregnated Fabric...

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Nuna Innovations Inc.

Concrete Cloth™

Geosynthetic Cementitious Composite Mat (GCCM)

Licensed from CONCRETE CANVAS

Manufactured by:

Milliken™ | Milliken Infrastructure Solutions, LLC

Nuna Innovations Inc.

Nuna Innovations represents and introduces ground-breaking, innovative technologies to the mining, construction, civil, defense, disaster relief and oil & gas industries. Nuna Innovations provides cost effective, safe, alternative product and technology solutions to current industry applications.

Delivering Value

Engineering Expertise

- Assess challenges and recommend customized solutions
- Leverage multiple technology platforms
- Provide in-depth documentation and third-party validation

Technical Support

- Deliver in-field training and support
- Provide responsive and on-demand service

Project Optimization

- Lower total project cost
- Improve contractor productivity
- Reduce user impact
- Extend asset life cycle
- Reduce installation time
- Minimize surface/soil preparation
- Avoid weather-related delays

Applications

Ditch and Channel Lining

Concrete Cloth™ GCCM can be rapidly unrolled to form a ditch or channel lining. When comparing erosion control methods, it is a cost-effective alternative to riprap, cement stabilized soil, plastic inserts, and shotcrete.

Benefits

- Minimizes installation time
- Conforms to ditch geometry
- Lowers total project cost
- Requires no specialized equipment
- Installs at a rate of 20,000 sf per day
- Acts as an effective weed suppressant

Culvert

Ideal as a protective wear surface in metal culvert applications, Concrete Cloth GCCM is a cost-effective alternative to topical invert coatings and relining systems. Additionally, it can be used at the headwall, inlet and outfall to prevent erosion and undermining of the existing structure.

Benefits

- Extends the life of existing culvert asset
- Hydrates with existing water source
- Offers easy handling and installation with a small crew

Slope

Concrete Cloth GCCM can be used to protect slopes as a replacement for shotcrete, riprap, and other hard armor systems. The material is easy to install, requiring limited equipment, and can be used by standard maintenance crews.

Benefits

- Reduces installation time
- Lowers total project cost
- Features small equipment footprint
- Acts as an effective weed suppressant
- Installs in rain, if needed, maximizing schedule flexibility

Berm

Compared to poured or sprayed concrete, Concrete Cloth GCCM is a cost-effective alternative for lining secondary berms. Its ability to be installed quickly reduces time on site, while the availability of man-portable rolls allows for installation in areas with reduced access.

Benefits

- Acts as an effective weed suppressant
- Installs easily around existing structures
- Provides additional levels of impermeability
- Lowers total project costs
- Reduces maintenance costs
- Offers fire protection

Other Applications

- Geosynthetic liner protection
- Irrigation
- Mining
- Remediation

Changing the Way You Think About Concrete

Imagine being able to use concrete on slopes, in water, and in other hard to reach locations - with no forms, no mixing and minimal equipment. Concrete Cloth™ geosynthetic cementitious composite mat (GCCM) is a flexible fabric that will bend and curve, enabling it to follow the natural contours of the land including ditches and slopes.

The material can't be overhydrated, so it can be installed in the rain or under water, even salt water. And, because it comes in a variety of sizes, including rolls small enough for two men to carry, it reduces the need for heavy machinery.

An ideal alternative to rip-rap, shotcrete and poured concrete, Concrete Cloth GCCM can be used in any place that needs protection from erosion or wear, and can be used to channel or contain water or other liquids.

To meet the needs of your application, three thicknesses are available: **CC5** (5 mm or 0.2 inches), **CC8** (8 mm or 0.3 inches) and **CC13** (13 mm or 0.5 inches).

APPLICATION	CC5	CC8	CC13	COMMENT
Ditch Lining	◑	●	◑	**Recommend CC8** CC5 or CC13 may be used depending on specific conditions.
Slope Protection	●	◑		**Recommend CC5** CC8 may be used on unstable ground or for high flow conditions.
Berm Lining	●	◑	◑	**Recommend CC5** CC8 or CC13 may be used for areas of heavy traffic.
Concrete Remediation	●	◑	◑	**Recommend CC5** CC8 or CC13 may be used where voids are large, or end use involves high flow rates or turbulent flow.
Culvert Lining	◑	●	◑	**Recommend CC8** CC13 may be used for flows with high levels of debris or high flow conditions. CC5 may be used for low flow conditions and low levels of debris.
Weed Suppression	●			**Recommend CC5**
Outfalls/Spillways		●	◑	**Recommend CC8** CC13 may be used for outfalls with a high level of debris or with high flow conditions.
Gabion Protection	●	●	◑	**Recommend CC5 or CC8** CC13 may be used for applications with high flow conditions or prone to impacts.
Mining Vent/Blast Walls	●	●		**Recommend CC5** for vent wall applications. **Recommend CC8** for walls exposed to blast, depending on pressure loading.

● **Recommended** ◑ **Recommended for specific applications**

NUNA
Nuna Innovations Inc.

Milliken Concrete Cloth™ Licensed from CONCRETE CANVAS

Concrete Cloth™

Geosynthetic Cementitious Composite Mat

STORM + SANITARY | BRIDGES + ROADWAYS | OIL, GAS, + INDUSTRIAL

The Concrete Cloth™ material is a three-dimensional flexible cement impregnated fabric that hardens after hydration to form a durable concrete layer. Classified as a Geosynthetic Cementitious Composite Mat (GCCM), it is used in a variety of civil infrastructure markets including: transportation, oil & gas, stormwater, landfill, mining, and erosion control. Typical applications for use are ditch lining, slope stabilization, shoreline armor, secondary berm protection, culvert invert protection, and Geosynthetic liner protection.

	MANPORTABLEBATCHROLLS				BULKROLLS			
Product	Roll Width ft (m)	Roll Length ft (m)	Roll Area ft^2 (m^2)	Average Unset Roll Weight lb (kg)	Roll Width ft (m)	Roll Length ft (m)	Roll Area ft^2 (m^2)	Average Unset Roll Weight lb (kg)
CC5	3.63 (~1.1)	30.0 (~9.1)	108.9 (~10.1)	~156 (~71)	3.63 (~1.1)	593.8 (~181.0)	2155.5 (~200)	~3100 (~1400)
CC8	3.50 (~1.1)	15.3 (~4.7)	53.6 (~5)	~130 (~58)	3.50 (~1.1)	385.0 (~117.0)	1347.5 (~125)	~3170 (~1440)
CC13	Not Available				3.60 (~1.1)	239.0 (~72.8)	860.4 (~80)	~3355 (~1520)

Standard production size information is subject to change without notice. Please contact your Nuna Innovations Inc. representative on exact roll size quotes (sales based on ft^2). All test data are typical minimum values unless otherwise noted.

Dimensional Parameters

Product	Thickness in (mm)	Dry Weight lb/ft^2 (kg/m^2)	Cured Weight lb/ft^2 (kg/m^2)
CC5	0.2 (5)	1.3 (6.3)	1.7 (8.5)
CC8	0.3 (8)	2.2 (10.6)	2.8 (14.2)
CC13	0.5 (13)	3.7 (18.0)	5.0 (24.3)

Listed weights are minimum values. Actual product weight may exceed these values

Tensile Strength: ASTM D-5035

Product	Working Strength lb/ft^2 (kg/m^2)		Ultimate Strength lb/ft^2 (kg/m^2)	
	Length	Width	Length	Width
CC5	60 (10)	20 (3.5)	140 (24)	50 (8.5)
CC8	85 (15)	25 (4.4)	190 (33)	100 (17)
CC13	150 (26)	90 (16)	190 (33)	110 (19)

Puncture Resistance: ASTM D-6241

Product	Puncture Strength lb (kg)
CC5	350 (160)
CC8	500 (225)
CC13	720 (325)

CC13 has also passed ASTM G-13 (Impact Resistance of Pipeline Coatings).

Permeability

Coefficient of permeability 2x10-11m/s (CC8)
Permeability of joints will vary dependant on the jointing method, consult Nuna Innovations for more information

Set Time: ASTM C-807

Initial Set: 120 Min
Final Set: 240 Min
CC will achieve -70% strength 24hr after hydration. Working Time 1-2 hrs after hydration

Flex Strength: ASTM C-1185

7 Day Minimum: 475 psi (3.3 MPa)
7 Day Modulus Minimum: 26,000 psi (180 MPa)

Compressive Strength: ASTM C-473

7 Day Minimum: 5600 psi (38 MPa)

Taber Abrasion: ASTM C-1353

Approximately 7.5x Greater than 2500 psi OPC

Freeze Thaw: ASTM C-1185

200 Cycles –Pass

Flame Resistance: MSHA ASTP-5011

n=0.011

Permissible Shear & Velocity CC5: ASTM D-6460

Shear <25 lb/ft2 (1200 Pa)
Velocity <35 ft./sec (10.7m/s)
Product Exceeded Large Scale Testing Capabilities and was not tested to failure

To actually achieve these permissible values, the CC material must be properly anchored with a system designed to meet or exceed these values

Concrete Cloth™

Geosynthetic Cementitious Composite Mat

STORM + SANITARY

BRIDGES + ROADWAYS

OIL, GAS, + INDUSTRIAL

Composition

Concrete Cloth GCCM is a three-dimensional flexible cement impregnated fabric that hardens after hydration. The material has a top surface fabric through which water will penetrate during hydration and a bottom surface consisting of a PVC membrane that acts as permeable barrier.

Characteristics

The dry density of the product before hydration is approximately 95 lbs/ ft3 (1500 kg/ m3). Upon complete hydration the density increases between 30-35% to approximately 125 lbs/ft3 (2000 kg/m3). The exact density will depend slightly on the thickness of material and the relative proportion of PVC membrane to cement.

Storage & Handling

Concrete Cloth matting is sold in three (3) thickness. Standard roll sizes referred to as Bulk or Batch rolls are noted in the product table on the proceeding page. Bulk rolls will be shipped a single roll to a pallet, Batch or Custom rolls maybe shipped multiple stacked rolls to a pallet.

It is important to check the wrapping when the Concrete Cloth rolls arrive on the jobsite. Unopened packages can be stored in a dry location, off the ground, and away from moisture for up to one year. Any damage to the packaging should be repaired prior to storage using plastic wrap and tape to protect the Concrete Cloth GCCM from premature hydration.

Batch rolls are designed to be able to lift by two (2) persons. Bulk rolls will require additional handling equipment rated for the weight of the rolls. Use of a load rated spreader bar is recommended.

Subgrade Preparation

Concrete Cloth matting will generally take the shape and structure of the surface to which it is applied and imperfections in the subgrade will be visible. It is necessary that a compact and smooth subgrade be prepared to engineering specifications prior to placement. Subgrade should be prepared to the lines and tolerances of the engineering drawings for the installation. It should be clear of surface vegetation and debris. To the extent possible Concrete Cloth materials should be in direct contact with the subgrade to which it is being applied.

Installation

Concrete Cloth matting is often overlapped to create joints so installation will typically begin at the lowest point of the project and proceed up the grade. A shingled installation overlapping the rolls is used to reduce any water seepage between the overlapped rolls.

The Concrete Cloth material is designed such that the PVC back of the material will be against the subgrade in most applications. This side is water resistant and will not allow subsequent hydration if the material is installed upside down. The PVC back side is identifiable as the side with a continuous film. It is packaged such that the PVC back will be on the outside of the roll. For this reason it is important when placing Concrete Cloth materials to let the fabric off from the bottom side of the roll.

Temporary anchoring may be used on the leading edge of roll to prevent unrolling. In applications where long lengths will be let off the roll, it is good practice to allow several feet of extra material on the down-slope side of the install to allow for migration of the material in the direction of equipment movement.

After installation of the first roll or cut piece, the leading edge of the second roll or cut piece will typically be shingled over the first. If shingling is not possible, other jointing can be used. Please consult the detailed Concrete Cloth Installation Guide for further details.

Cutting

Concrete Cloth matting is designed to be cut with commonly available cutting tools. A box cutter or razor knife is generally acceptable and rotary cutters are more efficient. Always cut the material from the fabric (top) side down to minimize tearing of the PVC membrane. When possible, use a straight edge. Always wear proper hand PPE when working with cutting tools.

Overlap and Jointing

Four (4) inch overlap is typically recommended for shingling. The most common joint is an overlapped screw joint. A stainless steel #12 screw (coarse threads) is recommended 4-18 inch (typical 6) on center at least 1 inch from the overlap edge. Consult the Installation Guide for additional jointing recommendations.

Anchoring

Along all exterior edges (top, bottom & sides) of the Concrete Cloth installation, it is recommended to install a toe-in trench (minimum of 6 inches in depth) to resist migration of surface water between the Concrete Cloth material and the subgrade. The trench may vary based on the recommendation of a certified design engineer.

Some slopes, soil types and applications may require anchors or nails to stabilize the underling soil mass against internal instability. Concrete Cloth matting may be used as the non-structural facing treatment when internal anchorage conditions are required. Anchors may be installed first or the anchors can be inserted through the cloth.

Hydration

Complete hydration is critical to optimal performance. The Concrete Cloth product cannot be over hydrated and over watering is recommended. Any water source is acceptable in most circumstances.

Saturate the top surface. This will take multiple passes of a moderate spray of water from a garden hose or other source. More water will be needed as the slope of the install increases.

Insure that the material has been saturated by means of the “thumb test”, by pressing a thumb to observe water pooling at the indention.

Wait 30-60 minutes and then put a final dose of water on the material to insure complete hydration.

The material can also be hydrated by submersion for 5-10 minutes but will only have a 1-2 hour working time after hydration.

Do not jet high pressure water directly onto the surface. Do not hydrate if temperature is likely to fall below 25F (-4C) within 24hrs of initial hydration. Do not install on frozen ground. Consult the Installation Guide for additional details and pictures.

Health & Safety

The material contains cement powder which is alkaline and may cause skin irritation.

Always wear proper PPE and consult the SDS for additional information

1.855.815.4385 sales@nunainnovations.com nunainnovations.com

Sheldon Mine

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • March 2013

Introduction

The U.S. Environmental Protection Agency (US EPA) Region 9 is working to protect the residents living near the Sheldon Mine site in Walker, Arizona. The purpose of this fact sheet is to update you on the progress of the cleanup and invite you to a community meeting.

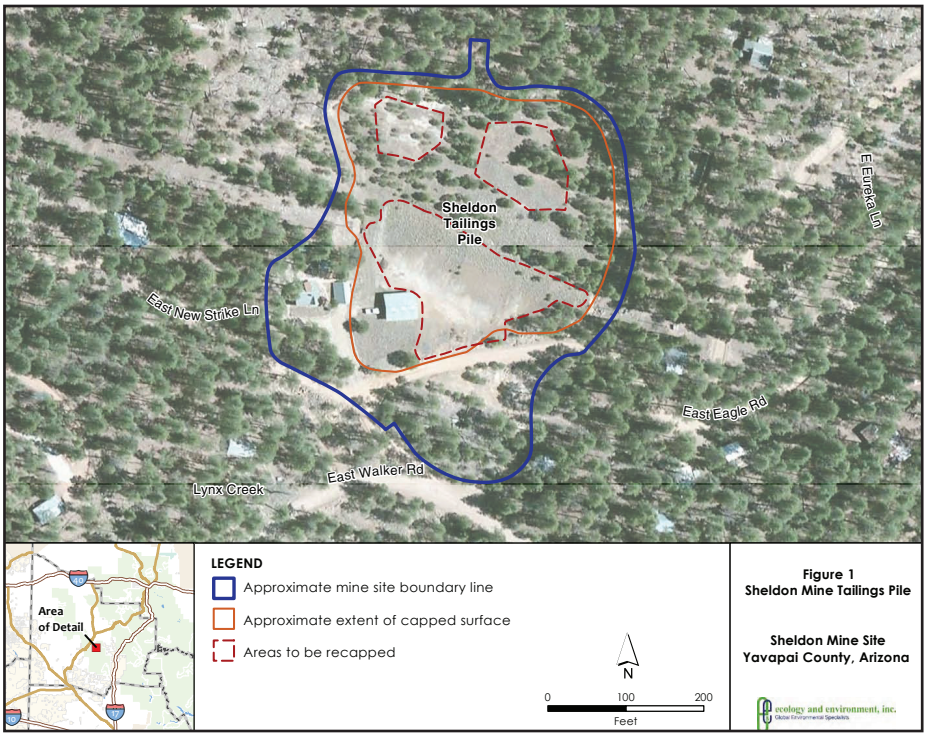
Site Background

The Sheldon Mine site is located approximately 2 miles southeast of the Town of Walker, Yavapai County, Arizona on unincorporated private land within Prescott National Forest, north of the headwaters of Lynx Creek and seven miles upstream from Lynx Lake reservoir. The Sheldon Mine was one of the larger mining operations in the area and it recovered copper, gold, silver lead and zinc from the 1860s through the 1950s. Historical records indicate the site was also the location of a former mill and tailings pond. Abandoned mine waste was left in two areas: the Sheldon Mine Tailings Pile and the Sheldon Mine Waste Rock Pile. The waste rock pile and the tailings pile are sources of heavy metals and Acidic Mine Drainage (AMD) in the Lynx Creek watershed. Acidic Mine Drainage is the formation and movement of highly acidic water containing heavy metals and it can have negative impacts on human health, animals, and plants.

In 2005, EPA collected and analyzed soil samples at the Sheldon Mine site and found elevated levels of lead and arsenic that were above EPA's Regional Screening Levels (RSL). In addition, EPA conducted a geotechnical evaluation to identify options for soil and slope stabilization at Sheldon Mine. In 2012, EPA conducted additional field screenings and evaluated removal alternatives and erosion control for the mine waste.

Cleanup Actions Prior to EPA Involvement

In 1975, the Prescott National Forest and the University of Arizona, School of Renewable Natural Resources graded and covered the Sheldon Mine waste rock and tailings pond. They regraded eroded banks, added limestone and topsoil, and seeded native grasses. This restoration improved erosion control and the landscape, but wind and water erosion have damaged the soil cap over time.



Reasons for Taking Action

High concentrations of heavy metals, including lead and arsenic, are present in tailings, soil and sediments at the Sheldon Mine site. Nearby residents and recreational visitors can be exposed to heavy metals in dust through breathing or touching dust. The removal action will reduce the amount of metals entering Lynx Lake, which is used for recreation.

In order to protect human health and the environment, the US EPA Region 9 Superfund Emergency Response Section plans the following actions for the mine tailings pile. We anticipate that this work will begin in April 2013 and take five weeks.

- Implement erosion control measures to reduce arsenic and lead enriched mine tailings in surface water runoff
- Reduce the infiltration of water into the mine tailings pile to reduce the quantity of mine influenced water
- Remove existing contaminated sediments from the bottom and banks of the seasonal stream leading to Lynx Creek

The waste rock pile will need to be addressed in a separate removal action in the future.

Please stay away from the Sheldon Mine site before and during EPA's removal action. Avoiding the site will prevent exposure to contaminants and possible health risks.

View of the Sheldon Tailings Pile facing north

Community Meeting

EPA will hold a community meeting to discuss and answer questions about the Sheldon mine cleanup on Wednesday, March 6 at 6 PM at the Walker Fire Department.

Wednesday, March 6
6:00-8:00 PM

Walker Fire Department
5881 S. Walker Road
Prescott, AZ 86303

Contact Information

If you have questions or concerns, please contact any of the following individuals:

EPA Contacts

Dan Shane
On-Scene Coordinator
(415) 972-3037
shane.dan@epa.gov

Grace Ma
Community Involvement Coordinator
(415) 947-4212
ma.grace@epa.gov

APPENDIX C

Waste Disposal Records

15101588918

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

ORDER # POC800823 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: Univar USA Inc. 800-535-5053
4. Manifest Tracking Number: 008207164 FLE

5. Generator's Name and Mailing Address:
PCC STRUCTURALS INC.
4600 SE HARNEY DRIVE
PORTLAND, OR 97206

Generator's Site Address (if different than mailing address):
PCC STRUCTURALS INC.
5001 SE JOHNSON CREEK BLV
PORTLAND, OR 97206

Generator's Phone:

6. Transporter 1 Company Name: 1. UNIVAR USA INC. — U.S. EPA ID Number: ORD009227398

7. Transporter 2 Company Name: 2. SAVANNAH TRANSPORT, INC. — U.S. EPA ID Number: KS0000336891

8. Designated Facility Name and Site Address:
US ECOLOGY OF IDAHO
20400 LEMLEY ROAD
GRAND VIEW, ID 83624
Facility's Phone: 800-274-1516
U.S. EPA ID Number: IDD073114654

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, PG II, (RQ-1), (ERG#171)	9	D-M	2168	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information: CERTIFICATE OF DISPOSAL REQUIRED
1. 38247 SOIL CONTAMINATED W/ PCBS
PLACARDS PROVIDED BY CARRIER/SHIPPER YES/NO DRIVER SIGNATURE R. Aitchison
****ER CALLER MUST IDENTIFY UNIVAR USA AS REGISTRANT (CONTRACT # 97569) ****

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs — Signature: Scott Jacobs — Month 10 Day 12 Year 15

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: James Gamy — Signature: J Gamy — Month 10 Day 12 Year 15
Transporter 2 Printed/Typed Name: Rodney Aitchison — Signature: Rodney Aitchison — Month 10 Day 14 Year 15

18. Discrepancy
18a. Discrepancy Indication Space: ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Actual received 1851.17K. wt ok per Ashley Oakes via email 10/20/15
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Jennifer Lutrell — Signature: Jennifer Lutrell — Month 10 Day 15 Year 15

EPA Form 8700-22 (Rev. 3-05). Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

ORDER # [illegible]

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: O R D 0 0 9 8 2 7 9 7 0

2. Page 1 of 1

3. Emergency Response Phone: Unit of USA Inc. 800-535-5053

4. Manifest Tracking Number: 008207164 FLE

5. Generator's Name and Mailing Address:
PCC STRUCTURALS INC.
4600 SE HARNEY DRIVE
PORTLAND, OR 97206

Generator's Site Address (if different than mailing address):
PCC STRUCTURALS INC.
5001 SE JOHNSON CREEK BLV
PORTLAND, OR 97206

Generator's Phone:

6. Transporter 1 Company Name: 1. UNIVAR USA INC.
U.S. EPA ID Number: O R D 0 0 9 4 2 2 3 9 8

7. Transporter 2 Company Name: 2. SAVANNAH TRANSPORT, INC.
U.S. EPA ID Number: F S 0 0 0 0 3 1 6 8 9 7

8. Designated Facility Name and Site Address:
US ECOLOGY OF IDAHO
20400 LEMLEY ROAD
GRAND VIEW, ID 83624
Facility's Phone: 800-274-1516
U.S. EPA ID Number: I D D 0 7 3 1 1 4 6 5 4

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, POLYCHLORINATED DIPHENYLS, SOLID, 9, PG 17, (RQ-1), (EAG#171)	9	DM	2168	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
CERTIFICATE OF DISPOSAL REQUIRED
1. 38247 SOIL CONTAMINATED W/ PCBS
PLACARDS PROVIDED BY CARRIER/SHIPPER YES/NO DRIVER SIGNATURE
**** ER CALLER MUST IDENTIFY UNIVAR USA AS REGISTRANT (CONTRACT # 975[illegible]) ****

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: [illegible] Signature: Month Day Year

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: [illegible] Signature: [illegible] Month Day Year
Transporter 2 Printed/Typed Name: Signature: Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

USEcology

PCB CONTROL SHEET

GENERATOR COPY

MANIFEST # 008207164FLE

Generator: PCC Structurals Inc.

Site Address: 5001 SE Johnson Creek Blvd. Portland, OR 97206

EPA ID#: ORD009027970 Page 1 of 1

For US Ecology Use Only

Load #:

Received:

1	2	3	4	5	6	7	8	9	10	11	12	13	14
WSID# *Required*	QTY *Required*	PKG *Required*	TYPE OF MATERIAL *Required*	D/F *Required*	MANUF *Required*	MANIFEST LINE # *Required*	SERIAL # /UNIQUE # *Required*	KVA	WEIGHT K *Required*	DIELECT VOL	PPM *Required*	OSD *Required*	ABSORBENTS ADDED
38247	1	DM	Soil w/ PCB's			9b.1	DM #1		303.91		64	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #2		298.92		100	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #4		140.16		55	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #6		365.6		66	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #10		52		1800	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #11		402.79		57	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #13		353.80		310	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #46		190.51		53	9/3/2015	
38247	1	DM	Soil w/ PCB's			9b.1	DM #48		59.42		120	9/3/2015	

Explanation:

1. **WSID #:** US Ecology approved waste stream ID#.
2. **QTY:** Enter quantity.
3. **PKG:** Enter packaging type-same as container type.
4. **Type of Material:** Enter description of material. Be specific.
5. **D/F:** Specify if the transformer or article is full (F), drained (D), or drained & flushed (D/F).
6. **Manuf:** Enter manufacturer.
7. **Manifest Line#:** For each item, indicate which line # of the manifest it is shipped on.
8. **Serial # / Unique#/:** Enter the nameplate serial number for transformers or articles or a unique number for each container. (Note: If there is no name plate serial #, you must assign a unique number to ach container.)
9. **KVA:** Enter the nameplate KVA rating of the transformer or article.
10. **Weight K:** Enter the weight in kilograms.
11. **Dielect Vol.:** Enter the nameplate dielectric volume of the transformer or article.
12. **PPM:** Enter the parts per million PCB contained in the material.
13. **OSD:** Enter the date the material was removed from service and designated for disposal [761.65(a), 761.180(a), 761.207(a)].
14. **Absorbents Added:** Specify non-biodegradable absorbents added.

REQUIRED CERTIFICATION: In order for US Ecology to accept the waste material specified at the US Ecology – Grand View, Idaho or Beatty, Nevada facility the undersigned, as an authorized employee of the generating company, hereby warrants and certifies to US Ecology that the waste material listed above, delivered to and accepted for disposal by US Ecology shall conform to the above description and that all waste material and packaging shall comply with all current state and federal regulations.

Name: _____ **Signature:** _____ **Title:** _____ **Date:** _____

Note: A Completed PCB Control Sheet, including generator's signature, must accompany each shipment of regulated PCB waste.

Revision Date 1/2013

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 16052603608 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ORD009027970	2	Univar USA Inc. (800) 635-5063	009469095 FLE

5. Generator's Name and Mailing Address
PCC STRUCTURALS INC.
4600 SE Harney Drive
Portland, OR, 97206
Generator's Phone:

Generator's Site Address (if different than mailing address)
PCC STRUCTURALS INC.
5001 SE JOHNSON CREEK BLV
PORTLAND, OR, 97206

6. Transporter 1 Company Name: UNIVAR USA INC. — U.S. EPA ID Number: ORD009227398

7. Transporter 2 Company Name: UNIVAR USA INC — U.S. EPA ID Number: ORD000711671

8. Designated Facility Name and Site Address
US ECOLOGY OF IDAHO
20400 LEMLEY ROAD, ;
GRAND VIEW, ID, 83624
Facility's Phone: 800-274-1516
U.S. EPA ID Number: IDD073114654

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, Polychlorinated biphenyls, solid , 9, PG II, (RQ=1), (ERG#=171)	39	DM	9791	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.38247(SOIL CONTAMINATED W/ PCBS)
PLACARDS PROVIDED BY THE CARRIER/SHIPPER YES NO DRIVER SIGNATURE JB
****ER CALLER MUST IDENTIFY UNIVAR USA AS REGISTRANT {CONTRACT # 97569}****

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs — Signature: Scott Jacobs — Month 05 Day 17 Year 16

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dan Mullendore — Signature: [signature] — Month 05 Day 17 Year 16
Transporter 2 Printed/Typed Name: Jon Young — Signature: [signature] — Month 5 Day 17 Year 16

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [signature] — Signature: [signature] — Month 5 Day 17 Year 16

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)
Order#PO 125969C

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 1605260308 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ORD009227970	2	Univar USA Inc.	009469095 FLE

5. Generator's Name and Mailing Address
PCC STRUCTURALS INC.
4600 SE Harney Drive
Portland, OR 97206

Generator's Site Address (if different than mailing address)
PCC STRUCTURALS INC
3001 SE JOHNSON CREEK BLV
PORTLAND, OR, 97206

Generator's Phone:

6. Transporter 1 Company Name: UNIVAR USA INC. — U.S. EPA ID Number: ORD009227398

7. Transporter 2 Company Name: UNIVAR USA INC — U.S. EPA ID Number: ORD000711671

8. Designated Facility Name and Site Address
US ECOLOGY OF IDAHO
30400 LEMLEY ROAD,
GRAND VIEW, ID, 83624
Facility's Phone: 800-374-1516
U.S. EPA ID Number: IDD073114654

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, Polychlorinated biphenyls, solid , 9, PG II, (RQ=1), (ERG#=171)	39	DM	979	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.38247(SOIL CONTAMINATED W/PCBS)
PLACARDS PROVIDED BY THE CARRIER SHIPPER YES NO DRIVER SIGNATURE JB
PR CALLER MUST IDENTIFY UNIVAR USA AS REGISTRANT (CONTRACT # 97569)

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs — Signature: Scott Jacobs — Month 05 Day 17 Year 16

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dan Mullendore — Signature: [signature] — Month 05 Day 17 Year 16
Transporter 2 Printed/Typed Name: Jon Young — Signature: [signature] — Month 5 Day 17 Year 16

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H130 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Melissa Rodriguez — Signature: [signature] — Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 1605260360 8 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ORD009017970	2	Univar USA Inc. (800) 535-5053	009469095 FLE

GENERATOR

5. Generator's Name and Mailing Address
PCC STRUCTURALS INC
5000 SE Hartley Drive
Portland, OR 97206
Generator's Phone:

Generator's Site Address (if different than mailing address)
PCC STRUCTURALS INC
5001 SE JOHNSON CREEK BLV
PORTLAND OR 97206

6. Transporter 1 Company Name: UNIVAR USA INC — U.S. EPA ID Number: ORD009227398

7. Transporter 2 Company Name: UNIVAR USA INC — U.S. EPA ID Number: ORD000711671

8. Designated Facility Name and Site Address
US ECOLOGY OF IDAHO
20400 LEMLEY ROAD,
GRAND VIEW, ID. 83624
Facility's Phone: 800-274-1516
U.S. EPA ID Number: IDD073114654

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, Polychlorinated biphenyls, solid, 9, PG II, (RQ=1), (ERG#=171)	39	DM	9791	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1 38247(SOIL CONTAMINATED W/PCBS)
PLACARDS PROVIDED BY THE CARRIER/SHIPPER/YES NO DRIVER SIGNATURE JB
****PR CALLER MUST IDENTIFY UNIVAR USA AS REGISTRANT (CONTRACT # 97569)****

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs — Signature: Scott Jacobs — Month 05 Day 17 Year 16

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Dan Mullendore — Signature: [signature] — Month 05 Day 17 Year 16
Transporter 2 Printed/Typed Name: Jon Young — Signature: [signature] — Month 5 Day 17 Year 16

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H130			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [signature] — Signature: [signature] — Month 5 Day 17 Year 16

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Order#PO 128969C

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	ORD009027970	2of2	009469095FLE

24. Generator's Name
PCC STRUCTURALS INC.
5001 SE JOHNSON CREEK BLV,
PORTLAND, OR

25. Transporter 3 Company Name ACTION RESOURCES, INC. U.S. EPA ID Number ALR000007237

26. Transporter _____ Company Name U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name John BATTEN Signature John Batten Month 5 Day 26 Year 16

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name Signature Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

order#PO 135969C

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	ORD009027970	2 of 2	009469095FLB

24. Generator's Name
PCC STRUCTURALS INC.
5001 SE JOHNSON CREEK BLV.
PORTLAND, OR

25. Transporter 3 Company Name ACTION RESOURCES, INC. — U.S. EPA ID Number ALR000007237

26. Transporter _____ Company Name — U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter 3 Acknowledgment of Receipt of Materials
Printed/Typed Name John Batten — Signature John Batten — Month 5 Day 26 Year 16

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

Order#PO 1259690

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator ID Number	22. Page	23. Manifest Tracking Number
	ORD009027970	2 of 2	009409095FLE

24. Generator's Name
PCC STRUCTURALS INC
1001 SE JOHNSON CREEK BLV.
PORTLAND OR

25. Transporter _____ Company Name ACTION RESOURCES, INC. U.S. EPA ID Number ALR000007237

26. Transporter _____ Company Name U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

TRANSPORTER

33. Transporter 2 Acknowledgment of Receipt of Materials
Printed/Typed Name John Batton Signature John Batton Month 5 Day 26 Year 16

34. Transporter _____ Acknowledgment of Receipt of Materials
Printed/Typed Name Signature Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

TSCA CERTIFICATE OF DISPOSAL

June 01,2016

PCC STRUCTURALS INC LPC C/O UNIVAR
5001 SE JOHNSON CREEK BLVD
PORTLAND, OR 97206

This is to certify that waste as defined on Waste Manifest number **009469095 FLE/** was received by U.S. Ecology, Inc., on **05/27/2016** .The waste(s) were subsequently managed as required by U.S. Ecology's Part B and/or TSCA permits where applicable and disposed of on **05/31/2016** in accordance with permits and laws regulating this facility.

Reference Number: 16052603608-009469095 FLE-1-1
Material: 39 55 GALLON DRUM
Process: Direct Landfill
Management Code: H132 Landfill or surface impoundment that will be closed as landfill
Facility: U.S. ECOLOGY IDAHO, INC.
20400 LEMLEY ROAD
GRAND VIEW, ID 83624
EPA ID: IDD073114654
Waste Stream #: 38247-0
Customer: UNIVAR USA, INC.

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements of representations [18 U.S.C. 1001 and 15 U.S.C. 2615], I certify that the information contained in or accompanying this document is true, accurate, and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true,accurate, and complete.

Printed Name: DONNA PULLEN

Signature: Donna Pullen

Title: RECEIVING SUPERVISOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. **Manifest Tracking Number** 009469095 FLE

GENERATOR

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.					
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month | Day | Year

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month | Day | Year

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name | Signature | Month | Day | Year

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number

22. Page

23. Manifest Tracking Number

24. Generator's Name

25. Transporter _____ Company Name

U.S. EPA ID Number

26. Transporter _____ Company Name

U.S. EPA ID Number

27a. HM	27b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	28. Containers No.	28. Containers Type	29. Total Quantity	30. Unit Wt./Vol.	31. Waste Codes		

32. Special Handling Instructions and Additional Information

GENERATOR

33. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

34. Transporter _____ Acknowledgment of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

TRANSPORTER

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

DESIGNATED FACILITY

EPA Form 8700-22A (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

US ecology

PCB CONTROL SHEET

GENERATOR COPY

MANIFEST # 009469095FLE

Generator: PCC Structurals Inc.

Site Address: 4600 SE Harney Drive, Portland, OR 97206

EPA ID#: ORD009027970 Page _____ of _____

For US Ecology Use Only

Load #: _____

Received: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14
WSID# *Required*	QTY *Required*	PKG *Required*	TYPE OF MATERIAL *Required*	D/F *Required*	MANUF *Required*	MANIFEST LINE # *Required*	SERIAL # /UNIQUE # *Required*	KVA	WEIGHT K *Required*	DIELECT VOL	PPM *Required*	OSD *Required*	ABSORBENTS ADDED
38247	1	DM	Soil w/ PCB's			9b.1	DM #1		262		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #2		274		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #3		263		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #4		242		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #5		275		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #6		270		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #7		260		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #8		200		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #9		231		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #10		272		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #11		273		53-1,800	4/23/16	

Explanation:

1. **WSID #:** US Ecology approved waste stream ID#.
2. **QTY:** Enter quantity.
3. **PKG:** Enter packaging type-same as container type.
4. **Type of Material:** Enter description of material. Be specific.
5. **D/F:** Specify if the transformer or article is full (F), drained (D), or drained & flushed (D/F).
6. **Manuf:** Enter manufacturer.
7. **Manifest Line#:** For each item, indicate which line # of the manifest it is shipped on.
8. **Serial # / Unique#/:** Enter the nameplate serial number for transformers or articles or a unique number for each container. (Note: If there is no name plate serial #, you must assign a unique number to ach container.)
9. **KVA:** Enter the nameplate KVA rating of the transformer or article.
10. **Weight K:** Enter the weight in kilograms.
11. **Dielect Vol.:** Enter the nameplate dielectric volume of the transformer or article.
12. **PPM:** Enter the parts per million PCB contained in the material.
13. **OSD:** Enter the date the material was removed from service and designated for disposal [761.65(a), 761.180(a), 761.207(a)].
14. **Absorbents Added:** Specify non-biodegradable absorbents added.

REQUIRED CERTIFICATION: In order for US Ecology to accept the waste material specified at the US Ecology – Grand View, Idaho or Beatty, Nevada facility the undersigned, as an authorized employee of the generating company, hereby warrants and certifies to US Ecology that the waste material listed above, delivered to and accepted for disposal by US Ecology shall conform to the above description and that all waste material and packaging shall comply with all current state and federal regulations.

Name: _____ Signature: _____ Title: _____ Date: _____

Note: A Completed PCB Control Sheet, including generator's signature, must accompany each shipment of regulated PCB waste.

US ecology

PCB CONTROL SHEET

MANIFEST #_____

Generator: PCC Structurals Inc.

Site Address: 4600 SE Harney Drive, Portland, OR 97206

EPA ID#: ORD009027970 Page _____ of _____

For US Ecology Use Only

Load #: _____

Received: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14
WSID# *Required*	QTY *Required*	PKG *Required*	TYPE OF MATERIAL *Required*	D/F *Required*	MANUF *Required*	MANIFEST LINE # *Required*	SERIAL # /UNIQUE # *Required*	KVA	WEIGHT K *Required*	DIELECT VOL	PPM *Required*	OSD *Required*	ABSORBENTS ADDED
38247	1	DM	Soil w/ PCB's			9b.1	DM #12		262		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #13		289		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #14		261		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #15		265		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #16		121		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #17		181		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #18		217		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #19		109		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #20		261		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #21		268		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #22		274		53-1,800	4/23/16	

Explanation:

1. **WSID #:** US Ecology approved waste stream ID#.
2. **QTY:** Enter quantity.
3. **PKG:** Enter packaging type-same as container type.
4. **Type of Material:** Enter description of material. Be specific.
5. **D/F:** Specify if the transformer or article is full (F), drained (D), or drained & flushed (D/F).
6. **Manuf:** Enter manufacturer.
7. **Manifest Line#:** For each item, indicate which line # of the manifest it is shipped on.
8. **Serial # / Unique#/:** Enter the nameplate serial number for transformers or articles or a unique number for each container. (Note: If there is no name plate serial #, you must assign a unique number to ach container.)
9. **KVA:** Enter the nameplate KVA rating of the transformer or article.
10. **Weight K:** Enter the weight in kilograms.
11. **Dielect Vol.:** Enter the nameplate dielectric volume of the transformer or article.
12. **PPM:** Enter the parts per million PCB contained in the material.
13. **OSD:** Enter the date the material was removed from service and designated for disposal [761.65(a), 761.180(a), 761.207(a)].
14. **Absorbents Added:** Specify non-biodegradable absorbents added.

REQUIRED CERTIFICATION: In order for US Ecology to accept the waste material specified at the US Ecology – Grand View, Idaho or Beatty, Nevada facility the undersigned, as an authorized employee of the generating company, hereby warrants and certifies to US Ecology that the waste material listed above, delivered to and accepted for disposal by US Ecology shall conform to the above description and that all waste material and packaging shall comply with all current state and federal regulations.

Name: _____ Signature: _____ Title: _____ Date: _____

Note: A Completed PCB Control Sheet, including generator's signature, must accompany each shipment of regulated PCB waste.

US ecology

PCB CONTROL SHEET

MANIFEST #_____

Generator: PCC Structurals Inc.

Site Address: 4600 SE Harney Drive, Portland, OR 97206

EPA ID#: ORD009027970 Page _____ of _____

For US Ecology Use Only

Load #: _____

Received: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14
WSID# *Required*	QTY *Required*	PKG *Required*	TYPE OF MATERIAL *Required*	D/F *Required*	MANUF *Required*	MANIFEST LINE # *Required*	SERIAL # /UNIQUE # *Required*	KVA	WEIGHT K *Required*	DIELECT VOL	PPM *Required*	OSD *Required*	ABSORBENTS ADDED
38247	1	DM	Soil w/ PCB's			9b.1	DM #23		272		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #24		290		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #25		285		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #26		300		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #27		305		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #28		281		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #29		293		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #30		265		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #31		282		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #32		273		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #33		280		53-1,800	4/23/16	

Explanation:

1. **WSID #:** US Ecology approved waste stream ID#.
2. **QTY:** Enter quantity.
3. **PKG:** Enter packaging type-same as container type.
4. **Type of Material:** Enter description of material. Be specific.
5. **D/F:** Specify if the transformer or article is full (F), drained (D), or drained & flushed (D/F).
6. **Manuf:** Enter manufacturer.
7. **Manifest Line#:** For each item, indicate which line # of the manifest it is shipped on.
8. **Serial # / Unique#/:** Enter the nameplate serial number for transformers or articles or a unique number for each container. (Note: If there is no name plate serial #, you must assign a unique number to ach container.)
9. **KVA:** Enter the nameplate KVA rating of the transformer or article.
10. **Weight K:** Enter the weight in kilograms.
11. **Dielect Vol.:** Enter the nameplate dielectric volume of the transformer or article.
12. **PPM:** Enter the parts per million PCB contained in the material.
13. **OSD:** Enter the date the material was removed from service and designated for disposal [761.65(a), 761.180(a), 761.207(a)].
14. **Absorbents Added:** Specify non-biodegradable absorbents added.

REQUIRED CERTIFICATION: In order for US Ecology to accept the waste material specified at the US Ecology – Grand View, Idaho or Beatty, Nevada facility the undersigned, as an authorized employee of the generating company, hereby warrants and certifies to US Ecology that the waste material listed above, delivered to and accepted for disposal by US Ecology shall conform to the above description and that all waste material and packaging shall comply with all current state and federal regulations.

Name: _____ Signature: _____ Title: _____ Date: _____

Note: A Completed PCB Control Sheet, including generator's signature, must accompany each shipment of regulated PCB waste.

US ecology

PCB CONTROL SHEET

MANIFEST #_____

Generator: PCC Structurals Inc.

Site Address: 4600 SE Harney Drive, Portland, OR 97206

EPA ID#: ORD009027970 Page _____ of _____

For US Ecology Use Only

Load #: _____

Received: _____

1	2	3	4	5	6	7	8	9	10	11	12	13	14
WSID# *Required*	QTY *Required*	PKG *Required*	TYPE OF MATERIAL *Required*	D/F *Required*	MANUF *Required*	MANIFEST LINE # *Required*	SERIAL # /UNIQUE # *Required*	KVA	WEIGHT K *Required*	DIELECT VOL	PPM *Required*	OSD *Required*	ABSORBENTS ADDED
38247	1	DM	Soil w/ PCB's			9b.1	DM #34		249		553-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #35		273		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #36		277		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #37		271		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #38		266		53-1,800	4/23/16	
38247	1	DM	Soil w/ PCB's			9b.1	DM #39		275		53-1,800	4/23/16	

Explanation:

1. **WSID #:** US Ecology approved waste stream ID#.
2. **QTY:** Enter quantity.
3. **PKG:** Enter packaging type-same as container type.
4. **Type of Material:** Enter description of material. Be specific.
5. **D/F:** Specify if the transformer or article is full (F), drained (D), or drained & flushed (D/F).
6. **Manuf:** Enter manufacturer.
7. **Manifest Line#:** For each item, indicate which line # of the manifest it is shipped on.
8. **Serial # / Unique#/:** Enter the nameplate serial number for transformers or articles or a unique number for each container. (Note: If there is no name plate serial #, you must assign a unique number to ach container.)
9. **KVA:** Enter the nameplate KVA rating of the transformer or article.
10. **Weight K:** Enter the weight in kilograms.
11. **Dielect Vol.:** Enter the nameplate dielectric volume of the transformer or article.
12. **PPM:** Enter the parts per million PCB contained in the material.
13. **OSD:** Enter the date the material was removed from service and designated for disposal [761.65(a), 761.180(a), 761.207(a)].
14. **Absorbents Added:** Specify non-biodegradable absorbents added.

REQUIRED CERTIFICATION: In order for US Ecology to accept the waste material specified at the US Ecology – Grand View, Idaho or Beatty, Nevada facility the undersigned, as an authorized employee of the generating company, hereby warrants and certifies to US Ecology that the waste material listed above, delivered to and accepted for disposal by US Ecology shall conform to the above description and that all waste material and packaging shall comply with all current state and federal regulations.

Name: _____ Signature: _____ Title: _____ Date: _____

Note: A Completed PCB Control Sheet, including generator's signature, must accompany each shipment of regulated PCB waste.

#137 463756

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438041 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	~~14329~~ 7403 KIC 8-3-18	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb)0.454k 7403K FDX# 38213
PCB OUT OF SERVICE DATE: 8-2-18, WEIGHT: 14329, TYPE: CM "Chemtrac# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Rego
Signature:
Month 8 Day 3 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 3 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Changed By Driver DO 8-3-18
18b. Alternate Facility (or Generator) Manifest Reference Number:
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dawn Dirle
Signature:
Month 08 Day 03 Year 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

4637559

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438038 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	~~14329~~ 7884	K	X002
	2.			KIC 8-3-18		
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb) 0.454K ~~7884K~~ 7884K BOX# 343 13 PS 8-13-18
PCB OUT OF SERVICE DATE: 8-2-18, WEIGHT: 14329, TYPE: CM "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Pace
Signature
Month 8 Day 3 Year 18

16. International Shipments ☑ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 3 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Changed R1 UN3432 JD 8-3-18
18b. Alternate Facility (or Generator)
Manifest Reference Number:
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Quan Vinh
Signature
Month 08 Day 03 Year 18

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/07/18 as described on Shipping Document number 018438043JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46381401

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/07/18	LANDFILL 14	018438043JJK

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/07/18 as described on Shipping Document number 018438043JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46381401

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233534
08/27/18

137 463614

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438043 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	~~7400~~ 6157 KG 7/18	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMAINATED SOIL: ERG# 171 (RQ=1Lb)0.454k 6187K BOX# 395-13
PCB OUT OF SERVICE DATE: 8-1-18, WEIGHT: 7400K, TYPE: PCB "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Rego
Signature: [signature]
Month 8 Day 7 Year 18

GENERATOR

INTL

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 7 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Pat Slicker
Signature: [signature]
Month 8 Day 7 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/07/18 as described on Shipping Document number 018438045JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46381301

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/07/18	LANDFILL 14	018438045JJK

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/07/18 as described on Shipping Document number 018438045JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46381301

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Simmer

CWMNW RECORDS DEPARTMENT
Certificate # 233533
08/27/18

6/13/13

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438045 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	8927	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1LB) 0.454k BOX# 34373
PCB OUT OF SERVICE DATE: 8-4-18 WEIGHT: 8927 K TYPE: PCB "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Lego
Signature:
Month 8 Day 7 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 7 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Robin Wilson
Signature:
Month 8 Day 7 Year 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

#135 463840

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438020 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	6511 ~~5511~~	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMAINATED SOIL: ERG#171 (RQ=1Lb),0.454k 6511K DROPBOX 33413
PCB OUT OF SERVICE DATE: 8-2-18, WEIGHT, 5511 K TYPE: PCB "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Reno
Signature
Month 08 Day 08 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: X Tom Gorie
Signature
Month 08 Day 08 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature
Month 8 Day 8 Year 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

163836

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438037 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825
Generator's Phone: (503) 777-8827
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE.
ARLINGTON, OR. 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

GENERATOR

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	0 01	C M	~~8927~~ 6731 8518	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb)0.454k 6131K BOX# 382-13
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 8927K TYPE: PCBS "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Rego
Signature:
Month Day Year: 8 8 18

INT'L

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month Day Year: 8 8 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
Month Day Year
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
18b. Alternate Facility (or Generator)
Manifest Reference Number:
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobbi Nilson
Signature:
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

463837

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438046 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	6200	K	X002
	2.			7048		
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb)0.454k 7048k BOX# 341-13
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 6200K TYPE: PCB'S "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Deere
Signature:
Month 8 Day 8 Year 18

16. International Shipments ☑ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 8 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Quantity Changed [illegible]
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [illegible]
Signature:
Month Day Year

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

463839

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438047 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	7584K ~~8927K~~	KG	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb)0.454k BOX# 3/0 -13
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 8927 K TYPE: PCB "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Rego
Signature:
Month 08 Day 08 Year 18

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tom Garvin
Signature: Tom G
Month 08 Day 08 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature:
Month 8 Day 8 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

463861

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438044 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643

U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	7800	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMAINATED SOIL: ERG# 171 (RQ=1Lb00.454k. BOX# 39313
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 7800K TYPE: PCB'S "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Regg
Signature: [signature]
Month 8 Day 9 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 9 Year 18

Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

18b. Alternate Facility (or Generator) Manifest Reference Number:
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature: [signature]
Month 8 Day 9 Year 18

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY

4/6 38660

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438048 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825
Generator's Phone: (503) 777-8827
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD039452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	~~7400~~	K	X002
	2.			8318		
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171 (RQ=1Lb) 0.454k BOX# 33-13
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 7400, TYPE: PCB'S "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Rose
Signature
Month 8 Day 9 Year 18

GENERATOR

INT'L

16. International Shipments ☑ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chavez
Signature: Kathy Chavez
Month 8 Day 9 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H122 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 018438064JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46392701

Process	CWM Unit	Xfer Date	Site Location	Gen #
801 DRUM/PCB/SOLID/LANDFI	1*0	08/13/18	LANDFILL 14	34313

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 018438064JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46392701

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233922
09/17/18

463927

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438064 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	~~7800~~ 7348	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1LB(0.454k) 7348K BOX# 34313
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 98WK, TYPE: PCB'S Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Bryan McCampbell
Signature: Bryan McCampbell
Month 8 Day 13 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 13 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Pat Slider
Signature
Month 8 Day 13 Year 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 018438104JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46392801

Process	CWM Unit	Xfer Date	Site Location	Gen #
801 DRUM/PCB/SOLID/LANDFI	1*0	08/13/18	LANDFILL 14	341-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 018438104JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46392801

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233923
09/17/18

463928

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438104 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,IIII, (PCB)	001	CM	~~6800~~ 7983 KIC 8-13-18	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1Lb(0.454k) 1983k BOX# 341-13
PCB OUT OF SERVICE DATE: 8-4-18, WEIGHT: 1800K TYPE: PCB'S Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell
Signature: [signature]
Month 8 Day 13 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 8 Day 13 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [illegible]
Signature:
Month Day Year 18

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05). Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/16/18 as described on Shipping Document number 018438100JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46402101

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/16/18	LANDFILL 14	395-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/16/18 as described on Shipping Document number 018438100JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46402101

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233949
09/18/18

1/64/021

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438100 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-8827
Generator's Phone: (503) 777-8827

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD069452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	6432 ~~11,022~~	K	X002
	2.					
	3.					
	4.			6432 lb		

14. Special Handling Instructions and Additional Information
1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171 RQ=1lb(0.454k) Box# 395-13
PCB OUT OF SERVICE DATE: 8-15-18 WEIGHT: 11,022 K TYPE: Soil Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRIAN McCampbell
Signature: [signature]
Month 8 Day 16 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Krista Thurston
Signature: [signature]
Month 8 Day 16 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H137 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Williams
Signature: [signature]
Month 8 Day 16 Year 18

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/16/18 as described on Shipping Document number 018438102JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46402201

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/16/18	LANDFILL 14	382

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/16/18 as described on Shipping Document number 018438102JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46402201

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233950
09/18/18

116822

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438102 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825
Generator's Phone: (503) 777-8827

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWANW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	8146 ~~11,022~~	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR3[illegible]672 - PCB CONTAMINATED SOIL: ERG# 171: RQ=1Lb(0.454k) 8147K Box# 382
PCB OUT OF SERVICE DATE: 8-15-18 WEIGHT: 11,022 TYPE: Soil Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRIAN McCampbell
Signature: [signature]
Month 8 Day 16 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter signature (for exports only):
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Keith Thurston
Signature: [signature]
Month 8 Day 16 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
[illegible] 8-16-18
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature: [signature]
Month 8 Day 16 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438076JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46405301

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/17/18	LANDFILL 14	398-20

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438076JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46405301

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 234032
09/20/18

464053

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438076 JJK

5. Generator's Name and Mailing Address: [illegible]
4600 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 503-788-6588
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES. DBA WEST COAST MARINE — U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: [illegible] Inc.
17629 Cedar Springs Lane
Arlington, OR 97812-9709 541-454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	~~7600~~ K 11521 K		X002
	2.			RIC 8-7-18		
	3.					
	4.					

14. Special Handling Instructions and Additional Information

11521 K

1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1LB (0.454k) BOX# 398 20
PCB OUT OF SERVICE DATE: 8-4-18 WEIGHT: 7600 K TYPE: PCB'S Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell — Signature: [signature] — Month 8 Day 17 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. 30 Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kathy Chapman — Signature: Kathy Chapman — Month 8 Day 17 Year 18
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Changed By Driver 8-17-18 DD
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [illegible] — Signature: [signature] — Month 8 Day 17 Year 18

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438077JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46406301

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/17/18	LANDFILL 14	336-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438077JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46406301

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 234035
09/20/18

H64063

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438077 JJK

5. Generator's Name and Mailing Address
4800 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 503-788-6588
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES DBA WEST COAST MARINE
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
17629 Cedar Springs Lane
Arlington, OR 97812-9709 541-454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
K	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	TG 5500	K	X002
	2.			9362-K		
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1. OR338872 - PCB CONTAMINATED SOIL; ERG# 171; RQ=1LB (0.454k) BOX# 336-13
PCB OUT OF SERVICE DATE: 8-4-18 WEIGHT: 5500 K TYPE: PLB Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell
Signature: [signature]
Month 08 Day 17 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tom Gurci
Signature: [signature]
Month 08 Day 17 Year 18

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Changed Ru Driver Dn 8-17-18
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438078JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46406201

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/17/18	LANDFILL 14	393-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/17/18 as described on Shipping Document number 018438078JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46406201

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 234034
09/20/18

#135 464062

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438078 JJK

5. Generator's Name and Mailing Address: [illegible]
4600 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 503-788-6588

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES, DBA WEST COAST MARINE — U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: [illegible], INC
17629 Cedar Springs Lane
Arlington, OR 97812-9709 541-454-2643

U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	8,000	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

7911K

1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1LB (0.454k) BOX# 393-13
PCB OUT OF SERVICE DATE: 8-4-18 WEIGHT: 8,000K TYPE: DOT Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Brian McCandless — Signature: [signature] — Month 08 Day 17 Year 18

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tom Garcia — Signature: [signature] — Month 08 Day 17 Year 18

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name — Signature: [signature] — Month 08 Day 17 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/27/18 as described on Shipping Document number 018438079JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46422501

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/27/18	LANDFILL 14	340-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/27/18 as described on Shipping Document number 018438079JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46422501

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233601
08/29/18

464225

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438079 JJK

GENERATOR

5. Generator's Name and Mailing Address: 4600 SE HARNEY DRIVE, PORTLAND, OR 97206-0825 503-788-6588

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES DBA WEST COAST MARINE — U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: 17629 Cedar Springs Lane, Arlington, OR 97812-9709 541-454-2643 — U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
K	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	9200	K	~~X002~~
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1. OR338872 - PCB CONTAMINATED SOIL. ERG# 171, RQ=1LB (0.454k) BOX# 340-13
PCB OUT OF SERVICE DATE 8/4/18 WEIGHT 9200K TYPE PCBS Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell — Signature: [signature] — Month 8 Day 27 Year 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Kathy Chapman — Signature: [signature] — Month 8 Day 27 Year 18

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Bobbi Wilson — Signature: [signature] — Month 8 Day 27 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/27/18 as described on Shipping Document number 018438080JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46422601

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	08/27/18	LANDFILL 14	334-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/27/18 as described on Shipping Document number 018438080JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46422601

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233602
08/29/18

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438080 JJK

5. Generator's Name and Mailing Address: 4600 SE HARNEY DRIVE, PORTLAND, OR 97206-0825 503-788-6588

Generator's Site Address (if different than mailing address):

Generator's Phone:

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES. DBA WEST COAST MARINE — U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: 17629 Cedar Springs Lane, Arlington, OR 97812-9709 541-454-2643 — U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	6500	K	X002
	2.			8309 K 8 27 18		
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171 RQ=1LB (0.454k) BOX# 334-13
PCB OUT OF SERVICE DATE: 8-4-18 WEIGHT: 8309 K TYPE: DCB'S Chemtrec# CCN24117

8309 K

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRIAN McCampbell — Signature: [signature] — Month 8 Day 27 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Kathy Chapman — Signature: Kathy Chapman — Month 8 Day 27 Year 18

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

[illegible] 8-27-18 Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Bobby Wilson — Signature: [signature] — Month 8 Day 27 Year 18

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/04/18 as described on Shipping Document number 018438081JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46439301

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	09/04/18	LANDFILL 14	383-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/04/18 as described on Shipping Document number 018438081JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46439301

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233876
09/13/18

464393

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438081 JJK

5. Generator's Name and Mailing Address: PPC STRUCTURAL
4600 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 503-788-6588

Generator's Site Address (if different than mailing address):

Generator's Phone:

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES, DBA WEST COAST MARINE — U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: UTMWA, Inc.
17629 Cedar Springs Lane
Arlington, OR 97812-9709 541-454-2643

U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	~~8800~~ 1205K	K	X002
	2.			RQ 9-4-18		
	3.					
	4.					

14. Special Handling Instructions and Additional Information

1205K

1. OR338672 - PCB CONTAMINATED SOIL. ERG# 171; RQ=1LB (0.454k) BOX# 383-13
PCB OUT OF SERVICE DATE: 8-25-18 WEIGHT: TYPE: PCB'S Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell — Signature: [signature] — Month 9 Day 4 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Kathy Chapman — Signature: Kathy Chapman — Month 9 Day 4 Year 18

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

[illegible] 9-4-18 Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: [illegible] — Signature: [signature] — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/04/18 as described on Shipping Document number 018438082JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46439201

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	09/04/18	LANDFILL 14	310-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/04/18 as described on Shipping Document number 018438082JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46439201

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233875
09/13/18

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 018438082 JJK

5. Generator's Name and Mailing Address
4600 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 503-788-6588

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: TIDEWATER ENVIRONMENTAL SERVICES. DBA WEST COAST MARINE
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
SYNMAT, INC.
17629 Cedar Springs Lane
Arlington, OR 97812-9709 541-454-2643

U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, UN3432, WASTE, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, (PCB)	001	CM	~~6,000~~	K	X002
	2.					
	3.					
	4.				BMC	9-13-18

14. Special Handling Instructions and Additional Information

1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171 RQ=1LB (0.454k) BOX# 310-13
PCB OUT OF SERVICE DATE: 8-25-18 WEIGHT: ~~6,000~~ K TYPE: PCB'S Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRIAN MCCAMPBELL
Signature
Month 9 Day 4 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Kathy Chapman
Signature: Kathy Chapman
Month 9 Day 4 Year 18

Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: John Wilson
Signature
Month 9 Day 4 Year 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

#136 471576

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 002672670 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS INC - LPC
4600 SE Harney Dr.
Portland, OR 97206
Generator's Phone: 971-258-3222
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT
17629 Cedar Springs LN
Arlington, OR 97812
Facility's Phone: 541-454-3220
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1. PCB01 PCB CONTAMINATED SOIL/DEBRIS	1	CM	12,050	K	X002		
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information
DISPOSAL UNDER WASTE MANAGEMENT PROFILE OR342192
PCB X002
26560P.
OSD 7-10-19 12048K

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ~~SARA BAKER~~ for BRIAN M Campbell
Signature: [signature]
Month 7 Day 10 Year 19

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter signature (for exports only):
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tom Green
Signature: [signature]
Month 7 Day 26 Year 19
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: PAT OWNER
Signature: [signature]
Month 7 Day 26 Year 19

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 019236626JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338721
CWM Tracking ID: 46392301

Process	CWM Unit	Xfer Date	Site Location	Gen #
801 DRUM/PCB/SOLID/LANDFI	1*0	08/16/18	LANDFILL 14	PCB-01

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 08/13/18 as described on Shipping Document number 019236626JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338721
CWM Tracking ID: 46392301

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233687
09/05/18

463923 ① CWMI

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	ORD009027970	1	(800) 424-9300	019236626 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS INC
4600 SE HARNEY DR
PORTLAND OR 97206-0825
Generator's Phone: (503) 777-3881

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: CHEMICAL WASTE MANAGEMENT OF THE NW, INC.
U.S. EPA ID Number: ORD089452353

7. Transporter 2 Company Name:
U.S. EPA ID Number: 05/01/18

8. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON OR 97812-9709
Facility's Phone: (541) 454-2643
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, II 1100 RQ OR338721	1	DM	87	K	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338721 - PCB11 - PCB EQUIPMENT, NAERG (171)
ID NUMBER: PCB-01 OUT OF SERVICE: 05/01/18
E/R PROVIDER: CHEMTREC (1-800 424-9300) CONTRACT NUMBER 24117

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Zach Dego
Signature: [signature]
Month 8 Day 1 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Daniel E Whitmore
Signature: [signature]
Month 8 Day 1 Year 18
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Dawn Dunlap
Signature: [signature]
Month 08 Day 13 Year 18

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

Chemical Waste Management of the Northwest, Inc.

17629 Cedar Springs Lane

Arlington, OR 97812

541-454-2643

Date: 8/27/18

PCC STRUCTURALS INC

4600 SE HARNEY DRIVE

PORTLAND OR 97206-0825

This letter is to inform your office of the following discrepancy(s), errors or omissions identified on the manifest, land disposal certification, lab pack inventory, or other applicable manifest attachment which accompanied your waste shipment on:

Manifest Number: 018438022JJK

Profile Number: OR338672

Shipment Date: 8/02/18

CWMNW Load Number: 463736

Description: Section 14. Change the kilograms received from 7829 K. to 7992 K.

This information has been corrected/added to our records. Please attach this letter to your manifest copy as an addendum.

Becky Sumner

Chemical Waste Management of the Northwest, Inc.

463736

137

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438022JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	7829 ~~11022~~	K ~~V~~	X002
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. OR338672-PCB CONTAMINATED SOIL: ERG# 171; (RQ=1Lb),0.454K ~~7829 KG~~ 7992 K. Dropbox# ~~393-13~~ 341-13 KJ
BMS 8.22.18
PCB OUT OF SERVICE DATE: 8-1-18, WEIGHT: ~~11022~~ 7829 K, TYPE: Soil "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs
Signature: Scott Jacobs
Month Day Year: 08 02 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Keith Thurston
Signature: Keith Thurston
Month Day Year: 08 02 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Quantity changed by Driver BW 8-2-18
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature
Month Day Year: 8 2 18

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator ID Number: ORD009027970

2 Page 1 of 1

3 Emergency Response Phone: (800) 424-9300

4. Manifest Tracking Number: 018438018 **JJK**

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR 97206-0825 (503) 777-3827

Generator's Site Address (if different than mailing address)

Generator's Phone

6. Transporter 1 Company Name: West Coast Marine Cleaning
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	11022	K	X002
	2					
	3.					
	4					

14 Special Handling Instructions and Additional Information
1 OR338672-PCB CONTAMINATED SOIL ERG# 171 (RQ-1Lb) 0.454k DROPBOX# 395-13
PCB OUT OF SERVICE DATE: 8-1-18 WEIGHT: 11022 K TYPE: Soil "Chemtrec# CCN24117"

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Scott Jacobs
Signature: Scott Jacobs
Month 08 Day 02 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Keith Thurston
Signature: Keith Thurston
Month 08 Day 02 Year 18

Transporter 2 Printed/Typed Name: 11651KG
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature: [signature]
Month 8 Day 2 Year 18

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438093 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPRINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
U.S. EPA ID Number: ORD089452353

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	9752	K	X002
	2.					
	3.					
	4.			9752K		

14. Special Handling Instructions and Additional Information
1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1Lb(0.454k) BOX# 341-13

PCB OUT OF SERVCIE DATE: 8-26-18 WEIGHT: 9752 TYPE: PCB's Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRIAN McCampbell
Signature: [signature]
Month 9 Day 6 Year 18

GENERATOR

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Signature: Month Day Year
Transporter 2 Printed/Typed Name: Signature: Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Checked by Driver Bill 9-6-18
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature: [signature]
Month 9 Day 6 Year 18

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/06/18 as described on Shipping Document number 018438097JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46449801

Process	CWM Unit	Xfer Date	Site Location	Gen #
800 BULK/PCB/LANDFILL	1*0	09/06/18	LANDFILL 14	346-13

WASTE MANAGEMENT

CWM OF THE NORTHWEST
Federal EPA ID: ORD089452353
17629 CEDAR SPRINGS LANE
ARLINGTON, OR 97812

PCC STRUCTURALS INC
ATTN: MANIFEST SECTION
ORD009027970
4600 SE HARNEY DR
PORTLAND OR 97206-0825

CERTIFICATE OF DISPOSAL

CWM OF THE NORTHWEST, EPA ID: ORD089452353, has received waste material from PCC STRUCTURALS INC on 09/06/18 as described on Shipping Document number 018438097JJK. CWM OF THE NORTHWEST hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: OR338672
CWM Tracking ID: 46449801

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

Becky Sumner

CWMNW RECORDS DEPARTMENT
Certificate # 233978
09/19/18

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: ORD009027970
2. Page 1 of: 1
3. Emergency Response Phone: (800) 424-9300
4. Manifest Tracking Number: 018438097 JJK

5. Generator's Name and Mailing Address
PCC STRUCTURALS, INC.
4600 SE HARNEY DRIVE
PORTLAND, OR. 97206-0825 (503) 777-8827
Generator's Phone:

Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name: WEST COAST MARINE CLEANING
U.S. EPA ID Number: WAH000053774

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
CWMNW, INC.
17629 CEDAR SPINGS LANE
ARLINGTON, OR. 97812-9709 (541) 454-2643
Facility's Phone:
U.S. EPA ID Number: ORD089452353

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ,UN3432,WASTE,POLYCHLORINATED BIPHENYLS, SOLID,9,III, (PCB)	001	CM	7974	K	X002
	2.					
	3.					
	4.			7974K		

14. Special Handling Instructions and Additional Information
1. OR338672 - PCB CONTAMINATED SOIL: ERG# 171; RQ=1Lb(0.454k) BOX# 346-13
PCB OUT OF SERVICE DATE: 8-25-18 WEIGHT: 7974 TYPE: PCB's Chemtrec# CCN24117

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BRYAN McCAMPBELL
Signature: [signature]
Month Day Year

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Signature: Month Day Year
Transporter 2 Printed/Typed Name: Signature: Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☑ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Changed by Driver [illegible] 9-6-18
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Bobby Wilson
Signature: [signature]
Month Day Year: 9 6 18

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

February 15, 2018 (revised)

Attn: Mr. Dave Bartus, EPA; Ms. Audrey O'Brien, DEQ

Transmitted via email to: *Bartus.Dave@epa.gov and obrien.audrey@deq.state.or.us*

Re: Self-Implementing Cleanup Work Plan Deviation
PCC Structurals Large Parts Campus
Portland, Oregon
Project No. 0883002.040.046

Dear Mr. Bartus and Ms. O'Brien:

On behalf of PCC Structurals, Inc. (PCC), Landau Associates, Inc. is writing to report a deviation from the U.S. Environmental Protection Agency (EPA)-approved *Supplemental PCB Self-Implementing Notice to EPA* (Work Plan), dated July 25, 2016, for work performed at the PCC Large Parts Campus in Portland, Oregon (site).

In the course of cleanup, an estimated 18 cubic yards of PCB-remediation waste (soil containing polychlorinated biphenyls [PCBs]) was disposed of off site. During review of the waste manifests last week, it was discovered that PCB-remediation waste was not disposed of in accordance with the Work Plan.

Characterization samples collected from material representative of approximately 13 cubic yards of waste indicated that soil concentrations of total PCBs were less than 50 milligrams per kilogram (mg/kg); the analytical data package containing these results is provided in Attachment 1. One composite soil sample collected from the remaining 5 cubic yards of waste contained total PCBs at 54 mg/kg. The 18 cubic yards of waste material was disposed of at the Waste Management Hillsboro Landfill in Hillsboro, Oregon; waste manifests are provided in Attachment 2.

Deviation from the Work Plan was the result of a miscommunication. To prevent further miscommunications, PCC will review waste disposal requirements specific to PCB-remediation waste with the contractor verbally and in writing, prior to all cleanup activities conducted under the Toxic Substances Control Act. PCC will confirm adherence to the disposal requirements specified in the Work Plan before sending waste off site.

If you have questions or require additional information, please contact Chris Myers at (503) 777-7494.

LANDAU ASSOCIATES, INC.

Colette Gaona
Senior Scientist

CMG/JPB/mcs
[\\EDMDATA01\PROJECTS\883\002\FILERM\R\040\UPLAND PCBS\SUPPLEMENTAL PCB SELF-IMPLEMENTING NOTICE TO EPA\RBDM POST REMOVAL\FINAL\WASTE DISPOSAL\PCC LPC WASTE DISPOSAL LETTER.DOCX]

cc: Mr. Chris Myers, PCC Structurals, Inc. (via email)
Mr. Peter Serrurier, Precision Castparts Corp. (via email)
Mr. Paul Seidel, ODEQ (via email)

Attachments: Attachment 1. Laboratory Analytical Report
Attachment 2. Waste Manifests

ATTACHMENT 1

Laboratory Analytical Report

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, October 2, 2017

Colette Gaona
Landau Associates
1500 SW First Avenue Suite 1015
Portland, OR 97201

RE: PCC LPC / 883002.040.045

Enclosed are the results of analyses for work order A7I0398, which was received by the laboratory on 9/13/2017 at 11:08:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AA-C-1S-091117	A7I0398-01	Soil	09/11/17 09:40	09/13/17 11:08
AA-C-2S-091117	A7I0398-02	Soil	09/11/17 10:22	09/13/17 11:08

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL CASE NARRATIVE

Work Order: A7I0398

Amended Report Revision 1:

Additional Analysis-

This report supersedes all previous reports.

The final report has been amended to include additional PCBs by EPA8082 on sample AA-C-2S-091117 (A7I0398-02)

Kevin Friscia
Project Manager & Sample Control Supervisor
9/28/2017

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-1S-091117 (A7I0398-01RE1)			**Matrix: Soil**		**Batch: 7090711**			**C-07**
Aroclor 1016	ND	---	507	ug/kg dry	50	09/20/17 15:33	EPA 8082A	
Aroclor 1221	ND	---	507	"	"	"	"	
Aroclor 1232	ND	---	507	"	"	"	"	
Aroclor 1242	ND	---	507	"	"	"	"	
Aroclor 1248	ND	---	507	"	"	"	"	
Aroclor 1254	**10500**	---	507	"	"	"	"	
Aroclor 1260	ND	---	507	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 103 %*	*Limits: 72-126 %*	"	"	"	*S-05*
AA-C-2S-091117 (A7I0398-02RE1)			**Matrix: Soil**		**Batch: 7091069**			**C-07**
Aroclor 1016	ND	---	1960	ug/kg dry	200	09/28/17 10:46	EPA 8082A	
Aroclor 1221	ND	---	1960	"	"	"	"	
Aroclor 1232	ND	---	1960	"	"	"	"	
Aroclor 1242	ND	---	1960	"	"	"	"	
Aroclor 1248	ND	---	1960	"	"	"	"	
Aroclor 1254	**40600**	---	1960	"	"	"	"	
Aroclor 1260	ND	---	1960	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 118 %*	*Limits: 72-126 %*	"	"	"	*S-05*

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
AA-C-1S-091117 (A7I0398-01)			**Matrix: Soil**		**Batch: 7090676**			
% Solids	**95.9**	---	1.00	% by Weight	1	09/18/17 07:52	EPA 8000C	
AA-C-2S-091117 (A7I0398-02)			**Matrix: Soil**		**Batch: 7091064**			
% Solids	**91.4**	---	1.00	% by Weight	1	09/28/17 11:28	EPA 8000C	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7090711 - EPA 3546							**Soil**					
Blank (7090711-BLK1)					Prepared: 09/18/17 10:10		Analyzed: 09/18/17 17:13					C-07
EPA 8082A												
Aroclor 1016	ND	---	9.09	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	9.09	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	9.09	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 112 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7090711-BS1)					Prepared: 09/18/17 10:10		Analyzed: 09/18/17 17:31					C-07, Q-18
EPA 8082A												
Aroclor 1016	187	---	10.0	ug/kg wet	1	250	---	75	47-134%	---	---	
Aroclor 1260	222	---	10.0	"	"	"	---	89	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 113 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7090711-DUP2)					Prepared: 09/18/17 10:10		Analyzed: 09/20/17 16:08					C-07
QC Source Sample: AA-C-1S-091117 (A7I0398-01RE1)												
EPA 8082A												
Aroclor 1016	ND	---	509	ug/kg dry	50	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	509	"	"	---	ND	---	---	---	30%	
Aroclor 1254	**11200**	---	509	"	"	---	10500	---	---	6	30%	
Aroclor 1260	ND	---	509	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 102 %*	*Limits: 72-126 %*			*Dilution: 50x*					*S-05*
Batch 7091069 - EPA 3546							**Soil**					
Blank (7091069-BLK1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:24					C-07
EPA 8082A												
Aroclor 1016	ND	---	8.33	ug/kg wet	1	---	---	---	---	---	---	
Aroclor 1221	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	---	8.33	"	"	---	---	---	---	---	---	

Apex Laboratories

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Lisa A Domenighini

Lisa Domenighini, Client Services Manager

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls by EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7091069 - EPA 3546							**Soil**					
Blank (7091069-BLK1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:24					C-07
EPA 8082A												
Aroclor 1248	ND	---	8.33	ug/kg wet	"	---	---	---	---	---	---	
Aroclor 1254	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1262	ND	---	8.33	"	"	---	---	---	---	---	---	
Aroclor 1268	ND	---	8.33	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 72-126 %*			*Dilution: 1x*					
LCS (7091069-BS1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 08:41					C-07
EPA 8082A												
Aroclor 1016	195	---	10.0	ug/kg wet	1	250	---	78	47-134%	---	---	
Aroclor 1260	227	---	10.0	"	"	"	---	91	53-140%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 90 %*	*Limits: 72-126 %*			*Dilution: 1x*					
Duplicate (7091069-DUP1)					Prepared: 09/27/17 14:53		Analyzed: 09/28/17 10:10					C-07
QC Source Sample: AA-C-2S-091117 (A7I0398-02RE1)												
EPA 8082A												
Aroclor 1016	ND	---	1970	ug/kg dry	200	---	ND	---	---	---	30%	
Aroclor 1221	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1232	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1242	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1248	ND	---	1970	"	"	---	ND	---	---	---	30%	
Aroclor 1254	**35700**	---	1970	"	"	---	40600	---	---	13	30%	
Aroclor 1260	ND	---	1970	"	"	---	ND	---	---	---	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 122 %*	*Limits: 72-126 %*			*Dilution: 200x*					*S-05*

Apex Laboratories

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Lisa Domenighini, Client Services Manager

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

AMENDED REPORT

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7090676 - Total Solids (Dry Weight)							**Soil**					
Batch 7091064 - Total Solids (Dry Weight)							**Soil**					
Duplicate (7091064-DUP1)					Prepared: 09/27/17 13:56 Analyzed: 09/28/17 11:28							
QC Source Sample: AA-C-2S-091117 (A7I0398-02)												
EPA 8000C												
% Solids	**92.3**	---	1.00	% by Weight	1	---	91.4	---	---	1	10%	

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AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls by EPA 8082A

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7090711							
A7I0398-01RE1	Soil	EPA 8082A	09/11/17 09:40	09/18/17 10:10	10.28g/5mL	10g/5mL	0.97
Batch: 7091069							
A7I0398-02RE1	Soil	EPA 8082A	09/11/17 10:22	09/27/17 14:53	11.16g/5mL	10g/5mL	0.90

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7090676							
A7I0398-01	Soil	EPA 8000C	09/11/17 09:40	09/15/17 16:57	1N/A/1N/A	1N/A/1N/A	NA
Batch: 7091064							
A7I0398-02	Soil	EPA 8000C	09/11/17 10:22	09/27/17 13:56	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories

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Lisa Domenighini, Client Services Manager

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
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Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
Q-18	Matrix Spike results for this extraction batch are not reported due to the high dilution necessary for analysis of the source sample.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
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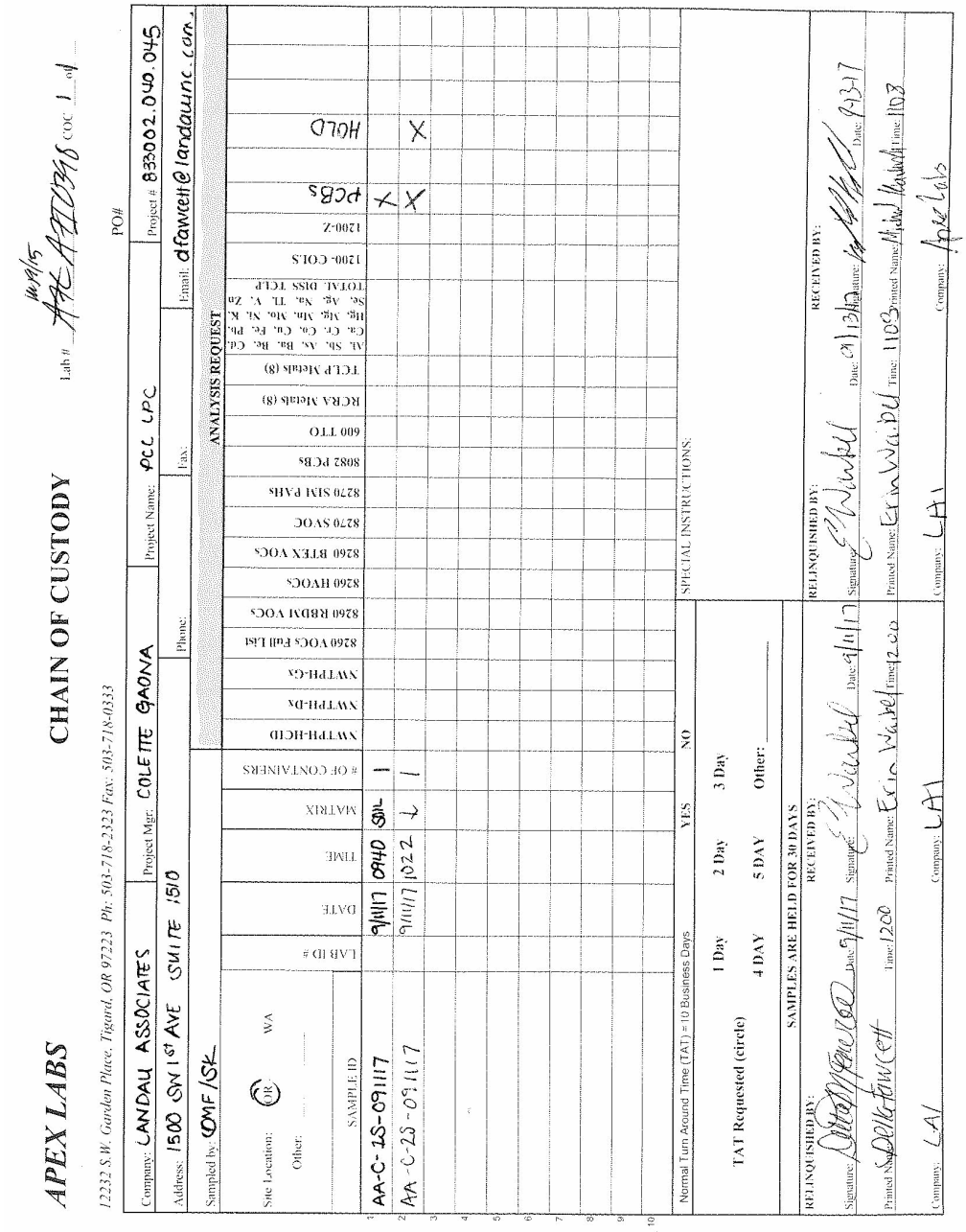
Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32



APEX LABS

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

CHAIN OF CUSTODY

Lab # AAC A7I0348 COC 1 of 1

PO#

Company: LANDAU ASSOCIATES | Project Mgr: COLETTE GAONA | Project Name: PCC LPC | Project # 833002.040.045

Address: 1500 SW 1st AVE SUITE 1510 | Phone: | Fax: | Email: dfawcett@landauinc.com

Sampled by: CMF/SK

Site Location: OR WA

Other:

ANALYSIS REQUEST

	SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	8260 VOCs Full List	8260 RBDM VOCs	8260 HVOCs	8260 BTEX VOCs	8270 SVOC	8270 SIM PAHs	8082 PCBs	600 TTO	RCRA Metals (8)	TCLP Metals (8)	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn TOTAL DISS TCLP	1200-COLS	1200-Z	PCBs	HOLD
1	AA-C-2S-091117		9/11/17	0940	SOIL	1																		
2	AA-C-2S-091117		9/11/17	1022	↓	1																		
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								

Normal Turn Around Time (TAT) = 10 Business Days YES NO

TAT Requested (circle) 1 Day 2 Day 3 Day 4 DAY 5 DAY Other: ____

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

RELINQUISHED BY: Signature: [signature] Date: 9/11/17 Printed Name: Colette Fawcett Time: 1200 Company: LA1

RECEIVED BY: Signature: E Waibel Date: 9/11/17 Printed Name: Erin Waibel Time: 1200 Company: LA1

RELINQUISHED BY: Signature: E Waibel Date: 9/13/17 Printed Name: Erin Waibel Time: 1103 Company: LA1

RECEIVED BY: Signature: [signature] Date: 9/13/17 Printed Name: Michael Kaufman Time: 1103 Company: Apex Labs

Apex Laboratories

Lisa A Domenighini

Lisa Domenighini, Client Services Manager

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AMENDED REPORT

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Landau Associates	Project: **PCC LPC**	
1500 SW First Avenue Suite 1015	Project Number: 883002.040.045	**Reported:**
Portland, OR 97201	Project Manager: Colette Gaona	10/02/17 13:32

APEX LABS COOLER RECEIPT FORM

Client: Landau Element WO#: A7 I0398

Project/Project #: PCC LPC / 883002.040.045

Delivery info:

Date/Time Received: 9-13-17 @ 1108 By: MM

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: MM : 9-13-17 @ 1358

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	–						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	2.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: ___

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: MM : 9/15/17 @ 11:47

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: ___

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: ___

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

ATTACHMENT 2

Waste Manifests

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1468982

Customer Name TERRAHYDRINC TERRA HYDR INC
Ticket Date 01/05/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 3193-1
Destination
PO 14-3193
Profile 1260140R (LF02 - Soil (WM012D))
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier west coast marine
Vehicle# 139
Container
Driver
Check#
Billing # 0002107
Gen EPA ID N/A

Grid

Volume

	Time	Scale	Operator	Inbound		
In	01/05/2018 09:25:41	Inbound 1	BLAKE1		Gross	69140 lb
Out	01/05/2018 11:12:01	Outbound	blake1		Tare	40100 lb
					Net	29040 lb
					Tons	14.52

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	14.52	Tons	33.32		$483.81	MULT-IN
2	13% FEA-13% FEA FE	100		%	13.00		$62.90	MULT-IN

351-13 307-10

Total Tax
Total Ticket $546.71

Driver's Signature Tom G-

403WM

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of 1
3. Emergency Response Phone
4. Waste Tracking Number 31931.

5. Generator's Name and Mailing Address
PCC Structurals
4600 SE Harney
Portland OR 97206
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
West Coast Marine Cleaning
U.S. EPA ID Number WAD988479440

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Hillsboro Landfill
3205 SE Minter Bridge
Hillsboro OR 97123
Facility's Phone:
U.S. EPA ID Number

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	LF02-Soil		CM	13	Y	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
Profile 12601402
Box# 351-13

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: BRIAN MCCAMPBELL
Signature: [signature]
Month 1 Day 3 Year 18

INT'L
15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER
16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Tom Garcia
Signature: [signature]
Month 1 Day 5 Year 18
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY
17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Brandi Lake
Signature: Brandi Lake
Month 1 Day 5 Year 18

169-BLC-O 5 11977 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone

4. Waste Tracking Number: 3193-2

5. Generator's Name and Mailing Address: PCE Structurals, 4600 SE Harney, Portland OR 97206

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: West Coast Marine Cleaning — U.S. EPA ID Number: WAD988479440

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Hillsboro Landfill, 3205 Minter Bridge, Hillsboro, OR 97123 — U.S. EPA ID Number:

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	LF02-Soil		CM	5	Y	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

Profile 1260140R

Box # 307-10

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: BRYAN McCampbell — Signature: [signature] — Month 1 Day 3 Year 18

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tom Gering — Signature: [signature] — Month 1 Day 5 Year 18

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Brandi Lake — Signature: [signature] — Month 1 Day 5 Year 18

GENERATOR

169-BLC-O 5 11977 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1493713

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/30/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/30/2018 11:08:59	Inbound 2	mlarsonl	Inbound	Gross	72900 lb
Out	07/30/2018 11:08:59		mlarsonl		Tare	34760 lb
					Net	38140 lb
					Tons	19.07

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	19.07	Tons	52.23		$996.03	MULT-IN

Total Tax
Total Ticket $996.03

Driver's Signature

408WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1496191

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 08/20/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid
Volume

	Time	Scale	Operator			
In	08/20/2018 09:52:29	Inbound 2	stannery	Inbound	Gross	54260 lb
Out	08/20/2018 09:52:29		stannery		Tare	34760 lb
					Net	19500 lb
					Tons	9.75

Comments

Consumer Comments? We want to know. Please call.

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Cont Soil Pet-RGC- 100		9.75	Tons	52.23		$509.24	MULT-IN

#18 Sox

Total Tax
Total Ticket $509.24

Driver's Signature Jorge Salse

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1496418

Customer Name PCC STRUCTURALS 127750DR PCC
Ticket Date 08/21/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 127750DR (LF02 - Excavation Debris)
Generator DR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	08/21/2018 12:03:21	Inbound 2	STANNERY	Inbound	Gross	61260 lb
Out	08/21/2018 12:03:21		STANNERY		Tare	34760 lb
					Net	26500 lb
					Tons	13.25

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	13.25	Tons	52.23		$692.05	MULT-IN

#16 Box

Total Tax
Total Ticket $692.05

Driver's Signature Jose Salgado

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1496572

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 08/22/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	08/22/2018 11:57:25	Inbound 1	BLAKE1	Inbound	Gross	59840 lb
Out	08/22/2018 11:57:25		BLAKE1		Tare	34760 lb
					Net	25080 lb
					Tons	12.54

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	12.54	Tons	52.23		$654.96	MULT-IN

#77 Box

Total Tax
Total Ticket $654.96

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1496728

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 08/23/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Volume
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

	Time	Scale	Operator			
In	08/23/2018 11:13:59	Inbound 2	STANNERY	Inbound	Gross	62240 lb
Out	08/23/2018 11:13:59		STANNERY		Tare	34760 lb
					Net	27480 lb
					Tons	13.74

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	13.74	Tons	52.23		$717.64	MULT-IN

Total Tax
Total Ticket $717.64

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1490187

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/02/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/02/2018 10:10:22	Inbound 1	JPRIME	Inbound	Gross	60800 lb
Out	07/02/2018 10:48:47	Outbound	JPRIME		Tare	35120 lb
					Net	25680 lb
					Tons	12.84

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	ENVCLEANUP RGCPCS-	100	12.84	Tons	52.23		$670.63	MULT-IN

$1 1ST Box

RECEIVED
JUL 11 2018

Total Tax
Total Ticket $670.63

Driver's Signature Jorge Soto

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1490263

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/02/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PL1 SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/02/2018 13:47:57	Inbound 2	BLAKE1	Inbound	Gross	66760 lb
Out	07/02/2018 14:24:33	Outbound	BLAKE1		Tare	35080 lb
					Net	31680 lb
					Tons	15.84

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	ENVCLEANUP RSCPCS- 100		15.84	Tons	52.23		$827.32	MULT-IN

2ND Box

RECEIVED
JUL 11 2018

Total Tax
Total Ticket $827.32

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1490328

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/03/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest na
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/03/2018 07:39:01	Inbound 1	blakel	Inbound	Gross	62360 lb
Out	07/03/2018 08:17:00	Outbound	jprime		Tare	34540 lb
					Net	27820 lb
					Tons	13.91

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	ENVCLEANUP RGCPCS- 100		13.91	Tons	52.23		$726.52	MULT-IN

3 Yd Box

RECEIVED
JUL 11 2018

Total Tax
Total Ticket $726.52

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc.
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491206

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/10/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC 4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/10/2018 14:26:49	Outbound	JPRIME	Inbound	Gross	61920 lb*
Out	07/10/2018 14:27:10	Outbound	JPRIME		Tare	34640 lb
			* Manual Weight		Net	27280 lb
					Tons	13.64

Comments REPLACEMENT FOR TICKET #1491201

Consumer Comments? We want to know. Please call.

	Product	LDx	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	13.64	Tons	52.23		$712.42	MULT-IN

#11

Total Tax
Total Ticket $712.42

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491264

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/11/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid
Volume

	Time	Scale	Operator
In	07/11/2018 07:41:55	Inbound 1	JPRIME
Out	07/11/2018 08:04:08	Outbound	JPRIME

Comments

Inbound		
	Gross	65660 lb
	Tare	35020 lb
	Net	30640 lb
	Tons	15.32

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC- 100		15.32	Tons	52.23		$800.16	MULT-IN

#5 box

RECEIVED
JUL 12 2018

Total Tax
Total Ticket $800.16

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491371

Customer Name PCC STRUCTURALS 127750OR PCC
Ticket Date 07/11/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 127750OR (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTL

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver JORGE
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/11/2018 11:50:47	Inbound 2	stannery	Inbound	Gross	65940
Out	07/11/2018 11:50:47		stannery		Tare	35020
					Net	30920
					Tons	15.

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC- 100		15.46	Tons	52.23		$807.48	MULT-IN

#6 Box

RECEIVED
JUL 12 2018

Total Tax
Total Ticket $807.48

Driver's Signature Jorge Salgado

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491434

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/11/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest na
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver jorge
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/11/2018 16:01:35	Inbound 2	stannery	Inbound	Gross	59460 lb
Out	07/11/2018 16:01:35		stannery		Tare	35020 lb
					Net	24440 lb
					Tons	12.22

Comments

Consumer Comments? We want to know. Please call.

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1. Cont Soil Pet-RGC-	100	12.22	Tons	52.23		$638.25	MULT-IN

#7 Box

RECEIVED
JUL 12 2018

Total Tax
Total Ticket $638.25

Driver's Signature Jorge Santiago

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491514

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/12/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator DR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A

Volume

Grid

	Time	Scale	Operator			
In	07/12/2018 09:30:05	Inbound 2	mlarsonl	Inbound	Gross	68460 lb
Out	07/12/2018 09:30:05		mlarsonl		Tare	35020 lb
					Net	33440 lb
					Tons	16.72

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	16.72	Tons	52.23		$873.29	MULT-IN

#7 Box

RECEIVED
JUL 23 2018

Total Tax
Total Ticket $873.29

Driver's Signature Jorge Salgado

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491601

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/12/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver JORGE
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/12/2018 13:17:23	Inbound 2	stannery	Inbound	Gross	62360 lb
Out	07/12/2018 13:17:23		stannery		Tare	35020 lb
					Net	27140 lb
					Tons	13.57

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	13.57	Tons	52.23		$708.76	MULT-IN

#8 Box

RECEIVED
JUL 23 2018

Total Tax
Total Ticket $708.76

Driver's Signature Jorge Salgado

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491739

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/13/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/13/2018 09:55:29	Inbound 2	mlarsonl	Inbound	Gross	63300 lb
Out	07/13/2018 09:55:29		mlarsonl		Tare	35020 lb
					Net	28280 lb
					Tons	14.14

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	14.14	Tons	52.23		$738.53	MULT-IN

#10 box

RECEIVED
JUL 23 2018

Total Tax
Total Ticket $738.53

Driver's Signature Jorge Salas

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1491705

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/13/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A

Grid

Volume

	Time	Scale	Operator			
In	07/13/2018 08:43:12	Inbound 2	mlarsoni	Inbound	Gross	63280 lb
Out	07/13/2018 08:43:12		mlarsoni		Tare	35020 lb
					Net	28260 lb
					Tons	14.13

Comments

Consumer Comments? We want to know. Please call.

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Cont Soil Pet-RGC-	100	14.13	Tons	52.23		$738.01	MULT-IN

#9 box

RECEIVED
JUL 23 2018

Total Tax
Total Ticket $738.01

Driver's Signature Jaye Salgo

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR 97123
Ph: (503)-640-9487

Original
Ticket# 1492076

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/17/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest na
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/17/2018 08:21:58	Inbound 1	blake1	Inbound	Gross	70520 lb
Out	07/17/2018 08:41:44	Outbound	BLAKE1		Tare	34760 lb
					Net	35760 lb
					Tons	17.88

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC- 100		17.88	Tons	52.23		$933.87	MULT-IN

#11 box

RECEIVED
JUL 23 2018

Total Tax
Total Ticket $933.87

Driver's Signature Jaye Sabin

408WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1492661

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/20/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLI SYSTEMS
Vehicle# 45
Container
Driver JORGE
Check#
Billing # 0004053
Gen EPA ID N/A

Volume

Grid

	Time	Scale	Operator			
In	07/20/2018 10:46:32	Inbound 2	stannery	Inbound	Gross	68640 lb
Out	07/20/2018 10:46:32		stannery		Tare	34760 lb
					Net	33880 lb
					Tons	16.94

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC- 100		16.94	Tons	52.23		$884.78	MULT-IN

#12

Total Tax
Total Ticket $884.78

Driver's Signature Jorge Salsa

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1492776

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/23/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PLi SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator			
In	07/23/2018 06:16:03	Inbound 2	BLAKE1	Inbound	Gross	67360 lb
Out	07/23/2018 06:33:00	Outbound	jprime		Tare	34600 lb
					Net	32760 lb
					Tons	16.38

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	16.38	Tons	52.23		$855.53	MULT-IN

#14

Total Tax
Total Ticket $855.53

Driver's Signature

403WM

WASTE MANAGEMENT

Hillsboro Landfill, Inc
3205 SE Minter Bridge
Hillsboro, OR, 97123
Ph: (503)-640-9427

Original
Ticket# 1493028

Customer Name PCC STRUCTURALS 1277500R PCC
Ticket Date 07/24/2018
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest NA
Destination
PO R02464
Profile 1277500R (LF02 - Excavation Debris)
Generator OR-PCC STRUCTURALS INC 4600 SE PCC STRUCTURALS INC_4600 SE HARNEY DR, PORTLA

Carrier PL1 SYSTEMS
Vehicle# 45
Container
Driver
Check#
Billing # 0004053
Gen EPA ID N/A
Grid

Volume

	Time	Scale	Operator	Inbound		
In	07/24/2018 11:16:43	Inbound 1	JPRIME		Gross	69380 lb
Out	07/24/2018 11:16:43		JPRIME		Tare	34760 lb
					Net	34620 lb
					Tons	17.31

Comments

Consumer Comments? We want to know. Please call.

	Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1	Cont Soil Pet-RGC-	100	17.31	Tons	52.23		$904.10	MULT-IN

#15

Total Tax
Total Ticket $904.10

Driver's Signature

403WM

APPENDIX D

Deed Restriction

Multnomah County Official Records
E Murray, Deputy Clerk
2018-063257
06/15/2018 10:47:21 AM
1R-NTAFFRLP Pgs=4 Stn=23 CRESWEP
$20.00 $11.00 $6.00 $60.00
$97.00

After Recording, Return To:

Precision Castparts Corp.
4650 SW Macadam Avenue, Suite 400
Portland, OR 97239-4262
ATTN: Peter Serrurier

NOTICE OF MATTER AFFECTING TITLE TO REAL PROPERTY (40 CFR §761.61)

This Notice of Matter Affecting Title to Real Property ("**Notice**") is made as of June 14, 2018 by Precision Castparts Corp., an Oregon corporation ("**PCC**").

This Notice is required by and made pursuant to Code of Federal Regulations, Title 40, Section 761.61.

PCC is the current owner of the real property in Multnomah County, Oregon described on the attached Exhibit A (the "**Property**").

The portion of the Property identified as Area A, Area B West, and Area B East as reflected on Figure 1 attached hereto as Exhibit B has been used for polychlorinated biphenyl (PCB) remediation waste disposal in accordance with federal regulations and approved by the U.S. Environmental Protection Agency. The PCB concentrations remaining in soil in Area A, Area B West, and Area B East (Figure 1) of the Property are greater than 1 milligram per kilogram (mg/kg) and, therefore, trigger the requirement for this deed notification under the Code of Federal Regulations, Title 40, Section 761.61 (40 CFR §761.61) and the use of Area A, Area B West, and Area B East are restricted to low occupancy as defined in Title 40, Section 761.3 (40 CFR §761.3). Land use in Area A, Area B West, and Area B East is consistent with the definition of a low occupancy area (40 CFR §761.3). A concrete fabric cap was placed in portions of Area A and Area B West and the cap must be maintained in perpetuity. Fencing and signage were also installed as institutional controls in these two areas. The applicable cleanup level for the capped soil in Area A and Area B West is 100 mg/kg total PCBs. The applicable cleanup level for Area B East is 25 mg/kg.

Restrictions for Area A and Area B West: Future use shall comply with the definition of low occupancy (40 CFR §761.3). Signage and fencing shall be maintained. Repairs to the cap shall begin within 72 hours of discovery for any breaches which would impair the integrity of the cap.

After Recording, Return To:

Precision Castparts Corp.
4650 SW Macadam Avenue, Suite 400
Portland, OR 97239-4262
ATTN: Peter Serrurier

NOTICE OF MATTER AFFECTING TITLE TO REAL PROPERTY
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This Notice is required by and made pursuant to Code of Federal Regulations, Title 40, Section 761.61.

PCC is the current owner of the real property in Multnomah County, Oregon described on the attached Exhibit A (the "**Property**").

The portion of the Property identified as Area A, Area B West, and Area B East as reflected on Figure 1 attached hereto as Exhibit B has been used for polychlorinated biphenyl (PCB) remediation waste disposal in accordance with federal regulations and approved by the U.S. Environmental Protection Agency. The PCB concentrations remaining in soil in Area A, Area B West, and Area B East (Figure 1) of the Property are greater than 1 milligram per kilogram (mg/kg) and, therefore, trigger the requirement for this deed notification under the Code of Federal Regulations, Title 40, Section 761.61 (40 CFR §761.61) and the use of Area A, Area B West, and Area B East are restricted to low occupancy as defined in Title 40, Section 761.3 (40 CFR §761.3). Land use in Area A, Area B West, and Area B East is consistent with the definition of a low occupancy area (40 CFR §761.3). A concrete fabric cap was placed in portions of Area A and Area B West and the cap must be maintained in perpetuity. Fencing and signage were also installed as institutional controls in these two areas. The applicable cleanup level for the capped soil in Area A and Area B West is 100 mg/kg total PCBs. The applicable cleanup level for Area B East is 25 mg/kg.

Restrictions for Area A and Area B West: Future use shall comply with the definition of low occupancy (40 CFR §761.3). Signage and fencing shall be maintained. Repairs to the cap shall begin within 72 hours of discovery for any breaches which would impair the integrity of the cap.

Restrictions for Area B East: Future use shall comply with the definition of low occupancy (40 CRF §761.3).

DATED: June 14, 2018.

PRECISION CASTPARTS CORP.,
an Oregon corporation

By: Ruth A. Beyer
Name: Ruth A. Beyer
Title: Sr. VP & General Counsel

STATE OF OREGON)
)ss.
County of Multnomah)

This instrument was acknowledged before me on the 14 day of June, 2018 by Ruth A. Beyer, the Sr. VP and General Counsel of Precision Castparts Corp., an Oregon corporation.

OFFICIAL STAMP
DEBORAH L. BROWNING
NOTARY PUBLIC-OREGON
COMMISSION NO. 957760
MY COMMISSION EXPIRES DECEMBER 28, 2020

Deborah L Browning
Notary Public for Oregon
My Commission expires:

EXHIBIT A

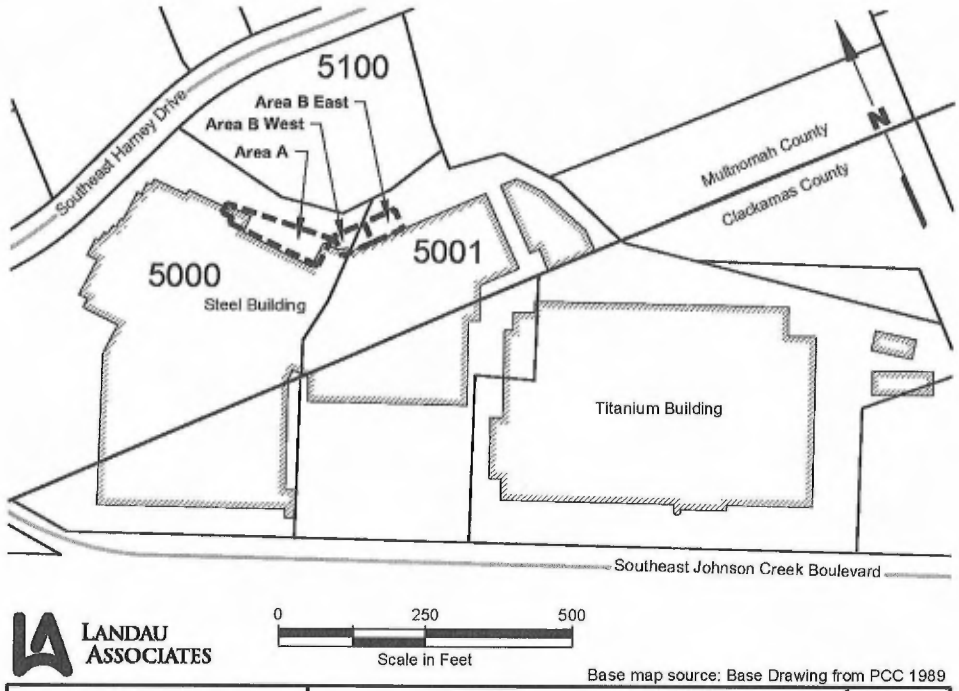
(Legal Description of the Property)

A tract of land in Section 19, Township 1 South, Range 2 East of the Willamette Meridian, partially in the City of Portland, County of Multnomah and State of Oregon, of which a portion lies in a part of Gibsons Subdivision of the J.A. Logan tract and being more particularly described as follows:

Beginning at a point on the line between Sections 19 and 30, Township 1 South, Range 2 East of the Willamette Meridian, said point located South 89°25'18" West, 203.47 feet from the quarter corner common to said Sections 19 and 30; thence continuing South 89°25'18" West along said section line, 1069.96 feet; thence North 24°33'08" East 257.24 feet to a point on a line between Lots 1 and 16, said Gibsons Subdivision of the J.A. Logan tract; thence continuing North 62°28'38" West along said line between Lots 1 and 16, 270.92 feet to the South line of S.E. Harney Drive, now a 60.00 foot right of way; thence South 89°12'10" East along said South line of S.E. Harney Drive, 166.04 feet to a point of curve; thence on a 602.98 foot radius curve to the left, which has a chord that bears North 79°28'50" East 236.64 feet, an arc length of 238.18 feet; thence North 68°09'50" East 199.63 feet; thence leaving South line of S.E. Harney Drive, South 33°09'30" East 209.15 feet; thence South 52°28'10" East, 106.72 feet; thence North 86°21'40" East, 94.07 feet; thence North 75°05'20" East 109.99 feet; thence South 0° 56'20" West 34.00 feet; thence South 83°14'10" East 93.85 feet; thence South 40°43'10" East, 109.23 feet; thence South 23°26'10" East 141.43 feet to the point of beginning.

EXHIBIT B

(Figure 1: Area A, Area B West, and Area B East)



LANDAU ASSOCIATES

Precision Castparts Corp. Portland, Oregon	**Areas Requiring Deed Notice**	Figure **1**

97229970.1 0027928-00008