

WORK AND SAFETY PLAN

2014 Kudzu Management Project for Indiana

1.0 Treatment Area

The Indiana Department of Natural Resources (IDNR), Division of Entomology and Plant Pathology proposes a project to treat kudzu populations in late summer or autumn of 2014. The proposed action includes 53 sites in 24 counties in Indiana which totals an estimated 61.35 acres (Table 1 below and maps in Appendix B).

Table 1. Number of Treatment Sites and Acres by County for 2014.

COUNTY	TREATMENT SITES	TREATMENT ACRES
Clark	6	4.18
Crawford	2	1.06
Clay	4	9.20
Dubois	6	4.22
Floyd	1	1.02
Gibson	2	2.10
Greene	1	3.0
Harrison	2	2.71
Jefferson	1	0.23
Jennings	6	6.35
Knox	1	1.79
Lake	1	0.20
Laporte	2	0.24
Lawrence	3	2.10
Martin	3	0.57
Morgan	1	1.45
Orange	2	1.83
Owen	1	0.34
Posey	1	0.65
Starke	1	0.20
Sullivan	2	5.89
Vigo	1	1.75
Warrick	2	9.59
Washington	1	0.68
Total Proposed Project	53	61.35

2.0 Description of the Proposed Treatment Sites

(See Table 2) Definitions for Descriptions of Proposed Treatment Sites).

(See Table 3) Summary of 2014 Proposed Treatment Sites by Acreage and Treatment Method*.

Clark-3: The proposed treatment site contains 0.64 acres. The site is composed of Maple, Walnut, Pine, Yellow Poplar, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. The vascular plant *Lechea racemulosa* (Illinois Pinweed) (Family: Cistaceae) is an Indiana State Endangered plant species that has been previously identified by DNR staff at the site. The site is located along a stream bank, and has a risk of flooding. The soil types at the site are Beanblossum Silt Loam (BcrAW) (1-3% slopes, occasionally flooded, very brief duration) and Gilwood-Brownstown Silt Loam (GgbG) (25-75% slopes). Beanblossum Silt Loam and Gilwood-Brownstown Silt Loam series of soils consist of deep, well drained soils. The potential for surface water runoff in Beanblossum Silt Loam is very low to low and medium to high in Gilwood-Brownstown Silt Loam. Permeability is moderate to rapid in both. There is a low risk of erosion potential at the site. A small home is adjacent to the southeast side of the site, but not directly located in the site. The site was treated in 2013 with glyphosate. This site has a medium density population and glyphosate is proposed for 2014. Glyphosate will be applied as a foliar treatment.

Clark-4: The proposed treatment site contains 1.36 acres. The site is composed of Flowering Dogwood, American Beech, Ash, Oak, Black Cherry and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Knobcreek-Navilleton-Haggett Silt Loam (KxoC2) (karst, rolling, eroded) and Crider-Bedford-Navilleton Silt Loam (CtwB) (2-6% slopes). The Knobcreek-Navilleton-Haggett series of soils consists of deep, well drained soils. Permeability is slow to moderate and the potential for surface water runoff is high. Crider-Bedford-Navilleton series of soils consists of generally very deep, moderately well to well drained soils. Permeability is generally moderate above the fragipan and slow in the fragipan. The potential for surface water runoff is medium. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. There is a high risk of erosion potential at the site. The erosion plan consists of seeding with 84 lbs./acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. No houses occur on the site. The site was treated in 2012 and 2013 with clopyralid. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Clark-5: The proposed treatment site contains 0.32 acres. The site is composed of Silver Maple, Honeysuckle, Multiflora Rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Urban land-Udarents (UnpA) (loamy substratum, complex terrace, 0-3% slopes). The drainage, permeability and potential for surface water runoff can vary greatly on Urban land Udarent soil sites because the natural soils

have been disturbed. Soil drainage at this site is likely moderately well drained. Permeability is unknown and the potential for surface water runoff is likely low. There is a low risk of erosion potential at the site. No houses occur on the site, but a mobile home park is immediately north of the site. The site was treated in 2012 and 2013 with clopyralid. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Clark-6: The proposed treatment site contains 0.02 acres. The site is composed of American Sycamore, American Sweetgum, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Urban land-Udarents (UngB) (fragipan substratum, complex, till plain, 0-12% slopes). The drainage, permeability and potential for surface water runoff can vary greatly on Urban land Udarent soil sites because the natural soils have been disturbed. Soil drainage at this site is likely moderately well drained. Permeability is unknown and the potential for surface water runoff is likely low. There is a low risk of erosion potential at the site. This site is on a residential property and is located in the back yard of this property near a public golf course. The site was treated in 2012 and 2013 with Clopyralid. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Clark-7: The proposed treatment site contains 0.37 acres. The site is composed of Sugar Maple, Black Walnut, American Elm, Virginia Pine and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Trappist Silty Clay Loam (ThbD5) (6-18% slopes, gullied) and Deputy-Trappist Silt Loam (DtvC2) (6-12% slopes, eroded). The Trappist and Deputy-Trappist series of soils consist of moderately well drained to well drained soils. Permeability is slow to moderate and the potential for surface water runoff is high. There is native vegetation growing near the kudzu site, limited slope and limited water flow running through the site. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2012 and 2013 with Clopyralid. This site has a medium density population and clopyralid and glyphosate is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Clark-8: The proposed treatment site contains 1.47 acres. The site is composed of Sugar Maple, Aspen, Flowering Dogwood, White Ash, Tulip Poplar, Oak and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified

Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Gilwood-Wrays Silt Loam (GgfE2) (12-25% slopes, eroded), Gilwood-Brownstown Silt Loam (GgbG) (25-75% slopes) and Knobcreek-Navilleton Silt Loam (KxkC2) (6-12% eroded). All three soil types are well drained. Permeability varies from impermeable to moderate. The potential for surface water runoff is high for all types. There is a low risk of erosion potential at the site. No houses occur on the site. The site has had no prior treatment. This site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Crawford-5: The proposed treatment site contains 0.83 acres. The site is composed of Red Maple, White Ash, Virginia Pine, American Sycamore and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Udorthents Soils (UbxD) (6-18% slopes, gullied). The Udorthent series of soils consists of moderately well drained to well drained soils. Permeability varies from very low to high. The potential for surface water runoff is medium to very high. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2012 and 2013 with clopyralid and glyphosate. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Crawford-6: The proposed treatment site contains 0.23 acres. The site is composed of White Ash, Eastern Red Cedar, Yellow Foxtail, Canada goldenrod and grasses. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site mostly lies on top of a sloped area, with surface water near to the site. The soil type at the site is Pits, Quarry (Pml). The drainage, permeability and potential for surface water runoff can vary greatly on Pits, Quarry soil sites because the natural soils have been highly disturbed. The potential for surface water runoff is likely moderate at this site. Permeability and drainage are unknown. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2013 with clopyralid. The site has a medium density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Clay-1: The proposed treatment site contains 0.94 acre. The site is composed of a large number of Sweetgum, and also Maple, Ash, Black Walnut, Tulip Poplar, Oak, Elm and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. A creek and drainage ditches occur within the site. The soil types at this site are Cincinnati Silt Loam (CcC2) (6-12% slopes, eroded), Shoals Silt Loam (Sh) (frequently flooded) and Iva Silt Loam (0-2% slopes). Cincinnati Silt Loam soils are well drained. Shoals and Iva Silt Loam soils are poorly drained soils. These soil types have slow to moderate permeability. Cincinnati Silt Loam soils have high potential for surface water runoff. Shoals and Iva Silt Loam soils have low potential for surface water runoff. No erosion plans are

needed at this site because it has been treated in stages with selective herbicides that preserved native vegetation. There is a low risk of erosion potential at the site because an abundance of non kudzu vegetation has returned to the site and the site is flat. No houses occur on the site. This site was treated in 2009 and 2010 with Clopyralid. This site has a low density population and metsulfuron-methyl is proposed for 2014. Metsulfuron-methyl is a non selective broad leaf herbicide that is highly effective at killing kudzu. It will be applied in a selective manner and used to eliminate resistant kudzu growth as well as help manage herbicide resistance issues.

Clay-2: The proposed treatment site contains 1.00 acre. The site is composed of abundant Red Maple along with White Ash, Flowering Dogwood, Red Oak, Tulip Poplar and other species of trees, shrubs and plants. This site occurs within Indiana Classified Forest or Wildlands property. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A small dam, drainage area and pond occur within the site. The soil types at this site are Cincinnati Silt Loam (CcC3) (6-12% slopes, severely eroded) and Hickory Silt Loam (HcD3) (12-18% slopes, severely eroded). These soils are well drained with slow to moderate permeability. The potential for surface water runoff is very high. No erosion plans are needed at this site because it has been treated in stages with selective herbicides that preserved native vegetation. There is a low risk of erosion potential at the site because of an abundance of existing non kudzu vegetation. No houses occur on the site. This site was treated with Clopyralid in 2009 and 2010, and treated with clopyralid and metsulfuron-methyl in 2011 and 2012. This site has a low density population and metsulfuron-methyl is proposed for 2014. Metsulfuron-methyl is a non selective broad leaf herbicide that is highly effective at killing kudzu. It will be applied in a selective manner and used to eliminate resistant kudzu growth as well as help manage herbicide resistance issues.

Clay-3: The proposed treatment site contains 0.26 acres. The site is composed of Maple, Ash, Elm, Oak, Flowering Dogwood and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. There are connecting ponds immediately adjacent to the site. The soil types at this site are Iva Silt Loam (IvA) (0-2% slopes) and Ava Silt Loam (AvB2) (2-6% slopes, eroded). These soils vary from being poorly drained to moderately well drained. Both soil types have slow permeability. The potential for surface water runoff is slow with Iva Silt Loam soils and high with Ava Silt Loam soils. There is a moderate risk of erosion potential at the site. No houses occur on the site. This site was treated with glyphosate in 2009. This site has a low density population and glyphosate is proposed for 2014. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Clay-5: The proposed treatment site contains 7.00 acres. The site is composed of Maple, American Beech, Tulip Poplar, Pitch Pine, American Sycamore, Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. Ponds occur within the site. The soil type at this site is Fairpoint Shaly Silty Clay Loam (FcG) (33-90% slopes). The Fairpoint series of soils consists of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. The site has wide varying and steep slopes. No erosion plans are needed at this site because it has been treated in stages with selective herbicides that preserved native

vegetation. No houses occur on the site. This site was treated with clopyralid in 2008 and 2009, treated with clopyralid and glyphosate in 2010 to 2012, and treated with clopyralid, glyphosate and metsulfuron methyl in 2013. This site has both a low and medium density population levels and clopyralid, glyphosate and metsulfuron methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment. There is a severe risk of erosion potential at the site however the staged treatments have managed erosion risk.

Dubois-1: The proposed treatment site contains 1.20 acres. The site is composed of Flowering Dogwood, Virginia Pine, Oak, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A stream occurs within the site. The soil type at this site is Fairpoint Shaly Silt Loam (FcB) (0-8 % slopes). The Fairpoint Shaly Silt Loam series of soils consist of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. No houses occur on the site. The site was treated with clopyralid in 2009, and treated with clopyralid and glyphosate in 2010 to 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment. There is a moderate risk of erosion potential at the site.

Dubois-2: The proposed treatment site contains 2.41 acres. The site is composed of Flowering Dogwood, Black Walnut, White Oak, American Elm, Shagbark Hickory and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A stream occurs within the site. The soil type at this site is Fairpoint Shaly Silt Loam (FcB) (0-8% slopes). The Fairpoint Shaly Silt Loam series of soils consist of well drained soils. Permeability is very low to moderately high. The potential for surface water runoff is very high. No houses occur on the site. The site was treated with clopyralid in 2009, and treated with clopyralid and glyphosate in 2010 to 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment. There is a moderate risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used.

Dubois-3: The proposed treatment site contains 0.05 acres. The site is composed of Red Maple, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur

within the site. The soil type at this site is Gilpin-Berks Complex (GoF) (20-50% slopes). Gilpin-Berks Complex series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. There is low risk of erosion potential at the site. No houses occur on the site. The site was treated with clopyralid in 2011 and clopyralid and glyphosate in 2012 and 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron- methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Dubois-4: The proposed treatment site contains 0.43 acres. The site is composed of White Ash, Red Oak, Shortleaf Pine, Virginia Pine, Shagbark Hickory, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. An erosion ditch which may contain periodic water occurs within the site. The soil type at this site is Gilpin-Berks Complex (GoF) (20-50% slopes). Gilpin-Berks Complex series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. There is a low risk of erosion potential at the site. Native vegetation exists at the site and can be preserved with the use of selective herbicides and selective application of herbicides. No houses occur on the site. The site was treated with clopyralid in 2011 and clopyralid and glyphosate in 2012 and 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Dubois-5: The proposed treatment site contains 0.10 acres. The site is composed of Red Maple, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Gilpin-Berks Complex (GoF) (20-50% slopes) and Gilpin Silt Loam (GID3) (12-18% slopes, severely eroded). The Gilpin-Berks Complex and Gilpin Silt Loam series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2013 with clopyralid. The site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Dubois-6: The proposed treatment site contains 0.03 acres. The site is composed of White Ash, Red Oak, Shortleaf Pine, Virginia Pine, Shagbark Hickory, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. An erosion ditch which may contain periodic water occurs within the site. The soil types at this site are Gilpin-Berks Complex (GoF) (20-50% slopes) and

Gilpin Silt Loam (GID3) (12-18% slopes, severely eroded). The Gilpin-Berks Complex and Gilpin Silt Loam series of soils consists of well drained soils. Permeability is moderate to moderately rapid. The potential for surface water runoff is negligible to high. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2013 with clopyralid. The site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Floyd-4: The proposed treatment site contains 1.02 acres. The site is composed of Tulip Poplar, Red Oak, Flowering Dogwood, Eastern Redbud, Black Locust, Multiflora Rose and other species of trees, shrubs and plants. Legumes occur within the site. The site occurs on a DNR Nature Preserve property. No threatened or endangered species are known to occur within the site. A small pond exists on the north side of the site and a creek runs along the west side of the site. The soil type at this site is Gnawbone-Kurtz Silt Loam (GmaG) (20-60% slopes). The Gnawbone-Kurtz series of soils consists of well drained soils. Permeability is moderate. The potential for surface water runoff is medium to high. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2013 with clopyralid. The site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Gibson-1: The proposed treatment site contains 1.66 acres. The site is composed of Ash, Black Walnut, Black Cherry, Honeysuckle, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. This site occurs adjacent to soybean fields. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Alford Silt Loam (AIC3) (6-12% slopes, severely eroded), Sylvan Silt Loam (SyC3) (6-12% slopes, severely eroded) and Alford Silt Loam (AIB2) (2-6% slopes, eroded). The Alford Silt Loam and Sylvan Silt Loam series of soils consist of well drained soils. Permeability is moderate. The potential for surface water runoff is low to very high in Alford series soils and medium to high in Sylvan series soils. There is a limited flow of water into and through the site and selective herbicides will preserve the native vegetation. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2012 with clopyralid and in 2013 with clopyralid and glyphosate. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Gibson-3: The proposed treatment site contains 0.44 acres. The site is composed of Sugar Maple, Black Walnut, American Elm, Locust species and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Alford Silt Loam (AIB2) (2-6% slopes, eroded). The Alford Silt Loam series of soils consist of well drained soils. Permeability is moderate. The potential for surface water runoff is low to very

high. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. The erosion plan consists of seeding with 84 lbs./acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. There is a medium risk of erosion potential at the site. A house occurs on the site. The site was treated in 2012 and 2013 with Clopyralid. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Greene-5: The proposed treatment site contains 4.9 acres of kudzu. Only 3.0 acres of the site will be treated in 2014 in order to prevent serious erosion. The site is composed of Sugar Maple, Black Walnut, Sassafras, American Sycamore and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Parke Silt Loam (PbD2) (12-18% slopes) and Princeton Fine Sandy Loam (6-12% slopes). These soils are well drained, have moderate permeability and the potential for surface water runoff is from moderate to very high. There is a high risk of erosion potential at this site. No houses occur on the site. This site has had no prior treatment. This site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. The site will be treated in stages to reduce potential erosion problems.

Harrison-6: The proposed treatment site contains 2.69 acres. The site is composed of Maple, Flowering Dogwood, Oak, Black Cherry, Sassafras and other species of trees, shrubs and plants. No legumes occur within the site, but this site occurs adjacent to soybean fields. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Vertrees Crider Caneyville Complex (VcaC3) (karst, rolling, severely eroded), Vertrees Haggatt Caneyville Complex (VccD3) (karst, hilly, severely eroded) and Vertrees Crider Caneyville Silt Loam (VcbD2) (karst, hilly, eroded). These soil series consist of well drained soils. The potential for surface water runoff of these soils varies from low to high. Permeability is moderately slow to moderate. There is a low risk of erosion potential at the site. No houses occur on the site, but a house occurs approximately a fourth mile from the site. The site was treated in 2012 and 2013 with Clopyralid. This site has both high and medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Harrison-12: The proposed treatment site contains 0.02 acres. The site is composed of grasses and Engelmann's Adder's-tongue plant is present. No legumes occur within the site. No trees occur on the site. No threatened or endangered species are known to occur within the site. No water occurs on the site. The soil types at this site are Caneyville-Haggatt-Knobcreek Silt Loam

(CbrD2) (karst, hilly, eroded) and Deuchars-Apalona-Wellston Silt Loam (DeaC2) (6-12% slopes, eroded). These soils consist of moderately well drained to well drained. The potential for surface water runoff on these soils is medium to very high. Permeability is moderate to moderately slow. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2013 with clopyralid. The site has a low density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Jefferson-1: The proposed treatment site contains 0.23 acre. The site is composed of Red Maple, Sycamore, Sassafras, Flowering Dogwood, Multiflora rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Rossmoyne Silt Loam (RoB2) (2-6% slopes, eroded) and Jennings Silt Loam (JnC2) (6-12% slopes, eroded). These soils are moderately well drained, have low permeability and a moderate potential for surface water runoff. There is a low risk of erosion potential at the site. No houses occur within the site. The site was treated in 2011 with glyphosate and metsulfuron-methyl. This site has a medium density population and glyphosate and metsulfuron-methyl are proposed for 2014. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron- methyl will be applied in a selective manner and as a spot treatment.

Jennings-6: The proposed treatment site contains 1.57 acres. The site is composed of Maple, Flowering Dogwood, White Pine, Oak, American Elm and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. A creek occurs 0.75 miles from the site. The soil types at this site are Blocher Cincinnati Silt Loam (BlgC3) (6-12% slopes, severely eroded), Bonnell Hickory Blocher Complex (BnuD3) (12-25% slopes, severely eroded) and Bonnell Blocher Hickory Silt Loam (BlkE2) (12-25% slopes, eroded). These series of soils consist of moderately well drained to well drained soils. The potential for surface water runoff is low to very high. Permeability is moderately slow to moderate. There is a moderate risk of erosion potential at the site, however the prior treatments have managed erosion risk and no erosion plan will be used. No houses occur within the site. This site has very difficult access. The site was treated with Clopyralid in 2009 and 2010 and with Clopyralid in 2012 and 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Jennings-7: The proposed treatment site contains 2.30 acres. The site is composed of Maple, Ash, Eastern White Pine, American Sycamore, Kentucky Coffeetree, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil

types at this site are Ryker Muscatatuck Silt Loam (RzfA) (0-2% slopes, terrace), Ryker Muscatatuck Silt Loam (RzfB2) (2-6% slopes, eroded, terrace) and Whitcomb Silt Loam (WnmA) (0-2% slopes). Ryker Muscatatuck Silt Loam soils are well drained with moderate permeability and low potential for surface water runoff. Whitcomb Silt Loam soils are somewhat poorly drained with slow to moderate permeability and a medium potential for surface water runoff. There is a low risk of erosion potential at the site. No houses occur within the site, however, a hypersensitive individual with COPD resides in a house immediately adjacent to the site. The site was treated with clopyralid in 2009, 2010 and 2012, and was treated with clopyralid and glyphosate in 2011. This site has a low density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron- methyl will be applied in a selective manner and as a spot treatment.

Jennings-8: The proposed treatment site contains 0.14 acre. The site is composed of area without any trees, shrubs or other plants. No legumes occur within the site. No water sources occur within the site. The soil type at this site is Haymold Silt Loam (HcgAH) (0-2% slopes). This soil type is well drained with moderate permeability and low potential for surface water runoff. The site also contains gravel fill from the road. There is a low risk of erosion potential at the site. No houses occur on the site. The site was in 2009 and 2010 with clopyralid and treated in 2011 with metsulfuron-methyl. This site has a low density population and metsulfuron-methyl is proposed for 2014. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Jennings-12: The proposed treatment site contains 0.38 acres. The site is composed of Multiflora Rose, grasses, Yellow Foxtail, Honey Locust and other species of trees, shrubs and plants. Legumes occur within the site. 2013 Early Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the State Endangered Species *Tyto alba* (barn owl) within a half mile of the site. No water sources occur within the site. The soil type at this site is Bonnell Blocher Hickory Silt Loam (BlkE2) (12-25% slopes, eroded). Bonnell Blocher Hickory Silt Loam soils consist of moderately well drained to well drained soils. The potential for surface water runoff is medium to very high. Permeability is moderate to moderately slow. There is a low risk of erosion potential at the site and the site will be monitored. No houses occur on the site. The site was treated with clopyralid in 2011, 2012 and 2013. This site has a high density population and clopyralid and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Jennings-13: The proposed treatment site contains 0.29 acre. The site is composed of Sugar Maple, Tulip Poplar, Red Oak, Flowering Dogwood and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water

sources occur within the site. The soil types at this site are Ryker Grayford Muscatatuck Complex (RzhC3) (karst, rolling, severely eroded), Caneyville Rock Outcrop Complex (CcaG) (25-60% slopes) and Bonnell Blocher Hickory Silt Loam (BlkE2) (12-25% slopes, eroded). These soils are all well drained with moderate permeability. The potential for surface water runoff varies from moderate to high. There is a low risk of erosion potential at the site. No houses occur on the site. The site has had no prior treatments. This site has a high density population and Triclopyr is proposed for 2014. Triclopyr will be applied in a selective manner.

Jennings-14: The proposed treatment site contains 1.67 acres. The site is composed of White Ash, Black Walnut, Tulip Poplar, Multiflora rose, Elm and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Ryker Muscatatuck Silt Loam (RzgC2) (karst, rolling, eroded), Deputy Trappist Silty Clay Loam (DtzC3) (6-15% slopes, severely eroded), Blocher Soft Black Shale Substratum Jennings Deputy Silt Loam (BlcC3) (6-12% slopes, severely eroded) and Nabb Silt Loam (NaaB2) (2-6% slopes, eroded). These soil types are moderately well drained with slow to moderate permeability. The potential for surface water runoff varies from moderate to very high. There is a low risk of erosion potential at the site. No houses occur on the site. The site has had no prior treatments. The site has a high density population and clopyralid and triclopyr are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Triclopyr will be applied in a selective manner to open areas of the site without trees. Clopyralid will be applied to the tree covered portion of the site in order to preserve the existing trees at the site. Cut stump application of triclopyr to large vines will be done when access allows for such applications to occur.

Knox-1: The proposed treatment site contains 1.79 acres. The site is composed of Red Maple, Tulip Poplar, Red Oak, American Beech, Multiflora rose and other species of trees, shrubs and plants. Legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The site is highly eroded with gullies. The soil types at this site are Alford Silt Loam (AID3) (12-18% slopes, severely eroded) and Sylvan Silt Loam (SyF) (25-40% slopes). These are well drained soils with moderate permeability and very high potential for surface water runoff. There is a high risk of erosion potential at the site. No houses occur on the site. The site has had prior treatment with glyphosate by the landowners. The site has a low to medium density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce the need for erosion control measures.

Lake-1: The proposed treatment site contains 0.20 acre. The site is composed of White Oak, Red Oak, Willow, Catalpa, Multiflora rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. The site is immediately adjacent to a river. The soil types at this site are Walkkill Silt Loam (Wa) (0-2% slopes) and Plainfield Fine Sand (PIB). Walkkill Silt Loam are poorly drained soils with moderate permeability and Plainfield Fine Sand soils are excessively drained with very high permeability. The potential for surface water runoff with these soils is low. There is a moderate risk of erosion potential at the site. There is a house and a small business adjacent to

this site, as well as a parking lot. The site has had no prior treatment. The site has a high density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce the need for erosion control measures. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines growing in trees. Glyphosate will also be applied for the areas that are closest to the river branch in order to prevent clopyralid from entering the surface water. Cut stump applications reduce the need for large volume foliar applications.

Laporte-1: The proposed treatment site contains 0.16 acre. The site is composed of Elm, Red Maple, White Ash, Black Walnut, Multiflora rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. The site exists on a dam at a boy scout camp and water is very close to the soil surface. The soil types at this site are Tracy Sandy Loam (TcD2) (12-18% slopes, eroded) and Histosoils and Aquolis Soils (Hh). Tracy Sandy Loam soils are well drained soils while Histosoils and Aquolis soils are poorly drained. Permeability in both these soils varies. Tracy Sandy Loam soils have a high potential for surface water runoff, and Histosoils and Aquolis soils have a low potential for surface water runoff and tend to frequently have shallow standing water. There is a low risk of erosion potential at the site. No houses occur on the site. The site has a low density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce the need for erosion control measures. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Laporte-2: The proposed treatment site contains 0.08 acre. The site is composed of Red Oak, Apple, Multiflora rose and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Chelsea Fine Sand (ChC) (6-12% slopes). These soils are excessively drained, have high permeability and the potential for surface water runoff is low. There is a low risk of erosion potential at the site. No houses occur on the site. The site has had no prior treatment. The site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce the need for erosion control measures.

Lawrence-1: The proposed treatment site contains 1.62 acres. The site is composed of Sugar Maple, Ash, Black Walnut, Redbud, Tulip Poplar, Multiflora rose and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Crider Silt Loam (CspC2) (6-12% slopes, eroded) and Wellston-Adyeville Silt Loam (WpoD2) (12-18% slopes eroded complex). These soils are well drained, permeability varies from very low to high and the potential for surface water runoff is moderate to high. There is a moderate risk of erosion potential at the site. There is a house that exists in the site and another house located immediately adjacent to the south of the site. The site was treated in 2009 with clopyralid. This site has a low density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native

vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Lawrence-7: The proposed treatment site contains 0.16 acres. The site is composed of Sugar Maple, Ash, Tulip Poplar, Red Oak, American Elm, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Frederick-Crider Silt Loam (FknC2) (karst, 2-12% slopes, eroded complex). This soil type consists of well drained soils, moderate permeability and the potential for surface water runoff is low to very high. There is a low risk of erosion potential at the site. This site exists on city property behind a residential area and 4 houses are located immediately adjacent to the site. Houses occur around the site. Duke Energy will need notification prior to treatment due to kudzu vines growing up electrical poles. The site was treated with Clopyralid in 2010 and 2011. The site was treated with Metsulfuron methyl in 2012. This site has a low density population and Glyphosate and Metsulfuron methyl are proposed for 2014. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron methyl will be applied in a selective manner and as a spot treatment.

Lawrence-11: The proposed treatment site contains 0.32 acres. The site is composed of Red Oak, White Ash, American Sycamore, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site occurs a few hundred feet away from the White River. The soil type at this site is Crider Silt Loam (CspD2) (12-18% slopes, eroded). Crider Silt Loam soils are well drained. The potential for surface water runoff is low to high. Permeability is moderate. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated in 2012 with clopyralid and with clopyralid and glyphosate in 2013. This site has a medium density population and Clopyralid and Glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Martin-5: The proposed treatment site contains 0.28 acres. The site is composed of American Sycamore, American Sweetgum, Rubus species, Eastern Redbud, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Wellston-Tipsaw-Adyeville complex (WpfG) (18-70% slopes) and Gatchel Loam (GacAW) (1-3% slopes, occasionally flooded, very brief duration). These series of soils consist of well drained to somewhat excessively drained soils. The potential for surface water runoff ranges from low to rapid. Permeability is moderate to moderately rapid. There is a low risk of erosion potential at the site. No houses occur on the site. This site is on U.S. Gypsum property. The site was treated in 2012 with clopyralid and with clopyralid and glyphosate in 2013. This site has a medium density population and clopyralid and glyphosate are proposed for 2014.

Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Martin-6: The proposed treatment site contains 0.14 acres. The site is composed of Eastern White Pine, Black Cherry, Flowering Dogwood and other species of shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this site is Apalona Silt Loam (AgrB) (2-6% slopes). Apalona Silt Loam series of soils are moderately well drained. The potential for surface water runoff is medium to very high. Permeability is moderate above the fragipan and very slow in the fragipan and below. There is a low risk of erosion potential at the site. A house is located adjacent to the site. The site was treated in 2013 with clopyralid. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Martin-7: The proposed treatment site contains 0.15 acre. The site is composed of Redbud, Maple, White Ash, White Oak, American Elm, Multiflora rose and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at this is Wellston Silt Loam (WhfC2) (6-12% slopes, eroded). This soil type consists of well drained soils, moderate permeability and the potential for surface water runoff is moderate to high. There is a low risk of erosion potential at the site and the site. No houses occur on the site. The site has had no prior treatments. This site has a medium density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Morgan-3: The proposed treatment site contains 1.45 acres. The site is composed of Shagbark Hickory, Red Oak, American Elm, American Beech, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Ava Silt Loam (AvB) (2-6% slopes) and Wellston Silt Loam (WfC) (6-12% slopes). These series of soils consist of moderately well drained to well drained. The potential for surface water runoff in the Ava series of soils is high and is medium to rapid in the Wellsto series of soils. Permeability is moderate in these soils. There is a high risk of erosion potential at the site. A soil erosion plan is developed for this site to manage any soil erosion which may occur after kudzu is removed. The erosion plan consists of seeding with 84 lbs/acre of cereal rye after treatment and frost seeding with 35 lbs./acre of fescue. No houses occur on the site. The site was treated with clopyralid in 2011, 2012 and 2013. This site has a medium density population and clopyralid and glyphosate is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Orange-2: The proposed treatment site contains 0.28 acres. The site is composed of an area with no trees, shrubs or plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at the site are Wellston-Adyeville-Ebal Silt Loam (WppD2) (12-18% slopes, eroded), Crider Silt Loam (CspC2) (6-12% slopes, eroded) and Crider-Caneyville Silt Loam (CtwD2) (12-18% slopes, eroded). These soils are well drained. Permeability is moderate. The potential for surface water runoff ranges from low to rapid. There is a low risk of erosion potential at the site and the site. A commercial building is located adjacent to the site. The site has had no prior treatment. This site has a high density population and clopyralid is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures.

Orange-3: The proposed treatment site contains 1.55 acres. The site is composed of Maple, Flowering Dogwood, White Ash, Red Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil type at the site is Wellston-Adyeville-Ebal Silt Loam (WppD2) (12-18% slopes, eroded). These soils consist of moderately well drained to somewhat excessively drained. The potential for surface water runoff ranges from low to rapid. Permeability is moderate. There is a moderate risk of erosion potential at the site and the site will be monitored. No houses occur on the site. The site was treated in 2012 and 2013 with clopyralid. This site has a medium density population and clopyralid and glyphosate is proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Owen-1: The proposed treatment site contains 0.34 acres. The site is composed of abundant Tulip Poplar along with Oak, Red Maple, American Beech, Flowering Dogwood and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. A pond and stream occur 0.25 miles from the site. The soil types at the site are Zanesville Silt Loam (ZamB2) (soft bedrock substratum, 2-6% slopes, eroded) and Zanesville Silt Loam (ZamC3) (soft bedrock substratum, 6-12% slopes, severely eroded). These soils are moderately well drained, with low to moderate permeability and low potential for surface water runoff. There is a low risk of erosion potential at the site. The site is located within a plant nursery business (Woodland Farm Nursery). The site was treated with clopyralid in 2009, and treated with clopyralid and glyphosate in 2010 and 2011. The site was treated with glyphosate and metsulfuron-methyl in 2012. This site has a low density population and glyphosate and metsulfuron-methyl are proposed for 2014. Glyphosate will be applied in a selective manner and applied as a spot treatment and/or cut stump application for large vines

growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl is a non selective broad leaf herbicide that is highly effective at killing kudzu. It will be applied in a selective manner and used to eliminate resistant kudzu growth as well as help manage herbicide resistance issues.

Posey-2: The proposed treatment site contains 0.65 acres. The site is composed of Flowering Dogwood, White Ash, Black Cherry, Oak and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. A creek occurs within the site. The soil type at the site is Wellston Silt Loam (WeE) (18-25% slopes). The Wellston series of soils is well drained. The potential for surface water runoff is medium to rapid. Permeability is moderate. There is a moderate risk of erosion potential at the site and the site will be monitored. No houses occur on the site. The site was treated in 2012 and 2013 with clopyralid and glyphosate. This site has a medium density population and clopyralid and glyphosate are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Starke-1: The proposed treatment site contains 0.20 acre. The site is composed of Black Locust, Red Maple, Willow and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. The site is located on the east side of Koontz Lake. The soil types at this site are Adrianmuck (Ad) (drained) and Brems Sand (BeA) (0-3% slopes). Adrianmuck soils are poorly drained with slow to moderate permeability while Brems Sand is well drained with very high permeability. The potential for surface water runoff with these soils is very low. There is a low risk of erosion potential at the site. No houses occur on the site, but there is a house located just north of the site. This site has a medium density population and glyphosate is proposed for 2014. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Sullivan-1: The proposed treatment site contains 1.25 acres. The site is composed of Hickory, Red Maple, Ash, Red Oak, American Elm, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. A drainage ditch occurs within the site. The soil type at this site is Hickory Silt Loam (HkE) (18-25% slopes). The Hickory series of soils are well drained. The potential for surface water runoff is medium to very high. Permeability is moderate. There is a moderate risk of erosion potential at the site however the prior treatments have managed erosion risk and no erosion plan will be used. No houses occur on the site. The site was treated with Clopyralid in 2009 and 2010, and was treated with clopyralid and glyphosate in 2011, 2012 and 2013. This site has a medium density population and clopyralid, glyphosate and metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large

volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Sullivan-2: The proposed treatment site contains 4.64 acres. The site is composed of Maple, Black Cherry, American Sycamore, White Willow, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. Coordination Review with Indiana DNR, Division of Fish and Wildlife has documented the State Endangered Species *Rana areolata circulosa* (northern crawfish frog) within a half mile of the site. No water sources occur within the site. The soil types at this site are Strip Mines (St) and Iva Silt Loam (IvA) (0-2% slopes). Strip Mines soils consist generally of well drained with moderately slow permeability. The potential in these soils for surface water runoff is very rapid. The Iva series of soils are somewhat poorly drained and permeability is moderate. The potential for surface water runoff is low. There is a low risk of erosion potential at the site. No houses occur on the site. Cattle graze within the site. An electric fence is within the site. The site was treated with clopyralid in 2011 and 2012 and with clopyralid and glyphosate in 2013. This site has a low density population and triclopyr is proposed for 2014. Triclopyr will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Glyphosate and clopyralid will be avoided for use at this site due to the potential risk to the northern crawfish frog.

Vigo-1: The proposed treatment site contains 1.75 acres. The site is composed of several Oak, White Ash, Tulip Poplar, Multiflora rose and other species of trees, shrubs and plants. No legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Alford Silt Loam (AIF) (25-40% slopes), Muren Silt Loam (MuB2) (2-6% slopes, eroded) and Muren Silt Loam (MuA) (0-2% slopes). These soils are moderately well drained with moderate permeability. The potential for surface water runoff is high. There is a low risk of erosion potential at the site because most of the kudzu has been eliminated and non kudzu vegetation has established at the site. No houses occur on the site. The site was treated in 2009 and 2010 with clopyralid and in 2011 with clopyralid, glyphosate and metsulfuron-methyl. This site has a low density population and glyphosate and metsulfuron-methyl are proposed for 2014. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Warrick-1: The proposed treatment site contains 1.67 acres. The site is composed of Maple, Black Cherry, American Elm, Euonymus, Honey Locust, Black Locust and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. No water sources occur within the site. The soil types at this site are Wheeling Silt Loam (WhB2) (2-6% slopes, eroded) and Weinbach Silt Loam (WbA) (0-2 % slopes). The Wheeling series of soils are well drained and the Weinbach series of soils are somewhat poorly drained. The potential for surface water runoff in Wheeling soils is low to medium and slow in Weinbach soils. Permeability in Wheeling soils is moderate and very slow in Weinbach soils. There is a low risk of erosion potential at the site. Houses occur adjacent to the site. The site was treated with clopyralid in 2009-2012 and treated with clopyralid and glyphosate in 2013. This site has a medium density population and clopyralid, glyphosate and

metsulfuron-methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Clopyralid will also allow for future increased site accessibility and selective cut stump treatments. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Warrick-2: The proposed treatment site contains 7.92 acres. The site is composed of Maple, Flowering Dogwood, Black Walnut, Pine, Oak, American Elm, Eastern Redbud and other species of trees, shrubs and plants. Legumes occur within the site. No threatened or endangered species are known to occur within the site. Drainage ditches occur within the site. The soil types at this site are Zanesville Silt Loam (ZaD3) (12-18% slopes, severely eroded), Tilsit Silt Loam (TtB2) (2-6% slopes, eroded), Tilsit Silt Loam (TsB2) (2-6% slopes, eroded) and Zanesville Silt Loam (ZaC3) (6-12% slopes, severely eroded). These soils are moderately well drained to well drained. The potential for surface water runoff in Zanesville soils is medium and negligible to medium in Tilsit soils. Permeability in these soils is moderate above the fragipan and slow in the fragipan. There is a low risk of erosion potential at the site. No houses occur on the site. The site is adjacent to Lincoln State Park property. The site was treated with clopyralid in 2009-2011 and with clopyralid and glyphosate in 2012 and 2013.. This site has a medium density population and clopyralid, glyphosate and metsulfuron- methyl are proposed for 2014. Clopyralid is a selective herbicide and will preserve native vegetation and may reduce or eliminate the need for erosion control measures. Glyphosate will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications. Metsulfuron-methyl will be applied in a selective manner and as a spot treatment.

Washington-1: The proposed treatment site contains 0.68 acres. The site is composed of Red Oak, White Oak, Elm, Tulip Poplar, Beech, Multiflora rose and other species of trees, shrubs and plants. No legumes occur within the site. This site occurs within Indiana Classified Forest or Wildlands property. No threatened or endangered species are known to occur within the site. The site has a dry creek bed which is connected to the Blue River which is near the site. The soil type at this site is Crider Silt Loam (CoC2) (6-12% slopes). This soil is well drained with moderate permeability. The potential for surface water runoff is high. There is a low risk of erosion potential at the site. No houses occur on the site. The site was treated with clopyralid in 2010 and was treated with clopyralid and glyphosate in 2009 and 2011. This site has a low density population and triclopyr is proposed for 2014. Triclopyr will be applied in a selective manner and as a spot treatment and/or cut stump application for large vines growing in trees. Cut stump applications reduce the need for large volume foliar applications.

Table 2. Definitions for Descriptions of Proposed Treatment Sites

<p>ENDANGERED SPECIES</p>	<p>The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.</p>
<p>FRAGIC SOILS</p>	<p>Fragic soil properties are the essential properties of a fragipan.</p>
<p>FRAGIPAN</p>	<p>Brittle subsurface restricting water flow and root penetration, usually loamy textured and weakly cemented.</p>
<p>INDIANA CLASSIFIED FOREST OR WILDLANDS</p>	<p>A minimum of 10 contiguous acres supporting a growth of native or planted trees, native or planted grasslands, wetlands or other acceptable types of land cover that have been set aside and managed for the production of timber, wildlife habitat and watershed protection.</p>
<p>PERMEABILITY</p>	<p>How quickly or slowly water or other liquids move vertically within the soil.</p>
<p>SPECIES OF SPECIAL CONCERN</p>	<p>A species is considered a species of special concern if, although the species is not endangered or threatened, it is extremely uncommon in its range, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations.</p>
<p>SURFACE WATER RUNOFF</p>	<p>The water flow that occurs when the soil is infiltrated to full capacity and excess water from rain, meltwater, or other sources flows over the land. This is a major component of the water cycle, and the primary agent in water erosion</p>
<p>THREATENED SPECIES</p>	<p>A species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range, as defined in the Endangered Species Act.</p>

Table 3. Summary of 2014 Proposed Treatment Sites by Acreage and Treatment Method*.

County	2014 Site Name	Acreage	2014 Proposed Treatment Method
Clark	Clark-3	0.64	G
Clark	Clark-8	1.47	G
Clay	Clay-3	0.26	G
Starke	Starke-1	0.20	G
	(Total)	2.57	G
Crawford	Crawford-6	0.23	C
Dubois	Dubois-5	0.10	C
Dubois	Dubois-6	0.03	C
Floyd	Floyd-4	1.02	C
Greene	Greene-5	3.0	C
Harrison	Harrison-12	0.02	C
Knox	Knox-1	1.79	C
Lake	Lake-1	0.20	C
LaPorte	LaPorte-2	0.08	C
Martin	Martin-7	0.15	C
Orange	Orange-2	0.28	C
	(Total)	6.90	C
Clark	Clark-4	1.36	CG
Clark	Clark-5	0.32	CG
Clark	Clark-6	0.02	CG
Clark	Clark-7	0.37	CG
Crawford	Crawford-5	0.83	CG
Gibson	Gibson-1	1.66	CG
Gibson	Gibson-3	0.44	CG
Harrison	Harrison-6	2.69	CG
Lawrence	Lawrence-11	0.32	CG
Martin	Martin-5	0.28	CG
Martin	Martin-6	0.14	CG
Morgan	Morgan-3	1.45	CG
Orange	Orange-3	1.55	CG
Posey	Posey-2	0.65	CG
	(Total)	12.08	CG
Clay	Clay-5	7.00	CGM
Dubois	Dubois-1	1.20	CGM
Dubois	Dubois-2	2.41	CGM
Dubois	Dubois-3	0.05	CGM
Dubois	Dubois-4	0.43	CGM
Jennings	Jennings-6	1.57	CGM

Jennings	Jennings-7	2.30	CGM
LaPorte	LaPorte-1	0.16	CGM
Lawrence	Lawrence-1	1.62	CGM
Sullivan	Sullivan-1	1.25	CGM
Warrick	Warrick-1	1.67	CGM
Warrick	Warrick-2	7.92	CGM
	(Total)	27.58	CGM

Jefferson	Jefferson-1	0.23	GM
Lawrence	Lawrence-7	0.16	GM
Owen	Owen-1	0.34	GM
Vigo	Vigo-1	1.75	GM
	(Total)	2.48	GM

Clay	Clay-1	0.94	M
Clay	Clay-2	1.0	M
Jennings	Jennings-8	0.14	M
	(Total)	2.08	M

Jennings	Jennings-13	0.29	T
Sullivan	Sullivan-2	4.64	T
Washington	Washington-1	0.68	T
	(Total)	5.61	T

Jennings	Jennings-12	0.38	CM
	(Total)	0.38	CM

Jennings	Jennings-14	1.67	CT
	(Total)	1.67	CT

*Treatment Method: C= Clopyralid
G=Glyphosate
CG= Clopyralid + Glyphosate
CGM= Clopyralid+Glyphosate+Metsulfuron methyl
CM=Clopyralid + Metsulfuron methyl
GM= Glyphosate+Metsulfuron methyl
M= Metsulfuron methyl
T= Triclopyr
CT= Clopyralid + Triclopyr

2.0 Licenses and Recordkeeping

The contractor must have employees that have a current Indiana Pesticide Applicator's License in the appropriate category for each site. The contractor's employees will be required to

maintain a current license in the following categories in order to conduct treatments at all of the sites: 2-Forestry, 3a-Ornamental, and 6-Right of Way.

- A. Applicators and contractor employees must be fully trained and certified according to IC 15-3-3.6. According to IC 15-3-3.6 the contractor must also have a valid form of financial responsibility.
- B. The contractor is responsible for obtaining all necessary permits and licenses.
- C. The contractor will supply DNR with a copy of all 2014 project treatment records within 14 days of the last project treatment day. Contractor will maintain records of applications and spills for two years from treatment date.

3.0 Safety and Hazard Communication

A. General Safety Requirements

1. In addition to the spray vehicle, one other street legal vehicle must be present at the kudzu site within a distance that is as close as possible to the site. This is to provide quick available transportation in the event of a medical emergency.
2. At least one individual at the site must carry a fully charged cell phone.
3. A DNR employee must be present at the site during all applications on private property.

The DNR Employee must do the following:

- a) Notify landowner of arrival on property.
 - b) Take weather measurements including temperature, RH, wind speed.
 - c) Complete the herbicide record application form.
 - d) Communicate known site hazards to the contractor.
 - e) Facilitate the safe movement of spray equipment during the treatment process.
 - f) The DNR Employee has the authority to start, stop or alter the application.
4. Site assessments will be conducted each year by DNR staff, prior to treatments to evaluate sites for possible safety hazards.

B. Herbicides and spray equipment

1. All parts of the spray equipment must be triple rinsed internally before loading the herbicide for the application in order to prevent prior pesticides from contaminating the herbicide being used for that site or the site area environment.
2. Herbicides must be stored in a locked, non-passenger location of the vehicle in original containers with labels.
3. The pesticide will be mixed according to label directions for the control of kudzu.
4. When possible, herbicides should only be mixed at the treatment site immediately prior to beginning application. This is designed to minimize the risk of a high volume, hazardous spill during transportation to the site. The quantity of herbicide mixed should be just sufficient to do the application for each site to minimize excess and the need for disposal. Left over small loads of herbicide mix may be moved from site to site.
5. All herbicide disposable gloves, mixing equipment and hand towels must be placed in a plastic trash bag and locked in the herbicide storage area of the vehicle.
6. A fire extinguisher rated for gasoline and chemical fires must be available on the spray equipment and the nearby truck.

7. A portable spill response kit, two shovels and extra PPE (Personal Protective Equipment) must be in the area of the spray equipment during applications in order to provide rapid response to an accidental, large scale spill.
8. The contractor and on site DNR employee shall keep all emergency phone numbers and the number to CHEM TREC readily available during applications.

C. Protective clothing

1. The applicator will provide any protective clothing for employees mixing, loading, or applying herbicides or operating equipment, according to product label requirements. All DNR personnel working at the site must wear long pants due the presence of herbicides and ticks. Short pants are not acceptable.
2. A protective hat must be worn by applicators in order to provide protection from possible run off of herbicide from overhead vines.
3. Foot wear should be some type of hiking boot or work boot with a strong supportive sole. Shoes with ankle support and a rubber sole that wraps around the toe area are preferred. Sneakers are not acceptable.
4. Protective clothing requirements must comply with label directions of each herbicide employed on the project.

D. Signs

1. Any signs required by law to indicate application of the herbicide will be provided by the applicator. Signs must be removed after reentry time is permitted according the herbicide label, but no later than 72 hours after reentry time is up.
2. Although not required by the Worker Protection Standard, signs will be placed at treated kudzu sites near residential areas where post treatment entry could be a potential issue.

E. Notification

1. DNR will notify landowners by telephone at least 48 hours in advance of any herbicide applications on their properties.
2. The applicator/contractor will be informed of such notifications.
3. The DNR representative must have obtained written and/or oral permission from the landowner to treat the sites. All permission records will be maintained by the DNR and will be made available to the contractor upon request.
4. DNR personnel has Right of Entry onto properties for evaluation or treatment of kudzu (IC 14-24-4-1, IC 14-24-5-6, IC 14-24-8-1, 312 IAC 18-2-2.) and will use this authority to escort the contractor onto treatment sites.
5. Treatments will not occur on Saturdays or Sundays.

F. Traffic Control and Working Along Roadsides

1. Fluorescent colored vests must be worn when working along roadsides.
2. Emergency flashers or an orange strobe light on the roof to the vehicle must be used while vehicles are parked in close proximity to the road.
3. Spray equipment and tractors must have a slow moving vehicle placard attached to them (to be provided by applicator).
4. If traffic must be stopped to move spray equipment across or down the road to the kudzu sites, the following must be done:

- Two people standing in the road with fluorescent vest may be utilized to control traffic on less traveled county roads. Use cell phones with speaker phone on as a two way radio.
- For heavier traffic situations on State Highways and other busy locations; contact the local sheriff's office or state police to provide assistance with traffic control.
- If police officials are not available, a minimum of two DNR employees must be present.
- When stopping traffic, with your vehicle and safety lights on, go to an area in the road in which you can safely see in each direction.
- A second DNR vehicle should do the same behind the first.
- Maintain open cell phone communications with the second vehicle via speaker phone while doing this activity.
- The spray equipment should move safely in between the two DNR vehicles that have stopped traffic.
- Once the spray equipment has cleared the road, pull your state vehicle off of the road and allow traffic to flow.

G. Working or Crossing Railroad Tracks

1. All federal railroad laws apply when working on railroad property.
2. It is illegal to cross or work within 20 feet of an operating railroad track.
3. A railroad flagman must be on site to monitor train activity and legally open access to the tracks for work that involves crossing or operating within 20 feet of railroad tracks.
This is Federal Law.
4. The railroad flagman has full authority over the starting and stopping of the work and can decide when crews must be pulled off of the tracks.
5. Fluorescent colored vests must be worn when working on and around railroad tracks.
6. The DNR employee on site must maintain open communication with the railroad flagmen and must provide assistance in informing the spray crew when to clear the railroad tracks as order by railroad personnel.
7. The onsite DNR employee must maintain open communication with railroad personnel about the progress of the work and expected completion time.

H. Adverse Weather Conditions

1. Spraying activity will be halted if winds exceed 15 mph at the treatment site or excessive drift is observed by any individual working at the treatment site. Although drift sometime occurs inside the working area of kudzu sites, it is absolutely essential that drift does not occur beyond the treatment site while spraying next to crop fields, especially soybeans.
2. Treatments will not be conducted if daytime temperatures are below 60F in order to maintain the effectiveness of the herbicides. Herbicide applications will not be conducted if leaf wetness from dew or previous rainfall exists on the kudzu leaf surface.
3. Herbicide applications will not be conducted if rain is expected within 4 hours after applications have been completed.
4. Excessively high temperatures and hot working conditions are frequently encountered during this project

- a) Bring plenty of fluids to drink while at treatment sites
- b) Bring your lunch along to sites because sites are often far from fast food and restaurant locations.
- c) Wear a hat to protect yourself from the hot sun/sunscreen
- d) The spray crews are likely to experience more difficult working conditions than the DNR personnel at the site. If excessive heat becomes a safety issue, work can stop at the discretion of the spray crew.

I. Use of Cutting Tools

1. Cuttings tools used at the site include power tools such as chain saws, brush cutter, and hand tools such as machetes, hand saws and looping shears.
2. On site DNR personnel are not to use contractor's power tools, including chain saws and brush cutters unless there is an emergency situation in which use would prevent injury or save lives.
3. Personal protective equipment including, saw chaps, face shield (eye protection), hard hat and ear protection must be worn when operating power cutting tools.
4. Care must be taken when caring cutting tools through rough terrain. In some cases it is better to set the cutting down if it is not needed in a rough area. A trip and fall with a cutting tool could result in serious injury.
5. A first aid kit should be on site for minor cuts
6. If serious injury that results in excessive bleeding occurs,
 - Stop or slow the bleeding by applying pressure.
 - Contact emergency personnel.
 - If unable to contact emergency personnel, get individual inside of vehicle and transport to nearest hospital while contacting emergency personnel
 - Provide emergency personnel with nature of injury, age of person, gender, and any medications they may be taking or are allergic too.

J. Fuels and Fueling

1. All transported fuels must be stored in a properly labeled, vapor proof container, in a non passenger area of the vehicle away from the pesticides or fertilizers.
2. Place portable fuel containers on the ground when filling at a gas station. **Do not fill portable fuel tanks while in the back of vehicles because the static charge build up from the moving vehicle may result in a spark when the nozzle is placed in the container, resulting in a fire.**
3. Do not fuel vehicles or any type of equipment that is running. Turn off all equipment and vehicles during fueling.

K. Trailers and Towing

1. All trailers must be maintained in safe working condition by the contractor.
2. Inspection of the ball hitch, safety chains, emergency brake cable, ramps, and operating lights must be completed on a regular basis and should be checked prior to traveling to each site
3. Trailers must not be over loaded and careful attention must be taken not to exceed weight ratings on towing capacity of the vehicle, hitch or trailer.

4.0 Accidental Spill

- A. The contractor will provide a spill plan for the loading, mixing and application of the treatment material. This plan will be followed in case of an accidental spill. **(SEE: HERBICIDE SPILL RESPONSE PLAN, PAGE 35-36)**
- B. The contractor employees are responsible for containing and cleaning up any chemical spill.
- C. The contractor employees are responsible for completing the spill report form.
- D. All spills, regardless of size will be **recorded on the spill report form**. This includes minor spills during mixing and loading, drips from nozzles, minor leaks on spray equipment, leaks and spills associated with pesticide containers. **(SEE: SPILL REPORT FORM, PAGE 37)**
- E. Major spills and environmentally significant spills, whether large or small may require additional reporting procedures.
- F. Once the spill report form is complete, it will be signed by the applicator that cleaned it up and the DNR person on site during the event. DNR will keep the original copy of this completed form and the applicator will also maintain a copy of this record at their place of business for 2 years.

In the event a major or environmentally significant spill does occur the following will be notified: (SEE: PESTICIDE SPILL CALLING SHEET, PAGE 34)

- Safety Officer of the DNR: (Richard Edwards) 317-232-4145
- State Chemist Office: 765-494-1492
- State Police: 911 or site specific emergency numbers
- IN Dept. of Environmental Management Spill Line: 888-233-7745
- Local authorities: police, fire department, hospitals
- CHEMTREC (Chemical Transportation Emergency Center): 800-424-9300
- National Response Center (if spill occurs on a highway): 800-424-8802

5.0 National Pollutant Discharge Elimination System Incident Reporting Requirements

Adverse Incidents to be Reported to the Indiana Dept. of Environmental Management (IDEM)

All persons covered by the Indiana General Permit for Pesticide Applications (Permit ING870000) must monitor for, identify, and report adverse incidents. If a person covered by this general permit observes or are otherwise made aware of an adverse incident that may have resulted from a discharge from the pesticide application, the person must notify IDEM by telephone at (888) 233-7745.

- A. Immediately for incidents which pose a significant danger to human health or the environment,
- B. As soon as possible but within two (2) hours of discovery for any adverse incidents resulting in death or acute injury or illness to animals or humans (see 327 IAC 2-6.1), and
- C. Within 24 hours of the person becoming aware of the adverse incident for any other adverse incidents not listed above.

Such adverse incident reports to IDEM must include the following information:

- The caller's name and telephone number;
- Operator name and mailing address;
- If covered under a notice of intent, the NPDES tracking number;
- The name and telephone number of a contact person, if different than the person providing the 24-hour notice;
- How and when the person became aware of the adverse incident;
- Description of the location of the adverse incident;
- Description of the adverse incident identified and the EPA pesticide registration number for each product the person applied in the area of the adverse incident; and
- Description of any steps the person has taken or will take to correct, repair, remedy, clean up, or otherwise address any adverse effects.

Written Reports of Adverse Incidents to IDEM

Within 5 days of reporting an adverse incident, the person covered by the pesticide general permit must provide a written report of the adverse incident to the department which includes the following information:

- A. Information required to be provided above;
- B. Date and time the person notified IDEM of the adverse incident, who the person spoke with, and any instructions the person received from IDEM;
- C. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc);
- D. A description of the circumstances of the adverse incident including species affected, estimated number of individual and approximate size of dead or distressed organisms;
- E. Magnitude and scope of the affected area (e.g. aquatic square area or total stream distance affected)
- F. Pesticide application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of pesticide product, description of pesticide ingredients, and EPA registration number;
- G. Description of the habitat and the circumstances under which the adverse incident occurred (including any available ambient water data for pesticides applied:
- H. If laboratory tests were performed, indicate what test(s) were performed, and when, and provide a summary of the test results within 5 days after they become available;
- I. If applicable, explain why the person believes the adverse incident could not have been caused by exposure to the pesticide;
- J. Actions to be taken to prevent recurrence of adverse incidents; and
- K. Signed and dated in accordance with 327 IAC 5-2-22.

The person must report adverse incidents even for those instances when the pesticide labeling states that adverse effects may occur.

Adverse Incident Reporting For Federally listed Threatened or Endangered Species

If a person becomes aware of an adverse incident to a federally listed threatened or endangered species or its federally designated critical habitat, that may have resulted from a discharge from the pesticide application, the person must immediately notify the National Marine Fisheries Service Northeast Regional Office (NMFS) at **978-281-9300** in the case of an anadromous or marine species, or the U.S. Fish and Wildlife Service (FWS) Indianapolis Law Enforcement Office at **317-346-7014** in the case of a terrestrial or freshwater species. This notification must be made by telephone immediately upon becoming aware of the adverse incident and must include the following information:

- A. The caller's name and telephone number;
- B. Operator name and mailing address;
- C. The name of the affected species;
- D. How and when the person became aware of the adverse incident;
- E. Description of the location of the adverse incident;
- F. Description of the adverse incident, including the EPA pesticide registration number for each product the person applied in the area of the adverse incident; and
- G. Description of any steps the person has taken or will take to alleviate the adverse impact to the species.

Adverse Incident Reporting for State-Listed Rare, Threatened or Endangered Species

If a person becomes aware of an adverse incident to a state-listed rare, threatened or endangered species or its critical habitat that may have resulted from a discharge from the pesticide application, the person must immediately notify the Indiana Department of Natural Resources at **317-232-4200**. This notification must be made by telephone immediately upon becoming aware of the adverse incident and must include the information required in the previous section.

6.0 Safety Training

Safety training will be incorporated into the pre treatment training for treatment site and load site observers and other personnel. The Work and Safety Plan will be reviewed at the time of application. Individuals will review emergency procedures, phone numbers, the communication procedure, the location of emergency equipment, and the monitoring procedure.

7.0 Personal/Vehicular Incident

In the event of a personal or vehicular incident, the treatment site observer or other project personnel will notify the State Police, 911 services if available in the project area, county/municipal police, fire department, hospital and EMS for emergency situations. Project personnel will assist in the emergency situation as needed. A report of the incident should be made using Indiana State Form 40141, "Report of Personal/Vehicular Incident".

DO NOT DELAY NOTIFICATION TO EMERGENCY SERVICES.

(SEE: REPORT OF PERSONAL/VEHICULAR INCIDENT, PAGES 30-31)

(SEE: TORT CLAIM FORM, PAGES 32-33)



REPORT OF PERSONAL / VEHICULAR INCIDENT
State Form 40141 (R2 / 5-90)

INDIANA DEPARTMENT OF
NATURAL RESOURCES

INSTRUCTIONS: Within ten (10) days, the completed form (State Form 40141) will be distributed to the following:
 * 2 copies to the Director of Safety.
 (The Director of Safety will forward a copy to the Investigation Division, Attorney General.)
 * 1 copy to the DNR division representative involved in the accident
 * 1 copy to be retained by the originator.

PRIVACY NOTICE

This agency is requesting that you disclose your Social Security Number. You have the right to refuse, and will not be penalized for doing so.

TO: **ATTORNEY GENERAL'S OFFICE, INVESTIGATION DIVISION**
 FROM: (PROPERTY)
 VIA: (AGENCY / DIVISION)

NOTICE
 This report is prepared by and for State use. It shall not be published or disseminated to anyone without specific authorization from a representative of the office of the Attorney General of Indiana or a representative of the state agency with the authority to release said information.

TIME, PLACE AND ENVIRONMENT

State Employee Not a State Employee Date of Incident (Month, Day, Year) Incident Resulted In: Personal Injury Vehicle Damage

Local Time A.M. P.M. Day of Week Exact Location of Accident Tort Claim Procedure Issued Yes No

WEATHER CONDITIONS: Clear Fog, Smoke Cloudy Other (Describe) Rain Snow Sleet / Hail Freezing Rain

LIGHT CONDITIONS: Daylight Dawn / Dusk Dark (No Street Lights) Dark (Street Lights On) Dark (Street Lights Off)

TYPE OF INCIDENT: Personal Injury Property Damage Fatality Vehicle Damage

PHOTO INCLUDED: Yes No

PROPERTY MAP INCLUDED: Yes No

INJURED PERSON

Name of Injured Person Telephone Number
 Address Date of Birth (Month, Day, Year)
 City, State and ZIP code Social Security Number ■

BODILY INJURY STATUS
 Below is a numbered list indicating Area of Injury. In the box next to the numbers around the figure, show the type of injury that occurred; using the letter coding indicated under Type of Injury. This will give an over-all and precise picture of the nature of the injury.

- Area of Injury**
- | | | | | | | |
|--------------|-------------------|-----------------|---------------|-------------------|----------------|-------------------|
| Head..... 1 | Shoulder..... 5 | Wrist..... 9 | Ankle..... 13 | Chest..... 17 | Back..... 21 | Knee..... 25 |
| Face..... 2 | Collarbone..... 6 | Abdomen..... 10 | Foot..... 14 | Hip..... 18 | Thumb..... 22 | Lower leg..... 26 |
| Eye..... 3 | Elbow..... 7 | Thigh..... 11 | Skin..... 15 | Upper arm..... 19 | Hand..... 23 | Instep..... 27 |
| Tooth..... 4 | Ribs..... 8 | Groin..... 12 | Neck..... 16 | Forearm..... 20 | Finger..... 24 | Toe..... 28 |



- Indicate skin areas affected!
- Type of Injury**
- | | | | |
|-------------|----------------------|-------------------|-----------------------|
| WOUNDS..... | Laceration..... A | BURN..... | Heat..... L |
| | Contusion..... B | | Chemical..... M |
| | Infection..... C | | Friction..... N |
| | Foreign Body..... D | SKIN..... | Dermatitis..... O |
| | Puncture..... E | | Irritation, Rash... P |
| | | FRACTURE..... | Q |
| | | STRAIN..... | R |
| EYES..... | Foreign Body..... F | SPRAIN..... | S |
| | Burn, Corrosive... G | GASES..... | Nausea..... T |
| | Burn, Heat..... H | | Dizziness..... U |
| | Burn, Flash..... I | | Irritation..... V |
| | | Wound..... J | PAINS..... W |
| | | Irritation..... K | MISCELLANEOUS..... X |

VICTIM STATUS
 Conscious
 Semi-conscious
 Unconscious
 Dead

Received First Aid
 Yes No
 If Yes, By Whom? _____

Refused Medical Treatment
 Ambulance: Name of Ambulance Service _____

DISPOSITION
 Went Home
 Went to Hospital
 Saw Physician

WITNESS

Name Telephone Number
 Address
 City, State and ZIP code Social Security Number ■

(over)



**NOTICE OF TORT CLAIM FOR
PROPERTY DAMAGE AND/OR PERSONAL INJURY**

State Form 54668 (3-11)
Special Investigations Division

OFFICE OF ATTORNEY GENERAL

ATTN: Tort Claim Investigations
Government Center South, 5th floor
302 W. Washington Street
Indianapolis, IN 46204
Telephone: (317) 232-6350

- INSTRUCTIONS:** Anyone who has a claim for personal injury or property damage against the State of Indiana must either use this form to file a claim or make the claim in writing as prescribed in Indiana Code 34-13-3. Immunities are listed on the back of this form.
1. **If applicable**, include copies of accident/incident report, vehicle registration, paid receipts for repair or two (2) estimates for repair, medical reports, photographs and any additional documentation in reference to this matter.
 2. Each person who had a loss should file a separate form.
 3. Sign and date this form.
 4. State statute requires the claim be delivered in person or be sent via **Certified or Registered** mail to the address in the upper right corner above.
 5. Do not delay making your claim. Indiana law gives you two hundred seventy (270) days after the loss to make a claim and it must comply with **Indiana Code 34-13-3**.
 6. Keep a copy of your claim form, receipts, bills and certified/registered mail receipt.
 7. If your claim is properly filed, the Office of the Attorney General will investigate it and will notify you in writing within ninety (90) days of receipt if your claim is approved. A claim is denied if not approved within ninety (90) days.
 8. The filing of this claim is part of a legal process. If you have any questions about the right way to file a claim, please contact an attorney of your choice. The state's attorneys are not authorized by law to assist you with filing this claim. For your information a list of actions, or conditions, resulting in non-liability pursuant to Indiana Code 34-13-3 are shown on the back of this form.

CLAIMANT INFORMATION					
Name		Home Telephone	Work Telephone	Cellular Telephone	
Address at Time of Loss (<i>number and street, city, state, and ZIP code</i>)			Email Address		
Current Address (<i>if different from above</i>)			Driver License Number	Issuing State	
			Vehicle License Plate Number (<i>if involved</i>)	Issuing State	
LOSS INFORMATION					
Date of Loss (<i>m/d/yy</i>)	Time of Loss <input type="checkbox"/> AM <input type="checkbox"/> PM	Dollar Amount of Loss	State Agency Involved	State Vehicle Commission (<i>if known</i>)	
Exact Location of Loss (<i>include town, street & nearest crossroad</i>)				Loss County	
Names/Addresses of All Persons Involved (<i>if known</i>)					
Alleged Negligence					
Explanation of what happened (<i>use additional sheets if necessary</i>)					

Please read: I swear and affirm under the penalties for perjury that the foregoing information is true and correct to the best of my knowledge and belief.

Claimant's Signature

Date (m/d/yy)

Immunity of governmental entity or employee

A governmental entity or an employee acting within the scope of the employee's employment is not liable if a loss results from the following:

- (1) The natural condition of unimproved property.
- (2) The condition of a reservoir, dam, canal, conduit, drain, or similar structure when used by a person for a purpose that is not foreseeable.
- (3) The temporary condition of a public thoroughfare or extreme sport area that results from weather.
- (4) The condition of an unpaved road, trail, or footpath, the purpose of which is to provide access to a recreation or scenic area.
- (5) The design, construction, control, operation, or normal condition of an extreme sport area, if all entrances to the extreme sport area are marked with:
 - (A) a set of rules governing the use of the extreme sport area;
 - (B) a warning concerning the hazards and dangers associated with the use of the extreme sport area; and
 - (C) a statement that the extreme sport area may be used only by persons operating extreme sport equipment.

This subdivision shall not be construed to relieve a governmental entity from liability for the continuing duty to maintain extreme sports areas in a reasonably safe condition.

- (6) The initiation of a judicial or an administrative proceeding.
- (7) The performance of a discretionary function; however, the provision of medical or optical care as provided in IC 34-6-2-38 shall be considered as a ministerial act.
- (8) The adoption and enforcement of or failure to adopt or enforce a law (including rules and regulations), unless the act of enforcement constitutes false arrest or false imprisonment.
- (9) An act or omission performed in good faith and without malice under the apparent authority of a statute which is invalid if the employee would not have been liable had the statute been valid.
- (10) The act or omission of anyone other than the governmental entity or the governmental entity's employee.
- (11) The issuance, denial, suspension, or revocation of, or failure or refusal to issue, deny, suspend, or revoke any permit, license, certificate, approval, order, or similar authorization, where the authority is discretionary under the law.
- (12) Failure to make an inspection, or making an inadequate or negligent inspection, of any property, other than the property of a governmental entity, to determine whether the property complied with or violates any law or contains a hazard to health or safety.
- (13) Entry upon any property where the entry is expressly or impliedly authorized by law.
- (14) Misrepresentation if unintentional.
- (15) Theft by another person of money in the employee's official custody, unless the loss was sustained because of the employee's own negligent or wrongful act or omission.
- (16) Injury to the property of a person under the jurisdiction and control of the department of correction if the person has not exhausted the administrative remedies and procedures provided by section 7 of this chapter.
- (17) Injury to the person or property of a person under supervision of a governmental entity and who is:
 - (A) on probation; or
 - (B) assigned to an alcohol and drug services program under IC 12-23, a minimum security release program under IC 11-10-8, a pretrial conditional release program under IC 35-33-8, or a community corrections program under IC 11-12.
- (18) Design of a highway (as defined in IC 9-13-2-73), toll road project (as defined in IC 8-15-2-4(4)), tollway (as defined in IC 8-15-3-7), or project (as defined in IC 8-15.7-2-14) if the claimed loss occurs at least twenty (20) years after the public highway, toll road project, tollway, or project was designed or substantially redesigned; except that this subdivision shall not be construed to relieve a responsible governmental entity from the continuing duty to provide and maintain public highways in a reasonably safe condition.
- (19) Development, adoption, implementation, operation, maintenance, or use of an enhanced emergency communication system.
- (20) Injury to a student or a student's property by an employee of a school corporation if the employee is acting reasonably under a discipline policy adopted under IC 20-33-8-12.
- (21) An act or omission performed in good faith under the apparent authority of a court order described in IC 35-46-1-15.1 that is invalid, including an arrest or imprisonment related to the enforcement of the court order, if the governmental entity or employee would not have been liable had the court order been valid.
- (22) An act taken to investigate or remediate hazardous substances, petroleum, or other pollutants associated with a brownfield (as defined in IC 13-11-2-19.3) unless:
 - (A) the loss is a result of reckless conduct; or
 - (B) the governmental entity was responsible for the initial placement of the hazardous substances, petroleum, or other pollutants on the brownfield.
- (23) The operation of an off-road vehicle (as defined in IC 14-8-2-185) by a nongovernmental employee, or by a governmental employee not acting within the scope of the employment of the employee, on a public highway in a county road system outside the corporate limits of a city or town, unless the loss is the result of an act or omission amounting to:
 - (A) gross negligence;
 - (B) willful or wanton misconduct; or
 - (C) intentional misconduct.

This subdivision shall not be construed to relieve a governmental entity from liability for the continuing duty to maintain highways in a reasonably safe condition for the operation of motor vehicles licensed by the bureau of motor vehicles for operation on public highways.

PESTICIDE SPILL CALLING SHEET

In the event of a pesticide spill notify the following personnel:

1. Indiana DNR Safety Officer **Richard Edwards**
317-232-4145
 2. Call State Chemist Office **765-494-1492**
 3. Call State Police **See Site Specific Emergency Numbers**
 4. Call Department of Environmental Management Spill Line **888-233-7745**
 5. Notify Local Authorities (Police, Fire, Hospital) if needed **See Site Specific Emergency Numbers**
 6. Notify CHEMTREC (Chemical Transportation Emergency Center) **800-424-9300**
 7. Notify National Response Center (If spill occurs on highway) **800-424-8802**
 8. Notify DNR Program Manager **Ken Cote**
(812) 322-7249
- Or
- Phil Marshall**
(812) 595-2740

Eco Logic LLC

Herbicide Spill Response Plan

All herbicide spray crews will have Personal Protective Equipment (PPE), herbicide absorbent material and tools for containment. A laminated copy of this Spill Response Plan will be kept in each transport and application vehicle.

In the case of an herbicide spill, all employees have been instructed to respond as follows;

- Don't panic
- Supervisor on site leads all spill response activities
- Wear all appropriate PPE per herbicide labels
- Assess the situation
- Account for all employees
- Keep unauthorized persons away from area In the case of large spills.
- Call for assistance if controlling and containing spill is not feasible with available materials and staff on site.

Control the spill at the source

1. Turn off all equipment and nozzles.
2. Prevent further leakage by repositioning the pesticide container
3. Get out Spill Kit and put on any additional disposable PPE needed
4. Prevent the spill from spreading by encircling the area with absorbent material from the spill kit
5. Spill kit should include several different size buckets (3 & 5 gallon) to help control spill either at the source or during cleanup activities. All buckets will be equipped with sealable lids for transport and proper disposal of hazardous material. Label all buckets "hazardous" if used to store or transport herbicide.
6. In case of the 100 gallon tank sprayer having a leak, immediately empty (minimum 225 gallons) water tank and attempt to transfer herbicide from tank sprayer to empty water tank. Label water tank "hazardous" if herbicide is transferred.

Containing the spill:

1. With liquid spills, construct a dam to prevent the chemical from spreading. It is critical not to allow any chemical to get into any body of water, including storm sewers. If needed absorbent dams should be constructed in front of storm sewers or other entry points to any body of water.
2. Use the Spill Kit solidifier in an inward motion onto your spill or use adsorbent pads on top of the spill.
3. Use absorbent socks or granule absorbent to clean up any remaining spilled herbicide

Clean up spilled herbicide

1. Remove solid material with shovel or dustpan and dispose of it in a biohazard bag.
2. Put any additional contaminated pads inside biohazard bag.
3. Place biohazard bags in Spill Kit bucket along with any disposable PPE used, then secure bucket and label "hazardous" on outside of container.

-Report the pesticide spill to Indiana Dept. of Environmental Management

888-233-7745 and the National Response Center 800-424-8802

-Report the spill to client – Indiana DNR Entomology and Plant Pathology

-May need to call the Indiana Dept. of Natural Resources if potential for fish or wildlife exposure 800-847-4367.

-May also call Chemtrec 800-424-9300

-Notify Eco Logic LLC management and make special note if adverse health or environmental effects are noticed or expected

SPILL REPORT FORM

1. Kudzu site name and county _____
2. Name of applicator(s) involved in incident _____
3. Applicator(s) title and company name _____
4. Application date _____
5. Closest approximate time of incident _____
6. Acreage of site _____
7. Chemical brand name and formulation _____
8. Rate of application _____
9. Total amount of product spilled _____
10. Name of manufacturer _____
11. EPA registration number _____
12. Active ingredient _____
13. Weather conditions _____
14. Description of spill incident (where occurred within site, what happened, how, etc.)

15. Were there any immediate injuries that occurred to any person as a result of the spill? If so, provide name, title, employer, description of injury. Was medical attention obtained?

16. Were any animals directly contacted by the spill chemical at the time of the incident? If so, provide the number and type of animals affected.

17. Did any spill material occur into a water site? If so, describe

18. Estimated potential for off site movement?

19. Provide name, title, employer of individual who has completed this form.

20. Signature of Applicator _____
21. Signature of DNR Employee Witness _____

Kudzu Site Herbicide Application Record

Site Information

Site Name _____ County _____

Primary Owner _____ Phone _____

Address _____ City _____ ZIP _____

Site Acreage _____ Soil Type _____

Legumes Present YES NO Erosion Potential High Medium Low

Surface Water Close? YES NO Distance to Closest Surface Water _____

Erosion Present Prior to Application YES NO

Treatment/Pesticide Information

Applicator Name, Title, Company _____

Applicator License # _____

Date of Application _____

Time arrived at site _____

Time left/finished at site _____

Weather Conditions Cloudy Sunny

Leaf Wetness Present: Yes No Temperature _____

Wind Speed + Direction _____ Relative Humidity _____

Product _____ EPA Reg # _____
(Name and formulation)

Application Rate _____ Amount of Product Applied _____

Total Acreage Treated _____

Problems encountered during treatment

Actions taken in response to problems

Date and Time Follow Up Visit Occurred _____

Second Application Necessary for this season? YES NO

Signature of Applicator _____

Signature of DNR Representative _____

MATERIAL SAFETY DATA SHEET

Emergency Phone: Chemtrec 800-424-9300

Effective Date: June 3, 2008

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Alligare Triclopyr 3
DESCRIPTION: A liquid herbicide.
EPA Reg. No.: 81927-13

COMPANY IDENTIFICATION:

Alligare, LLC
13 North 8th Street
Opelika, AL 36801
888-255-4427

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>Chemical Name</u>	<u>Formula</u>	<u>CAS #</u>	<u>Composition</u>
Triclopyr	3,5,6-trichloro-2-pyridinyloxyacetic acid, triethylamine salt	C ₁₃ H ₁₉ Cl ₃ N ₂ O ₃	57213-69-1	44.4%
Triethylamine	N,N-Diethylethanamine	C ₆ H ₁₅ N	121-44-8	16.25%
Ethylenediaminetetraacetic Acid (EDTA)	N,N'-1,2-Ethanediybis-[N-(carboxymethyl)glycine] trisodium salt	C ₁₀ H ₁₆ N ₂ O ₈	60-00-4	2.5%

3. HAZARD IDENTIFICATION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS: Corrosive. Causes irreversible eye damage. Harmful if absorbed through skin or swallowed. Do not get in eyes or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

ENVIRONMENTAL HAZARDS: Do not contaminate water when disposing of equipment wash water. Under certain conditions, oxygen depletion or loss due may result due to decomposition of dead plants, which may contribute to fish suffocation. This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS: Combustible liquid. May release toxic fumes if burned.

4. FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Flash point (closed cup): 61°C (141°F)

Flammable Limits (LEL): Unknown

Fire and Explosion Hazards: May decompose in fire due to thermal decomposition releasing irritating and toxic gasses.

Means of Extinction: Use water spray, carbon dioxide, foam or dry chemical.

Fire Fighting Instructions: Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Dike runoff and do not allow runoff to enter sewers, storm drains or waterways. Foam and dry chemical extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Firefighting Equipment: Self-contained breathing apparatus with full face piece and full bunker gear.

Hazardous Combustion Products: Hydrogen chloride, oxides of nitrogen, chlorinated pyridine, phosgene.

NFPA Ratings: Health – 3 / Flammability – 2 / Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this MSDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water.

SMALL SPILLS: Absorb spill with sand, vermiculite or other inert absorbent. Place contaminated material into an appropriate container for disposal.

LARGE SPILLS: Dike large spills using absorbent or impervious materials such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, scrape up and place in an appropriate container for disposal. After removal, flush contaminated area thoroughly with water, observing all environmental regulations. Recover wash liquid with additional absorbent and place in container for disposal.

7. HANDLING AND STORAGE

Do not allow to come into contact with skin, eyes and clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a secured storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Protective Clothing: Long-sleeved shirt, long pants and shoes plus socks, protective eyewear, and chemical resistant gloves (\geq 14 mils) such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber.

General: Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been heavily contaminated with this product; do not reuse them. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light pink liquid
Odor: Slight ammonia-like
pH: 8.5 – 9.0
Specific Gravity: 1.14 g/ml @ 68°F
Flashpoint (Closed Cup): 61°C (141°F)
Solubility in Water: Soluble

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and transportation situations. May decompose if heated.
CONDITIONS TO AVOID: Temperatures above 40°C (105°F) and below 6°C (40°F).
HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, oxides of nitrogen, chlorinated pyridine, phosgene.
INCOMPATIBILITY WITH OTHER MATERIALS: Strong acids and oxidizing agents.
POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY
Oral LD₅₀ (rat): > 1,500 mg/kg
ACUTE DERMAL TOXICITY
Dermal LD₅₀ (rat): > 2,000 mg/kg
ACUTE INHALATION TOXICITY
Inhalation LC₅₀ (rat): > 2.5 mg/L (4-hour)
EYE IRRITANT
Rabbit – Corrosive
SKIN IRRITATION
Rabbit – Slightly irritating
SENSITIZATION
Guinea Pig – Potential sensitizer after repeated exposure to concentrate
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.
CARCINOGENICITY:
ACGIH: Not listed
IARC: Not listed
NTP: Not listed
OSHA: Not listed
MUTAGENIC DATA: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.
ADDITIONAL DATA: Not known to cause reproductive or birth defects at normal exposure levels.

12. ECOLOGICAL INFORMATION

This herbicide is injurious to plants at extremely low concentrations. Nontarget plants may be adversely affected from drift and run-off. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water. Under certain conditions, oxygen depletion or loss due may result due to decomposition of dead plants, which may contribute to fish suffocation.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

Plastic Container - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Metal Container - Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

14. TRANSPORT INFORMATION

Non-Bulk Shipments by Land: Not regulated by DOT

Bulk Shipments by Land:

DOT PROPER SHIPPING NAME: NA1993, COMBUSTIBLE LIQUID, N.O.S. (Contains TRIETHYLAMINE), 3, PG III

Shipments by Air or Vessel:

DOT PROPER SHIPPING NAME: UN1993, FLAMMABLE LIQUID, N.O.S. (Contains TRIETHYLAMINE), 3, PG III

DOT EMERGENCY RESPONSE GUIDE: 128

MARINE POLLUTANT: No

15. REGULATORY INFORMATION

FIFRA –

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

SARA Title III – Section 302 Extremely Hazardous Substances

Not Listed

SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed, Fire

SARA Title III – Section 312 Threshold Planning Quantity

N/A

SARA Title III – Section 313 Reportable Ingredients

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration</u>
Triethylamine	121-44-8	16.25%

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA –

<u>Chemical Name</u>	<u>CAS Number</u>	<u>RQ</u>	<u>Concentration</u>
Triethylamine	121-44-8	5000	16.25%
ETDA	60-00-4	5000	2.5%

CALIFORNIA PROP 65 STATUS –

This product does not contain any products known to the state of California to cause cancer or reproductive harm.

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

MATERIAL SAFETY DATA SHEET

Emergency Phone: Chemtrec 800-424-9300

Effective Date: February 24, 2009

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Alligare Triclopyr RTU
DESCRIPTION: A liquid herbicide.
EPA Reg. No.: 81927-13

COMPANY IDENTIFICATION:

Alligare, LLC
13 North 8th Street
Opelika, AL 36801
888-255-4427

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient</u>	<u>Chemical Name</u>	<u>Formula</u>	<u>CAS #</u>	<u>Composition</u>
Triclopyr BEE	(3,5,6-trichloro-2-pyridinyl)oxyacetic acid, butoxyethyl ester	C ₁₃ H ₁₆ Cl ₃ NO ₄	64700-56-7	13.6%
Kerosene	Kerosene	N/A	8008-20-6	> 25.0%

3. HAZARD IDENTIFICATION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS: Harmful if swallowed. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

PHYSICAL OR CHEMICAL HAZARDS: Combustible liquid. May release toxic fumes if burned.

4. FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTE TO PHYSICIAN: Contains petroleum distillate – vomiting may cause aspiration pneumonia.

5. FIRE-FIGHTING MEASURES

Flash point (TCC): 84.5°C (184.1°F)

Flammable Limits (LEL): Unknown

Fire and Explosion Hazards: May decompose in fire due to thermal decomposition releasing irritating and toxic gasses.

Means of Extinction: Use water fog, carbon dioxide, foam or dry chemical.

Fire Fighting Instructions: Evacuate area and fight fire upwind from a safe distance to avoid possible hazardous fumes and decomposition products. Dike runoff and do not allow runoff to enter sewers, storm drains or waterways. Foam and dry chemical extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

Firefighting Equipment: Self-contained breathing apparatus with full face piece and full bunker gear.

Hazardous Combustion Products: Hydrogen chloride, oxides of nitrogen, phosgene.

NFPA Ratings: Health – 2 / Flammability – 2 / Reactivity – 0

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this MSDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water.

SMALL SPILLS: Absorb spill with sand, vermiculite or other inert absorbent. Place contaminated material into an appropriate container for disposal.

LARGE SPILLS: Dike large spills using absorbent or impervious materials such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify, scrape up and place in an appropriate container for disposal. After removal, flush contaminated area thoroughly with water, observing all environmental regulations. Recover wash liquid with additional absorbent and place in container for disposal.

7. HANDLING AND STORAGE

Do not allow to come into contact with skin, eyes and clothing. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Do not use or store near heat or open flame. Do not cut or weld container. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a secured storage area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower. Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below exposure limits. Local mechanical exhaust ventilation may be required.

Protective Clothing: Long-sleeved shirt, long pants and shoes plus socks, and chemical resistant gloves such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber.

General: Wash thoroughly with soap and water after handling. Discard clothing and other absorbent materials that have been heavily contaminated with this product; do not reuse them. Follow the manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Amber liquid
Odor: Kerosene-like
pH: 4.0 – 5.0
Specific Gravity: 1.05 – 1.10 g/ml @ 20°C (8.75 – 9.20 lb/gal)
Solubility in Water: Emulsifies

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and transportation situations. May decompose if heated.

CONDITIONS TO AVOID: Temperatures above 40°C (105°F) and below -2°C (28°F).

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, oxides of nitrogen, phosgene.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong acids and oxidizing agents.

POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY

Oral LD₅₀ (rat): > 1,000 mg/kg

ACUTE DERMAL TOXICITY

Dermal LD₅₀ (rat): > 2,000 mg/kg

ACUTE INHALATION TOXICITY

Inhalation LC₅₀ (rat): No data available.

EYE IRRITANT

Rabbit – Minimally irritating

SKIN IRRITATION

Rabbit – Moderately irritating

SENSITIZATION

Guinea Pig – Potential sensitizer after repeated exposure to concentrate

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CARCINOGENICITY:

ACGIH: Not listed

IARC: Not listed

NTP: Not listed

OSHA: Not listed

MUTAGENIC DATA: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.

ADDITIONAL DATA: Not known to cause reproductive or birth defects at normal exposure levels.

12. ECOLOGICAL INFORMATION

This herbicide is injurious to plants at extremely low concentrations. Nontarget plants may be adversely affected from drift and run-off.

This pesticide is toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL:

NONREFILLABLE CONTAINERS -

Do not reuse or refill nonrefillable containers. Offer for recycling, if available. Triple rinse container (or equivalent) promptly after emptying.

(Nonrefillable container \leq 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container $\frac{1}{4}$ full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

(Nonrefillable $>$ 5 gallons): Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container $\frac{1}{4}$ full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

REFILLABLE CONTAINERS -

Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORT INFORMATION

Non-Bulk ($<$ 119 gal.) Shipments by Land: Not regulated by DOT

Bulk (\geq 119 gal.) Shipments by Land:

DOT PROPER SHIPPING NAME: NA1993, COMBUSTIBLE LIQUID N.O.S. (Contains KEROSENE), 3, PG III

Shipments by Air or Vessel:

DOT PROPER SHIPPING NAME: UN1993, FLAMMABLE LIQUID, N.O.S. (Contains KEROSENE), 3, PG III

DOT EMERGENCY RESPONSE GUIDE: 128

MARINE POLLUTANT: No

15. REGULATORY INFORMATION

FIFRA –

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

SARA Title III – Section 302 Extremely Hazardous Substances

Not Listed

SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed, Fire

SARA Title III – Section 312 Threshold Planning Quantity

N/A

SARA Title III – Section 313 Reportable Ingredients

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Concentration</u>
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Triethylamine	121-44-8	16.25%
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OSHA HAZARD COMMUNICATION STANDARD: This product is not a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA –

<u>Chemical Name</u>	<u>CAS Number</u>	<u>RQ</u>	<u>Concentration</u>
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N/A	-	-	-
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CALIFORNIA PROP 65 STATUS –

This product does not contain any products known to the state of California to cause cancer or reproductive harm.

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Date of Issue:7/26/2007
Supersedes: None

IN CASE OF EMERGENCY, CALL CHEMTREC
UNITED STATES: 1-800-424-9300
INTERNATIONAL: 1-202-483-7616

Alligare 90 13 N 8th Street Opelika, AL 36801
MATERIAL SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

TRADEMARK OR PRODUCT NAME: Alligare 90
SYNONYMS: None, mixture
CHEMICAL FAMILY: Nonionic Surfactant
GENERIC DESCRIPTION: Nonionic Surfactant Blend
MOLECULAR WEIGHT: Not applicable, mixture

2. HAZARDOUS INGREDIENTS

OSHA REGULATED

COMPONENT	CAS. NO	WT%	EXPOSURE LIMITS
None			

Maximum of 1 ppm Ethylene Oxide (EO) (75-21-8) May be present in the product. The OSHA PEL and ACGIH TLV for EO is 1 ppm.
(EO Statement for any formula containing a component that is ethoxylated-REMOVE THIS INSTRUCTION and change paragraph to Black)

3. EFFECTS OF OVEREXPOSURE

INHALATION: Inhalation not likely. Mist may cause irritation of the respiratory tract.
SKIN CONTACT: Brief contact is not irritating. Prolonged contact may cause redness.
EYE CONTACT: Slightly irritating. May cause redness, irritation.
INGESTION: May cause abdominal discomfort, nausea, vomiting and diarrhea.
OTHER HEALTH EFFECTS: None

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data, and/or expert review of the product. Overexposure to any chemical may result in enhancement of pre-existing and adverse medical condition and allergic reactions.

4. EMERGENCY FIRST AID

CALL A POISON CONTROL CENTER OR DOCTOR IMMEDIATELY FOR TREATMENT ADVICE.

IF SWALLOWED: Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth to mouth if possible.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses if present, after the first 5 minutes, then continue rinsing eye. Have the product container with you when calling a poison control center or doctor, or going for treatment.

5. REACTIVITY DATA

STABILITY: () unstable (x) stable

INCOMPATIBILITY (MATERIALS TO AVOID): Avoid strong oxidizing and reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Burning can produce carbon monoxide and/or carbon dioxide

HAZARDOUS POLYMERIZATION: () may occur (x) will not occur

CONDITIONS TO AVOID: Open flame or extreme heat.

6. PHYSICAL PROPERTIES

APPEARANCE AND ODOR: Light, golden liquid

BOILING POINT: NA

SPECIFIC GRAVITY: (Water=1) 1.03 +/- .05

VAPOR DENSITY: NA

VAPOR PRESSURE: NA

EVAPORATION RATE: (butyl acetate = 1) NA

SOLUBILITY IN WATER: Soluble

7. NFPA HAZARD RATING (National Fire Protection Association)

Flammability 1	Health: Exposure could cause irritation but only minor residual injury even if no treatment is given.
Health 1	0 Instability
Special Hazard	Flammability: Exposure could cause irritation but only minor residual injury even if no treatment is given.. Instability: Normally stable, even under fire exposure conditions, and are not reactive with water.

8. FIRE AND EXPLOSION HAZARD INFORMATION**FLASHPOINT:** >200 °F**FLAMMABLE LIMITS:** NA**EXTINGUISHING MEDIA:** Foam, Water fog, Dry chemical, ABC fire extinguisher.**SPECIAL FIRE FIGHTING PROCEDURES:** Self-contained positive breathing apparatus and protective clothing should be worn.**UNUSUAL FIRE HAZARD:** None known**9. SPECIAL PRECAUTIONS****HANDLING AND STORAGE:** Use with adequate ventilation. Wash thoroughly after handling. Keep away from heat, sparks and flames.**OTHER PRECAUTIONS:** Keep in original container tightly closed. Do not reuse empty container. Avoid contact with eyes, skins, and clothing. Do not store with food, feed, or other material to be used or consumed by humans or animals.**10. SPECIAL PROTECTION INFORMATION****RESPIRATORY PROTECTION:** Appropriate to chemical.**VENTILATION:** Adequate ventilation.**PROTECTIVE GLOVES:** Impervious.**EYE PROTECTION:** Wear chemical safety goggles. Do not wear contact lenses.**11. SPILL OR LEAK PROCEDURES****SPILLS OR RELEASES:** If material is released or spilled wear eye and skin protection. Floor may be slippery; use care to avoid falling. Contain spill immediately with inert materials (e.g. sand, earth). Avoid discharge to natural waters. Transfer liquids and solid diking material to suitable containers for recovery or disposal.**WASTE DISPOSAL:** Do not contaminate water, food or feed by storage or disposal. Dispose of in an approved waste disposal facility in accordance with all Federal, State, and Local Regulations.**CONTAINER DISPOSAL:** Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by local regulations.**12. REGULATORY INFORMATION**

COMPOUNDS WHICH REQUIRE REPORTING UNDER SARA TITLE III

Sara Regulated Compounds	Section	CAS NO.	Percent
None Known			

13. OTHER INFORMATION**WARNING!** This product contains a detectable amount of ethylene oxide, which is known to the State of California to cause cancer and/or reproductive toxicity.

Ethoxylated products may contain residual amounts of ethylene oxide (EO) which can accumulate in the container headspace and be released into the ambient environment. This process is enhanced when the product is agitated, as during tank car loading and unloading, and blending operations. Ethylene oxide causes tumors in laboratory animals. The Occupational Safety and Health Administration (OSHA) Permissible Exposure Level (PEL) for EO is 1 ppm for an eight-hour time weighted average exposure. The standard regulates occupational exposure to EO from all sources, including products containing residual EO. It is the responsibility of the employer to comply with OSHA ethylene oxide standard (29 CFR 1910.1047).

The recommendation for safe handling and protection procedures is believed to be generally suitable for the standard uses of this compound. However, each user should identify his intended uses of this material and determine whether they are appropriate. All data included in this document is released as typical values and should not be utilized to determine the suitability of this material for a particular use or purpose. No warranty, either expressed or implied, is hereby made, nor do we give permission, inducement, or recommendations to practice any patented invention without a license. All data is offered for consideration, investigation, and verification purposes only.

SAFETY DATA SHEET

ALLIGARE, LLC



Updated: January 16, 2014
Page 1 of 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Alligare Marking Dye™
Manufactured for:	Alligare, LLC 13 N. 8 th Street Opelika, AL 36801
Product Use:	Spray Pattern Indicator
CAS Number:	Proprietary
Emergency telephone number:	(Chemtrec Information 24 hours) (800) 424-9300
For MSDS, Product Safety or Regulatory inquiries, call:	(800) 323-6280
Customer Service, call:	(847) 596-3001

2. HAZARDS IDENTIFICATION

Reportable Components: None



Primary Routes of Exposure: Eyes, Skin, Oral and Inhalation

Ingestion: May cause nausea, vomiting and diarrhea.

Eye Contact: May cause irritation and reddening.

Skin Contact: May cause irritation and reddening.

Inhalation: May cause respiratory and mucosal irritation.

Other Effects: No information was found in connection with medical conditions aggravated by exposure. This product is not a carcinogen by NTP, OSHA and ACGIH.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Component</u>	<u>CAS Number</u>	<u>Weight %</u>
Mixture	Proprietary	100%

4. FIRST AID MEASURES

If in Eyes: Check for and remove contact lenses. Immediately flush eyes with water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

If on Skin: Wash affected area with plenty of soap and water. Cold water may be used. Get medical attention if irritation develops.

If Swallowed: Do not induce vomiting unless directed to do so by medical personnel. Never give fluids or force vomiting if the person is unconscious, is having convulsions or has no gag reflex. If large quantities are swallowed, get emergency medical help immediately.

If Inhaled: Move person to fresh air. If person is having difficulty breathing, give oxygen. If not breathing, give artificial respiration. Get emergency medical help immediately.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

5. FIREFIGHTING MEASURES

Suitable Extinguishing media: Water spray, foam, CO₂, or dry chemicals may be used in areas where this product is stored.

Specific Hazards: None

PPE and Precautions: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

SAFETY DATA SHEET

ALLIGARE, LLC



Updated: January 16, 2014

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6. ACCIDENTAL RELEASE MEASURES

In Case of Spill: Evacuate the spill area, except for cleanup personnel. Wear NIOSH/MSHA-approved respirator and protective equipment as referenced in Section 8 below. Control spill with adsorbent pads or booms. If necessary, apply granular or loose adsorbent to spill. When absorbed, sweep or otherwise collect and dispose of properly.

Disposal: Dispose of collected waste in accordance with federal, state and local regulations.

7. HANDLING AND STORAGE

Keep away from heat, sparks and flame. Keep container closed. Safety goggles with full-face shield and eyewash recommended. USDA-accepted Nitrile (CFR-20) or Neoprene Rubber (CFR-21) recommended. Wear appropriate clothing to prevent repeated or prolonged skin contact. Use only with adequate mechanical exhaust ventilation. To avoid fire minimize ignition sources. Product should be stored in a dry place with temperatures above 30° F. Partially used containers should be resealed between uses for maximum storage stability.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits: N/D

Eye/Face Protections: Wear splash-proof chemical safety goggles. Contact lenses should not be worn when working with chemicals.

Skin Protection: Wear coveralls and boots to minimize skin contact. As precautions, wash hands and face with mild soap and water before eating, drinking, smoking or using restroom. After each shift, clean all protective equipment, wash work clothes, and shower.

Respiratory Protection: Not required under normal use conditions with good ventilation. Protect against spray mists.

General Protection: Avoid contact with skin, eyes and clothing. Avoid breathing vapors. Wash thoroughly after handling product.

Note: When selecting personal protective equipment and clothing, follow all of the manufacturer specifications and recommendations that apply to your specific operation and processing conditions. Take into consideration all working conditions and all chemicals to be handled or processed. Eye wash fountains and drench showers should be located within 100 feet or a 10 second walk or the work area per ANSI Z358.1-1990.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Deep blue liquid	UEL:	N/D
Odor:	No odor	LEL:	N/D
Odor Threshold:	N/D	Vapor Pressure:	N/D
pH:	3	Vapor Density:	N/D
Melting Point:	N/D	Relative Density:	8.75 lbs/gallon
Freezing Point:	N/D	Solubility:	Dispersible in water
Boiling Point:	212°F	Partition Coefficient:	N/D
Flash Point:	N/D	Autoignition Temperature:	N/D
Evaporation Rate:	N/D	Decomposition Temperature:	N/D
Flammability:	N/D		

10. STABILITY AND REACTIVITY

Stability: Stable

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Condition to Avoid: None known.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Burning will produce oxides of carbon nitrogen and sulfur.

SAFETY DATA SHEET

ALLIGARE, LLC



Updated: January 16, 2014
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11. TOXICOLOGICAL INFORMATION

No toxicological data is available for this product.

12. ECOLOGICAL INFORMATION

No ecological data is available for this product.

13. DISPOSAL CONSIDERATIONS

Component Waste Numbers:	No EPA Waste Numbers are applicable for this product's components.
Disposal Instructions:	Recycle or rework material if at all possible. Incinerate material at an approved facility. Treat at an acceptable waste treatment facility or municipal waste treatment plant after proper testing and approval waste samples in compliance with applicable federal, state and local environmental regulations.
Container Reuse:	An empty container can contain product residue, and should not be reused. If not professionally cleaned and reconditioned, crushing or other means is recommended to prevent unauthorized reuse.

14. TRANSPORT INFORMATION

DOT Status (Highway and rail):	Not Regulated
IATA Status (Air):	Not Regulated
Marine Pollutant:	No

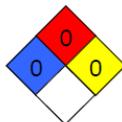
15. REGULATORY INFORMATION

TSCA: All components of this product are listed under the regulation of the Toxic Substance Control Act.
SARA HAZARD: No

16. OTHER INFORMATION

HMIS Hazard Rating

Health:	0
Flammability:	0
Reactivity:	0
Personal Protection:	X



Date Prepared: January 16, 2014
Last Updated: January 16, 2014

WHILE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE BELIEVED TO BE ACCURATE AS OF THE DATE HEREON, ALLIGARE, LLC MAKES NO WARRANTY WITH RESPECT THERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

N/R—Not Rated
N/D—Not Determined
N/A—Not Applicable
N/E—Not Established

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; NJTSR = New Jersey Trade Secret Registry.

MATERIAL SAFETY DATA SHEET

CLOPYRALID 3

Alligare, LLC
Emergency Phone: Chemtrec 800-424-9300
Effective Date: April 02, 2007

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ALLIGARE CLOPYRALID 3

DESCRIPTION: A liquid herbicide.

EPA Reg. No.: 81927-14

COMPANY IDENTIFICATION:

Alligare, LLC
13 North 8th Street
Opelika, AL 36801

2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Chemical Name	Formula	CAS #
Clopyralid	(3,6-Dichloro-2-pyridinecarboxylic acid), Monoethanolamine salt	C ₆ H ₃ Cl ₂ NO ₂	57754-85-5

3. HAZARD IDENTIFICATION

Health Hazards: Harmful if absorbed through skin.

Physical Hazards: May release irritating or toxic fumes if burned.

Environmental Hazards: Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes.

4. FIRST AID

NOTE: Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

5. FIRE-FIGHTING MEASURES

Flash point: 47.2°C (117°F)

Flammable Limits (LFL-UFL): Not determined

Fire and Explosion Hazards: May thermally decompose in fire releasing irritating and toxic fumes.

Extinguishing Medium: Alcohol resistant foam, CO₂, dry chemical, foam, or water fog preferred.

Fire Fighting Equipment: Firefighters should be equipped with self-contained positive pressure breathing apparatus and turnout gear.

Fire Fighting Instructions: Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

NFPA Ratings: Health – 2 / Flammability – 2 / Reactivity – 1

2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

Small Spills: Absorb using sand, vermiculite or other inert absorbent. Place contained material in appropriate container for disposal.

Large Spills: Dike spillage and recover and retain as much free liquid as possible for reuse. Pick up remainder with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. After removal, thoroughly clean contaminated area with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

Handling: Do not swallow and avoid contact with eyes, skin and clothing. Use only in a well-ventilated area. Wear appropriate personal protective clothing and equipment (see Section 8 below).

Storage: Keep out of reach of children and animals. Keep in the original container in a cool (above 28°F), dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Pesticide Applicators and Workers: Refer to the product label attached to the product.

Engineering Controls: Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Local mechanical exhaust ventilation may be required. Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Personal Protective Equipment (PPE):

Eyes – Safety goggles or full face respirator if vapors cause eye discomfort.

Clothing – Long-sleeved shirt and long pants. Shoes plus socks.

Gloves – Chemical resistant gloves such as barrier laminate, butyl, nitrile or neoprene rubber, polyvinyl chloride (PVC) or viton.

Respirator – When handling in enclosed areas or areas with limited ventilation, use a respirator with either an organic vapor cartridge with a pre-filter approved for pesticides (MSHA/NIOSH TC-23C) or a canister approved for pesticides (MSH/NIOSH TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

General Safety and Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use; replace if necessary (e.g. pinhole leaks). Remove PPE immediately after handling this product; wash the outside of gloves before removing.

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. As soon as possible, wash thoroughly and change into clean clothing. Keep away from food, drink and animal feed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Reddish-brown Liquid

Odor: Sweet

pH: 7.5 – 8.0

Specific Gravity: 1.161 @ 20°C

Vapor Pressure: 23.5mmHg @ 20°C

Solubility: Miscible

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and storage conditions. May decompose if heated.

CONDITIONS TO AVOID: Direct sunlight, open flame and temperatures close to the flash point (117°F).

SUBSTANCES TO AVOID: Acids, oxidizing materials, halogenated organics, brass, copper, zinc and aluminium.

HAZARDOUS REACTIONS: This product is chemically stable and no hazardous reactions should occur if stored and handled as prescribed / indicated.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride and oxides of nitrogen.

HAZARDOUS POLYMERIZATION: Does not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY

LD₅₀ (rat): > 5,000 mg/kg

ACUTE DERMAL TOXICITY

LD₅₀ (rat): > 2,000 mg/kg

ACUTE INHALATION TOXICITY

LC₅₀ (rat): > 2.1 mg/L

EYE IRRITATION: Moderate

SKIN IRRITATION: Slight

SKIN SENSITIZATION: Not a skin sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CARCINOGENICITY:

ACGIH: Not Listed

IARC: Not Listed

NTP: Not Listed

OSHA: Not Listed

MUTAGENIC TOXICITY: Little evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: No evidence in animal studies.

12. ECOLOGICAL INFORMATION

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes.

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils that would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by the use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Plastic – Do not reuse container. Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration or, if allowed by state and local authorities, by burning (non-metal containers only).

14. TRANSPORT INFORMATION

CONTAINERS NOT Shipped by Air: Not Regulated by DOT

CONTAINERS Shipped by Air:

DOT PROPER SHIPPING NAME: NA1993, COMPOUNDS, WEED KILLING, LIQUID, 3, PG III

DOT HAZARD CLASS OR DIVISION: 3

DOT UN/NA NUMBER: 1993

DOT PACKING GROUP: III

REPORTABLE QUANTITY: N/A

DOT EMERGENCY RESPONSE GUIDE: 128

MARINE POLLUTANT: No

15. REGULATORY INFORMATION

FIFRA –

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

OSHA HAZARD COMMUNICATION STANDARD STATUS

Hazardous Chemical

SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed

SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

SARA Title III – Section 313 Reportable Ingredients

None

CERCLA –

Not Listed

California Prop 65 Status –

Not Listed

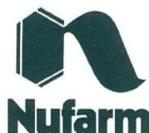
16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

DISCLAIMER:

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT ALLIGARE, LLC TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS. JUDGMENTS AS TO THE SUITABILITY OF THE INFORMATION HEREIN FOR THE INDIVIDUAL'S OWN USE OR PURPOSES IS NECESSARILY THE INDIVIDUAL'S OWN RESPONSIBILITY. ALTHOUGH REASONABLE CARE HAS BEEN TAKEN IN THE PREPARATION OF SUCH INFORMATION, ALLIGARE, LLC EXTENDS NO WARRANTIES, MAKES NO REPRESENTATIONS, AND ASSUMES NO RESPONSIBILITY AS TO THE ACCURACY OR SUITABILITY OF SUCH INFORMATION FOR APPLICATION TO THE INDIVIDUAL'S PURPOSES OR THE CONSEQUENCES OF ITS USE.

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.



For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300.
For Medical Emergencies Only, Call 1-877-325-1840.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: AquaNeat[®] Aquatic Herbicide
Synonyms: Isopropylamine Salt of Glyphosate; Glyphosate IPA Salt
EPA Reg. No.: 228-365

Company Name: Nufarm Americas Inc.
 150 Harvester Drive, Suite 200
 Burr Ridge, IL 60527

Date of Issue: April 5, 2007 **Supersedes:** March 29, 2005
Sections Revised: New or updated information all sections

2. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance and Odor: Colorless viscous solution with little odor.

Warning Statements: Keep out of reach of children. CAUTION. Harmful if inhaled. Avoid breathing spray mist.

Potential Health Effects:

Likely Routes of Exposure: Skin contact and inhalation.

Eye Contact: Slightly irritating based on toxicity studies.

Skin Contact: Slightly toxic and slightly irritating based on toxicity studies.

Ingestion: Slightly toxic based on toxicity studies. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed.

Inhalation: Low inhalation toxicity.

Medical Conditions Aggravated by Exposure: None known

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:

Available data on similar formulations suggest that this product would be slightly to moderately toxic to aquatic organisms and practically non-toxic to avian species, honeybees and earthworms.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Glyphosate, N-(phosphonomethyl) glycine, in the form of its isopropylamine salt	38641-94-0	53.8
Other Ingredients		46.2

4. FIRST AID MEASURES

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable due to aqueous formulation

Autoignition Temperature: Not determined

Flammability Limits: Not determined

Extinguishing Media: In case of fire, use water (flood with water), dry chemical, CO₂, or alcohol foam.

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon, nitrogen, and phosphorous.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Thoroughly scrub floor or other impervious surface with a strong industrial detergent and rinse with water. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE**Handling:**

Avoid breathing spray mist. Remove contaminated clothing and wash clothing before reuse. Wash thoroughly with soap and water after handling.

MATERIAL SAFETY DATA SHEET**AquaNeat Aquatic Herbicide**

Spray solutions of this product should be mixed, stored and applied using only stainless steel, aluminum, fiberglass, plastic or plastic-lined containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with such containers and tanks to produce hydrogen gas which may form a highly combustible gas mixture. This gas mixture could flash or explode, causing serious personal injury, if ignited by open flame, spark, welder's torch, lighted cigarette or other ignition source.

Storage:

STORE ABOVE 10°F (-12°C) TO KEEP PRODUCT FROM CRYSTALLIZING. Crystals will settle to the bottom. If allowed to crystallize, place in a warm room 68°F (20°C) for several days to redissolve and shake, roll or agitate to mix well before using. Do not contaminate water, foodstuff, feed or seed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Engineering Controls:**

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Isopropylamine Salt of Glyphosate	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Colorless viscous solution with little odor.

Boiling Point: Not determined
Density: 10.00 pounds/gallon
Evaporation Rate: Not determined
Freezing Point: 10°F (-12°C)
pH: 5.0 - 5.4

Solubility in Water: Miscible
Specific Gravity: 1.201 @ 20°C
Vapor Density: Not determined
Vapor Pressure: Not determined
Viscosity: 67.9 cPs @ 20°C

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Chemical Stability: This material is stable under normal handling and storage conditions.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids. This product reacts with galvanized steel or unlined steel (except stainless steel) to produce hydrogen gas that may form a highly combustible gas mixture which could flash or explode.

Hazardous Decomposition Products: Under fire conditions may produce gases such as oxides of carbon, nitrogen, and phosphorous.

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Data from laboratory studies conducted on a similar, but not identical, formulation:

Oral: Rat LD₅₀: >5,000 mg/kg

Dermal: Rabbit LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >4.24 mg/l

Eye Irritation: Rabbit: Minimally irritating

Skin Irritation: Rabbit: Non-irritating

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to glyphosate may decrease body weight gains and effects to liver.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to glyphosate may cause effects to the liver. There was no evidence of carcinogenicity in animal studies using glyphosate. EPA has given glyphosate a Group E classification (evidence of non-carcinogenicity in humans).

Reproductive Toxicity: In laboratory animal studies with glyphosate, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Developmental Toxicity: In animal studies, glyphosate did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother.

Genotoxicity: Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Glyphosate technical:

96-hour LC ₅₀ Bluegill:	120 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>4,500 ppm
96-hour LC ₅₀ Rainbow Trout:	86 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>4,500 ppm
48-hour LC ₅₀ Daphnia:	780 mg/l		

Environmental Fate:

In the environment, salts of glyphosate rapidly dissociate to glyphosate, which adsorbs strongly to soil and is expected to be immobile in soil. Glyphosate is readily degraded by soil microbes to AMPA (aminomethyl phosphonic acid) that is further degraded to carbon dioxide. Glyphosate and AMPA are unlikely to enter ground water due to their strong adsorptive characteristics. Terrestrially-applied glyphosate has the potential to move into surface waters through soil erosion because it may be adsorbed to soil particles suspended in the runoff. Aquatic applications registered for certain formulations may also result in glyphosate entering surface waters. Complete degradation is slow, but dissipation in

water is rapid because glyphosate is bound in sediments and has low biological availability to aquatic organisms. These characteristics suggest a low potential for bioconcentration in aquatic organisms and this has been verified by laboratory investigations of glyphosate bioconcentration in numerous marine and freshwater organisms with and without soil. The maximum whole body bioconcentration factors for fish were observed to be less than 1X. Bioconcentration factors for sediment dwelling mollusks and crayfish tended to be slightly higher, but were always less than 10X. In addition, any residues accumulated in organisms were rapidly eliminated.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method:**

Wastes resulting from the use of this product that cannot be used or chemically reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, state or local procedures. Emptied container retains vapor and product residue. Observe all label safeguards until container is destroyed.

Container Handling and Disposal:

Plastic Bottles and Non-Returnable Plastic Drums: Do not reuse container. Triple rinse container. Then puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Returnable/Refillable Containers: Close all openings which have been opened during use and replace all caps. Contact Nufarm Customer Service at 1-800-345-3330, to arrange for return of the empty refillable container.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT

Non Regulated – See 49 CFR 173.132(b)(3)

IMDG

Non Regulated – See IMDG 2.6.2.1.3

IATA

Non Regulated – See IATA 3.6.1.5.3

15. REGULATORY INFORMATION**U.S. Federal Regulations:**

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): Immediate

Section 313 Toxic Chemical(s): None

Reportable Quantity (RQ) under U.S. CERCLA: None

RCRA Waste Code: None

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not listed

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

AquaNeat is a registered trademark of Nufarm Americas Inc.

Material Safety Data Sheet



DuPont™ Escort® XP Herbicide

Version 2.0

Revision Date 01/22/2010

Ref. 130000036195

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : DuPont™ Escort® XP Herbicide
Tradename/Synonym : DPX-T6376 60 XP
Metsulfuron Methyl 60 XP
Escort 60 DF
B11495142
METSULFURON METHYL (Methyl 2-[[[(4-methoxy-6-methyl-1,3,4-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate)

MSDS Number : 130000036195
Manufacturer : DuPont
1007 Market Street
Wilmington, DE 19898

Product Information : 1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency : 1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency : CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview
CAUTION!
Causes eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Avoid breathing vapours or mist.

Potential Health Effects
This section includes potential acute adverse effects which could occur if this material is not used according to the label.

Skin : May cause: Irritation with discomfort or pain, redness or rash, itching or swelling.

Eyes : May cause: Irritation with discomfort, pain, redness, or visual impairment.

Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Metsulfuron methyl	74223-64-6	60 %
Other Ingredients		40 %

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SECTION 4. FIRST AID MEASURES

- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Inhalation : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
- Ingestion : No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.

SECTION 5. FIRE-FIGHTING MEASURES

- Flammable Properties
Flash point : not applicable
- Suitable extinguishing media : Water spray, Dry chemical, Foam, Carbon dioxide (CO2)
- Unsuitable extinguishing media : High volume water jet, (contamination risk)
- Firefighting Instructions : In the event of fire, wear self-contained breathing apparatus. Wear full protective equipment. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers / tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.
- Safeguards (Personnel) : Wear personal protective equipment. Refer to protective measures listed in sections 7 and 8.
- Spill Cleanup : Clean-up methods - small spillage Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean-up methods - large spillage Prevent further leakage or spillage. Use approved industrial vacuum cleaner for removal. Shovel into suitable container for disposal. If spill area is on

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ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.

Accidental Release Measures : Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

- Handling (Personnel) : Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Handling (Physical Aspects) : Dust may form explosive mixture in air. Keep away from heat and sources of ignition.
- Storage : Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store product in original container only, away from other pesticides, fertilizer, food or feed. Keep containers tightly closed in a cool, well-ventilated place. Keep out of the reach of children.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Personal protective equipment
Skin and body protection : Applicators and other handlers must wear:
Long sleeved shirt and long pants
Shoes plus socks
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:
Coveralls
Shoes plus socks
- Protective measures : Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.
- Exposure Guidelines
Exposure Limit Values
Metsulfuron methyl
AEL * (DUPONT) 10 mg/m3 8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Form : solid, granular
Color : light brown
Odor : odourless
Specific Gravity : 1.47 at 25 °C (77 °F)
Bulk density : 0.64 - 0.74 g/ml
Tapped
Water solubility : dispersible

SECTION 10. STABILITY AND REACTIVITY

Stability : Stable at normal temperatures and storage conditions.
Conditions to avoid : None reasonably foreseeable.
Incompatibility : No materials to be especially mentioned.

SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ Escort® XP Herbicide
Dermal LD50 : > 2,000 mg/kg , rabbit
Oral LD50 : > 5,000 mg/kg , rat
Skin irritation : Species: rabbit, No skin irritation
Eye irritation : Species: rabbit, slight irritation
Sensitisation : Species: guinea pig, Animal test did not cause sensitization by skin contact.
Metsulfuron methyl
Inhalation 4 h LC50 : > 5.3 mg/l, rat
Repeated dose toxicity : The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.
Oral, rat
Reduced body weight gain, Organ weight changes, Liver
Dermal, rabbit
Skin irritation
Carcinogenicity : Did not show carcinogenic effects in animal experiments.
Mutagenicity : Did not show mutagenic effects in animal experiments.
Did not cause genetic damage in cultured bacterial cells.
Genetic damage in cultured mammalian cells was observed in some laboratory tests but not in others.

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Reproductive toxicity : Animal testing did not show any effects on fertility.

Teratogenicity : Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Metsulfuron methyl

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 150 mg/l

96 h LC50 : Lepomis macrochirus (Bluegill sunfish) > 150 mg/l

Toxicity to other organisms

Metsulfuron methyl

LD50 : Anas platyrhynchos (Mallard duck) > 2,510 mg/kg

LC50 : Colinus virginianus (Bobwhite quail) > 5,620 mg/kg

Additional ecological information : Environmental Hazards: Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

Container Disposal : Refer to the product label for instructions.

SECTION 14. TRANSPORT INFORMATION

IMDG UN-Number : 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Metsulfuron methyl)
Class : 9
Packaging group : III
Labelling No. : 9

Marine pollutant

Not regulated as a hazardous material by DOT.

Not regulated as a hazardous material by IATA.

Optional classification as per IATA Special Provision A97.

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SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s) : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

EPA Reg. No. : 352-439
In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SECTION 16. OTHER INFORMATION

	NFPA	HMIS
Health :	1	1
Flammability :	1	1
Reactivity/Physical hazard :	0	0

MSDS preparation date : 01/22/2010

DuPont™, Escort® are trademarks of E. I. du Pont de Nemours and Company

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.