



Engineering +  
Environmental  
*Est. 1982*

October 3, 2013

Oregon State University, Cascades Campus  
Attn: Kelly Sparks  
2600 NW College Way  
Bend, OR 97701-5998

Via Email: [kelly.sparks@osucascades.edu](mailto:kelly.sparks@osucascades.edu)

Re: Focused Site Investigation  
1500 SW Chandler Avenue and 1707 SW Simpson Avenue, Bend, Oregon  
PBS Project No. 80599.000PR80599.000 Phase 0002

Dear Ms. Sparks:

PBS Engineering and Environmental Inc. (PBS) was retained by Oregon State University-Cascades Campus (OSU) to perform a focused Phase II investigation on the above referenced properties. The additional investigation was conducted at the request of OSU in response to a recommendation identified in PBS' Phase 1 Environmental Site Assessment (July 2013) for the Chandler Property (TL 181206C000100). The additional investigation included conducting exploratory excavations to assess subsurface conditions in the vicinity of the north property boundaries of both properties. The general location of these properties is shown on Figure 1. A summary of the field activities and the associated findings are provided below.

## **BACKGROUND**

During the course of conducting a Phase I Environmental Site Assessment, PBS obtained information that indicates the north adjoining property was utilized as the Deschutes County Bend Demolition Landfill from approximately 1972 through 1997. The eastern portion of the landfill (known as Area 1) is adjacent to the Chandler Property and reportedly ceased operation in 1982. This portion of the landfill was utilized to dispose of construction and demolition waste, industrial, and commercial waste. A waste tire disposal area has also been reported in the southeast portion of Area 1. The southern portion of Area 1 is in close proximity to the northern boundary of the Chandler Property. The closed landfill abuts approximately 420 feet of the Chandler Property's northern boundary (Figure 2).

The Robinson Property, identified as 1701 SW Simpson Avenue, adjoins an additional portion of the Demolition Landfill known as Area 2. This portion of the landfill is reported to contain similar material to that of Area 1 but was active in the 1980's and had more oversight. The southern portion of Area 2 is in close proximity to the Robinson Property. Area 2 of the closed landfill abuts approximately 700 feet of the Robinson property, with about one-third of that distance being inaccessible due to the presence of the northern shear wall of the Robinson industrial mineral quarry (Figure 3). A small portion of Area 1 of the landfill also abuts the Robinson Property.

Based upon the information obtained from previous environmental reports and PBS' physical observations during the site reconnaissance, landfill cover material (cover soils and grass vegetation) appears to slightly encroach onto small sections of each property's northern

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boundary. Although no visible indications of former landfill debris (protruding material) was observed on the Chandler property, it is possible that buried waste is concealed by the observed cover material. Wood and metal debris was observed protruding from the surface side wall adjacent to the fenced landfill boundary adjacent to the Robinson property. This observation suggests that additional debris may be buried at the base of this slope which is located on the Robinson Property.

## **FIELD EXPLORATION**

As a result of the Phase I ESA, PBS recommended conducting an additional assessment to further evaluate if solid waste from the adjacent closed landfill property is present on the subject properties. PBS retained an excavation contractor experienced in working on sites with waste material to excavate test pits immediately adjacent to the north property boundaries. The test pit locations were identified in the field based on visual observation of suspected fill areas. Efforts were made to minimize disturbance to the vegetation and ground surface. The test pits were excavated until waste was encountered or native undisturbed soils were encountered and/or to a maximum depth of approximately 8 to 10 feet below ground surface. A PBS geologist was present to direct the contractor and log the test pits. When waste material was encountered, the excavation was stopped and the test pit was backfilled with existing site material.

## **FINDINGS**

### **Chandler Property**

Eleven test pit locations were selected along the northern property boundary of the Chandler property (Figure 2). The existing chain-link fence and recently surveyed property boundary between Tax Lot 100 and the adjoining Demolition Landfill tax lot (TL 181206A000719) were available to use as reference points. The test pits were located in areas to assess beneath where apparent landfill cover soil had been placed and the surface topography indicated a possible extension of fill onto the Chandler property.

The test pits confirmed that solid waste extends into the northern edge of the Chandler property. Observed waste material included various metal, glass objects, ceramics, plastic, rubber, wire, and cables. The waste was encountered at depths ranging from 1.5 to 3.5 feet below ground surface (bgs). Test Pits TP-1, TP-3 thru TP-5 and TP-6A contained buried solid waste. Test Pits 3A thru 5A were excavated to estimate the horizontal extent of the waste south of test pits containing waste material. In general the waste is limited to within 20 feet of the property boundary (Figure 2). The remnants of a small berm that likely demarks the northern boundary of the former Brooks-Scanlon haul road appears to provide a good east-west delineation of the waste boundary. Test Pits TP-1, TP-6A and TP -7 were also used to further define the extent of buried waste on the Chandler Property. TP-6A contained a thin (less than 0.5 feet thick) layer of waste material at a depth of approximately 3 feet bgs. The waste zone pinched out to the south within the excavation. Test Pit TP-6 was excavated from the top of the fill berm and did not encounter any waste, but also was not able to fully penetrate the fill material vertically (9 ft bgs) or horizontally (8 ft into the center of the berm). Therefore, the extent of waste is estimated east of TP-6/TP-6A due to the significant amount of fill material placed along the property boundary associated with the removal of the former haul road bridge. The test pit information is summarized in Table 1 below.

**Table 1- Test Pit Summary-Chandler Property (TL 100)**

Test Pit ID	Location	Depth to Waste or Test Pit Depth (ft bgs)	Waste Encountered	Extent of Waste
TP-1	80 feet E of SW fence corner post	1.5-2.0	Plastic sheeting, metal, glass, wiring, angle iron, wood	No waste present 12 ft S of boundary
TP-2	18 ft W of TP-1	2.0-2.5	None	Native soil no fill present
TP-3	65 ft E of TP-1	3.5-4	Metal banding, glass wood,	No waste 17 ft S of boundary
TP-3A	65 ft E of TP-1	4.5	None	No waste 17 ft S of boundary
TP-4	105 ft E of TP-1	2.5	Pipe, wire, rubber mat, wood, glass	
TP-4A	105 ft E of TP-1	3.0	None	No waste 16 ft S of boundary
TP-5	165 ft E of TP-1	1.5	Cable, metal bucket, wood debris, glass	
TP-5A	165 ft E of TP-1	2.5	None	No waste 18 ft S of boundary
TP-6	210 ft E of TP-1	9.0 ft down & 8 ft into berm	None	Top of berm to mid slope
TP-6A	210 ft E of TP-1	3.0 ft (<0.5 ft thick pinches out)	Metal, glass, ceramics	Toe of slope approx. 20 ft S of boundary
TP-7	300 ft E of TP-1	6.0 ft	None	Toe of slope approx. 20 ft S of boundary

Robinson Property

Five test pit locations were selected along the northern property boundary of the Robinson Property (Figure 3). The existing chain-link fence and recently surveyed property boundary between Tax Lot 2000 and the adjoining Demolition Landfill tax lots (TL 1812060000110 and TL 1812060000111) were available to use as reference points. There is a narrow area between the property boundary and the main access road on the Robinson Property where fill material is present. No solid waste was observed in the test pits (TP-8 through TP-12) excavated in this area to depths ranging from 4 to 6 feet bgs. The test pit data is summarized in Table 2 below.

**Table 2 Test Pit Summary - Robinson Property (TL 2000)**

TP-8	130 ft E of access rd c/l	5.0 ft	None	
TP-9	80 ft E of access rd c/l	4.0 ft	None	
TP-10	210 ft W of access rd c/l	5.0 ft	None	
TP-11	430 ft W of access rd c/l	6.0 ft	None	
TP-12	490 ft W of access rd c/l	4.0 ft	None	

## CONCLUSIONS

Test pit explorations conducted along the northern portion of the Chandler Property adjacent to the Bend Demolition Landfill indicate that buried solid waste material is present along the property boundary. The waste material appears to have been placed in this area when the landfill was actively operating and when the former haul road was utilized by Brooks Scanlon. The identified waste appears to extend onto the Chandler Property a horizontal distance of approximately 20 feet as shown on Figure 2. Additionally, the waste appears to extend as much as 340 feet parallel to the northern property boundary of the Chandler Property. The eastern extent of the waste was not confirmed due to the large amount of fill material present in that area.

Test pit explorations conducted along the northern portion of the Robinson Property adjacent to the landfill provide no evidence of solid waste material extending onto the property.

## LIMITATIONS

This study was limited to the tests, locations, and depths as indicated to determine the absence or presence of landfill debris encroaching onto the subject properties. The properties as a whole may have other environmental conditions that were not characterized by this study. The findings and conclusions of this report are not scientific certainties but, rather, probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation.

If you have any questions regarding this report please do not hesitate to contact me at 541.388.9290.

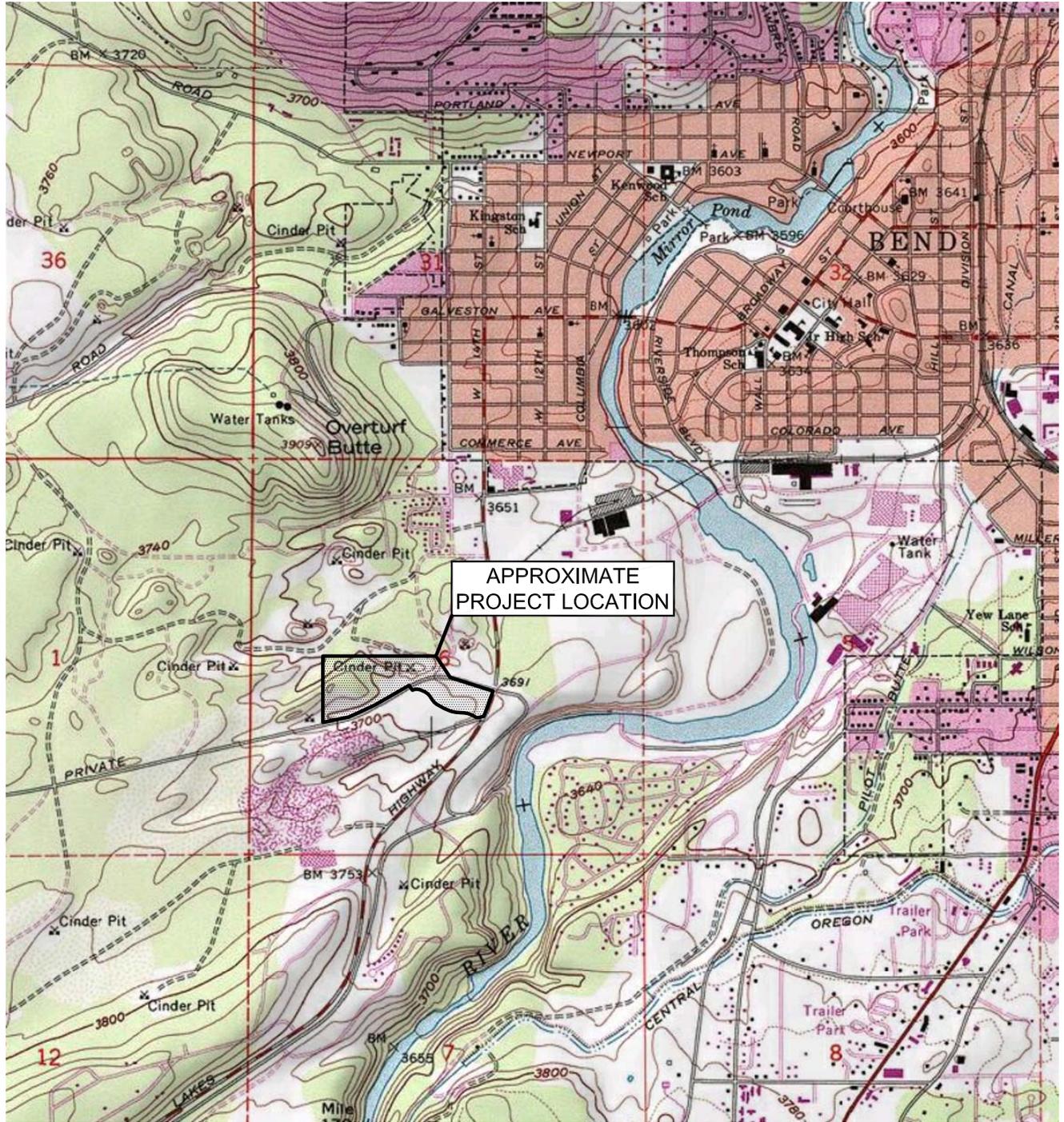
Sincerely,

PBS Engineering and Environmental, Inc.

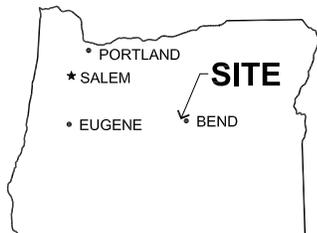
A handwritten signature in blue ink, appearing to read "N. Toby Scott". The signature is fluid and cursive, written over a light blue horizontal line.

N. Toby Scott, R.G.  
Senior Project Manager

Attachments: Figures (3)



SOURCE: USGS BEND QUADRANGLE, OR 1979, PHOTO REVISED 1981.



**OREGON**



SCALE: 1" = 2,000'

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PROJECT #  
80599.000  
DATE  
OCT 2013

**SITE VICINITY MAP**  
1500 SW CHANDLER AVENUE & 1707 SW SIMPSON AVENUE  
BEND, OREGON

FIGURE  
**1**

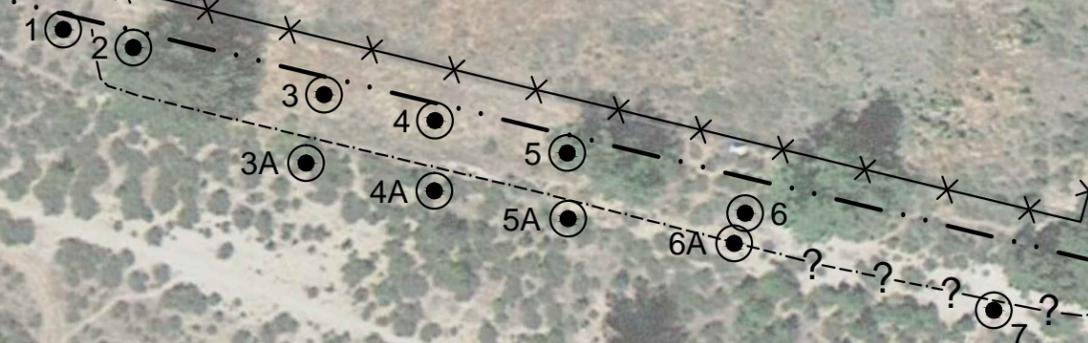
TL 2000

ROBINSON  
PROPERTY

AREA 1  
DEMOLITION  
LANDFILL

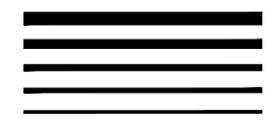
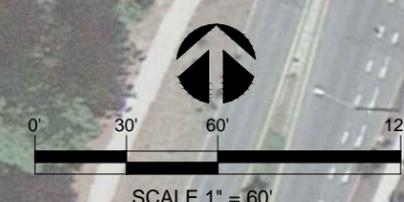
TL 719

TL 100



**LEGEND**

- X — FENCE
- . . - TAX LOT BOUNDARY
- - - - - APPROXIMATE EXTENT OF WASTE
- - ? - ? - - INFERRED EXTENT OF WASTE
- ⊙ 10 TEST PIT LOCATION



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CHANDLER PROPERTY TEST PIT LOCATIONS

1500 SW CHANDLER AVENUE  
BEND, OREGON

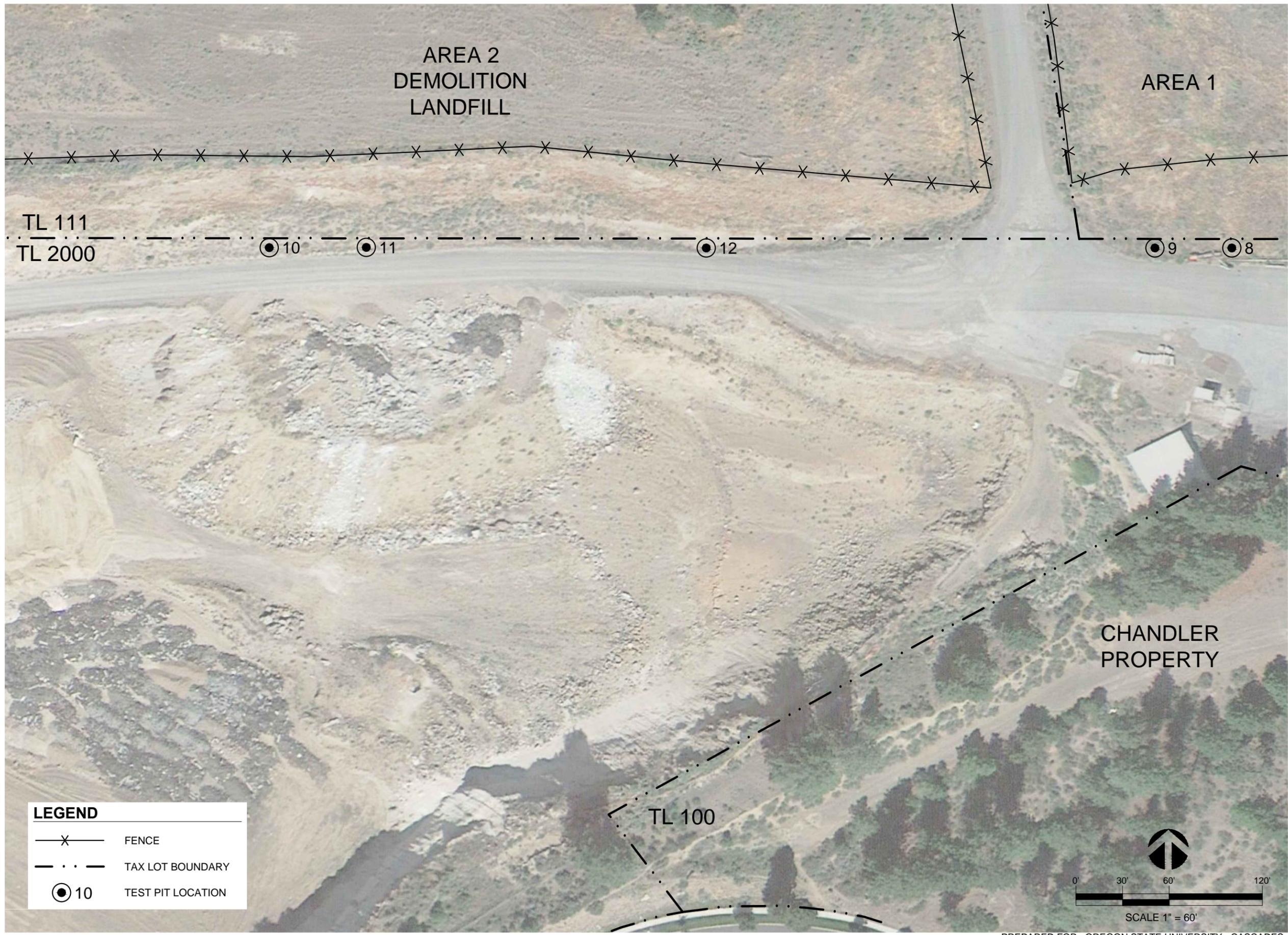
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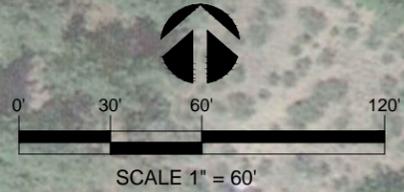
FIGURE:

**2**

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LEGEND	
	FENCE
	TAX LOT BOUNDARY
	TEST PIT LOCATION



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ROBINSON PROPERTY TEST PIT LOCATIONS

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FIGURE:

# 3