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August 23, 2023

Joseph B. Hunt, LHG
Toxics Cleanup Program
Southwest Regional Office
Washington Department of Ecology
P.O. Box 47775
Olympia, WA 98504-7775

RE: Work Plan – Expanded Site Investigation

FOR: Papé Group Properties
7109 - 7519 48th Street East, Fife, WA
Parcels #047, 048, 008, 024, 025, 018, 039, 040, and 037
VCP ID SW1800, Cleanup Site ID 15535

Joseph:

BB&A Environmental is providing this work plan for an Expanded Investigation in response to your letter dated June 12, 2023.

The purpose of this work plan is to additionally investigate pesticide contamination at the *subject property*, identified as parcels 047, 048, 008, 024, 025, 018, 039, 040, and 037 (of Map #042017-3). The former heating oil underground storage tank (UST) will continue to be appropriately managed through the Pollution Liability Insurance Agency (PLIA). All other potential *recognized environmental concerns* (*RECs*) and issues previously identified and investigated by BB&A Environmental[1] (BB&A), were sufficiently completed to the satisfaction of BB&A and Papé Properties.

BACKGROUND AND SUMMARY OF INVESTIGATIONS

In February 2021, BB&A initiated a Phase I ESA for Papé Properties Inc. (Papé), as part of their due diligence prior to purchasing the above referenced agricultural and residential parcels in east Fife, Washington. As part of the Phase I ESA, BB&A identified multiple *recognized environmental conditions* (*RECs*) and concerns associated with the *subject properties*. Due to the identified *RECs* and concerns, BB&A recommended a Focused Phase II ESA.

[1] Documented in BB&A Environmental reports titled: Phase I and Focused Phase II Environmental Site Assessments, 7109-7610 48th Street E, Fife, WA, Parcels 047,048, 024, 25, 018, 039, 040, 037, 038, 029, and 031; dated February 19, 2021; and Phase I and Focused Phase II Environmental Site Assessments, 7619-7723 48th Street E, and 4708-4710 77th Avenue Court, Fife, WA, Parcels 016, 026, 032, 035, and 036; dated December 16, 2022.

On February 10th, 2021, as part of a Focused Phase II ESA, near-surface soil samples were collected at the *subject property* in areas of former agricultural production, and a groundwater sample was collected from the water well at the former on-site greenhouse facility property (7511 and 7519 48th Street East).

Soil Sampling for Pesticides and Herbicides: As part of the focused investigation, composite soil samples were collected from surface / near-surface soils immediately beneath the tables within the greenhouses, as well as from the agricultural fields composing the *subject property*. Each composite sample from each greenhouse was composed of 10 random surface and near-surface soil grab samples. Similarly, the agricultural parcels were subdivided into six (6) segments, where 10 random grab samples were collected and combined for six (6) composite soil samples (collected just beneath the root zone).

Soil Analytical Results: Laboratory analysis of the composite soil samples detected the herbicide 2,4-D in four (4) greenhouse composite samples and the following pesticides in most of the greenhouse and agricultural field samples: Aldrin, beta-BHC, Lindane, cis-Chlordane, trans-Chlordane, 4,4'-DDD, 4,4'-DDE, 4.4'-DDT, Dieldrin, Endosulfan II, Endosulfan Sulfate, Endrin Ketone, and Heptachlor Epoxide.

Model Toxics Control Act (MTCA) Cleanup Level Comparison: To evaluate the herbicide and pesticide analytical results, the detected concentrations were compared to MTCA Method B cleanup levels for unrestricted land use. Dieldrin was found to slightly exceed the *carcinogenic* MTCA Method B cleanup level in two (2) soil samples from the agricultural fields. All other detected herbicide and pesticide concentrations were generally orders of magnitude below MTCA Method B cleanup levels. It should be noted that none of the detected pesticides, including all concentrations of dieldrin, are well below MTCA Method C levels for industrial use – a more appropriate cleanup level, since the *subject property* is to be developed as Papé Machinery and Material Handling facilities.

The analytical results appear to show that historical use of pesticides occurred across most of the agricultural fields, and to some extent inside the greenhouses. However, it is important to note that the detected pesticides are not the result of spill or releases, but instead, cumulative buildup of more persistent compounds from historical standard operating practices and applications per manufacturers recommendations.

Water Well Sampling: As part of the Focused Phase II ESA, the water well at 7519 48th Street E was sampled for dissolved arsenic, nitrates, organochlorine pesticides, and herbicides. None of the potential contaminants analyzed for were detected above method-reporting limits.

<u>Dieldrin Reported to Ecology</u>

Based on the findings of the February 2021 Phase I and Focused Phase II ESA, Papé reported the slightly elevated levels of dieldrin to Ecology in March 2021. Papé submitted a copy of the February 2021 report to Ecology, and upon entering the Voluntary Cleanup Program, requested Ecology review and comment on the pesticide results, and the dieldrin concentrations. In addition, Papé also submitted a copy of the December 2022 Phase I and Focused Phase II ESA for the adjacent properties further east, as verification that pesticide concentrations at the properties further east were below MTCA Method B levels.

Remedial Investigation – March 2023

In March 2023, BB&A conducted a Focused Remedial Investigation with the purpose of defining the magnitude and extent of dieldrin in soil at parcels 047, 048, and 024 of the *subject property*. More specifically, the former Composite 1 (COMP 1) and Composite 3 (COMP 3) sample units, where dieldrin exceeded MTCA Method B (Cancer) Cleanup Levels, were subdivided and resampled (see Attached **Figure 1**).

As part of the Remedial Investigation, the area identified as COMP 1, on the west portion of the *subject property* (composed of portions of tax lots 047 and 048), was subdivided into six (6) approximately equal sub-units. The area identified as COMP 3, identified as tax lot 024, was subdivided into five (5) approximately equal sub-units. Within each sub-unit, 10 random grab samples were collected at depths of two (2) to eight (8) inches, and again at a depth of 14 to 18 inches. Care was taken to prevent cross-contamination. The 10 sub-unit grab samples were combined and thoroughly mixed within a one-gallon plastic ziploc bag, from which eight (8) ounce soil jars were filled to capacity.

Surface / Shallow Sub-Unit Sampling Results: Laboratory analysis detected dieldrin in all of the shallow soil samples (i.e., two [2] to six [6] inch depth) at fairly consistent concentrations: dieldrin was detected in the sub-units of the COMP 1 sample unit at concentrations ranging from 0.08 to 0.118 milligrams per kilogram (mg/kg) or parts per million (ppm); and dieldrin was detected in the sub-units of the COMP 3 sample unit at concentrations ranging from 0.124 to 0.153 ppm – all exceeding the MTCA Method B (Cancer) cleanup level of 0.063 ppm.

Deeper Sub-Unit Sampling Results: Within the COMP 1 sub-units, dieldrin was detected in the deeper soil samples (i.e., 14" to 18") at concentrations ranging from 0.0375 to 0.101 ppm (mean value of 0.077 ppm), with dieldrin concentrations in two (2) of the deeper sub-unit samples below the MTCA Method B cleanup level.

Within the COMP 3 sub-units, dieldrin was detected in the deeper soil samples (i.e., 14" to 18") at concentrations ranging from 0.0274 to 0.107 ppm, with a mean value of 0.063 ppm (at MTCA Method B cleanup level), and dieldrin concentrations in three (3) sub-units below the MTCA Method B cleanup level of 0.063 ppm.

Full Composite Samples: After collection of the composite soil samples, all remaining “like” soil from the sub-units were combined, mixed and sampled as “full composites.” The full composite soil sample results were lower than the mean values calculated for each sub-unit, likely due to high sample variability. The “full composite” sample for all of the shallow (2" - 6") sub-unit samples for Comp 7 through 12 detected dieldrin at 0.0788 ppm; the “full composite” sample for all of the shallow (2" - 6") sub-unit samples for Comp 13 through 17 detected dieldrin at 0.086 ppm; the “full composite” sample for all of the deeper (14" - 18") sub-unit samples for Comp 7 through 12 detected dieldrin at 0.0658 ppm; and, the “full composite” sample for all of the deeper (14" - 18") sub-unit samples for Comp 13 through 17 detected dieldrin at 0.0589 ppm.

Conceptual Site Model (CSM): BB&A developed a preliminary CSM for the *subject property*. The results of the CSM identified the following receptors and exposure pathways as reasonably applicable and complete:

- Ingestion, dermal contact, and/or inhalation of soil particulates by Excavation Workers is deemed appropriate for the *subject property*.
- Ingestion, dermal contact, and/or inhalation of contaminants in groundwater by Excavation Workers is deemed appropriate for the *subject property*.
- Groundwater as a drinking water source is considered an incomplete pathway.
- Inhalation of trench air in open excavations, or vapor intrusion into future onsite buildings is considered a complete pathway.
- Papé Properties Inc. plans to redevelop the *subject property* into an industrial property, including a Papé Machinery facility for sales, service, and repair of large earth moving equipment, such as excavators and tractors; and Papé Material Handling Facility for sales, service, and rental of forklifts, and high-lift machinery. Based on future industrial use of the *subject property*, MTCA Method C cleanup levels are deemed appropriate for the site. It should be noted that all pesticide concentrations in soil were well below MTCA Method C levels, including that of dieldrin, and adverse exposure to dieldrin by future on-site workers after redevelopment is not likely.

SCOPE OF SERVICES

1.0 EXPANDED INVESTIGATION OF THE MAGNITUDE AND EXTENT OF CONTAMINATION

Per the opinion letter dated, June 12, 2023, this work plan is provided to outline methods for additionally investigating pesticide contamination at the *subject property*, identified as parcels 047, 048, 008, 024, 025, 018, 039, 040, and 037 (of Map #042017-3). In addition, the above-referenced opinion letter requested investigation of soils at additional parcels 029 and 031.

1.1 Utility Locate

Prior to conducting the proposed investigation, the 1-800 One-Call Utility Notification Service will be contacted for mark out of subsurface utilities.

1.2 Soil Sampling Methodology

As part of this proposed expanded investigation, composite soil samples will be collected from surface soils within the vicinity of the former greenhouses (removed in 2021), as well as from the previously subdivided agricultural fields composing the *subject property*. The following sample protocols will be performed for each composite soil sample:

- **Former Greenhouse Area:** Within the vicinity of the former greenhouse area, 15 random grab samples will be collected from surface and near-surface soil at depths between 0" - 6" using clean nitrile gloves, and a shovel.

- **Former Agricultural Fields:** The agricultural fields for parcels (west to east) 047, 048, 008, 024, 025, 018, 039, and 037, were previously sub-divided into six (6) sampling segments, at approximately two (2) acres in size. These same sample segments will once again be sampled for an additional list of pesticides requested by Ecology, including Organophosphorous (OPP) and carbamate pesticides. The sampling segments are shown on attached **Figure 1**. Within each sampling segment, 15 random grab samples will be collected using a shovel and clean nitrile gloves.

- At each random grab sample location, a one (1) foot by one (1) foot square plug of soil, approximately eight (8) inches deep, will be removed using a shovel. Between sample units or segments, the nitrile gloves will be changed, and the shovel washed with alconox and rinsed with fresh water, to prevent cross-contamination. The grab samples will be combined within a one-gallon plastic ziploc bag, from which two (2), four (4) ounce soil jars will be filled to capacity. Each clean four (4) ounce glass jar will be sealed with threaded, teflon-lined caps. The jars will be filled such that remaining headspace volume is minimized.

1.3 Soil Sampling Analytical Methods

Per the request of Ecology, composite soil samples are to be analyzed for OPP and carbamate pesticides (and 8321B, respectively), as well as metals, commonly associated with pesticides and fertilizer. As such, all composite soil samples will be analyzed for OPP pesticides per EPA Methods 8270E (Apex Laboratory); carbamate pesticides per EPA Method 8321B (Pacific Ag Laboratory); and RCRA 8 metals per EPA Method 6020 (Apex Laboratory). In addition, the opinion letter requested that the composite soil samples be additionally analyzed for dioxins. As such, one (1) composite soil sample, as a full composite of all samples collected across the *subject property*, will be analyzed for dioxins and furans per EPA Method 1613B (Ceres Laboratory).

1.4 Push-Probe Groundwater Water Sampling

As part of the proposed investigation, six (6) push-probe borings will be advanced to sample groundwater beneath the western end of the subject property, specifically parcels 047, 048, 008, 024, and 025 (see attached **Figure 1**). The push-probe borings will be completed using a track-mounted Geoprobe® 7822, and Geoprobe® tooling. To eliminate potential contact between the Geoprobe® rods and surface soils that might be in contaminated with residual pesticides, a hollow stem auger will be advanced five feet into the ground, and the inner drill bit removed. Within the three (3) inch inside-diameter auger (acting as an outside casing), 2.25-inch rods (with1.5-inch inside diameter) will be advanced to a depth of 15 feet below land surface (BLS). Upon driving the hollow rods to a depth of 15 feet BLS, three-quarter (3/4)-inch diameter slotted PVC casing will be placed within the 2.25-inch diameter rods. The 2.25-inch rod will then be lifted, removing the expendable point at the bottom, and exposing the slotted casing to accumulating groundwater.

Prior to sampling groundwater, groundwater will be purged to the extent that three (3) well casing volumes have been purged, and groundwater is clear of sediment. Groundwater will be purged and sampled using new polyethylene tubing, and a low-flow peristaltic pump. Purged groundwater will be placed in a 55-gallon drum pending laboratory analysis. Upon purging a sufficient volume, groundwater will be pumped using a peristaltic pump at its lowest setting (0.1 to 0.3 liters per minute), and transferring groundwater directly into laboratory-supplied glassware with appropriate sample preservatives (as necessary).

1.5 Groundwater Laboratory Analysis - General Methodology

Groundwater samples will be collected from all temporary borings using a peristaltic pump and clean disposable polyethylene tubing. Prior to sample collection, a minimum of three (3) well-casing volumes will be purged. During sample collection, the peristaltic pump will be set at its lowest setting (0.1 to 0.3 liters per minute), and groundwater transferred directly into clean laboratory-supplied sample glassware and given given a unique identification. The groundwater samples collected from the temporary push-probe borings will be placed on ice and delivered to Apex Laboratory in Tigard, Oregon, for the following laboratory analyses: Organochlorine pesticides per EPA method 8081B, and OPP Pesticides per EPA Method 8270E. If elevated levels of metals are detected in soil, additional analysis of groundwater will include those specific metals.

1.6 Report

A report, signed by a registered professional geologist or engineer, will be prepared documenting the findings of the subsurface investigations. The report will also present conclusions and recommendations of this assessment specific to the site. The report will also include a site plan illustrating the push-probe locations, probe logs, analytical laboratory reports, and chain-of-custody records for all samples. If detected, contaminant concentrations will be compared to the applicable screening and/or cleanup levels. The comparisons will be used for documentation, evaluation, risk-assessment, and recommendations for cleanup (if necessary).

Should you have any questions regarding this work plan, please do not hesitate to contact me at your convenience. Thank you for the opportunity to be of service. We look forward to working on this project with you.

Sincerely,

BB&A Environmental

Stephen M. Omo, RG
Project Manager

Enclosures

N

0 120
60
(FEET)

SERVICE STEEL AEROSPACE

COMMERCIAL PROPERTY

CRYSTAL DISTRIBUTION

COMMERCIAL PROPERTY

TL 042017-3-047 (1.0 Acres)

AG COMP 1

AG COMP 2

GRASS

P2

P3

P1

7109 48th STREET E.

7111 48th STREET E.

TL 042017-3-048 (1.92 Acres)

TL 042017-3-008 (1.92 Acres)

7223 48th STREET E.

AG COMP 3

P4

PUMPKIN

AG COMP 4

TL 042017-3-024 (1.95 Acres)

TL 042017-3-025 (1.95 Acres)

P6

7305 48th STREET E.

P5

Former Heating Oil AST & UST

Trash

AG COMP 5

TL 042017-3-018 (2.53 Acres)

TL 042017-3-039 (1.86 Acres)

AG COMP 6

TL 042017-3-037 (1.65 Acres)

GH COMP6

GH COMP7

GH COMP8

GH COMP9

GH COMP5

GH COMP4

GH COMP3

GH COMP2

GH COMP1

WW

USTs

7501 48th STREET E.

7511 & 7519 48th STREET E.

TL 042017-3-040 (0.46 Acres)

7601 48th STREET E.

TL 042017-3-031 (2.15 Acres)

TL 042017-3-029 (0.35 Acres)

AST

Drainage Ditch

48th STREET E.

Drainage Ditch

48th STREET COURT E.

TRAILER PARK PROPERTY

73th AVE. CT. E.

49th STREET E.

Private Drive to Pond

SUBJECT PROPERTY

LEGEND

P1	Proposed Push Probe Groundwater Location and Identification Number
	Building
PL	Property Line
TL 042017-3-047 (1.0 Acres)	Tax Lot Number & Acres
WW	Water Well

FIGURE #:

SITE PLAN SHOWING PROPOSED PUSH PROBE GROUNDWATER LOCATIONS
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

PROJECT CODE: PAP182PH1.21E | DATE: 08/22/23 | SCALE: 1"=120' | DRAWN: K.D.DESIGNS | CHECKED: STEVE OMO

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