APPENDIX F

Indiana Bat Summer Mist Net Survey

for the

American Electric Power Mountaineer Commercial Scale Carbon Capture and Storage Project Mason County, West Virginia

> Contract No. 326849x215 February 2011

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INDIANA BAT SUMMER MIST NET SURVEY FOR AMERICAN ELECTRIC POWER'S PROPOSED MOUNTAINEER CCS II PROJECT: CO₂ PIPELINE AND INJECTION WELL SITES, MASON COUNTY, WEST VIRGINIA

5 October 2010

Prepared for:





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Executive Summary

American Electric Power (AEP) and the U.S. Department of Energy (DOE), propose to develop a carbon capture and storage (CCS) project at the AEP Mountaineer Power Plant, Mason County, West Virginia.

A study plan dated 9 June 2010, outlining the survey effort for endangered bats, was submitted to the U.S. Fish and Wildlife Service, West Virginia Field Office (USFWS WVFO). On 28 July 2010, the USFWS WVFO accepted the proposed field efforts in the study plan.

Mist netting was completed from 24 July through 15 August 2010 at 28 sites. No Indiana bats or other endangered bat species were caught. A total of 99 bats representing five species was captured: 21 big brown bats (*Eptesicus fuscus*), 71 eastern red bats (*Lasiurus borealis*), 3 tricolor bats (eastern pipistrelle) (*Perimyotis subflavus*), 3 little brown bats (*Myotis lucifugus*), and 1 hoary bat (*Lasiurus cinereous*). Overall, 19 of 28 sites ranked as low quality for roosting bats and 9 ranked as moderate value.

In a letter dated 30 August 2010, a request was made to the USFWS WVFO to seek approval to install a geologic characterization well on a small (\leq 5 acre) portion of the project area (Borrow Area 1). The site was selected because it provided no habitat for the endangered Indiana bat. E-mail correspondence from USFWS WVFO on 8 September 2010 and WV DNR on 20 September confirmed that the proposed activities required for this part of the project were approved. The following report is for the balance of the field studies performed for this project.

The overall netting effort provided no evidence that the Indiana bat or other endangered bat species use the project area during summer months. No endangered bats were caught in mist nets and the available roosting habitat is generally of low to moderate quality. Thus, it is unlikely the Indiana bat or other endangered bat species are present or that the project would adversely affect them. We anticipate that the project would have insignificant and discountable effects to the bat, and on behalf of our clients (DOE and AEP) respectfully suggest that a "May Affect – Is Not Likely to Adversely Affect" determination is appropriate for consultation under Section 7 Endangered Species Act (ESA).

ESI

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1.0 Introduction

American Electric Power (AEP) and the U.S. Department of Energy (DOE) propose to develop a carbon capture and storage (CCS) project at the AEP Mountaineer Power Plant located in Mason County, West Virginia. It is referred to as the proposed Mountaineer CCS II Project (or simply "Project") hereafter within this document.

Environmental Solutions & Innovations, Inc. (ESI) was hired by AEP and their prime consultant Potomac-Hudson Engineering, Inc. (PHE) to survey for the federally endangered Indiana Bat (*Myotis sodalis*) along feasible alternative carbon dioxide (CO₂) pipeline corridors and injection well sites (initially characterization wells).

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1.1 **Project Description**

The Project would capture approximately 1.5 million tonnes of CO_2 annually from a slipstream of flue gas, equivalent in quantity to the flue gas emissions of a 235megawatt power plant, from the existing 1300-megawatt Mountaineer Power Plant located near New Haven, West Virginia. Captured CO_2 would be transported by pipeline to injection sites located within approximately 12 miles of the plant on other AEP properties. Captured CO_2 would be injected into and permanently stored in geologic formations approximately 1.5 miles underground.

As shown in Figure 1 the following properties are under consideration for potential injection wells. They are listed below in descending order of preference:

- Mountaineer Plant site: 5 acres;
- Borrow Area site: 28 acres;
- Eastern Sporn tract: 400 acres;
- Jordan Tract: 195 acres; and
- Western Sporn tract: 70 acres.

Based on preliminary data, AEP anticipates that the proposed Project will require a minimum of four injection wells located in pairs at two different injection properties (e.g. Mountaineer Plant Site and Borrow Area Site) to a maximum of eight wells, also sited in pairs, but located at four different properties. AEP has identified preferred injection sites on each of the five injection properties, each approximately 5 acres in size. The preferred injection sites, along with preferred locations for Project features,

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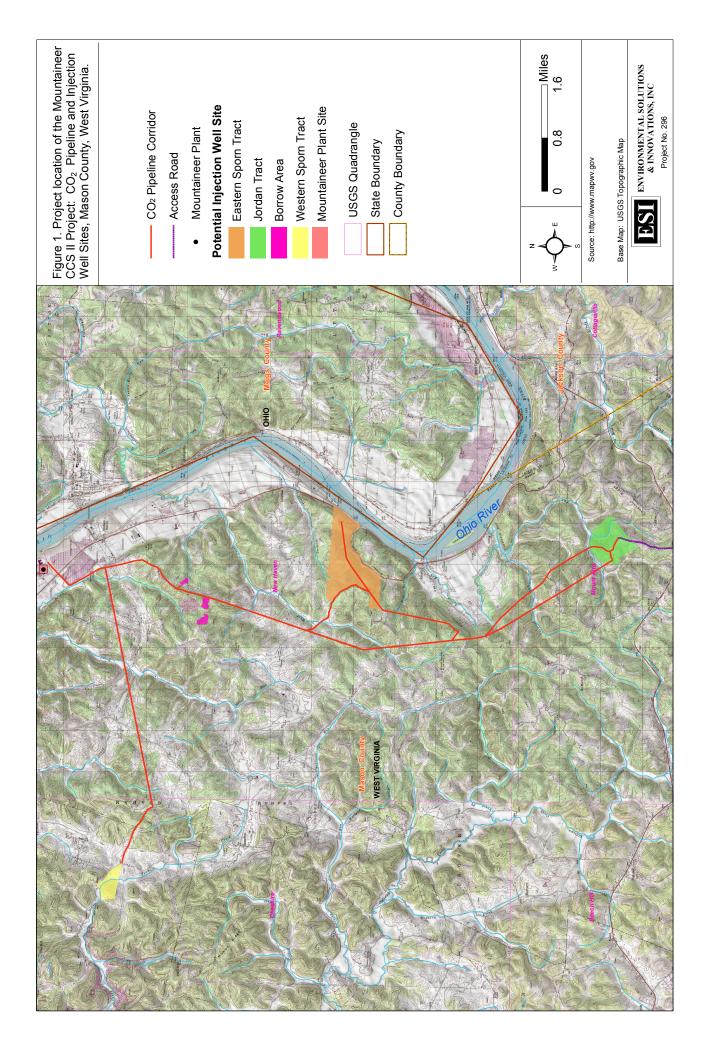
including access roads and pipelines would be sited based on AEP's siting criteria, which include the following:

- 1. Avoid wetlands to the extent practical, Project features would not be sited in wetlands.
- Avoid streams and floodplains to the extent practical, Project features would be sited to avoid streams/floodplains and minimize the number of potential stream crossings.
- 3. Avoid sensitive habitat to the extent practical, Project features would not be sited in areas that have been identified as containing sensitive habitat.
- 4. Avoid cultural resources to the extent practical, Project features would not be sited in areas that have been identified as containing cultural resources.
- 5. Proximity to Public Roads to the extent practical, Project features would be sited, to the extent practicable, near ready access to public roads.
- 6. Topography to the extent practical, Project features would be sited in areas that are generally flat to minimize grading requirements.

The final location of injection wells, and associated pipeline corridors, will depend on results of geologic and hydrogeologic characterization studies being conducted by AEP to determine the optimal locations and design for the CO_2 injection wells. AEP anticipates acceptable well locations will be identified within the five injection site properties being considered.

As part of the characterization studies, AEP plans to initially install geologic characterization wells at the Borrow Area Site and the Jordan Tract. If sufficient data is not obtained from these wells to determine placement and design parameters of the injection well placement, then additional characterization wells could be installed at one or all of the remaining properties. Data from the characterization studies will be used to determine the number and optimal placement of the wells required to inject the CO_2 .





To the maximum extent feasible, AEP plans to construct the pipeline within existing electric transmission rights-of-way (ROW) and road corridor ROW. The construction right-of-way (ROW), as currently planned, would be 80 to 120 feet in width. However, to be conservative, the netting effort was completed to address the situation where there was no co-location, and all areas were treated as though the line would be adjacent to and outside of the existing ROW.

At this time, it is anticipated that all access roads, other than the one south of the Jordan Tract, which was identified in the study plan and netted, or other lay down or extra work areas required to support construction activities would be located within the 80 to 120 feet wide construction ROW or would be located on the potential well properties.

1.2 Regulatory Setting

1.2.1 Background

The Federal Endangered Species Act (ESA) [16 U.S.C. 1531 *et seq.*] was codified in 1973. This law provides for listing, conservation, and recovery of endangered and threatened species of plants and wildlife. Under ESA, the U.S. Fish and Wildlife Service (USFWS) is mandated to monitor and protect listed species. Many states have enacted similar laws.

Section 7(a)(2) of ESA states that each Federal agency shall insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of designated critical habitat. Federal actions include (1) expenditure of Federal funds for roads, buildings, or other construction projects, and (2) approval of a permit or license, and activities resulting from such permit or license. Compliance is required regardless of whether involvement is apparent, such as issuance of a Federal permit, or less direct, such as Federal oversight of a state-operated program.

Section 9 of ESA prohibits "take" of listed species. "Take" is defined by ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" [16 U.S.C. 1532(19)]. USFWS further defines "harm" to include significant habitat modification or degradation [50 CFR §17.3]. Actions of Federal agencies that do not result in jeopardy or adverse modification, but that could result in a take, must also be addressed under Section 7.

Involvement of DOE provides a Federal nexus that will require DOE, as the lead Federal agency, to participate in the National Environmental Policy Act (NEPA) process and in consultation under Section 7 of the ESA.

1.2.2 Study Plan

A study plan, dated 9 June 2010, outlining the field effort to survey for endangered bats was submitted to the USFWS, West Virginia Field Office (WVFO). The plan defined the level of effort, at well areas and along the pipeline corridors and access roads, radio telemetry studies to be completed if endangered bats were caught, and the efforts to locate portals that might serve as winter hibernacula (Appendix A). In a phone call on 28 July 2010, Ms. Barbara Douglas from the USFWS WVFO confirmed that the proposed level and types of field efforts defined in the study plan were acceptable.

Initially, as defined in the study plan, netting at 33 nets sites was anticipated: 6 in well areas, 22 along the pipeline ROW, and 1 for an access road. However, the eastern pipeline ROW alternative was dropped from consideration, resulting in the need for netting at 28 sites.

The study plan also detailed efforts for radio telemetry studies if bats were caught and survey for portals that might be used by bats for autumn swarming, winter hibernation, and spring staging.

1.2.3 Characterization Well at Borrow Area 1

In a letter dated 30 August 2010, a request was made to the USFWS WVFO to seek advanced approval to install a geologic characterization well and an associated access road to Borrow Area 1 located at the existing AEP Mountaineer Plant (Appendix B). The total disturbance area was to be <5 acres. The Borrow Area 1 site is an area used to mine for clay for support of landfill operations. The area has previously been denuded of vegetation and modified by extraction and disposal activities. This area was selected for a characterization well because the entire site was previously disturbed and biological values were essentially lacking, including habitat for the endangered Indiana bat and other listed species. The request letter summarized the field survey activities completed, including a lack of capture of any endangered bats.

On 8 September 2010, an e-mail correspondence was received from Ms. Barbara Douglas, at the USFWS WVFO, and on 20 September 2010 an e-mail was received from Ms. Barbara Sargent of West Virginia Department of Natural Resources, confirming that proposed activities for the geologic characterization were approved, per ESA concerns (Appendix C).

1.2.4 Permits

Studies were carried out under ESI's USFWS Federal Fish and Wildlife Permit (TE02373A-0) and West Virginia Scientific Collections Permits, issued to individual collectors.



1.3 Physiographic Setting

West Virginia is made up of three Physiographic Areas: Mid-Atlantic Ridge and Valley, Northern Cumberland Plateau, and Ohio Hills. The Project is within the Ohio Hills section, which extends north into southern Ohio. Landforms within the Ohio Hills consist primarily of dissected, unglaciated plateaus ranging in elevation from 150 to 450 meters, with some valleys as low as 100 meters and some mountainous areas reaching 1,100 meters. Most of this area was dominated historically by oakhickory forests and today these cover roughly 4.3 million hectares (10.7 million acres), or 54 percent of the physiographic area. Braun (1950) referred to this as the Cumberland and Allegheny Plateaus section of the Mixed Mesophytic Forest region. The Mixed Mesopytic climax forest is a community where the dominant trees are beech (Fagus grandifolia), tuliptree (Liriodendron tulipifera), American basswood (Tilia americana), sugar maple (Acer saccharum), yellow buckeye (Aesculus octandra), red oak (Quercus rubra), white oak (Q. alba), and hemlock (Tsuga canadensis), in addition to as many as 30 other species (Braun 1950). Because of the large number of dominants of this climax community, the composition and relative abundance of the dominants vary greatly from location to location. Modern-day forests have been impacted by logging and a variety of other human uses.

Numerous patches of northern hardwood forest occur on north-facing hillsides, particularly near the edges of the Allegheny Mountains. Historically, oak-hickory and oak-pine regeneration was dependent on fire, and recent policies of fire suppression in the southern Appalachians have had major (often negative) effects on native forest composition and structure.

Human populations are relatively sparse through most the area and often are confined to the larger valleys. Roughly 40 percent of the physiographic area is in agricultural production or urban development, mostly in the northern half (including southern Ohio). Timber extraction has been a major activity throughout the history of this region, and it continues to be important on both public (10% of the area) and privately owned forest lands. Extraction of minerals, oil and gas, and coal are also important land uses throughout this region.

2.0 Ecological Setting

Little is known about the ecology of the Indiana bat in the eastern portion of its range (Watrous et al. 2006) where the current survey was conducted. Despite the fact that the species remains poorly known compared to many other native mammals (Kurta and Kennedy 2002), this species is among the most intensively studied bats in North America (Barclay and Kurta 2007). A review of the bat's ecology is provided in the



following sections. The review is based on studies conducted across the range of the species, providing an ecological framework for this study and its conclusions.

2.1 Description

The Indiana bat is a medium-sized bat in the genus *Myotis.* The forearm length has a range of 35 to 41 millimeters (1.4 - 1.6 in). The head and body length range from 41 to 49 millimeters (1.6 - 1.9 in). Its appearance most closely resembles that of congeners little brown bat (M. lucifugus) and northern bat (M. septentrionalis). Indiana bats differ from similar Myotis species in that they have a distinctly keeled calcar (cartilage that extends from the ankle to support the tail membrane). Other minor differences include smaller and more delicate hind feet, shorter hairs on the feet that do not extend past the toenails, and a pink nose. The fur lacks luster, and the wing and ear membranes have a dull, flat coloration that does not contrast with the fur (USFWS 2007). Fur on the chest and belly is lighter



than fur on the back, but is not as strongly contrasting as that of similar *Myotis* species. Overall color is slightly grayer, while the little brown bat and northern bat are browner. The skull has a crest and tends to be smaller, flatter, and narrower than that of the little brown bat (USFWS 2007).

2.2 Status

The USFWS listed the Indiana bat (*Myotis sodalis*) as endangered on 11 March 1967. The 2009 range-wide estimate of the population was 387,835 individuals (USFWS 2010), which represents about half of the estimated population of 1960. Long-term, detailed documentation of population changes are lacking across most of its range, with the exception of the state



<u>41 FR 41914</u>; 24 September 1976: Final Critical Habitat, Critical habitat-mammals
<u>40 FR 58308 58312</u>; 16 December 1975: Proposed Critical Habitat, Critical habitat-mammals
<u>32 FR 4001</u>; 11 March 1967: Final Listing, Endangered

of Indiana (Brack et al. 1984, Johnson et al. 2002, Whitaker and Brack 2002, Brack et al. 2003, Sparks et al. 2008), although such information now being acquired in most states. It is probable that habitat loss during summer (USFWS 2007) and winter disturbances during hibernation (Johnson et al. 1998) both contributed to the overall decline of the species.

The only official recovery plan for the species was completed on 14 October 1983. A new draft revised recovery was released in April 2007. Although widely used as a regulatory document, the 2007 version of the recovery plan has not been officially approved.



Critical habitat was designated on 24 September 1976, and includes 11 caves and 2 abandoned mines in Illinois, Indiana, Kentucky, Missouri, Tennessee, and West Virginia.

2.3 Regional Species Occurrence

The federally endangered Indiana bat is not known to occur in Mason County, West Virginia (Figure 2). The nearest known hibernacula and records of summer maternity are from Lawrence County, Ohio to the southwest of Mason County. There is a summer record from Athens County, Ohio to the north of a nonreproductive Indiana bat.

2.4 Ecology

The Indiana bat is a "tree bat" in summer and a "cave bat" in winter. There are four ecologically distinct components of the annual life cycle: winter hibernation, spring staging and autumn swarming, spring and autumn migration, and the summer season of reproduction (Figure 3). The USFWS Recovery Plan (2007) provides a description of the life history.

2.4.1 Summer Roosting Ecology

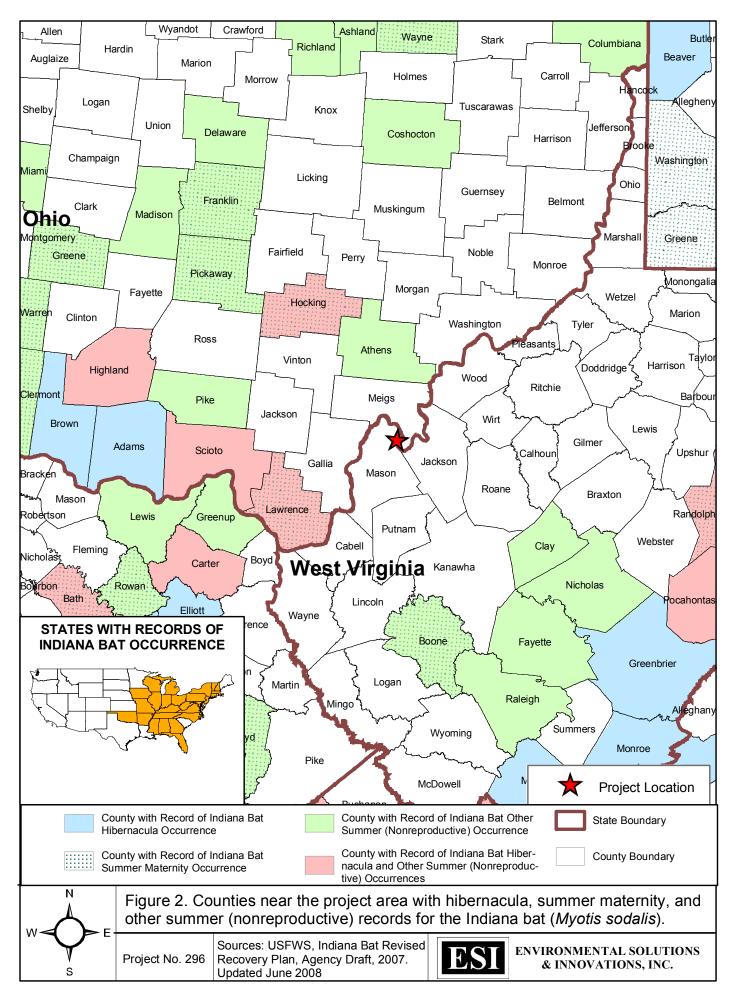
The summer range of the Indiana bat is large and includes much of the eastern deciduous forestlands between the Appalachian Mountains and Midwest prairies (Figure 4). Distribution throughout the range is not uniform and summer occurrences are more frequent in Indiana, northern Missouri, and southern portions of Iowa Michigan, and Illinois. Historically, these areas were vegetated in a mix of prairies, forest, and savannas (Küchler 1964). At the eastern end of the distribution tree densities are greater (Brack et al. 2002), but the bat appears to be less abundant. Cooler summer temperatures associated with latitude or altitude likely affect reproductive success and the summer distribution of the species (Brack et al. 2002). Similarly, the warmer, drier climate of the Midwest allows rapid growth of young and short migration to suitable hibernacula.

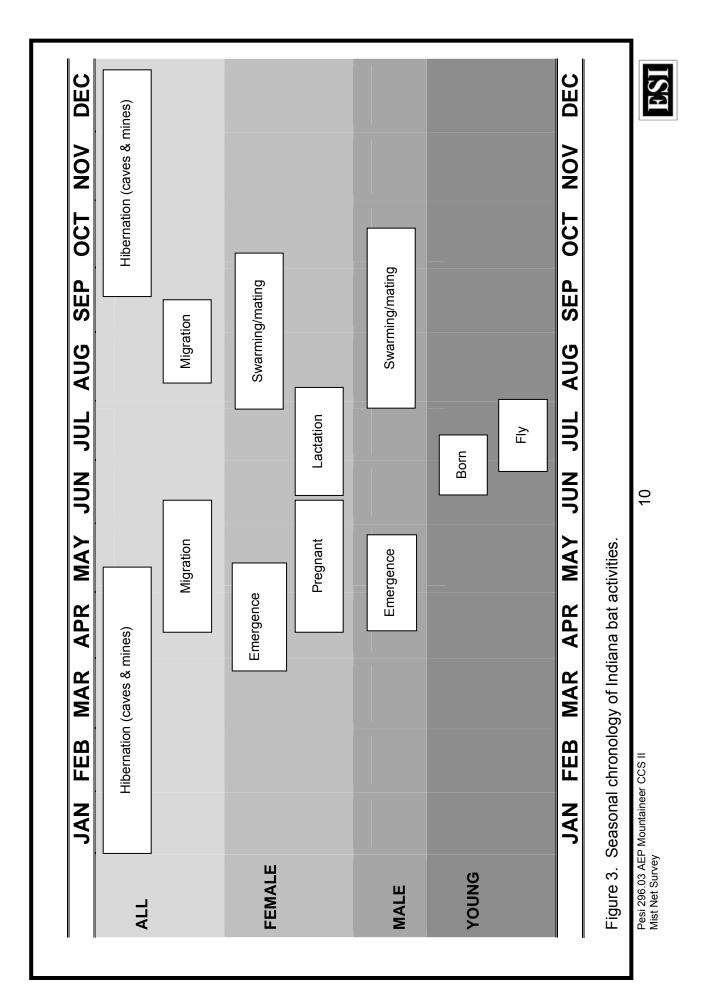
2.4.1.1 Males

Some males remain near hibernacula throughout summer while others migrate varying distances (Whitaker and Brack 2002). Males can be caught at hibernacula on most nights during summer (Brack 1983, Brack and LaVal 1985), although there may be a large turnover of individuals between nights (Brack 1983).

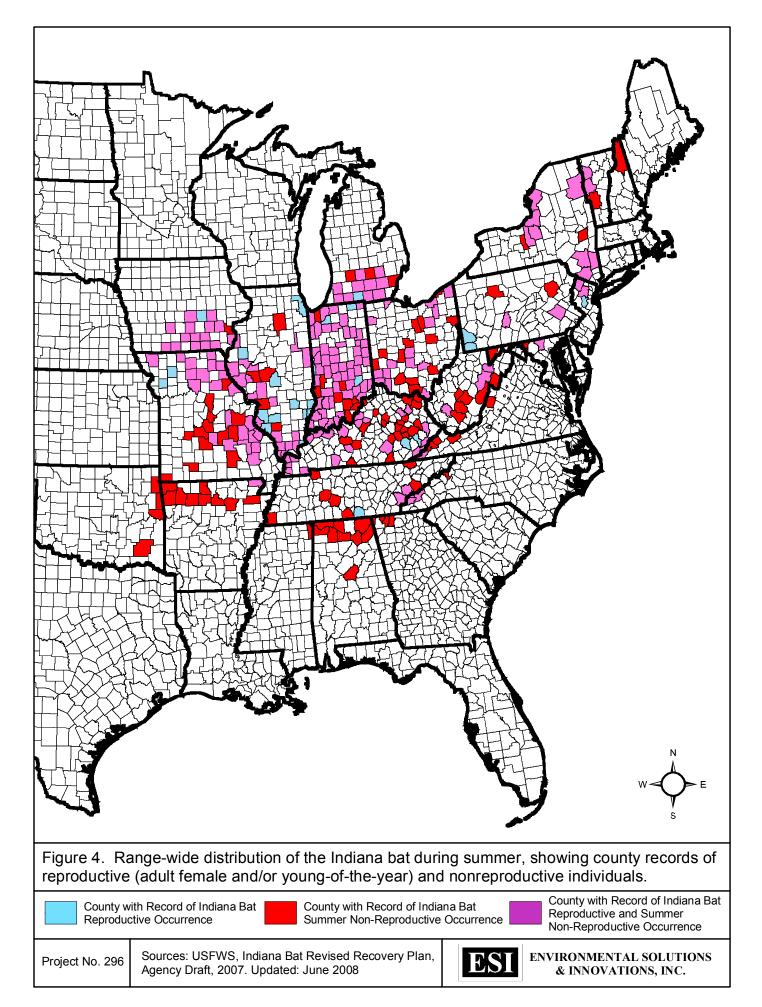
Structurally, woodland roosts used by males are similar to those used by maternity colonies (Kiser and Elliott 1996, Schultes and Elliott 2002, Brack and Whitaker 2004, Brack et al. 2004). These trees are smaller (Kurta 2004), perhaps because males are often solitary or form small groups and thus need less space or because males may have different thermal requirements than females. Males appear somewhat nomadic; over time, the number of roosts and the size of an area used increases.







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Activity areas encompass roads of all sizes, from trails to interstate highways. Roosts have also been located near roads of all sizes (Kiser and Elliott 1996, Schultes and Elliott 2002, Brack et al. 2004), including adjacent to an interstate highway (Sparks et al. 1998, Brack et al. 2004, Whitaker and Sparks 2008, Sparks et al. 2009).

2.4.1.2 Females and Maternity Colonies

When female Indiana bats emerge from hibernation, they migrate to maternity colonies that may be located up to several hundred miles from the hibernacula (Kurta and Murray 2002). Females form nursery colonies under exfoliating bark of dead, dying, and living trees in a variety of habitat types, including uplands and riparian habitats. A wide variety of tree species (Kurta 2004), occasionally including pines (Britzke et al. 2003), are used as nursery colonies indicating that it is tree form, not species that is important for roosts. Because many roosts are in dead or dying trees, they are often ephemeral. Roost trees may be habitable for one to several years, depending on the species and condition of the tree (Callahan et al. 1997). Indiana bats exhibit strong site fidelity to summer roosting and foraging areas (Kurta and Murray 2002, Kurta et al. 2002, Sparks et al. 2004, Whitaker et al. 2004, Whitaker and Sparks 2008, Sparks et al. 2009). This fidelity is to a larger landscape which can change over time. Between the discovery of a colony near the Indianapolis International Airport in 1994 and 2008, this colony of bats essentially abandoned foraging areas north of the expanded Interstate 70 and shifted their center of activity into a conservation area that was designed and managed for them (Sparks et al. 2009). This indicates that it is possible to move colonies of Indiana bats across a developing landscape if suitable long-term habitat is available or developed during the move.

A maternity colony typically consists of 25 to 325 adult females. Nursery colonies often use several roost trees (Kurta et al. 1993, Foster and Kurta 1999, Kurta and Murray 2002, Whitaker and Sparks 2008), moving among roosts within a season. Most members of a colony coalesce into one or a few roost trees about the time of parturition. Once young are volant, the bats spend less time in these major roosts and more time in minor roosts—often roosting alone under the bark of live trees. Roosts that contain large numbers of bats (more than 20 bats) are often called primary roosts, while secondary roosts hold fewer bats. Primary roost trees are often greater than 46 centimeters (18 in) diameter at breast height (dbh) and secondary roost trees are often greater than 23 centimeters (9 in) dbh (Gardner et al. 1991, Callahan et al. 1997, Kurta et al. 2002, Miller et al. 2002, Carter 2003). Numerous suitable roosts may be needed to support a single nursery colony, possibly about 45 stems per hectare (20/acre) (Gardner et al. 1991, Miller et al. 2002, Carter 2003).

Roost trees often have 10 hours of solar exposure per day, with 20 to 80 percent canopy closure (Humphrey et al. 1977, Gardner et al. 1991, Kurta et al. 1993, Kurta et al. 1996, Kurta et al. 2002, Carter 2003), but the need for solar exposure may vary



with latitude. Although Indiana bats typically roost under the exfoliating bark of dead and dying trees, they have also been found roosting in a variety of cracks and hollows in trees (L. C. Watkins in Humphrey et al. 1977, Kurta et al. 1993, Butchkoski and Hassinger 2002, Kurta et al. 2002, Kurta 2004), utility poles (ESI 2004, Hendricks et al. 2004), buildings (Butchkoski and Hassinger 2002, V. Brack Unpublished data, A. C. Hicks Personal communication), and bat boxes (Butchkoski and Hassinger 2002, Carter 2002, Butchkoski 2005, Ritzi et al. 2005, Whitaker et al. 2006). The colony of bats near the Indianapolis Airport have used a combination of both natural roosts (trees) and bat boxes every year since 2003 (Sparks et al. 2008).

Females are pregnant when they arrive at maternity roosts. Females produce one young per year, typical for the genus *Myotis* (Asdell 1964, Hayssen et al. 1993). Parturition typically occurs between late June and early July. Lactating females have been caught 11 June to 29 July in Indiana, 26 June to 22 July in Iowa, and 11 June to 6 July in Missouri (Humphrey et al. 1977, LaVal and LaVal 1980, Brack 1983, Clark et al. 1987). Juveniles become volant between early July and early August. Reproductive phenology is likely dependent upon seasonal temperatures and the thermal character of the roost (Humphrey et al. 1977, Kurta et al. 1996). Like many microchiropterans, Indiana bats are thermal conformists (Stones and Wiebers 1967), with prenatal, neonatal, and juvenile development are temperature dependent (Racey 1982). Cooler summer temperatures associated with latitude or altitude likely affect reproductive success and therefore the summer distribution of the species (Brack et al. 2002).

Nightly non-foraging behavior of Indiana bats is poorly documented. In Michigan, pregnant bats from a maternity colony foraged most of the night, but lactating females returned two to four times to feed young. Both pregnant and lactating females roosted up to six times per night for 14 minutes (SD = 1) each (Murray and Kurta 2004). Foraging areas were 0.5 to 4.2 kilometers (0.3 – 2.5 mi) from diurnal roosts. Kiser et al. (2002) found 82 bats under three bridges over a 6-night period in late July and August. Temperatures under the bridges were warmer and less variable than ambient, apparently providing a location to roost and digest food between foraging bouts. These bridges were 1.0 to 1.9 kilometers (0.6 - 1.2 mi) from diurnal roost trees. Additional unpublished information about night roosting is available from the long-term study of a colony near the Indianapolis International Airport (D.W. Sparks Unpublished data). These bats regularly night roosted within wooded areas. When biologists entered woodlots to locate tagged bats to a specific tree, the bats moved to new roosts; this behavior was greatly reduced when human activity in the woodlot was restricted. When bats were located to a specific tree, they were hanging exposed on the tree rather than under bark. More rarely, individual bats night roosted in bat boxes. In one case, an Indiana bat night roosted in a prairie, apparently on big bluestem (Andropogon gerardii) or evening primrose (Oenothera sp.).



Indiana bats live on anthropogenic landscapes and recent research indicates females include roads in their active area. Although bats do cross roads, the studies that document this behavior were typically not designed to gauge a graded response. On Camp Atterbury, Indiana, female and juvenile Indiana bats routinely night roosted under bridges on 2-lane paved roads (Kiser et al. 2002). Activity areas of nursery colonies in Illinois (Gardner et al. 1991) and Michigan (Kurta et al. 2002) included paved roads. On the campus of Wright State University, Ohio, a roost tree was at the edge of a large parking lot, and about 20 meters (60 ft) from a moderately traveled road. Emerging bats crossed the parking lot and radio-tagged bats crossed highway 444, a four-lane divided highway, to forage in a 73-hectare (180 ac) woodlot (Brown et al. 2001). In eastern Indiana, adjacent to Newport Chemical Depot, a reproductive female Indiana bat was radio-tracked across a 4-lane divided highway to a maternity colony in a small, 0.7-hectare (1.7 ac) isolated woodlot (Brack and Whitaker 2006). The roost tree was on the western edge of the woodlot (adjacent to the highway) and the woodlot was surrounded on other sides by open, farmed agricultural lands. Based on Euclidean distance analysis, small, unimproved roads were the most preferred foraging habitat at Fishhook Creek Watershed in Illinois (Menzel et al. 2005).

Several unpublished data sets describe the response of Indiana bats to roads in finer detail. Indiana bats foraging near the Indianapolis airport cross roads ranging from unimproved tire paths to Interstate highways an average of 11.97 times per night, but most of this activity (11.54 crossings per night) is restricted to small rural roads, and this pattern holds when corrected for the much greater abundance of smaller roads (M. McGuire Unpublished data). Similarly, bats at this site were much more likely to abort attempts to cross a roadway when vehicles were present (Zurcher et al. Unpublished data). By combining species-specific patterns of movement with these observations, it is possible to mathematically model the impacts of roadways on bats. The willingness of a bat to cross a roadway is in part determined by three factors: value of the habitat on the opposite side of the road, size of the road, and intensity of traffic (V. J. Bennett Personal communication). These results suggest that utility corridors are less of a barrier than roadways because they lack traffic. In addition, Indiana bats have been observed using such corridors as both commuting and foraging habitat (Brack and Whitaker 2006). As such, reasonable efforts to avoid and minimize effects of utility corridors include the sharing of a corridor by multiple lines.

2.4.2 Food Habits and Foraging Ecology

The diet of Indiana bats varies substantially among bats of different ages and genders, and in relation to the availability of insects within different habitat types. Based on diets of males, Brack and LaVal (1985) considered the species selective opportunists. In Indiana, aquatic-based insects were more common in the diet of a maternity colony than in the diet of males collected at caves (Brack 1983). The maternity colony was located along the Big Blue River, where only about 11 percent of the land within 3.2 kilometers (2 mi) of the roost was forested (most was riparian),



whereas males were caught at a cave where 42 percent of the area within 3.2 kilometers (2 mi) was forested and only a small portion was riparian. In late summer, the diets of males, females, and juveniles captured at caves were similar to one another and to males' summer diets. Diets reported by Belwood (1979) from a colony along a stream and by Kurta and Whitaker (1998) from a colony within a wooded wetland contained more aquatic-based insects than diets of males foraging in an upland habitat (Brack and LaVal 1985). The repeated seasonal occurrence of the Asiatic oak weevil (Cyrtepistomus castaneus) and sporadic abundance of hymenopterans in the diet (Brack 1983, Brack and LaVal 1985, Brack and Whitaker 2004, Tuttle et al. 2006, Brack In press) are both indicative of opportunistic feeding. Insects may be less common late at night, forcing bats to eat a greater variety of insects (Brack 1983). Diet varied across weeks at a maternity colony in Indiana (Tuttle et al. 2006). The diet contains less diversity late in the season (Brack 1983, Brack and LaVal 1985). Diet also varies by lunar cycle (Brack 1983, Brack and LaVal 1985), because the cycle affects insects. Murray and Kurta (2002) found that the diet was flexible across the range and potentially affected by regional and local differences in bat assemblages and availability of foraging habitat and prev. Despite variability of the diet, it should be noted that this variability is a result of eating different amounts of insects belonging to five orders: Lepidoptera (moths), Coleoptera (beetles), Diptera (true flies), Trichoptera (caddisflies), and Hymenoptera (wasps and ants) (Tuttle et al. 2006).

Using a variety of techniques, authors have reported that Indiana bats travel a wide range of distances from their roosts, and the inherent benefits and biases of these techniques must be considered when interpreting the data (Sparks et al. 2004). Using reflective wristbands, Humphrey et al. (1977) found that a maternity colony foraged in areas ranging from 1.5 to 4.5 hectares (3.7 to 11.1 ac). Using telemetry. much larger distances have been recorded. In Illinois, individuals traveled up to 4 kilometers (2.5 mi) from maternity colonies (Gardner et al. 1991). In Michigan, foraging areas were 0.5 to 4 kilometers (0.3 to 2.5 mi) from diurnal roosts (Murray and Kurta 2004), and members of a maternity colony moved a maximum distance among roosts of 5.8 kilometers (3.6 mi) overnight, but 9.2 kilometers (5.7 mi) over 4 vears (Kurta et al. 2002). In Missouri, adult males traveled 5 kilometers (3.1 mi) while foraging LaVal and LaVal (1980), and Brack (1983) observed foraging light-tagged bats within 3.22 kilometers (2 mi) of caves used during autumn swarming. In Hoosier National Forest, the mean active foraging area of four adult male bats ranged from 95.1 to 151.9 hectares (235 - 375 ac) based on the method of estimation, while the means of individual bats across three methods of estimation (95% minimum convex polygon, capture radius, and non-circular) ranged from 43.1 to 314.2 hectares (107 -776 ac) (Brack et al. 2004). At the Indianapolis Airport (Sparks et al. 2004, Sparks et al. 2005), maximum distance flown by Indiana bats averaged 3 kilometers (1.86 mi) but ranged from 0.8 to 8.4 kilometers (0.5 to 5.41 mi). Similarly, using 95 percent minimum convex polygons, home range size averaged 412 hectares (1081.07 ac) but ranged from 50 to 1168 hectares (123.55 to 2886.19 ac), and home ranges of



individuals often overlapped (Sparks et al. 2004, Sparks et al. 2005). Individuals of many species of bats that roost colonially forage independently of one another (Kerth et al. 2001). Like many other species of microchiropterans, the Indiana bat often uses travel corridors that consist of open flyways such as streams, woodland trails, small infrequently used roads, and possibly utility corridors, regardless of suitability for foraging or roosting (Brown and Brack 2003). Such corridors may play an important role in allowing bats to access isolated foraging areas (Murray and Kurta 2004, Sparks et al. 2004), but may not be essential as Indiana bats have been tracked crossing large open areas (Brack 1983).

Members of maternity colonies forage in a variety of woodland settings, including upland and floodplain forest (Humphrey et al. 1977, Brack 1983, Gardner et al. 1991). Foraging activity is concentrated above and around foliage surfaces, such as over the canopy in upland and riparian woods, around crowns of individual or widely spaced trees, and along edges (LaVal et al. 1977). They forage less frequently over old fields, and occasionally over bushes in open pastures (Brack 1983). Forest edges, small openings, and woodlands with patchy trees provide more foraging opportunities than dense woodlands. Most species of woodland bats forage prominently along edges, less in openings, and least within forests (Grindal 1996). Openings also provide a better supply of insects than do wooded areas (Tibbels and Kurta 2003).

At the landscape scale, the species makes preferential use of forested habitat for foraging in both Illinois and Indiana (Menzel et al. 2005, Sparks et al. 2005). The Illinois study was on a wildlife management area with substantial blocks of bottomland hardwood forest. In this landscape, bats foraged closer to roads, forest, and riparian areas than chance alone would predict. Grassland was used in proportion to availability and agricultural areas were avoided. In suburban Indianapolis, Indiana bats preferentially used woodlands more than agricultural, low density residential, and open water, and these habitats more than pasture, parks, and commercial lands, with high density residential least preferred. It should be noted, however, that at this study site most such neighborhoods were new developments within what were previously large agricultural fields. The authors suggest that this pattern might not hold for residential areas where woodland habitat is retained. Finally, it is likely that in heavily forested areas, open habitats would be preferentially used by foraging Indiana bats (Sparks et al. 2004).

2.4.3 Survivorship

Detailed studies of survivorship of the Indiana bat have not been completed. Paradiso and Greenhall (1967) and Humphrey and Cope (1977) determined a terminal age of between 12 and 13 years after marking. Brack et al. (2005b) found that survivorship of white and leucistic *M. sodalis* was low, about 7.7 percent (assuming individuals were 0.5 year old when first found). This calculated rate may be low because bats may have been 1.5 years of age when first found, and they may



have survived an additional year without being found. Low survivorship during adolescence is representative of many mammalian species, although white coloration may make bats more susceptible to predation by visually oriented nocturnal predators.

Extensive winter banding records were used by Humphrey and Cope (1977) to estimate survival between winters. Survival rates were high for years one through six after banding, 75.9 percent annually for females and 69.9 percent for males (72.9 % combined), lower after six years, at 66.0 percent for females and 36.3 percent for males (51.2 % combined), and only 4.1 percent (females) after 10 years. Humphrey and Cope (1977) could not determine survivorship for young of the year, but total survival was much lower the first year after marking (ca. 41%), which was attributed to low survivorship of young-of-the-year. Using more modern approaches, young-ofyear survival rate is now estimated at 65 percent (Boyles et al. 2007). Because of substantially increased survival during the first winter, this analysis predicts a greater number of bats from each cohort surviving. Unfortunately, as noted by both sets of authors (Humphrey and Cope 1977, Boyles et al. 2007), these samples are inherently biased by the inability to reliably distinguish age classes among hibernating bats. No estimate of summer survivorship is available although efforts are underway to develop and apply molecular mark-recapture to this species (Sparks Using emergence counts, the colony at the Indianapolis airport et al. 2008). apparently increased in size from a maximum count of 70 individuals in 1997 to 228 in 2007 (Sparks et al. 2008).

2.5 Causes of Past/Current Decline

Long-term, detailed documentation of population changes of Indiana bats are lacking in most areas. Summer habitat degradation (USFWS 2007), pesticides, and winter disturbance (Johnson et al. 1998) are believed to have contributed to an overall decline. The greatest current threat to the species is the emergence of a new disease known as White-nose syndrome (WNS), which has been responsible for dramatic declines in bats throughout the Northeast (Blehert et al. 2008; 2009).

The Indiana bat uses a variety of wooded summer habitats, from large tracts of woodlands to riparian strips and woodlots on an anthropogenic landscape. Summer habitat losses include tree removal or land clearing for a variety of land use practices. Removal of standing dead trees, especially during summer months, is potentially harmful. Removal of riparian forest along streams and ditches also degrades summer habitat. Loss of wooded lands can lead to increased forest fragmentation, and a compounding of adverse effects. In many portions of their core range, Indiana bats utilize savanna-like habitats with large trees, an open canopy, and an uncluttered understory. However, suppression of fire and removal of dominant grazing herbivores, combined with frequent tree harvest, has often produced wooded lands of smaller trees with a closed canopy and a cluttered understory, which may have affected the quality of maternity habitat (USFWS 2007). Similarly, urbanization



removes potential foraging habitat and bats may not cross developed areas to access otherwise suitable foraging habitat (Sparks et al. 2005).

Chemical contamination in non-winter habitats has been implicated in the decline of most North American bats (USFWS 2007). Lethal concentrations of a number of pesticides have been found in several other species of bats that overlap substantially with Indiana bats in foraging habitat and thus have similar risk of exposure (Schmidt et al. 2001, O'Shea and Clark 2002, Schmidt et al. 2002). Of particular concern are organophosphates, which have been detected in the guano of Indiana bats and may indirectly cause mortality or decreased production by causing bats to become torpid or unconscious for long periods, potentially leading to indirect mortality through predation, exposure, or death of dependent offspring (Eidels et al. 2006). However, the importance of this group of contaminates on a species-by-species basis is not clearly documented, and additional studies are needed.

Documented threats to winter habitats, caused by humans, include: (1) disturbance and vandalism, (2) improper cave gates and structures, (3) indiscriminate collecting, and (4) flooding of caves from reservoir construction. Natural hazards include flash flooding of hibernacula (Brack et al. 2005a), ceiling collapse of mines and caves (Elliot 2007), colder or warmer than average winters, and severe summer storms. Natural and/or human-caused changes in the microclimate of caves and mines used as hibernacula can adversely affect the species (Richter et al. 1993).

Populations of hibernating bats in the northeastern United States have been dying in record numbers, and the specific cause of the deaths is unknown. However, this crisis is directly associated with WNS, named for a white fungus evident on the muzzles and wings of affected bats (Metever et al. 2009). This affliction was first documented at four sites in eastern New York in the winter of 2006-07 (Blehert et al. 2008; 2009). Since then, WNS has rapidly spread to multiple sites throughout the Northeast and Appalachians. Researchers associate WNS with a newly identified fungus (Geomyces destructans) that thrives in the cold and humid conditions characteristic of the caves and mines used by bats (Gargas et al. 2009). Bats apparently have a reduced immune response while hibernating (Carey et al. 2003), which may predispose them to infection by G. destructans. WNS ultimately results in inadequate energy reserves during hibernation, forcing bats to leave hibernacula in mid-winter in search of food. In the U.S., biologists and/or cavers have documented WNS in bat hibernacula in New Hampshire, Vermont, New York, Massachusetts, Connecticut, New Jersey, Pennsylvania, West Virginia, Virginia, Tennessee, Missouri, and Oklahoma.



3.0 Methods

The survey followed summer mist netting guidelines provided by the USFWS in the 2007 Indiana Bat Draft Recovery Plan (First Revision) and Draft Survey Protocol (Table 1).

Table 1. U.S. Fish & Wildlife Mist Netting Guidelines

NETTING GUIDELINES

- 1. Netting Season: 15 May to 15 August, when Indiana bats occupy summer habitat
- Equipment (Mist Nets): constructed of the finest, lowest visibility mesh commercially available – monofilament or black nylon – with the mesh size approximately 38 millimeters (1½ in)
- Net Placement: mist nets extend approximately from water or ground level to tree canopy and are bounded by foliage on the sides. Net width and height are adjusted for the fullest coverage of the flight corridor at each site. A "typical" net set consists of three (or more) nets "stacked" on top of one another; width may vary up to 18 meters (60 ft)
- 4. Net Site Spacing:
 - Streams one net site per 1 kilometer (0.6 mi)
 - Land Tracts two net sites per 1 square kilometer (246 ac)
- 5. Minimum Level of Effort Per Net Site:
 - Two net locations (sets) per net site, with locations (sets) at least 30 meters apart
 - Two (calendar) nights of netting
 - At least four net-nights (1 net-night = 1 net set deployed for 1 night); typically, two net sets are deployed at one site for two nights, resulting in four net nights
 - Sample Period: begin at dusk and net for 5 hours (approximately 0200h)
 - Nets are monitored at approximately 10-minute intervals
 - No disturbance near the nets between checks
- 6. Weather Conditions: net only if the following weather conditions are met:
 - No precipitation
 - ◆ Temperature <u>></u> 10°C (50°F)
 - No strong winds

Source: U.S. Fish and Wildlife Service, 2007



3.1 Summer Mist Net Survey

3.1.1 Study Plan

As detailed above, a study plan was submitted to and approved by the USFWS WVFO.

As noted above, netting at 33 nets sites was anticipated in the study plan, but when the Route 62 pipeline corridor alternative was dropped from consideration, netting was only required at 28 Sites (Figure 5). Net sites were selected as identified in the study plan based on the suitability of available habitat along the length of corridor and areal extent of well sites. Thus, sampling was completed at 6 sites in well areas, 21 sites along the pipeline ROW, and 1 site for an access road. As identified in the study plan, this sampling regime included some overlap among well and corridor sites, based on typical coverage along corridors.

3.1.2 Site Selection and Level of Effort

During field surveys, net sites were numbered simply as KM1 – KM28. Each net site consisted of two nets operated for 2 nights each for a total of 4 net nights per site, or a total of 112 complete net nights (and 3 additional partial nights when netting was discontinued because of adverse weather conditions).

Per ESI's 9 June 2010 Study Plan to USFWS, Section 6 (page 11) "**Inaccessible Properties**," three net sites (KM9, KM12, and KM18) were located outside the 1-kilometer boundaries noted in the study plan. The study plan stated:

With a proposed Project of this size, it is not unexpected that we may not gain access to all parcels required for netting. Therefore, the following is proposed for properties for which landowner access cannot be obtained:

- If access cannot be obtained for a high quality flyway within a 1kilometer² block, the next best property, for which access can be obtained, within that 1-kilometer² block will be netted.
- If access cannot be obtained for any suitable flyways within a 1kilometer² block, the best and most similar habitat, in one of the adjacent blocks will be netted instead. (This may result in two net sites being placed in some 1-kilometer² blocks.)

The following circumstances resulted in relocation of these net sites, to alternate adjacent locations as follows (Figure 5):

- KM9: Suitable bat habitat was limited and good netting sites were not found. This net site was relocated into the KM10 block.
- KM12: Access was denied to all suitable habitat by the landowner. This net

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site was relocated into the KM13.

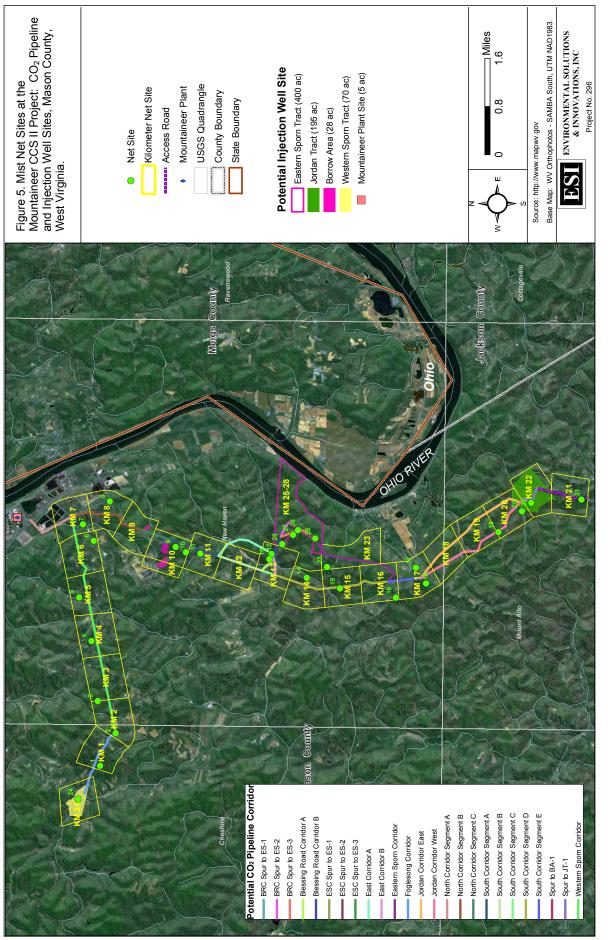
• KM18: This block had a combination of limited land-owner access and limited good net sites. This site was relocated to KM17.

The precise placement of each net was based upon canopy cover, presence of a flight corridor, water, and habitat conditions near the site. Nets were set to maximize coverage of flight paths used by bats along suitable corridors. Riparian corridors often provide successful mist net sites; however, upland corridors (e.g., trails or logging roads) also provide suitable sites (Brown and Brack 2003). In upland areas, road ruts or other areas of standing water frequently facilitate capture of bats, including the Indiana bat. Placement of mist nets was based upon expectation of bat activity and to provide broad coverage of the Project area with potentially suitable Indiana bat habitat. Mist net site selection also included consideration of habitat characterizations described for the Indiana bat in current literature and experience of ESI personnel. Habitat with the following characteristics was selected to the degree feasible:

- Large trees (>16 inches dbh) (frequently used for maternity roosts)
- An open canopy (apparently important for warming roost sites)
- An open, uncluttered understory (used for traveling and foraging)

Figure 5 and Appendix D provide mist net site locations and habitat descriptions. GPS coordinates for each net site were recorded (Table 2) and photos were taken (Appendix E).





Appendix F

F-26

	ounty, west virgi	ma
Site	Latitude	Longitude
KM1	N38 57 25.8	W82 00 45.0
KM2	N38 57 12.5	W82 00 08.7
KM3	N38 57 28.3	W81 59 32.9
KM4	N38 57 34.5	W81 58 26.6
KM5	N38 57 45.5	W81 57 38.2
KM6	N38 57 33.4	W81 56 35.3
KM7	N38 57 42.8	W81 56 17.1
KM8	N38 57 19.8	W81 55 51.5
KM9	N38 56 22.3	W81 56 41.3
KM10	N38 56 13.2	W81 56 47.2
KM11	N38 56 00.8	W81 56 48.3
KM12	N38 54 59.1	W81 56 47.9
KM13	N38 55 01.1	W81 56 53.6
KM14	N38 54 28.5	W81 57 13.9
KM15	N38 53 59.6	W81 57 25.3
KM16	N38 53 11.1	W81 57 34.8
KM17	N38 52 53.9	W81 57 01.5
KM18	N38 52 45.0	W81 57 18.9
KM19	N38 51 42.7	W81 56 20.9
KM20	N38 51 22.4	W81 55 57.8
KM21	N38 50 31.0	W81 55 44.1
KM22	N38 51 14.6	W81 55 48.3
KM23	N38 54 11.1	W81 57 01.6
KM24	N38 57 44.6	W82 01 22.1
KM25	N38 54 21.4	W81 56 30.2
KM26	N38 54 36.4	W81 56 21.3
KM27	N38 54 40.8	W81 56 26.5
KM28	N38 54 49.9	W81 56 36.9

Table 2. Mist Net Site Coordinates on the Mountaineer CCS II Project: CO2 Pipeline and Injection Well Sites, Mason County, West Virginia

3.1.3 Bat Capture

Mist netting was completed from 24 July through 15 August 2010. Mist nets were used to live capture and release bats unharmed near the point of capture. Bats were identified to species using a combination of morphological characteristics (e.g., ear and tragus, calcar, pelage, size/weight, length of right forearm, and overall appearance of the animal). The species, sex, reproductive condition, age, weight, length of right forearm, time, and location of capture were recorded for all bats captured. Age (adult or juvenile) of bats was

Adam Mann

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determined by examining ephiphyseal-diaphyseal fusion (calcification) of long bones in the wing.

Weight was measured to the nearest 0.5 gram using a Pesola spring scale. Length of right forearm was measured to the nearest 0.5 millimeter using a rule marked at 1.0 millimeter intervals. The reproductive condition of captured bats was classified as non-reproductive male, reproductive male, non-reproductive female, or post-lactating female. Morphometric data recorded in the field are provided on Bat Capture Data sheets in Appendix D. Processing and data collection were usually completed in 30 minutes.

3.1.4 White-Nose Syndrome Decontamination Protocol

White-nose syndrome (WNS) is an emerging disease that is killing millions of bats in the eastern U.S. The disease, which was first found in New York, is spreading and is now in West Virginia. Bat handling followed current WNS protocols set by the USFWS. Captured bats were examined for damage associated with WNS to the wing and uropatagium (tail) membranes, including use of white and ultraviolet light. ESI biologists followed the Disinfection Protocol for Bat Field Research/Monitoring finalized by USFWS in June 2009. Wing damage was categorized using the Wing-Damage Index Used for Characterizing Wing Condition of Bats Affected by White-nose Syndrome (Reichard 2008).

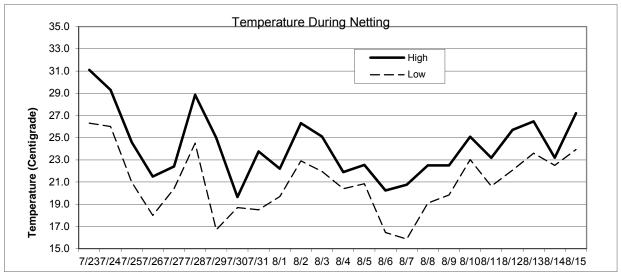
3.1.5 Weather and Temperature

Weather conditions were monitored each night of mist netting (Appendix D). Conditions recorded included: temperature, wind speed and direction, percent cloud cover, and moon phase (if visible). A standard digital thermometer was used to record temperature, wind speed was determined by use of the Beaufort wind scale, and cloud cover was estimated visually. Netting was terminated early on 11 August 2010 at site KM24 at 2300h, and on 14 August at sites KM27 and KM28 at 2200h because of precipitation. No bats were caught on any of these nights when netting was terminated early and these nights were not included in the total of 112 complete net nights. Nightly temperatures never fell low enough to require the termination of netting (Figure 6).

3.1.6 Net Site Habitat

A habitat assessment was completed for each net site. Habitat descriptions included: size, species, and relative abundance of large trees and snags that potentially serve as roost trees; canopy closure; understory clutter/openness; water availability; and flight corridors.





NOTE: Values are based on averages if netting was completed at more than one site on that night

Figure 6. High and low temperatures (°C) for nights when netting was completed.

ESI's habitat assessment includes species of large trees near the net site or roost and identifies components of the canopy and subcanopy layers. All trees that reach into the canopy are canopy trees, regardless of their diameter/size. As defined in the Indiana Bat Habitat Suitability Index Model (3D/Environmental 1995), dominant trees are the large trees in the canopy (>40 cm dbh) that have the greatest likelihood of being used by maternity colonies of Indiana bats. Many smaller trees are often also found in the canopy, and in some situations, the canopy can be entirely composed of smaller-diameter trees. ESI's habitat characterization identifies dominant and subdominant elements of the canopy.

The subcanopy, or understory, vegetation layer is well defined in classical ecological literature. It is that portion of the forest structure between the ground vegetation (to approximately 0.6 meter (2 ft) and the canopy layers, usually beginning at about 7.6 meters (25 ft). Vegetation in the understory may come from lower branches of overstory trees, small trees that will grow into the overstory, and small trees and shrubs that are confined to the understory. The amount of understory, or clutter, is also recorded, as many bat species, including the Indiana bat, tend to avoid areas of high clutter.

Roost potential, recorded only at net sites, is characterized by three categories: high, moderate, and low. The determination of roost potential is based on the individual bat biologist's experience and discretion at each site. Certain criteria are evaluated to help in the determination. ESI uses a combination of tree species composition, presence/absence and/or abundance of snags in the immediate area, canopy closure (i.e. solar exposure), and degree of clutter.



Each net site was documented with a sketch on the Net Site Habitat Description data sheet provided in Appendix D.

3.2 Radio Telemetry

No Indiana bats were caught or radio-tagged; no maternity roosts were monitored.

3.3 Portal Surveys

The study plan submitted to and approved by the USFWS WVFO identified known areas of mining from the U.S. Geological Survey GIS databases for mineral mining and all other Abandon Mine Lands and Permit Boundaries information from the West Virginia Department of Environmental Protection (accessed through West Virginia Universities GIS Technical Center (<u>http://wvgis.wvu.edu/</u>).

Portal/cave searches were conducted from 6 June through 25 August 2010 by teams of two individuals walking approximately 150 feet apart, 75 feet to either side of centerline. Each individual searched the areas within 75 feet to either side of the path they were walking. Coverage of potential well properties was completed in a similar manner.

No portals were found, assessed, or sampled.

4.0 Results

4.1 Bat Capture

No Indiana bats were caught during these studies. A total of 99 bats representing five species was captured: 21 big brown bats (*Eptesicus fuscus*), 71 eastern red bats (*Lasiurus borealis*), 3 tricolor (eastern pipistrelle) bats (*Perimyotis subflavus*), 3 little brown bats (*Myotis lucifugus*), and 1 hoary bat (*Lasiurus cinereous*) (Table 3). Red bats were 71 percent of the total catch and big brown bats were 21 percent.

	Adult		Adult	Female)	Juv	enile		
Bat Species	Male	L	PL	NR	UNK	Male	Female	Unknown	Total
Big brown bat	4		1		4	4	4	4	21
Eastern red bat	22		2		14	5	13	15	71
Hoary bat	1								1
Little brown bat	2						1		3
Pesi 296.03 AEP Mou Mist Net Survey	ntaineer CCS	S II			26				RST

Table 3. Bat captures for the AEP Mountaineer CCS II Project.

	Adult		Adult	Female	<u>;</u>	Juv	enile		
Bat Species	Male	L	PL	NR	UNK	Male	Female	Unknown	Total
Tricolor bat			1			1	1		3
Total	29		4		18	10	19	19	99

L = lactating; PL = post-lactating; NR = non-reproductive; UNK = reproductive condition not determined (unknown)

4.1.1 Occurrence by Sex and Age

Adult bats were 51.5 percent of captures, including 22 females and 29 males; bats of unknown age were 19.2 percent of the catch. Of the adult individuals, approximately 22 and 29 percent were female and male, respectively. Only 18 percent of adult females (n = 4) were post-lactating, while the reproductive condition of most females (n = 18) could not be ascertained. The high frequency of individuals of unknown age and unknown reproductive condition precludes meaningful statistical analyses of most parameters for sex and age. Evidence of reproduction (capture of postlactating females or juvenile bats) was obtained for four of the five species; reproduction was not confirmed for the hoary bat.

4.1.2 Species Diversity

Species richness was five species of bats. The mean number of individuals captured per net site was 3.5 bats; the catch per net night, excluding unproductive partial net nights cancelled because of poor weather, was 0.9 bats. The largest number of individuals caught was at site KM7 (n = 15), followed by sites KM5 (n = 9), KM14 (n = 15) 8), and KM25 (n = 8). Three species (species richness) were caught at sites KM5 and KM7.

A MacArthur Diversity Index (D = 1.8) indicates that there is the equivalent of 1.8 species evenly represented. Species evenness was 0.356, meaning that 35.6 percent of species captured were equally represented in the sample.

4.2 Habitat Characterization of Net Sites

Mist net sites were placed in association with forested areas of the corridor, based upon their suitability for Indiana bat roosting. A habitat assessment of the immediate area surrounding net sites was conducted to gain a generalized view of the available habitat across the Project area. Table 4 summarizes habitat characteristics at each net site.

Sites were largely characterized as young upland forest (64%). Dominant tree species included white oak (Quercus alba) (42.8% of sites) followed by red oak (Quercus rubra) (25.0%). Subdominant canopy species consisted of red maple (Acer rubrum) and sugar maple (Acer saccharum), at 39 and 36 percent of sites, respectively. Nineteen sites (68%) were ranked as having a low roost tree potential with the remainder of sites characterized as moderate. Only three sites had open understory (7 were cluttered and 18 were moderately cluttered), which provides easy access to roosts. Most understory clutter was attributed to saplings, which is again Pesi 296.03 AEP Mountaineer CCS II 27 Mist Net Survey

indicative of relatively young stands and inherent in a relatively low roosting potential.

Overall, 19 of 28 sites ranked as of low quality for roost sites and 9 ranked as of moderate value.



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0110	Wate	Water Source		Tree Species ¹			Subca	Subcanopy Clutter	Roc	Roost Tree		
SITE	Name	Distance (m)	Dominant Canopy	Subdominant Canopy	Subcanopy	CC ²	Rating ³	Composition	Potential ⁴	Composition	Habitat Type⁵	Herb. Cover ⁶
KM1	UNK	UNK	Ouercus alba, Acer saccharum	Carya ovata, Quercus rubra		×	M	Branches	Γ	Snags	ΥU	S
KM2	UNK	UNK	Quercus rubra	Acer rubrum, Fraxinus americana, Quercus rubra	Acer rubrum	M	W	Branches	_	Lrg trees	YU, WF, OF	D
KM3	UNK	UNK	Liriodendron tulipifera, Quercus alba, Fraxinus americana	Acer saccharum, Acer rubrum, Fraxinus americana	Acer saccharum, Acer rubrum	Þ	≥	Branches & Saplings	≥	Lrg trees	ML, YL, CPL	Q
KM4	UNK	150	Ouercus alba, Platanus occidentalis	Juglans nigra, Prunus serotina	Rhus radicans	Σ	U	Shrubs	⊵	Snags	ML, YL, WF, CPL, DLP	Σ
KM5	Broad run	10	Quercus rubra, Quercus alba, Prunus serotina	Juglans nigra, Platanus occidentalis, Acer rubrum	Carpinus caroliniana, Acer rubrum, Sassafras albidum	Σ	Z	Branches	⊵	Lrg trees & snags	MU, YU, WIFE, S/R	Q
KM6	UNK	UNK	Acer negundo	Acer negundo, Crataegus sp.	Acer negundo	M	C	Branches	Γ	Snags	YU, W/FE	×
KMX	UNK	20	Platanus occidentalis, Pinus virginiana	Acer rubrum, Fagus grandifolia, Acer saccharum	Acer negundo, Ulmus rubra, Robinia pseudoacacia	Σ	×	Saplings	Μ	Snags	YL, OF, EW	×
KM8	UNK	UNK	Robinia pseudoacacia, Fraxinus americana	Robinia pseudoacacia, Fraxinus americana	Robinia pseudoacacia	Z	×	Branches	_	Snags	λŊ	S
KM9	UNK	UNK	Pinus virginiana	Quercus rubra, Quercus montana, Acer rubrum	Acer saccharum, Quercus montana, Acer rubrum	M	N	Branches	Γ	Snags	ΥU	N

Table 4. Habitat at the AEP Mountaineer CCS II Project mist net survey sites.

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BSI

Appendix F

	Wate	Water Source		Tree Species ¹			Subca	Subcanopy Clutter	Ro	Roost Tree		
Site	Name	Distance (m)	Dominant Canopy	Subdominant Canopy	Subcanopy	CC ²	Rating ³	Composition	Potential ⁴	Composition	Habitat Type⁵	Herb. Cover ⁶
KM10	UNK	UNK	Acer rubrum	Acer saccharum, Quercus rubra, Pinus virginiana	Acer rubrum, Acer saccharum	×	M	Saplings	W	Snags	ΥU	D
KM11	UNK	UNK	Robinia pseudoacacia, Quercus alba	Robinia pseudoacacia	Ulmus spp.	Σ	×	Saplings	Ļ	Snags	YU,C/PL	Σ
KM12	UNK	ę	Platanus occidentalis, Liriodendron tulipifera	Acer saccharum, Juglans nigra, Pinus virginiana	Cercis canadensis, Carpinus caroliniana	≥	⊵	Saplings	Σ	Lrg trees	ML, W/FE	D
KM13	UNK	-	Ouercus alba, Platanus occidentalis, Liriodendron tulipifera	Juglans nigra, Acer saccharum, Acer rubrum	Aesculus flava, Carpinus caroliniana, Cercis canadensis	Z	U	Saplings	×	Lrg trees	ML, YL, W/FE, OF	Q
KM14	UNK	UNK	Acer rubrum, Quercus alba	Willow spp.	Willow spp., Rhododendron spp.	Σ	≥	Branches & Saplings	_	Snags	YL, OF	Z
KM15	NNK	200	Ouercus stellata, Ouercus rubra, Pinus sylvestris	Robinia pseudoacacia, Ouercus rubra Ouercus rubra	Cercis canadensis, Corruus florida, Sassafras albidum, Rosa multiflora, Juniperus virginiana, Ulmus americana, Diospyros virginiana	Σ	0	Saplings	_	Snags	YU, WIFE, C/PL	Σ
KM16	UNK	3000	Quercus alba, Quercus rubra, Carya tomentosa	Robinia pseudoacacia, Quercus rubra, Ulmus americana	Robinia pseudoacacia, Rhus typhina	0	C	Saplings	L	Lrg trees & snags	YU, OF	D
KM17	Ohio River	1900	Quercus alba, Quercus coccinea	Asimina triloba, Carya tomentosa, Acer rubrum	Robinia pseudoacacia, Asimina triloba, Acer saccharum	Σ	≥	Saplings	_	Lrg trees	YU,	Σ
KM18	UNK	UNK	Acer rubrum	Acer rubrum	Acer rubrum	M	0	Branches	W	Lrg trees	YU,C/PL	W
Pesi 296.03 AEF Mist Net Survey	.03 AEP Mi Survey	Pesi 296.03 AEP Mountaineer CCS II Mist Net Survey	CS II		30	0						ISt

Appendix F

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	Water	Water Source		Tree Species ¹			Subca	Subcanopy Clutter	Ro	Roost Tree		
Site	Name	Distance (m)	Dominant Canopy	Subdominant Canopy	Subcanopy	CC ²	Rating ³	Composition	Potential ⁴	Composition	Habitat Type⁵	Herb. Cover ⁶
KM19	UNK	1000	Acer saccharum, Liriodendron Lulipifera, Robinia pseudoacacia	Acer saccharum, Liriodendron tulipifera, Fraxinus americana	Carya tomentosa, Smilax sp., Populus grandidentata, Robinia pseudoacacia, Lindera benzoin, Corrus florida, Quercus alba, Pinus virginiana, Acer rubum	≥	C C	Branches & Saplings	_	Snags	YU, WIFE, C/PL	×
KM20	UNK	3	Platanus occidentalis, Acer saccharum	Robinia pseudoacacia, Juglans nigra, Aesculus flava	Ulmus rubra, Cercis canadensis, Carpinus caroliniana	M	C	Saplings	Г	Snags	YL, S/R	S
KM21	Ohio River	1 km	Acer saccharum, Robinia pseudoacacia, Quercus rubra	Quercus rubra, Acer saccharum, Acer rubrum, Robinia pseudoacacia, Carya ovata, Ailanthus altissima, Liriodendron tulipifera	Oxydendrum arboreum, Rubus spp., Lonicera spp., Populus grandidentata, Ouercus alba, Cercis canadensis, Sassafras albidum, Rhus typhina, Robinia pseudoacacia, Acer rubrum	≥	U	Branches & Saplings	_	Snags	YU,WFE	٩
KM22	UNK	NNN		Pinus strobus, Quercus alba, Acer rubrum	Pinus strobus, Quercus alba, Aesculus flava	0	≥	Branches	-	Snags	W/FE	Σ
KM23	UNK	UNK	Juglans nigra, Robinia pseudoacacia, Ailanthus altissima	Robinia pseudoacacia	Robinia pseudoacacia	×	M	Branches & Saplings	-	Snags	YU,OF,C/PL	M
KM24	UNK	-	Platanus occidentalis, Acer negundo	Juglans nigra, Acer saccharum, Liquidambar styraciflua	Aesculus flava,	×	×	Branches & Saplings	Г	Lrg trees	YL,S/R	×
KM25	Ohio River	1300	Ouercus alba, Ouercus velutina	Quercus montana, Ulmus americana, Acer rubrum	Quercus montana, Acer rubrum, Ulmus americana	N	M	Saplings	Γ	Lrg trees	ΥU	Z
Pesi 296. Mist Net (.03 AEP Mc Survey	Pesi 296.03 AEP Mountaineer CCS II Mist Net Survey	cs II		31	5						IS

Appendix F

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5.0 Discussion

5.1 Bat Capture

Netting provided no evidence that the Indiana bat uses habitat within the project area during the summer season. Mist net sampling efforts met minimum requirements of guidelines set by USFWS and the Indiana bat Recovery Team, as set forth in a study plan approved by USFWS WVFO to survey summer habitat for the presence/absence of the federally-endangered Indiana bat.

Ninety-nine bats, representing five species, were captured at 28 net sites; all but 7 of these were big brown and red bats, the two most common species in the eastern United States. Three little brown bats, three tricolor bats, and one hoary bat were also captured. Twelve species of bats are typically considered to occur in West Virginia: little brown bat, northern bat, Indiana bat, small-footed bat (*Myotis leibii*), big brown bat, evening bat (*Nycticeius humeralis*), tricolor (eastern pipistrelle) bat, eastern red bat, hoary bat, silver-haired bat (*Lasionycteris noctivagans*), Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), and Townsend's big-eared bat (*Corynorhinus townsendii*) (Whitaker and Hamilton 1998, Harvey et al. 1999). In addition, the gray bat (*Myotis grisescens*) has once been documented in the state (Stihler and Brack 1992).

In general, species richness, diversity, and rate of capture were low (Table 5). Species diversity was 1.39 species per net site (SD = 0.74). Only two bats belonging to the genus *Myotis*, both little brown bats, were caught; no northern, Indiana, or small-footed bats were caught. The catch of tri-colored bats, another species that hibernates in caves during winter, was also low, and limited to two individuals. It is even arguable that the catch of big brown bats, which only sometimes hibernate in caves, was low, with an abundance of less than one-third of the catch of red bats, which it often exceeds.

Based on these survey results, it is improbable that the project will have any effect on the Indiana bat that is not insignificant or discountable.

Table 5. Capture success during the present study compared to similar studies in woodland habitats in West Virginia and in the eastern and midwestern United States within the range of the Indiana bat.

	Bats/Net night	Bats/Net site	Sp. Diversity Index ¹	Sp. Rich- ness	Source
AEP Mountaineer CCS II, WV	0.9	3.5	1.8	5	
Camp Dawson, WV	1.4	6.1	4.0	6	Brack et al. 2005
Camp Dawson, WV	5.3	21	2.4	8	ESI 2006
Monongahela NF, WV	0.9	3.7	2.5	6	ESI 2000
Pesi 296.03 AEP Mountaineer CCS I Mist Net Survey	I	33			EST

			Sp.	Sp.	
	Bats/Net	Bats/Net	Diversity	Rich-	
	night	site	Index ¹	ness	Source
Private 2 net sites, WV	1.1	4.5	1.2	2	ESI 2003
Private 15 net sites, WV	0.8	3.3	2.1	4	ESI2003
Private 2 net sites, WV	0.4	1.5	1.8	2	ESI 2005
Private 3 net sites, WV	2.3	9.0	2.8	4	ESI 2005
Private 2 net sites, WV	1.3	2.5	2.8	4	ESI 2005
Private 2 net sites, WV	0.1	0.5	1.0	1	ESI 2005
Private 4 net sites, WV	0.6	2.3	3.5	5	ESI 2005
Private 2 net sites, WV	0.3	1.3	1.0	1	ESI 2005
Private 21 net sites, WV	3.7	14.6	3.8	7	ESI 2006
Private 34 Net Sites, WV	1.9	7.4	3.9	7	ESI 2006
Private 2 net sites, WV	4.0	16	2.4	4	ESI 2009
Private 2 net sites, WV	2.0	8.0	3.3	5	ESI 2010
Potter & McKean Co., PA	2.9	12.1	2.3		Brack 2009
Ravenna, OH	2.4	9.7	2.9		Brack and Duffey 2006
Kentucky	0.4-4.5/1.7	1.5-18.0/6.6	2.0-4.3/2.8		ESI ² (ranges and means)
Crane, IN	1.8	5.6	4.4		Brack and Whitaker 2004
HNF, IN	2.1		4.3		Brack et al 2004
Ft. Leavenworth, KS $\frac{1}{100}$ Ft. Leavenworth, KS	2.9	9.4	1.6		Brack et al. 2007

¹ SDI = $1/\Sigma P_i^2$ (MacArthur 1972)

² based on 12 ESI projects, ranging in size from 4 to 212 net nights (\bar{X} = 40)

5.2 Habitat Suitability

The habitat near the 28 net sites was considered representative of the habitat in the project area. In general it was suitable but of low to moderate value in terms of providing suitable roost sites for a maternity colony of the Indiana bat; 19 of 28 sites ranked as low quality for roost sites and 9 were of moderate value.

5.3 Conclusions

This effort provided no evidence that the Indiana bat or other endangered bat uses the project area during summer months. No endangered bats were caught in mist nets and the roosting habitat was generally of low (to moderate) quality. Thus it is unlikely the Indiana bat, or other endangered bat, is present within the study areas or that the project would adversely affect them. Based on our experience, ESI anticipates that the project would have insignificant and discountable effects to bats, and on behalf of our clients (DOE and AEP) respectfully suggest that a "May Affect – Is Not Likely to Adversely Affect" determination is appropriate for Section 7 ESA consultation for this proposed project.



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APPENDIX A STUDY PLAN DATED 9 JUNE 2010





ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

781 Neeb Road Cincinnati, OH 45233 Phone: (513) 451-1777; Fax: (513) 451-3321

Pesi 926.01

9 June 2010

Ms. Barbara Douglas U.S. Fish and Wildlife Service West Virginia Field Office Ecological Services 694 Beverly Pike Elkins, West Virginia 26241

RE: Request for Early Coordination/Informal Consultation for AEP's Proposed Mountaineer CCS II Project in Mason County, West Virginia.

American Electric Power (AEP) and the U.S. Department of Energy (DOE), as lead Federal agency, propose to develop a carbon dioxide capture and storage (CCS) project at AEP's Mountaineer Power Plant in Mason County, West Virginia. The project is referred to as the proposed Mountaineer CCS II Project (or "Project" hereafter in this transmittal). AEP is seeking financial assistance from DOE for the proposed Project. As such, AEP will support DOE's preparation of an environmental impact statement (EIS) and future consultation under Section 7 of the Endangered Species Act (ESA).

The EIS will address all aspects of the Project; however, site selection for characterization wells and potential corridor alignments for the CO₂ pipeline are currently undergoing feasibility considerations by AEP. Preliminary field studies for characterization wells are expected to precede preliminary development of the Draft EIS. For that reason, Environmental Solutions & Innovations, Inc. (ESI) is writing on behalf of AEP and their consultant Potomac-Hudson Engineering, Inc (PHE), to request early coordination/informal consultation with U.S. Fish and Wildlife Service (USFWS) regarding threatened and endangered species or their critical habitat in the vicinity of the Project. Our approach is to investigate all such concerns as early in the Project as possible.

The following provides a brief description of the Project and plans for characterization work in support of Project planning and EIS development.

Project Description

The Project will add the infrastructure necessary to capture approximately 1.5 million tonnes of carbon dioxide (CO_2) annually from a 235-megawatt slipstream of flue gas from the existing 1300-megawatt Mountaineer Power Plant located near New Haven, West Virginia. Captured CO_2 will be transported by pipeline (primarily underground) to well injection sites within approximately 12 miles of the plant and injected for permanent storage into geologic formations approximately 1.5 miles underground.

www.EnvironmentalSI.com

AEP will conduct geologic and hydrogeologic characterization activities to support preliminary Project engineering and design. As part of these activities, preliminary characterization work is planned at potential injection well sites and within potential pipeline corridors between the Mountaineer Plant and well sites. Up to three deep characterization wells will be developed to characterize subsurface conditions and assess their suitability for injection and storage of CO₂. Four properties owned by AEP have been identified for potential characterization wells and, in order of preference to support characterization activities; they are the (1) Jordan Tract, (2) AEP Landfill Site, (3) Eastern Sporn Tract, and (4) the Western Sporn Tract. Conceptual pipeline corridors to each of the four locations have been preliminarily identified. The final locations and design of the characterization wells, pipeline corridors, access roads, injection and monitoring wells, and potentially other work areas will be refined after completion of associated environmental studies.

Attachment A contains maps depicting the location of the Mountaineer Plant, characterization well properties, and preliminary conceptual pipeline corridors.

Indiana Bat Surveys

ESI has been contracted to conduct Indiana bat surveys within the study area, following guidelines in the 2007 Indiana Bat Draft Recovery Plan. Along with this early coordination letter, ESI is submitting a Project Study Plan for the Indiana bat to your office and to the West Virginia Division of Natural Resources (WVDNR) for review and approval. Based on the acceptability of the Study Plan, fieldwork will be coordinated with your office and with WVDNR.

Evaluations for Other Species

ESI is also requesting information from USFWS about ecologically significant habitats and/or species of special concern present within or near the Project. We are also coordinating with WVDNR to see whether they have concerns for any protected or unique species or habitats that could be adversely affect. If so, we are seeking to identify appropriate characterization and evaluation needs/studies as a part of our efforts to avoid and minimize adverse impacts and to support our characterization and evaluation of these species and potential Project impacts in the EIS process and applicable documentation.

Ongoing Consultation

On-going coordination and consultation with the USFWS and WVDNR throughout the Project is expected. Updates to your agency will be provided as information becomes available. If you desire, we are available to participate in face-to-face or teleconference meetings to facilitate your review or understanding of the Project.



2

We would appreciate your participation and request a response as soon as practical within the next 30 days to help us more quickly identify and focus on potential impacts to protected species.

If you need additional information please do not hesitate to contact me at (513) 451-1777, <u>VBrack@EnvironmentalSI.com</u>.

Sincerely,

Virgil Brack, Jr., Ph.D., MBA, Principal Scientist Certified Wildlife Biologist, TWS Certified Senior Ecologist, ESA

cc: M. Lusk, DOE/NETL M. McMillian, DOE/NETL B. Whipple, PHE F. Blake, AEP J. Magalski, AEP B. Sherrick, AEP V. Brack, ESI

enclosures



STUDY PLAN: ENDANGERED BAT STUDIES FOR AMERICAN ELECTRIC POWER'S PROPOSED MOUNTAINEER CCS II PROJECT: CO₂ PIPELINE AND INJECTION WELL SITES, MASON COUNTY, WEST VIRGINIA

9 June 2010

Submitted to:

Ms. Barbara Douglas, Endangered Species Biologist U.S. Fish and Wildlife Service West Virginia Field Office Elkins, West Virginia 26241

Prepared by:



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Appendix A: Project Maps Appendix B: Sample Data Sheets

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1.0 Introduction

American Electric Power (AEP) and the U.S. Department of Energy (DOE), propose to develop a carbon dioxide capture and storage (CCS) project at the AEP Mountaineer Power Plant located in Mason County, West Virginia. It is referred to as the proposed Mountaineer CCS II Project (or simply "Project" hereafter within this document).

Environmental Solutions & Innovations, Inc (ESI) was hired by AEP and their prime consultant Potomac-Hudson Engineering, Inc. (PHE) to survey for the federally endangered Indiana Bat (*Myotis sodalis*) along feasible alternative CO₂ pipeline corridors and injection wells (initially characterization wells).

American Electric Power 1 Riverside Plaza Columbus, OH 43215 Potomac-Hudson Engineering, Inc. 7830 Old Georgetown Road, Suite 220 Bethesda, MD 20814

Studies will be carried out under our U.S. Fish and Wildlife (USFWS) Federal Fish and Wildlife Permit (TE02373A-0). We currently hold West Virginia Scientific Collections Permits, issued to individual collectors (currently 2010.171 through 2010.18), enabling us to work with endangered bats.

2.0 **Project Description**

The Project will capture approximately 1.5 million tons of carbon dioxide (CO_2) annually from a 235-megawatt slipstream of flue gas from the existing 1300-megawatt Mountaineer Power Plant located near New Haven, West Virginia. Captured CO_2 will be transported by pipeline to injection sites located within approximately 12 miles of the plant. Captured CO_2 will be injected into and permanently stored in geologic formations approximately 1.5 miles underground.

AEP will conduct geologic and hydrogeologic characterization at alternative potential injection well sites and have identified alternative potential pipeline corridors between the Mountaineer plant and the well sites. Four properties owned by AEP have been identified for potential characterization wells, used to characterize subsurface conditions and assess the suitability for injection and storage of CO₂. The approximate acreages at these four sites are:

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- Jordan Tract: 195 ac
- AEP Landfill property (3 parcels): 28 ac
- Eastern Sporn Tract: 400 ac
- Western Sporn Tract: 70 ac

Conceptual pipeline corridors to each of these four locations have been also identified. Each corridor may include areas of overlap with other corridors, so the sum for all corridors is greater than the total collective corridor length of 30.4 miles.

Appendix A Map 1 contains maps depicting the location of the Mountaineer Plant, characterization well properties, and preliminary conceptual corridors.

Major portions of each potential corridor parallel and are adjacent to existing corridor rights-of-way (ROW), including utilities and roads. In some cases, the pipeline may be collocated within the existing ROW, but at this time that cannot be ascertained with certainty, so they are treated as though they are not colocated. In addition, access roads, lay-down areas, and other additional work spaces may be required; however, at this time the only such identified area is to the south of the Jordan Tract well site.

3.0 Summer Mist Net Surveys

3.1 Protocol

ESI will follow guidelines provided by the USFWS in the 2007 Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision (Table 1).

Bats are live-caught in mist nets and released unharmed near the point of capture. Captured bats are identified to species, sex, age class, and reproductive condition. Weight and right forearm length of each individual are also recorded (data sheets are provided in Appendix B). Age is determined by examining the ephiphysealdiaphyseal fusion of long bones in the wing. Reproductive condition of female bats is recorded as pregnant (based on gentle abdominal palpation), lactating, post lactating, or non-reproductive. Time and location/net site of captured bats is recorded. Processing is typically completed within 30 minutes of the time the bat is removed from the net.

Table 1. USFWS Mist Netting Guidelines

NETTING GUIDELINES

- 1. Netting Season: 15 May to 15 August, when Indiana bats occupy summer habitat.
- 2. Equipment (Mist Nets): constructed of the finest, lowest visibility mesh commercially available monofilament or black nylon with the mesh size approximately $1\frac{1}{2}$ inch $(1\frac{1}{4} 1\frac{3}{4})$ (38 mm).
- 3. Net Placement: mist nets extend approximately from water or ground level to tree canopy and are bounded by foliage on the sides. Net width and height are adjusted for the fullest coverage of the flight corridor at each site. A "typical" net set consists of three (or more) nets "stacked" on top of one another; width may vary up to 60 feet (20 m).
- 4. Net Site Spacing:
 - Streams one net site per 0.6 mile (1 km)
 - Land Tracts two net sites per 246 acres (1 square km)
- 5. Minimum Level of Effort Per Net Site:
 - Two net locations (sets) per net site, with locations (sets) at least 100 feet (30 m) apart
 - Two (calendar) nights of netting
 - At least four net–nights (1 net–night = 1 net set deployed for 1 night); typically, two net sets are deployed at one site for two nights, resulting in four net-nights
 - Sample Period: begin at dusk and net for 5 hours (approximately 0200h)
 - Nets are monitored at approximately 10-minute intervals
 - No disturbance near the nets between checks
- 6. Weather Conditions: net only if the following weather conditions are met:
 - No precipitation
 - Temperature \geq 10°C (50°F)
 - No strong winds

Source: U.S. Fish and Wildlife Service, 2007

3.2 White Nose syndrome

White-nose syndrome (WNS) is an emerging disease that is killing millions of bats in the eastern U.S. The disease, which was first found in New York is spreading and is



now in West Virginia. Bat handling will follow current WNS protocols set by the USFWS. Captured bats will be examined for damage associated with WNS to the wing and uropatagium (tail) membranes, including use of white light and ultraviolet and wing damage will be categorize using the "Wing-Damage Index Used for Characterizing Wing Condition of Bats Affected by White-nose Syndrome" established by Jon Reichard in 2008. We keep current on changes in agency responses to WNS needs.

3.3 Level of Effort

3.3.1 Well Areas

Netting is completed at a rate of 2 net sites per 246 ac (1 km²). For this project, this equated to 6 net sites, with the following level of effort at each of the well sites:

- Jordan Tract: 2 sites
- AEP Landfill property: no sites as the properties are contained within the corridor coverage
- Eastern Sporn Tract: 4 net sites
- Western Sporn Tract: 2 net sites

3.3.2 Pipeline Corridors

Netting is completed at 1-kilometer intervals along portions of the corridor where appropriate habitat is proposed to be cleared. Netting segments are 1 kilometer long by 1 kilometer wide, creating a netting block of 1 km². Net sites may be situated anywhere within each 1 km² block; thus, net sites will not be "forced" into even 1-kilometer spacing, although one net site will be completed for each linear kilometer of suitable habitat.

The well sites and pipeline corridors were overlain on aerial photographs in GIS. The pipeline corridors were evaluated to determine where potential habitat (forested or wooded areas) would be removed to install the proposed pipeline. Areas within the construction corridor possessing no roosting habitat (i.e., agricultural, commercial, and occasionally residential) were excluded. Appendix A Map 2 shows the lengths of each segment of all potential corridors with 1-kilometer blocks superimposed upon them where suitable (woodland) habitat is present, and within which a net site will be placed. This produced a total of 26 net sites.

When mist netting is completed, each segment of the corridor is evaluated in the field to verify the accuracy of the habitat determination made from aerial photographs. The final report will include maps identifying all segments, both netted and not. Segments that are not netted (because no wooded habitat is removed) will be identified as such. Likewise the basis for this determination is documented with a



ROW Habitat Exclusion data sheet and a representative photograph. Copies of ESI's data sheets are provided in Appendix B.

3.3.3 Overlap Between Well and Pipeline Corridors

Corridors are attached to well areas. Portions of the corridors may be covered by netting completed within the well areas. Specifically, netting within a well area will include portions of the corridor that are within 1 kilometer of the border of the well area opposite the attachment of the pipeline corridor. At the AEP Landfill property well site, no additional netting is required because it is contained within the area covered by netting of the corridor.

3.3.4 Access Roads and Other Additional Areas

As with the corridor, netting is completed for linear areas other than the corridor (e.g. access roads) where clearing will occur, except when they fall within 0.5 kilometer of the corridor and/or net site, they are covered by ROW netting. At this time the only such identified area is to the south of the Jordan Tract well site, where one additional net site is required (Appendix A) Map 2.

If additional clearing is required outside the established netting "blocks," additional netting will be conducted accordingly.

3.4 Habitat Evaluation

When netting is completed, a habitat description will be completed for each net location. The emphasis of this description is habitat form: size and relative abundance of large trees and/or snags [\geq 2.5 inches Diameter Breast Height (DBH) (Gumbert et al. 2002)] that may potentially serve as roost trees, canopy closure, understory clutter/openness, water availability, and flight corridors. Habitat form is emphasized because the Indiana bat roosts in a great many species of trees. Tree species composition is included in the assessment. Species composition is important because it provides insight to edaphic conditions on site. For example, an oakhickory stand references a different set of conditions than does a beech-maple stand. ESI's habitat characterization does more than emphasize species of large trees near the net. It identifies components of the canopy and subcanopy layers. ESI's habitat characterization also identifies dominant and subdominant elements of the canopy. The amount of understory, or clutter, is also recorded as many species of bats, including the Indiana bat, tend to avoid areas of high clutter.

The following items are used to ascertain the suitability of net sites and applicability of net placement:

• Netting is not completed in areas that have been cleared (e.g. row crops, hay fields/pastures, residences, etc.). *In contrast, wooded streams in an otherwise cleared area typically provide suitable habitat and will be netted.*

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- Netting is not completed in areas where all woody stems are <6 inches dbh.
- A decision not to net discreet, specific areas is made if all habitat is unsuitable (e.g., even-age, live, smooth barked, young, small <10 inches dbh stands of maple or tulip poplar) and the areas are not within a 1-kilometer netting interval. *In contrast, recently logged areas with a few remaining large trees, or young stands with a few large, old, often dead-or-dying "wolf trees" typically provide suitable habitat and will be netted.*

Excluded areas are documented on our standard ROW Habitat Exclusion data sheet and are provided, with a photograph, in the final report along, with mapping as appropriate.

3.5 Net Placement

Mist nets are set to maximize coverage of flight paths used by Indiana bats along suitable travel corridors, foraging areas, and/or drinking areas. Riparian corridors are often used for travel or foraging by Indiana bats. However, upland corridors (e.g., trails or logging roads) also provide suitable sites for the Indiana bat. In upland areas, nets placed within proximity to road ruts holding water have produced Indiana bats in many portions of the range. Site selection is based upon the extent of canopy cover, presence of an open flyway, and forest conditions near the site. The actual location and orientation of each net is determined in the field.

3.6 Emergence Counts

Where the ROW crosses very small patches of trees (e.g., <5 trees \geq 5" dbh) that ESI biologists determine are not suitable for netting, but do merit closer inspection (i.e., contain potentially suitable roost trees), ESI will visually monitor potential roost trees for a minimum of 2 nights at dusk to determine the presence/absence of bats roosting in trees possessing the following characteristics:

- Exfoliating, peeling or loose bark
- Splits in trunks or branches
- Cavities

Emergence counts/surveys are not completed during inclement weather, such as precipitation, strong wind, and/or temperatures below 10° Celsius (50°F).

4.0 Portal Surveys

4.1 Karst and Coal

Underground voids may be used by bats for winter hibernation. Voids may be natural or man made. In this portion of the world, natural caves occur in limestone bedrock or areas of karst topography. There are no natural caves known from within the Project area. In this portion of the world, the mining activity most likely to produce underground voids is coal extraction. Mining has occurred within the region containing the project.

4.2 Search for Portals

Coal deposits in West Virginia have been mined in many areas, with a variety of technologies. Portals, signaling mine voids, are the signature of sub-surface mining, and such voids may be used by bats for winter hibernation.

GIS databases for mineral mining were obtained from the U.S. Geological Survey (2001) and all other Abandon Mine Lands and Permit Boundaries information was from the West Virginia Department of Environmental Protection. These files can be accessed through West Virginia Universities GIS Technical Center (<u>http://wvgis.wvu.edu/</u>) and were used to identify known areas of mining (Appendix A Map 3).

Portal/cave searches will be conducted by teams of two individuals walking approximately 150 feet apart, 75 feet to either side of centerline. Each individual searches the areas within 75 feet to either side of the path they are walking. Coverage of well areas will be completed in a similar manner.

4.3 Initial Portal Assessment

If portals are found, they are assessed for their potential to serve as bat hibernacula, based on a variety of characteristics as identified in the USFWS in the 2007 Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision. (Additional detail is provided in Brack (2005) "*Field techniques for biological assessment: assessment of potential hibernacula and swarming/staging habitat*" in <u>Indiana Bat and Coal Mining</u>). These characteristics include:

- Size of portal entrance (and the potential for predation)
- Presence/absence of guano
- Depth of the portal i.e., did it extend beyond the depth to which a mine light shown, or did it appear to continue around a corner



- Air flow
- Other indications (such as spider webs or debris) that, by presence or state (disturbed vs. undisturbed), would provided evidence of use/no use by bats

Portals are documented with a GPS location, mine portal description data sheet (Appendix B), and photograph.

4.4 **Portal Survey Protocol**

Portals determined to be potentially suitable for bat use based on the initial Portal Assessment will be trapped. Trapping is completed in accordance with the 2007 Indiana Bat (Myotis sodalis) Draft Recovery Plan protocol and accepted trapping procedures (Table 2).

talbatt Т

Table 2.	Guidelines for mine/cave portal bat trapping surveys.
	PORTAL TRAPPING GUIDELINES
1.	Season: 10 April to 10 May or 15 September to 31 October
2.	Equipment
	 Harp Trap – Traps are checked at least once every 20 minutes.
	 Mist Nets – 50 denier, 38mm mesh. Nets checked at least once every 20 minutes
	 Bat Detector – AnaBat acoustical data collected for duration of trapping on both evenings
	Net Placement: mist nets extend approximately from water or ground level to tree canopy and are bounded by foliage on the sides. Net width and height are adjusted for the fullest coverage of the flight corridor at each site. A "typical" net set consists of three (or more) nets "stacked" on top of one another; width may vary up to 60 feet (20 m).
	Sample Period: ¹ / ₂ hour before sunset and continue for at least 5 hours
5.	Minimum Level of Effort Per Net Site:
	Two (calendar) nights of netting
	If no captures occur and no bat activity is noted with
	 a bat detector on the first evening during acceptable weather conditions, sampling will not be conducted a second night
6.	Weather Conditions: net only if the following weather conditions are met:
	 At least 3 hours free of heavy rain and thunderstorms
	 Temperature ≥ 10°C (50°F) for first 2 hours of sampling
	 Temperature above 1.6°C (35°F) until 0:00hr
	Source: Pennsylvania Game Commission, 2004



5.0 Radio Telemetry

5.1 Radio Tagging of Indiana Bats

After collecting morphometric data, all adult Indiana bats are fitted with radio transmitters. If juvenile Indiana bats are captured at a site before adults have been captured, they will be fitted with transmitters; if reproductive females have been caught and fitted with transmitters then juvenile bats from that site will be not be fitted with transmitters. Transmitters affixed to pregnant or juvenile bats will not constitute more than 5 percent of the bat's weight (Aldridge et al. 1988). Transmitters are obtained from Wildlife Materials, Inc., Titley Electronics, PTY LTD, Blackburn Transmitters, or a similarly reputable vendor.

Bat transmitters weigh 0.20 to 0.68 gram; ESI typically favors smaller transmitters to minimize the impact to the bat over the additional tracking window associated with larger devices. These transmitters tend to last 7 to 14 days. Transmitters are activated and tested before attachment. A small interscapular area is trimmed of fur and the transmitter is attached to this area with non-toxic surgical adhesive. The adhesive degrades over time (typically 1 to 4 weeks) and the transmitter falls off the bat. Biologists record the transmitter weight, weight of the bat before and after transmitter attachment, and holding time. Bats are released unharmed near the point of capture. Standardized data forms (Appendix B) are used for transmitter attachment.

5.2 Diurnal Roost Telemetry

5.2.1 Number and Locations of Bats Tagged

No more than 3 bats will be tagged at net sites that are within a 3-kilometer proximity of one another. This should keep us from tagging a bunch of bats from the same colony, where captures are "clustered," but should allow us to locate multiple colonies if they are present. Thus, two or more "clusters" of captures could occur along the alternative ROWs, and for example if there were three "clusters" of captures with three bats tagged at each cluster, nine bats would be tagged.

5.2.2 Length of Time

All Indiana bats tagged with transmitters will be tracked for a minimum of 6 days or until the transmitter is shed by the bat. Because receivers are not water resistant, telemetry will not occur during rain; however, barring rain telemetry typically will occur over 6 consecutive days. A ®Wildlife Materials TRX-2000S PLL Synthesized Tracking Receiver, ®Advanced Telemetry Systems, Inc. Model R2000 Scanning Receiver, or ®Titley Australis 26k receiver, or similar standard equipment, in

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conjunction with three or four element folding yagi directional antennas, loop antennas, and whip unidirectional antennas (manufactured by Wildlife Materials, Inc. or a similarly reputable firm) are used to track tagged bats. Signals are detected and followed to roost trees.

Beginning the day after bat capture and transmitter attachment, telemetry will be used to locate each bat's diurnal roost. Roost trees are identified to species and dbh is measured. The approximate height that each bat is roosting and general condition of the roost tree (dead, live, dying, % bark cover, etc.) and percentage of exfoliating bark are noted. A description of habitat near the roost (tree, hibernacula, man-made structure, etc.) is recorded. Roosts and associated habitat are characterized on standardized data forms (Appendix B).

Roosts are flagged or marked in another acceptable manner for ease of future identification. GPS coordinates are recorded for each roost. When feasible, distances among roost trees and other notable landscape features are determined.

5.2.3 Roost Emergence Counts

The value of finding roost trees is to understand the potential impact of the Project on the maternity colony. Unfortunately, many roost trees are often used by the same colony. Fortunately, most roosts contain only a very few bats and usually only one or two, or three roost trees contain a lot of bats. Thus, knowing how many bats are using the roost tree(s) located is an important part of understanding the importance of those trees.

Each tagged bat may roost in one or several trees. Emergence counts are conducted for a minimum of 6 days for each bat at each identified roost.

5.3 Nocturnal Foraging Telemetry

The impact to foraging habitat associated with habitat removal for a linear corridor tends to be small as a proportion of total availability. Likewise, studies have shown that Indiana bats may benefit from pipeline rights-of-way (Brown and Brack 2003, Brack 2006) and/or open green spaces (Rommé et al. 1995, Farmer et al. 2002, Gardner and Cook 2002). However, there is a point at which the anthropogenic nature of a landscape decreases the productivity of the land for foraging bats. Within the project area, abundant suitable foraging habitat exists and it is not anticipated that development of any of the project alternatives would substantially change that equation. As such, ESI proposes not to conduct nighttime foraging telemetry studies if Indiana bats are captured and radio-tagged.

6.0 Inaccessible Properties

With a proposed Project of this size, it is not unexpected that we may not gain access to all parcels required for netting. Therefore, the following is proposed for properties for which landowner access cannot be obtained:

- If access cannot be obtained for a high quality flyway within a 1-kilometer² block, the next best property, for which access can be obtained, within that 1-kilometer² block will be netted.
- If access cannot be obtained for *any* suitable flyways within a 1-kilometer² block, the best and most similar habitat, in one of the adjacent blocks will be netted instead. (This may result in two net sites being placed in some 1-kilometer² blocks.)
- If access cannot be obtained for *any* habitat within *multiple*, adjacent 1-kilometer² blocks, then the forest habitat quality will be evaluated based upon review from publicly accessible roads and GIS data including forest cover type, percentage of canopy cover, and aspect.
 - If the habitat is low-moderate quality, we will place 2 net sites within the closest, 1-kilometer² blocks to the inaccessible properties.
 - If the habitat is moderate-high quality, we will place 4 net sites within the closest, 1-kilometer² blocks to the inaccessible properties.

If an Indiana bat is captured, we will likely need to work with new, additional land owners, beyond those identified for mist netting, in order to gain access to roost(s) and/or other active areas. Studies can only be conducted where landowners grant permission to do so. If we locate a roost on a parcel where land access can not be gained, triangulation will be used to approximate the bat's diurnal roost location (s).

7.0 Avoidance and Minimization

To facilitate planning and smooth Project execution, we endeavor to gain agreement from USFWS on what minimization and avoidance measures will be employed under various capture scenarios, if in fact bats are caught:



7.1 Capture of a Single, Adult Male

If a single adult male Indiana bat is captured and:

- a roost tree cannot be located (after 6 days of telemetry efforts) then it will be assumed that the individual is transient and thus a seasonal cutting restriction (1 November to March 31) is not required.
- one or more roosts are located, but emergence counts show that bat to be the only bat roosting in the tree(s), two additional nights of netting and AnaBat data will be conducted nearby. If no additional *sodalis* are captured or detected by the AnaBat, then it will be assumed that the individual is transient and thus a seasonal cutting restriction (1 November to March 31) will be required for the identified roost trees, but not the surrounding area.
- one or more roosts are located and emergence counts reveal multiple bats using the tree(s), then at least two AnaBat acoustical detectors will be placed near the roost tree(s) for at least 2 nights used to identify the species using the tree(s). The two filters provided by the KDFWR / USFWS Frankfort field office and/or direct call identification by a qualified biologist will be used to determine if Indiana bat calls were recorded. If two or more separate call files contain calls of the Indiana bat, it is likely that multiple Indiana bats are using the tree(s). As such, ESI will either conduct additional mist netting in the area to attempt to catch and transmitter additional Indiana bats to understand how the bats are using the area OR assume a maternity colony is present and employ a seasonal cutting restriction within 2.5 miles of identified roost tree(s).

7.2 Capture of Adult Female or Juvenile

Capture of an adult female or juvenile Indiana bat is indicative that a maternity colony is present in the area. In the past, emergence counts of greater than 20 bats were often considered indicative of a "primary roost" while trees with less than 20 bats were considered "secondary roosts". However, as we have come to understand that most colonies exhibit a fission-fusion society structure, it can be difficult to understand which trees are primary trees, how many trees actually constitute a maternity colony, and if there are multiple colonies present in an area. (In 2007, ESI completed studies in New York where there were up to four colonies present and emergence counts on several trees ranged from zero to over 80 bats in just a few days.) As such, if an adult female or juvenile Indiana bat is captured, ESI will endeavor to collect adequate data to understand the location and number of roosts, and how many bats are using which trees in order to facilitate a determination of if one or more maternity colonies are present as well the overall size of the area used by the bats. Efforts to this end include:



- Completion of dusk emergence counts at all identified roosts for a minimum of 6 days. (Night vision scopes and/or AnaBat recording devices may be used as deemed appropriate by field staff.)
- In the event that only one reproductive bat is captured within any 2.5-mile length of corridor and tracked to any roost tree, it is assumed that a maternity colony is present in the area. If no primary roost (i.e., tree with over 20 bats) is located during the telemetry efforts up to four additional calendar nights of netting will be conducted near the bat's known roost(s) to capture and transmitter additional reproductive individuals from the same colony, to facilitate identification of at least one primary roost.
- If a single reproductive bat is caught and a roost tree cannot be located, we will observe a seasonal cutting restriction within 2.5 miles of the capture site.
- We will observe a seasonal cutting restriction within 2.5 miles of any identified roost tree(s) used by a reproductive individual.

8.0 Timeline and Reporting

Mist net surveys will be conducted between 15 May and 15 August 2010 and a complete survey report, covering all field studies completed will be submitted to USFWS. Our report includes maps showing all project areas including alternative well areas, ROW alignments, construction areas, access roads, net site locations, and areas excluded from netting based on habitat. Copies of all field data sheets and photographs of net sites, excluded areas, etc. are included in the report. The final report will detail survey methods, weather results, net site habitat analysis, and basic statistical analysis of results, including species diversity and richness.

Searches to locate portals will be completed by 15 July 2010 and if any portals are located they will be assessed for their potential to serve as hibernacula. A report of these findings will be submitted to USFWS by early August 2010 with recommendations for trapping of potentially suitable portals. With concurrence from USFWS, potentially suitable portals will be trapped between 25 August and the end of suitable autumn weather, typically about 20 October. The portal/cave search report will be amended to include results of the trapping surveys and resubmitted to USFWS. Our report includes maps showing portal search areas, portals assessed for potential suitability, and portals trapped. The report includes copies of all field



data sheets and photographs of portals. The final report will detail survey methods, weather results, and basic statistical analysis of results.

USFWS will be notified within 24 hours (via phone and/or email) upon capture of any endangered species.

9.0 Personnel

A list of ESI staff that may be involved in the mist netting field work for the Project follows. Other staff not listed here may also participate – resumes can be provided in advance of surveys if requested by USFWS; all individuals responsible for bat identification are listed on ESI's federal and state permits.

- 1. Dr. Virgil Brack, Jr. Principal Scientist & Project Manager
- 2. Mr. Jason Duffey
- 3. Mr. Adam Mann
- 4. Ms. Erin (Pfeffer) Basiger
- 5. Mr. Jack Basiger
- 6. Dr. Dale Sparks
- 7. Mr. David Jeffcott
- 8. Mr. John Timpone
- 9. Ms. Michelle Gilley

Resumes for all individuals listed above can be provided upon request.

10.0 Literature Cited

- Brack, V., Jr. 2005. Field techniques for biological assessment: assessment of potential hibernacula and swarming/staging habitat. Pages 89-92 *in* Indiana Bat and Coal Mining, A Technical Interactive Forum (K.C. Vories and A. Harrington, eds.) U.S. Department of Interior, Office of Surface Mining. Alton, Illinois.
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Pesi 296.01 Study Plan AEP Mountaineer CCS II

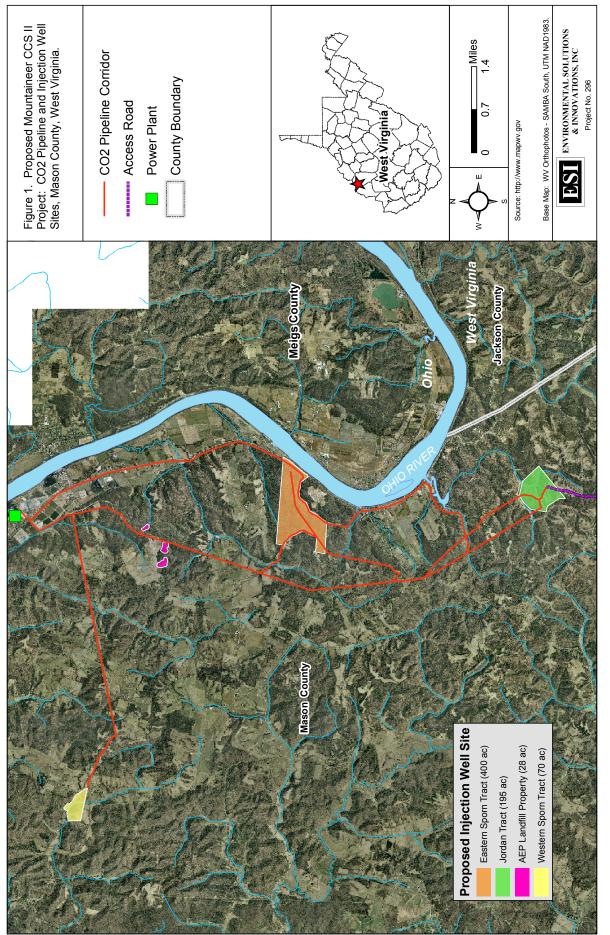


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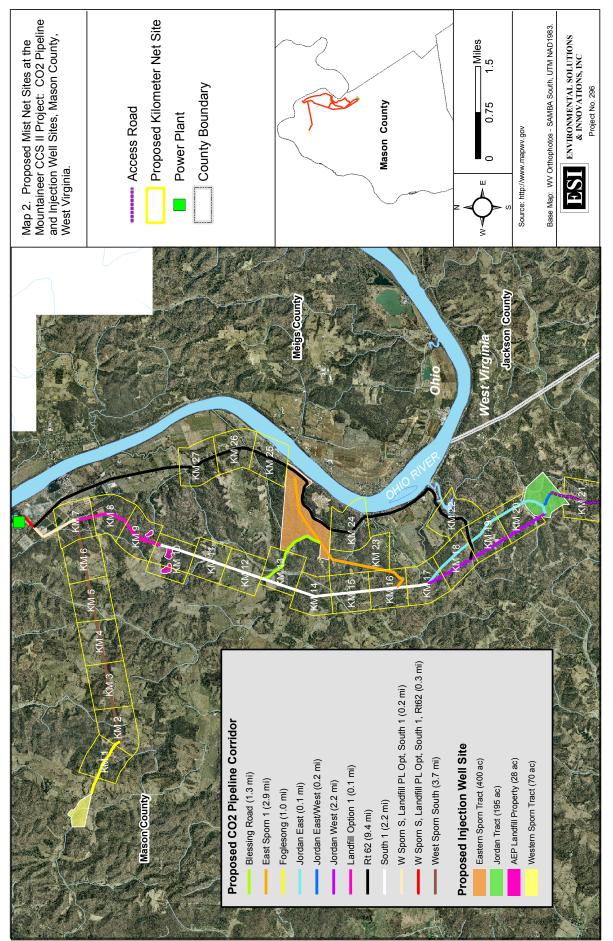
APPENDIX A PROJECT MAPS





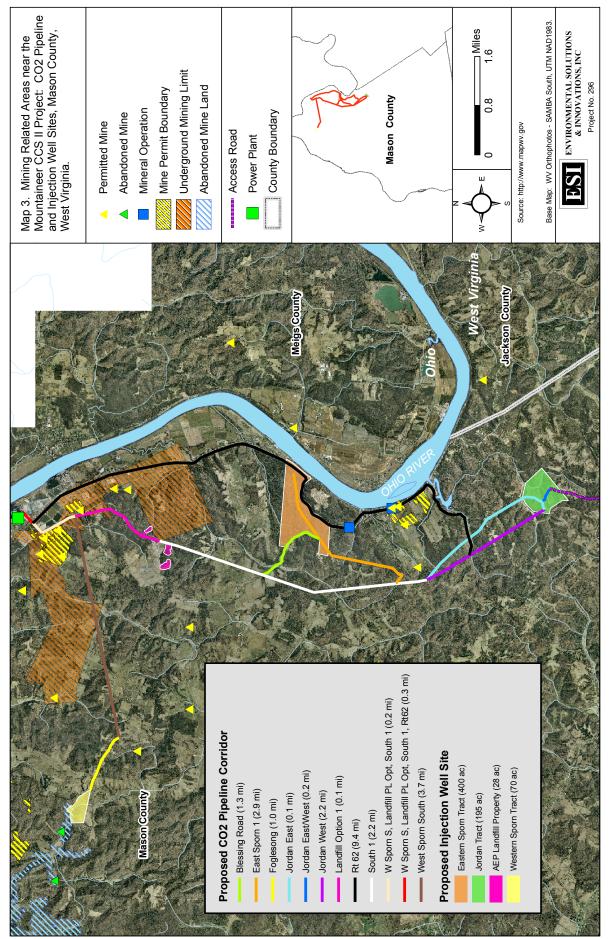
Appendix F

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Appendix F

F-70



Appendix F

F-71

APPENDIX B SAMPLE DATA SHEETS



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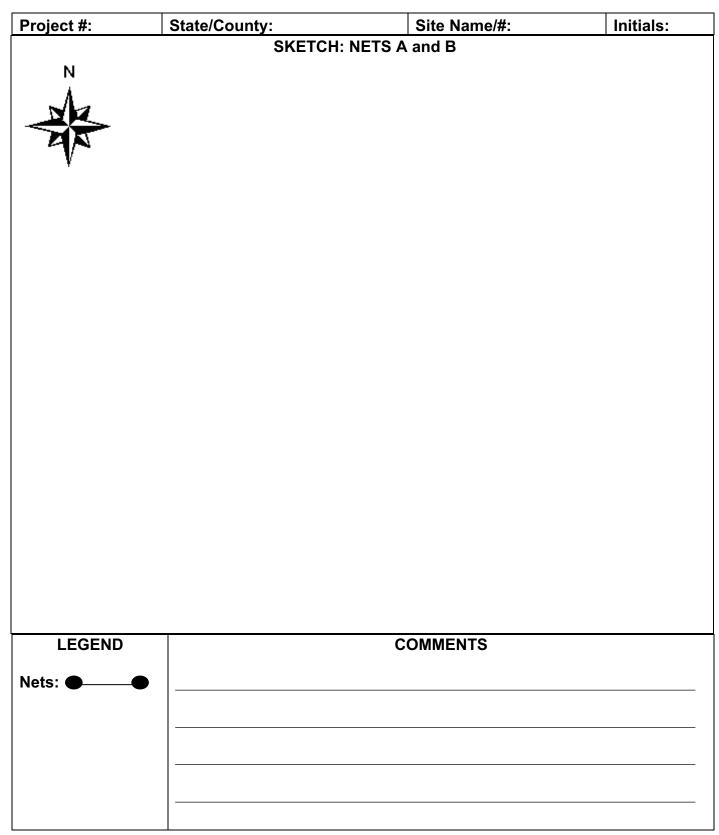


NET SITE HABITAT DESCRIPTION

Project #:	Date:	Biologists:		· · · · · · · · · · · · · · · · · · ·
Project Name:		Site Name/#	t:	· · · · · · · · · · · · · · · · · · ·
State: County:		USGS Quad	l:	
Camera #: Picture #s	:	GPS Unit #:	Wa	ypoint #:
Latitude:°' Distance to closest water source				
Water source name:			ater source	
ESTIMATED WATER SOURC			FTS) [.]	
Bank Height:meters				
Substratum:Bedrock				
Still Water Present (Y/N):				
VEGETATION:		• • • • • •		
Dominant Canopy Species (> 4	0 cm/16" dbh) Sul	odominant Can	opy Species (< 40 cm/16" dbh)
	<u> </u>			
Estimated dbh range: Lg:	Sm:Est	imated dbh ran	ge: Lg:	Sm:
Relative abundance of dominal			_	
Estimated canopy closure:	Closed		Moderate	Open
Roost tree potential consists of	f:Large Tree	esSnags	Both	Neither
Roost tree potential for the are	a is:High		Moderate	Low
Roost potential comments:				
Subcanopy clutter:	Closed		Moderate	Open
Subcanopy comprised largely o	of:Lower Bra Canopy Tre		Saplings	Shrubs
Common Subcanopy Species:		<u></u>		
Habitat Description:				
Check all that apply: Mature Upland Forest Re	pontly Loggod Forest	Cron/Posturo	land Shr	ub/corub Swamp
Young Upland ForestPir	ecently Logged Forest ne Plantation	Crop/Pasture Stream/River	·Ver	ub/scrub Swamp nal Pool
	oodlot/ForestEdge d Field	Emergent We Forested Swa		epwater Lake/Pond er
Herbaceous Cover: Spar		Dense		



NET SITE HABITAT DESCRIPTION (continued)



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Appendix F

is & Innovations, Inc. 10ne: 513-451-1777)		Comments									Picture #					ts lair Sample			
Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)	DATA	ection: % Cloud to Cover (estimated)									Time Down (0000 h)					() Picture # /Gumments			
	WEATHER DATA	Wind Dir From									t Time Up (0000 h)					ly Wing Index* /E) (0-3)			
		Wind Speed (estimated – see chart)*									Height (m)					A Belly (F/M/E)			
		Wind : (estimated -									Length (m)					RFA (mm)			
		Temp (°C)										M.,	M"	M"		² Wt (g)			
		Time (0000 h) T									Longitude	,				Repro. ²			
		0)									Long	0	0	0		Sex (M/F)			
									er abous	5						Age (Ad/Jv)			
< F	HA								First quarter	ה ה ה		N"	N"	N"		Time			
	KE UA						Camera #:				Latitude	,	r	•					
	BAI CAPIUKE DAIA	Date:					0	MOON PHASE*	_Waxing crescent	Waning crescent		0	o	o		Species			
Ē	BAI			County:				MC			Net/Trap Type ¹				Net Placement/Site Description:_	S			
ISE		Project #:	Project Name:_	State:	Biologists:	Site name/#:	GPS Unit #:		New moon Waxing gibbous	Last quarter	Net/Trap/Anabat #				Net Placement/	Capt Net # #			

² Reproductive Condition: Female = NR/PG/L/PL; Male = \uparrow/\downarrow ¹ M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back

Page 1 of $_{-}$

Appendix F

		Wing Index* Comments (0-3) Picture # /Guano/Hair Sample										Wing Index Key	Description No demans Equarition 6 and core code are reacted to the mandvarae	Light damage. Less than 50% of flight membrane is depigmented (splotching).	which is often visible only with translumination.
	Initials:	Belly Wing (F/M/E) (0											Score No da		1 which
	1	RFA Be (mm) (F/N										 es	Last		28 Apr 6
		Repro. ² Wt (g)										2010 Lunar Phases	First Full Ouarter Moon	Mar 23	5 Apr 21 Apr 28
		Sex (M/F)											New	Feb 13	Mar 15
	Site Name/#:	Age (Ad/Jv)													
Date:	Site	Time											uo		ind vanes
		Species										Beaufort Wind Scale	Visible Condition	Smoke rises vertically	Direction of wind shown by smoke but not by wind vanes
	ame:	et #											Description	Calm	Light Air
Project #:_	Project Name:	Capt Net # #											Wind Speed (mph)	0	1-3

Visible Condition	Smoke rises vertically	Direction of wind shown by smoke but not by wind vanes	Wind felt on face; leaves rustle; ordinary wind vane moved by wind	Leaves and small twigs in constant motion; wind extends light flag	Raises dust and loose paper; small branches are moved	Small trees in leaf begin to sway; crested wavelets on inland water	Large branches in motion; telephone wires whistle; umbrellas used with difficulty	Whole trees in motion; inconvenience in walking against wind	Breaks twigs off trees; generally impedes progress
Description	Calm	Light Air	Light Breeze	Gentle Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Gale	Fresh Gale
Wind Speed (mph)	0	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46

	Last	Quarter	Mar 7	Apr 6	May 5	Jun 4	Jul 4	Aug 2	Sep 1	Oct 30	Nov 28
	Full	Moon	Mar 29	Apr 28	May 27	Jun 26	Jul 25	Aug 24	Sep 23	Oct 22	Nov 21
	First	Quarter	Mar 23	Apr 21	May 20	Jun 18	Jul 18	Aug 16	Sep 15	Oct 14	Nov 13
I	New	Moon	Feb 13	Mar 15	Apr 14	May 13	Jun 12	Jul 11	Aug 9	Sep 8	Oct 7

2010	Description
0	No damage. Fewer than 5 small scar spots are present on the membranes.
	Light damage. Less than 50% of flight membrane is depigmented (splotching),
.	which is often visible only with translumination.
	Moderate damage. Greater than 50% of wing membrane covered with scar tissue
	(splotching). Scarring is visible without translumination. Membrane exhibits some
	necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may
2	be flaking and discolored along the majority of the forearm.
	Heavy damage. Deteriorated wing membrane and necrotic tissue. Isolated holes
	>0.5 cm are present in membranes. Necrotic or receding plagiopatagium and/or
e	chiropatagium are evident.



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ROW HABITAT EXCLUSION

(Linear Corridor Study)

Project #:	Date:	Biologists:	
Project Name:			
		USGS Quad:	
Location of Excluded S	ection:		
	Easter	m Terminus	
Approximate Milepost:	and/or Landr	nark:	
		Longitude:°'	
	Weste	rn Terminus	
Approvimate Milanost:	and/or Landr	nork	
		nark:°'_ Longitude:°'_	
Approximate Length: _			
Reasons for Exclusion:			
Habitat Types: (Check al. Industrial / Commercia	al Recent Clea		
		yMeadow	
Open Water / Lake Large River		b Mowed G able as roosts Other	
Estimated tree dbh range	: Lg: Sm:	Stream Present:	NoYes
Roost Tree Potential: Travel Corridor: No		·Moderate <i>'ES, THEN</i> Riparian	Upland

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BAT TRANSMITTER DATA

Project #:	Date:	Biologists:		
Project Name:		Site Name/#:		
State:	County:	Camera #:		
Picture #:				
Bat Species:		Capture Time	e:	
Age Ad or Jv	Sex M or F	Reproductive Condition F=(NR/PG/L/PL; M=↑/↓	Wt (g)	RFA (mm)
Transmitter weight =	grams	Frequency number:		
Transmitter + bat tot	al weight =	grams Band/color number:		····
 2) Signal receiving 3) Band attach 4) Condition of 	ving (frequency): ment (Y/N): animal:			
RELEASE TIME	: тс	DTAL HOLD TIME:mir	nutes	
RELEASE LOCA				
COMMENTS:				



FIXED TELEMETRY DATA

Page___of___

Project #:	Date:	Bio	logists:
Project Name:		State:	County:
USGS Quad:		GPS Unit #:	Waypoint:
Bat Species:			
Transmitter Frequency:			
Comments:			

Station #	Latitude	Longitude	Frequency	Time (0000h)	Azimuth	Comments



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ROOST TREE DATA

Page ____ of ____

Project #:	Date:	Biol	ogists:	
Project Name:		State:	County:	
GPS Unit #: Wa	aypoint:	Camera #:	Picture #:	
Latitude:°'	"N	Longitude: _	°"W	
Bat Species:		Sex(M/F):	Age(Ad/Jv):	Repro.:
Capture Date:		Capture Site	:	
Frequency:		Roost Name	/#:	
ROOST TREE DATA				
Roost tree species:			dbh: cm	
Estimated height from ground	to roost:	_(meters)		
Exfoliating bark (%):	Distance from cap	ture site:	m or km (circle o	ne)
Tree health:	Live	Dead	Parti	al
Observed roost potential:	Exfoliating Bark	Cracks/	/crevassesHollc	w _Unknown
Bat vocalizations:	_Yes	No		
Guano on ground/foliage:	Yes	No		
Is guano fresh (if present)?:	Yes	No		
Guano volume (if present):				
DESCRIPTION OF SURROU	NDING HABITAT			
Dominant Canopy Species (>	40 cm/16" dbh)	Subdom	iinant Canopy Species ((< 40 cm/16" dbh)
Estimated dbh range (cm): Lo		Estimate	ed dbh range (cm): Lg:	Sm:
	Moderate Sligh	t None	Direction facing:	
Subcanopy Clutter:		lerate	Open	
			Distance to nearest	t flight
Distance to nearest water sou	rce:m or k	km (circle one)	corridor:mete	•
Habitat Description:				
<u>Check all that apply:</u> <u>Mature Upland Forest</u> Young Upland Forest <u>Mature Lowland Forest</u> Young Lowland Forest Comments:	_Recently Logged Fo _Pine Plantation _Woodlot/ForestEdge _Old Field	Stre	am/RiverVer ergent WetlandDee	rub/scrub Swamp rnal Pool epwater Lake/Ponc ier



ROOST TREE DATA (continued)

Page ____ of ____

State/County:	Project Name/#:	Date:
Frequency:	Roost Name/#:	Initials:
	Sketch: Roost Tree Habitat	
Comments:		Sketch: Roost Tree
Stages of Decay:		
	Stage 5 Stage 6 Broken Stage 7 Decomposed Down material	



ROOST TREE EMERGENCE DATA

Project #:	Date:	Biologists:		
Project Name:	Sta	te: County:		
GPS Unit #:	Wa	ypoint:		
Latitude:°'	"N	Longitude:	o ,	"W
Roost Name/#:				
Radio-tagged bat present in	tree: Yes	No		
Complete the following information o	nly if a radio-tagged	bat is present in the roost		
Bat species:	Sex(M/F):	Age(Ad/Jv):	Repro.:	
Capture date:	Capture site	e: Freq	uency:	

NOTE: Tallies of bat exits should be made at 2-minute intervals. Use the back lighting of the setting sun to help distinguish bats as silhouettes against the sky as they exit the roost. Please ensure that you are close enough to the roost to observe all exiting bats, but not close enough to influence emergence (do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights).

Arrival time: _____ Departure time: _____

Emergence Time	Number of Bats	Emergence Aspect

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Page ____ of ____

ROOST TREE EMERGENCE DATA (continued)

Project #: Frequency:	Project name: Roost #:	
Emergence Time	Number of Bats	Emergence Aspect

Describe emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. What time did the transmittered bat(s) emerge? What direction did the transmittered bat fly?



MINE PORTAL DESCRIPTION

Project No:	Project Name:				
Date:	Biologists:				
State:	County:				
Site Name/#			No. of	f Portals:	
GPS: Unit #:	Waypo	int Name:			
Latitude:°'	"N	Longitud	l e: °	,	"W
Camera #:	Photo ID #	s:			
Portal/opening		#1	#2	#3	#4
Diameter (height x width)					
Is opening vertical or horizo	ntal (V or H)				
Is opening sloped (estimate	d degree of slope)				
Estimated length of portal					
Estimated internal dimensio	ns (height x width)				
Entrance appears stable?					
Evidence of collapse?					
Ceiling condition stable?					
Amount of airflow (slight, mo	· · · · · · · · · · · · · · · · · · ·				
Direction of airflow (in or our	t)				
Outside temperature					
Temperature at portal					
Evidence of past flooding?					
% Canopy closure at entran					
Estimated distance to neare					
Evidence of foraging (insect	remains)?				
Presence of guano?					
Portal obstructed by vegeta					
Portal obstructed by spider					
Would use make bat suscer	otible to predation?				
Is portal recommended for bat	survey? No Yes_	Why			

Comments:

Please include site sketch on back when feasible.

APPENDIX B USFWS WVFO REQUEST LETTER DATED 30 AUGUST 2010





ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.

781 Neeb Road Cincinnati, OH 45233 Phone: (513) 451-1777; Fax: (513) 451-3321

Pesi 296.03

30 August 2010

Ms. Barbara Douglas U.S. Fish and Wildlife Service West Virginia Field Office Ecological Services 694 Beverly Pike Elkins, West Virginia 26241

RE: AEP's Mountaineer CCS II Project, Mason County, West Virginia – Request for USFWS Approval to Install a Characterization Well at Borrow Area No. 1

Dear Ms. Douglas:

As you will recall, American Electric Power (AEP) and the U.S. Department of Energy (DOE), as lead Federal agency, propose to develop a carbon dioxide capture and storage (CCS) project at AEP's Mountaineer Power Plant in Mason County, West Virginia. In correspondence dated June 9, 2010, Environmental Solutions & Innovations, Inc. (ESI), on behalf of AEP, DOE, and Potomac-Hudson Engineering, Inc. (PHE), AEPs prime consultant, requested early coordination/informal consultation with U.S. Fish and Wildlife Service (USFWS) regarding threatened and endangered species or their critical habitat in the vicinity of the Project. That correspondence included "*Study Plan: Endangered Bat Studies for American Electric Power's Proposed Mountaineer CCS II Project: CO*₂ *Pipeline and Injection Well Sites, Mason County, West Virginia.*" We subsequently completed the field studies and no endangered bats were found. We anticipate completion of a detailed report by October 2010 that will address all fieldwork completed in support of the Project. However, in advance of your review of that report, AEP is seeking your approval to install a geologic characterization well and an associated access road to a single location on one of AEP's existing properties.

Initially, AEP had identified four potential sites, all on AEP-owned properties, for the development of a geologic characterization well. AEP later determined that the preferred location for the well would be at the AEP Mountaineer Plant. An area identified as Borrow Area No. 1 was selected because the entire site is previously disturbed and biological values are essentially lacking, including habitat for the endangered Indiana bat and other listed species.

The purpose of this letter is to seek your approval to install a characterization well and an associated access road to Borrow Area 1 ("BA-1") located at the existing AEP Mountaineer Plant. Included below is a description of BA-1, and a summary of the field survey for endangered bats undertaken on and adjacent to BA-1. An additional Field Survey Report will be submitted in the near future for the entire project.

Description of Current Project Needs

Map 1 provides an overview of the project area, which also identifies the field mist net sampling sites. In the upper portion of the map, areas identified as mist net sampling areas KM9 and KM10 include three small areas that are colored deep pink. The western most of these three areas is labeled "Borrow Area 1." This small site is the area intended for placement of the characterization well, located within the property boundary of AEP's Little Broad Run Landfill. The landfill commenced operation with the inception of operations of the Mountaineer Plant in 1980. A maximum of 5 acres will be used for the geologic characterization well activities at the Borrow Area 1 site.

Borrow Area 1 is one of three borrow areas initially considered as a potential location for a characterization well. The other two borrow areas are no longer under consideration as potential characterization well sites. All three borrow areas and the proposed access road to Borrow Area 1 are shown on Map 2. Borrow Area 1 (as well as the other two areas) falls within the existing clay borrow pits that have been actively mined for clay to use in lining disposal cells within the landfill. Generally, this area consists of upland ridge finger landforms and steep slopes at elevations ranging from 700 to 840 ft. AMSL. The landscape has been heavily denuded of vegetation and modified by extraction and disposal activities. Existing vegetation on these previously disturbed areas consists mostly of short grasses and provides no suitable roosting habitat for the Indiana bat.

Summary of Field Efforts Completed to Date

A total of 28 sites, as Identified on Map 1, were netted. No endangered bats were caught. A total of 97 bats of 5 species were caught: 71 red bats, 21 big brown bats, 2 little brown bats, 2 tri-colored bats, and 1 hoary bat. This equates to 3.5 bats per net site and an average species richness of 1.2 species per net site.

At site KM10, which encompassed Borrow Area 1, the only captures were two red bats. At the two adjoining sites, KM 9 and KM 11, the only captures were three and one red bats, respectively. Surveys at site KM 10 were completed on August 4 - 5, 2010; and surveys on sites KM9 and KM 11 were completed on August 2 - 3 and on August 4 - 5, respectively.

In summary, no endangered bats were caught anywhere on lands to be used for the Project. In general, the rate of bat capture and species richness were low. Across the entire project, only two bats belonging to the genus *Myotis*, both little brown bats, were caught; no northern, Indiana, or small-footed bats were caught. The catch of tri-colored bats, another species that hibernates in caves during winter, was also low, and limited to two individuals.



It is even arguable that the catch of big brown bats, which only sometimes hibernate in caves, was low, with an abundance of less than one-third of the catch of red bats, which it often exceeds. The community of bats at the mist net sites nearest Borrow Area 1 was depauperate and limited to a single species. The area required for the characterization well and access road has been heavily disturbed for 30 years, is a very small part of the overall project area, and provides no suitable roosting habitat for endangered bats. As such, AEP requests concurrence to proceed with installation of the characterization well at Borrow Area No. 1 prior to further ESA and NEPA consultation.

We look forward to your concurrence with this request for AEP to install the characterization well at the Borrow Area No. 1 location. If you have questions or require additional information, please contact me at (513) 451-1777, or <u>Vbrack@EnvironmentalSl.com</u>.

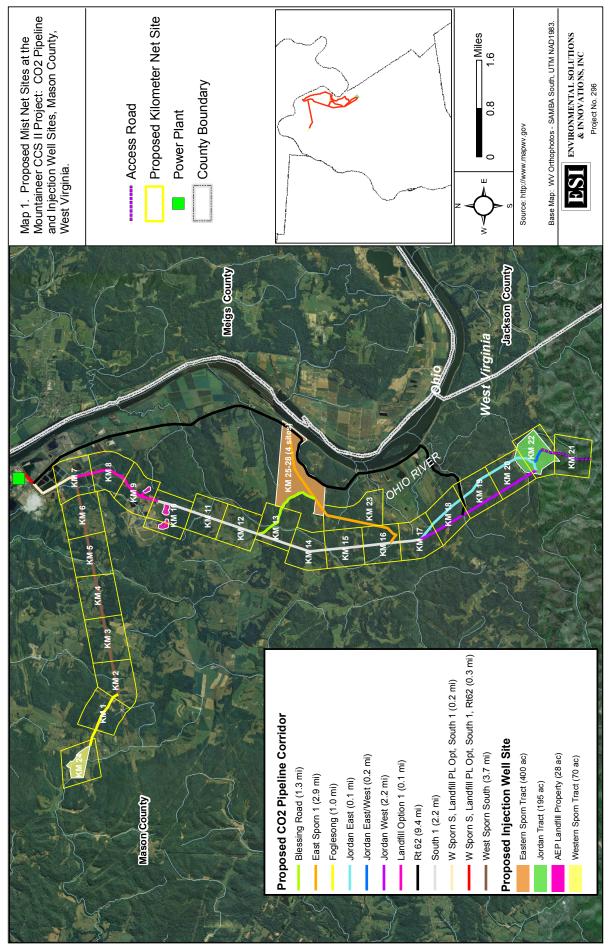
Sincerely,

1 Brach

Virgil Brack, Jr., Ph.D., MBA, Principal Scientist Certified Wildlife Biologist, TWS Certified Senior Ecologist, ESA Email: VBrack@EnvironmentalSI.com

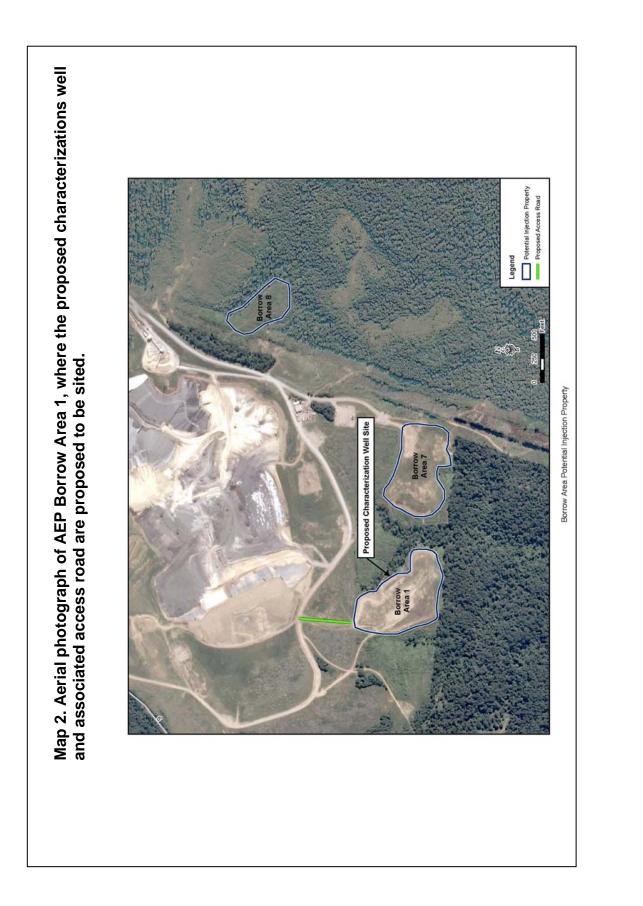
cc: B. Sargent, WVDNR M. Lusk, DOE/NETL M. McMillian, DOE/NETL B. Whipple, PHE F. Blake, AEP J. Magalski, AEP B. Sherrick, AEP





Appendix F

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Pesi296 AEP's Mountaineer CCS II Project

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Appendix F

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APPENDIX C E-MAIL CONFIRMATION FROM USFWS AND WVDNR, DATED 8 SEPTEMBER AND 20 SEPTEMBER 2010



From:	barbara_Douglas@fws.gov
Sent:	Wednesday, September 08, 2010 4:16 PM
То:	Virgil Brack
Subject:	geologic characterization well - AEP Mason County, WV

Hi Virgil - I received your letter dated 30 August 2010 regarding the proposal to install a geologic characterization well and associated access road for AEP's Mountaineer CCS II project in an area of Mason County, West Virginia identified as Borrow Area 1 on the maps attached to your letter. This 5 acre area had been previously disturbed and is devoid of potential Indiana bat habitat. There should be no endangered species concerns regarding the construction of this portion of the project. Thanks and give me a call if you have questions. Barb

1

Barbara Douglas Senior Endangered Species Biologist U. S. Fish and Wildlife Service West Virginia Field Office 694 Beverly Pike Elkins, WV 26241 Phone: 304-636-6586 x19 Fax: 304-636-7824 From: Barbara Sargent [mailto:barbarasargent@wvdnr.gov]
Sent: Monday, September 20, 2010 11:14 AM
To: Virgil Brack
Subject: RE: geologic characterization well - AEP Mason County, WV

Virgil—

I concur with the USFWS that this project will not impact rare, threatened or endangered species.

Barb

Barbara Sargent WVDNR - Wildlife Resources Section PO Box 67 - Ward Road Elkins, WV 26241 304/637-0245 x 2048 (voice) 304/637-0250 (fax) www.wvdnr.gov

"Speak when you are angry and you will make the best speech you will ever regret." ~ Ambrose Bierce

From: Virgil Brack [mailto:VBrack@environmentalsi.com]
Sent: Monday, September 20, 2010 10:22 AM
To: BarbaraSargent@wvdnr.gov
Subject: FW: geologic characterization well - AEP Mason County, WV

Barbara,

Thanks for taking the time to talk with me this morning about AEP's Mountaineer CCSII project. As you can see below, and as I mentioned in our conversation, USFWS was in agreement that proceeding with work for the characterization well in this small area would not present a threat for T&E species. For our project records, could you concur via return e-mail, with the statement below by USFWS.

1

Thanks

Virgil Brack, Jr., Ph.D., MBA CEO and Principal Scientist Environmental Solutions & Innovations Inc. 781 Neeb Road Cincinnati, OH 45233 Office: 513-451-1777; Cell: 513-235-1076; Fax: 451-3321

From: barbara_Douglas@fws.gov [mailto:barbara_Douglas@fws.gov]
Sent: Wednesday, September 08, 2010 4:16 PM
To: Virgil Brack
Subject: geologic characterization well - AEP Mason County, WV

Hi Virgil - I received your letter dated 30 August 2010 regarding the proposal to install a geologic characterization well and associated access road for AEP's Mountaineer CCS II project in an area of Mason County, West Virginia identified as Borrow Area 1 on the maps attached to your letter. This 5 acre area had been previously disturbed and is devoid of potential Indiana bat habitat. There should be no endangered species concerns regarding the construction of this portion of the project. Thanks and give me a call if you have questions. Barb

Barbara Douglas Senior Endangered Species Biologist U. S. Fish and Wildlife Service West Virginia Field Office 694 Beverly Pike Elkins, WV 26241 Phone: 304-636-6586 x19 Fax: 304-636-7824

APPENDIX D COMPLETED DATA SHEETS



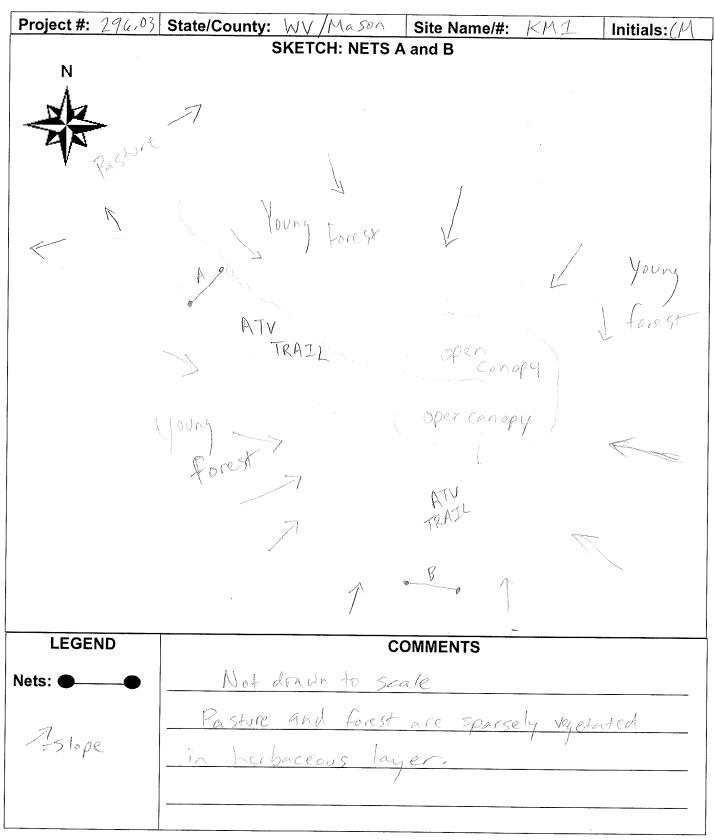
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78	Property of: Environmental Solutions & Innovations, Inc. 31 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
DSL NET SITE HABITAT	DESCRIPTION
Project #: 29.6.03 Date: 24 July 7010 Project Name: <u>AEP CO2</u>	Biologists: D. Jeffcott, C. Murphy
Project Name: <u>AEP COz</u>	Site Name/#:KM1/
State: County:Ason	USGS Quad:
Camera #: 61 Picture #s: Latitude: 38 ° 57 ' 25.8 "N Distance to closest water source (meters):	Longitude: <u>82</u> ° <u>00</u> ′ <u>45.0</u> "W _ Type of water source:
ESTIMATED WATER SOURCE CHARACTERISTICS (
Bank Height:meters Channel Width:	
Substratum:BedrockBoulderCobble	
Still Water Present (Y/N): Average Water Dep	oth:m or cm Clarity (H,M,L):
VEGETATION:	
	ominant Canopy Species (< 40 cm/16" dbh) এর ০০৯২৯
	ercus rubra
Estimated dbh range: Lg: 24 Sm: 16 Estim Relative abundance of dominant vs. subdominant (ratio):
Estimated canopy closure:Closed	
Roost tree potential consists of:Large Trees	
Roost tree potential for the area is:High	· · · · · · · · · · · · · · · · · · ·
Roost potential comments: <u>some dead pines</u>	
Subcanopy clutter:Closed	ModerateOpen
Subcanopy comprised largely of: Lower Branc Canopy Tree	
Common Subcanopy Species:	
Habitat Description: Horse pastore with di Sparse vegetation in foresto Uplan. Check all that apply:	
Mature Upland Forest Recently Logged Forest Young Upland Forest Pine Plantation Mature Lowland Forest Woodlot/ForestEdge Young Lowland Forest Old Field	_Crop/Pasture Land_Shrub/scrub Swamp_Stream/River_Vernal Pool_Emergent Wetland_Deepwater Lake/Pond_Forested Swamp_Other
Herbaceous Cover: X Sparse Moderate	Dense
Revised June 2007 1	

F-97



NET SITE HABITAT DESCRIPTION (continued)



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² Reproductive Condition: Female = NR/PG/L/PL; Male = \uparrow/\downarrow

¹ M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back

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		0		0	6	M"					
cement	Net Placement/Site Description:	Nets	over road	Compect	t new to	open fe	-X				
Net #	Ø	Species	Time	Age (Ad/Jv)	Sex F (M/F)	Repro. ² V	Wt RFA (q) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
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Appendix F

Pr 781 Nee	roperty of: Environmental Solutions & Innovations, Inc. b Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT DE	ESCRIPTION
Project #: 296.03 Date: 26 July 2010 Biol	logists: D. Jeffcott, C. Murphy
Project Name: <u>AEP CO2</u> Site	• Name/#:KM 2
	GS Quad:
Camera #:GPSLatitude:3% °3% °57 '12.5 "NDistance to closest water source (meters):TWater source name:T	ngitude: <u>אב</u> ° <u>סס</u> ' <u>סאי</u> ז"W ype of water source:
ESTIMATED WATER SOURCE CHARACTERISTICS (IF U	NDER NETS):
Bank Height:meters Channel Width:me	eters Stream Width:meters
Substratum:BedrockBoulderCobbleG	Fravel Sand Silt/Clay
Still Water Present (Y/N): Average Water Depth: _	m or cm Clarity (H,M,L):
VEGETATION:	
	nant Canopy Species (< 40 cm/16" dbh)
	xinus americana
	rcas (Jbra 1
Estimated dbh range: Lg: <u>1</u> Sm: <u>16</u> Estimated Relative abundance of dominant vs. subdominant (ratio): <u>1</u>	d dbh range: Lg: <u>16</u> Sm: <u>6</u>
Estimated canopy closure:Closed	
Roost tree potential consists of:Large Trees	
Roost tree potential for the area is:High	ModerateLow
Roost potential comments:	×
Subcanopy clutter:Closed	ModerateOpen
Subcanopy comprised largely of: Lower Branches Canopy Trees	of <u>Saplings</u> Shrubs
Common Subcanopy Species: <u>Acec (Drama</u>	
Habitat Description:	
Xoung Upland Forest Pine Plantation Structure Mature Lowland Forest Xwoodlot/ForestEdge Em	op/Pasture LandShrub/scrub Swamp eam/RiverVernal Pool mergent WetlandDeepwater Lake/Pond rested SwampOther

1



Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)

Project #: 296.03 State/County: WV/Mason Site Name/#: KMZ Initials: CM SKETCH: NETS A and B Road -orest field. Forest Gel LEGEND COMMENTS Scale Nets: Yold dawn. Canopy - L +D pla +611. grasse toot a [over 5hrobs Nets 8 acod 10 C.C. 400 this ぞう wid hetiken aren oresta Ares.

NET SITE HABITAT DESCRIPTION (continued)

Revised June 2007

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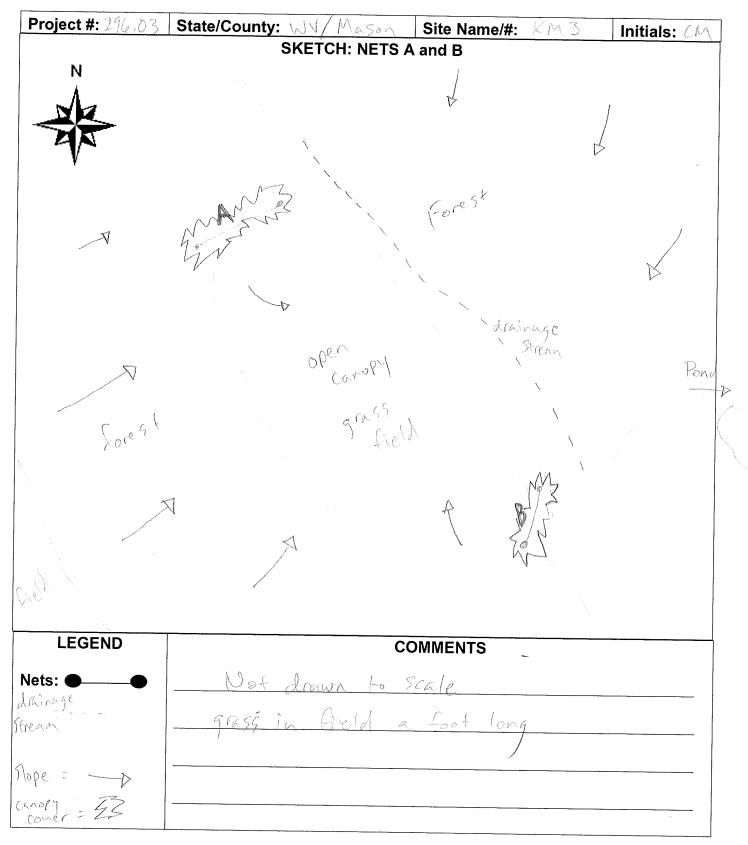
Appendix F

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: 296.03 Date: 28 July 2010	Biologists: D. Jeffcott, C. Murphy
Project Name: <u>AEP Coz</u>	
State: WV County: Mason	USGS Quad:
Camera #: <u>61</u> Picture #s: 7	
Latitude: <u>38</u> ° <u>57</u> ' <u>273</u> "N Distance to closest water source (meters):	Longitude: <u>81 ° 59 ' 31.3 "</u> W
Water source name:	
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	
Substratum: Bedrock Boulder Cobble	
Still Water Present (Y/N): Average Water De	
VEGETATION:	
	dominant Canopy Species (< 40 cm/16" dbh)
Liriodendron tulipitera	Acer Saccharum
	Acer rubrum
Frazinus americana	Fraxinus americana
	mated dbh range: Lg: $\underline{14^{\prime\prime}}$ Sm: $\underline{6^{\prime\prime}}$
Relative abundance of dominant vs. subdominant (rati	
Estimated canopy closure:Closed	
Roost tree potential consists of: <u>Large Tree</u>	
Roost tree potential for the area is:High	
Roost potential comments: few flaky whi	1
Subcanopy clutter:Closed	<u> </u>
Subcanopy comprised largely of: <u>Lower Brar</u> Canopy Tre	iches of <u> </u>
	un' Acer rubrum
Habitat Description: Variable sized trees in	a sloping forest with open
Chapy field: Field is gass and ma	kes good forasing artas
Check all that apply:	
Mature Upland ForestRecently Logged Forest	Crop/Pasture LandShrub/scrub Swamp
Young Upland ForestPine Plantation XMature Lowland ForestWoodlot/ForestEdge	Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond
Young Lowland ForestOld Field	Forested SwampOther
Herbaceous Cover:SparseModerate	Dense
Revised June 2007 1	



Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)

NET SITE HABITAT DESCRIPTION (continued)



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	Droioot #. 79/5		Project Name:	· · · · · · · · · · · · · · · · · · ·	olate: N V	Biologists:	Cito namo/#.		GPS Unit #:		New moon Waxing gibbous Last quarter	Net/Trap/Anabat #	X o	2	Net Placement/Site Description: Net5	Capt Net	* ~		3			
	Appe				olal	Bio	Cito	olle	GP			Neth	<u>।</u> इन्ह		Net	Cap	*	1	. 60	j.		-10

BAT CAPTURE DATA (continued)

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Project #:		Date:									
Project Name:		Site	Site Name/#:					.iu	Initials.		
J Capt Net #	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. ²	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments Picture # /Guano/Hair Sample	
							-				
×											1
	Beaufort Wind Scale				2010 Lunar Phases	ar Phases				Wing Index Kev	
Wind Speed Description	Visible Condition	udition		New	First	Full	Last	Score		Description	

Visible Condition	Smoke rises vertically	Direction of wind shown by smoke but not by wind yapas	Wind felt on face: leaves rustle: ordinary wind vana moved hy wind	Leaves and small twices in constant motion: wind extende light from	Raises dust and loose paper: small hranches are moved	Small trees in leaf begin to sway: crested wavelets on inland water	Large branches in motion: telephone wires whistler umbrallae read with difficulty.	Whole trees in motion: inconvenience in walking against wind	Breaks twids off trees: generally impedes programs	
Description	Calm	Light Air	Light Breeze	Gentle Breeze	Moderate Breeze	Fresh Breeze	Strong Breeze	Moderate Gale	Fresh Gale	
Wind Speed (mph)	0	1-3	4-7	8-12	T 13-18	4 19-24	5 25-31	32-38	39-46	

Auarter Mar 7 Mar 7 Mar 6 Mar 7 Jun 4 Jul 4 Jul 4 Jul 4 Jul 4 Jul 2 Sep 1 Oct 30 Oct 30 Nov 28 Mar 29 Mar 29 May 27 Jun 26 Jun 26 Jul 25 Sep 23 Sep 23 Oct 22 Nov 21 Mar 23 Apr 21 Apr 21 Jun 18 Jun 18 Aug 16 Sep 15 Oct 14 Nov 13 Mar 15 Mar 15 Mar 15 Apr 14 Jun 12 Jun 12 Jul 11 Aug 9 Sep 8 Sep 8

0	No damage. Fewer than 5 small scar spots are presen
	Light damage. Less than 50% of flight membrane is de
 -	which is often visible only with translumination.
	Moderate damage. Greater than 50% of wing membra
	(splotching). Scarring is visible without translumination.
	necrotic tissue and possibly few small holes (<0.5 cm d
 2	be flaking and discolored along the majority of the fores
	Heavy damage. Deteriorated wing membrane and nec
	>0.5 cm are present in membranes. Necrotic or recedin
 e	chiropatagium are evident.

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	terioren,	<u> </u>		0			60%	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			0	0		and the second		· · · · · · · · · · · · · · · · · · ·
First quarter Glob 23.4 0 Valuating globous Valuating globous 23.7 23.4 0 23.4 Longitude Length Height Time Up 23.7 $81 \circ 53 \cdot 32.9$ 0150 000 23.7 $81 \circ 53 \cdot 32.9$ 0150 0150 7 7 7 2020 0150 7 9 2020 0150 1000 7 9 2020 0150 1000 7 9 2020 0150 1000 7 1000 1000 1000 10000 7 9 2020 0150 10000 7 9 2020 0150 100000 7 100000 100000 1000000 1000000 Time Lage of forces fully the full 12 . Contribute # followed by $1000000000000000000000000000000000000$			30 24	0			C05	
First quarter Varing gibbous Varing gibbous Naming gibbous Colspan="2">Longitude $N = 3$ N S1 = 53 + 32.4 $N = 3$ N S1 = 53 + 32.4 N $N = 3$ N S1 = 53 + 32.4 N $N = 3$ N S1 = 53 + 32.4 N $N = 3$ N S1 = 53 + 32.5 N $N = 3$ N $2 = 32$ 0.130 $N = 3$ $N = 32.5$ $N = 2.52$ 0.130 $N = 400$ $N = 50$ 0.130 $N = 400$ $N = 50$ 0.130 12555 $M = 100$ $M = 100$ 12555 $M = 100$ 0.030 12555 $M = 100$ 0.030 12555 $N = 50$ 0.030 12555 $M = 100$ 0.030 12555 $M = 100$ 0.030 12555 0.030 0.030 12555 0.030		4 1	n)	0	1		30 %	
First quarter Erist quarter Waning gibbous S. Waning gibbous B. S. M. R. S. S. S. S. G. M. R. N. S. M. R. S. S. S. M. R. S. S. S. S. M. R. S. S. S. M. R. S. S. S. M. Repro. Market Dicture # Comparison Market Mark			13.	0	V		60%	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	First qual Waning ç	er bbous				x		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			ngitude	Length (m)	Height (m)		e Down 000 h)	Picture #
N 81 51.5<"W	8	0 1	. 32.9	12	6	\vdash	30	
"N • "N • "W at else of Korest where open compared is corridors blocked by Time Age Sex Repro ² Wt RFA Belly Wing Index [*] Picture # Guano/Hair Sample 1335 (addu) (MF) (0.3) Escare D 1335 Escare D 1335 (addu) (MF) (0.3) Escare D	N.	o	31.3	5	e	8	22	
Time Age Sex Next open canopy field is corridors blacked by 1535 Age Sex Repro. ² Wt RFA Belly Wing Index [*] Picture #/Guano/Hair Sample 1335 AddJuy (MIF) 0.3) ESCAPED 1335 Picture #/Guano/Hair Sample	N"	O						
Age Sex Repro. ² Wt RFA Belly Wing Index* (AdiJv) (MiF) (g) (mm) (F/MIE) (0.3) (adi secondary in the secondary interval		(g e	X	0260		÷ :S		2
	Time		Repro. ²		Belly (F/M/E)	Wing Index* (0-3)	Cor Picture # /Gu	nments ano/Hair Sample
	1335							PE D

BAT CAPTURE DATA (continued)

Date:

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#	t Na	# Net	
Project	Projec	Capt #	
Арр	enc	lix F	

な	Name:	Site	Name/#:					lnit	Initials:	
Capt #	Net #	Species Time	Age (Ad/Jv)	Sex (M/F)	Repro. ²	Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)	Comments Picture # /Guano/Hair Sample
		Beaufort Wind Scale			an 1.0100	00101 .unor Bhooon				
				Now		מו ר וומסכט	1	Score		vving Index Key
Nind Speed (mph)	Description	Visible Condition		Moon	: ð	Moon	Quarter	0	No damage. Fewer th	No damage. Fewer than 5 small scar spots are present on the membranes.
0	Calm	Smoke rises vertically		Heb 13 Mar 15		Mar 29 Apr 28	Apr 6 May 5	~	Light damage. Less the which is often visible of	Light damage. Less than 50% of flight membrane is depigmented (splotching), which is often visible only with transformation.
47	Light Air Light Breeze	Direction of wind shown by smoke but not by wind vanes Wind felt on face: leaves ristle- ordinary wind vane moved hy wind		Apr 14 May 13	May 20 fun 18	May 27	Jun 4		Moderate damage. G	Moderate damage. Greater than 50% of wing membrane covered with scar tissue
8-12 13-18	Gentle Breeze Moderate Breeze	Leaves and small twigs in constant motion; wind extends light flag Raises dust and losse namer small handhes are movied	5	Jun 12		Jul 25 Ann 24	Aug 2 Sen 1	~	recrotic tissue and por	(sprovening), ocarning is visiole winout translumination. Membrane exhibits some necrotic tissue and possibly few small holes (<0.5 cm diameter). Forearm skin may the flowing and disconcision to the set of t
19-24 25-31	Fresh Breeze Strong Breeze	Small trees in leaf begin to sway, created wavelets on inland water Large branches in motion telenhone wires which untrellas read	r d with difficulty	Aug 9 Sen 8	<u> </u>	Sep 23	Sept 30	2	Heavy damage. Deter	ore inserving and discovered along the intelloring of the forearm. Heavy damage, Deterorated wing membrane and necrotic firster, isolated holes of the near necrost is momentation of the construction of the
32-38 39-46	Moderate Gale Fresh Gale	Whole trees in motion; inconvenience in walking against wind Broshe heire off from concells inconvenience of a		Oct 7		Nov 21	Nov 28	3	chiropatagium are evic	e ou an are present in monutaires. Neurouc on recenting pragroparagrum and/or chiroparagrum are evident.
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Page 2 of

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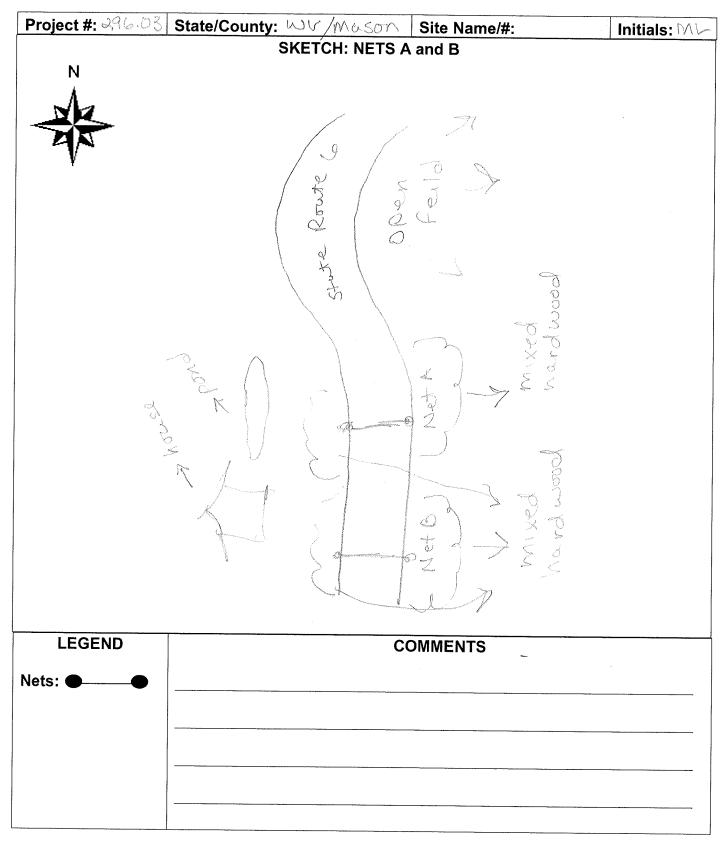
	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITA	AT DESCRIPTION
Project #: 296.03 Date: 0128/10	Biologists: M. Little, T. Hern
Project Name: AEP CO2	
State: <u>NV</u> County: <u>Mason</u>	USGS Quad:
Camera #:       Picture #s:       061,000         Latitude:       38.°       34.5."N         Distance to closest water source (meters): 150         Water source name:       Unknown	Longitude: <u>名す ° くる ' 26 6</u> "W Type of water source: <u>Pond</u>
ESTIMATED WATER SOURCE CHARACTERISTIC	CS (IF UNDER NETS):
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	
Still Water Present (Y/N): Average Water	Depth:m or cm Clarity (H,M,L):
VEGETATION:	
	Prunus Serion-Hna
Estimated dbh range: Lg: $\frac{1}{2}$ Sm: $\frac{35}{2}$ E	$\sim$
Relative abundance of dominant vs. subdominant (r	
Estimated canopy closure:Closed	/
Roost tree potential consists of: $\checkmark$ Large Tr	
-	<u></u> ModerateLow
Roost potential comments:	
Subcanopy clutter:	Moderate Open
	ranches ofSaplingsShrubs
Common Subcanopy Species: <u>Polson IV</u>	· · · · · · · · · · · · · · · · · · ·
Habitat Description: Paved public SI with small/short corridor	ngle labe road - Wprodehate canopy closure
Check all that apply:Mature Upland ForestYoung Upland ForestMature Lowland ForestYoung Lowland ForestOld Field	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover: SparseModerat	eDense
Revised June 2007	

.



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### **NET SITE HABITAT DESCRIPTION** (continued)



Project #:         73.0.02         Date:         7.0.1         Immune Sentem         Wind Report         Wind Ret		a.03 ACP County:	Date: 01					LL. P		WEAL	WEALHER UALA		
ACT     Contry:     March       In Little     T. Hacin       Standard     County:       Moon PHASE*     Camera #:       Camera #:     Camera #:       Moon Print     Woon Print       Washing cresent     Lattude       Lattude     Lattude       Lattude     Lattude       MiN     Secon Site       Species     Time       Ade     Sec       Species     Time       Cost     Cost       Camera #:     Conglo for the fight       MiN     Sec       Species     Time       Camera #:     Conglo for the fight       Camera #:     Cost			C02	1/28/2010	~	Tim (0000			Vind Speed ted – see chart		nd Direction: mto	% Cloud Cover (estimated	) Comments
March       County:       March       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20       20 <td></td> <td>County:</td> <td>C02</td> <td>1 1 1</td> <td></td> <td>30%</td> <td></td> <td></td> <td>O</td> <td></td> <td>a the second second</td> <td>0</td> <td></td>		County:	C02	1 1 1		30%			O		a the second	0	
County:		County:	A &						0		i.	0	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		CH4C)	Ma 500			76 73			0		A. S.	20	
Waring orescent     Camera #:       Camera #:     Camera #:       MOON PHASE*     MOON PHASE*       MOON PHASE*     Fist quarter       Waring orescent     Fist quarter       Waring orescent     Moon Phase*       Full moon     Waring orescent       Waring orescent     Lattude       Lattude     Length       MN     See ST       Will     See ST       NN     See ST       Site Description:     Set SS       Secies     Time       Astruct     Site Description:       Astruct     Site       Site Description:     Set SS       Astruct     Site	~			~		00	V ~		0		المتحلف وسار	50	
KM 4     Camera #:     Camera #:<		- Contraction of the Contraction	1 1 41 61	~		ି ଜୁଡ଼ି	5		Ð			0	
Camera #:       Camera #:       Camera #:       Camera #:       MOON PHASE*       Washing crescent     Erist quarter      Uul moon	2		~			- C	1		0			6	
MOON PHASE*     MOON PHASE*       Waaing creasent     First quarter       Waaing creasent     Full moon       Waaing creasent     Fraitst quarter       Waning gibous     Waning gibous       Waning creasent     Manuelling       Waning creasent     Manuelling       Waning creasent     Manuelling       Waning creasent     Manuelling       Manuelling     Latitude       Latitude     Longitude       MN     SSe 51 + 33/5 N       SSe 51 + 33/5 N     S1 + 5       N     S       N     S       Sectors     N       Species     Time       AssElvevs     Sectors       Exercise     Mile       Species     Mile       Mile     N       Species     Mile       Mile     N       Species     Mile       Mile     N       Species     Mile			Cam	era #:									
Wanning crescent       First quarter         Wanning crescent       Wanning crescent       First quarter         Wanning crescent       Wanning crescent       Latitude       Longitude       Length       Height       Time Up       Time Down         MrM       32.5       32.5       34.5       N       81.5       56.5       34.5       N       6       203.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.33.0       0.30.0       0.33.0       0.33.0	2	Č	ON PHASE*			-							
Net/Trap Type ¹ Latitude         Longitude         Length         Height         Time Up		Full Wax	ing crescent moon ing crescent	First quarter Waning gibb	snor								
A $NN$ $38^{\circ}$ 51 : $345^{\circ}$ N $81^{\circ}$ 58 : $56.6^{\circ}$ W $6$ $6$ $2230$ $0.325$ A $NN$ $38^{\circ}$ 51 : $345^{\circ}$ N $81^{\circ}$ 58 : $345^{\circ}$ W $6$ $6$ $2232$ $0.325$ IacementSite Description: $Both$ $R1^{\circ}$ $N$ $81^{\circ}$ 58 : $345^{\circ}$ N $81^{\circ}$ 58 : $345^{\circ}$ N $6$ $2232$ $0.325$ IacementSite Description: $Both$ $R2$ $R$ $Repro.2$ $W$ $RFA$ $Belly$ $Wing Index*$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $N12$ $755$ $425$ $R16$ $0.33$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $N12$ $755$ $425$ $R16$ $0.33$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $M12$ $755$ $425$ $R16$ $0.33$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $M12$ $756$ $425$ $R16$ $0.33$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $M12$ $756$ $425$ $R16$ $0.33$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $M12$ $756$ $426$ $R16$ A $Lastrueus$ barcalic $2441$ $W$ $F$ $M12$ $756$ $726$ $R16$ A $Lastrueus$ barcalic $2441$ $M$ $756$ $726$ $R16$ $R16$ A $Lastrueus$ $R16$ $R16$ $R16$ $R16$ $R16$	A	rap Type ¹	Lati	tude		Longitu	apr	(m Lenç				1e Down 0000 h)	Picture #
A       N.N $3\mathcal{L}^{\circ}$ $\mathcal{L}^{\circ}$		N	00°	Sire re	1	-	- K.				0		
Iacement/Site Description:       Rath       RAL         Net       Species       Time       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Index*         #       Asstrucus       barcalis       ZHYA       U       F       Mill       /56       40       0.3)         #       Lastrucus       barcalis       ZHYA       U       F       Mill       /56       40       0.3)         #       Lastrucus       barcalis       ZHYA       U       F       Mill       /56       40       Mill       0.3)	J	2	- 0 8 8	2		0F					0	0	10
Net     Age     Sex     Repro.2     Wt     RFA     Belly     Wing Index*       #     Astrueus     Species     Time     Age     Sex     Repro.2     Wt     RFA     Belly     Wing Index*       A     Lastrueus     banceulic     2149     Ju     R     Species     Repro.2     Wt     RFA     Belly     Wing Index*       A     Lastrueus     banceulic     2149     Ju     F     M/C     Species     R     O     O       A     Lastrueus     banceulic     2149     Ju     F     M/C     Species     R     O     O       A     Lastrueus     banceulic     2149     Ju     F     M/C     Species     R     O       A     Lastrueus     banceulic     2149     Ju     Species     F     M/C     Species     R     O       A     Lastrueus     Species     T     Species     R     Species     R     Species     R     Species     Species     R       A     Lastrueus     Species     Species     Species     Species     Species     R     Species     Species       R     Species     Specis     Species     Specis     Species </th <th>et Placement/Site I</th> <th>Description</th> <th>Both</th> <th>ets en a</th> <th></th> <th>9</th> <th>8</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	et Placement/Site I	Description	Both	ets en a		9	8						
The Lasture value of the control of		g	ecies		Age	Sex	Repro. ²	e) Vt			Ving Index*	0 2 2 2 2	Comments
Castulars borcallis		•	ŕ		(Acida)	(MIF)		(6)		M/E)	(0-3)	Picture # //	GUANO/HAIL SAMPI
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Project #: <u>206.</u>	בכ							WE	WEATHER DATA		
roject #: 🖉	C		-	0 2 2	Time	h, Temp (°C)	Wind Speed (estimated - see chart)*	eed ee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	ed) Comments
	5		8		000					C	
Project Name:	Ner	C02			8	20 75		0	a the second	NC	
State (A)	County	NOSSON	C		10	80 69	Q		all constrained and a second and	Q	
					235	30 05	0		,	0	
Biologists: 🗸		2	17 42 2		803	(C ) (C )	0		Annual Contraction	0	
Site name/#:	K W H				0	7 3 0	$\bigcirc$			0	
GPS Unit #:		Came	Camera #:								
New moon		MOON PHASE*	First quarter	L							
		_Full moon _Waning crescent	Waning gibbous	snog					1 x		
Net/Trap/Anabat							Length	Height		Time Down	Dicture #
.#	Neurrap Lype		Laurude		Pulgiuu	Ge	<b>(</b> ш)	(m)		(4 0000)	
4	2	38°51'	, 39,5 ["] N	0810		S. 6. W	9	Ś		1000	000 (
S.	2	38°57'	34. I <b>"N</b>	0 9 1 0 9	00 20	24. ⊕ "W		9	, 0 8 0 8	96.20	5005
		0	Z.	•	1	M"					
Vet Placemen	Net Placement/Site Description:	470 470 470	NOTS BY	2	9						
r K	σ	Species	Time	Age	Sex	Repro. ²		Belly	Wing Index*		Comments
# <			<pre></pre>	(AdiJV)					(c-0)		
Ž –	Lasires D	Dorealis	2.2.2	5		× .	1/4 2 4/.0	1/			
7	Miptis /vei	veitusus	0015	20	I.	NK	0	IT.	0		
5 A	Lasivus bo	وددرانج	8 2	3	<u>(</u> 1	NR 15	50 38.0	M	0		

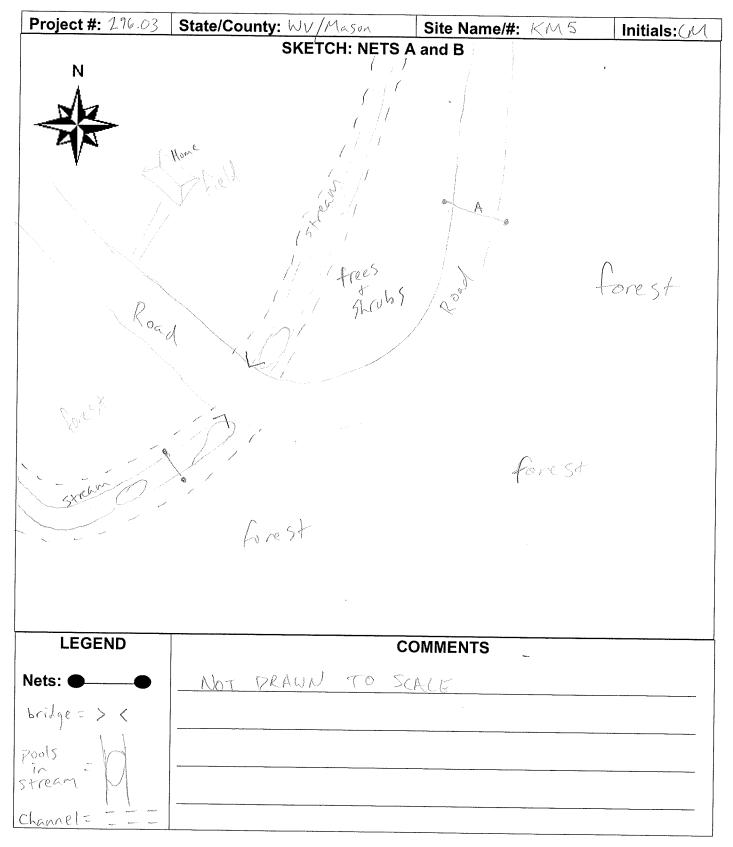
Appendix F

Page 1 of

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	
Project #: 296.03 Date: 30 July 2010 Project Name: AEP CO2	Biologists: D. Jeffcott, C. Murphy
Project Name: <u>AEP COz</u>	Site Name/#:KM5′
State: County:	USGS Quad:
Camera #: 61       Picture #s:         Latitude: 38       57       45.5       "N         Distance to closest water source (meters): 10 n from A,         Water source name:       Broad Run	GPS Unit #: <u>13</u> Waypoint #: <u>KM</u> 5A & B Longitude: <u>81 ° 57 ' 38,7</u> "W _ Type of water source: <u>Ephemeral Stream</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS) (NET B ONLY)
Bank Height: <u>2</u> meters Channel Width: <u>8</u> -	
Substratum: $\underline{\times}$ BedrockBoulder $\underline{\times}$ CobbleStill Water Present (Y/N): $\underline{\vee}$ Average Water De	$\times$ Gravel $\times$ Sand $\times$ Silt/Clay
Still Water Present (Y/N): Average Water De	pth: <u>2</u> m or cm Clarity (H,ML): <u>M</u>
VEGETATION:	
	dominant Canopy Species (< 40 cm/16" dbh)
	Juglans nigra
	Platinus occidentalis Acer rubrum
Estimated dbh range: Lg: <u>241</u> Sm: <u>16</u> Estir	
Relative abundance of dominant vs. subdominant (ratio	
	ModerateOpen
Roost tree potential consists of:	
Roost tree potential for the area is:High	
Roost potential comments: <u>Several white oaks</u> w	
Subcanopy clutter: Closed	ModerateOpen
	ches ofSaplingsShrubs
Common Subcanopy Species: <u>Carpinus carolic</u>	neana Sassafras albidinum
Acer rubran	
Habitat Description: Mature upland forest to Eas	+, uphill from nets, Younger trees
along stream and closer to the reade Str	enn is mostly day with some pook.
Check all that apply:	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover: Sparse Moderate	Dense

1





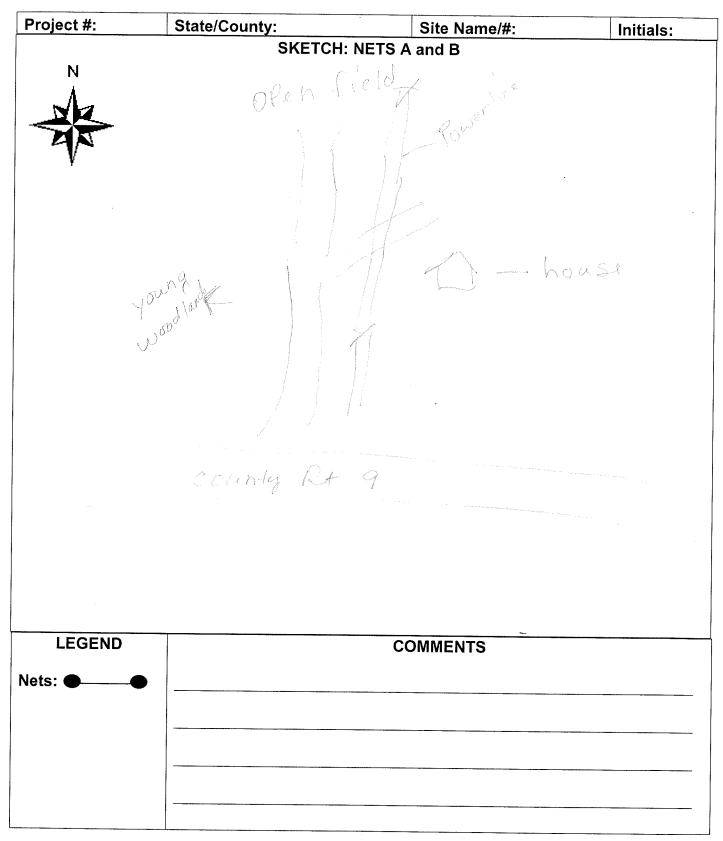
Revised June 2007

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۱	Capt Net			ŀ	Age	Sex	Repro. ²	Wt	RFA	Belly	Wing Index*	ບິ	Comments
		D	Species		(AUJV)	(M/F)		(g)	(mm)	(F/M/E)	(0-3)	Picture # /G	Picture # /Guano/Hair Sample
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WE	ed chart)*				-									Height (m)	0	Q		otaced	Belly (F/M/E)	6		Z	$\checkmark$		$\leq$	Z	annan ann a bhairtean ann an tartainn ann an tartainn ann ann an tartainn ann ann ann ann ann ann ann ann ann		
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<b>BAT CAPTURE DATA</b>		Date: 20 J		елен И У	200				Camera #:		IASE*	_		Latitude	· 57 · 45	5. CV	•	K A placed		U Ĵ	2								
<b>IT CAF</b>	4		(02	Š	4 . 	vert cott	5				MOON PHASE*	Waxing crescent	Full moon Waning crescent			$\sim$		on: Nef	Species	U U	521.46	Susse		<(5) <	s.(i5	2015	and a second and a second s		
BA	22	<u>(</u> , )	ACD	tano J		N. Jet	$\leq$	+	51		2			Net/Trap Type ¹	22	22		/Site Descripti		E-to Sino		C. C.	<u>_</u>	L. borealis	La bores	L. bores			A COMPANY OF A COMPANY AND A COMPANY AND A COMPANY A COMPANY AND A COMPANY AND A COMPANY A COMPANY AND A COMPANY
	Č	Project #: 7 (2.00	Project Name:	Ctato:	olate: VV V	Biologists:	Site name/#-		GPS Unit #:			New moon		Net/Trap/Anabat #	¥	S		Net Placement/Site Description: Net A	Capt Net # #	đ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Z.	T V	S A	C 2	7 A			
J	Appe				-				-			ı			ACMN/	Kw66	<u> </u>	] —	L		.1	<u> </u>			1	<u> </u>	F-	118	]

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: <u>196,03</u> Date: <u>01/30/10</u>	Biologists: M.Little, T. Hern
Project Name: AEP CO2	Site Name/#:
State: w/ County: Mason	USGS Quad:
Camera #:       Picture #s:         Latitude:       38.°         Jistance to closest water source (meters):       000000000000000000000000000000000000	Longitude: <u> </u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cm Clarity (H,M,L):
VEGETATION:	
Accenegundo Ac	dominant Canopy Species (< 40 cm/16" dbh) cc negundo
Estimated dbh range: Lg: <u>(5</u> Sm: <u>7</u> Estimated dbh range: Lg: <u>Closed</u>	o): <u>50; 50</u>
Roost tree potential consists of:Large Trees	sSnagsBoth 🔀 Neither
Roost tree potential for the area is:High	Moderate <u> </u>
Roost potential comments:	
Subcanopy clutter: <u> </u>	ModerateOpen
Subcanopy comprised largely of:Lower Bran Canopy Tre	ches of <u>X</u> Saplings <u>X</u> Shrubs
Common Subcanopy Species: <u>Accontectudo</u>	
Habitat Description: <u>Small trees along</u>	a dirt trail and
Very cluttered	
Check all that apply:Mature Upland ForestRecently Logged Forest✓Young Upland ForestPine PlantationMature Lowland ForestWoodlot/ForestEdgeYoung Lowland ForestOld Field	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover: Sparse _/Moderate	Dense
Revised June 2007 1	





	BA	<b>BAT CAPTURE DATA</b>	ATA					ME	WEATHER DATA		
Droioct #.	Droibet #- 2006 - 000	Date:	207.00 01	9010	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	peed see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
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		A state of the sta			2200	6	0			8	
Biologists:_					SC CC	6.	1	10	S1 Y Z	E	
Site name/#:	2 2 4 #						0				
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	M	MOON PHASE*			010	9´.2	S			01.	
New moon Waxing gibbous		Waxing crescent		r bous							
Last quarter		Waning crescent							×		
Net/Trap/Anabat #	abat Net/Trap Type ¹	Latitude	6		Longitude		Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
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		0	N"	0	1 1	M.,					
Net Placen	Net Placement/Site Description:	in:									
Capt Net # #		Species	Time	Age (Ad/Jv)	Sex Re (M/F)	Repro. ² Wt	t RFA ) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
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Appendix F

Page 1 of ____

² Reproductive Condition: Female = NR/PG/L/PL; Male = 1/4

¹ M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back

Project #: 296.0 Project Name: AE State: UDV Biologists: <u>No.U</u>	BAT	<b>BAT CAPTURE DATA</b>	DATA					WE	WEATHER DATA		
oject Name: ate: ologists:	, o 3	Date: 31 -	Date: 31 July 2010	0%	Time (0000 h)	Tem	Wind Speed (estimated – see chart)*	eed ee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	id) Comments
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ate: <u> </u>					81.0		C		( ) ( Mariana Maria	S.	
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Site name/#: 📈	: W (0				9	00 66	9		a a constantina da c		
GPS Unit #:	3	Camera #:	a #:								
New moon Waxing gibbous		MOON PHASE* 	First quarter Waning gibbous	r bous							
Last quarter		Waning crescent							x		
Net/Trap/Anabat N	Net/Trap Type ¹	Latitude	de		Longitude	Ð	Length (m)	Height (m)	Time Up Tim (0000 h) (0(	Time Down (0000 h)	Picture #
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t Placement/Si	Net Placement/Site Description: <u> </u>	I. Nets Pla	aced e	5 1020		Start -	ê.	Dower Linu	WW ROW		
Capt Net # #	Ś	Species	Time	Age (Ad/Jv)	Sex F (M/F)	Repro. ² M	Wt RFA (g) (mm)	Belly (F/M/E)	Wing Index* (0-3)	Picture #	Comments Picture # /Guano/Hair Sample
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	and the second se			2 						¹⁴ J. S. W. W. Statistics and a strain	
	NAMES AND										

No.

	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
<b>DSL</b> NET SITE HABITAT	Δ
Project #: 296.03 Date: 01 August 2010	
Project Name: <u>AEP COz</u>	Site Name/#:/
State: WV County: MASTM	USGS Quad:
Camera #: <u>61</u> Picture #s: Latitude: <u>38</u> ° <u>57</u> ' <u>42.8</u> "N Distance to closest water source (meters): <u>20m</u> fram A Water source name:	GPS Unit #: <u>A13</u> Waypoint #: Longitude: <u>81 °56 '[7]</u> "W _ Type of water source: <u>Wefland</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cm Clarity (H,M,L):
VEGETATION:	
Dominant Canopy Species (> 40 cm/16" dbh)Sub-Platiousoccidentalis	dominant Canopy Species (< 40 cm/16" dbh) Acer(vbrum
Pinus virginiara	Fagus grandifolia
· · · · · · · · · · · · · · · · · · ·	Acer Saccharum
Estimated dbh range: Lg: <u>ZZ``</u> Sm: <u>IG``</u> Estin	mated dbh range: Lg: <u>16</u> Sm: <u>5</u>
Relative abundance of dominant vs. subdominant (rati	·
Estimated canopy closure:Closed	· · · · · · · · · · · · · · · · · · ·
Roost tree potential consists of:Large Tree	
Roost tree potential for the area is:High	_ <u>∕_</u> ModerateLow
Roost potential comments: lots of Snags in	
Subcanopy clutter:Closed	ModerateOpen
Canopy Tre	
VIMUS rubra	p Robinia pseudoaciacia
Habitat Description: Young Great surrounds we Wetland has open canepy with water	land with many snags.
Welland has open canepy with water	present,
<u>Check all that apply:</u> Mature Upland ForestRecently Logged Forest Young Upland ForestPine Plantation	

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### NET SITE HABITAT DESCRIPTION (continued)

Project #: 296,03	State/County: ₩V	Mason	Site Name/#:	KM 7	Initials: (N
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LEGEND		CC	OMMENTS		
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Wetherd - A					

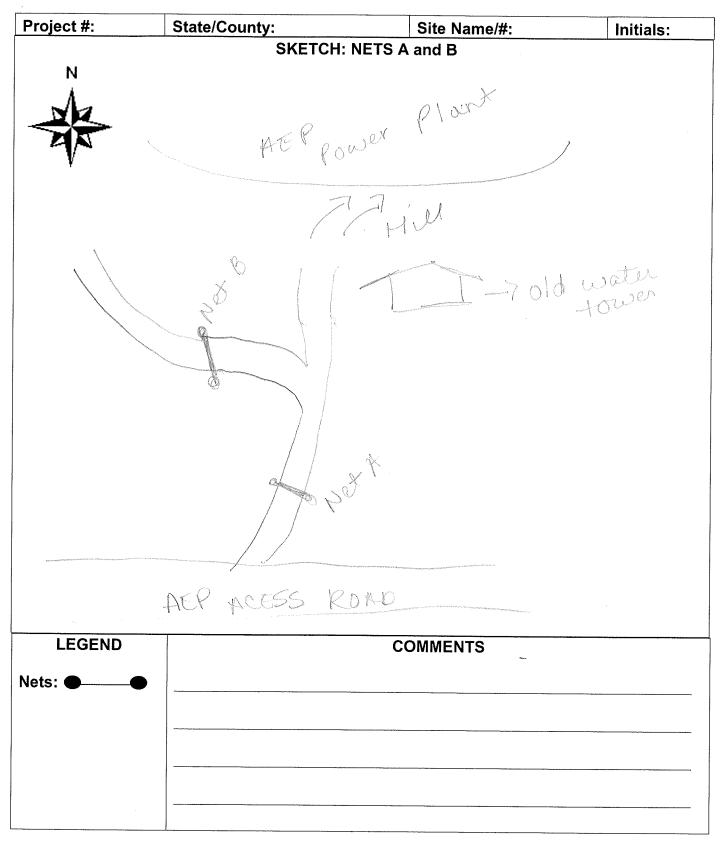
· Date: 31 July · Date: 31 July · A A Camera #: 0 Mug · Camera #: 0 · Camera					WE	WEATHER DATA		
ACP CO ACP CO County: Mason Bar Conty: Mason KM7 KM7 KM7 KM7 KM7 KM7 KM7 KM7 Camera #: ( Waning crescent Full moon Waning crescent Full moon Waning crescent KM7 MON PHASE* Full moon Site Description: Net A placed in Site Description: Net A placed in Castor Societs Castor Societs Camera #: ( 10 21 21 21 21 21 21 21 21 21 21 21 21 21	1 63 6 1	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see c	Speed - see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
D. Jeffcott Conty: Mason D. Jeffcott County: Mason XM 7 IS County: Mason MOON PHASE* Moon PHASE* Moon PHASE* First Waxing crescent Waxing crescent Waxing crescent Waning crescent Waning crescent Waning crescent Waning crescent Moon PHASE* First Moon PHASE* First Moon PHASE* First Moon PHASE* First Moon PHASE* First Moon PHASE* First Moon PHASE* Moon PHASE* First Maning crescent Maning crescent M		2030	19.7	0			207	a ser a se
D. Jeffcoff Mason KM7 I3 County: Mason KM7 I3 Camera #: 0 MOON PHASE* Full moon Waxing crescent Full moon Waning crescent Full moon Waning crescent Full moon Site Description: Net A placed in Site Description: Net A placed in Aszurus burch is 2010 Aszurus burch in 2010 Aszurus burch in 2010 Aszurus burch in 2010 Correlis		2/00	19,5	0			60%	
D. Jeff coff Coff Coff Coff Coff Coff Coff Co		212	19.6	0			×0 ×	
V. Jert Cott - Court KM7 IS Camera #: Court Waxing crescent Waning crescent Full moon Waning crescent Vaning c		2200	6	0		]	2.8	
I3     Camera #:       I3     Camera #:       MOON PHASE*     MOON PHASE*       MOON PHASE*     Mains       MOON PHASE*     Waxing crescent       Waxing crescent     Waning crescent       Net/Trap Type1     Latitude       No     34.057       No     34.057       No     34.057       Site Description: Net A placed in	and a	2730	51	1-3		N to S	×08	
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IS     Camera #:       MOON PHASE*       MOON PHASE*       MOON PHASE*       Moon phase*       Full moon       Waxing crescent       Waxing crescent       Full moon       Waxing crescent       Moning crescent       Full moon       Waxing crescent       Maning crescent       No       NN       Site Description:       No       Site Description:       No       Species       In       Species       In       Marino Fis       Superior       Marino Fis       M	7	7 330				r e d d t at de series provincient de series de ser	80%	And the second
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us Full moon Waning crescent Net/Trap Type ¹ Latitude Latitude Net/Trap Type ¹ Latitude NN 38° 57 ' 1/1. 6 NN 38° 57 ' 1/1. 6 Site Description: Net A placed in Species Tin Species 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1. 21/1	rter	0.50	-	0			20%	
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WE	Wind Speed (estimated – see chart)*	0	0	Ą	$\sim$	0	6	<u> </u>	) 0			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-	and a second			h Height (m)	5	<u>\</u> 0		raised an	RFA Belly			LT N	40- D	71- M	$:  \subset$	1	1 21 0			
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DATA	A 2 200	4	2		1	VONV	1		Camera #: 6				First quarter	X Waning gibbous			Latitude	N. 8	N" 2/1/2		colin 1	Time	( ) 	2017	2210	2210	1205	$\left  \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$					
<b>BAT CAPTURE DATA</b>	Date: 0			\	<u></u>	エレスに			Came			MOON PHASE*	Waxing crescent	Full moon	Waning crescent	0	Lati	38 . 57	2 2 2	0	Net Apla	Species		10505		. 1 5		1:10100		10×1.5	n de la companya de la companya de la decompanya de la companya de la companya de la companya de la companya d Na de la companya de		
BAT	с С		ALY CO	Country		D. 5 C-72.5H	1 1 J	12/2	A   3			Ŵ	Wax				Net/Trap Type ¹	NN		X 24	Net Placement/Site Description:	S	-	C ptesicus	M. Evsevs	1 RUS 1		L 2. 22					
	Droiont #.		Project Name:	Ctato:		Biologists:	Cita nama/#·		GPS Unit #:				New moon	Waxing gibbous	Last quarter		Net/Trap/Anabat #	X	S		et Placement/S	ot	* <		4	Lie M				5			

78	Property of: Environmental Solutions & Innovations, Inc. 31 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
DSL NET SITE HABITAT	DESCRIPTION
Project #: 296,03 Date: 68/01/10	Biologists: M. L. Hern
	Site Name/#:8
	USGS Quad:
	GPS Unit #: 13       Waypoint #:         Longitude: 81       55       51.5       "W          Type of water source: N/M
ESTIMATED WATER SOURCE CHARACTERISTICS (	IF UNDER NETS):
Bank Height:metersChannel Width:	_meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water Dep	oth:m or cm Clarity (H,M,L):
VEGETATION:	
Robinta pseudoacacia Po	ominant Canopy Species (< 40 cm/16" dbh)
	it in us & markania
Estimated dbh range: Lg: <u>15</u> Sm: <u>10</u> Estim Relative abundance of dominant vs. subdominant (ratio Estimated canopy closure: <u>Closed</u> Roost tree potential consists of: <u>Large Trees</u> Roost tree potential for the area is: <u>High</u> Roost potential comments: <u></u>	): <u>50/50</u> _ <u>X</u> ModerateOpen
Subcanopy clutter:Closed	^{∑/} Moderate Open
	ches of <u>X</u> Saplings <u>X</u> Shrubs
Common Subcanopy Species: Zohinia pscud	0966A11
Habitat Description: Young upland	usoadlote on hell next
<u>Check all that apply:</u> <u>Mature Upland Forest</u> <u>Mature Lowland Forest</u> <u>Young Lowland Forest</u> <u>Check all that apply:</u> <u>Recently Logged Forest</u> <u>Pine Plantation</u> <u>Woodlot/ForestEdge</u> <u>Old Field</u>	_Crop/Pasture LandShrub/scrub Swamp _Stream/RiverVernal Pool _Emergent WetlandDeepwater Lake/Pond _Forested SwampOther
Herbaceous Cover: 🔬 SparseModerate	Dense
Revised June 2007	

Appendix F





Revised June 2007

Appendix F

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Mail         State	County: MOSON County: MOSON B MOON PHASE* First quarter Waxing crescent Waning gibl	<u> </u>	2442220000				Cover (estimat	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	County: MOSOM County: MOSOM MOON PHASE* Waxing crescent Full moon Waning crescent	21-00 22-00 22-00 22-00 22-00 22-00 22-00 22-00 22-00 22-00 22-00 22-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-00 20-000	<u> </u>	9000000		and the state of t	0	-
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Samera #:     Camera #:       MOON PHASE*     Enter a #:       MOON PHASE*       MOON PHASE*       Moon acrescent     First quarter       Waning crescent     First quarter       Monon     28.57     50.67       NN     50.65        Steless     70		N 35 7 1										
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MOON PHASE*       Moon PHASE*       First quarter       Waxing crescent       First quarter       Varing crescent       Waring grescent       Lattude       Lattude       Lattude       Lattude       Lattude       Lattude       Lattude       NN       Species       NN       NN       NN       NN       NN       NN						~~~	5	C			0	
Waxing crescent       First quarter         E-full moon       Warling gibbous         Net/Frap Type1       Latitude       Longitude       Length       Height       Time Up       Time Up         N.N $\mathbb{Z}$ % 51 7 90.05 N $\mathbb{Z}$ % 51 7 90.05 N $\mathbb{Z}$ % 51 9.00 M $\mathbb{Q}$ % 000 M $\mathbb{Q}$ %		MG	<b>ION PHASE</b> *									
Maning creacent     Latitude     Latitude     Longitude     Length     Height     Time Up     Time Up       NN $32 \circ 57 + 12 \circ 16$ N $71 \circ 55 + 51 + 56$ N $71 \circ 55 + 51 + 56$ $8^{-1}$ $71 \circ 55 + 51 + 56$ $8^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$ $1^{-1}$	moon ng gibt		xing crescent moon	First quarte	r bous							
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Upland woodlyt with with the track dirt thad ies Time Age Sex Repro ² Wit RFA Belly Wing Index ⁴ 22 July (MIF) (0.3) 22 July 2 July 2 July (0.3) 22 July 2 July 2 July (0.3) 22 July 1 July 2 July 2 July 2 July 1 July 2 J			ф	X	0	1	M"		101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101 · 101			
Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index* <i>EL-Losicus EL-Losicus Labora A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A</i> <td< th=""><th>cemer</th><th>tt/Site Descriptior</th><th>ULD OW</th><th></th><th></th><th>+/</th><th>1 1</th><th>K 4.</th><th>)</th><th>R</th><th></th><th></th></td<>	cemer	tt/Site Descriptior	ULD OW			+/	1 1	K 4.	)	R		
$E_{i} + E_{i} = 0$ $E_{i} + MR$ $2 + MR$ $2 + K$ $4 + K$ $2 $	# Net	S	pecies	Time	Age (Ad/Jv)							Comments /Guano/Hair Sample
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Appendix F

	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
<b>DSI</b> NET SITE HABITAT	DESCRIPTION
Project #: <u>296.03</u> Date: <u>3 August 2010</u>	Biologists: D. Jeffcott, C. Murphy
Project Name: <u>HEP COn</u>	Site Name/#: <u>KM9</u>
State: <u>WV</u> County: <u>MASON</u>	USGS Quad:
Camera #: <u>G_1</u> Picture #s:	
Latitude: <u>38</u> ° <u>56</u> <u>'22,3</u> "N Distance to closest water source (meters):	Longitude: 8 ° 56 ' 411.3 "W
Water source name:	
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	
Substratum:BedrockBoulderCobble	
Still Water Present (Y/N): Average Water De	pth:m or cm Clarity (H,M,L):
VEGETATION:	······································
	dominant Canopy Species (< 40 cm/16" dbh)
	Quercus rubra
	Acer rubrum
Estimated dbh range: Lg: <u>45</u> Sm: <u>40</u> Estir	
Relative abundance of dominant vs. subdominant (ratio	
Estimated canopy closure:Closed	
Roost tree potential consists of:Large Trees	
	Moderate
Roost potential comments:	
Subcanopy clutter:Closed	ModerateOpen
Subcanopy comprised largely of: <u>Subcanopy</u> Lower Bran	ches of <u>     Saplings     </u> Shrubs es
Common Subcanopy Species: <u>Acer Sacchar</u>	um Acer rubrum
Quercas Mor	
Habitat Description: have great freese as	low districtly of some and
Les biggeratrees. Slope downward to	Wand E. of Sirc.
Check all that apply:	Oran /Destructional Charles / Strong
Mature Upland ForestRecently Logged Forest Xoung Upland ForestPine Plantation	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool
Mature Lowland ForestWoodlot/ForestEdge	Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Young Lowland ForestOld Field Herbaceous Cover: Sparse Moderate	Dense
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Project #: 296.07	State/County:		Site Name/#: KMA	Initials:
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$\times$ Last quarter		Vaning crescent	vva।।।।	enor					×			
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Net Placement/Site Description: <u>NVS</u>	te Descriptio	n: Nths placed	1 in access	00	Contra	or leading	24	Powerlin C	L ROW	*		
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County:     MeSon       7:26     7:14       7:26     7:14       7:26     7:14       7:26     7:14       7:26     7:14       7:26     7:14       7:26     7:26       7:26     7:26       7:26     7:26       7:26     7:26       7:26     7:26       7:26     7:25       7:26     7:25       7:26     7:25       7:27     7:25       7:28     7:25       8     MOON PHASE*       Moon PHASE*     First quarter       Moon Phase     First quarter       Moon Phase     Length       Ming first first first quarter     First quarter       Moon Phase     Sector       Ming first first quarter     Sector       Ming first first quarte	ject Name:	AET C	2	~		2100	-	0			100%		
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Muchan Private Maning creacent     Fist quarter Maning creacent     Fist quarter Maning creacent     Fist quarter Maning creacent       Maning creacent     Maning creacent     Length     Height     Time Up       Maning creacent     Maning creacent     Length     Height     Time Up       Maning creacent     Maning creacent     Length     Height     Time Up       MN     38 ° 5/6 ° 21.3 °N     81 ° 5/6 ° 44.13 °W     70     7000 fb       NN     38 ° 5/6 ° 21.3 °N     81 ° 5/6 ° 44.13 °W     70     703 ° 5/3 ° 5/6 ° 14.5 °W       NN     38 ° 5/6 ° 21.3 °N     81 ° 5/6 ° 44.12 °W     70     70 ° 203 ° 155 ° 155 ° 14.5 °W       Site Description:     NU     38 ° 5/6 ° 14.8 °N     70 ° 0.13 ° 16 ° 16 ° 14.5 °W     70 ° 203 ° 155 ° 155 ° 14.5 °W       Species     Time     Age     Sex     Repro.2 °W     Witr     70 ° 0.3 ° 15 ° 14.5 °W       Lastruct bacevicis     Daug     Age     Sex     Repro.2 °W     Witr     70 ° 0.3 ° 15 ° 14.5 °W       Lastruct bacevicis     Daug     Age     Sex     Repro.2 °W     Mitr     70 ° 0.3 ° 15 ° 14.5 °W       Lastruct bacevicis     Daug     Age     Sex     Repro.2 °W     N     70 ° 0.3 ° 15 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5 ° 14.5								) <		- Hy comprehensive two and the second se	108		
us Twang crescent Trist quarter Varing gibbous Length Lattude Langth Height Time Up Time Dow NetTrap Type ¹ Lattude Lattude Longitude (m) (0000 h)		MUC		i		2 2	26			and the second se			
Wanning orescent     Wanning orescent     Wanning orescent       NetTrap Type ¹ Latitude     Length     Height     Time Up       NN     38 · 56 · 71.3 °N     81 · 56 · 141.3 °N     7     6     703.0 10       NN     38 · 56 · 71.8 °N     81 · 56 · 141.3 °N     7     6     703.0 105       NN     38 · 56 · 71.8 °N     81 · 56 · 141.3 °N     7     6     703.0 105       Site Description:     105 °N     81 · 56 · 141.3 °N     6     7.03.0 105       Lastrice backs     20.00     N     8     8     8       Lastrice backs     0.000     1000.0 N     1000.0 N     100.0 N       Lastrice backs     0.000     1000     1000     1000       Lastrice backs     0.000     1000     1000     1000	New moon		ng crescent	First quart	er	<u>_</u>					1		
NetTrap Type       Latitude       Longitude       Length       Height       Time Up       Time Up         NM $38 \circ 56 \circ 72.5$ N $81 \circ 56 \circ 141.5$ m/ $66$ $2032$ $0000$ $00000$ NM $38 \circ 56 \circ 72.5$ N $81 \circ 56 \circ 141.5$ m/ $66$ $2032$ $0150$ NM $79 \circ 56 \circ 71.8$ N $81 \circ 56 \circ 141.5$ m/ $66$ $7050$ $0150$ VM $79 \circ 56 \circ 71.8$ N $81 \circ 56 \circ 141.5$ m/ $66$ $7050$ $0150$ Stite Description: Net?       Paced $700$ $700$ $700$ $700$ Species       Time       Age       Sex       Repro.2 $90$ $600$ $700$ Lasive to baceles $5026$ $503$ $700$ $700$ $700$ $700$ Lasive to baceles $700$ $700$ $700$ $700$ $700$ $700$ Lasive to baceles $5026$ $5026$ $700$ $700$ $700$ $700$ Lasive to baceles $700$ $700$ $700$ $700$ $700$ $700$ Lasive to baceles $500$ $700$	Waxing gibbc ast quarter		toon to crescent	Waning gi	snodd					<b>.</b>			
Net/Trap Type ¹ Latitude       Longitude       Length       Height       Time Up       Time													
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Placed in access roud carrier evelves to benefice Roules Time Age Sex Repro. ² Wt RFA Belly Wing Index [*] 2000 Adduvy (MIF) (MIF) (0.3) 2000 Adduvy (MIF) (0.3) 2000 Adduvy (MIF) (0.3) 2000 Adduvy (MIF) (0.3) 2000 Adduvy (0.3) 2000 Ad				Ν	0	L	Ma						
Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*       0.00     (MF)     (MF)     (MF)     (0.3)     (0.3)       0.03     (0.3)     (0.3)     (0.3)	Placement	t/Site Description:	Ð.	4		~		1		Ż	S.M.		
B Lasives herealis 2000 - A Lasives herealis 2020 - A Lasives barealis 2020 - A Scared S A Caredon A Cared	ot Net #	Spe	cies	Time	Age (Ad/Jv)					Wing Index (0-3)		Comments # /Guano/Hair \$	Samp
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	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
<b>DSL</b> NET SITE HABITAT	
Project #: 296.03 Date: 05 August 706	Biologists: D. Jeff coff, C. Murphy
Project Name: AFP CO2	Site Name/#:KMI0
State: W County: MASON	USGS Quad:
Camera #: <u>6 1</u> Picture #s:	GPS Unit #: <u>A13</u> Waypoint #: <u>KMIDA</u>
Latitude: <u>38_°56_'3.2_</u> "N	Longitude: <u>81 °56 ' 47.7</u> "W
Distance to closest water source (meters): Water source name:	_ Type of water source:
ESTIMATED WATER SOURCE CHARACTERISTICS           Bank Height:        meters         Channel Width:	
Substratum:BedrockBoulderCobble	and the second se
	The second state of the
Still Water Present (Y/N): Average Water De	
	dominant Canopy Species (< 40 cm/16" dbh)
Acer rubrum	Acer Saccharum
	Quercus rubra
	Plinus Virginiang
Estimated dbh range: Lg: <u>45</u> ~Sm: <u>47</u> ~ Estir	nated dbh range: Ĺg: ལཕིས鹿 Sm: <u>- \&gt;</u>
Relative abundance of dominant vs. subdominant (ratio	<b>)</b> : 1: 100
Estimated canopy closure:Closed	<u> </u>
Roost tree potential consists of:Large Trees	s $\underline{\succeq}$ SnagsBoth Neither
Roost tree potential for the area is:High	Moderate 🔀 Low
Roost potential comments:	
Subcanopy clutter:Closed	<u> </u>
Subcanopy comprised largely of:Lower Bran Canopy Tree	
Common Subcanopy Species:	· · · · · · · · · · · · · · · · · · ·
Habitat Description: Voune volant wrest - Few b	219 + trees. Mething mea
is new open field at ROW load	The second se
Check all that apply:Mature Upland ForestRecently Logged ForestYoung Upland ForestPine PlantationMature Lowland ForestWoodlot/ForestEdgeYoung Lowland ForestOld Field	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover:SparseModerate	<u> </u>
Revised June 2007 1	ě



Project #: 296.03	State/County: WV/MASON	Site Name/#: KMI()	Initials: CM
	SKETCH: NETS A	and B	:
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Nets: ●●	10- drawn Lo	Scale	
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Project #:         Project		BAT	BAT CAPTURE DATA	DATA					ME	WEATHER DATA		
AFF         Courty:         Mascular         M		706.02		State of the state	Ç	Time (0000		Wind Sp (estimated – Sv	eed se chart)*	Wind Direction: From to	% Cloud Cover (estimat	
AEV Co.         County:         Mascel         2145-22-4         H-1         Seven We           7: Ffect+         6 Mu cput         2215-22-4         H-1         Seven We         Seven We           A13         Camera #. 631         2215-22-4         H-1         Seven We         Seven We           WooN PHASE*         Windig orescent         2215-22-5         H-1         Seven We         Seven We           Waing orescent         Waing orescent         Waing orescent         Waing orescent         Waing orescent         Seven We         Seven We           Waing orescent         Waing orescent         Waing orescent         Waing orescent         Lastitude         Longitude         Lastitude         Lastitude         Lastitude         Lastitude         Seven We         Seve		1.1		1:46		204		- M		NITASIN	1 (60%)	
County:     County:     MASON     Z145     Z2:4     Z1-7     SW+NE       21:15     22:15     22:15     22:15     22:15     22:15     23:15     20       21:15     22:15     22:15     22:15     22:15     22:15     23:15     20     20       21:15     22:15     22:15     22:15     22:15     23:15     20     20     20       10:10     22:15     22:15     22:15     22:15     22:15     22:15     20     20       10:10     22:15     22:15     22:15     22:15     12:3     22:15     20     20       10:10     22:15     22:15     12:3     22:15     12:3     20     20       10:11     21:15     12:3     21:15     12:3     21:15     20     21:15       Naming orescent     Latitude     Latitude     Length     Height     Time Unit     20:00.00       NN     3:5:5:5     1:3:7     21:10     0:00     10:00     10:00.01       NN     3:5:5:5     1:3:7     1:3:7     1:3:10     1:3:10       NN     3:5:5:5     1:3:7     1:3:10     1:3:10     1:3:10       NN     3:5:5:5     1:1:10     1:1:10     1:1:10 <td< td=""><td>oject Name</td><td>AC</td><td>0,</td><td></td><td></td><td>212</td><td>N</td><td>ì</td><td></td><td>N40</td><td>101</td><td></td></td<>	oject Name	AC	0,			212	N	ì		N40	101	
Transmit     Transmit     Transmit     Transmit     Transmit     Transmit       Moon PHASE     All 1     Camera #: 6 1     2145 22: 4     1-3     520 4.0       MOON PHASE     2145 22: 4     1-3     520 4.0     1-3     520 4.0       MOON PHASE     First quarter     0000 22: 4     1-3     520 4.0       Waxing orescent     First quarter     0000 22: 4     1-3     520 4.0       Waxing orescent     Moon PHASE     10000 10     10000 10     10000 10       Waxing orescent     Failmoon     1110     13     13     13       Waxing orescent     Moon PHASE     10000 10     10000 10     10000 10       Waxing orescent     Moon PHASE     10000 10     10000 10     10000 10       Waxing orescent     Latitude     Latitude     Longitude     10000 10     10000 10       No     5     -     N     N     -     23 2.13       NN     5     -     N     N     -     23 2.13       NN     5     -     N     -     -     20 3.0       NN     5     -     N     -     -     20 3.0       NN     5     -     -     N     -     0       NN     5 </td <td>to.</td> <td>Country.</td> <td>N.A.</td> <td></td> <td></td> <td></td> <td>522.</td> <td></td> <td></td> <td>2</td> <td>7</td> <td>and the second se</td>	to.	Country.	N.A.				522.			2	7	and the second se
Alight Aligner     Camera #.     Clamera #.	10. 12	) — county.		••••		[n]	727	[)	2	\$	30 %	
MOON PHASE*     Camera #:     5.1     2.2.5     1.2.5     5.2.6       MOON PHASE*     MOON PHASE*     5.2.5     1.5.5     5.2.6     1.5.6       Waxing crescent     First quarter     0.00     22.5     1.5.7     5.2.6       Waxing crescent     First quarter     0.00     22.5     1.5.7     5.2.6       Waxing crescent     First quarter     0.00     22.5     1.5.7     5.5.6       Waring crescent     Waring globous     Waring globous     1.0.00     0.000     0.000       Net/Trap Type*     Lattude     Longitude     Length     Height     Time Up       NN     5.5.6     H.T. N     %1     %000     0.000       NN     5.5.6     H.T. N     %1     0.000     0.000       NN     5.5.6     H.T. N     %1     %0     0.000       NN     5.5.6     H.T. N     %1     6.0     %0       NN     5.5.6     H.T. N     %1     %000     %000       State Description:     Hime     Age     Social     %000       Lastude     Lastude     Controls     %0     %0     %0       State Description:     Hime     Age     Social     %0       Lastude     Age <t< td=""><td>logists:</td><td>N. Jettat</td><td>t ( e M</td><td>Chry</td><td></td><td>274</td><td>22</td><td></td><td></td><td>1</td><td>20</td><td></td></t<>	logists:	N. Jettat	t ( e M	Chry		274	22			1	20	
AI3       Camera #: 61       Camera #	.#/emen	$ \ge $		ing de de la companya		221	22			1		
ALL     Camera #:     C.       Moon PHASE*     Camera #:     C.       Moon PHASE*     First quarter       Moon PHASE*     First quarter       Moon PHASE*     First quarter       Maxing crescent     First quarter       Maxing crescent     Varing gibbous       Waning crescent     Maxing gibbous       Waning crescent     Maxing gibbous       Waning crescent     Length       Waning crescent     Length       With of the full of the ful				1			\$ 22.			승규는 가 옷		
MOON PHASE*         MOON PHASE*         First quarter         First quarter         MOON PHASE*         First quarter         MOON Phase         First quarter         MOON Phase         First quarter         Moon Phase         MOON Phase         First quarter         Moon Phase         Moo	S Unit #:	Z N	Came	$\sim$		2031	66	4		3		
MOON PHASE*         First quarter         First quarter         Full moon         Maining gressent         First quarter           Waining cressent         Frist quarter         Waining gressent         Frist quarter         Maining gressent         Frist quarter           Waining cressent         Maining gressent         Maining gressent         Maining gressent         Frist quarter           Waining cressent         Maining gressent         Maining gressent         Maining gressent         Maining gressent           Merf rap Type1         Latitude         Latitude         Longitude         Longitude         Length         Meight         Time Up           NN         55 - 55 - 14.7 'N         81 - 56 - 14.7 'N         81 - 56 - 14.7 'N         6         2000 b)         10000 b)           NN         55 - 55 - 14.7 'N         81 - 56 - 14.7 'N         6         7         7         7           NN         55 - 56 - 14.7 'N         81 - 56 - 14.7 'N         8         6         1000 b)         10000 b)           NN         55 - 56 - 14.7 'N         81 - 56 - 14.7 'N         6         1000 b)         1000 b)           Site Description:         Lassury vs         7         9         7         9         7           Lassury vs         1005	1					A PAC	22.	/-		t l		
Waning crescent     First quarter       Waning crescent     Vertrap Type!       Latitude     Longitude       NN     Se 56 · 37.0 N       Se 56 · 14.7 N     Se 56 · 14.7 N       NN     Se 56 · 14.7 N       Site Description:     Imme Joint Active Level       Lastuct     Age       Societs     Time       Age     Sex       Lastuct     Age       Societs     Time       Loster     Age       Loster     Age       Loster     Age       Lastuct		OW				0110	8.1 6	m m		1. N	$\sim$	
Usymptication       Full moon       Waning gibbous         NetTrap Type ¹ Latitude       Longitude       Length       Height       Time Up       Time Up         NN       35 • 56 • 13.2 "N       31 • 56 • 11.2 "W       6       6       2035       3135         NN       35 • 56 • 13.2 "N       31 • 56 • 11.2 "W       6       6       2035       3135         NN       35 • 56 • 14.1 "N       31 • 56 • 14.12 "W       6       6       2035       3135         NN       35 • 56 • 14.1 "N       31 • 56 • 14.12 "W       6       6       2035       3135         NN       5       -       "N       -       -       2036       3135         Visite Description:       Lession       No       -       -       -       -       -         Species       Time       Age       Sex       Repro.2       Wit       FME       0-3       -       0-3         Lession       Dio5       V       M       P.3       39       M       O       -         Lession       Dio5       V       M       P.3       39       M       O       -	Vew moon		king crescent	First quarter	<u>ب</u>	and and a second s			/	an an an Andrea an Anna Anna Anna Anna		a series and a series and a series of the
Net/Trap Type!     Latitude     Longitude     Length     Height     Time Up     Time Do.       NN     35 ° 56 ° 13.7 °N     31 ° 56 ° 14.7 °N     31 ° 56 ° 14.7 °N     6 ° 6     2 030 h)     2000 h)       NN     35 ° 56 ° 14.7 °N     31 ° 56 ° 14.7 °N     6 ° 6     6 ° 2030 h)     2030 h)       NN     35 ° 56 ° 14.7 °N     81 ° 56 ° 14.7 °N     6 ° 6     6 ° 2030 h)     2030 h)       NN     35 ° 56 ° 14.7 °N     6 ° 6     6 ° 6     7 033 h)     2030 h)       Site Description:     14 ° 50 ° 50 ° 14.7 °N     6 ° 6     6 ° 6     7 033 h)       Lastury     borcels     Time     Age     Sex     Repro. ² Wt     7 ° 33 h)       Lastury     borcels     Time     Age     Sex     Repro. ² Wt     7 ° 33 h)	Waxing gibt -ast quarter	sno	moon ning crescent	Waning gib	snoq					v		
NetTrap Type1         Latitude         Longitude         Length         Height         Time Up												
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Frap/Anaba #		Latit	ude		Longitu	de	Length (m)	Height (m)		ime Down (0000 h)	Picture #
$\mathcal{V}$ $\mathcal{N}$ $\mathcal{B}$ $\mathcal{S}$ $\mathcal{V}$ $\mathcal{S}$ $\mathcal{V}$ $\mathcal{S}$ $\mathcal{V}$ $\mathcal{V}$ $\mathcal{C}$	A	22		N" 7.2	Magina P	0	27	0	Ş		21355	
Ideament/Site Description:     Image     N     N       #     Met     Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Indext       #     Lasiurus     Dorcelis     2110     Met     9,     Mt     P     0.3)       P     Lasiurus     Dorcelis     2110     Mt     P     9,3     39     M     0.3)       P     Lasiurus     Dorcelis     210     210     10,3     10,3     10,3       P     Lasiurus     Dorcelis     210     10,3     10,3     10,3     10,3	D	22	26	1		<b>,</b> 9	200	9	Ŋ	Q	2130	
Idcement/Site Description: Lie Face       Deces       Time       Age       Sex       Repro.       With       Red (M)       Wing (ME)         #       X       X       X       X       Repro.       Wing (FME)       (0.3)         A       Lasiurus       Species       Time       Age       Sex       Repro.       Wing (FME)       (0.3)         A       Lasiurus       Species       710       A       P       9.3       3.4       M       0.33         A       Lasiurus       Species       710       A       P       9.3       3.4       M       0.33         A       Lasiurus       Species       710       A       P       9.3       3.4       M       0.3	and a second		0	۲ ۲	0	ſ	Ma					
Net       Net       Species       Time       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Index*         A       Lasiufus       Donalis       2110       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Index*         A       Lasiufus       Donalis       2110       Addust       An       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A       A <t< td=""><td>Placemer</td><td>nt/Site Description</td><td>ء د</td><td></td><td>s 25</td><td></td><td>orrietor</td><td></td><td>s.A.</td><td></td><td></td><td></td></t<>	Placemer	nt/Site Description	ء د		s 25		orrietor		s.A.			
Lasivry borald Stro borald Str		Ś	pecies	Time	Age (Ad/Jv)				Belly (F/M/E)	Wing Index (0-3)		Comments # /Guano/Hair Samp
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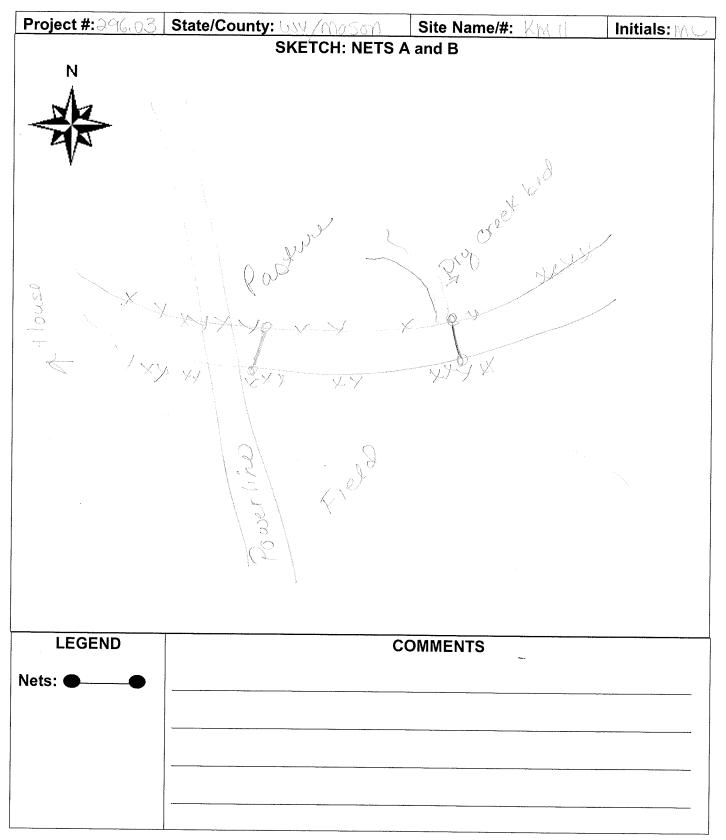
. B

Project #: 2	BAI	BAT CAPTURE DATA	DATA					WE	WEATHER DATA			
	796.03	Control	The second	7010	Time (0000 h)	) Temp (°C)	Wind Speed (estimated – see chart)*	speed see chart)*	Wind Direction: From to		% Cloud Cover (estimated)	Comments
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Project Name:_	F COS		×		2130	0.2		6				
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Biologists:	11 30++10	()   + +	Wur Pre-	-{	1 203	226			and the second	0	~	
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GPS Unit #:	+ -1	Came	Camera #: 🧢 🛛					~	11			Surger a construction of the second s
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New moon Waxing gibbous Last quarter		Waxing crescent Full moon Waning crescent	First quarter Waning gibbous	er bbous								
Net/Trap/Anabat #	Net/Trap Type ¹	Lati	Latitude		Longitude	Ð	Length (m)	Height (m)	Time Up Ti (0000 h)	Time Down (0000 h)		Picture #
4.4	22	38 ° 56 28 ° 56	N" 7,2 '	• • • •	1	M" 2'L	S  -	9 >	2030 0	0130		
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Placement	Net Placement/Site Description:	Nets	Placed i	1 2 C	ess co.	5 / C	061010	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	× 9.27	5 <u>2</u> 0	() Lor	ROWLEN
Capt Net				Age		Repro. ²	Wt RFA		<ul> <li>Wing Index</li> </ul>	*	Com	Comments
	\$	Species	Ime	(VL/DA)	_			) (F/M/E)	(0-3)		ture # /Gua	Picture # /Guano/Hair Sample
	**						1					

Appendix F

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	
Project #: <u>296.03</u> Date: <u>08/04/10</u>	Biologists: M. Little, T. Hern
Project Name: NCP CO2	Site Name/#:_KmU
State: USU County: Mason	USGS Quad:
Camera #:       Picture #s:/003 /008         Latitude:       28       56       00.8N         Distance to closest water source (meters):       N /A         Water source name:	GPS Unit #:        Waypoint #:          Longitude: <u>% (</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	epth:m or cm Clarity (H,M,L):
VEGETATION:	
	dominant Canopy Species (< 40 cm/16" dbh) ομινια βειμαροτικίαο
Estimated dbh range: Lg: <u></u> Sm: <u></u> Esti	mated dbh range: Lg: 5 - Sm: 3
Relative abundance of dominant vs. subdominant (rati	
Estimated canopy closure:Closed	
Roost tree potential consists of:Large Tree	
Roost tree potential for the area is:High	
Roost potential comments:	
Subcanopy clutter:Closed	
	Thes of $\underline{\times}$ Saplings $\underline{\times}$ Shrubs
Common Subcanopy Species: (Etm sep.)	, 
Habitat Description: Natrow grass path 1	ned with young trees
adjacent to pasture	
<u>Check all that apply:</u> <u>Mature Upland Forest</u> <u>Young Upland Forest</u> <u>Mature Lowland Forest</u> <u>Young Lowland Forest</u> <u>Check all that apply:</u> <u>Recently Logged Forest</u> <u>Pine Plantation</u> <u>Woodlot/ForestEdge</u> <u>Old Field</u>	∠Crop/Pasture LandShrub/scrub Swamp    Stream/RiverVernal Pool    Emergent WetlandDeepwater Lake/Pond    Forested SwampOther
Herbaceous Cover: Sparse // Moderate	Dense
Revised June 2007 1	





Revised June 2007

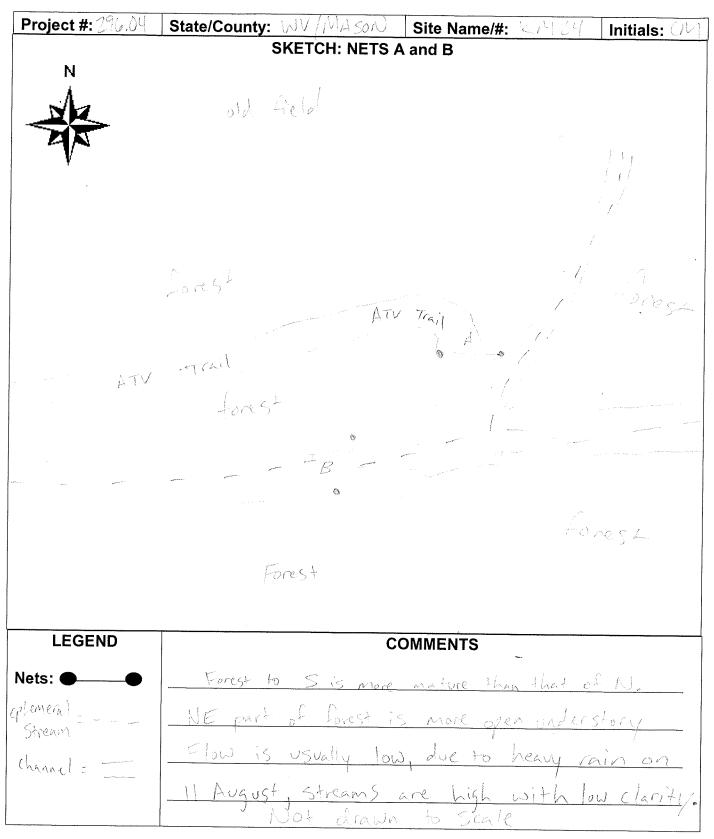
		BAT CAPT	BAT CAPTURE DATA					ME	WEATHER DATA	1		
American       American       American       American       American       American         American       American       American       American       American       American       American         American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American       American<	10 °C # +000		Sol Polos	ſ	Time (0000 h)		Wind Sp (estimated – s	eed ee chart)*	Wind Direction: From to	Cover (es	loud stimated)	Comments
County:       Model       The Park       Manuality       <	lect #'			<u> </u>	0200	7				01.		
County:     County: <thcounty:< th=""> <thcounty:< th=""> <thcounty:< th=""></thcounty:<></thcounty:<></thcounty:<>	Project Name:				3100		0			Ő	G	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	ч. (ЛV	County.	VO		100	6-	0			Ĉ	0	
K.M. I.I.     Camera #:     Camera #:       MOON PHASE*     Camera #:     Camera #:       MOON PHASE*     Camera #:       MOON PHASE*     Fist quarter       Monon processent     Fist quarter       Maning crescent     Monon processent       Maring crescent     Monon processent       Marine     Monon processent       Marine     Monon processent       Marin					100	Ċ			いたマ	Ø,	Ō	
KW       L       Camera #:       2000 F14SE*       NOON PHASE*       NOON PHASE*         MOON PHASE*       MOON PHASE*       First quarter       2000 F1       Solution       NOON PHASE*         Waning crescent       First quarter       Waning globous       MOON PHASE*       First quarter       NOON PHASE*         Waning crescent       Moon Phase*       Moon Phase*       First quarter       Endition       Noon Phase*         Waning crescent       Maning globous       Waning globous       Moon Phase*       Endition Phase*       Noon Phase*         Waning crescent       Maning globous       Waning globous       Moon Phase*       Noon Phase*       Noon Phase*         Waning crescent       Lattude       Lattude       Lattude       Lattude       Con Phase*       Con Phase*         Non NeurTrap Type*       Lattude       Lattude       Lattude       Langthude       Con Phase*       Con Phase*         Non Neuron       Site Description:       Site Description       Site Description       Con Phase*       Con Phase*       Con Phase*         Stecles       Time       Age       Site       N       N       Site       Con Phase*       Con Phase*       Con Phase*         Stecles       Time       Age       Site	logists: <u>(//</u>	~	tern		$ \gamma\rangle$		6		and a new particular law law . At the second se	4	0	
Among and the second the second matter first quarter first quarter first quarter wanting gibbous     Camera #:     Camera #:     Camera #:       MOON PHASE*     MOON PHASE*     MOON PHASE*     MOON PHASE*     MOON PHASE*     MOON PHASE*       Mono processent     Maning gibbous     Mono processent     Moon processent     Moon processent     Moon processent       Mono processent     Mono processent     Mono processent     Mono processent     Mono processent     Mono processent       Met/Trap Type*     Lattude     Longitude     Longitude     Length     Height     Time Up       Num     Se < 6 < 0.0.8 'N	#)	K WY L			IN	~						
Image: Camera #:     Camera #:     Camera #:     Camera #:       us     — Waing globous     First quarter     MoON PLASE     N 35 %       us     — Waing groscent     — First quarter     — Moon PLASE     N 35 %					78				VAN .	-		
MOON PHASE*     MOON PHASE*       Maing account     Varing greater       Full moon     Varing account       Waing account     Varing globous       Full moon     Varing account       Varing account     Varing globous       Full moon     Varing account       Varing account     Varing globous       Maring account     Varing globous       Full moon     Varing account       Varing account     Varing account       Varing account     Varing account       Varing account     Latitude       Intra Type     Mark       Intra Type     Mark       Intra Type     Mark       Intra Type     Mark       Intra Type     Latitude       Intra Type     Latitude       Intra Type     Latitude       Species     Mar       Intra	X I Init #-	<u>K</u>	Camera #.									
MON PHASE*       MON PHASE*         Maing creacent       Fill Innon         Waing greacent       Fill Innon         Full mon       Waing globous         MetTrap Type ¹ Lattude         Lattude       Longitude         Naing creacent       Lattude         Naing creacent       Maining globous         NetTrap Type ¹ Lattude         Lattude       Longitude         Nain       Sie 0.0.8 N         Nain       Sie 0.0.8 N         Nain       Sie 0.0.8 N         Site Description:       CrCSS U Arcub Lattude         Species       Time         Ascrubic       C2 45         Main       Main         Main       Main         Species       Time         Ascrubic       C2 45         Main       Main         Main       Main         Main       Main         Main       Main         Species       Time         Ascrubic       C2 45         Main       Main         Main       Main         Species       Main         Main       Main         Main       Main	0.111 #.		Valuela F.							-	~ I .	
us Waning crescent First quarter Waning crescent Waning gibbous Full moon Waning crescent Waning gibbous Full moon Waning crescent Waning gibbous HMAN FR Eatin Height Time Up Time Dow Net Trap Type Latitude Longitude Longitude (m) (m) (0000 h) (										~		
Waxing crescent       First quarter         Waxing globous       Latitude       Length       Height       Time Up       Time Do         Ner/Tap Type ¹ Latitude       Longitude       Length       Height       Time Up       Time Do         Nr $26 \circ 56 \circ 93.5$ °N $21 \circ 56 \circ 49.8$ °N $21 \circ 56 \circ 49.8$ °N $2000$ b)       (m)		MOON PHAS	*.									
Use       Time use       Latitude       Length       Length       Height       Time Up       Up <thup< th="">       Up       Up       <thu< td=""><td>Vew moon</td><td></td><td></td><td>irter</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thu<></thup<>	Vew moon			irter								
MetTrap Type     Latitude     Longitude     Length     Height     Time Up     Time Up       NM $28 \circ 56 \circ 0.05$ N $81 \circ 56 \circ 49.3$ W $26 \circ 49.3$ W $26 \circ 6130$ $0000$ h       NM $38 \circ 56 \circ 0.05$ N $21 \circ 56 \circ 49.3$ W $26 \circ 6130$ $0130$ NM $38 \circ 56 \circ 0.05$ N $21 \circ 56 \circ 49.3$ W $26 \circ 6130$ $0130$ Site Description: $6100$ M $81 \circ 56 \circ 0.05$ N $21 \circ 56 \circ 49.3$ W $20 \circ 6130$ Site Description: $6100$ M $81 \circ 56 \circ 0.05$ N $21 \circ 56 \circ 49.3$ W $26 \circ 6130$ Site Description: $6100$ M $81 \circ 56 \circ 0.05$ N $21 \circ 56 \circ 49.3$ W $26 \circ 6130$ Site Description: $61000$ M $61000$ M $6000$ M $6000$ M       Site Description: $61000$ M $61000$ M $6000$ M       Site Description: $22245$ J $700$ M $7160$ H $115$ $7160$ H $25000$ M $2245$ J $700$ M $7160$ H $1167$ $7160$ H	Vaxing gibbot set duarter			snoaaig					ł			
NetTrap Type ¹ Latitude         Longitude         Length         Height         Time Up	asi yuai lei		111									
AN.N. $28 \cdot 56 \cdot 0.0.8$ N $81 \cdot 65 \cdot 49.3$ W $56 \cdot 630$ $6130$ AN.N. $38 \cdot 56 \cdot 0.265$ N $31 \cdot 56 \cdot 49.8$ W $16$ $2030$ $0120$ IacementSite Description: $565 \cdot 0.265$ N $31 \cdot 56 \cdot 49.8$ W $16$ $2030$ $0120$ BellyMilti $MacNacuthatALchedNacuthatAcched16BellyMiltiMac116 \cdot 4716116 \cdot 471030B25ciesTimeAduluyMac116 \cdot 47116 \cdot 471000BL_5cuurus borolis2245UMac116 \cdot 47116 \cdot 471000BL_5cuurus borolis2245UMac116 \cdot 47116 \cdot 471000BL_5cuurus borolis2245UMac116 \cdot 47116 \cdot 471000BL_5cuurus borolis22245UMac116 \cdot 47116 \cdot 271000BL_5cuurus borolis22245UMac116 \cdot 47116 \cdot 271000B116 \cdot 1000116 \cdot 1000116 \cdot 1000116 \cdot 100010001000B100001000010000100001000010000B1000010000116 \cdot 100001000010000B1000010000100001000010000B1000010000100000100000B100000$	rap/Anabat #	Net/Trap Type ¹	Latitude		Longitude	e e e e e e e e e e e e e e e e e e e	Length (m)	Height (m)		ime Down (0000 h)	đ	icture #
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Net       Secreption:       Grassy Avail       Ladit Ladit       Net       Repro.2       Wt       RFA       Belly       Wing Indext         #       Species       Time       Age       Sex       Repro.2       Wt       RFA       Belly       Wing Indext         B       Loss visit       basedies       2245       Ju       R       Infr       Yma       E       O       O         B       Loss visit       basedies       2245       Ju       R       R       Infr       Yma       E       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O			1 1		X	Mu						And a second
Net       Species       Time       Age       Sex       Repro.2       Wt       RFA       Belly       Wing Index* $\mathcal{R}$ $\mathcal{L}_{SCUU:15}$ becces       Time       Age       Sex       Repro.2       Wt $\mathcal{R}$	Placement/	$\sim$	this	LADE	N.R.O	Và wei		1.2	Cerch		0 G.	Teld.
(AdJuv)     (MiF)     (g)     (mm)     (FiME)     (0-3) $S$ $U$ $F$ $MR$ $II.S$ $4/r_{resc}$ $E$ $O$		Sneries	Time								Comm	ients
5 Ju E MR 11.5 4/man E O 007/00	#	obecies			(M/F)	<u>ت</u>				Pict	ure # /Guan	o/Hair Sample
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Appendix F

2	BAI	<b>BAT CAPTURE DATA</b>	E DATA						WEATHER DATA	A	
roject Name:	e S	Dato:	0 / × / 0		Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	beed tee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	(Comments
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Site name/#:										2 · · · · · · · · · · · · · · · · · · ·	
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	MO	MOON PHASE*			0 1/2	4999 600	~				
New moon		Waxing crescent	First quarter	ŗ							
_Waxing gibbous		Full moon	Waning gibbous	snoqu					÷x		
_Last quarter		Waning crescent							a series de la constante de la		
Net/Trap/Anabat N	Net/Trap Type ¹	Lat	Latitude		Longitude	Ð	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
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	ice description	* *								~	
Capt Net # #	Ś	Species	Time	Age (Ad/Jv)	Sex R (M/F)	Repro. ² V	Wt RFA (a) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
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		Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
	<b>DSL</b> NET SITE HABITAT	
	Project #: $296.04$ Date: 11 August 2010 Project Name: $AEP = CO_2$ State: $WV$ County: <u>MASON</u> Camera #: 61 Picture #s:	Biologists: <u>P.Jeffcott</u> , C. Murphy Site Name/#: <u>KM24</u> USGS Quad: GPS Unit #: A13 Waypoint #: KM24A
	Latitude: <u>38°57'44.6</u> "N Distance to closest water source (meters): <u>IM From A</u> Water source name:	Longitude: <u>82</u> ° <u>01</u> ' <u>22.1</u> "W Type of water source: <u>effement Stoream</u>
-₩[	ESTIMATED WATER SOURCE CHARACTERISTICS	
	Bank Height: meters Channel Width: 4-7	
$\sqrt{2}$		$\underline{\times}$ Gravel <u>Sand</u> $\underline{\times}$ Silt/Clay
· Ì · · r		pth:m or cm) Clarity (H,M,L):
	VEGETATION:	
	Dominant Canopy Species (> 40 cm/16" dbh) Subo Platinus occidentalis	Jominant Canopy Species (< 40 cm/16" dbh)
	Acer negundo	Acer Saccharum
		Liquidamber Styraciflua
	Estimated dbh range: Lg: 55cm Sm: 40cm Estir	nated dbh range: Lg: <u>39 cm</u> Sm: <u>15 cm</u>
	Relative abundance of dominant vs. subdominant (ratio	
	Estimated canopy closure:Closed	X Moderate Open
		sSnagsBoth Neither
	Roost tree potential for the area is:High	ModerateLow
	Roost potential comments:	
	Subcanopy clutter:Closed	_ <u>X</u> ModerateOpen
	Subcanopy comprised largely of: <u>Canopy Tree</u>	
	Common Subcanopy Species: <u>Aesculus</u> flava	^; 
7	Habitat Description: old non-maintained pipeline Fream w/ multiple areas of Standing	ROW parallelog small extension
4	Check all that apply:Mature Upland ForestYoung Upland ForestMature Lowland ForestYoung Lowland ForestOld Field	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
	Herbaceous Cover: Sparse <u></u> Moderate	Dense
	Revised June 2007 1	





Revised June 2007

tedd     Commercian       S     S       Commercian     Picture #       Picture #       Index	ct #: ct Name	BAI	BAT CAPTURE DATA	E DATA					WE	WEATHER DATA			
Main         Date         Date <thdate< th="">         Date         Date         <thd< th=""><th>t #: t Name</th><th>747 24</th><th>-t-C</th><th></th><th>0 ×</th><th>Time (0000 h)</th><th>Temp (°C)</th><th>Wind Spt (estimated se</th><th></th><th>Wind Direction: From to</th><th></th><th>% Cloud er (estimated)</th><th>Comments</th></thd<></thdate<>	t #: t Name	747 24	-t-C		0 ×	Time (0000 h)	Temp (°C)	Wind Spt (estimated se		Wind Direction: From to		% Cloud er (estimated)	Comments
Full P. County:         Marcol         250         251         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	t Name					2030	25.9	0				10%	- A COLOR IN THE ADDRESS OF THE ADDR
December     County-     Marcol     2230     144     0       P. J. H. County-     2231     234     0     0     0       M.M. 2.H     233     234     0     0     0       M.M. 2.H     233     234     0     0     0       M.M. 2.H     233     234     1     3     0       M.M. 2.H     233     234     1     3     0       M.M. 2.H     233     234     1     3     0       M.M. 3810     274     1     3     5     1       M.M. 3810     274     1     1     1     0       M.M. 3810     255     1     1     1     0       M.M. 35     5     1     1     1     1       M.M. 35     5     1     1     1		. ART.	- CO-			812	75.1	Ø				10%	, and the second se
Distribution     Distribution     Clock     Clock     Clock       K.M. T.H.     Cantera #. (5 1)     Clock     223.9     Clock     Clock       A.13     Cantera #. (5 1)     Clock     223.9     Clock     Clock     Clock       MOON PHASE     First quarter     2030     22.4     1.5     Subh All B     Clock     Clock       MOON PHASE     MOON PHASE     First quarter     2030     22.4     1.5     Subh All B     Clock       Moon Phase     Moon Phase     Moon Phase     Moon Phase     Clock     2035     2.4     0.6       Moon Phase     Moon Phase     Moon Phase     Moon Phase     Display a clock     Display a clock     Display a clock     Display a clock       Mon More     Stationg crescent     Latitude     Longitude     Length     Time Up Time Down     Picture #       NN     35     51     V     N     2     0.1     2.05     0.15       NN     35     51     V     N     Display a clock     Display a clock     Display a clock       NN     35     51     V     N     N     2     0.03     Display a clock       NN     35     51     V     N     N     Display a clock     Display	101		Mocsa's			2130	24.60	0					
No. Commers #:     Camera #: <th< td=""><td>~ ~ ~ ~</td><td></td><td>···· / /·</td><td></td><td></td><td>7700</td><td>74.1</td><td></td><td></td><td></td><td></td><td>1</td><td>· · · · · · · · · · · · · · · · · · ·</td></th<>	~ ~ ~ ~		···· / /·			7700	74.1					1	· · · · · · · · · · · · · · · · · · ·
KM 24KM 24EndEndEndEndEndEndEndMOON PHASE*Camera #: $G_A$ 0.3322.41-35.4 M.V0.4MOON PHASE*First quarter0.3322.41-35.4 M.V0.4MOON PHASE*First quarter0.3322.40.40.4MOON PHASE*First quarter0.3322.40.40.4MOON PHASE*MOON PHASE*0.3322.40.40.4Moon Phase*First quarter0.3322.40.40.4Moon processentVaring gressent1.40.001 h1000 h)Picture #Nin355.51.444 h1.40.10.001 h1000 h)Picture #Nin355.51.444 h1.41.40.10.001 h1000 h)Picture #Nin355.51.444 h1.41.41.41.41.41.4Nin551.444 h1.41.41.41.41.4Nin51.41.41.41.41.41.41.4Nin51.41.41.41.41.41.41.4Nin51.41.41.41.41.41.41.4Nin51.41.41.41.41.41.41.4Nin51.41.41.41.41.41.41.4Nin51.41.41	ists:	しっした	20++ (	. MUSPLU	e~-	7720						5.5	
A13     Canera #:     G1     552     13     Subscription       us     MOON PHASE*     0000 PHASE*     5000 22.8     0     0       us     Moon PHASE*     5000 22.4     1.5     50.4     0       us     Maxing crescent     First quarter     5000 22.4     1.5     50.4       Warning grescent     Maxing grescent     First quarter     0.000 10     0.000 10     0.000 10       No     Maxing crescent     Maxing grescent     Length     Height     1.1     0.01     1.000 00       Net/Trap Type*     Latitude     Longtude     Length     Height     1.000 10     0.000 00       NM     38 - 5.1     149.6     N     22 - 0.1     2.0.3     0.01     1.000 00       NM     38 - 5.1     149.6     N     2.0.3     0.01     1.000 00     1.000 00       NM     38 - 5.1     149.6     N     2.0.3     0.03     1.000 00       NM     38 - 5.1     149.6     N     2.0.3     0.03     1.000 00       NM     38 - 5.1     1000 00     1.000 00     1.000 00     1.000 00       NM     38 - 5.1     1000 03     1.000 00     1.000 00     1.000 00       NM     5     5     1.0000 00 <td>j j</td> <td>5</td> <td>9 </td> <td>~</td> <td>No.</td> <td>7300</td> <td>1</td> <td></td> <td></td> <td>······</td> <td></td> <td>20</td> <td>· · · · · · · · · · · · · · · · · · ·</td>	j j	5	9 	~	No.	7300	1			······		20	· · · · · · · · · · · · · · · · · · ·
A.2.3     Camera #.     G.1.2     D550     2.2.3     D       Monon PhASE     Monon Phase     First quarter     D550     2.2.4     1.2.3     5.0.4 M/L     0.0       Musting orescent     First quarter     D550     2.2.4     1.2.3     5.0.4 M/L     0.0       Musting orescent     First quarter     D550     2.2.4     0.5     0.0     0.0       Musting orescent     Waning orescent     First quarter     Latitude     Latitude     Latitude     Latitude       NN     35     5.71     44/L     N     2.0.1     2.0.4     0.000 h)     Firstee Dom       NN     35     5.71     44/L     N     2.0.1     2.0.4     0.000 h)     Firstee Dom       NN     35     5.71     44/L     N     2.0.1     2.0.4     0.000 h)     Firstee Dom       Site Description:     Musting orescent     Time Up     Musting orescent     Common Markee     Musting orescent       Species     Time     Age     Sat     Repro.2     Wr     RFA     Beily     Mig Indext       Species     Time     Add     Mig     Mig Indext     Picture # foluonohierits	me/#:		aure	200 V	4	1000	2010			1. A. 1			ender
MOON PHASE working created Fist quarter         D020         2.2.4         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0	. H.	4	ۍ د	**************************************	wayness	2550	5.0						
MOON PHASE     MOON PHASE       Us     Waxing crescent       Full moon     Waxing orescent       Full moon     Latitude       Latitude     Latitude       NN     38 • 51 · 44/6 · N       Se     N       NN     38 • 51 · 44/6 · N       Point     Rithme Up       NN     2 • 53 0 · 51 0 · 50 · 51 0 · 50 · 51 0 · 50 · 5		f man much	Ca			0000	8.22	2				, , , , ,	N
MOON PHASE*     MOON PHASE*       Wanning crescent     First quarter       Wanning crescent     Medit       Medit     Lanttude       NM     S5       NM     S5       NM     S2       S1     S2       S2     S2       S2     S2       S2     S2       S2     S2       S2     S2       S2     S2						D030		2-1		Ner M			and a second
Waing crescent     First quarter       Us     Full moon       Full moon     Maring globous       Net/Trap Type!     Larthude       NM     28 • 5.1 · 44.6 °N       NM     0.001h       Rite Description:     Met B globack 5nv       Site Description:     Met B globack 5nv       Socies     Time (Adlu)       Mirst     0.3)       Picture # /GuanofHair Sam		OM	<b>NON PHASE</b> *			<u>ै।</u> ८०				1 40 N	U)	.\ 0	
Maing groom     Maing groom       WerTrap Type ¹ Latitude       NeuTrap Type ¹ Latitude       Null     38     551     141.6       Null     6     6     203.0       Species     Time     Age     560       Species     Time     600.0       Null     600.0     100.0       Null     600.0     100.0       Species     Time     600.0       Null     600.0     100.0       Null     600.0     100.0       Null     600.0     100.0       Null     600.0     100.0       Null     600.0     100.0 <th< td=""><td></td><td>Max</td><td>ving crescent</td><td>First duarte</td><td>۲</td><td>0130</td><td>1 1.22</td><td>0</td><td></td><td></td><td></td><td>.\. 0</td><td>an an a</td></th<>		Max	ving crescent	First duarte	۲	0130	1 1.22	0				.\. 0	an a
Mainting treesent     Leftingth     Leftingth     Heighth     Time Up     Time Up     Time Up     Time Up       NN     38< 57 1 44 L	ting oth			Waning gun	sinde								
NetTrap Type ¹ Lattude     Longitude     Length     Height     Time Up     Time Up     Time Down       NM     38< 57 + 444 L	t quartei		ning crescent							s			
NetTrap Type ¹ Lafitude     Length     Height Time Up     Time Up     Time Up     Time Up       NN     38 • 57 + 44.6     N     72 • 01 + 32.4     (0000)     (0000)     (0000)     Picture #       NN     38 • 57 + 44.6     N     72 • 01 + 32.4     0     2045     045     045       NN     38 • 57 + 45.6     N     72 • 01 + 32.4     0     2050     0135     0       NN     5     5     -     N     0     -     704     0     0       Site Description:     Ale A plead in cardina     Time (adulu)     Mir)     Mir)     FRA     Belly     Wing Index*     Picture # /Guano/Hair Sam       Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*     Comments       Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*     Comments	-		5										
8       57       144.6       N       72       01       22.1       W       6       2045       0145         8       57       45.6       N       82       01       22.4       W       6       2030       0130         No.       N       2       01       22.4       W       6       2030       0130         No.       N       2       01       23.0       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       1	p/Anaba #		Ľ	atitude		Longitude		Length (m)	Height (m)	_	Time Dow (0000 h)	E.	Picture #
No.     N     R2.0.1     22.7.7     W     C     2030     0130       No.     N     N     N     N     N     No.     No.     No.     No.       No.     N     N     N     N     No.		22	•	9.		(5.)			(0		0145		
•       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •       •		22		45.10	) o	$\langle \gamma \rangle$	5	0	2	030	0130		
Net A placed in corridat between Eonstead area near Stream and ald field. Net B placed one area near Stream and ald field. Net B placed one is in time Age Sex Repro. ² Wt RFA Belly Wing Indext Comments (g) (mm) (FIMIE) (0.3) Placture # (Guano/Hair Sam Placture # (Guano/Hair Sam					o	1	Ma		- contraction of the second				
Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*       (0-3)     (mm)     (mm)     (mm)     (mm)     (mm)     (mm)     (mm)	acemei	nt/Site Descriptior	Net A	<	à.							00	Stover St
	Net	S	necies	Time					Belly	Wing Index		Corr	Iments X (270)
	#		201222			W/F)	5)		(F/M/E)	(0-3)		PICTURE # /Gu	anornair Sampie
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	DA	BAI CAPIUKE DAIA							WE/	WEATHER DATA	4		
Droiart #. 296.04	10.04	Date.	Aron wet 10	(,	μĒ	Time Temp (°C) (0000 h)		Wind Speed (estimated – see chart)*		Wind Direction: From to	% Cloud Cover (estimated)	d) Comments	ıts
	1001		100100		10	2030 22.9		0			80%	Hard rain from 41.00 P	on Hive I
Project Name:	ALL	6			60	2100 22.5	2	0			80%		
State:	County:	Mason			d.	2)30 21.0		0		and the second se	10/-		
Riologists.	O. K. Brah	<	Marah /			00 21	، يرتع			<ul> <li>Construction</li> </ul>	70		
						50						502	
Site name/#:	LC WX		>		2.5	500 20.1		<2		and the second se	õ	700	
GPS Unit #:	A 13	Ca	Camera #: 61				12	L.L.					
			)										
	M	<b>MOON PHASE*</b>											
New moon		Waxing crescent	First quarter	ı									ana sa kata na
Waxing gibbous		Full moon Kaning crescent	Waning gibbous	snoc						×			
Net/Trap/Anabat #	t Net/Trap Type ¹		Latitude		Longitude	tude	Le Le	Length (m)	Height (m)	Time Up T (0000 h)	Time Down (0000 h)	Picture #	
Ł	al d	38 . 57	N.  91 h.h .	•	01	M. 1.22		0	0		2330		
B	R	25° 35	, 45,6 "N	• 03	. 10	M. 1,72	,	0	9	2030	2335		
	•	o	<b>N</b> "	•		Ma	-						
Net Placement	Net Placement/Site Description:	n: 1	Flaced in a	Corrido	1 Delvier	een forzstert	ted are	ra seal	i Stream	n and all file	1 Geld, Net	B placed over	A Shrew
Capt Net # #	S	Species	Time	Age (Ad.lv)	Sex (M/F)	Repro. ²	e) M	RFA (mm)	Belly (FIM/F)	Wing Index*		Comments Dicture # /Guano/Hair Sample	nle
				(ADINU)	1 1111		(8)			(0-0)			2
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TQT	BAT	<b>BAT CAPTURE DATA</b>	E DATA					Š	WEATHER DATA		DATA
Project #· ) 9 ( , 64	16.04	Date: 12	A.m. et 2410		Time (0000 h)	ne 0 h) Temp (°C)	-	Wind Speed (estimated – see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	1) Comments
Droicot Namo:	14 V V		ر م		8	2030 23.7	V	0	a na an	¢	
Project Name:					5	2100 22.6	v -	3			
State: 1	County:	Maser			21	2130 221		_	· · · · · · · · · · · · · · · · · · ·	0	
			-		2200	00 21.8	1	2	50 % WE	0	
Biologists:	V. Setto	COT, C. Mur	hut		0 A A A A A A A A A A A A A A A A A A A	· 0 2.1, 41	t de la contraction de la cont		and the second	0	
Site name/#:	K M 24		м.		1300	0 21,3	0	Ç.,		0	
			e.		1330	0 21.4	1	3	50 20 20	0	
GPS Unit #:	C 15	Can	Camera #: 💪 🛛		000	17		~	51 4 NE	0	
					0036	4	C			0	
	CIM CIM				62	5 00 F	0		· · · · · · · · · · · · · · · · · · ·	¢	
New moon		Maving crescent	Eirst auartar		010	5	0		1. June 1. Jun		
Waxing gibbous	4	Full moon	Waning gibbous	pous					×		
Last quarter	Wai	Waning crescent									
Net/Trap/Anabat #	Net/Trap Type ¹	Lat	Latitude		Longitude	ude	Length (m)	Height (m)	Time Up Ti (0000 h) (	Time Down (0000 h)	Picture #
X	1/4/	15 . 28	<b>Ν</b> " ^σ ), μ μ '	• (ک	• 10	Ma (120	5	2		01 50	
E	pri al	38 • 57	N" , (2).	• • • •	• •	M. 5.20	0	0		0145	
		0	<b>N</b> "	•	L	M.					
Net Placement/	Net Placement/Site Description:_	1. 1. 6. 6. 5.	ALEN LEV		and Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andrew Andre		2 - 2 - 2 - 2 - 2	200 - 200 200 - 200 200	an <i>er d</i>		Virge need the
Capt Net # #	ίζι Γ	Species	Time	Age (AdLIv)	Sex (M/F)	Repro. ²	Wt RFA (a) (mm)	A Belly (F/M/F)	Wing Index*	) Picture # /	Comments Picture # /Guano/Hair Sample
				Variana)		•					
	1 CCC WOL	2 SUPLAVUS	VUS 2110		- <	7		2			
· · · · · · · · · · · · · · · · · · ·	+ %	د د کرم	2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			>				- 14 Annalysis Argent - 2000 Participant - 2000 Par	

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	Property of: Environmental Solutions & Innovations, Inc.
<b>ESI</b> NET SITE HABITAT	781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
Project #: <u>A96.04</u> Date: <u> } Ang 2010</u>	Biologists: M. Michaels + S. Recies
Project Name: <u>AEP CO</u>	Site Name/#: <u>kmas</u>
State: WV County: Mason	
Camera #: $k_2760$ Picture #s: $5833-5836$ Latitude: $33$ ° $54$ ' $214$ "N Distance to closest water source (meters): $1,300$ m Water source name: $0h:0$ $Q:VC$	Longitude: <u>《] ° 56 ' 30.                                  </u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS): MA
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	epth:m or cm Clarity (H,M,L):
VEGETATION:	
Quercus Velutina (1)	dominant Canopy Species (< 40 cm/16" dbh) was montana mus amaricana
	· rubrum
Estimated dbh range: Lg: <u>40</u> Sm: <u>40</u> Esti	mated dbh range: Lg: <u>39</u> Sm: <u>70</u>
	the second se
Relative abundance of dominant vs. subdominant (rati	
Estimated canopy closure:Closed	$\underline{\times}$ ModerateOpen
	_X_ModerateOpen sSnagsBothNeither
Estimated canopy closure:Closed	X_ModerateOpen
Estimated canopy closure:ClosedRoost tree potential consists of:X_Large Tree	<u> </u>
Estimated canopy closure:ClosedRoost tree potential consists of:XRoost tree potential for the area is:High	<u> </u>
Estimated canopy closure:      Closed         Roost tree potential consists of:       _X_Large Tree         Roost tree potential for the area is:      High         Roost potential comments:	<u> </u>
Estimated canopy closure:      Closed         Roost tree potential consists of:      X Large Tree         Roost tree potential for the area is:      High         Roost potential comments:	<u> </u>
Estimated canopy closure:      Closed         Roost tree potential consists of:      Large Tree         Roost tree potential for the area is:      High         Roost potential comments:	<u>X</u> ModerateOpen sSnagsBothNeither Moderate <u>X</u> Low X ModerateOpen ches of X SaplingsShrubs es
Estimated canopy closure:      Closed         Roost tree potential consists of:      Large Tree         Roost tree potential for the area is:      High         Roost potential comments:	<u>X</u> ModerateOpen SnagsBothNeither Moderate XLow <u>X</u> ModerateOpen ches of X SaplingsShrubs es <u>``</u> <u>Umus amvicana</u> <u>ith ravine to the East.</u>

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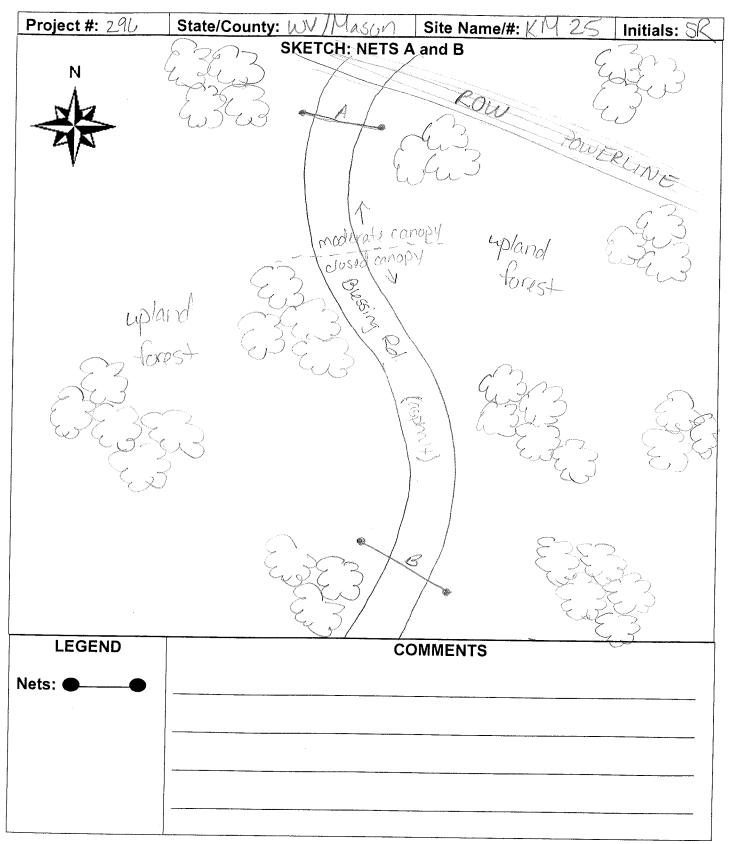
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# NET SITE HABITAT DESCRIPTION (continued)



WEATHER DATA           Wind Speed           Wind Speed         Wind Direction:           32         Z(L)         C           32         Z(L)         C           32         Z(L)         C           32         Z(L)         C           33         Z(L)         C           34         Z(L)         C           35         Z(L)         C           36         Z(L)         C           37         Z(L)         C           38         Z(L)         C           39         Z(L)         C           31         Z(L)         C           32         Z(L)         C           33         Z(L)         C           30         Z(L)         C           32         Z(L)         C           33         Z(L)         C           32         Z(L)         C           32         Z(L)         C           32         Z(L)         C           33         Z(L)         C           32         Z(L)         C           32         Z(L)         C	NEAT         Neat           1000h         1 emp (ec)         (estimated -see charty)         Fn           2030         22(1,0)         25,1         0         -           2100         25,1         0         -         -           2100         25,1         0         -         -           2100         25,1         0         -         -           2200         24,1         0         0         -         -           2230         24,1         0         0         -         -         -           2230         24,1         0         0         0         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -	Time         Temp (c)         (estimated - see charty         Fr           (0000 h)         7 mp (c)         (estimated - see charty         Fr           2203         22(1,0         25,1         0         -           2130         25,1         0         -         -           2130         25,1         0         -         -           2200         21,1,5         0         -         -           2300         24,1,5         0         -         -           0050         24,5         0         -         -           0050         24,5         0         -         -           0050         24,5         0         -         -           0050         24,5         0         -         -           0050         23,2         0         -         -           0050         23,2         0         -         -           00         -         -         -         -         -           00         -         -         -         -         -         -           0         -         -         -         -         -         -         -
Temp (°C)         Temp (°C)           Temp (°C)         226.0           226.1         224.4           224.4         224.4           224.4         224.4           224.4         224.4           224.5         224.4           224.6         224.4           224.6         224.4           225.7         224.4           225.7         224.4           225.7         224.4           225.7         224.4           225.7         224.4           225.7         224.4           225.7         224.4           225.7         224.4           224.5         224.4           225.7         224.4           225.7         224.4           225.7         225.7           225.7         225.5           224.5         224.5           225.7         224.5           225.7         224.5           225.7         224.5           225.7         224.5           225.7         224.5           225.7         224.5           225.7         224.5           225.7         225.5	Time         Time         Temp (°C)           1         2030         2(1,0)           2030         2(1,0)         2(1,0)           2100         25,1         2200           2100         25,1         2200           2220         24,0         24,0           2320         24,0         23,2           2100         23,1         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           2100         23,2         24,0           21         0         3,3           21         0         3,3           21         0         3,3           21         0         3,4           21         0         3,4           21         0         3,4           21	CAPTURE DATA       Date: Jà Au, 3010       Date: Jà Au, 3010       Date: Jà Au, 3010     Time       MA.Son     2000     24,0       Ansatz     2000     24,0       Ansatz     2000     24,1       Ansatz     2000     24,1       Camera #: KZ 760     24,1     2000       NPHASE*     Camera #: KZ 760     24,1       Gerescent     First quarter     2000       NPHASE*     Colso     24,1       g crescent     First quarter     2000       SG     51,4     23,2       Doon     Waning gibbous     20,00       g crescent     Institude     Latitude       Latitude     Latitude     Longitude       Nuds     orros     31,0     or       SG     54,1     81,0     54,10       Nuds     orros     31,0     or       Nuds     orros     32,0     10,10       Nuds     orros     32,0     10,0       SG     33,0     0,01     0,0       SG     0,00     10,0     10,0
	Age S Age S Age S Age S Age S S P A S S P A S S P A S S P A S S S P A S S S P A S S S S	CAPTURE DATA Date: Là Au aur Haston Haston Haston Camera #: K2 760 Camera #: K2 760 NHASE* Garcecent Camera #: K2 760 Camera #: K2 760 Camera #: K2 760 NHASE* Camera #: K2 760 NHASE* Camera #: K2 760 Camera #: K2 760 NHASE* Camera #: K2 760 NHASE* Camera #: K2 760 NHASE* Camera #: K2 760 Camera

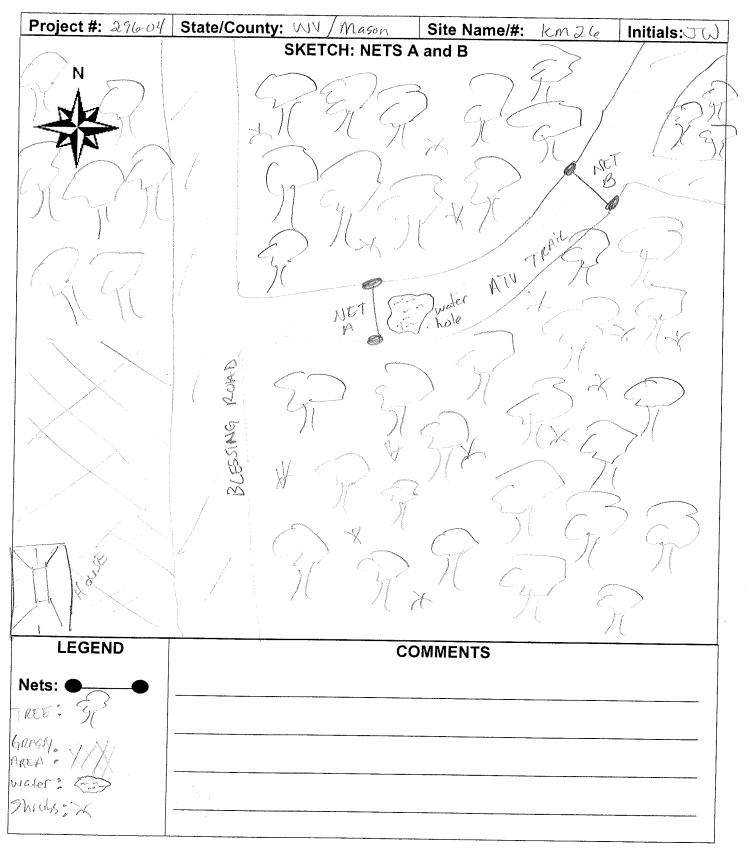
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	ind # . D G L , DM	BAT CAPTURE DAIA	DATA					ME	WEATHER DATA	A	
Main         County:         Main			Ň		Time (0000 h)	Temp (°C)	Wind Sp (estimated – se	eed se chart)*	Wind Direction From to		ted) Comments
AFP LD     Are LD       Mit duals     4 S. Receives       Mit duals     4 S. Receives       Artia     County: AusSo       Artia     Camera #: Kzit/D       MOON PHASE*     First quarter       Maxing crescent     Maxing processent       Maxing crescent     Moon phase       Warning crescent     Moon phase       Moon jagoous     Pase			3D			1.	C	F		10%	
County:         Mass         County:         Mass         State         <	AC 2	6,		1	0910		0		1	10%	
Withdracks         A.D. Control         A.D. Control <td>, ,</td> <td></td> <td></td> <td></td> <td>2212</td> <td></td> <td>0</td> <td></td> <td>and a second second</td> <td>10%</td> <td>a a summer ( summer ) a succession of the succes</td>	, ,				2212		0		and a second	10%	a a summer ( summer ) a succession of the succes
Mit diaction     Altonic     Altonic<	~~~		1			in'	20			20%	
Km 35       Km 35       Km 35       Stell       Stell <t< td=""><td>Ž</td><td></td><td></td><td></td><td>272.6</td><td>1.000</td><td></td><td></td><td></td><td>7.2.C</td><td></td></t<>	Ž				272.6	1.000				7.2.C	
$\overline{A44}$ Camera #: $k_2 1 L^0$ $\overline{A200}$ $\overline{B20}$ $\overline{B20}$ $\overline{D00}$ $\overline{D00}$ $\overline{B20}$ $\overline{D00}$ $\overline{B20}$ $\overline{D00}$ $\overline{B20}$ $\overline{D00}$ $\overline{B20}$ $\overline{D00}$ $\overline{B10}$ $\overline{D000}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D100}$ $\overline{D1000}$ $\overline{D1000}$ $\overline{D10000}$ $\overline{D10000}$ $\overline{D100000}$ $\overline{D1000000}$ $\overline{D10000000}$ $D1000000000000000000000000000000000000$					200200	) ( ) [ ) [	×			7.2%	
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M.L.         Camera #: N2 14         0000 PHASE*         N2 14         N2 14         0000 PHASE*         000 PHASE*         000 PHASE*         000 PHASE*         000 PHASE*         0000 PHASE*         000 PHASE*			1	¢	$\sim \gamma$		0		)	0/07/	
MON PHASE*     MOON PHASE*       E-ull moon     First quarter       - Waxing crescent     - First quarter       - Waning crescent     - Maining glabous       - Waling rescent     - Maining glabous       - Maining rescent     - Maining glabous       - Maining rescent     - Maining rescent		Cam	N2 1		0000		0		generál materia internetina para a desta de la constanció de la constanció de la constanció de la constanció d	20%	
MOON PHASE*     MOON PHASE*       First quarter     First quarter       Full moon     First quarter       Waxing crescent     First quarter       Full moon     Waxing gibbous       Mell rap Type1     Latitude       Latitude     Longitude       NN     34 ° 54 ° 54 ° 314 °N       Ste     56 ° 36 ° 50 ° 70 °       NN     34 ° 54 ° 54 ° 314 °N       Ste     56 ° 36 ° 30 °       NN     34 ° 54 ° 54 ° 314 °N       NN     34 ° 54 ° 54 ° 314 °N       NN     34 ° 54 ° 54 ° 314 °N       NN     34 ° 54 ° 54 ° 314 °N       Steecles     m       Steecles     Time       Age     56 ° 36 ° 36 ° N       L     borradi       2035     Ad       N     10 ° 24 ° N       C     520 ° Ad       Mile     66 ° 36 ° 36 ° 0       N     10 ° 24 ° N       C     5000 ° A       M     10 ° 24 ° N       M					22	Ľ (	0			202	Announce of the Announce of th
Mount HADE     First quarter     First quarter       Waning cresent     Waning cresent     First quarter       Waning cresent     Waning cresent     Maning cresent       Maring cresent     Maning cresent     Length     Height       Maning cresent     Latitude     Longitude     Length     Height       MN     34 ° S4 ° 344 ° N     71 ° 56 ° 367 ° W     6     3.63.0 0       MN     34 ° 54 ° 344 ° N     0     0     3.63.0 0       MN     34 ° 54 ° 344 ° N     0     0     3.63.0 0       MN     34 ° 54 ° 344 ° N     0     0     3.63.0 0       MN     34 ° 54 ° 344 ° N     0     0     3.63.0 0       MN     39 ° 54 ° 44 ° N     0     0     3.63.0 0       MN     36     56 ° 38.7 ° W     6     3.63.0 0       Site Description:     Nu4 Po     0     3.63.0 0       Local to     Age     Second     0     0       Local to     Age     An     NC     10.2 40     M       Local to     An     N     10.2 40     M     0       Local to     2000     A     A     N     0       Local to     2000     A     A     A     A       Local to <td></td> <td></td> <td></td> <td></td> <td>DIED</td> <td></td> <td>0</td> <td></td> <td></td> <td>30%</td> <td></td>					DIED		0			30%	
Waning crescent     Latitude     Latitude     Length     Height     Time Up       NM     34 · 54 · 344 °N     81 · 54 · 344 °N     81 · 54 · 300 °D     700 °D       NM     36 · 54 · 344 °N     81 · 56 · 34 · 70 °C     8000 °D       NN     38 · 54 · 194 °N     81 · 56 · 34 · 70 °C     800 °D       NN     39 · 54 · 194 °N     81 · 56 · 34 · 70 °C     800 °D       Stete Description:     NLAS     2.035 Ad     M     8 · 54 · 70 °C       Stete Description:     NLAS     2.035 Ad     M     N     70 °C       Costucture     Dongalis     2.035 Ad     M     N     10 °C     9.03 °C       Laborealis     2.035 Ad     M     N     10 °C     4.0 °C     0.3 °C       Locatics     2.035 Ad     M     N     10 °C     4.0 °C       Locatics     2.035 Ad     M     N     10 °C     0.0 °C       Locatics     2.035 Ad     M     N     10 °C     0.0 °C       Locatics     2.035 Ad     M     N     10 °C     0.0 °C       Loborealis     0.0000 CD     A     N     10 °C     0°C       Loborealis     0.0000 CD     A     N     0°C     0°C       Loborealis     0.0000 CD     A	ew moon axing gibbous	Waxing crescent Full moon	First quarter	sno	0130	36,0	0			30%	
NetTrap Type ¹ Latitude         Longitude         Length         Height         Time Up	ist quarter	Waning crescent									
54 · 54 · 314 "N       81 · 56 · 303 "W       7       6       3635 0130			tude		Longitude		Length (m)	Height (m)		Time Down (0000 h)	Picture #
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•     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     ·     · <td>~^</td> <td>0 27 0</td> <td>192</td> <td></td> <td>- 4</td> <td></td> <td>0</td> <td>9</td> <td>3030</td> <td>130 S</td> <td>33-58</td>	~^	0 27 0	192		- 4		0	9	3030	130 S	33-58
Net       Species       Time       Age       Sex       Repro. ² Wr       RFA       Belly       Winglindext         #       Age       Species       Time       Age       Sex       Repro. ² Wr       RFA       Belly       Winglindext         B       Lasiurus       Encratis       2035       Ad       M       V       10.2       40       M       0.3)         B       L       Dorratis       2220       Ad       M       V       10.2       40       M       0.3)         B       L       Dorratis       2220       Ad       M       V       10.2       40       M       0.3)         B       L       Dorratis       232.0       Ad       M       V       10.2       40       M       0.3)         B       L       Dorratis       232.0       Ad       M       V       10.2       40       M       0.3)         B       L       Dorratis       232.0       Ad       M       V       0.3       0.3       0.3         B       L       Dorratis       0.000       M       M       0.3       M       M       0.4       M       M<	2	0	2		-	*		)			
Net     Age     Secies     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*       #     Tasiurus     Species     Time     Age     Sex     Repro. ² Wt     RFA     Belly     Wing Index*       P     Lasiurus     Locratis     2.035     Ad Ivv     M     N     10.2     40     M     0.3       B     Locratis     2.035     Ad     M     N     10.2     40     M     0.3       B     Locratis     2.035     Ad     M     N     10.2     40     M     0.3       B     Locratis     2.025     Ad     M     N     N     10.2     40     M     0.3       B     L     boratis     2.000     Ad     M     N     0.2     40     M     0.3       B     L     boratis     0.000     Ad     M     N     0.3     44     M     0.3       B     L     boratis     0.000     M     M     M     M     M     M       B     L     boratis     0.000     M     M     M     M     M	Placement/Site Desc	Nets			$\sum$	< <u>&lt;</u>	/m/	- paga			
#       Adduy       (MF)       (g)       (mn)       (FME)       (0.3)         R       Lasiurus bornatis       2035       Ad       M       V       10:2       40       M       M       M       10:2       40       M       M       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2       40       10:2	-		i	Age		2		Belly	Wing Inde		Comments
I asimure Verentis       2035       M       M       L       10:2       40       M       0         I asimure terretis       2220       Ad       F       NL       11.6       44       M       0         I borealis       2020       A       F       NL       11.6       44       M       0         I borealis       0000       A       F       NR       0.3       3.9       F       0       0         I borealis       0000       A       F       NR       10.5       44       M       0       0         I borealis       0000       A       F       NR       10.5       44       M       0       0         I borealis       0000       M       M       0.5       44       M       0       1       45       66       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <t< td=""><td></td><td>Species</td><td>lime</td><td>(VC/DA)</td><td></td><td></td><td></td><td>(F/M/E)</td><td></td><td></td><td># /Guano/Hair Samp</td></t<>		Species	lime	(VC/DA)				(F/M/E)			# /Guano/Hair Samp
L boralis 2320 Ad F NZ II.6 44 M O L boralis 2320 Ad F NZ II.6 44 M O L boralis 0000 Ad F NR 0.3 39 F O C brealis 0000 - M F NR 0.9 44 M O C brealis 0000 - M - - M - O C brealis 000 -	1204		2035	Z	2		N	2	0		
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	3 6 6	wali S	2000		- 2					1005	

Appendix F

F-152

7	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: <u>296-04</u> Date: <u>12 August 201</u> 0	Biologists: J. Wilson, Tyler Herry
Project Name: <u>AEPCOZ</u>	Site Name/#: Km 2.6
State: <u>WV</u> County: <u>Mason</u>	
Camera #: <u>69</u> Picture #s: <u>104-0429,0430</u> Latitude: <u>38 ° 54 ' 364</u> "N Distance to closest water source (meters): <u>1 Km</u> Water source name: <u>Ohio Rivea</u>	Longitude: <u>81</u> <u>° 56</u> <u>' 21,3</u> "W _ Type of water source: <u>River</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	
Bank Height:meters Channel Width:	
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cmClarity (H,M,L):
VEGETATION:	
	lominant Canopy Species (< 40 cm/16" dbh)
Acer sacchrum Ace	er sachrum
Liridention fulipitera Li	ripdendron tulipifers
Estimated dbh range: Lg: <u>150</u> Sm: <u>u(</u> Estim	nated dbh range: Lg: <u>39</u> Sm: <u>25</u>
Relative abundance of dominant vs. subdominant (ratio	): <u>/://</u>
Estimated canopy closure: <u> </u>	ModerateOpen
Roost tree potential consists of: <u> </u>	$\underline{\times}$ Snags $\underline{\times}$ Both $_$ _Neither
Roost tree potential for the area is:High	
Roost potential comments: <u>Few large trees wit</u>	h expliciting bark and shalled snaps
Subcanopy clutter:Closed	_∕_ModerateOpen
Canopy Tree	
Common Subcanopy Species: <u>Sussafras albid</u> Acer sacchrum, Ulmus rubra <u>Fagus grandifuli</u>	um" Curya tomentosa, Queras velutina
Acer sacchrum, Ulmus rubra Fague grandifuli	a Fraxini americana, Smilar sp.
Habitat Description: Rolling upland hills with	dense maderstory with
open patches, site adjacent to open we	pollot
Check all that apply:✓ Mature Upland Forest✓ Young Upland ForestMature Lowland ForestYoung Lowland ForestMature Lowland ForestMature Lowland ForestYoung Lowland ForestMature Cover:Sparse✓ Moderate	_Crop/Pasture LandShrub/scrub Swamp _Stream/RiverVernal Pool _Emergent WetlandDeepwater Lake/Pond _Forested SwampOther



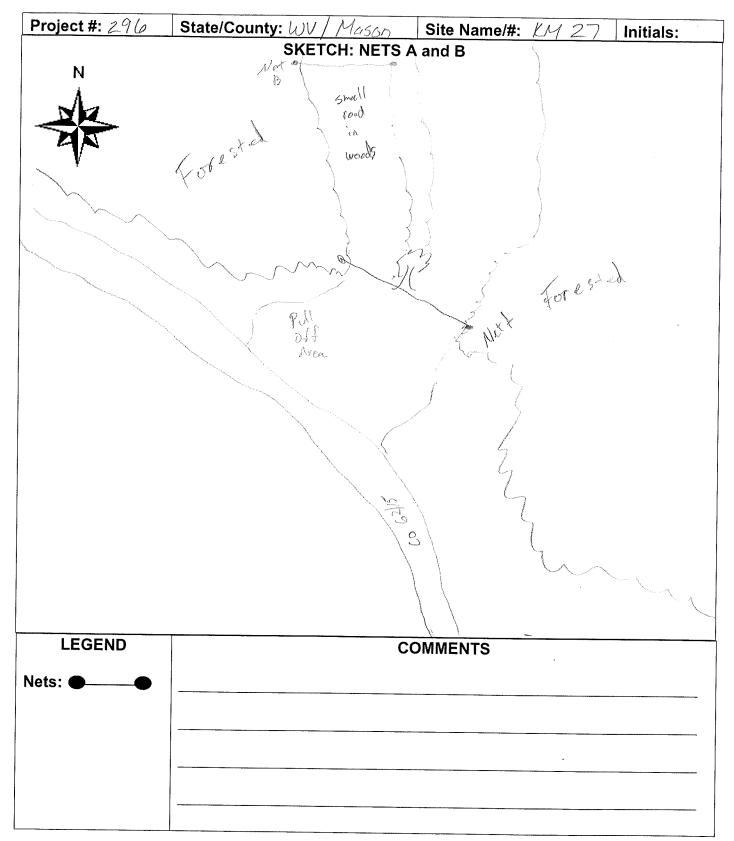


Project #: 396-04 Project Name: AEP Co2 State: WV County: Biologists: J. Wilsen Site name/#: Kvn 36			BAT CAPTURE DATA					ME	WEATHER DATA	4	
oject Name: <u>AE</u> ate: <u>WV</u> 0 ologists: <u>J. Wils</u> te name#: <u>K</u> W	<b>e</b> scrifts	Date.		0,00	Time (0000 h)	) Temp (°C)	Wind Speed (estimated – see chart)*	eed ee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
Kung I	10				2030	3				\$.''	
Kun	K 102.				200	27. N			-	051	
KIN	County:	Mason			2130	27.6			and a second	./. B	
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	ge				2300	25. L	A COMPANY AND A CO		ang mang di kana kana kana kana kana kana kana kan	S	
		c			2830	0 25 1	)				
		Can	Camera #: 💿		00CD	24.6			N		
					0030	23.	1		W-E	\$.1.	
	MOOI	<b>MOON PHASE*</b>			0100	23.9	1		N-E	\$ '/'	
_New moon Waxing gibbous	X Waxing cre	X Waxing crescent	First quarter	er Anus	0130	1.52				\$.Y.	
Last quarter	Waning	Waning crescent		chood							· ·
Net/Trap/Anabat Net/Trap Type ¹ #	o Type ¹	La	Latitude		Longitude	e	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
22 Z	7	0 2 G	N. N. 92 .	• 1×	51, 21,3	M. ξ'	a)	j_g		124	5 (7 × 1
S		1 7 7 7	Im	• • • • • •		12	9	g		-10/-	5
	) 	0	<b>N</b> "	•	-	M"				A	1
Net Placement/Site Description:	scription:	Net	ets stacked	0 Ner	CGAD	Died ATV	V trai				
Capt Net # #	Species	cies	Time	Age (Ad/Jv)	Sex F (M/F)	Repro. ² V	Wt RFA (q) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
a Lacit	activity Sor	Sorcalis	0110	79	W	5					
											anna ann an An
	n										
		e generale - 11 William (Alexandra - Jammania - Jammania									1 10 1 10 10 10 10 10 10 10 10 10 10 10

Project #. 2916-04     Date: 13 August 2010       Project #. 2916-04     Date: 13 August 2010       Project Name: AEP Con     2000 h       State: WV     County: Mased       Biologists: J. Wilson     Tyle rive vin       Biologists: J. Wilson     Tyle rive vin       Biologists: J. Wilson     Camera #: 69       Biologists: J. Wilson     Camera #: 69       Biologists: J. Wilson     Camera #: 69       Site name/#: Kymalu     Camera #: 69       Moon PHASE     Naming gibbous       Waxing gibbous     Waning gibbous       Last quarter     Waning gibbous       Anton     Moon PHASE       New moon     Moon PhASE       Antin     N	Wind Speed	WE	WEATHER DATA		
AEP Contry:     Masen     2030     2816       T.Wilson     Tyler Hevn     2130     2412       T.Wilson     Tyler Hevn     2130     2412       Xm2 L     Eamera #:     Laf     233     2412       Xm2 L     MOON PHASE*     Erist quarter     233     2412       MOON PHASE*     MOON PHASE*     2130     2412       No     Moon PHASE*     Camera #:     Laf       Moon PHASE*     Moon Phase*     2130     2412       No     Moon Phase*     2130     2412       No     Maning gibbous     2130     2410       No     38     54     36.4     N       NN     38     54     36.4     N       NN     38     54     36.4     N       Species     Time     Age     38     36.2	(estin	ed e chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
Hick County:     Macson     2106     2418       T.Willsen     Tyle Hern     2130     2418       Km2 L     A-Lo     Camera #: Log     233.0     24.0       MOON PHASE*     MOON PHASE*     233.0     24.1       Moon     Waning crescent     Erist quarter     233.0       MN     38<.54				ý.V	
County:     Meson     2130     24.0       T.Wilson     Tyler Heun     22.00     24.0       Km2 L     Camera #: Leg     23.00     24.0       A-L6     Camera #: Leg     23.00     24.0       MOON PHASE*     MOON PHASE*     23.00     24.1       MOON PHASE*     Waxing crescent     First quarter     23.00     24.1       MOON PHASE*     MOON PHASE*     013.0     24.1     24.0       MOON PHASE*     Moon     Maning gibbous     23.0     24.1       Waning crescent     Trap type!     Latitude     Longitude       NN     38     54     38.1     81     56     26.1       NN     38     54     38.1     81     56     26.1     71       Species     Time     Age     61.0     65.2     26.1     71			,	ġ. /;	
I. Wilson     Tyler Hern     22.20     24.2       Km2 L     Camera #: Leg     23.5     24.2       A-L6     Camera #: Leg     23.5     24.2       MOON PHASE*     First quarter     21.30     24.2       Kunsu     Waxing crescent     Waring gibbous     21.30     24.2       MOON PHASE*     First quarter     Eul moon     21.30     24.2       No     Waxing crescent     Waring gibbous     21.3     24.2       Moon phase*     Full moon     Waring gibbous     21.3     24.2       NN     38     54'     36.4     N     31.5       NN     38     54'     36.4     N     31.5       NN     38     54'     56'     20.2     20.2       NN     38     54'     56'     20.2     20.2       NN     38     54'     56'     20.2     20.2       Stite Description:     Neff     Stite     256'     20.2     20.2       Species     Time     Age     Sex     70'     26'     20.2				×. ×	
J. Wilson     J. Viet Neuron     27:31: 3 bit       Km.2.6     Camera #: Len     23:5: 31: 3       A-L6     Camera #: Len     23:5: 31: 3       MOON PHASE*     First quarter     21:3: 0       X Waxing crescent     Waning gibbous     21:3: 0       Waning crescent     Waning gibbous     21:3: 0       Waring crescent     Moon PHASE*     Constant       Met/Tap Type1     Latitude     Longitude       N:N     36: 5: 4: 3: N     71: 5: 5: 2: 2: 2: N       N:N     38: 5: 5: 4: 3: N     0       N:N     38: 5: 5: 4: 3: N     0       Species     Time     Age       Species     Time     Age				0,2,2	· · · · · · · · · · · · · · · · · · ·
Km2.u     Camera #:     Le P     23.0     24.2       P-L6     Camera #:     Le P     23.0     24.2       MOON PHASE*     First quarter     23.0     24.2       MOON PHASE*     First quarter     21.0     24.2       Waxing crescent     Frist quarter     21.0     24.2       MOON PHASE*     Frist quarter     21.0     24.2       Waxing crescent     Waxing gibbous     21.3     24.3       Waning crescent     Latitude     Longitude     10.0       NN     38.5     54.3     31.0     70.5       NN     38.5     54.3     70.0     70.5       Species     Time     Age     Sex     Repro.2				/- X	
A-lo     Camera #:     log       A-lo     Camera #:     log       MOON PHASE*     Camera #:     log       MOON PHASE*     First quarter     233.8       X Waxing crescent     Waning gibbous       Lus     Lull moon       Waning crescent     Waning gibbous       NN     38 ° 54'3       Species     Time       Age     Sak       Repro.2	Construction of the second		an di sa la generatione de la constante de la c	25/2	<ul> <li>A state of the sta</li></ul>
A-Lo     Camera #: Lon     Camera #: Lon       MOON PHASE*     MOON PHASE*     Pooco 24.2       MOON PHASE*     First quarter     Pooco 23.8       X Waxing crescent     Frist quarter     Pooco 23.8       X Waxing crescent     Moon Phase     Pooco 23.8       X Waxing crescent     Moon Phase     Pooco 23.8       Noning crescent     Maning gibbous     Polo 23.8       NN     28 ° 54 ° 36.4     N     R1 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     R1 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     R1 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     81 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     0 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     0 ° 56 ° 20.2       NN     28 ° 54 ° 36.4     N     0 ° 56 ° 20.2       NN     38 ° 54 ° 36.4     N     0 ° 56 ° 20.2       NN     38 ° 54 ° 36.4     N     0 ° 56 ° 20.2       Species     Time     Age     600       Species     Time     Age     20.2			and the second	Service and the service of the servi	
MOON PHASE*     Cose     24.2       MOON PHASE*     Erist quarter     010.8     23.6       X Waxing crescent     Frist quarter     010.8     23.6       Waning crescent     Waning gipbous     013.0     344.0       Waning crescent     Waning gipbous     01.3     244.0       NN     38     54.4     N     81     51.5     21.3       NN     38     54.4     30.1     70.0     100     100       NN     38     54.4     30.1     56.4     100     100       Species     Time     Age     Sex     Repro.2     100			A 1990 A 1991 A 1997		
MON PHASE*     Fresh granter     Presson and a strain			a da anticipada da anticip		And a contract of the contract
MOON PHASE*     First quarter     Clos 23.6       X Waxing crescent     First quarter     Clos 23.6       Full moon     Waning gibbous     Clos 23.6       Waning crescent     Waning gibbous     Clos 23.6       NN     38 ° 54 ° 36°     N       NN     38 ° 54 ° 36°     N       NN     38 ° 54 ° 36°     N       NN     38 ° 54 ° 37.3     N       NN     38 ° 54 ° 37.3     N       Site Description:     Net/     81 ° 56 ° 26.2       Species     Time     Age       Species     Time     Age	- 3		0-3	1_Q-1_	And and a second se
Luncon       First quarter       OL3.0       D4.0         Number       Waning crescent       Waning gibbous       OL3.0       D4.0         Number       Muthode       Waning crescent       Latitude       Longitude         Number       DSC       D4.1       N       D1       D0       N/0         Number       DSC       D1       D1       D0       N/0       D0       D0<	<u>_</u>		1) I V	0.11	Contraction of the State of the
Image: Construction     Waning crescent     Waning gibbous       Net/Trap Type1     Latitude     Latitude       NN     38 ° 54 ' 36.4 "N     81 ° 56 ' 31.3 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 30.2 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 30.2 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 30.2 "W       Site Description:     Net/Stacked     0 Net/Constructed       Species     Time     Age	N) 		N-C	. /. Ø	
Net/Trap Type ¹ Latitude     Latitude       NN     38 ° 54 ' 36.4 "N     81 ° 56 ' 3.13 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 3.0.2 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 3.0.2 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 3.0.2 "W       NN     38 ° 54 ' 37.3 "N     81 ° 56 ' 3.0.2 "W       Site Description:     Nefs     51 ° 56 ' 3.0.2 "W       Species     Time     Age     Sex       Repro.2     Secies     Time     Age			-		
$M$ $NN$ $38 \circ 54 \cdot 36 \cdot 1$ $N$ $81 \circ 56 \cdot 26 \cdot 2.13$ $W$ $NN$ $38 \circ 54 \cdot 37.3$ $N$ $81 \circ 56 \cdot 2.0.2$ $W$ $m$ $N$ $n$ $n$ $n$ $m$ $m$ $n$ $n$ $n$ $n$ $n$ $m$ $m$ $n$ $n$ $n$ $n$ $m$ $n$ $n$ $n$ $n$ $m$ $n$ $n$ $n$ $n$ $m$ $n$ $n$ $m$ $n$ <td< td=""><td>Length (m)</td><td>Height (m)</td><td>Time Up (0000 h)</td><td>Time Down (0000 h)</td><td>Picture #</td></td<>	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
%     NN     38 ° 5 4 ' 37, 3 "N     81 ° 56 ' 20, 2 m       lacement/Site Description:     Ncfs     51ac/ced     0 e.e.     20, 2 m       #     Species     Time     Age     Sex     Repro. ²				S130 104-	0429
Net     Net     Net     Species     Time     Age     Sex     Repro.2		0		-2001	579
lacement/Site Description: Nets Structed over ranopred ATV Net Species Time Age Sex Repro. ² # (MIF) (MIF)				a an a ann an an ann an an ann an an ann an a	
Net     Age     Sex       #     Age     Sex       #     (AdJJv)     (MIF)	trail				-
		Belly	Wing Index*		Comments
	(mm) (g)	(F/M/E)	(0-3)	Picture # /Gu	Picture # /Guano/Hair Sample
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	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
<b>DSL</b> NET SITE HABITAT	
<b>Project #:</b> $296.64$ <b>Date:</b> $13 A_{ug} 206$	Biologists: D. Jettest, M. L. Hle
Project #: $296.64$ Date: $13 A_{ug} 206$ Project Name: <u>AEP CO2</u>	Site Name/#: <u>VM 27</u>
State: WV County: Mason	USGS Quad:
Camera #:       Picture #s:         Latitude: _36 ° 54 '40.8 "N       Openation         Distance to closest water source (meters):       Openation         Water source name:Ohio       Piver	GPS Unit #: <u>A/3</u> Waypoint #: <u>∧r</u> 2 Longitude: <u>%/</u> ° <u>56</u> ' <u>26.3</u> "W _ Type of water source: <u>√i∪ℓ∩</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cm Clarity (H,M,L):
VEGETATION:	
Acer Saccharum smayle Ac	dominant Canopy Species (< 40 cm/16" dbh) er Saccharum odendron tol:pitera
Estimated dbh range: Lg: $20^{-7}$ Sm: $16^{-7}$ Sm: $16^{-7}$ Estimated dbh range: Lg: $20^{-7}$ Sm: $16^{-7}$ S	<b>):</b> <u>):</u> <u>):</u> <u>20</u>
Estimated canopy closure: <u>X</u> Closed	, t
Roost tree potential consists of:Large Trees	17
Roost tree potential for the area is:High	ModerateLow
Roost potential comments:	
Subcanopy clutter:Closed	Moderate <u> </u>
Subcanopy comprised largely of: Canopy Tree	ches ofSaplingsShrubs es
Common Subcanopy Species: <u>Cercis canadens</u> :	5
Habitat Description: Small trail through	woods, mostly sugar maple
Check all that apply:         Mature Upland Forest	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover: SparseModerate	_ <u>X</u> Dense
Revised June 2007 1	





Time         Temp (cc)         (estimated -see charty*         Wind Speed           000 h)         1 mm (cc)         (estimated -see charty*         From to	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Time         Tamp (c)         NextHER DAT           000 lb)         1 amp (c)         (estimated -sec charty         Wind Speed           000 lb)         200 lb)         200 lb)         200 lb)         200 lb)           2130         201 lb)         200 lb)         200 lb)         200 lb)           2130         201 lb)         200 lb)         200 lb)         200 lb)           2130         201 lb)         200 lb)         200 lb)         200 lb)           2255         25 cl lb)         20 lb)         20 lb)         20 lb)           2330         34, S         0         23 lb)         0         20 lb)           233         6         0 lb)         23 lb)         0         20 lb)         20 lb)           11         -57         "W         10         0         20 lb)         20 lb)           11         -57         "W         10         10         20 lb)         20 lb)           11         -57         "W         10         10         20 lb)         20 lb)           11         -57         "W         10         10         20 lb)         20 lb)           1         M         10         39         M		% Cloud Comments Cover (estimated) つック	0%	00	0%	0%	2% 0°	0% 0%	20	Time Down (0000 h)	130	50			Comments Picture # /Guano/Hair Sample		
Time         Temp (cc)         Wind Speed           0000 h)         Temp (cc)         (estimated - see chart)           026 $27 - 1$ $-3$ 1/00 $216.8$ $1 - 3$ 1/20 $216.6$ $1 - 3$ 1/20 $216.6$ $1 - 3$ 1/20 $216.6$ $1 - 3$ 1/20 $216.8$ $1 - 3$ 2/25 $21 - 3$ $1 - 3$ 2/25 $24.8$ $0 - 33.6$ 2/25 $34.5$ $0 - 33.6$ 2/23 $34.5$ $0 - 33.6$ 2/23 $34.5$ $0 - 33.6$ 2/23 $33.6$ $0 - 33.6$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ $0 - 4$ $1 - 3$ $- 33.6$ <t< td=""><td>$\begin{array}{ c c c c c c c c c c c c c c c c c c c$</td><td>CAPTURE DATA       Time       Date: $13 \Delta Lig 2010$       Date: $13 \Delta Lig 2010$       Date: $13 \Delta Lig 2010$       Colspan="2"&gt;Colspan="2"&gt;Nimul Speed       Camera #:       M PHASE*       Filtitude       Latitude       Latitude       Colspan="2"&gt;Colspan="2"&gt;Colspan="2"&gt;Colspan="2"&gt;Colspan="2"       Statutate:       M PHASE*       Filtitude       Latitude       Latitude<!--</td--><td>EATHER DATA</td><td>Direc</td><td><u>'</u> {</td><td></td><td>E - N</td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>2030 11</td><td></td><td></td><td></td><td>0</td><td></td></td></t<>	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	CAPTURE DATA       Time       Date: $13 \Delta Lig 2010$ Date: $13 \Delta Lig 2010$ Date: $13 \Delta Lig 2010$ Colspan="2">Colspan="2">Nimul Speed       Camera #:       M PHASE*       Filtitude       Latitude       Latitude       Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"       Statutate:       M PHASE*       Filtitude       Latitude       Latitude </td <td>EATHER DATA</td> <td>Direc</td> <td><u>'</u> {</td> <td></td> <td>E - N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>2030 11</td> <td></td> <td></td> <td></td> <td>0</td> <td></td>	EATHER DATA	Direc	<u>'</u>  {		E - N						0	2030 11				0	
Time     Temp (c)       000 h)     Temp (c)       0030 b)     Temp (c)       0030 b)     24.5       250 24.8     24.5       250 24.8     24.5       250 24.8     24.5       250 24.8     24.5       250 24.8     24.5       250 24.8     24.5       250 25.4     23.6       250 25.4     23.6       250 25.4     23.6       27.5     23.6       27.5     23.6       28.6     24.5       29.5     23.6       1     1       1     1	$ \frac{2010}{2000} \frac{1}{1000} \frac{1}{$	CAPTURE DATA       Total: 13 Aug 2010 $Date: 13 Aug 2010$ $Date: 14 Aug 2010$ $Date: 18 Aug 2010$ $Date: 18 Aug 2010$ $Date: 28 Aug 2010$	M	Wind Speed sstimated - see chart)*	M-1 M-1	0,0	27		N		0			0				88	
	ZOIC aguarter ng gibbous ne Age ne Age Add/Jvy	CAPTURE DATA Date: 13 Aug 2010 Mascon Camera #: Camera Camera		Temp (°C)	2 2 Co.	2 C		34.	2 2 2 2 0	0 23.	33.	Longitude		. 2	, W"	ra:1 + 41000 h	Repro. ²		

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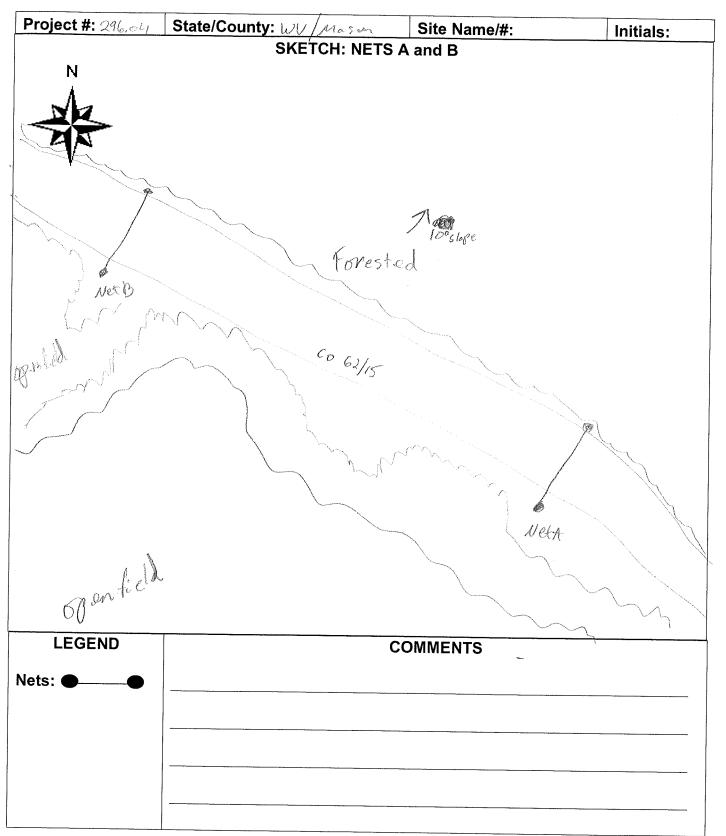
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		BAT CAPTURE DATA	DATA						WEATHER DATA			
$\Delta F P CO$ $\Delta T C Contry. Marster     \Delta P S P CO E M CO     E P CO A D Cantera # CI       A D Canta# CI       $		Date. 1 2/	Anarst	0/00	(0000			Speed - see chart)*	Wind Direction From to		Cloud estimated)	Comments
County:				5 5 6	201	53	- 20	С,	Wtot	100	8 5	Karla D. : K
Treffect T. Hern     2200     Production $M > 2$ Camera #: $G I$ $M > 2$ $M > 2$ Camera #: $G I$ $M > 2$ $M > 2$ Camera #: $G I$ $M > 2$ $M > 2$ Camera #: $G I$ $M > 2$ <	<u>VV</u> Cou	~			Ì.				102 M		2 6 C	
Model     Length     Height     Height       An     Camera #. $SL$ An     Camera #. $SL$ An     Camera #. $SL$ MOON PHASE*       Moon PHASE*       First quarter       Moon Phase*       Filst quarter       Moon Phase*       Filst quarter       Moon Phase*       Filst quarter       Moon Phase*       Filst quarter       Moon Phase*       Moon Phase*       Moon Phase*       Filst quarter       Maning geneent       Maning geneent       Maring geneent       Marin       Maring geneent		1/1/6	l		I r	1	$\langle   \rangle$		41 N	1 201	200	X
K.M.D.T       Camera #: $\[ \  \  \  \  \  \  \  \  \  \  \  \  \$	ю. С											Dain Oc
Arb     Camera #:     C       MOON PHASE*     First quarter       Noon PhASE*     First quarter       Waxing creacent     First quarter       Waxing creacent     Moon PhASE*       Valing creacent     Instanting creacent       Waring creacent     Moon PhASE*       Full moon     Waring creacent       Waring creacent     Moon PhASE*       Full moon     Waring creacent       Waring creacent     Moon PhASE*       Maring creacent     Moon PhASE*       Maring creacent     Latitude       Maring creacent     N       Maring creacent     Maring creacent       Maring creacent     N       Maring creacent     N       Maring creacent     Latitude       Maring creacent     N       Maring creacent     Latitude       Maring creacent     N       Maring creacent     N	X	C						-	Alderer Werner and State and Address of State and Address of State and State and State and State and State and S			
MOON PHASE*     MOON PHASE*       Us     Failt quarter       Waking creacent     First quarter       Waking creacent     Vaning gibbous       Herlf rap Type*     Lafitude       Lafitude     Longitude       Non     81 ° 57 ° W       Non     38 ° 53 ° W       Species     Time       Age     Repro.2       Mark     (m)       Repro.2     W       Non     (m)       Finite     (m)       Repro.2     (m)       Repro.2     (m)       Repro.3     (m)       Repro.4     (m)	ЧN ЧN	Came										
MOON PHASE*     MOON PHASE* $Moon Phase*     First quarter       First quarter     First quarter       Full moon     Waning crescent       First quarter     Image       MetTrap Type^t     Latitude       MetTrap Type^t$												
Waking crescent       First quarter         Waning crescent       First quarter         Waning crescent       Waning gibbous         Waning crescent       Waning gibbous         NetTrap Type!       Laftude       Longitude       Length       Height       Time Up         N/N $3\% \cdot 53$ "N $\%_1 \cdot 57$ "W $5$ $6$ $2 \cdot 3 \cdot 53$ N/N $3\% \cdot 53$ "N $\%_1 \cdot 57$ "W $7$ $6$ $2 \cdot 3 \cdot 32$ $2 \cdot 32 \cdot 32$ N/N $3\% \cdot 53$ "N $\%_1 \cdot 57$ "W $7$ $6$ $2 \cdot 32 \cdot 32$ N/N $3\% \cdot 53$ "N $\%_1 \cdot 57$ "W $7$ $6$ $2 \cdot 32 \cdot 32$ N/N $3\% \cdot 53$ "N $\%_1 \cdot 57$ "W $5$ $6$ $2 \cdot 32 \cdot 32$ Stele       Bescription: $M$ $M$ $M$ $M$ $M$ $M$ $M$ N $3\% \cdot 53$ Time $Age       5\infty 32 \cdot 32 \cdot 32 M         Stele       Time       Age       5\infty W M M M M $		MOON PHASE*										
Wanning gibous     Full moin       Wanning creacent     Wanning gibous       NetTrap Type!     Latitude $\sqrt{M}$ $3\% \cdot 5\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $7\%$ $\sqrt{M}$ $10\%$ $\sqrt{M}$ <	uoo	X Waxing crescent	First quarte	er								
Image: Constraint of the second s	j gibbous	Full moon Waning crescent	Waning gil	snoqq					i x			
NetTrap Type!     Latitude     Latitude     Longitude     Length     Height     Time Up     Time Up     Time Up $NM$ $3\% \cdot 53$ "N $\%1 \cdot 57$ "W $7$ $23.0$ $23.0$ $NM$ $3\% \cdot 53$ "N $\%1 \cdot 57$ "W $6$ $2.03.0$ $23.0$ $NM$ $3\% \cdot 53$ "N $\%1 \cdot 57$ "W $6$ $2.03.0$ $23.0$ $NM$ $3\% \cdot 53$ "N $\%1 \cdot 57$ "W $6$ $2.03.0$ $23.0$ $NM$ $\%1 \cdot 57$ "W $6$ $6$ $2.03.0$ $23.0$ $NM$ $\%1 \cdot 57$ "W $6$ $6$ $2.03.0$ $23.0$ $NM$ $\%1 \cdot 50.0$ $100$ $M$ $6$ $2.03.0$ $23.0$ $Site Description: Met S = 0.05 11m Age Sec Mir     6 Species     Time     Age Sec Mir     6 0.3 MM Mir     Mir     0.03 0.3 0.3 $	2											
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Mets over trait throward wood by cies Time Age Sex Repro. ² Wt RFA Belly Wing Index ⁴ (g) (mm) (FIME) (0-3) (0-3)		0	N"			M"						
Species Time Age Sex Repro. ² Wt RFA Belly Wing Index [*] (g) (mm) (FIMIE) (0.3)	ement/Site Descri	Nets	L	141		200						
	let #	Species	Time	Age	Sex (M/F)	Repro. ²					Comi cture # /Gua	ments no/Hair Sample
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Drniart #. 00 /	21. 50	Dafe.		(	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	eed ee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	ated) Comments
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Project Name:	TUT C	02			1.072	0 26 6		0		26 0 37	6.
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Biologísts: 🛆		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				24.6		0	\	20%	
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GPS Unit #:	AF5	Camera #:	#		0000		3	0	N	1090	
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	۳ ۳	MOON PHASE*			010	101	0			10%	
New moon Waxing gibbous Last quarter				er bous					×.		
Net/Trap/Anabat #	Net/Trap Type ¹	Latitude	n		Longitude	e	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
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Vet Placement	Net Placement/Site Description:	Net	OUR Sm	Swall thai	2	wood/ot	~	ه. م	Forest		DREWLING
t i	S	Species	Time			Repro. ² Wt	/t RFA	Belly	Wing Index*		Comments
#				(Ad/JV)	(M/F)	(6)			(0-3)	Picture	Picture # /Guano/Hair Sample
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			2	/							

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	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABIT	AT DESCRIPTION
Project #: <u>296.04</u> Date: <u>15 Aug 2016</u>	Biologists: D. Seffcott
Project Name: <u>AEPCO2</u>	Site Name/#:
State: WV County: <u>Mason</u>	USGS Quad:
Camera #: 61       Picture #s:         Latitude: 36°       54'49.9'"N         Distance to closest water source (meters):	Longitude: <u><u><u></u><u></u><u><u></u><u><u></u><u></u><u><u></u><u></u><u></u><u></u><u></u><u><u></u><u></u><u></u><u></u><u></u><u></u></u></u></u></u></u></u>
ESTIMATED WATER SOURCE CHARACTERISTI	CS (IF UNDER NETS):
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobb	leGravelSandSilt/Clay
Still Water Present (Y/N): Average Water	Depth:m or cm Clarity (H,M,L):
VEGETATION:	
	Subdominant Canopy Species (< 40 cm/16" dbh) Guerreus alba
	Quercus jubra
	Robinia operudoacacia
	Estimated dbh range: Lg: <u>14</u> [®] Sm: <u>4</u> [®]
Relative abundance of dominant vs. subdominant (	ratio): <u> :   0</u>
Estimated canopy closure:Closed	<u> </u>
Roost tree potential consists of:Large T	reesSnagsX_Both Neither
Roost tree potential for the area is:High	ModerateLow
Roost potential comments:	· · · · · · · · · · · · · · · · · · ·
Subcanopy clutter:Closed	_ <u>∕∕</u> ModerateOpen
Subcanopy comprised largely of: <u>X</u> Lower B	ranches ofSaplingsShrubs Trees
Common Subcanopy Species: <u>Cercis</u> canad	
· · · · · · · · · · · · · · · · · · ·	
Habitat Description: Forested road (grave); oak o	laminated formest to east, open
Check all that apply:∴ Mature Upland Forest_ Young Upland Forest_ Mature Lowland Forest_ Young Lowland Forest_ Old Field	Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther
Herbaceous Cover: SparseModera	teDense
Revised June 2007 1	





Revised June 2007

Appendix F

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Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)		Comments														Picture #				γ	Comments	Picture # /Guano/Hair Sample										Page 1 of	
erty of: Environmental Sv oad. Cincinnati, OH 452		% Cloud Cover (estimated)	10	20%	107	2%	-X 0	2.20	2	×0	5	01	6	a an Ailan an Ailan an Ailan an Ailan an Ailan an Ailan A		Time Down (0000 h)	000	30		or w/ canopy	Com	Picture # /Gua											
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	DAI CAPIUKE DAIA			CY-(07	County MASON	, , ,	ett cott	N 28		$\wedge$		MOON PHASE*	Waving greenent	Eull moon	Waning crescent	Net/Trap Type ¹	5° % NI	N 3% 5	• •	escription: Nev		Species	sivers boreal	5	, barealis	and a second and a s	na ana amin'ny faritr'o amin'ny f					Nylon, NN = New Nylon, HT	
ISA		791, NH	Injeur #.	Project Name: <u>MC</u>	Ctate: \///		Biologists: Vr J	Site name/#-		GPS Unit #: // //			Now moon	Mavina dibbane	Last quarter	Net/Trap/Anabat Net/Tra #	A N	2		Net Placement/Site Description:	Cant Nat		A		2 P							¹ M = Monofiliament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back	
	•	L Appe						U.		0				1	1	NOT	KW294	KN289				-	[		-	1	<u> </u>		F	-16	5	_ <b>-</b> *	

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Kerzst     Alson     Camera #: S       Alson     Camera #: S     Alson       MoON PHASE*     First quarter     First quarter       Washing cressent     Varing gbbous     Moon Phase*       Washing cressent     Moon Phase*     First quarter       Moon Phase*     Moon Phase*     First quarter       Washing cressent     Varing gbbous     Moon Phase*       Moon Phase*     Not So St + 55 or N     At So So St + 55 or N       St So St + 55 or N     At So	Kind Standart: Since At: Sinc						aa	6		1 7			00/	83	Rein
Km23     Camera #: $GI       Al3     Camera #:     GI       MOON PLASE'     First quarter       MOON PLASE'       MOON PLASE'       MOON PLASE'       Moon plase       Moon plase       Waxing creacent       First quarter       Moon plase       Waxing creacent       Moon plase       Waring creacent       Moon plase       Moon plase   $	Km22       Camera #: $G_1$ MOON PHASE*       Camera #: $G_1$ MOON PHASE*       Camera #: $G_1$ First quarter         MOON PHASE*       First quarter       First quarter         Maining crescent       Maining globous       Maining globous         Maring crescent       Maining crescent       First quarter         Maining crescent       Maining crescent       Maining crescent         Maining crescent       Latitude       Longitude       Length         Mu/M       3% 5 54 4 59 3 7 10       Maining crescent       Cool 00000         Mu/M       3% 5 54 4 59 3 7 10       Maining crescent       Cool 00000         Mu/M       3% 5 54 4 59 4 10       Maining crescent       Cool 00000         Mu/M       Species       Time       Agus       ReproMaining crescent         Species <t< td=""><td>ogists:</td><td>11. Jette</td><td>: 0 M</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>. 1</td></t<>	ogists:	11. Jette	: 0 M											. 1
A.G.     Camera #: SI       MOON PHASE*     MOON PHASE*       Moon PhASE*     First quarter       Second     Maining crescent       Full moon     Waining gibbous       Waining crescent     Maining gibbous       Maring crescent     Latitude       Maring crescent     Latitude       Maining crescent     Latitude       Ma	AG     Camera #.     GI       MOON PHASE*     MOON PHASE*     First quarter       MOON PHASE*     Moon generating account     First quarter       Maing creacent     First quarter     Monon phase       Jealing creacent     Maing generating     Monon phase       Maring creacent     Maing creacent     Maing generating       Jealing creacent     Maing generating     Maing generating       Maring creacent     Maing generating     Maing generating       Maring creacent     Laritude     Longitude     Length       Maing greacent     Laritude     Longitude     Maing monon       Maing greacent     Laritude     Longitude     Maing monon       Maring secont     Secont     N     Site Description     Maing monon       Maring secont     Marin     Site Description     Maing monon     Second       Site Description     Marin     Repro.2     W     N     Second       Shecies     Time     Age     Second     Second     Second       Marin     Repro.2     Mir     Repro.2     W     Second       Marin     Seconde     Time     Age     Seconde     Seconde       State     Seconde     Time     Age     Seconde     Seconde	name/#:	5												
MOON PHASE*     MOON PHASE*       MOON PHASE*     MOON PHASE*       Moon Phase     First quarter       Waxing crescent     First quarter       Waining gibbous     Waining gibbous       Letitude     Letitude       Waining crescent     Letitude       Moon hy     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     SS + 5 + 5 - 7 + N       M.M.     M.M.       Stecles     Time       M.M.     M.M.       M.M.     M.M.       M.M.     M.M.       M.M.     M.M.       M.M.     M.M.       M.M.     M.M.	MOON PHASE: MOON PHASE: First quarter     MOON PHASE: Moon Phase: First quarter       Moon Phase: Full moon Waining of assoent     First quarter       Moon Phase: Full moon Waining crescent     Moon Phase: First quarter       Moon Phase: Full moon Waining crescent     Moon Phase: First quarter       Moon Phase: Full moon Waining crescent     Moon Phase: Maining crescent       Moon Phase: Full moon Waining crescent     Moon Phase: Maining of bbous       Maining of bbous: Waining crescent     Length Height Time Dow (m)       Moon Phase: Waining crescent     Moon Phase: Maining crescent       Maining crescent     Length Height Time Dow (m)       Maining crescent     Moon Phase: Moon Phase: M	 	212												
MON PHASE:     MON PHASE:	MOON PHASE*     MOON PHASE*            Musing crescent Euflimon Usaing crescent Maining gibbous           First quarter Maining gibbous             MetTrap Type! Latitude           Latitude           Lengtin         Height         Time Up         Time Up         (m)		)												
MOON PHASE*     First quarter       Us     Waxing crescent       Full moon     Waring gibbous       Waring crescent     Waring gibbous       Maring crescent     Waring gibbous       Maring crescent     Waring gibbous       Maring crescent     Waring gibbous       Maring crescent     Waring pibbous       Maring crescent     Waring pibbous       Maring crescent     Length       Maring crescent     Length       Maring crescent     Length       Maring crescent     Length       Maring crescent     Longitude       Maring crescent     Length       Maring crescent     Company       Marine	Wood PHASE*     Mood PHASE*       Us     Evaluation crescent     First quarter       Wanning crescent     Maning gibbous       Wanning crescent     Maning crescent       Wanning crescent     Maning crescent       Wanning crescent     Latitude       Latitude     Longitude       Manning crescent     Latitude       Site Description:     Length       Manning crescent     Maning gibbous       Species     Time       Age     Sex       Manning crescent     Maning lindex*       Manning crescent     Maning lindex*       Manning crescent     Maning lindex*       Manning crescent     Time       Age     Sex       Repro.2     Wt       Repro.2     Wt       Manning crescent     Maning lindex*       Manning crescent     Manning lindex*       Manning crescent     Time       Age     Sex       Species     Time       Manning crescent     Manning lindex*       Add     Manning lind													-	
Waxing crescent       First quarter         Waning crescent       Waring globous         Full moon       Waning globous         Net/Trap Type1       Latitude         Latitude       Longitude         Met/Trap Type1       Latitude         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Sg & 54 + 5p.9 "N       R1 - 56 + 3 -5.4 "W         Species       Time         Age       Sex         Repro.2       Wr         Repro.2       Wr         Repro.2       Wr         Repro.2       Wr         Repro.2       Wr         Repro.4       (00)         Repro.4       (00)         Repro.4       (00)         Repro.4       (00)         Repro.4       (00) <td>Waxing crescent     First quarter       Waxing crescent     First quarter       Warning crescent     First quarter       Warning crescent     Length       Net/Trap Type¹     Latitude       Latitude     Longitude       Net/Trap Type¹     Latitude       Secondary     Secondary       With     Secondary       Site Description:     Lettine       Age     Sec       Species     Time       Age     Sec       Met/Trap Type¹     Color       With     Sec       Mark     Sec       Site Description:     Length       Height     Time Up       Species     Time       Age     Sex       Not     Sec       Species     Time       Age     Sec       Mark     Sec       Mark     Sec       Mark     Sec       Species     Time       Add/Jvv     Sec       Mark     Sec       Secies     Secies       Mark     Secondary       Mark     Secondary       Mark     Secondary       Mark     Secies       Mark     Secies       Mark     Secies    <tr< td=""><td></td><td>W</td><td>ON PHASE*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<></td>	Waxing crescent     First quarter       Waxing crescent     First quarter       Warning crescent     First quarter       Warning crescent     Length       Net/Trap Type ¹ Latitude       Latitude     Longitude       Net/Trap Type ¹ Latitude       Secondary     Secondary       With     Secondary       Site Description:     Lettine       Age     Sec       Species     Time       Age     Sec       Met/Trap Type ¹ Color       With     Sec       Mark     Sec       Site Description:     Length       Height     Time Up       Species     Time       Age     Sex       Not     Sec       Species     Time       Age     Sec       Mark     Sec       Mark     Sec       Mark     Sec       Species     Time       Add/Jvv     Sec       Mark     Sec       Secies     Secies       Mark     Secondary       Mark     Secondary       Mark     Secondary       Mark     Secies       Mark     Secies       Mark     Secies <tr< td=""><td></td><td>W</td><td>ON PHASE*</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>		W	ON PHASE*											
Matring greatent         Varing gibbous           Nating greatent         Latitude         Longitude         Length         Height         Time Up         Time Up           N/V         3% 54 ' 55.9 "N         21 ° 56 ' 35.9 "W         6         3.030 h)         (000 h)         (000 h)           N/V         3% 54 ' 55.9 "N         21 ° 56 ' 35.9 "W         6         3.03 23.0 32         2.03 23.0 32           N/V         3% 54 ' 55.9 "N         21 ° 56 ' 35.9 "W         6         3.03 23.0 32         2.0 3           V/V         3% 54 ' 55.9 "N         21 ° 56 ' 35.9 "W         6         3.0 33         2.0 3           V/V         3% 54 ' 55.9 "N         21 ° 56 ' 35.9 "W         6         3.0 33         2.0 3           V/V         3% 55         Time         Age         Sec         3.0 3         3.0 3           Species         Time         Age         Sex         Repro.2 W         (9)         (mm)         (6.03)           M         2         5         (9)         (mm)         (FME)         (0.3)	Marting cascent         Waning dibbous           NetTrap Typet         Latitude         Latitude         Latitude         Latitude         Colon hy         Mono hy         Mon	ew moon		king crescent	_First quarte.	5								-	
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lacement/Site Description: Let a eraue Kud Wet Species Time Age Sex Repro. ² Wt RFA Belly Wing Indext # (adJuy) (MIF) (g) (mm) (FIME) (0.3) MIF) C. (g) (mm) (FIME) (0.3)	lacement/Site Description: Net ou er oraue Kurd *  Net Species Time Age Sex Repro. ² Wt RFA Belly Wing Indext *  (9) (mm) (FIMIE) (0.3) *  0.3) *  Constrained of the constraint of the cons	-	N/ //	• • •	~			• •	M.	9	6	2	2		
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Net     Species     Time     Age (adJuy)     Sex     Repro. ² Wt     RFA     Belly     Wing Index*       #     (min)     (FilmE)     (g)     (min)     (FilmE)     (0.3)       MF     MF     (min)     (min)     (min)     (FilmE)     (0.3)       MF     MF     MF     (min)     (min)     (min)     (min)       MF     (min)     (min)     (min)     (min)	Net         Species         Time         Age         Sex         Repro. 2         Wt         RFA         Belly         Wing Index*           #	Placemen	it/Site Description	NEVO SU		të he									
	(Ad(Jvv)         (M/F)         (g)         (mm)         (F/M/E)         (0-3)           .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .         .<		, N	nocios	Time	Age	Sex	Repro. ²		RFA	Belly	Wing Index		Com	ments
	² Reproductive Condition: Female = NRPG/LPL; Male = 1/4	#	5			(Ad/Jv)	(M/F)		(6)	(mm)	(F/M/E)	(0-3)	Pict	ure # /Gua	no/Hair Sample
	² Reproductive Condition: Female = NR/PG/L/PL; Mate = 1/4		<u> </u>			1 A 4	and the second s	AND A THE OTHER PARTY AND A THE OTHER PARTY AND A THE OTHER PARTY.							
	2 Reproductive Condition: Female = NR/PG/L/PL; Male = 1/4		V / V												
N. N.	2 Reproductive Condition: Female = NR/PG/L/PL; Male = 1/4														
	² Reproductive Condition: Female = NR/PG/L/PL; Male = 1/4							-							
N Q L	² Reproductive Condition: Female = NR/PG/L/PL; Mate = 1/4			24-12											
N N N N N N N N	² Reproductive Condition: Female = NR/PG/LPL; Male = 1/4														
N Q V	2 Reproductive Condition: Female = NR/PG/L/PL; Mate = 1/4		>												
N OUL	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		C	X											
	2     Reproductive Condition: Female = NR/PG/LPL; Male = $\uparrow/\downarrow$		DX DX	Cur C	N P	-									
	² Reproductive Condition: Female = NR/PG/LPL; Male = $\uparrow/\downarrow$				ka.										

Appendix F

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	; ; ;							<b>WE</b>	WEATHER DATA	,	
Droiort #.	791 AV	Date.	Auno+ 2000	01	Time (0000 h)	h) Temp (°C)	Wind Speed (estimated – see chart)*	ed e chart)*	Wind Direction: From to	% Cloud Cover (estimated)	ated) Comments
	0 ) ) / /	Date.			2030	5 76.7	0	6		805	
Project Name:	ALC C	5		-	2100			0		42 53	
State:	County-	N.C.P.			270	500		0		4020	
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					0030	20	9			10%	
	MC	<b>MOON PHASE*</b>			0100			0		6201	
New moon	X	$\underline{ imes}$ Waxing crescent	First quarter	<b></b>	010	22.9	****	5		201	
Waxing gibbous Last quarter		Full moon Waning crescent	Waning gibbous	pous							
Net/Trap/Anabat #	It Net/Trap Type ¹	Latitude	ude		Longitude	de	Length (m)	Height (m)	Time Up Ti (0000 h) (	Time Down (0000 h)	Picture #
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t Placemer	Net Placement/Site Description:	Neta	2028 Arac	10 / Jon							
L L	Ū	Snecies	Time	Age	-	Repro. ² Wt	/t RFA	Belly	Wing Index*		Comments
#		60100		(VC/DA)	(M/F)	(ĝ)		(F/M/E)	(0-3)		Picture # /Guano/Hair Sample
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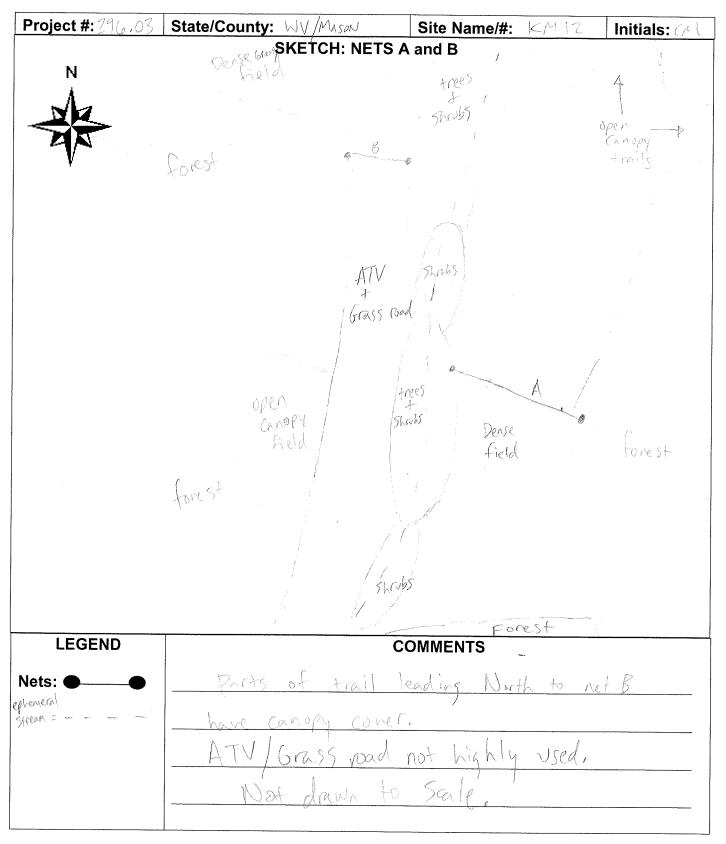
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	-	Property o 81 Neeb Road	of: Environmental S Cincinnati, OH 45	Solutions & Innovations, Inc. 233 (Phone: 513-451-1777)
<b>DSI</b> NET SIT	E HABITAT			
Project #: 296.03 Date: Project Name: AEP CO2	7 August 2010	Biologis Site Nam	۱	off, C. Murphy M12
State: <u>W</u> County: <u>M</u> AS	ion	USGS Q		
Camera #: <u>6.1</u> Picture #s: Latitude: <u>38 ° 54 ' 59.1</u> "N Distance to closest water source (met Water source name:	ers): <u>3</u> m	Longitud Type c		Waypoint #: <u>KM</u> 12 56 <u>' 47.9</u> "W ce: <u>ephemeral St</u> ream
ESTIMATED WATER SOURCE CHA		······		and the second
Bank Height:meters Char	and a second			
Substratum:BedrockBould			and share a second s	
Still Water Present (Y/N): A	verage Water De	pth:r	n or cm Cla	arity (H,M,L):
VEGETATION:				• • • • • • • • • • • • • • • • • • •
Dominant Canopy Species (> 40 cm/16 Platinus occidentalis	" dbh) Subo	Λ		cies (< 40 cm/16" dbh) ∽
Linidendron tulipife		Juglan	<u>s</u> nigro	٦
				<u><u> </u></u>
Estimated dbh range: Lg: <u>50cm</u> Sm:				<u> 9 cm</u> Sm: <u>10 cm</u>
Relative abundance of dominant vs. s	subdominant (ratio	<b>):</b> <u> : D</u>		
Estimated canopy closure:	Closed		<u> </u>	eOpen
Roost tree potential consists of:	<u> </u>	sSna	ags <u>Bo</u> l	th Neither
Roost tree potential for the area is:	High		<u>×</u> Moderate	eLow
Roost potential comments:				
Subcanopy clutter:	Closed	1	<u>─</u> Moderate	eOpen
Subcanopy comprised largely of:	Lower Bran Canopy Tree		$\ge$ Saplings	Shrubs
Common Subcanopy Species:	Cercis canal	lensis	Carpini	us carolineana
Habitat Description: open Fields				
Fields and open comp	y. Several w	ide Frain	<u>s</u> through	Loods.
Check all that apply:Mature Upland ForestRecently IYoung Upland ForestPine Plan∑Mature Lowland ForestOld Field		Stream/F	tWetland _	_Shrub/scrub Swamp _Vernal Pool _Deepwater Lake/Pond _Other
Herbaceous Cover: Sparse		N	ense	

1

Revised June 2007





1		BAI CAPIUKE DAIA	DATA					M	WEATHER DATA		
	7910 02	Dato:	August	2010	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	beed see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	) Comments
Project #:	- 16 · 0 ·	v 🔊 🖉			2030	20.0	R			5	A final state of the state o
Project Name:	- A - A -	CC2	>		2100	1.5	0		TATA A CANADA	10/2	,
State.	Countyr	MASON	and the owned		2.130	18.6	- - -		Str S	20	
			N. M.		77.00	8	1		SW to NE		a a construction of the second s
Biologists:	1. Jet	Cott C.	1.01/2	7	7.730					:00	
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Last quarter		<u> </u>	and Builder	2222							
Net/Trap/Anabat #	Net/Trap Type ¹	Latitude	de		Longitude		Length (m)	Height (m)	Time Up Tir (0000 h)	Time Down (0000 h)	Picture #
	SS	18, 024, 1	N. 1.95	° K	26 . 4	W. 5.7	<u>6</u>	0		0135	
	55	38 054 .	59. 3 " <b>N</b> "	• 15	110	5, 7, "W	2	e		0130	
	•	0	Z,	0	h	Ma					
cement	Net Placement/Site Description:	n: À placed between	Prest	and optements		SHRAM IN Fell	100	placed in	ATV corridor	Lot Lotreen	Forest and efferneed
Net #	S	Species	Time	Age (Ad/Jv)	Sex R (M/F)	Repro. ² V	Wt RFA (g) (mm)	Belly (F/M/E)	Wing Index* (0-3)	C Picture # /	Comments Picture # /Guano/Hair Sample
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Project #:		CAPTURE	<b>BAT CAPTURE DATA</b>					WE	WEATHER DATA	A			
	791, 02		7 D 1. 26	2010	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	ed e chart)*	Wind Direction: From to		% Cloud Cover (estimated)	Comments	1
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<b>Biologists:</b>	D. Jefest	FF, C,	NUNDLA	1	4100	5			ALA 4 VIN	2	1	a - a a fa a may a surang a pangangang ang sang sang sang sang sang s	
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Site name/#:							- - - - -		) 1 V			Sector and the sector	
GDC IInit #.	H 13	Cam	Camera #. $\left( \frac{1}{2} \right)$				11		1 1 2 2			· · · · · · · · · · · · · · · · · · ·	
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		MOON PHASE"			715.00	>, ,	)						
New moon Waxing gibbous	t	Waxing crescent	First quarter	sr hous									
Last quarter		Waning crescent							·.				
Net/Trap/Anabat #	at Net/Trap Type ¹	Lat	Latitude		Longitude		Length (m)	Height (m)	• •	Time Down (0000 h)		Picture #	1
¥	NN NN	28 . 54	, 59, <b>"N</b>	• 8	26.4	7.9 "W	$\sim$	6	2035	0/35			
Z		28 ° 54	N" 2.20.	•	56.4	5, 2 "W	2	S	2040	040			
<u></u>		•	N., r	0		M"							
let Placeme	Net Dlacement/Site Description: $A$	A alered	1. Chinese	Co cest	and policy	lemeral St	Stream in	Geld,	B Dlace	1 . A -	TU COST	Toloc between	
Capt Net	ads.	U U	Time	Age				Belly	Wing Index*		Com.	Comments Comments	+523 
#	2	2010	>	(VC/DA)	(M/F)	(6)	(mm)	(F/M/E)	(0-3)	2	cture # /oua		7
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Married Married MM - Married MM - Married Trans 7 - Married							-						

	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
DSL NET SITE HABITAT	
Project #: 296.03 Date: 7 August 7010	Biologists: D. Jeffcott, C. Murphy
Project Name: <u>AEF-COz</u>	Site Name/#:K_M_1_3/
State: <u>MV</u> County: <u>MASON</u>	USGS Quad:
Camera #: G1       Picture #s:         Latitude: 38 ° 55 ' 1.1 "N       under A         Distance to closest water source (meters): In form B         Water source name:	GPS Unit #: <u>A13</u> Waypoint #: <u>KM</u> 13A Longitude: <u>81_°56_'53.6</u> "W _ Type of water source: <u>eptemeral Stream</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	
Bank Height:meters Channel Width: _2	
Substratum: <u> </u>	GravelSandSilt/Clay
Still Water Present (Y/N): _/ Average Water De	pth: $\underline{MA}$ m or cm Clarity (H,M,L): $\underline{MA}$
VEGETATION:	
Quercus alba	Jominant Canopy Species (< 40 cm/16" dbh)
Platinus occidentalis	Acer Saccharum
	Acer rubrum
Estimated dbh range: Lg: <u>50 cm</u> Sm: <u>40 cm</u> Estir	
Relative abundance of dominant vs. subdominant (ratio	
Estimated canopy closure:	ModerateOpen
Roost tree potential consists of: $_$ Large Trees	
Roost tree potential for the area is:High	
/	oaks
Subcanopy clutter: <u>X</u> Closed	ModerateOpen
Canopy Tree	<b>*</b>
	va Cercis canadensis
Carpinus Caroli	
Habitat Description: Old road w/ dense cane	
Ephemeral stream Struns through.	
Young Upland ForestPine Plantation Mature Lowland ForestWoodlot/ForestEdge	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool
$\underline{ imes}$ Young Lowland Forest $\underline{ imes}$ Old Field .	_Emergent WetlandDeepwater Lake/Pond _Forested SwampOther Zense



Project #: 2%.03	State/County: WV/MASon	Site Name/#: KM13	Initials: CM
N	SKETCH: NETS A	and B Moderately open Canopy Vidense Vegetation	
A			
	fore st		
	K		
old f w/ s trees	feld Small t cut grass	forest	
LEGEND Nets:	Not dawn to see	DMMENTS	

Appendix F

County: MASON County: MASON County: MASON Defecett Camera #: 6 MOON PHASE* Maxing crescent						Ц Х Г	WEALHER UALA		
Xing of	"	2010	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	eed se chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
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200 PHASE			2130	18,6	<u>~</u>		2 1	62	
MOON PHASE	A Mar A	Ň	2200	18.0	~ <u>-</u> ~		SUL & NC	, , , 0	A second s
<b>IASE</b>	VI OLI	¥	7230	17.6	0		· · · · · · · · · · · · · · · · · · ·	0	
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- IASE scent	1		2330	16.9	17		50 10 NC	, , ,	<ul> <li>The Provide state of the State</li></ul>
MOON PHASE* Waxing crescent	107		0000	16.4	~ -		SU & NE	0	
MOON PHASE* Waxing crescent			5030	5.8	1-3		So to C	( ) ) )	
Maxing crescent				5.5	(v)		50 to 201	0	and the second se
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Full moon	Waning gibbous	SUC	and the second sec		and the second se		n en		و می دود. بر این از این از این از این از این
X Waning crescent							*		
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Net/Trap Type ¹ Latitude	e		Longitude		(m)	uniginit (m)		(0000 h)	Picture #
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-	01.0 "N	•	56 , 56	N" & ?	C	C	0 0802	0145	
r 0	Z	0	5	M"					
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Snariae		Age				Belly	Wing Index*		Comments 56
Openica		(VC/DA)	(M/F)	<b>b</b> )		(F/M/E)	(0-3)	Picture # /C	Picture # /Guano/Hair Sample
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<u> </u>	66 30				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-	)		
		· · · · · · · · · · · · · · · · · · ·							
v = New Nylon, HT = Harp Trap	); A = Anabat	² Repi	roductive Conditio.	n: Female = NR/I	oG/L/PL; Male =	14	v::		) Jo 1 0000
						ł			Page 1 of
	Way.				r s i s Anton				
	ion: Net A March Species Species Soccalis Soccalis Soccalis Harp Trap	<ul> <li>P. P. P. R. R. A. M. V. S.</li> <li>S Time</li> <li>S Time</li> <li>C 15</li> <li>C 22 V D</li> <li>C 15</li> <li>C</li></ul>	F     P     ACE     F     V     V       S     Time     Age       orcalis     2215     Addu       orcalis     22240     Ad       (55     22240     Ad       (60, HT = Harp Trap; A = Anabat     Image	L     P     ACEA     L     V       S     Time     Age       orcalis     2215     Addu       orcalis     2224     Addu       15     2224     Addu       16     7     Addu       17     2224     Addu       18     7     7       17     2224     Addu       18     7     7       17     7     7       18     7     7       19     11     10	F     P     ACE     F     V     V       S     Time     Age       orcalis     2215     Addu       orcalis     22240     Ad       (55     22240     Ad       (60, HT = Harp Trap; A = Anabat     Image	F     P     ACE     F     V     V       S     Time     Age       orcalis     2215     Addu       orcalis     22240     Ad       (55     22240     Ad       (60, HT = Harp Trap; A = Anabat     Image	L       P       ALE       L       V       L       ALE       V       L       ALE       ALE	France       A. F. V. L. K. F. Belly       Wing Inde         S       Time       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Inde         S       215       Q       (MIF)       (g)       (mm)       (FMIE)       (0.3)         S       215       Z       215       Q       (g)       (mm)       (FMIE)       (0.3)         S       215       Z       Z       (g)       (mm)       (FMIE)       (0.3)         S       221       Z       Z       (g)       (m)       (FMIE)       (0.3)         (i;       222       Z       Z       Z       (g)       (g)       (g)       (g)       (g)         (i;       222       Z       Z       Z       (g)       (g)       (g)       (g)       (g)         (i;       Z       Z       Z       (g)       (g)       (g)       (g)       (g)       (g)         (i;       Z       Z       Z       (g)       (g)       (g)       (g)       (g)         (i;       Z       Z       Z       (g)       (g)       (g)       (g)       (g)	It P. Lard       It The Lard       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Index*         S       Time       Age       Sex       Repro. ² Wt       RFA       Belly       Wing Index*         S       2726       A       M       L       [g]       (mm)       [FIMIE]       (0.3)         S       22240       A       M       L       [b.1]       36.5       M       O         If S       22240       A       M       L       [b.1]       36.5       M       O         If S       22240       A       M       L       [b.1]       36.5       M       O         If S       2240       A       M       L       [b.1]       36.5       M       O         If S       2240       A       M       L       A       O       O       O       O         If S       2240       A       M       L       D       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O       O

Appendix F

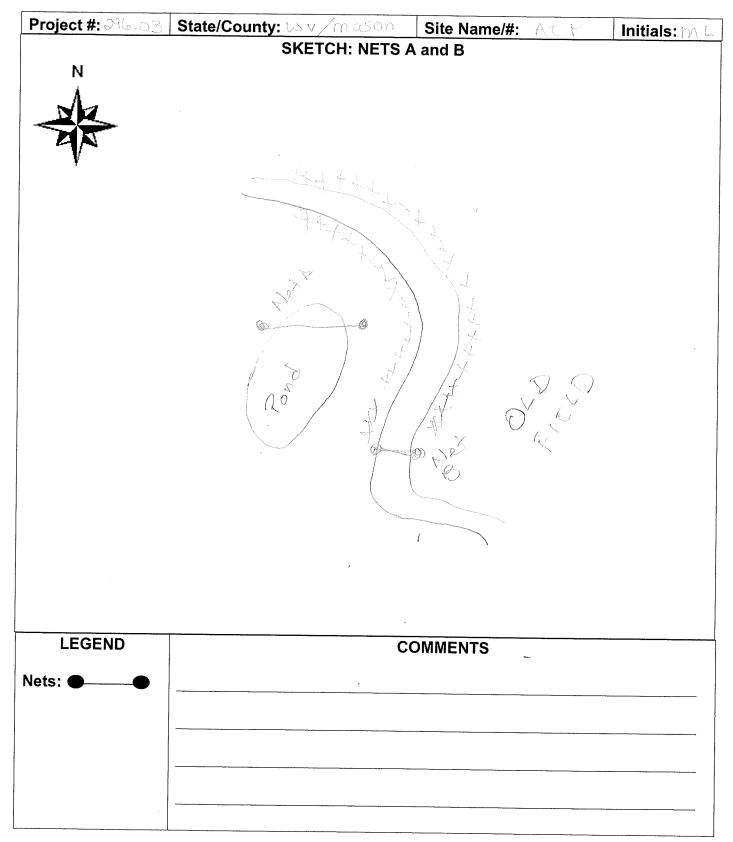
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Project #:	BAI	<b>BAT CAPTURE DATA</b>	<b>ATA</b>					ME	WEATHER DATA	LA		
roject #:	791, 02	1	P. 16 LCL	7010	Time (0000 h)	e Temp (°C)		Wind Speed (estimated – see chart)*	Wind Direction: From to		% Cloud Cover (estimated)	Comments
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Project Name:	TCT'	5.	>		7120	-					×,	
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<b>Biologists:</b>	D. Jet C	coft (	NUDER	2	2 2 2 2			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Not VIS	7		
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Site name/#:	V I V	2.7		<u></u>		9 	- per-			/		Company of the Control of the
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	<b>C</b> W				0020	0 14.0	$\bigcirc$	0		2	0.7.	
_New moon _Waxing gibbous		Waxing crescent	_First quarter _Waning gibbous	snoc	),				2			
Last quarter	¥_Wan	Waning crescent										
Net/Trap/Anabat #	Net/Trap Type ¹	Latitude			Longitude	de	Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)		Picture #
7	2 N	38 ° 55 ' 0	N" J.	•	56 ,	53.6 "W	0	0	2030	0145		
10	NN	8 • 55 ·	0	•	56 -	56.8 "W	1	2	2030	0/55		
		¢ 0		•	1	1						
et Placement	Net Placement/Site Description: <u>Ne</u>	NEL A DILLEJ	in ATV	1 Corrido.	er and	over ept	eplement :	the and the	Foresu,	2 V 2 ( ) V 2 ( )		ing have an
Capt Net		~~~	i	Age	Sex	Repro. ²	Wt RFA	-	Wing Index*	*Xi	Com	Comments
	ซ์ ภ	Species	lime	(VL/DA)	(M/F)			_			icture # /Guai	Picture # /Guano/Hair Sample
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Appendix F

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: <u>296.03</u> Date: <u>08/06/10</u>	Biologists: m. Little F. Hem
Project Name: <u>ACP CO2</u>	Site Name/#:K/\/ / //
State: W/ County: Mason	USGS Quad:
Camera #: Picture #s:ON Discontinuity Latitude: 38 ° S · 28 · S · N Distance to closest water source (meters): O Water source name: N/A	GPS Unit #: A G Waypoint #: Longitude: 8 ° 57 '139 "W Type of water source: Pand
ESTIMATED WATER SOURCE CHARACTERISTICS	
Bank Height: <u>< 1</u> meters Channel Width:	
Substratum:BedrockBoulderCobble	
Still Water Present (Y/N): Average Water De	epth: <u> </u>
VEGETATION:	
Acer rubrum	dominant Canopy Species (< 40 cm/16" dbh) വിഡെ Spp .
queraus alba	
Estimated dbh range: Lg: <u>\</u> Sm: <u>\</u> Esti	mated dbh range: Lg: <u>5</u> Sm: <u>3</u>
Relative abundance of dominant vs. subdominant (rat	io):
Estimated canopy closure:Closed	<u>,</u> ∠ModerateOpen
Roost tree potential consists of:Large Tree	
Roost tree potential for the area is:High	ModerateLow
Roost potential comments:	
Subcanopy clutter:Closed	<u> </u>
Subcanopy comprised largely of: <u>X</u> Lower Bran Canopy Tre	nches of $\underline{\succ}$ Saplings $\underline{\succ}$ Shrubs
Common Subcanopy Species: willow	rhododendron
Habitat Description: Old field with parth	Through narrow statiend
Corridor, small pond near by	
Check all that apply:	





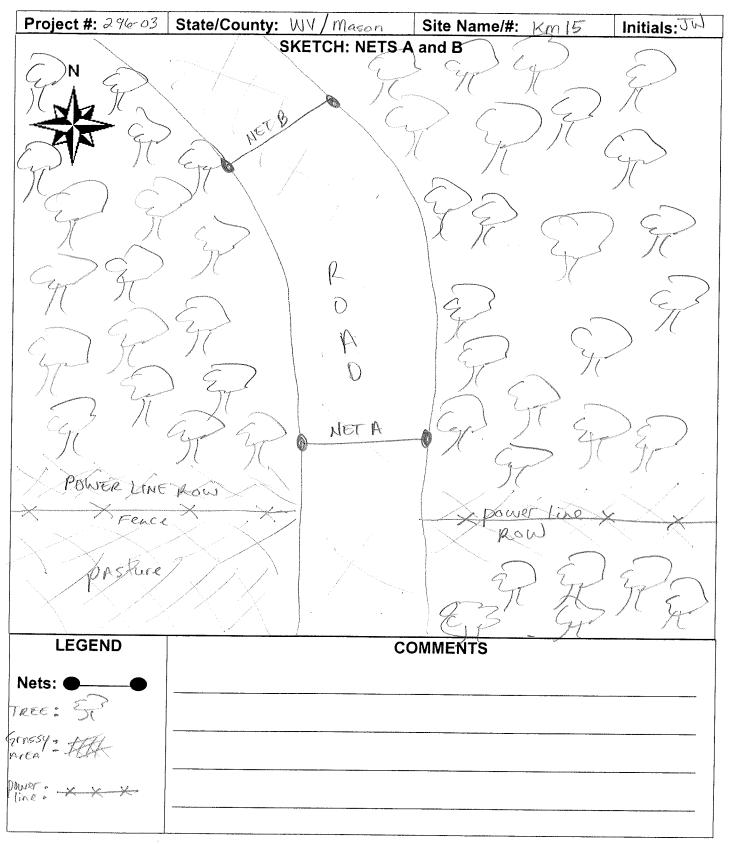
ATA First quarter Naning gibbous "N" "N" "N" "N" "N" "N" "N" "N	
	Latitud

Project #: 39.6.03 Date: 08.601 Project Name: A.E. Date: 08.601 State: W.V. 000 Site name/#: K.M.M. Site name/#: K.M.M. County: K.O.00 Site name/#: K.M.M. Camera #: MOON PHASE* Mew moon Waxing crescent Last quarter Waning crescent Met/Trap/Anabat Net/Trap Type1 Latitude #	08/07/0 Camera #:		i						
A County: V County: V A M W Waxing ci Waning ci Net/Trap Type ¹	Camera #:		(0000 h) Temp (°C)	Wind Speed (estimated – see chart)*	eed e chart)*	Wind Direction: From to	% Cloud Cover (estimated)	d Comments hated)	ents
Net/Trap Typ	Camera #:	<i>α</i>	030 20				S		
A L Coun A L A L	Camera #:	<u>)</u> ((3100 X0	C		190-11-11-11-11-11-11-11-11-11-11-11-11-11	strong .		
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A b b with the second s	Camera #:		222 1.0Z	V.			····		
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0 ° % 22	54'25'1"N	0 00 00	' 10,5 "W				07 30 1	017	
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Net Placement/Site Description: Net H	A is over a	r Small	STRO.	U.H. B.	, 2 2	ON OL	910 551	And	
Net Snecies	Time	Age Sex	Repro. ² V	Wt RFA	Belly	Wing Index*		Comments	
*			"	(d) (mm)	(F/M/E)	(0-3)	Pictur	Picture # /Guano/Hair Sample	nple
	Access								
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	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: 296-03 Date: 06 Aug 2010	Biologists: J.W. (son, C. Baggs
Project Name: <u>AEP coz</u>	60°
State: WV County: Mason	USGS Quad:
Camera #: <u>69</u> Picture #s: <u>104-0421,0422</u> Latitude: <u>38</u> ° <u>53</u> ' <u>59.6</u> "N Distance to closest water source (meters): <u>200 m</u> Water source name: <u>UNK</u>	Longitude: <u>81</u> ° <u>57</u> ′ <u>25,3</u> "W Type of water source: <u>stream</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS):
Bank Height: meters Channel Width:	metersMidth:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cmClarity (H,M,L):
VEGETATION:	
	dominant Canopy Species (< 40 cm/16" dbh)
Quercus rubra Que	ercus alba
Pinus sylvestris Qu	ercus rubra
Estimated dbh range: Lg: <u>80</u> Sm: <u>4</u> Estir	
Relative abundance of dominant vs. subdominant (ratio	D): 1:15
Estimated canopy closure:Closed	_ <u>∕∕</u> ModerateOpen
Roost tree potential consists of:Large Trees	
Roost tree potential for the area is:High	Moderate $_$ _Low
Roost potential comments:	no exteliating barrie à in shaded areas
Subcanopy clutter:Closed	Moderate _ <u>X</u> Open
Subcanopy comprised largely of:Lower Brand Canopy Tree	ches of <u> </u>
Common Subcanopy Species: Cercis canadencis	" Sassafras albidum
Ulmus americana Disspiros virginiana Cornus Florida	Rosa multiflora, Juniperus virginiana
Habitat Description: Rolling hills of upland for	
young upland forest with mostly open in	oderstory
<u>Check all that apply:</u> Mature Upland ForestRecently Logged Forest	<u> Crop/Pasture Land</u> <u>Shrub/scrub Swamp</u> <u>Stream/River</u> <u>Vernal Pool</u> <u>Emergent Wetland</u> <u>Deepwater Lake/Pond</u> <u>Forested Swamp</u> <u>Other</u>
Herbaceous Cover: SparseModerate	Dense
Revised June 2007	

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								3	WEATHER DATA	A	
Proiect #:	296-03	Date: 010	During	2010	Time (0000 h)) Temp (°C)	Wi (estimate	Wind Speed (estimated – see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
				,	2030	21.0	(,, 	3	ц 2	Q*/.	
Project Name:		7		and the second se	2100	20° %	1	M	0-N	0 */* Q	
State: N/V	County:	. Masan			2130	8. 8	1 V		3-6	1. O	 A manual state of the state of
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Site name/#:_	# KWY 12				2300	0. 19. 0				~	
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GPS Unit #:		Cam	Camera #: 64		0000	5				Ø'/,	
					0020	-	1	2	S-D	Q. /	
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New moon Waxing gibbous		Waxing crescent Full moon	First quarter Waning gibbous	r bous	0(3)	16.6	2		E-W	Ø./.	
Last quarter	·	X Waning crescent									
Net/Trap/Anabat #	bat Net/Trap Type ¹	Lat	Latitude		Longitude	<u>e</u>	Length (m)	h Height (m)	Time Up 1 (0000 h)	Time Down (0000 h)	Picture #
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Placem	Net Placement/Site Description:	n: Nets	s stratced	over	ROAL W	with same	V	ndove			
Capt Net # #		Species	Time	Age (Ad/Jv)	Sex F (M/F)	Repro. ²		RFA Belly (mm) (F/M/E)	Wing Index*		Comments Picture # /Guano/Hair Sample
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Appendix F

Page 1 of $_{-}$

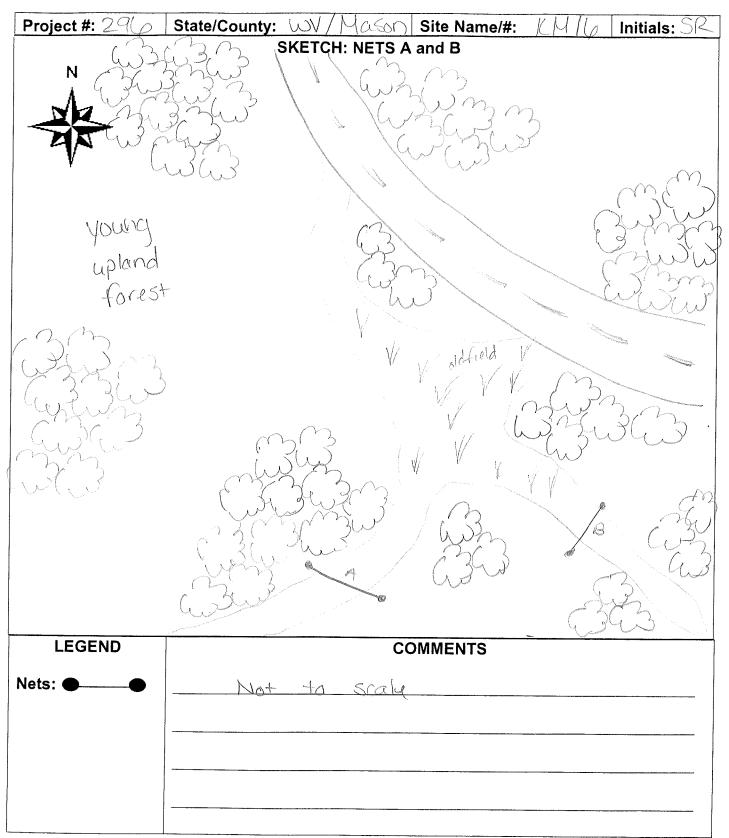
Date: 07. A Ma.son Bate: 07. A Ma.son Camera # Bate: 07. A NN PHASE* Indecode Bate: Date: Date: NN PHASE* Indecode Indecode Bate: Date: Date:	First quarter Waning gibbous	Time (0000 h) 2 (50 0 2 (50 0 2 2 3 0 0 0 0 0 0 1 2 2 3 0 0 0 0 0 0 1 2 2 2 0 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Temp (°C) 200.4 200.6 200.6 19.4	Wind Speed (estimated - see chart)*	ed e chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
AEPCOZ. AEPCOZ. County: Mason County: Mason A-C A-C A-C Camera # Waxing crescent us Full moon NN SS 53 59	Vaning gibbou	2130 2160 2130 2230 2230 2230 2230 2230 2230 2000 0000 0000 0000 0000 0000 0000	200. 200. 19.1 19.1 19.1 19.1 19.1 19.1					
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County: Mason Km IS Km IS A-C MOON PHASE* Waxing crescent Waxing crescent Latitude NN SS 53 59	Vaning gibbou	2130 2200 2200 2230 22300 22300 22300 0000 0000 0000 0000 0000 0000	14:41 14:41 14:52 14:41 14:52				Š%	
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Capt Net Species # #	Time Age (Ad/Jv)	Sex (M/F)	Repro. ² Wt (g)	RFA (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
	2335 N.el	17	NR 12.	42	Z	0		
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Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)	
NET SITE HABITAT DESCRIPTION	
Project #: <u>296.03</u> Date: <u>6 Aug 2016</u> Biologists: <u>MMichaely SRewes</u> Project Name: <u>AEP CO2</u> Site Name/#: <u>KM16</u> State: WV County: <u>Mason</u> USGS Quad: <u>Ohio River</u>	
Camera #: <u>V276</u> 0 Picture #s: <u>4923 - 4927</u> GPS Unit #: <u>A4</u> Waypoint #: <u>KM16-NE</u> Latitude: <u>38° 53' // 1 "N</u> Longitude: <u>81° 57' 34.8</u> "W Distance to closest water source (meters): <u>3000 m</u> Type of water source: <u>vive</u> Water source name: <u>Ohid</u> River	ΞTA
ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS): \mathbb{N}/A	
Bank Height:meters Channel Width:meters Stream Width:meters	
Substratum:BedrockBoulderCobbleGravelSandSilt/Clay	
Still Water Present (Y/N): Average Water Depth:m or cm Clarity (H,M,L):	
VEGETATION:	
Dominant Canopy Species (> 40 cm/16" dbh) Quercus alba Quercus rubra Subdominant Canopy Species (< 40 cm/16" dbh) Robinia pseudoacacia Quercus rubra	
Canja tomentosa Ulmis americana	
Estimated dbh range: Lg: (a) Sm: 40cm Estimated dbh range: Lg: 39m Sm: 10cm	
Relative abundance of dominant vs. subdominant (ratio): / 2/00	
Estimated canopy closure:ClosedModerate	
Roost tree potential consists of:Large TreesSnags 2 BothNeither	
Roost tree potential for the area is:HighModerate _/_Low	
Roost potential comments:	
Subcanopy clutter:ClosedModerateOpen	
Subcanopy comprised largely of:Lower Branches ofSaplingsShrubs Canopy Trees	
Common Subcanopy Species: <u>Robinia Dseudoacoria</u> <u>Rhus</u> typhina	
Habitat Description: young upland forest/early successional forest	
unimproved path through forest	
Check all that apply: Mature Upland Forest Recently Logged Forest Crop/Pasture Land Shrub/scrub Swamp Mature Upland Forest Pine Plantation Stream/River Vernal Pool Mature Lowland Forest Woodlot/ForestEdge Emergent Wetland Deepwater Lake/Pond	
Young Lowland ForestOld FieldForested SwampOther <u></u> Other <u></u> Herbaceous Cover: Sparse ModerateDense	

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Revised June 2007





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t Placemei	Net Placement/Site Description:	Nets	000055	North	mately C	Canapied		AND CM INN	tod by	Ą	
Capt Net # #	S.	Species	Time	Age (Ad/Jv)	Sex R((M/F)	Repro. ² V	Wt RFA (q) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
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Appendix F

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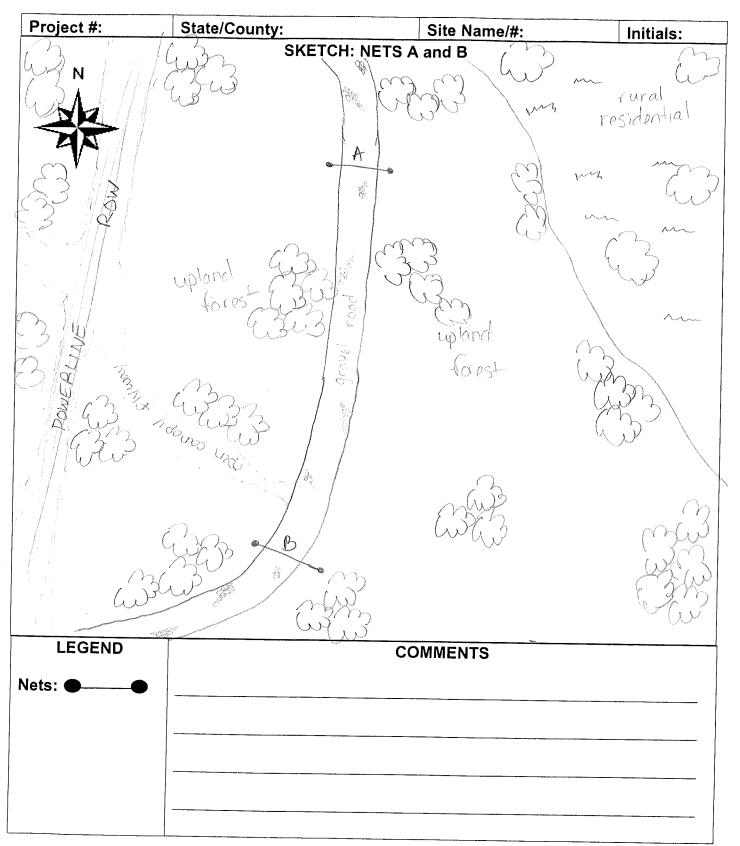
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Math County: Math 2000 22:00 23:00 24:40 Math A Mid backs County: American: 21:00			\int	11, UN	Ē	Time (0000 h)	Temp (°C)	Wind Sp (estimated – se	eed ee chart)*	Wind Direction: From to	Cover (e:	loud stimated)	Comments
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All Camera #: ¥2760 Com 17.6 Com 17.6 MOON PHASE* MOON PHASE* First quarter 00100 HASE* MOON PHASE* Valing groots First quarter MOON PHASE* Valing groots Com 17.6 Com 17.6 MOON PHASE* Valing groots Com 17.6 Com 17.6 Moon Phase* Valing groots Valing groots Com 17.6 Mon assent Valing groots Laptude Length Height NN 38 • 53 • 10 4 °N 81 • 57 • 33 °N 8 Com 2030 NN 38 • 53 • 10 4 °N 81 • 57 • 33 °N 8 Com 2030 NN 38 • 53 • 10 4 °N 81 • 57 • 33 °N 8 Com 17.6 Stet Description: Net State Com 17.6 Com 17.6 Com 17.6 Species Time Age Son 20 °N Com 17.6 Com 17.6 Species Time Age Son 20 °N Com 17.6 Com 17.6	S Unit #: Au					2000	11	K				60 20	
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Waning crescent Fist quarter Waning crescent Fist quarter Waning crescent Fist quarter Waning crescent Vaning crescent Waning crescent Length NN 38 ° 53 ° 10 4 °N Steecles Time Age 58x Repro.2 Wt RFA Belly No 0.3 NO And Ford Species Time Age 58x Repro.2 Wt Species Time Age 58x No 0.3 No 0.3 No 0.3 N	New moon Waxing gibbous Last quarter	:				700)) 6/	
us Full mon Evaluation Waning gibous Full mon NetTrap Type ¹ Latitude Length Height Time Up Time Do NN 38 53 1 04 "N 81 57 7 34 "W 7 0 2030 h (m0 b) NN 38 53 1 04 "N 8 57 7 34 "W 7 0 2030 h (m0 b) NN 38 53 1 04 "N 8 5 7 33 "W 7 0 2030 h (m0 b) Site Description: NetS DELOS UNIVEDVIE FOR Lime Address Composition Compositio	_New moon _Waxing gibbous Last quarter	MC H	ON PHASE*	Ĺ		202	10.10			a provinsi na seconda de la constanción		200	
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Appendix F

7	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT	DESCRIPTION
Project #: 296.03 Date: 8 Aug2010	Biologists: M Michaels SReever
Project Name: <u>AEP COz</u>	Site Name/#:KIM_17
State: UV County: Mason	USGS Quad: Chio River
Camera #: <u>K276</u> Picture #s: <u>5071-5074</u> Latitude: <u>38° 52'53.9</u> "N Distance to closest water source (meters): <u>1900 m</u> Water source name: <u>0000 River</u>	Longitude: <u>81°.57'01.5</u> "W _ Type of water source: <u>river</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	oth:m or cm Clarity (H,M,L):
VEGETATION:	
<u>Ourrais al'aa</u> <u>A</u>	lominant Canopy Species (< 40 cm/16" dbh) Simina Irilaba arya tomentosa
	ker rubrum
Estimated dbh range: Lg: <u>200cm</u> Sm: <u>40cm</u> Estin	
	nated dbh range: Lg: <u>39 cm</u> Sm: <u>15 cm</u>
Relative abundance of dominant vs. subdominant (ratio): <u>/ \$50</u>
Relative abundance of dominant vs. subdominant (rational canopy closure:Closed):/ <u>\$50</u> _ <u>∕</u> ModerateOpen
Relative abundance of dominant vs. subdominant (rational construction of the subdominant construction of the subdominant (rational construction of the subdominant consuperturbute construction of the subdominant construction	p): <u>/ 50</u> <u>//</u> ModerateOpen SnagsBothNeither
Relative abundance of dominant vs. subdominant (rational construction of the subdominant construction of the subdominant (rational construction of the subdominant consuperturbute construction of the subdominant construction):/ <u>\$50</u> _ <u>∕</u> ModerateOpen
Relative abundance of dominant vs. subdominant (rational construction of the subdominant construction of the subdominant (rational construction of the subdominant consuperturbute construction of the subdominant construction	p): <u>/ 50</u> <u>//</u> ModerateOpen SnagsBothNeither
Relative abundance of dominant vs. subdominant (rational example a construction of the area is:	p): <u>/ 50</u> <u>//</u> ModerateOpen SnagsBothNeither
Relative abundance of dominant vs. subdominant (rational construction of the second construction o	p):/ <u>\$50</u> ModerateOpen SnagsBothNeither ModerateLow ModerateOpen ches ofSaplingsShrubs
Relative abundance of dominant vs. subdominant (rational example of the subdominant example of the subdom	a): <u>/ 50</u> <u>→</u> ModerateOpen SnagsBothNeither Moderate£ow <u>→</u> ModerateOpen ches of <u>→</u> SaplingsShrubs
Relative abundance of dominant vs. subdominant (rational estimated canopy closure: Closed Estimated canopy closure: Closed Roost tree potential consists of: Large Trees Roost tree potential for the area is: High Roost potential comments: A Subcanopy clutter: Closed Subcanopy comprised largely of: Closed Closed Closed Subcanopy comprised largely of: Closed	b): <u>/ 50</u> <u>/</u> ModerateOpen SnagsBothNeither Moderate _/Low <u>/</u> ModerateOpen ches of <u>/</u> SaplingsShrubs s
Relative abundance of dominant vs. subdominant (rational Estimated canopy closure: Closed Roost tree potential consists of: Large Trees Roost tree potential for the area is: High Roost potential comments: A Subcanopy clutter: Closed Subcanopy comprised largely of: Closed Common Subcanopy Species: AbinActed Habitat Description:): <u>/ 350</u> <u>/</u> ModerateOpen SnagsBothNeither Moderate _/20w <u>/</u> ModerateOpen ches of <u>/</u> SaplingsOpen ches of <u>/</u> SaplingsShrubs s <u>cloaica da Acer Sacharcum</u> <u>ba</u> <u>few large oats</u>) along gravel
Relative abundance of dominant vs. subdominant (rationalised canopy closure:Closed Roost tree potential consists of:Large Trees Roost tree potential for the area is:High Roost potential comments:N/A Subcanopy clutter:Closed Subcanopy comprised largely of:Closed Subcanopy comprised largely of:Closed Subcanopy comprised largely of:Closed Common Subcanopy Species:Abin_aSetue Asimina): <u>/ 350</u> <u>/</u> ModerateOpen SnagsBothNeither Moderate _/20w <u>/</u> ModerateOpen ches of <u>/</u> SaplingsOpen ches of <u>/</u> SaplingsShrubs s <u>cloaica da Acer Sacharcum</u> <u>ba</u> <u>few large oats</u>) along gravel
Relative abundance of dominant vs. subdominant (rational Estimated canopy closure: Closed Roost tree potential consists of: Large Trees Roost tree potential for the area is: High Roost potential comments: A Subcanopy clutter: Closed Subcanopy comprised largely of: Closed Common Subcanopy Species: AbinActed Habitat Description:): <u>/ 350</u> <u>/</u> ModerateOpen SnagsBothNeither Moderate _/20w <u>/</u> ModerateOpen ches of <u>/</u> SaplingsOpen ches of <u>/</u> SaplingsShrubs s <u>cloaica da Acer Sacharcum</u> <u>ba</u> <u>few large oats</u>) along gravel



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	DAI	BAI CAPIUKE DAIA	AIA					WE	WEATHER DATA		
Project #: $29(p$	2010	Date: 3	Aug 2610	\sim	Time (0000 h)		Wind Speed (estimated – see chart)*	eed ee chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
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Project Name:		· · · · · · · · · · · · · · · · · · ·			2100	\sim) /	2	JUI-INK	20%0 * * *	
State:	County:	Mason			7130	22.). -			0%	
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			22		2230	1.170	(<u>-</u>	SW-NE	0%	
Site name/#:	KM 17				2300	21.	-	m	SW-NE	0 %	
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Waxing gibbous			Waning gibbous	snoc	>				1		
_Last quarter	1-7	Waning crescent	0								
Net/Trap/Anabat	The second s	La. 1					Length	Height		Time Down	Dicture #
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ot N	oy.	Snecies	Time	Age		Repro. ² W			Wing Index*	S S I I	Comments
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	Comments												Picture #	1202-	3-5074			Comments Picture # /Guano/Hair Sample					
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BAT CAPTURE DATA		Date: / Aug 2010	2			> Kreves			Camera #: <u>KZ</u>		MOON PHASE*	Waning crescentFirst quarter	Latitude	N . 52, 539 "N	· 52 · 57.6	° v	Nets across	Time		CITAR CATA			
BAT C	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		AEP CO2		E E	Mi charly S		Ī	A4		NOOM		Net/Trap Type ¹	NN 38	NN		Net Placement/Site Description:	Species		LO SILVIUS DOV. 60			
TQ	C	Project #:	Project Name:		State:	Biologists:		olte name/#:	GPS Unit #:			Alew moon Waxing gibbous Last quarter	Net/Trap/Anabat #	-7	K	<u></u>	et Placement/	Capt Net # #		-) -)			

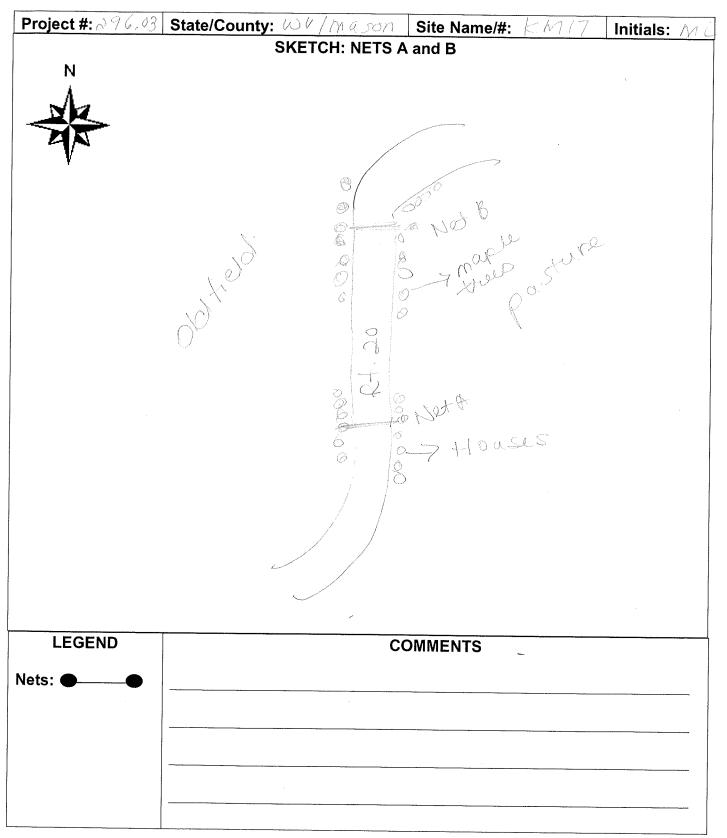
Page 1 of

	Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
DSI NET SITE HABIT	TAT DESCRIPTION
Project #: $A9.61.03$ Date: $Aug 8, 20$ Project Name: $I9.6P$	DIO Biologists: M. Little, T. Hern Site Name/#: KM 18
State: WV County: Mason	USGS Quad:
Camera #: Picture #s: 013,014 Latitude: 38° 52' 45' "N Distance to closest water source (meters): N Water source name: N	GPS Unit #: <u>1</u> 3 Waypoint #: Longitude: <u>81 ° ≤7 '18.9</u> "W A Type of water source:
ESTIMATED WATER SOURCE CHARACTERIST	
Bank Height:meters Channel Width: _	
Substratum:BedrockBoulderCobl	bleGravelSandSilt/Clay
Still Water Present (Y/N): Average Wate	er Depth:m or cm Clarity (H,M,L):
VEGETATION:	
Dominant Canopy Species (> 40 cm/16" dbh)	Subdominant Canopy Species (< 40 cm/16" dbh)
Estimated dbh range: Lg: <u>\</u> Sm: <u>`</u>	Estimated dbb range: Lg: 7 Sm: 5
Relative abundance of dominant vs. subdominant	(ratio): 50/50
Estimated canopy closure:Closed	
Roost tree potential consists of: \angle Large	
Roost tree potential for the area is:High	
Roost potential comments:	
	Moderate <u>X</u> Open
	Branches ofSaplingsShrubs
	/ Trees
Common Subcanopy Species: <u>A Cerru</u>	
Habitat Description: Large to medice Near houses and open	m trees along roadside fields
Check all that apply: Mature Upland Forest Young Upland Forest Mature Lowland Forest Young Lowland ForestRecently Logged Forest Pine Plantation Woodlot/ForestEdge Old Field	st XCrop/Pasture Land Shrub/scrub Swamp Stream/River Vernal Pool Emergent Wetland Deepwater Lake/Pond Forested Swamp Other
Herbaceous Cover: SparseModer	rateDense
Revised June 2007	1 #1



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NET SITE HABITAT DESCRIPTION (continued)



Revised June 2007

Project #: 296, 05 Project Name: ACA State: UVV Co Biologists: M. LVV Site name/#: KMA & GPS Unit #: 13	County:	Date: 08						M	WEATHER DATA	_	
oject Name: RC oject Name: RC ate: UVV iologists: M. L ite name/#: KM	County:		Z Z	0.06	Time (0000 h)	n) Temp (°C)	Wind Speed (estimated – see chart)*	Speed see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	d Comments nated)
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		Camera #:	ra #:		18 18		"%"		· · ·		
New moon Waxing gibbous Last quarter	MC Wa: Full Wai	MOON PHASE* Waxing crescent Full moon Waning crescent	First quarter Waning gibbous	SNO							
Net/Trap/Anabat Net/Tra #	Net/Trap Type ¹	Latitude	nde		Longitude		Length (m)	Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
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Net Placement/Site Description:	escriptior	A C	and 20		5	01.525					
Capt Net # #	S.	Species	Time	Age (Ad/Jv)	Sex (M/F)	Repro. ²	Wt RFA (g) (mm)	A Belly (F/M/E)	Wing Index* (0-3)		Comments Picture # /Guano/Hair Sample
		6.41	7,130	P Y	14	NR		<u> </u>			
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Appendix F

	BAT (BAT CAPTURE DATA	νTA					Ň	WEATHER DATA	A			
Droinot #: 29 6:03	4 	Date: 9	2010		Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*	eed ee chart)*	Wind Direction: From to		% Cloud Cover (estimated)	Comments	
Jer #.					2130	12)		<u>,</u>				
Project Name:	A6 8				0012	- 12	0		-	0			- 1
State:	County:	11 4 (0)/			2130	02	0		,	Ci.			1
101					9022	14.15	6		ſ	0			6
Biologists: M.	N. Little 1	HORM			0822	14.3	0			~~>			1
Site name/#• Z // / &	LW12				2700	Ι.	0			0.			
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GPS Unit #:	<u>(</u> 3	Camera #:			0030	19,0	0			0			
					000	$\langle e', \delta \rangle$	0		- P	~			
New moon Waxing gibbous Last quarter		HASE* sscent	First quarter Waning gibbous	snc									
Net/Trap/Anabat #	at Net/Trap Type ¹	Latitude			Longitude		Length (m)	Height (m)	Time Up	Time Down (0000 h)	Ē	Picture #	
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	ja ja		Z.	o	6	M"			·				
Placemei	Net Placement/Site Description:_	a f											
Capt Net # #	Spe	Species	Time	Age (Ad/Jv)	Sex R((M/F)	Repro. ² (Wt RFA (g) (mm)	Belly (F/M/E)	Wing Index* (0-3)		Comments ture # /Guano/Hai	Comments Picture # /Guano/Hair Sample	
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Appendix F

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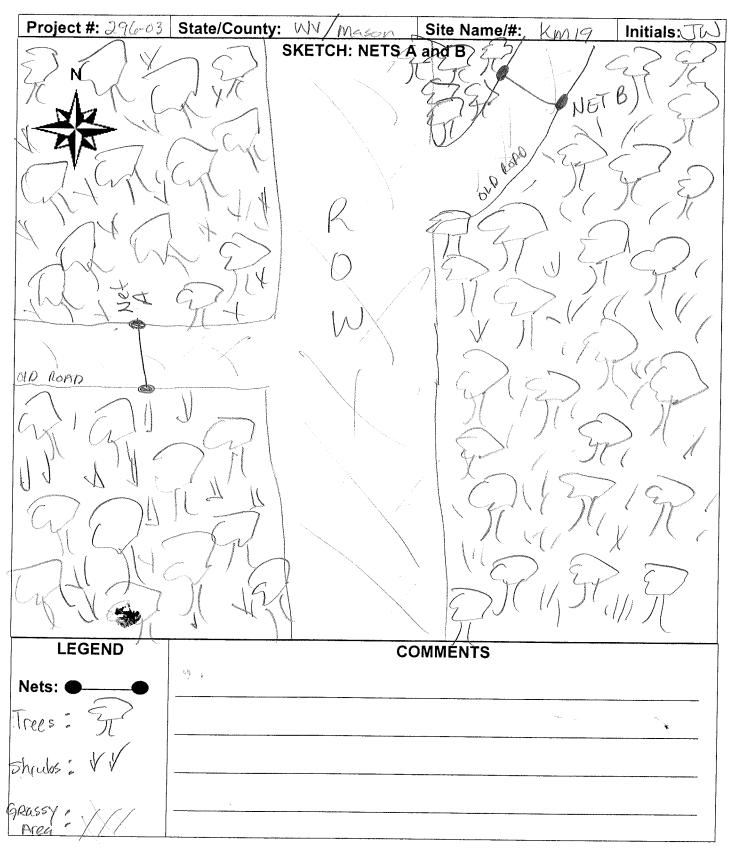
² Reproductive Condition: Female = NR/PG/L/PL; Male = \uparrow/\downarrow

¹ M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back

		Property of: Environmental Sol 781 Neeb Road. Cincinnati, OH 4523	
DSI N	IET SITE HABITA	T DESCRIPTION	
Project #: 296-03	Date: 69 Aug 2010	Biologists: J. Wils	on, C. Buzzs
Project Name: <u>AEP C</u>			<u> </u>
State: <u>WV</u> Count	y: Mason	USGS Quad:	
Camera #: <u>69</u> Picture Latitude: <u>38</u> ° <u>51</u> ' Distance to closest water s Water source name: <u>ur</u>	<u>4a.4 </u> "N source (meters): <u> I.km</u>	Longitude: <u>8/</u> <u>5</u> Type of water source	
ESTIMATED WATER SOL			
Bank Height: <u>me</u> t			
Substratum:Bedrock	BoulderCobble	GravelSand	Silt/Clay
Still Water Present (Y/N):	Average Water D	Depth:m or cm Clar	ity (H,M,L):
VEGETATION:			
Dominant Canopy Species	\	bdominant Canopy Specie Acec sacchoum	
Liriodendron tulipi	lèra	Liridendron tulipiter	
Robinia pseudoacacia		Fraging andricana	
Estimated dbh range: Lg:			
Relative abundance of dor	minant vs. subdominant (ra	itio):25	
Estimated canopy closure:	Closed	Moderate	Open
Roost tree potential consis	sts of:Large Tre	es <u> </u>	Neither
Roost tree potential for the	e area is:High	Moderate	_ <u> </u>
Roost potential comments	: Few Jarge trees	and Minimal snags pres	ect in het area
Subcanopy clutter:	Closed	Moderate	Open
Subcanopy comprised larg	gely of: <u> </u>	nches of <u></u> Saplings	<u>>></u> Shrubs
Common Subcanopy Spece Smilax Sp., Populus grandidentet	s Lindera benzo	in Pinus Virginia	ing, Acer rubrum
Habitat Description: <u>You</u>		rolling hills adja	cent to KOW
and pasture land	, dense shrub ?	sapling layer	
<u>Check all that apply:</u> Mature Upland Forest Young Upland Forest Mature Lowland Forest Young Lowland Forest	Recently Logged Forest Pine Plantation ∕_Woodlot/ForestEdge Old Field	Stream/RiverV Emergent WetlandC	Shrub/scrub Swamp /ernal Pool Deepwater Lake/Pond Dther
Herbaceous Cover: S	Sparse <u>/</u> Moderate	Dense	

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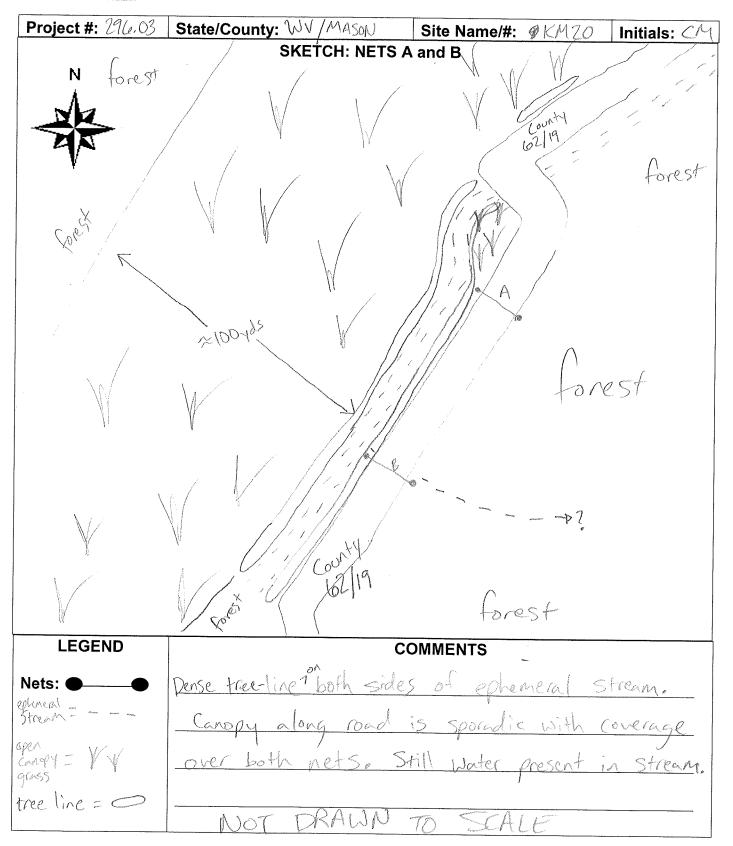
Project #: 296-63 Project Name: AE State: WV 0 Biologists: J. Wi Site name/#: Am GPS Unit #: A-6	PLE-03 AEPC02 J. Wilson Km 19							N	WEALGEN DALA	IA	
ö		Date: 20	L.		Time (0000 h)	h) Temp (°C)		Wind Speed (estimated – see chart)*	Wind Direction: From to	n: % Cloud Cover (estimated)	f Comments
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		Waxing crescent	First quarter	b	0130			-		05.1	-
_Waxing gibbous _Last quarter		Full moon Waning crescent	Waning gibbou	snoq					and the second se		
let/Trap/Anabat N	Net/Trap Type ¹		Latitude		Longitude	de	Length (m)	th Height (m)	Time Up (0000 h)	Time Down (0000 h)	Picture #
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Capt Net		2 montoo	F	Age		Repro. ²	Wt	RFA Belly	Wing Index*	eX*	Comments
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Lioject #.	(0-0)	Date: 04	Husus	20107	2 ~ 2 ~	× 24 4			- AIRIN		1.2	
Project Name:	AED	C02			2100	1	- m				0.1'	
State: WV	County:	Meson			2130	23. 5	1	and a second		a de la companya de l	\$1.2	
	Norman	5			2200						7.P	
Biologists:	J. Wrissp	C. 150995			2230		7	And and a state of the second state of the sec		(1.0	
Site name/#:	Km 19	<u>.</u>			2300	23,	0	array provide a second s			0.1	
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imes New moon	W.	Waxing crescent	First ouarter		N O U	0 21.4					Kh - / -	
Waxing gibbous		Full moon Waning crescent	Waning gibbou	pous						*		
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Net/Trap/Anabat #	Ne	Latitude	ude		Longitude	ide	 	Length (m)	Height (m)	Time Up 1 (0000 h)	Time Down (0000 h)	Picture #
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st i	y	2nocioe	Timo	Age		Repro. ²	Wt	RFA	Belly	Wing Index*	a separative production (see a set of the second	Comments
*		sheries	a 11	(VC/DA)	(M/F)		(6)	(mm)	(F/M/E)	(0-3)		Picture # /Guano/Hair Sample
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¹ M = Monofilament	ON = Old Nvion NN =	New Nvion HT = Harn Tr	an: A = Anahat	2 Ror	$\frac{1}{2} \frac{1}{2} \frac{1}$	dition: Famale			1			-
* Refer to table on th	he back	* Refer to table on the back		•			 		•			Page 1 of

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	Property of: Environmental Solutions & Innovations, Inc. 81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
DSI NET SITE HABITAT	
Project #: 296.03 · Date: 09 Avgvs+ 2010	Biologists: P. Jeffcott, C. Murphy
Project Name: <u>AEP-CO2</u>	Site Name/#:KM20/
State: <u>MV</u> County: <u>MASON</u>	USGS Quad:
Camera #: <u>61</u> Picture #s: Latitude: <u>38 ° 61 ' 22.4</u> "N Distance to closest water source (meters): <u>3M</u> Water source name: <u>NA</u>	GPS Unit #: <u>A13</u> Waypoint #: <u>KM</u> 20B Longitude: <u>81 ° 55 ' 57.8</u> "W _ Type of water source: <u>eptemeral_stream</u>
ESTIMATED WATER SOURCE CHARACTERISTICS	
Bank Height:meters Channel Width:	metersStream Width:meters
Substratum:BedrockBoulderCobble _	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	oth:m or cm Clarity (H,M,L):
VEGETATION:	
<u>Platinus occidentalis</u> <u>Acer Saccharum</u> J	lominant Canopy Species (< 40 cm/16" dbh) Robinia pseudoacacia Inglans nigra Esculus flava
Estimated dbh range: Lg: <u>45</u> cr Sm: <u>40</u> cm Estin	nated dbh range: Lg: <u>35 m</u> Sm: <u>10 m</u>
Relative abundance of dominant vs. subdominant (ratio	
	<u>∕</u> ModerateOpen
	SnagsBoth 🖄 Neither
Roost tree potential for the area is:High	ModerateLow
Roost potential comments:	
Subcanopy clutter: <u>X</u> Closed	ModerateOpen
Subcanopy comprised largely of: Canopy Tree	
Common Subcanopy Species: Ulmus (Jbra	Carpinus carolineana
Cercis canad	
Habitat Description: County Rd 62/19 running adj	acent to ephemeral stream w/ standing
Water, Subcanopy is dense. Field adjacent to	stream w/tallgrasses.
<u>Check all that apply:</u> Mature Upland ForestRecently Logged Forest	Crop/Pasture LandShrub/scrub Swamp Stream/RiverVernal Pool Emergent WetlandDeepwater Lake/Pond Forested SwampOther Dense





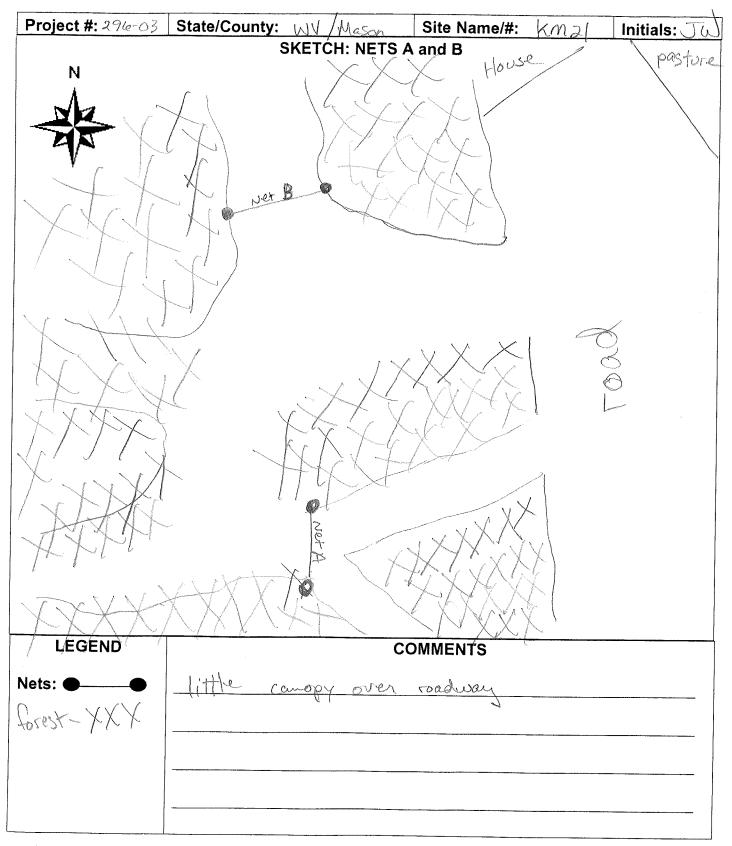
M_{α}
(orridor behaven) Sex Repro. ² (MIF)

j

AED AED ALL ALL	Date: 09 A 07 A ASON CO ASON CO Camera # cont moon moon	sust 20						WEAT	WEATHER DATA	A		
AEP AAN Count	CO Addr	5 21	7010	Time (0000 h)	, Temp (°C)		Wind Speed (estimated – see chart)*		Wind Direction: From to	% Cloud Cover (estimated)	d nated)	Comments
A Country A	Contractor #			2030			0			0	<u>.</u> \.	
A Count	ON PHASE*			2100	8.12 0		0			0	./.	
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Net/Trap/Anabat Net/Trap Type ¹ #	1 Latitude			Longitude	e	Length (m)	th Height (m)		• •	Time Down (0000 h)	С.	Picture #
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R N N	22 . 15 . 32	5	• 2	55 . 55	W" 8.73	0	<i>v</i>)			0140		
	r 0	-	0									
Net Placement/Site Description: NetS	on: Nets placed	, Ç	rard c	corridor	betwen	n Farst	St and	Woode	ded g	demeral.	Stream	NN
Capt Net	Snariae	Time	Age		Repro. ²	Wt		Belly	Wing Index*		Comments	nents
#	oheries		(Ad/Jv)	(M/F)		(g)	(mm)	(F/M/E)	(0-3)	Pictur	e # /Guan	Picture # /Guano/Hair Sample
Blaciurus	CNERDUS	2248	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Š	\rightarrow	23.5	20	Ś	C			
		0005	D.J.	N.	×	8.8	35	5	C			
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Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
NET SITE HABITAT DESCRIPTION
Project #: <u>296-03</u> Date: <u>16 August 2010</u> Biologists: <u>J. Wilson, C. Buggs</u>
Project Name: <u>AEP COZ</u> Site Name/#: <u>KMZI</u>
State: WV County: Mason USGS Quad:
Camera #: 69 Picture #s: 104-0428, 0424 GPS Unit #: A-6 Waypoint #: 42 Latitude: 38 ° 50 ' 310 "N Distance to closest water source (meters): 1 Km Type of water source: Rivee Water source name: 0 his River
ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):
Bank Height:meters Channel Width:meters Stream Width:meters
Substratum:BedrockBoulderCobbleGravelSandSilt/Clay
Still Water Present (Y/N): Average Water Depth:m or cmClarity (H,M,L):
VEGETATION:
Dominant Canopy Species (> 40 cm/16" dbh) Aces saccharum , Carya ovata, Acer alorum
Robinia pseudoacacia Robinia pseudoacacia, Allanthus altissima
Queters rubrum Acer saicharum, Leriodandhon tulipifera
Estimated dbh range: Lg: <u>LeO</u> Sm: <u>4(</u> Estimated dbh range: Lg: <u>39</u> Sm: <u>20</u>
Relative abundance of dominant vs. subdominant (ratio): // 25
Estimated canopy closure:ClosedModerateOpen
Roost tree potential consists of:Large Trees _X_SnagsBothNeither
Roost tree potential for the area is:HighModerateLow
Roost potential comments: no big trees w/ exteriating bank
Subcanopy clutter: <u>K</u> ClosedModerateOpen
Subcanopy comprised largely of: <u>Lower Branches of</u> Saplings Shrubs
Common Subcanopy Species: Oxydendron astosein Kubus spp., Lonicera spp. <u>Populus grandadantata Avercus alba</u> , <u>Cercis caredensis</u> , Sassafras Jabidum, Rhus typhinie, Robine pseudoacasia, Acerture
Habitat Description: Sassafsas Jabidon , Khus typhinie, Kobine pseudoacasta, Acertor
Ofen near off of read with multiple trails leading to forest & pasture - upland harding
Check all that apply:
Mature Upland Forest Recently Logged Forest Crop/Pasture Land Shrub/scrub Swamp ∠Young Upland Forest Pine Plantation Stream/River Vernal Pool Mature Lowland Forest Old Field Forested Swamp Other
Herbaceous Cover: SparseModerateDense
Revised June 2007 l





Project #: 346-03 Date: 10 Purgust 2010 Time rempression Project Name: AE P Co2 State: UV State: UV Biologists: UMISpan Site name#: First quarter MOON PHASE* 2200 24:10 State: UV Site name#: Full Site name#: County: MOON PHASE* 2200 24:15 Site name#: Camera #: 64 ORS Unit #: A Camera #: 64 MOON PHASE* 2320 24:15 Site name#: Full moon Waxing gibbous Full moon Last quarter Waxing crescent Maning crescent Frist quarter Waxing gibbous Full moon Last quarter Waring crescent MotTrap Typei Lastitude Last quarter NN Size 2444.1 Mont Plan NN Size 233.3 Mot Plan Size Maring crescent Intitude Last quarter Longitude Maring crescent Last quarter Maring crescent Last quarter Maring crescent Last quarter Maring crescent Last quarter	Speed Wind Direction: - see chart)* From to - From to	Dn: % Cloud Cover (estimated)	Comments
MEP Coz County: Mccoh Scient Fullison, C. Bergs 213 o 25.1 Fullison, C. Bergs 275 o 24.1 Arla Camera #: 67 2200 24.1 Arla Camera #: 67 2200 24.5 Wold Son Camera #: 67 2200 24.5 Wood PHASE* MOON PHASE* 2230 24.4 Waning crescent Waning globous 27.30 24.4 Waning crescent Waning globous 27.3 27.4 Waning crescent Naming globous 27.2 4.4/1.1 MN 37.5 5.0 \cdot 37.6 \cdot MN 38.0 \cdot 50 \cdot 23.3 \cdot MN 38.0 \cdot 50 \cdot 37.4 \cdot MN 38.0 \cdot 57 \cdot 444.1 MN 38.0 \cdot 57 \cdot 44.1 Stecles		ad a gib of a gib	
HEP CO2 Zero Z: 3 County: $Mesch$ T. Wilson, C: Boggs Km21 Zitzo Z: 1 Aria Zamera #: 64 Aria Camera #: 64 MOON PHASE* Zitzo Z: 2 Kitst quarter Zitzo Z: 2 Vaxing crescent First quarter Waxing crescent Waning gibbous Waning crescent Waning gibbous Waxing crescent Entitude Latitude Latitude NN Zi : 5 ' : 7: 4' '''''''''''''''''''''''''''''		all a side is	
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T. Wilson C. Bogs 2200 24.12 A-la Camera #: bq 2330 24.13 A-la Camera #: bq 2330 24.13 MOON PHASE* Pilot auter 2330 24.13 Waxing crescent First quarter 2330 24.13 Waxing crescent Waning gibbous 2000 24.13 Waning crescent Waning gibbous 21.14 2000 Waning crescent Moon PHASE* 01300 24.14 Moon Baring crescent Waning gibbous 21.0 N Waning crescent Mon 81 55 144/1 N MN 38 50 32.10 N 81 55 NN 38 50 32.10 N 81 55 Site Description: Nol 38 55 144/1 N 6 All N \circ \circ \sim n n n n All N $38 \circ \sim n n n $			
D. Wilson Camera #: 67 22.30 35.16 Aria Camera #: 67 23.30 24.53 Aria Camera #: 67 23.30 24.53 MOON PHASE* Vaxing crescent First quarter 233.0 24.53 Waxing crescent Waning glabous 233.0 24.63 24.53 Waning crescent Waning glabous 21.60 24.53 24.60 Waning crescent Latitude Latitude Longitude Leng No $22.5 \circ 31.6$ N $81 \circ 55 \circ 34.4$ N NN $38 \circ 50 \circ 32.3$ N $81 \circ 55 \circ 44.4$ N NN $38 \circ 50 \circ 32.3$ N $81 \circ 55 \circ 43.4$ N Site Description: Ald Site Description: N 0.1 0.1 Eplesteus Ester 2035 Ad M		N = 1	
Km21Camera #: 67 2732 241.8 ArleCamera #: 67 2332 241.8 MOON PHASE*MOON PHASE* 0020 237.1 232.2 Waxing crescentFirst quarter 0020 247.4 000 Waning crescentManing glibbous 0000 247.4 0000 Waning crescentLatitudeLatitudeLongitudeLengNN $324 \cdot 50$ 321.0 N $81 \cdot 55$ 444.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 NN $38 \cdot 50$ 32.3 N $81 \cdot 55$ 474.1 Site Description: $MetricMetricMetric19.4EpilesieusTimeAgeSex19.4Costruct2035AdMmr19.4$			
A- Le Camera #: 69 2330 24.5 MOON PHASE* Comera #: 69 200.00 Moon maxing crescent First quarter 233.0 24.4.5 Waxing crescent Waning gibbous Col 30 24.4.5 Waring crescent Maning gibbous Col 30 24.4.6 Moon Base scont Latitude Longitude NN Base scont Latitude Longitude NN Base scont Milting Store scont NN Base scont Latitude Longitude NN Base scont Longitude NN Base scont N N Site Description: Adf VN Milting Milting Species Time Age Sex N Cpfastour functur Zost Adf NN Milting			
Arte Camera #: 64 coso 757 74 MOON PHASE* Moon PHASE* eoso 257 24		, , , , , , , , , , , , , , , , , , ,	
MOON PHASE* MOON PHASE* Waxing crescent First quarter Waxing crescent First quarter Waning crescent Moon Waning crescent Moon Moon Moon Waning crescent Moon Maing crescent Moon Maing crescent Moon Maing crescent Moon Maing crescent Moon Moon 38 • 50 • 31.0 "N NN 38 • 50 • 32.3 "N Site Description: Met Site Cover Species Time Adden Mo Cpferstruet Feptors		0./	
MOON PHASE* MOON PHASE* Vaxing crescent First quarter Vaxing crescent Vaning gibbous Full moon Waning crescent Waning crescent Maning gibbous Non 32 · 5 · 32.0 "N NN 38 · 5 · 32.3 "N Site Description: Net Species Time Adduv MrF Repro.2 MrF President MrF Repro.2 MrF			
Waxing crescent First quarter O(30 24:4 Waxing crescent Vaning gibbous Full moon Waning crescent Waning crescent Maning gibbous No 38 · 50 · 31.0 °N NN 38 · 50 · 31.0 °N NN 38 · 50 · 32.3 °N Site Description: Net Species Time Adge Sex Repro. 2 Wt Prestruct 2.035 Adduluy MilF)		2.2	
Maning crescent Latitude Latitude Leng Net/Trap Type ¹ Latitude Latitude Longitude NN 38 ° 50 ' 31.0 "N 81 ° 55 ' 44.1 "W % NN 38 ° 50 ' 32.3 "N 81 ° 55 ' 43.4 "W % NN 38 ° 50 ' 32.3 "N 81 ° 55 ' 43.4 "W % Site Description: Net ° '''W % Stecles Time Age Sex Repro.2 Wt Cpfestous Fascus 20357 Ad/UN (MF) %		×1.	
Met/Trap Type! Latitude Latitude Longitude Leng Net/Trap Type! Latitude Longitude Longitude (m) NN 38 • 50 • 31.0 "N 81 • 55 • 44.1 "W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4" W 6 Site Description: Met/Add/V M 19.6" Epfezieus Fasteus 2035 Ad M			
Net/Trap Type1 Latitude Latitude Longitude Leng N/N 32 · 50 · 31.0 "N 81 · 55 · 44.1 "W 6 N/N 38 · 50 · 32.3 "N 81 · 55 · 44.1 "W 6 N/N 38 · 50 · 32.3 "N 81 · 55 · 43.4 "W 6 N/N 38 · 50 · 32.3 "N 81 · 55 · 43.4 "W 6 Site Description: Net/Site Description: Net/Site Description: N Species Time Age Sex Repro.2 Wt Epfasious Fuscus 2035 Ad M V 19.4"			
Net/Trap Type ¹ Latitude Latitude Longitude Lengitude NN 38 • 50 • 31.0 "N 81 • 55 • 44.1 "W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4 "W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4 "W 6 NN 38 • 50 • 32.3 "N 81 • 55 • 43.4 "W 6 Site Description: Net/Stacked over unimproved rond 9 Species Time Age Sex Epfestrue fuscue 2035 Ad M 19.4			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		Time Down (0000 h)	Picture #
NN 38 ° 50 ' 32,3 "N 81 ° 55 ' 43.4 "W 0 Iacement/Site Description: Net Shelled over unimproved rand Image: Species Time Age Sex Repro.2 Wt Image: Species Time Add/Jun M V 19:0	Lo 2030	0130 104-04	3640
Iacement/Site Description: Net * "N * "W Iacement/Site Description: Net Shelf over wimproved road # Species Time Age Sex Repro. ² Wt # Species Time Age Sex Repro. ² Wt B Eptesteur Eptesteur 2035 Ad M V 19, 0	LO 2030	-701	0 4 a f
lacementSite Description: Nets Started over wimproved read Net Species Time Age Sex Repro. ² Wt # V 19,0 C Eptesteus Eiseus 2035 Ad M V 19,0			
Net Species Time Age Sex Repro. ² Wt (g) (MF) (MF) (MF) (g) (g) (g) (g) (g) (g) (g) (g) (g) (g	th canepy		
Eplesteus Eiseus 2035 Ad M V 19.0	A Belly Wing Index*	Picture #	Comments /Guano/Hair Sample
	W		

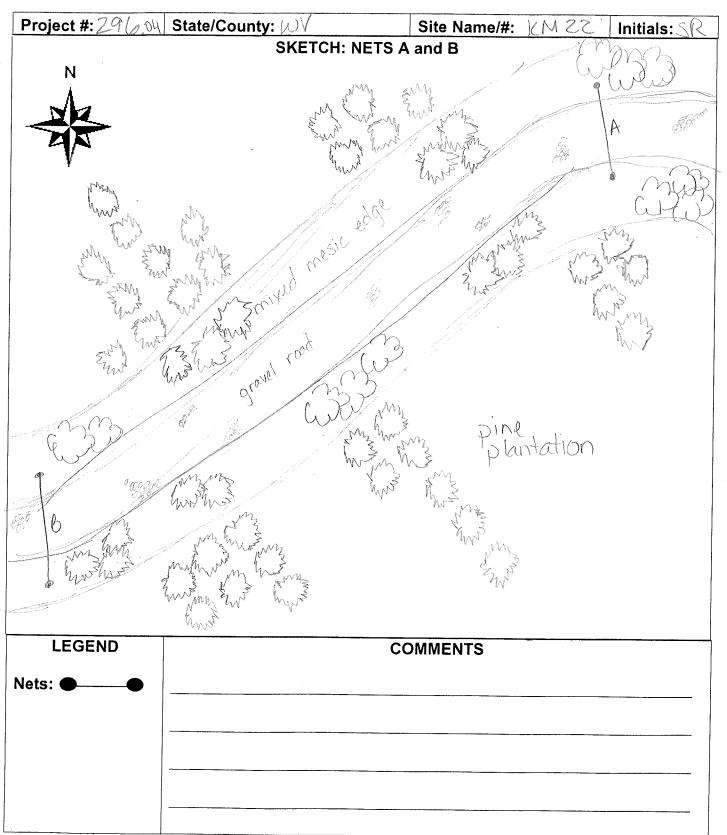
Appendix F

	рА	BAT CAPTURE DATA	DATA					WE	WEATHER DATA		
Drainat #. 296-0	96-02	Dato.	11 Bereit	2010	Time (0000 h)	Temp (°C)	Wind Speed (estimated – see chart)*		Wind Direction: From to	% Cloud Cover (estimated)	Comments
Iolect #		חמוב.			2030	22.0	M 1		10 - N		Minimum Links
Project Name:	TUE	005			2100	22 0	5-7-		M-C	10011	entropy of the second sec
State: N/V	County:	Mason			2130	P., 9	$\overline{\mathcal{U}}$	~	N N	100%.	
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iologists: //	Biologists: Ur Wrisch	C. Coyas			1	5	13	>	13 M	- J. Ø]
Site name/#·	KNN.					+++++++++++++++++++++++++++++++++++++++	- 3	3	1013	×/.Ø	(
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GPS Unit #:	A-6	Camera #:	sra #: 69		1	5.0	- 12		(x) - T	. 1.4	
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				allow							
waxiiig globous Last quarter		Vaning crescent		ennor					×		
Net/Trap/Anabat #	t Net/Trap Type ¹	Latitude	nde		Longitude		Length (m)	Height (m)	Time Up Tir (0000 h) ((Time Down (0000 h)	Picture #
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Q	22	> لا و		0	5 . 42.	 س	()	9	2030	104-1	せてかい
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et Placemen	Net Placement/Site Description:	Nets	stacked o	aver un	unimp roved	Fred	with.	Canopy			
ant Nat				Vuo	Cov Dan	Denro 2 Wt	REA.	Rally	Wing Index*		Comments
capi nei #	.,	Species	Time	Ad/Jv)				(F/M/E)	(0-3)		Picture # /Guano/Hair Sample
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				1							

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NET SITE HABITAT	
Project #: <u>296.64</u> Date: <u>10 Aug 2010</u>	Biologists: M.M. chards + S. Recces
Project Name: MEP CO2	Site Name/#:
State: <u>W</u> County: <u>Mason</u>	
Camera #: <u>kr160</u> Picture #s: <u>5127-5132</u> Latitude: <u>28° 51' 14.6</u> "N Distance to closest water source (meters): Water source name:	Longitude: <u>{{ \${ \$5 \$' 48.3 }"</u> W
ESTIMATED WATER SOURCE CHARACTERISTICS	(IF UNDER NETS): NA
Bank Height:meters Channel Width:	meters Stream Width:meters
Substratum:BedrockBoulderCobble	GravelSandSilt/Clay
Still Water Present (Y/N): Average Water De	pth:m or cm Clarity (H,M,L):
VEGETATION:	
	dominant Canopy Species (< 40 cm/16" dbh) ი
	uycus alba
	a rubran
Estimated dbh range: Lg: Sm: Estir	
Relative abundance of dominant vs. subdominant (rational concernment) Estimated canopy closure:Closed	
Roost tree potential consists of:Large Trees	
Roost tree potential for the area is:High	1
Roost potential comments:	
Subcanopy clutter:Closed	X Moderate Open
	ches ofSaplingsShrubs
Common Subcanopy Species: Pinas Strobas Acscalas Octo	ndra
Habitat Description: Pinus Strobus Plantation	
lining a grave road.	
Check all that apply:	_Crop/Pasture Land_Shrub/scrub Swamp_Stream/River_Vernal Pool_Emergent Wetland_Deepwater Lake/Pond_Forested Swamp_YOther Putes StradusDensePlantation



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Project #: <u>396, 04</u>	BAI	BAT CAPTURE DATA	E DATA					ME	WEATHER DATA		
	46.04	Date.	Date: 10 Act 2010		Time (0000 h)) Temp (°C)	Wind Speed (estimated – see chart)*	peed see chart)*	Wind Direction: From to	% Cloud Cover (estimated)	Comments
	1. 0.00	רמוקי אל			2020	37.3	\mathcal{O}		J	20%	
Project Name:	AEP CO	~			Subo	Ser 36	0			38%	
State. \///	County	Micon			212	26.0	٥		-	40%	
>					COCK	0 25.5				40910	
Biologists:	M. M; Chacles	₹ .×	ceve S		5225	11			The second	40 2%	
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Appendix F

F-211

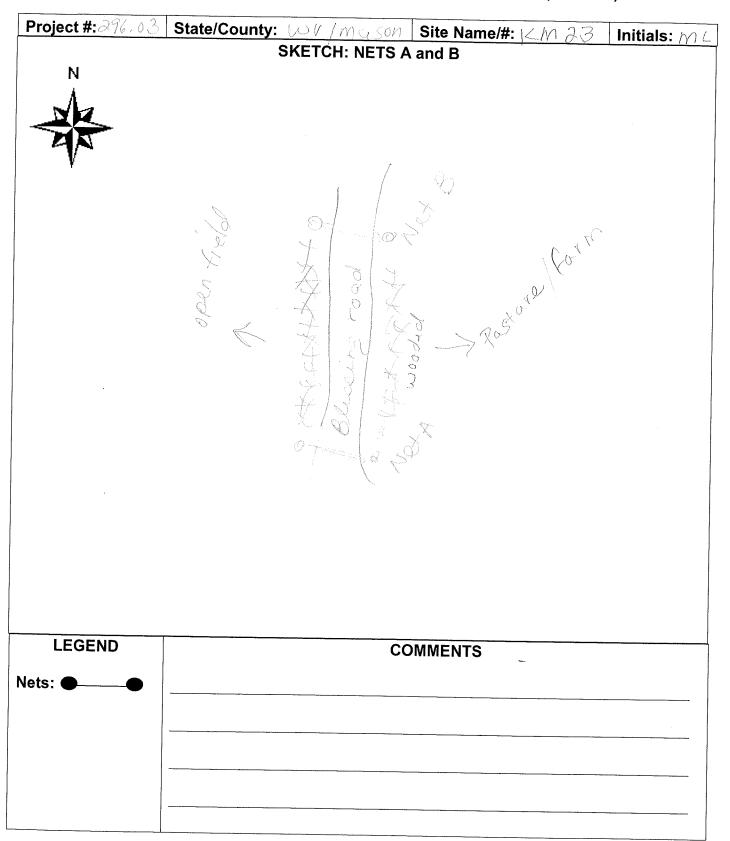
Project #: <u>246.04</u> Project Name: <u>AF</u> /		BAI CAPIUKE DAIA						ŇĒ	WEATHER DATA			
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Property of: Environmental Solutions & Innovations, Inc.
T81 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)
Project #: 296703 Date: Aug 11, 2010 Biologists: M.L.H/e, T.Hern Project Name: <u>AEP</u> Site Name/#: <u>KM23</u>
State: WV County: Mason USGS Quad:
Camera #: Picture #s: 015 016 GPS Unit #: 13 Waypoint #: Latitude:°
ESTIMATED WATER SOURCE CHARACTERISTICS (IF UNDER NETS):
Bank Height:metersChannel Width:meters Stream Width:meters
Substratum:BedrockBoulderCobbleGravelSandSilt/Clay
Still Water Present (Y/N): Average Water Depth:m or cm Clarity (H,M,L):
VEGETATION:
Dominant Canopy Species (> 40 cm/16" dbh) <u>Juglan nigia</u> <u>black locus</u> <u>trec of heaven</u>
Estimated dbh range: Lg: <u>20</u> Sm: <u>5</u> Estimated dbh range: Lg: <u>7</u> Sm: <u>5</u>
Relative abundance of dominant vs. subdominant (ratio): $15/25$
Estimated canopy closure:ClosedModerateOpen
Roost tree potential consists of:Large TreesSnagsBoth _ \nearrow Neither
Roost tree potential for the area is:HighModerateLow
Roost potential comments:
Subcanopy clutter:ClosedModerateOpen
Subcanopy comprised largely of: <u>Lower Branches of</u> SaplingsShrubs Canopy Trees
Common Subcanopy Species: <u>Black Locusti</u>
Habitat Description: Forest edge along rodside
Check all that apply:



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NET SITE HABITAT DESCRIPTION (continued)



Revised June 2007

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ESI	. 44147

Property of: Environmental Solutions & Innovations, Inc. 781 Neeb Road. Cincinnati, OH 45233 (Phone: 513-451-1777)

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			-	6											
¹ M = Monofilament, * Refer to table on th	$^{\rm T}$ M = Monofilament, ON = Old Nylon, NN = New Nylon, HT = Harp Trap; A = Anabat * Refer to table on the back	w Nylon, HT = H	Harp Trap; A =	Anabat	² Re	productive Cc	ondition: Fer	male = NR/P	² Reproductive Condition: Female = NR/PG/L/PL; Male = 1	↓ ↓				Page 1 of _	

Page 1 of _

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fonofilament,	ON = Old Nulon NN = N	¹ M - Monofilament ON - Old Nulon NN - New Nulon HT - Harn Tran: A - Anahat	104000	;								

APPENDX E MIST NET SITE PHOTOGRAPHS





Site KM1 – Net A



Site KM2 - Net B



Site KM3 – Net A



Site KM4 – Net B



Site KM5 – Net A



Site KM6 - Net A



Site KM7 – Net A



Site KM8 – Net B



Site KM9 – Net A



Site KM10 - Net B



Site KM11 – Net A



Site KM12 – Net B



Site KM13 – Net A



Site KM14 – Net B



Site KM15 – Net A



Site KM16 - Net B



Site KM17 - Net A



Site KM18 – Net A



Site KM19 – Net A



Site KM20 - Net B



Site KM21 – Net A



Site KM22 – Net B



Site KM23 - Net A



Site KM24 – Net B



Site KM25 - Net B



Site KM26 - Net A



Site KM27 – Net A



Site KM28 - Net B

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