MEMORANDUM

DATE: September 19, 2013

TO: Tom Meyer, Seattle City Light

FROM: Ross Stainsby
Phil Cordell

RE: **Remediation Scoping Memorandum**
Glendale Surplus Property
2423 South 132nd Street
SeaTac, Washington
17843-27

PURPOSE

This memorandum outlines the general objectives for remediation activities planned at the Seattle City Light Glendale Surplus Property located at 2423 South 132nd Street in SeaTac, Washington (Figure 1).

We understand that Seattle City Light (SCL) is considering selling this property; therefore, they would like to remove contaminated soil from the site. Arsenic, dieldrin, 4,4'-DDT, and 4,4'-DDE have been identified in near-surface soil at the property. The objective of this remedial action is to remove contaminated soil and verify that the remaining soil is below Model Toxics Control Act (MTCA) Method A or MTCA Method B unrestricted direct contact cleanup levels. This memorandum is intended to provide general guidance for planning purposes and is not intended to prescribe contractor means and methods.

We understand that NRC may be the Contractor completing this work under an existing contract with SCL. The provisions and requirements of their contract will apply to this project. It is the responsibility of the contractor to comply with all local, state, and federal regulations during performance of all work.

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SITE DESCRIPTION

The property is located at 2423 South 132nd Street, in a single-family residential area in SeaTac, Washington. A Site Plan showing site features is presented on Figure 2. The property is vacant and the transformer area is secured by a cyclone fence. A concrete pad is located in the east-central portion of the property and is surrounded by an asphalt-paved yard; the remainder of the property is grass and/or landscaping.

The property was reportedly acquired by SCL in approximately 1957 or 1958 to locate a 4 kilovolt (kV) electrical substation. Transformers and other electrical equipment were de-energized and removed in April 1996. Before decommissioning, the transformer main tank chamber was tested and found to contain 8.3 parts per million (ppm) polychlorinated biphenyls (PCBs) and the tap charger was tested and found to contain 44 ppm PCBs. We understand SCL periodically used pesticides on a periodic basis during early years of operation on the property.

PREVIOUS INVESTIGATIONS SUMMARY

Two previous investigations have been completed at this property. The reports are summarized below.

4kV Environmental Assessment, 2001

On behalf of SCL, Herrera Environmental Consultants completed a site assessment in 2001. The site assessment tested soil for PCBs, pesticides, and petroleum hydrocarbons. Four composite soil samples (GD-CS-01 through -04) were collected adjacent to the concrete pad and four composite concrete samples (GD-CC-01 through -04) were collected from the concrete pad as shown on Figure 2.

Analytical results from the four composite soil samples did not detect any chlorinated pesticides at concentrations above MTCA cleanup levels. In three samples, 4,4'-DDT was detected and in two samples 4,4'-DDE was detected. Diesel and heavy oil were not detected above laboratory reporting limits in any samples. PCBs were not detected above laboratory reporting limits in any of the composite soil or concrete samples. No suspect asbestos containing materials were identified at this location. All accessible conduits were found to be metal.

Supplemental Environmental Characterization Summary and Recommendations Memorandum Update, 2012-2013

In 2012 and 2013, Hart Crowser collected seven composite soil samples (GL-COMP-1 through -7), three discrete samples (GL-D-4 through -6), and nine hand auger samples from four locations (GL-CS-1 through -4). Soil sampling analytical results indicate that contamination above cleanup levels is generally limited to the top 10 inches of soil across most of the site, however elevated pesticide concentrations in GL-CS-1-24-26", GL-CS-2-8-10" and GL-4-18-20" indicate that contamination potentially extends approximately 2 to 3 feet bgs.

Sample locations and cleanup level exceedances are shown on Figure 2.

KEY PERSONNEL

Role	Organization	Contact	Telephone Number
Owner	SCL	Tom Meyer	(206) 386-9168
Contractor	NRC	Scott St. John	TBD
Contractor Field Representative	NRC	TBD	TBD
Environmental Representative	Hart Crowser	Ross Stainsby	(206) 826-4485
On Site Environmental Representative	Hart Crowser	Phil Cordell	(206) 730-5016
On Site Environmental Representative	Hart Crowser	Nick Galvin	(206) 718-1261

WORK ELEMENTS

Remediation activities to be completed by the Contractor will generally consist of the following tasks. Additional detail on select tasks is provided later in the memorandum.

- Prepare a site-specific health and safety plan.
- Locate public and private utilities.
- Obtain all applicable permits which may include (but are not limited to) fill and grading permits and street use permits.
- Install temporary security fencing around the perimeter of the site. Note that SCL may need to obtain entry authorization from the adjoining neighbor to the east of the property. The Contractor shall first obtain authorization from SCL prior to placing fencing along the east side.

- Excavate the property to a minimum depth of approximately 20 inches below ground surface (bgs). The actual depth of excavation will be determined by confirmation sample analytical results.

- Preserve vegetation as directed by SCL. If necessary, using an Air Knife and Vac Truck, remove soil around root systems of selected trees. Excavation work within the drip line of trees marked for preservation will need to be completed during the rainy season and adhere to procedures specified by SCL. An arborist representing SCL may be on-site during these activities.

- Remove chain link fencing and the concrete transformer pad from the southern portion of the property. Remove remaining concrete pads and asphalt surfacing from site

- Backfill and compact excavated areas.

- Prepare and implement all necessary paperwork and or labeling for proper shipment of soils contaminated with chemicals and concentrations at the site.

- Dispose of soil at a properly permitted and authorized solid waste landfill.

Sample locations and proposed excavation areas are shown on Figure 3.

The Environmental Representative will be responsible for the following work elements:

- Collect and analyze soil samples for disposal, if necessary.

- Observe and document field activities, including erosion control measures.

- Collect confirmation samples from the excavated areas.

Earthwork

The contractor is responsible for protecting utilities, fences, pavement, and structures on or adjacent to the property. Excavation areas and volumes provided below are based on available information. Actual areas and volumes excavated may change depending on field observations or confirmation sampling.

Excavation

Arsenic, dieldrin, 4,4'-DDT, and 4,4'-DDE exceed MTCA cleanup standards in near-surface soil. The excavation area includes all areas of the site (Figure 3). Soil will be excavated to approximately 20 inches bgs. A 1-to-1 slope will be maintained along the property line, as necessary, to minimize any disturbance to neighboring properties.

Gravel base course from beneath asphalt and concrete at the site will be removed; native soil below the gravel should not be excavated. The dimensions of the area to be excavated are approximately 150 feet by 60 feet. Assuming an excavation depth of 20 inches, approximately 470 cubic yards (cy) of soil, asphalt, and concrete will be removed from the site.

Excavation Backfill

The Contractor shall backfill excavations as promptly as possible, but not until confirmation sampling is complete and test results are received. We anticipate soil sample results will be available within 3 days of collection. Excavations shall be backfilled to be even with the ground surface, or graded to avoid surface depressions that would collect water. Excavations that are left open overnight shall be surrounded by safety fencing.

The backfill shall be compacted to a firm condition. The backfill shall be documented clean soil material acceptable to SCL, and the site surface shall be covered with acceptable mulch or "hog fuel."

Erosion Control and Wet Weather Provisions

In the event of wet weather, the following precautions should be taken to minimize erosion and saturation of site soil.

Provide erosion and sediment control to prevent off-site transport of sediment. In accordance with all applicable regulations, maintain erosion and sediment control until work is completed and accepted by SCL. Contractor shall develop and implement an Erosion Control Plan pursuant to all applicable regulations, with appropriately trained and certified personnel on site.

- On-site soil may be moisture sensitive. The Contractor shall be responsible for protecting on-site soil from becoming too wet to achieve appropriate compaction by covering stockpiles, sealing exposed soil, etc.

- Schedule earthwork to minimize the potential for erosion, siltation, and disturbance of site soil.

- Compact exposed soil to seal and reduce rainwater infiltration, and grade to drain at the end of each work shift.
- Direct surface water away from fills and excavations.
- Suspend work in the event of heavy rainfall.
- Under no circumstances shall runoff from contaminated soils be allowed to leave the site or otherwise flow to storm water conveyance in the street right of way.

Sediment track out will be of particular concern at this site; therefore, appropriate preventative measures shall be taken to prevent track out.

Grading

The contractor shall grade work areas uniformly including adjacent transition areas. At project completion the site shall be hand-rake level.

Soil Disposal

Excavated soil will be disposed of at a properly permitted and authorized solid waste landfill meeting the requirements of Chapter 173-351 WAC, or a Resource Conservation and Recovery Act (RCRA) Subtitle D facility. Before remediation activities begin, site soil will need to be profiled by the disposal facility and a bill of lading obtained by SCL to facilitate transport.

The contractor shall provide documentation of legal disposal to SCL.

Confirmation Sampling

Before backfilling, confirmation samples will be collected by the Environmental Representative.

Approximately one discrete sample should be collected from each 400-square-foot excavation section.

The soil samples will be submitted to OnSite Environmental on an expedited turnaround time. It is anticipated that data will be available within 3 working days from the day the samples were collected.

SCHEDULE

The tasks and an approximate schedule for remediation activities are outlined below.

1. Obtain necessary permits before - date TBD.
2. Coordinate soil disposal before - date TBD.
3. Begin excavation - October 2013.
4. Conduct confirmation sampling immediately following excavation activities.
5. Backfill excavation after receiving confirmation sample analytical data in October 2013.
6. Project completion no later than November 30, 2013.

Attachments:
Figure 1 – Vicinity Map
Figure 2 – Site Plan and Soil Sampling Results
Figure 3 – Site Plan and Excavation Areas

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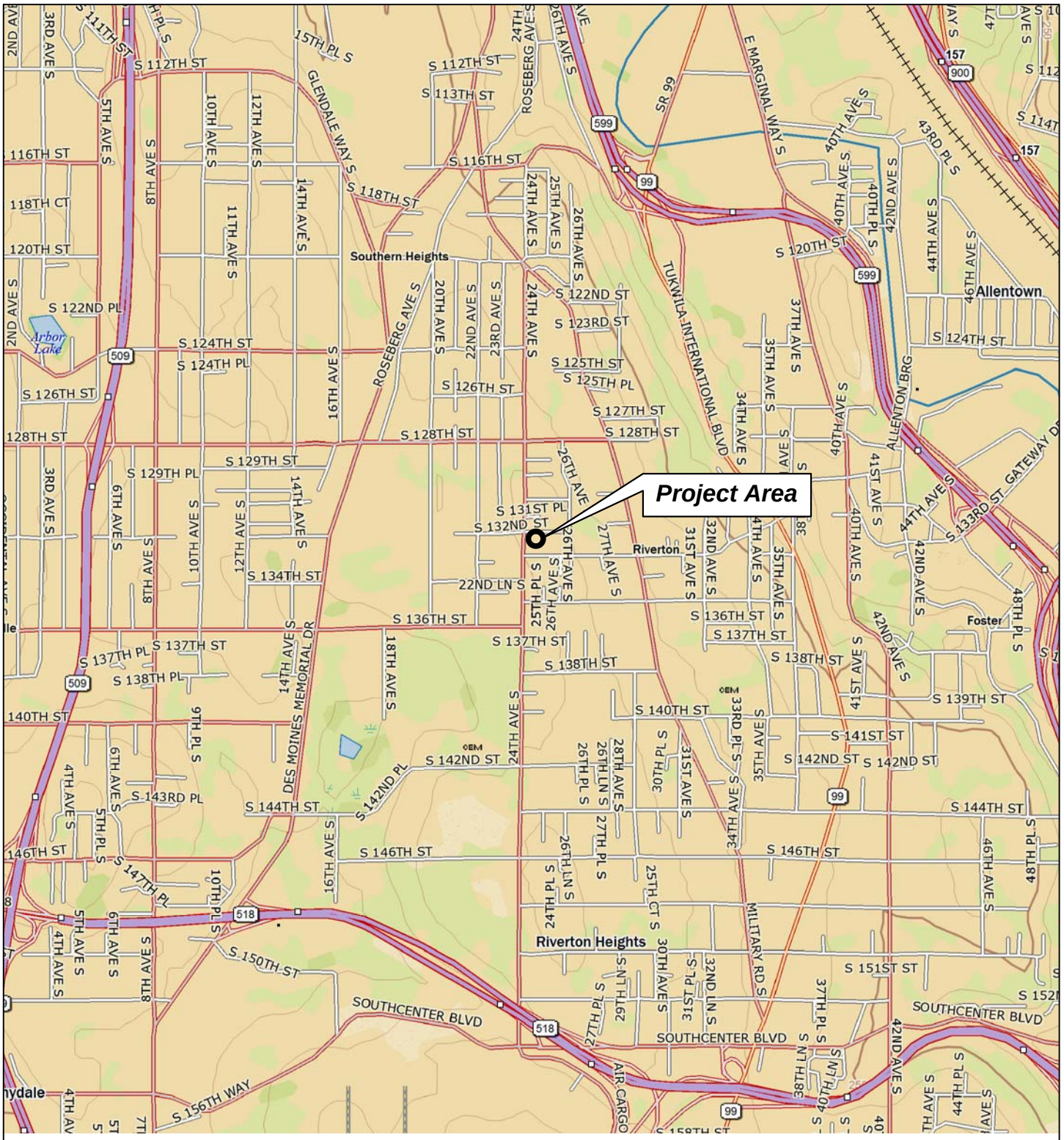

Source: DeLorme Topo USA®.

Glendale Surplus Property
SeaTac, Washington

Vicinity Map

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Figure **1**

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GL-COMP-1	
4,4'-DDD	40 J
4,4'-DDE	300
4,4'-DDT	390
Dieldrin	**4300**

GL-D-4	
4,4'-DDD	120 J
4,4'-DDE	100
4,4'-DDT	830
Dieldrin	**840**

GL-CS-2-8-10"	
4,4'-DDD	12U
4,4'-DDE	31
4,4'-DDT	35
Dieldrin	**130**

GL-CS-2-18-20"	
4,4'-DDD	12U
4,4'-DDE	13
4,4'-DDT	17
Dieldrin	57

GL-D-5	
4,4'-DDD	54
4,4'-DDE	530
4,4'-DDT	1000
Dieldrin	**2400**

GL-D-6	
4,4'-DDD	12 U J
4,4'-DDE	63
4,4'-DDT	100
Dieldrin	**920**

GL-COMP-2	
4,4'-DDD	14 J
4,4'-DDE	310
4,4'-DDT	540
Dieldrin	**1800**

GL-COMP-7	
4,4'-DDD	180J
4,4'-DDE	980
4,4'-DDT	2700
Dieldrin	**3500**

GL-CS-1-8-10"	
4,4'-DDD	11U
4,4'-DDE	27
4,4'-DDT	33
Dieldrin	**260**

GL-CS-1-18-20"	
4,4'-DDD	11U
4,4'-DDE	11U
4,4'-DDT	11U
Dieldrin	**71**

GL-CS-1-24-26"	
4,4'-DDD	11U
4,4'-DDE	75J
4,4'-DDT	74
Dieldrin	**1300**

GL-COMP-4	
4,4'-DDD	110
4,4'-DDE	**3900**
4,4'-DDT	**17000**
Dieldrin	32
Arsenic	**23**

GL-CS-3-8-10"	
4,4'-DDD	11U
4,4'-DDE	690J
4,4'-DDT	1700
Dieldrin	40
Arsenic	11U

GL-CS-3-18-20"	
4,4'-DDD	35J
4,4'-DDE	230J
4,4'-DDT	1300
Dieldrin	11U
Arsenic	11U

GL-COMP-3	
4,4'-DDD	11 U
4,4'-DDE	18
4,4'-DDT	81 J
Dieldrin	11 U

GL-COMP-6	
4,4'-DDD	280
4,4'-DDE	2100
4,4'-DDT	**5400**
Dieldrin	47

GL-CS-4-8-10"		GL-CS-4-18-20"	
4,4'-DDD	460J	4,4'-DDD	1000J
4,4'-DDE	**4500J**	4,4'-DDE	1700J
4,4'-DDT	**25000**	4,4'-DDT	**7600**
Dieldrin	48	Dieldrin	24

GL-COMP-5	
4,4'-DDD	130
4,4'-DDE	2400
4,4'-DDT	**14000**
Dieldrin	**110**

SOUTH 132nd STREET

Paved Driveway

PARCEL A

PARCEL B

Concrete

Sump

Conduit Pipe Stub (Typ.)

Limits of Composite Subsample, 2012 (Typ.)

Limits of Composite Subsample, 2001 (Typ.)

Gate

Fence

Property Line

GD-CS-01

GD-CS-02

GD-CS-03

GD-CS-04

GD-CC-01

GD-CC-02

GD-CC-03

GD-CC-04

Concrete Pad

Pesticide Concentrations in µg/kg:
(Arsenic in mg/kg)

GL-COMP-2	
4,4'-DDD	14
4,4'-DDE	310
4,4'-DDT	540
Dieldrin	**1800**

Bold Shaded Value Exceeds MTCA Cleanup Level

- Hand Auger Characterization Sample Location (2013)
- Composite Subsample Location (2013)
- Composite Subsample Location (2012)
- Discrete Sample Location (2012)
- Composite Subsample Location (Herrera, 2001)
- Individual Concrete Subsample Location (Herrera, 2001)

0 10 20

Approximate Scale in Feet

Source: Herrera Environmental Consultants.

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Site Plan and Soil Sampling Results

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Figure **2**

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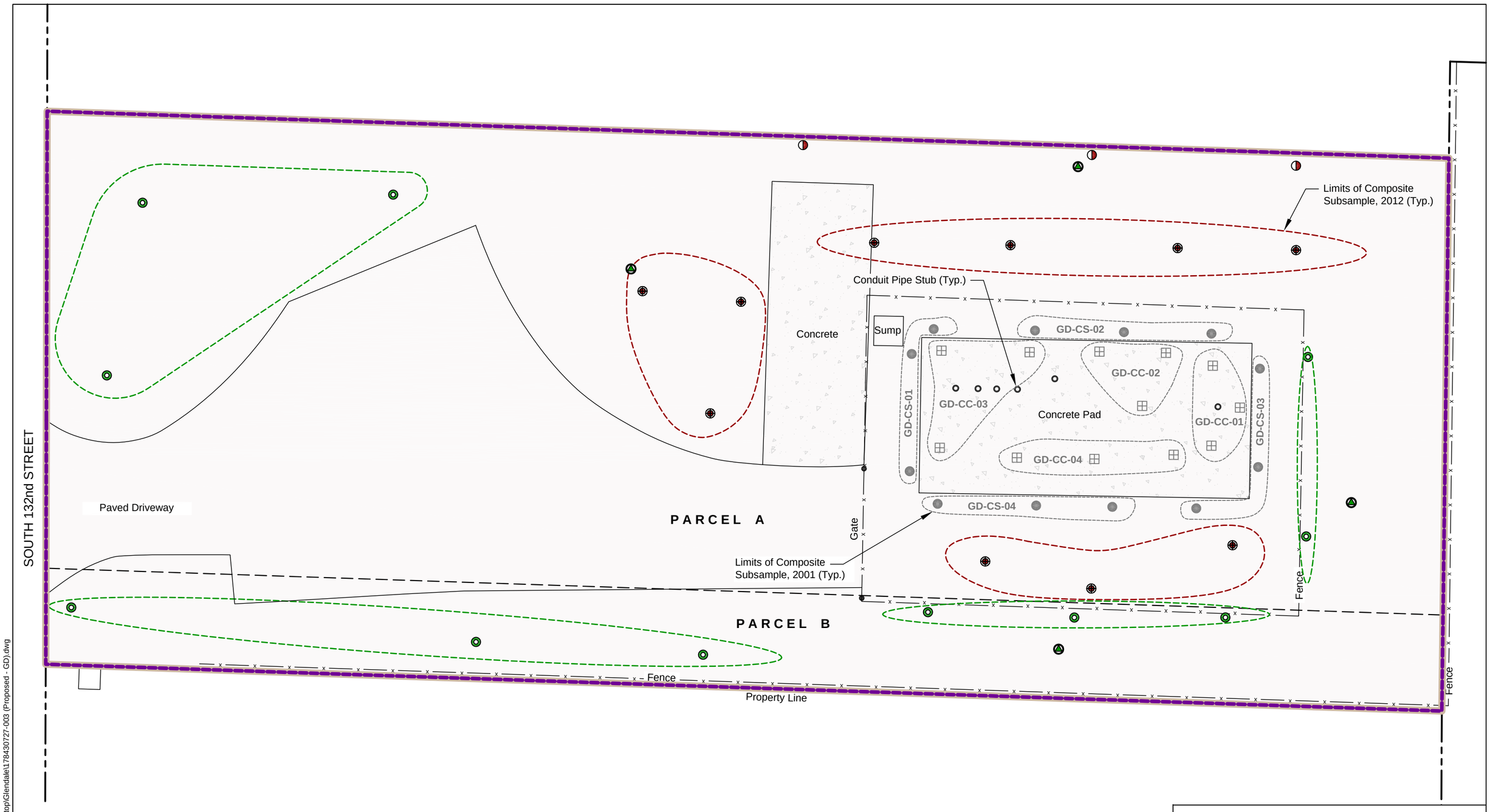

- Hand Auger Confirmation Sample Location (2013)
- Composite Subsample Location (2013)
- Composite Subsample Location (2012)
- Discrete Sample Location (2012)
- Composite Subsample Location (Herrera, 2001)
- Individual Concrete Subsample Location (Herrera, 2001)
- Excavation to Approximately 20" bgs

Note: Soil beneath concrete pad and asphalt will not be removed unless evidence of contamination is observed.

N

0 10 20

Approximate Scale in Feet

Source: Herrera Environmental Consultants.

Glendale Surplus Property
SeaTac, Washington

Site Plan and Excavation Area

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Figure **3**

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