



State of Ohio Environmental Protection Agency

FILE COPY

Central District Office

STREET ADDRESS:

3232 Alum Creek Drive
Columbus, OH 43207-3417

TELE: (614) 728-3778 FAX: (614) 728-3898

MAILING ADDRESS:

P.O. Box 1049
Columbus, OH 43216-1049

September 30, 2002

Re: Up Alum Creek, Inc. Property
PreCERCLIS Screening
Ohio ID: 125-2021
Franklin County

Laura Ripley
Early Action Project Manager
United States Environmental Protection Agency
Region 5
77 West Jackson Blvd
Chicago, Illinois 60604

Laura:

Attached is the Pre-CERCLIS Screening Assessment package for the Up Alum Creek, Inc. Property. The package includes the Pre-CERCLIS Screening/Assessment Checklist/Decision Form and the Assessment Report.

Based on the findings in this assessment, Ohio EPA recommends that the Up Alum Creek, Inc. Property should not be placed in CERCLIS for further assessment. The site was included in the Integrated Assessment of the Anchor Landfill (OHD987052297), and further federal assessment is not needed.

If you have any questions, please contact me at (614) 728-3830.

Sincerely,



Fred Myers

FM/sb
UACsubmitletter.wpd

Attachment

cc: Ray Beaumier, DERR-CO w/out attachment
Deborah Strayton, DERR-CDO, w/out attachment
CDO file copy w/out attachment

Pre-CERCLIS Screening Assessment Report
for the
Up Alum Creek, Inc. Property
Franklin County, Ohio

Executive Summary

In 2001, the Ohio Environmental Protection Agency (Ohio EPA) completed a Phase I Geographic Initiative of Lower Alum Creek. Three landfills were identified that were not assessed for listing in the federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). The Up Alum Creek, Inc. property (UAC) is one of these sites. The purpose of the Pre-CERCLIS screening is to determine whether UAC should be entered into CERCLIS. Ohio EPA completed this Pre-CERCLIS Screening Assessment under a grant from the United States Environmental Protection Agency, Region 5.

UAC is located 3 miles southeast of downtown Columbus in a mixed residential/commercial area. UAC is the southernmost of four contiguous landfills in this area. All of the landfills were operated by Franklin County from the 1950s to the early 1960s. From 1994-1997, federal integrated assessments and expanded site inspections were completed for two of the landfills: Anchor Landfill and Integrity Drive South Drum Dump. No further federal action is planned for either of these sites.

Soil, ground water, surface water, and sediment samples were collected on UAC property during the Anchor Landfill Integrated Assessment. The results of the environmental sampling indicate releases to soil have occurred at UAC. Contaminants detected in soil include semi-volatile organic compounds, polychlorinated biphenols (PCBs), chromium, lead, mercury and cadmium. No significant releases to ground water, surface water, sediment, and air are indicated from the sampling results.

Potential migration pathways include leaching to ground water, ground water to surface water, overland flow, soil erosion, soil particulates, landfill gas, and direct contact with contaminated soil and waste. There are no controls to prevent trespassers from entering the site. Ground water is used by individual residences within 1 mile of the site and as a public water supply within 4 miles of the site. There are no surface drinking water intakes downstream of the site. Recreational fishing and limited subsistence fishing occurs in Alum Creek. A municipal park is located 1 mile south of the site. Five state listed endangered species and one federal listed endangered specie occur within 15 miles downstream of the site in Alum Creek. Potential wetlands occur in the flood plain of Alum Creek totaling 27 acres within a 500 foot buffer zone.

Site Description and History

UAC is located 3 miles southeast of downtown Columbus, Ohio in a mixed commercial/residential area (Latitude: 39° 55' 46", Longitude: 82° 56' 10") (Figure 1). The site is bounded by Anchor Landfill to the north; Alum Creek Drive to the west; commercial businesses to the south and Alum Creek to the east. The area of the property is 9.581 acres. Up Alum Creek, Inc. obtained the property in 1997. The previous owner, Forex Corporation, forfeited the property to the State of Ohio due to delinquent taxes.

UAC is the southernmost of four contiguous landfill sites that Franklin County operated during the 1950s and early 1960s (see Figure 2). Franklin County began the landfill in 1953 at the property to the north of UAC (Anchor Landfill). An aerial photograph taken by the Ohio Department of Transportation (ODOT) in 1955 shows an apparent active trench and fill type landfill operation at Anchor Landfill, but not at the UAC site. An ODOT aerial photograph taken five years later (1960) shows that the landfill expanded to include the entire UAC property. Franklin County closed the landfill in 1963. A 1964 ODOT aerial photograph shows that the UAC property had been graded and covered.

After Franklin County ceased operations, the Anchor Construction Landfill opened on the property immediately north of UAC, where an additional 20 feet of waste was placed on top of the original fill. Today, there is a distinct demarcation between Anchor Landfill and UAC. Sometime between 1972 and 1979, UAC received additional fill material at the western part of the property. There is no evidence that significant waste disposal has occurred at the site since 1979.

From 1994-1997, federal integrated assessments and expanded site inspections were completed for the Anchor Landfill and Integrity Drive South Drum Dump. The integrated assessment for the Anchor Landfill was completed in 1994 and the Expanded Site Inspection was completed 1996. In 1995, US EPA removed approximately 600 drums and sludge from the Integrity Drive South Drum Dump. The Integrated Assessment for the Integrity Drive South Drum Dump was completed in 1995 and the Expanded Site Inspection completed 1997. Both expanded site inspections concluded that no further federal action is necessary for either of these sites.

UAC was originally included in the Anchor Landfill Integrated Assessment because it was going to be scored for the National Priority List with Anchor Landfill and Integrity Drive South Drum Dump. However, it was decided that each of the landfills should be assessed as separate sites. During the Anchor Landfill Integrated Assessment, environmental samples were collected at UAC. The results of the environmental sampling are discussed in the Pathway Analysis section of this report.

Reconnaissance Activities

Ohio EPA visited the site on 2/08/02 and again on 9/20/02. The first visit was an initial windshield survey of the site and surrounding land-use. The second visit was intended to be a more comprehensive investigation; however, the vegetation was too thick to transverse most of the site. Ohio EPA walked along the southern border of the Anchor Landfill, which is about 20 feet higher in elevation than UAC, east to Alum Creek. From this vantage point, Ohio EPA could observe the condition of most of UAC. The site is heavily vegetated with brush and trees its entire length. No visible drums or wastewere observed, and no recent dumping was observed.

Pathway Analysis

Ohio EPA has no information on the specific types and quantities of wastes disposed of at UAC. The current topographic elevation of UAC is approximately 10 feet higher than the pre-landfill elevation. It appears the landfill was a trench and fill operation and the depth of waste was likely governed by the ground water table, which is approximately 10 feet below the original land surface. Therefore, the maximum thickness of the waste is approximately 20 feet, and the estimated volume of waste is 8,276,400 cubic feet.

Potential migration pathways include leaching to ground water, ground water to surface water, overland flow (leachate), soil erosion, soil particulates, landfill gas, and direct contact with waste. Nearby land-use is mixed residential, commercial, and recreational. The site is not fenced and there are no other controls to prevent unauthorized entry. The population within a 1 mile radius is 5,797 and 258,344 within a 4-mile radius (Figure 4).

Ground Water Pathway

UAC is located over a buried valley that was incised into Devonian age shale bedrock. The depth of the buried valley is approximately 100 feet in the vicinity of the site. The buried valley sediments consist of glacial till with interbedded sand and gravel deposits. Alum Creek alluvium deposits overlay the glacial sediments. The local aquifer is the Alum Creek Buried Valley Aquifer, which can yield over 500 gallons per minute (Figure 5). Ground water is obtained from sand and gravel lenses that are interbedded with glacial till. Area well logs indicate sufficient ground water for domestic wells occurs 8-100 feet below the surface. According to borehole logs for monitoring wells constructed at the Integrity Drive South Drum Dump during the Expanded Site Inspection, the ground water table is 20-30 feet below the top of the fill or at the same elevation as Alum Creek; therefore, ground water is likely hydraulically connected with Alum Creek.

The majority of the population within a 4-mile radius of the site relies on municipal water supplied by the city of Columbus. Based on well logs available at the Ohio Department

of Natural Resources, the nearest water well is a commercial well located approximately 3000 feet north of the site, and the nearest residential well is located approximately 3400 feet east of the site. Two residential neighborhoods were identified where water wells were drilled. The nearest neighborhood is located 1 mile to the south and has an estimated population of 200. The other neighborhood is located 1.5 miles southeast of the site and has an estimated population of 300. The Village of Obetz public water supply wells are located approximately 4 miles south of the site and serves a population of 3,977. The Obetz well-field is a well-head protection area. The other public water supply systems are two trailer parks and a church. Norton's Trailer Court is located 2.5 miles west of the site and serves a population of 70. Meadows Mobile Home Park is located 3 miles west of the site and serves 40. The potential impacted population is 30 within one mile and 5,000 within four miles.

Ground water samples were collected from three production wells during the Anchor Landfill Integrated Assessment and from the three monitoring wells during the Integrity Drive South Drum Dump Expanded Site Inspection (See Figure 5). The ground water samples did not indicate the presence of contamination or releases to ground water.

Soil Pathway

Soil samples were collected at two areas where exposed drums were observed and at the eastern edge of the landfill (Figure 3). Soil samples indicate semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenols (PCBs), lead, mercury and cadmium may have been released to soil at the site. The highest concentrations of semi-volatile organic compounds were detected in a sample collected near six empty 55-gallon drums that were dumped on the ground surface (Sample Number AN-SO-18/21). Semi-volatile organic compounds were also detected near buried drums exposed in a topographic depression (Sample Number AN-SO-20) and at the base of the fill near Alum Creek (Sample Number AN-SO-22). Based on US EPA Region 9 Preliminary Remediation Goals (PRGs), benzo(b)fluoranthene, benzo(a)pyrene, benzo(a)anthracene, and lead are the only chemicals that have the potential to pose an unacceptable direct contact risk. Lead was detected near the residential PRG of 400 mg/kg at AN-SO 18/21 and AN-SO-20 (see Table 1 for a summary of the results).

The principal soil exposure pathway is direct contact with contaminated soil at the exposed drum sites. The potentially impacted population is trespassers. There are no controls to prevent trespassers from entering the site or prevent contact with hazardous substances.

Table 1 Significant Soil Sample Results

Constituent	Sample Number	Concentration mg/kg	Region 9 PRGs mg/kg	
			Residential	Industrial
Benzo(a) anthracene (PAH)	AN-SO-18/21	2.6/1.7	0.62	2.9
	AN-SO-22	0.78		
Benzo(b)fluoranthene (PAH)	AN-SO-18/21	6.3E/4.6E	0.62	2.9
	AN-SO-22	1.3		
Benzo(a)pyrene (PAH)	AN-SO-18/21	2.6/1.8	0.062	0.29
	AN-SO-22	0.72		
Lead	AN-SO-18	396	400	750
	AN-SO-20	410		
Notes: E Qualifier: exceeds calibration range of GC/MS AN-SO-18/21: replicate samples PAH: polynuclear aromatic hydrocarbons. Samples collected on UAC property in 1994 during the Anchor Landfill Integrated Assessment				

Surface Water Pathway

The nearest surface water receptor is Alum Creek, which borders the eastern portion of the site. Alum Creek is classified as a warm water habitat, and its use designation is primary contact recreation, public water supply, industrial water supply, and agricultural water supply. According to United States Geological Survey stream flow observations, it has an average flow rate of 196 cubic feet per second.

Surface water samples were collected from a manhole, water seep, and in Alum Creek. Sediment samples were collected at a water seep and in Alum Creek (see Figure 3). Surface water samples were collected on UAC property from a 15 foot deep by 4 foot diameter manhole, and from a water seep adjacent to Alum Creek. The manhole is apparently connected to a buried drainage pipe, which follows an old drainage channel that was buried beneath the Anchor Landfill and UAC. The water flow is generally north to south. The manhole is in a topographically low area that was not filled in with waste. Aerial photographs indicate this area was ponded during landfill operations; therefore, it likely collected storm water. Historic documentation indicates the drainage pipe and manhole were installed by Franklin County when they closed the landfill.¹

Surface water sampling results are summarized in Table 2. The water in the manhole (AN-GW-31/33) had positive results for benzene, toluene, xylenes, methylene chloride, chlorobenzene, 2-methylnaphthalene, acenaphthene, bis (2-ethylhexyl)phthalate, and lead.

¹In 1963, Franklin County stated in a letter that they would improve the drainage and install a drainage pipe.

The seep samples had positive results for acetone and lead. Based on these sample results, the seeps and the drainage pipe are not a significant sources of surface water contamination in Alum Creek.

Table 2 Surface Water Sample Results ($\mu\text{g/l}$)

Sample Constituents	AN-GW-26/34 Seep	AN-GW-31/33 Manhole
Acetone	ND/3J	ND/ND
Benzene	ND/ND	11/ND
Chlorobenzene	ND/ND	1J/ND
Methylene Chloride	ND/ND	ND/4J
Toluene	ND/ND	2J/10J
Xylenes	ND/ND	9J/22J
2-methylnaphthalene	ND/ND	14/ND
Acenaphthene	ND/ND	2J/ND
Bis(2-ethylhexyl)phthalate	ND/ND	ND/2J
Lead	3.2/0.89B	ND/3.3
Notes: AN-GW-26/34 are replicate samples AN-GW-31/33: the GW-33 sample was collected on 3/22/94; the GW-31 sample was collected two months later on 5/04/94 J Qualifier: estimated concentration B Qualifier: analyte detected in blank ND: Not Detected Samples were collected in 1994 during the Anchor Landfill Integrated Assessment		

The potential sensitive environments downstream of the site are numerous small scattered wetland areas adjacent to Alum Creek (Figure 6). The wetland areas depicted in Figure 6 were identified by the Ohio Department of Natural Resources using satellite (Landsat) remote sensing data. Based on this information, the total area of the wetlands is approximately 27 acres within a 500 foot buffer of Alum Creek and 54 acres within 1000 foot buffer. The the total estimated linear distance of wetlands along Alum Creek is 1.5 miles.

One federal and five state listed endangered/threatened species were identified within 15 miles downstream. All of the threatened and endangered species were identified near the confluence of Alum Creek and Big Walnut Creek. Clubshell (*pleurobema clava*) is the only federal listed specie identified. The five identified state listed species are: rabbitsfoot (*quadrula cylidrica cylindrica*), northern brook lamprey (*ichthyomyzon fossor*), spotted darter (*etheostoma maculatum*), rayed bean (*villosa fabalis*) and washboard (*megalonias nervosa*). See Figure 6 for the locations of where these species were observed.

Sediment Pathway

Two sediment samples were collected at the UAC site during the Anchor Landfill Integrated Assessment: one at a slow water seep area adjacent to Alum Creek (AN-SE-23/25) and the other a short distance downstream of UAC (AN-SE-28). In addition, a background stream sediment sample (AN-SE-30) was collected immediately north of Interstate 70 in Alum Creek.

The sampling results do not indicate that UAC is a significant source of contamination to Alum Creek sediment (see Table 3). PAHs and Arochlor 1260 were detected in sediment sample AN-SE-23/25, which was collected at a water seep adjacent to Alum Creek; however, the total concentration of PAHs and Arochlor 1260 were higher in Alum Creek sediment (AN-SE-28) than at the seep. Arsenic and cadmium concentrations were detected higher at the seep than in Alum Creek; however, the arsenic concentration in Alum Creek sediment downgradient of UAC is below the background sediment concentration and cadmium was not detected in the sample.

Table 3 Significant Sediment Sample Results (mg/kg)

Sample Constituent	AN-SE-23/25 Water Seep	AN-SE-28 Alum Creek Downstream	AN-SE-30 Alum Creek Background
PAHs (Total)	3.776/5.117	12.726	0.576
Arsenic	53/55.3	7.1	12
Cadmium	1.9/2.1	<0.77	<0.82
Arochlor 1260 (PCB)	0.040J/0.040J	0.120P	<0.050
<small>Notes: P Qualifier: >25% difference between the 2 GC columns; the lower of the 2 is reported J Qualifier: estimated concentration AN-SE-23/25: replicate samples</small>			

Air Pathway

Explosive gas investigations were conducted by the current and previous owners of Anchor Landfill in conjunction with Up Alum Creek, Inc. Gas vents and gas monitoring wells are located along the border of Anchor Landfill and UAC. The investigations indicate some methane is probably being generated at UAC. It is not known whether other vapors are being emitted. The particulate migration potential is small because UAC is heavily vegetated.

References

Ohio Department of Natural Resources, 1958. *Map Illustrating The Ground Water Resources of Franklin County, Ohio.*

Ohio EPA, 1991. *Preliminary Assessment Narrative, Anchor Landfill, 1900 Alum Creek Drive, Columbus, Ohio, Franklin County.* Ohio ID: 125-1244.

Ohio EPA, 1993, *Preliminary Assessment, Anchor Landfill, Franklin County, Ohio, US EPA ID# OHD 9870522297.*

Ohio EPA 1994. *Integrated Assessment Report for the Anchor Landfill, City of Columbus, Franklin County, Ohio, US EPA CERCLIS ID #: OHD 987052297.*

Ohio EPA, 1995, *Integrated Assessment Report for Integrity Drive South Drum Dump.* US EPA CERCLIS ID #: OHD 0000592626.

PRC Environmental Management, 1996. *Expanded Site Inspection Report for the Anchor Landfill, 1900 Alum Creek Drive, Columbus, Ohio.* EPA ID #: OHD 987 052 2971 Contract # 68-W8-0084.

Ohio EPA, 1997, *Expanded Site Inspection Report for the Integrity Drive South Drum Dump.* US EPA CERCLIS ID #: OHD 0000592626.

Ohio EPA, 2001. *Phase I Geographic Initiative, Lower Alum Creek Watershed,* September, 2001.

Ohio EPA, 2002. Information on file at the Central District Office of the Ohio EPA.

Ohio EPA 2002. Geographical Information System Data

US EPA, Region 9, 2000. Preliminary Remediation Goals

Figures

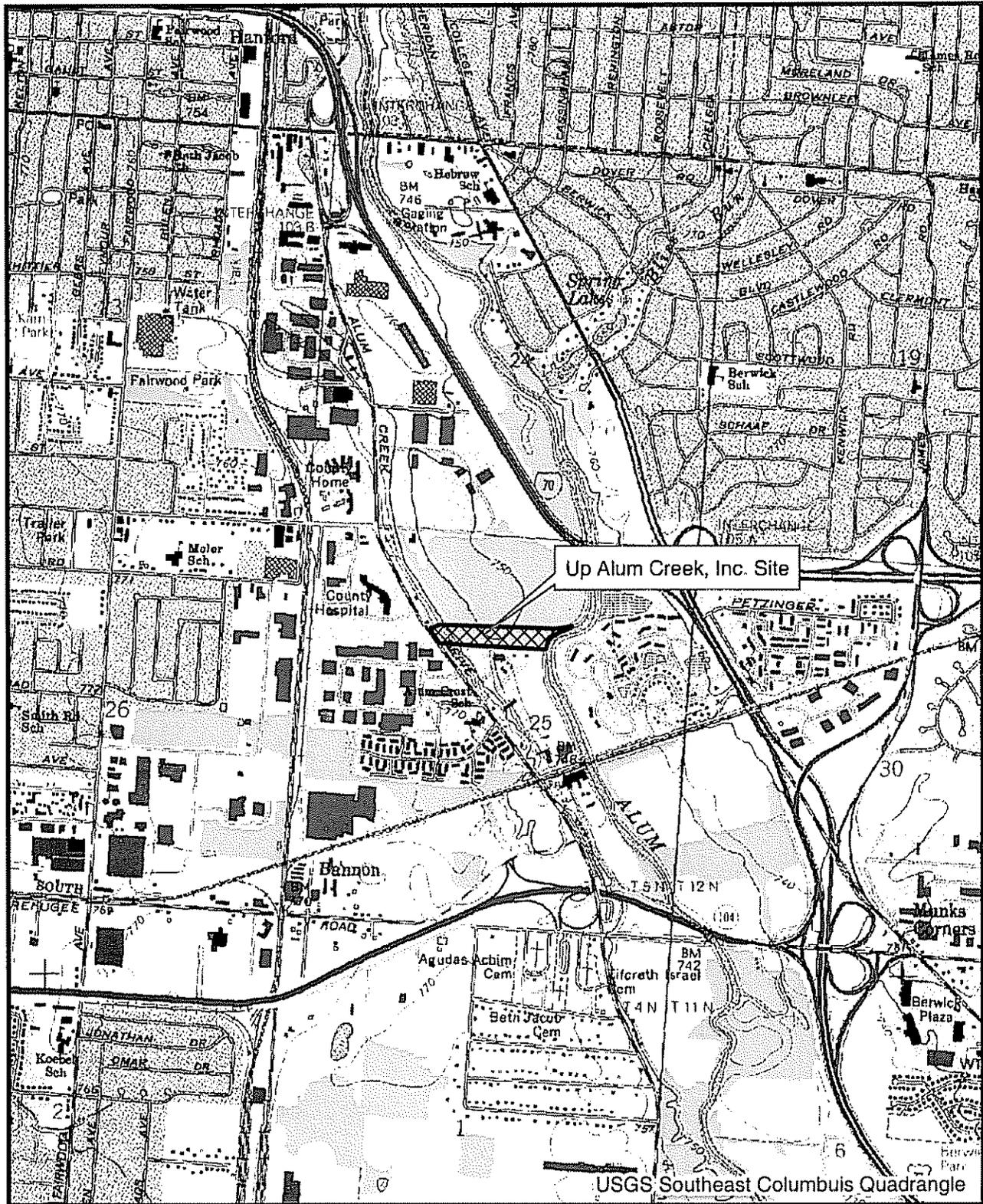
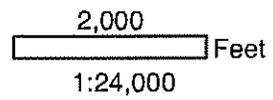
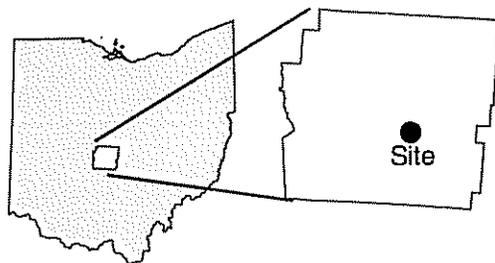


Figure 1
 Up Alum Creek, Inc. Site
 Franklin County, Ohio



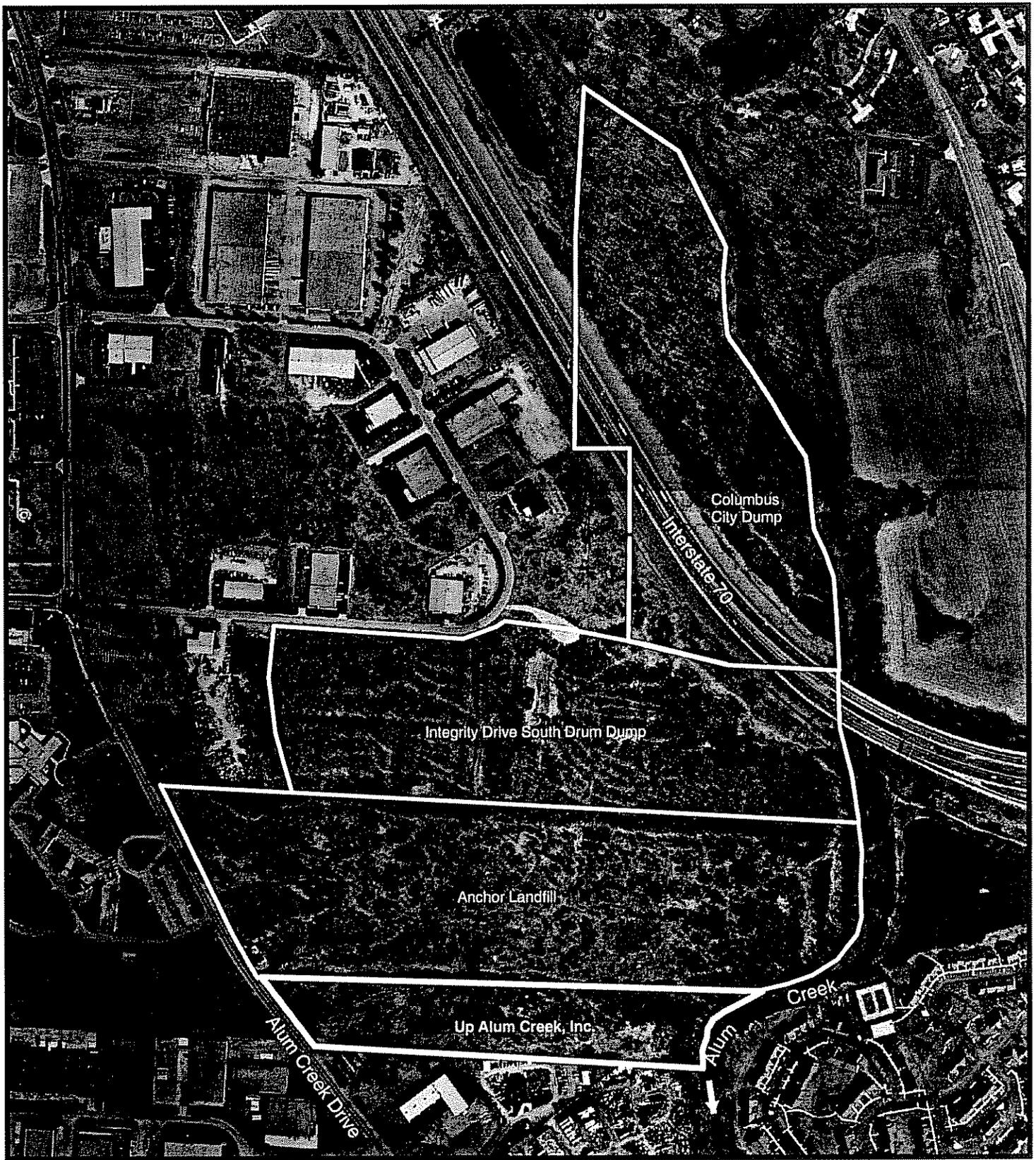


Figure 2
Landfill Complex Contiguous with
Up Alum Creek, Inc.
Southeast Columbus



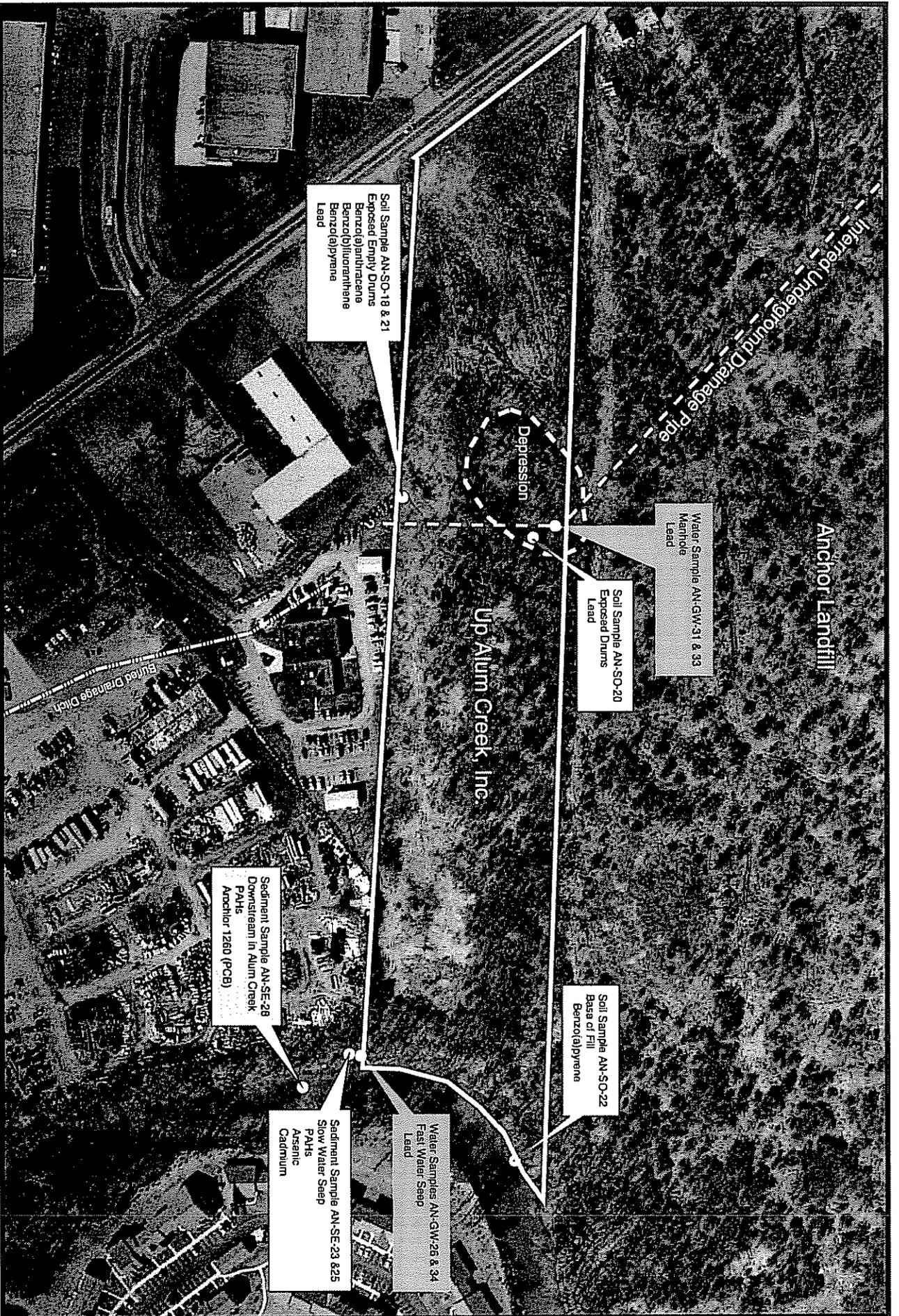


Figure 3
Up Alum Creek, Inc.
Sample Locations and Significant Results

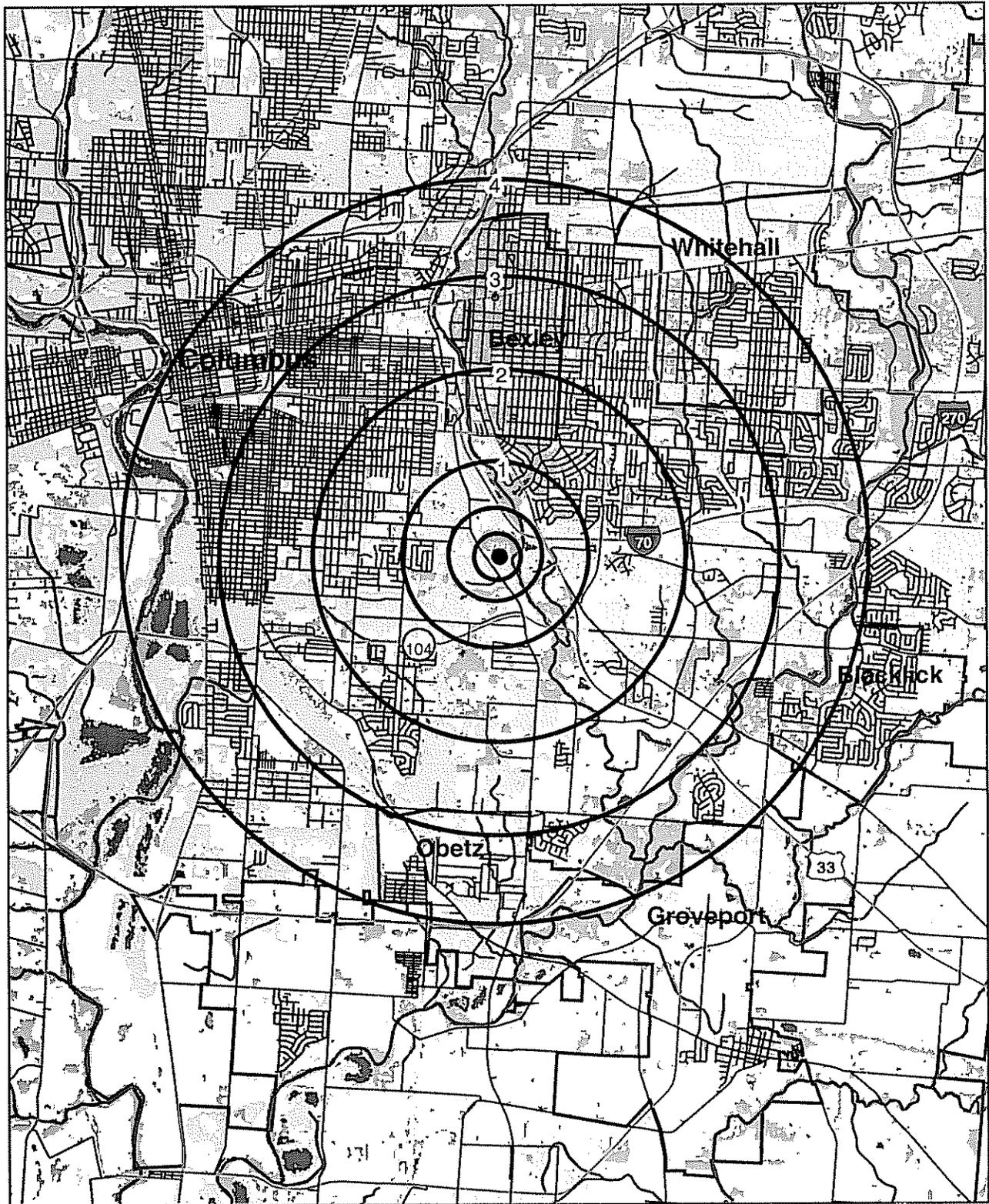
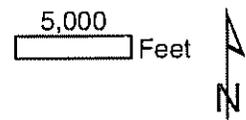


Figure 4
 Up Alum Creek, Inc.
 Distance Rings

Radius	Population
0.25	211
0.5	1,118
1.0	5,797
2.0	29,649
3.0	102,814
4.0	258,344



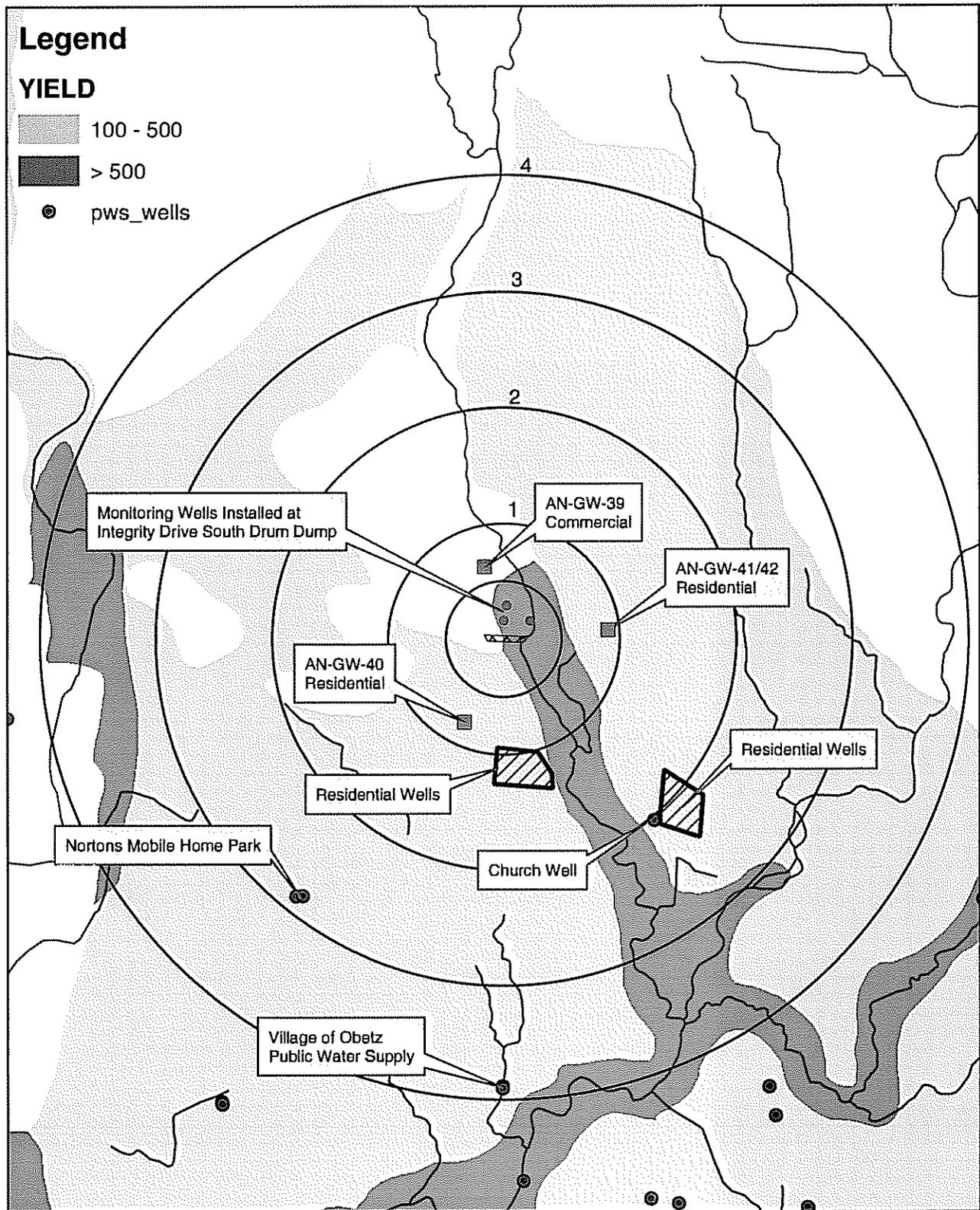
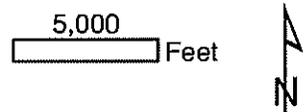


Figure 5
 Up Alum Creek, Inc.
 Ground Water Targets
 Ground Water Sampling Locations
 Alum Creek Buried Valley Aquifer Yield



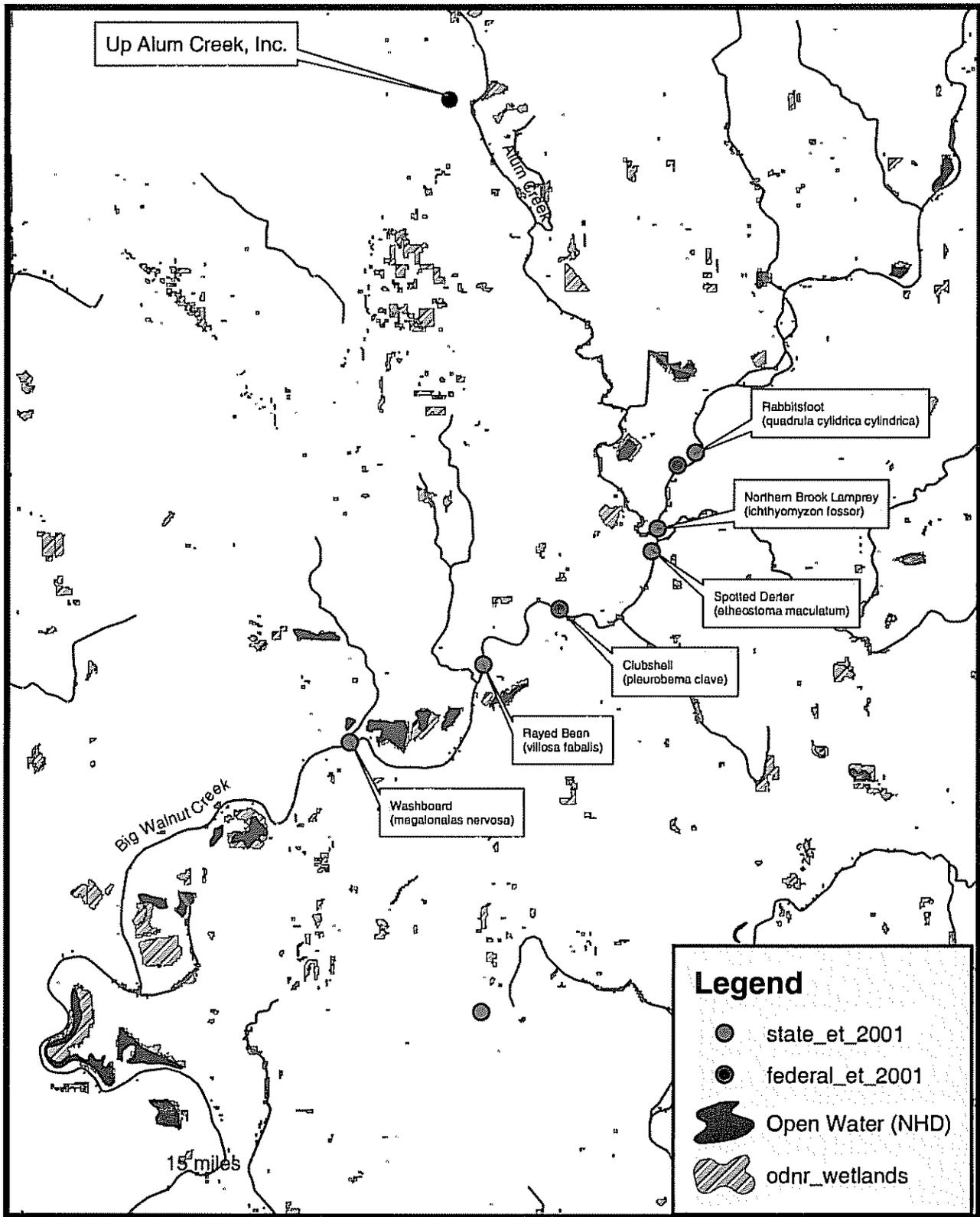


Figure 6
 Up Alum Creek, Inc.
 Surface Water Targets
 Sensitive Environments

