APPENDIX C – AGDRIFT MODELING

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1.0 AGDRIFT MODELING FOR THE HUMAN HEALTH RISK ASSESSMENT

Off-site spray drift and resulting terrestrial deposition rates and water body concentrations were predicted using the computer model AgDRIFT, Version 2.0.05 (Spray Drift Task Force [SDTF] 2002). AgDRIFT is a product of the Cooperative Research and Development Agreement between the U.S. Environmental Protection Agency's (USEPA) Office of Research and Development and the Spray Drift Task Force (a coalition of pesticide registrants). AgDRIFT was developed for use in regulatory assessments of off-site drift associated with agricultural use of pesticides through aerial, ground, or orchard/air blast applications; it is based on the computer program AGDISP, which was developed by the National Aeronautics and Space Administration (NASA), the U.S. Department of Agriculture Forest Service, and the U.S. Army. AgDRIFT was created in response to the idea that pesticide drift is primarily a function of application technique (e.g., droplet size and release height), environmental conditions, and physical properties of the spray solution and is not a function of the specific active ingredient. The computational approach employed by AgDRIFT is based on a simple model that has evolved over a period of more than 20 years and yields high correlation with field measurement datasets. This model was selected for use in the risk assessment because of its acceptability for use in regulatory assessments of off-site drift and its suitability to this particular application.

AgDRIFT allows the user to choose between three tiers (Tiers I, II, and III) of increasingly complex evaluations of off-site drift and deposition. The basic difference between the three tiers is the amount of control users have in selecting model input variables. Tier I represents a screening level model and supports the evaluation of aerial and ground application scenarios, whereas Tiers II and III permit an increasing level of access to model details for evaluation of aerial application scenarios only (e.g., agricultural and forestry applications). Tier I is based on a set of standard "Good Application Practices" and requires little knowledge of the actual application conditions or herbicide properties. Tier I allows the user to modify a small number of model variables. Tiers II and III are based on the same set of "Good Application Practices" as Tier I; however, Tiers II and III allow the user to modify a progressively larger set of variables to make the scenario more representative of actual environmental conditions. Tier I was used in the risk assessment to evaluate off-site drift associated with ground application scenarios. Tier II was used to evaluate off-site drift associated with aerial applications in agriculture-like (e.g., rangeland) and forestry scenarios in the risk assessment. Both Tier I and Tier II were used to evaluate impacts to terrestrial areas and to small water bodies. The ground and aerial application models and the model input variables (including variables specific to the application method, environmental setting, and herbicide evaluated) are discussed below.

1.1 Ground Applications – Tier I

Ground applications were modeled using Tier 1 of the AgDRIFT model for both low- and high-placed boom application techniques. The actual model runs conducted were based on the specific BLM uses of each herbicide. Off-site spray drift and resulting terrestrial deposition rates and water body concentrations were predicted at 25, 100, and 900 feet (ft) from the application area for each herbicide application scenario. The AgDRIFT model determined the fraction of the application rate that is deposited on the off-site location without considering herbicide degradation. Water body concentrations were determined from the predicted deposition rates through a process representative of simple mixing without considering herbicide degradation.

The Tier I ground-application model variables (most of which cannot be changed by the user) are summarized for each herbicide in Tables 1 to 8, and those model inputs that can be modified are discussed below:

- Boom Height – The Tier I ground application model allows selection of a low (20 inches [in] / 0.508 meters m) or a high (50 in / 1.27 m) boom height. The AgDRIFT software default setting is the low boom height, but as mentioned above, off-site spray drift associated with ground-level herbicide application was modeled

using both the low- and high-boom options. Higher boom heights will result in increased predicted off-site drift and deposition.

- Drop Size Distribution – The drop size distribution of the released herbicide spray mixture is a major controlling variable in off-site drift of herbicides; finer drop sizes will result in greater predicted off-site drift and deposition. The Tier I ground application model allows the user to select from two drop size distributions: very fine to fine or fine to medium/coarse. The AgDRIFT software default setting is a very fine to fine drop size distribution; however, for this risk assessment the BLM was able to supply information regarding the equipment typically used in herbicide application that supports the specification of individual herbicide drop size distribution. Therefore, this drop size distribution has been assumed for the evaluation of off-site spray drift associated with ground-level herbicide applications.

- Data Percentile – The Tier I ground application model allows bounding of predicted deposition rates based on the field data collected in support of the SDTF model development. The AgDRIFT user manual recommends the 90th percentile of this data for regulatory use and the 50th percentile for public use. The 90th percentile was utilized in this risk assessment.

- Number of Swathes – The Tier I ground application allows modification of the number of application swaths required to cover an application area. The default assumption of 20 swaths (45 ft / 13.72 m wide) was used in this risk assessment.

1.2 Ground Applications – Tier II

The Tier II AgDRIFT model was used in this risk assessment to evaluate off-site drift associated with agricultural-like (rangeland) and forestry aerial herbicide applications. The Tier II AgDRIFT evaluation is dependent on a large number of modeling inputs specific to the herbicides considered in the risk assessment, the spraying conditions (e.g., the environmental setting), the spray system to be used, and the meteorological conditions under which the herbicides will be applied. These inputs are discussed below and presented in Tables 1 to 8.

Off-site spray drift and resulting terrestrial deposition rates and water body concentrations were predicted at 100, 300, and 900 ft from the application area for each herbicide application scenario. The AgDRIFT model determined the fraction of the application rate that is deposited on the off-site location without considering herbicide degradation. As with ground applications, water body concentrations were determined from the predicted deposition rates through a process representative of simple mixing without considering herbicide degradation.

The Tier II aerial evaluation of off-site drift depends on the following model inputs:

- Drop Size Distribution – The drop size distribution of the released herbicide spray mixture is a major controlling variable in off-site drift of herbicides. Smaller herbicide drop sizes will increase off-site spray drift. The Tier II aerial application model allows the user to choose from four drop size distributions (very fine to fine, fine to medium, medium to coarse, and coarse to very coarse). Distributions specific to the herbicides evaluated are identified in Tables 1 to 8.

- Aircraft Type – It is possible to choose the specific aircraft type to be used in applying the herbicide product. There are four aircraft to select from:

    - Ag Husky slow, fixed-wing aircraft
    - Air Tractor AT-502 fast, fixed-wing aircraft
    - Wasp Helicopter
    - Air Tractor AT-401 slow, fixed-wing aircraft

The Air Tractor AT-401 is the default aircraft set in the AgDRIFT model. Aircraft type affects drift primarily through airspeed; faster airspeeds will increase predicted off-site drift. For all aerial applications in this risk assessment, both the Air Tractor AT-401 and the Wasp Helicopter were modeled to predict off-site drift in aerial and forestry applications.

- Boom Length – Boom length is defined as the percent length of the spray boom relative to the wing span or rotor diameter of the aircraft. Default values are available for each of the above aircraft; however, users can define boom widths ranging from 0 to 85 percent of the wing span or rotor diameter. Depending on aircraft type used in this risk assessment (discussed above), default boom widths range from approximately 72.8 to 76.3 percent of aircraft wing span or rotor diameter. These default values have been utilized in this risk assessment.

- Boom Height – Boom height is the height of the spray boom above the ground in agricultural-like applications and the height of the spray boom above the canopy in forestry applications. AgDRIFT users can define a specific boom height within a range of 3 to 30 ft (0.9 to 9.1 m) above the ground or above the forest canopy. For this risk assessment the default boom height of 10 ft (3.05 m) was used for agricultural-like applications, and a boom height of 20 ft was assumed for forestry applications because it is expected that under most aerial forestry application scenarios a pilot will fly closer to 20 ft above the forest canopy to avoid colliding with individual trees that may be taller than the average canopy height. Increased assumed boom heights will result in greater predicted off-site drift.

- Number of Flight Lines – This represents the number of aircraft flight lines located a swath width apart within an application area. Users can specify between 1 and 20 flight lines; a default of 20 flight lines was used in this risk assessment. Increasing the number of flight lines will result in greater predicted off-site drift.

- Swath Width – Swath width measures the distance between flight lines. A swath width ranging from 15 to 100 ft (approximately 4.5 to 30.5 m) can be defined. The default value of 1.2 times the aircraft wingspan was used in this risk assessment. The smaller the swath width the greater the off-site drift.

- Swath Displacement – Swath displacement is the horizontal ground distance from the farthest downwind flight line to the edge of the application area. All calculations assume a default of ½ the swath width as the swath displacement. This default can be overridden by a user-defined swath displacement representing a fraction of the maximum application rate or a fixed distance downwind. User-defined swath displacement can range from –½ to 2 swaths. A value of –½ swath displacement is used if the farthest downwind flight line (the aircraft centerline) coincides with the edge of the application area. Decreasing swath displacement increases off-site drift.

- Meteorological Parameters – Wind speed, relative humidity, and temperature can be user-defined or set at the Tier II defaults of 10 miles per hour (mph) (4.47 meters per second [m/s]), 25 percent, and 88 degrees Fahrenheit (°F) (31 degrees Celsius [°C]), respectively. These defaults are the meteorological conditions used for generic herbicide labels. Hot and dry conditions with light to moderate winds would generally result in the greatest amount of drift and deposition. The average meteorological conditions for Phoenix, Arizona between May and October (i.e., hot and dry) were obtained from the AgDRIFT model library of meteorological data and used in this risk assessment.

- Herbicide Mixture-Specific Inputs – The Tier II evaluation allows user-defined inputs regarding the following usage characteristics of the herbicides being evaluated:

    - Herbicide Carrier Type (water or oil)
    - Spray Volume Rate (gallons per acre [gal/acre] or Liters per hectare [L/ha]) – volumetric rate at which final herbicide mixture is pumped through the spray booms and nozzles
    - Active Rate (lb/acre or kg/ha) – rate at which the herbicide active ingredient is applied

- Nonvolatile Rate (pounds per acre [lb/acre] or kilograms per hectare [kg/ha]) – rate at which the nonvolatile components of the final herbicide mixture are applied. If volatility information was not provided in the individual herbicide labels, the non-volatile rate was assumed to be equal to the active rate.

These inputs are specific to the herbicides being considered; therefore, the herbicide labels were reviewed and inputs identified. In addition, in a Tier II assessment of aerial forestry applications the Active Rate and Nonvolatile Rate are expressed as the Active Fraction and the Nonvolatile Fraction of the final herbicide mixture (as pumped through the spray boom and nozzles), respectively. Herbicide-specific values for these parameters are presented in Tables 1 to 8.

1.3 Terrestrial Applications

For both the Tier I and Tier II AgDRIFT models, it is necessary to identify the following parameters for the terrestrial assessment (i.e., the evaluation of the impact of off-site drift on terrestrial receptors):

- Terrestrial Field Definition – This field defines the type of terrestrial field to evaluate (point or area average). The "point" terrestrial field definition was utilized in this risk assessment. The selection of a point terrestrial field results in higher predicted terrestrial deposition rates.

- Distance to the Point or Area – This is the distance from edge of the application area to the terrestrial point or area to be evaluated. A range of distances were considered in this risk assessment. To evaluate off-site herbicide drift from ground-level applications, distances of 25, 100, and 900 ft to the point terrestrial field were considered. To evaluate off-site herbicide drift from aerial applications, distances of 100, 300, and 900 ft to the point terrestrial field were considered. A smaller distance between the evaluated terrestrial field and the area of application will result in greater estimated impact from off-site drift.

1.4 Aquatic Applications (Ponds)

In this risk assessment, herbicide impacts to ponds via aquatic exposure pathways are predicted to result from off-site drift, deposition to a hypothetical pond, and simple mixing of an individual herbicide within the hypothetical pond. The hypothetical pond considered in the assessment was a small pond ¼ acre in surface area and 3.28 ft (1 m) deep. For ground application scenarios, pond concentrations were predicted at 25, 100, and 900 ft from the application area. For aerial application scenarios, pond concentrations were predicted at 100, 300, and 900 ft from the application area.

1.5 Aquatic Applications (Streams)

In this risk assessment, herbicide impacts to streams via aquatic exposure pathways are predicted to result from off-site drift, deposition to a hypothetical stream, and mixing of an individual herbicide within the hypothetical stream. The hypothetical stream considered in the assessment was a small stream that was 6.56 ft (2 m) wide and 0.66 ft (0.2 m) deep with a flow rate of 31.7 gallons per second. For ground application scenarios, pond concentrations were predicted at 25, 100, and 900 ft from the application area. For aerial application scenarios, pond concentrations were predicted at 100, 300, and 900 ft from the application area.

1.6 Model Results

The results of the AgDRIFT modeling conducted for the herbicides considered assessments are summarized in Tables 9 to 16.

1.7 References

Spray Drift Task Force (SDTF). 2002. A User's guide for AgDRIFT 2.0.05: A Tiered Approach for the Assessment of Spray Drift of Pesticides. Regulatory Version. Spray Drift Task Force (SDTF).

Table C-1. Chemical Specific Inputs for AgDRIFT Model - Aminopyralid

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	0.078 and 0.11
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Fine to Medium
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	0.078/0.11
	Non-Volatile Rate	Typical/high	lbs/acre	0.078/0.11 (a)
	Spray Volume Rate	User specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-1 (continued). Chemical Specific Inputs for AgDRIFT Model – Aminoyralid

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	20
	Canopy Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Fine to Medium
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0019/0.0026
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0019/0.0026 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-2. Chemical Specific Inputs for AgDRIFT Model – Fluroxypyr

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	0.26 and 0.50
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		Ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	0.26 and 0.50
	Non-Volatile Rate	Typical/high	lbs/acre	0.26 and 0.50 (a)
	Spray Volume Rate	User specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-2 (continued). Chemical Specific Inputs for AgDRIFT Model – Fluroxypyr

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		Ft	20
	Canopy Height		Ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0062/0.0124
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0062/0.0124 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-3. Chemical Specific Inputs for AgDRIFT Model – Rimsulfuron

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb a.i./acre	0.0469 and 0.0625
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Fine to Medium
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs a.i./acre	0.0469 and 0.0625
	Non-Volatile Rate	Typical/high	lbs/acre	0.0469 and 0.0625 (a)
	Spray Volume Rate	User specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-3 (continued). Chemical Specific Inputs for AgDRIFT Model – Rimsulfuron

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	20
	Canopy Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0011/0.0014
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0011/0.0014 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-4. Chemical Specific Inputs for AgDRIFT Model – Clopyralid

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	0.25 and 0.50
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height	User Defined	ft	10
	# Flight Lines	User Defined	--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	0.25 and 0.50
	Non-Volatile Rate	Typical/high	lbs/acre	0.25 and 0.50 (a)
	Spray Volume Rate	User specified	gal/acre	5

Table C-4 (continued). Chemical Specific Inputs for AgDRIFT Model – Clopyralid

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	20
	Canopy Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0023/0.0046
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0023/0.0046 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-5. Chemical Specific Inputs for AgDRIFT Model – 2,4-D Land Application Annual

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	1.0 and 2.0
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height	User Defined	ft	10
	# Flight Lines	User Defined	--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	1.0 and 2.0
	Non-Volatile Rate	Typical/high	lbs/acre	1.0 and 2.0 (a)
	Spray Volume Rate	User specified	gal/acre	5

Table C-5 (continued). Chemical Specific Inputs for AgDRIFT Model – 2,4-D Land Application Annual

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	20
	Canopy Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0240/0.0479
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0240/0.0479 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-6. Chemical Specific Inputs for AgDRIFT Model – 2,4-D Land Application Woody

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	2.0 and 4.0
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height	User Defined	ft	10
	# Flight Lines	User Defined	--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	2.0 and 4.0
	Non-Volatile Rate	Typical/high	lbs/acre	2.0 and 4.0 (a)
	Spray Volume Rate	User specified	gal/acre	5

Table C-6 (continued). Chemical Specific Inputs for AgDRIFT Model – 2,4-D Land Application Woody

Scenario	Parameter	Input Options	Units	Value
Tier 2 Aerial (Forestry)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height		ft	20
	Canopy Height		ft	10
	# Flight Lines		--	20
	Swath Width (separation between flight lines)	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Fraction of Spray Material	User Specified	Fraction	0.0479/0.0958
	Non-Volatile Fraction of the Spray Material	User Specified	Fraction	0.0479/0.0958 (a)
	Spray Volume Rate	User Specified	gal/acre	5

(b) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-7. Chemical Specific Inputs for AgDRIFT Model – 2,4-D Aquatic Application (Floating)

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	2.0 and 4.0
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height	User Defined	ft	10
	# Flight Lines	User Defined	--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	2.0 and 4.0
	Non-Volatile Rate	Typical/high	lbs/acre	2.0 and 4.0 (a)
	Spray Volume Rate	User specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

Table C-8. Chemical Specific Inputs for AgDRIFT Model – 2,4-D Aquatic Application (Submerged)

Scenario	Parameter	Input Options	Units	Value
Tier 1 Ground (Agricultural)	Boom Height (High = 50 in; Low = 20 in)	Low or High	in	Low and High
	Drop Size Distribution	Very Fine to Fine or Fine to Medium/Coarse	--	Fine to Medium/Coarse
	Active Rate		lb /acre	5.4 and 10.8 (b)
Tier 2 Aerial (Agricultural)	Aircraft Type	Ag Husky, Air Tractor AT-502, Wasp Helicopter, or Air Tractor AT-401	--	Air Tractor AT-401/Wasp Helicopter
	Boom Length	Fixed/rotor	%	76.3/72.8
	Boom Height	User Defined	ft	10
	# Flight Lines	User Defined	--	20
	Swath Width (separation between flight lines)	1.2x wingspan or user defined	--	1.2x aircraft wingspan or rotor width
	Swath Displacement	Aircraft Centerline, Fixed Distance, Fraction of Swath Width	--	0.5 swath width
	Drop Size Distribution	Very Fine to Fine, Fine to Medium, Medium to Coarse, Coarse to Very Coarse	--	Coarse to Very Coarse
	Wind Speed	User Specified	mph	10
	Temperature	User Specified	°F	88
	Relative Humidity	User Specified	%	25
	Spray Material	Oil or Water based	--	Water
	Active Rate	Typical/high	lbs /acre	5.4 and 10.8 (b)
	Non-Volatile Rate	Typical/high	lbs/acre	5.4 and 10.8 (a) (b)
	Spray Volume Rate	User specified	gal/acre	5

(a) Label does not specify non-volatile portion of active ingredient, conservative assumption that 100% of active ingredient is non-volatile.

(b) Application rate for submerged aquatics is 5.4 lb per acre foot of water treated and 10.8 lb per acre of water treated. AECOM assumed a typical water pond of exactly 1 acre-foot of water that is one acre in area and one foot deep.

Table C-9. AgDRIFT Model Results for Spray Drift Scenarios: Aminopyralid

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg /L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	7.00E-03	6.86E-03	9.78E-04	9.90E-03	9.72E-03	1.39E-03
Plane	Forested	300	3.30E-03	2.49E-03	4.26E-04	4.70E-03	3.51E-03	5.99E-04
Plane	Forested	900	1.10E-03	7.30E-04	1.37E-04	1.60E-03	1.03E-03	1.94E-04
Plane	Non-Forested	100	3.00E-03	3.14E-03	4.30E-04	4.50E-03	4.65E-03	6.36E-04
Plane	Non-Forested	300	1.50E-03	1.05E-03	1.91E-04	2.30E-03	1.60E-03	2.86E-04
Plane	Non-Forested	900	8.00E-04	4.71E-04	9.12E-05	1.20E-03	7.17E-04	1.38E-04
Helicopter	Forested	100	4.00E-04	4.57E-04	5.76E-05	5.00E-04	6.36E-04	8.01E-05
Helicopter	Forested	300	1.00E-04	8.84E-05	1.50E-05	2.00E-04	1.24E-04	2.09E-05
Helicopter	Forested	900	1.89E-05	1.38E-05	2.40E-06	2.67E-05	1.93E-05	3.38E-06
Helicopter	Non-Forested	100	2.50E-03	2.74E-03	3.60E-04	3.70E-03	3.93E-03	5.26E-04
Helicopter	Non-Forested	300	1.20E-03	7.97E-04	1.44E-04	1.70E-03	1.18E-03	2.12E-04
Helicopter	Non-Forested	900	6.00E-04	3.53E-04	6.68E-05	8.00E-04	5.17E-04	9.69E-05
Ground	Low Boom	25	3.00E-04	4.88E-04	5.32E-05	5.00E-04	6.88E-04	7.50E-05
Ground	Low Boom	100	2.00E-04	1.43E-04	2.92E-05	3.00E-04	2.02E-04	4.11E-05
Ground	Low Boom	900	4.76E-05	1.48E-05	5.63E-06	6.72E-05	2.09E-05	7.94E-06
Ground	High Boom	25	6.00E-04	8.17E-04	8.54E-05	8.00E-04	1.15E-03	1.20E-04
Ground	High Boom	100	3.00E-04	2.31E-04	4.50E-05	5.00E-04	3.26E-04	6.34E-05
Ground	High Boom	900	6.00E-05	1.96E-05	7.14E-06	8.46E-05	2.76E-05	1.01E-05

Table C-10. AgDRIFT Model Results for Spray Drift Scenarios: Aminopyralid

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	1.67E-02	9.34E-03	1.27E-03	3.37E-02	1.89E-02	2.57E-03
Plane	Forested	300	5.10E-03	2.77E-03	4.75E-04	1.03E-02	5.62E-03	9.65E-04
Plane	Forested	900	1.40E-03	7.54E-04	1.41E-04	2.80E-03	1.57E-03	2.95E-04
Plane	Non-Forested	100	3.70E-03	3.84E-03	5.44E-04	8.30E-03	8.26E-03	1.18E-03
Plane	Non-Forested	300	1.80E-03	1.20E-03	2.19E-04	4.10E-03	2.79E-03	5.04E-04
Plane	Non-Forested	900	9.00E-04	5.49E-04	1.06E-04	1.90E-03	1.21E-03	2.27E-04
Helicopter	Forested	100	1.30E-03	5.19E-04	7.53E-05	2.60E-03	1.06E-03	1.52E-04
Helicopter	Forested	300	2.00E-04	1.28E-04	2.14E-05	5.00E-04	2.60E-04	4.33E-05
Helicopter	Forested	900	3.53E-05	2.00E-05	3.45E-06	7.45E-05	4.17E-05	7.33E-06
Helicopter	Non-Forested	100	3.10E-03	4.61E-04	3.27E-03	6.60E-03	6.73E-03	9.72E-04
Helicopter	Non-Forested	300	1.40E-03	1.72E-04	1.01E-03	3.10E-03	2.10E-03	3.84E-04
Helicopter	Non-Forested	900	7.00E-04	7.95E-05	4.07E-04	1.70E-03	1.01E-03	1.93E-04
Ground	Low Boom	25	1.20E-03	1.63E-03	1.77E-04	2.20E-03	3.13E-03	3.41E-04
Ground	Low Boom	100	7.00E-04	4.76E-04	9.72E-05	1.40E-03	9.16E-04	1.87E-04
Ground	Low Boom	900	2.00E-04	4.93E-05	1.88E-05	3.00E-04	9.49E-05	3.61E-05
Ground	High Boom	25	1.80E-03	2.72E-03	2.85E-04	3.50E-03	5.24E-03	5.47E-04
Ground	High Boom	100	1.10E-03	7.71E-04	1.50E-04	2.10E-03	1.48E-03	2.88E-04
Ground	High Boom	900	2.00E-04	6.52E-05	2.38E-05	4.00E-04	1.25E-04	4.58E-05

Table C-11. AgDRIFT Model Results for Spray Drift Scenarios: Rimsulfuron

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg ae/L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	7.20E-03	4.01E-03	5.70E-04	9.10E-03	5.09E-03	7.22E-04
Plane	Forested	300	2.60E-03	1.46E-03	2.49E-04	3.30E-03	1.84E-03	3.14E-04
Plane	Forested	900	8.00E-04	4.26E-04	7.99E-05	1.00E-03	5.38E-04	1.01E-04
Plane	Non-Forested	100	1.70E-03	1.83E-03	2.47E-04	2.40E-03	2.46E-03	3.38E-04
Plane	Non-Forested	300	8.00E-04	5.89E-04	1.05E-04	1.20E-03	8.16E-04	1.47E-04
Plane	Non-Forested	900	4.00E-04	2.56E-04	4.94E-05	6.00E-04	3.64E-04	6.98E-05
Helicopter	Forested	100	6.00E-04	2.71E-04	3.36E-05	8.00E-04	3.44E-04	4.30E-05
Helicopter	Forested	300	9.19E-05	5.06E-05	8.60E-06	1.00E-04	6.50E-05	1.10E-05
Helicopter	Forested	900	1.41E-05	7.88E-06	1.38E-06	1.77E-05	9.94E-06	1.73E-06
Helicopter	Non-Forested	100	1.40E-03	1.53E-03	2.03E-04	1.90E-03	2.11E-03	2.75E-04
Helicopter	Non-Forested	300	6.00E-04	4.41E-04	7.73E-05	9.00E-04	6.09E-04	1.07E-04
Helicopter	Non-Forested	900	3.00E-04	1.87E-04	3.58E-05	4.00E-04	2.58E-04	5.04E-05
Ground	Low Boom	25	2.00E-04	3.02E-04	3.20E-05	3.00E-04	4.02E-04	4.26E-15
Ground	Low Boom	100	1.00E-04	8.88E-05	1.75E-05	2.00E-04	1.18E-04	2.34E-05
Ground	Low Boom	900	2.86E-05	8.87E-06	3.38E-06	3.82E-05	1.18E-05	4.51E-06
Ground	High Boom	25	3.00E-04	4.91E-04	5.13E-05	1.30E-03	6.55E-04	6.84E-05
Ground	High Boom	100	2.00E-04	1.39E-04	2.71E-05	4.00E-04	1.85E-04	3.60E-05
Ground	High Boom	900	3.61E-05	1.18E-05	4.30E-06	5.46E-05	1.57E-05	5.72E-06

Table C-12. AgDRIFT Model Results for Spray Drift Scenarios: Clopyralid

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg ae/L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	8.50E-03	9.00E-03	1.23E-03	1.72E-02	1.82E-02	2.48E-03
Plane	Forested	300	3.50E-03	2.68E-03	4.58E-04	7.20E-03	5.41E-03	9.28E-04
Plane	Forested	900	1.10E-03	7.23E-04	1.35E-04	2.40E-03	1.50E-03	2.81E-04
Plane	Non-Forested	100	3.60E-03	3.69E-03	5.20E-04	8.30E-03	8.26E-03	1.19E-03
Plane	Non-Forested	300	1.70E-03	1.15E-03	2.09E-04	4.10E-03	2.79E-03	5.05E-04
Plane	Non-Forested	900	9.00E-04	5.30E-04	1.01E-04	1.90E-03	1.21E-03	2.27E-04
Helicopter	Forested	100	5.00E-04	5.10E-04	7.41E-05	1.00E-03	1.06E-03	1.52E-04
Helicopter	Forested	300	2.00E-04	1.26E-04	2.12E-05	3.00E-04	2.60E-04	4.33E-05
Helicopter	Forested	900	2.67E-05	1.95E-05	3.39E-06	5.81E-05	4.17E-05	7.33E-06
Helicopter	Non-Forested	100	3.00E-03	3.14E-03	4.39E-04	6.60E-03	6.73E-03	9.72E-04
Helicopter	Non-Forested	300	1.30E-03	9.60E-04	1.64E-04	3.10E-03	2.10E-03	3.84E-04
Helicopter	Non-Forested	900	6.00E-04	3.92E-04	7.55E-05	1.70E-03	1.01E-03	1.93E-04
Ground	Low Boom	25	1.10E-03	1.56E-03	1.70E-04	2.20E-03	3.13E-03	3.41E-04
Ground	Low Boom	100	7.00E-04	4.58E-04	9.35E-05	1.40E-03	9.16E-04	1.87E-04
Ground	Low Boom	900	2.00E-04	4.74E-05	1.80E-05	3.00E-04	9.49E-05	3.61E-05
Ground	High Boom	25	1.80E-03	2.62E-03	2.74E-04	3.50E-03	5.24E-03	5.47E-04
Ground	High Boom	100	1.00E-03	7.42E-04	1.44E-04	2.10E-03	1.48E-03	2.88E-04
Ground	High Boom	900	2.00E-04	6.27E-05	2.29E-05	4.00E-04	1.25E-04	4.58E-05

Table C-13. AgDRIFT Model Results for Spray Drift Scenarios: 2,4-D Land Application Semi-Annual

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	3.47E-02	3.67E-02	5.00E-03	7.05E-02	7.40E-02	1.01E-02
Plane	Forested	300	1.46E-02	1.09E-02	1.88E-03	3.04E-02	2.26E-02	3.90E-03
Plane	Forested	900	5.00E-03	3.17E-03	6.00E-04	1.11E-02	6.90E-03	1.31E-03
Plane	Non-Forested	100	1.81E-02	1.73E-02	2.56E-03	4.02E-02	3.75E-02	5.60E-03
Plane	Non-Forested	300	9.30E-03	6.27E-03	1.15E-03	2.12E-02	1.46E-02	2.64E-03
Plane	Non-Forested	900	4.40E-03	2.66E-03	5.11E-04	8.90E-03	5.57E-03	1.06E-03
Helicopter	Forested	100	1.90E-03	2.04E-03	2.96E-04	3.60E-03	3.72E-03	5.55E-04
Helicopter	Forested	300	6.00E-04	5.00E-04	8.38E-05	1.20E-03	9.83E-04	1.63E-04
Helicopter	Forested	900	1.00E-04	7.99E-05	1.41E-05	2.00E-04	1.63E-04	2.92E-05
Helicopter	Non-Forested	100	1.48E-02	1.45E-02	2.13E-03	3.22E-02	3.07E-02	4.56E-03
Helicopter	Non-Forested	300	7.40E-03	5.07E-03	9.11E-04	1.65E-02	1.13E-02	2.05E-03
Helicopter	Non-Forested	900	3.80E-03	2.32E-03	4.48E-04	5.60E-03	3.70E-03	6.83E-04
Ground	Low Boom	25	4.50E-03	6.26E-03	6.82E-04	9.00E-03	1.25E-02	1.36E-03
Ground	Low Boom	100	2.80E-03	1.83E-03	3.74E-04	5.50E-03	3.67E-03	7.48E-04
Ground	Low Boom	900	6.00E-04	1.90E-04	7.22E-05	1.20E-03	3.80E-04	1.44E-04
Ground	High Boom	25	7.10E-03	1.05E-02	1.09E-03	1.42E-02	2.10E-02	2.19E-03
Ground	High Boom	100	4.20E-03	2.97E-03	5.77E-04	8.40E-03	5.94E-03	1.15E-03
Ground	High Boom	900	8.00E-04	2.51E-04	9.16E-05	1.50E-03	5.02E-04	1.83E-04

Table C-14. AgDRIFT Model Results for Spray Drift Scenarios: 2,4-D Land Application Annual

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	7.05E-02	7.40E-02	1.01E-02	1.45E-01	1.50E-01	2.07E-02
Plane	Forested	300	3.04E-02	2.26E-02	3.90E-03	6.49E-02	4.75E-02	8.29E-03
Plane	Forested	900	1.11E-02	6.90E-03	1.31E-03	2.47E-02	1.54E-02	2.91E-03
Plane	Non-Forested	100	4.02E-02	3.75E-02	5.60E-03	8.54E-02	7.91E-02	1.19E-02
Plane	Non-Forested	300	2.12E-02	1.46E-02	2.64E-03	4.17E-02	3.09E-02	5.34E-03
Plane	Non-Forested	900	8.90E-03	5.57E-03	1.06E-03	1.14E-02	7.77E-03	1.40E-03
Helicopter	Forested	100	3.60E-03	3.72E-03	5.55E-04	7.20E-03	7.95E-03	1.15E-03
Helicopter	Forested	300	1.20E-03	9.83E-04	1.63E-04	2.40E-03	1.91E-03	3.18E-04
Helicopter	Forested	900	2.00E-04	1.63E-04	2.92E-05	4.00E-04	2.87E-04	5.02E-05
Helicopter	Non-Forested	100	3.22E-02	3.07E-02	4.56E-03	6.93E-02	6.52E-02	9.84E-03
Helicopter	Non-Forested	300	1.65E-02	1.13E-02	2.05E-03	3.18E-02	2.41E-02	4.15E-03
Helicopter	Non-Forested	900	5.60E-03	3.70E-03	6.83E-04	5.20E-03	4.01E-03	6.76E-04
Ground	Low Boom	25	9.00E-03	1.25E-02	1.36E-03	1.79E-02	2.50E-02	2.73E-03
Ground	Low Boom	100	5.50E-03	3.67E-03	7.48E-04	1.10E-02	7.33E-03	1.50E-03
Ground	Low Boom	900	1.20E-03	3.80E-04	1.44E-04	2.40E-03	7.59E-04	2.89E-04
Ground	High Boom	25	1.42E-02	2.10E-02	2.19E-03	2.84E-02	4.19E-02	4.38E-03
Ground	High Boom	100	8.40E-03	5.94E-03	1.15E-03	1.68E-02	1.19E-02	2.31E-03
Ground	High Boom	900	1.50E-03	5.02E-04	1.83E-04	3.10E-03	1.00E-03	3.66E-04

Table C-15. AgDRIFT Model Results for Spray Drift Scenarios: 2,4-D Aquatic Application Floating

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	--	--	--	--	--	--
Plane	Forested	300	--	--	--	--	--	--
Plane	Forested	900	--	--	--	--	--	--
Plane	Non-Forested	100	4.02E-02	3.75E-02	5.60E-03	8.54E-02	7.91E-02	1.19E-02
Plane	Non-Forested	300	2.12E-02	1.46E-02	2.64E-03	4.17E-02	3.09E-02	5.34E-03
Plane	Non-Forested	900	8.90E-03	5.57E-03	1.06E-03	1.14E-02	7.77E-03	1.40E-03
Helicopter	Forested	100	--	--	--	--	--	--
Helicopter	Forested	300	--	--	--	--	--	--
Helicopter	Forested	900	--	--	--	--	--	--
Helicopter	Non-Forested	100	3.22E-02	3.07E-02	4.56E-03	6.93E-02	6.52E-02	9.84E-03
Helicopter	Non-Forested	300	1.65E-02	1.13E-02	2.05E-03	3.18E-02	2.41E-02	4.15E-03
Helicopter	Non-Forested	900	5.60E-03	3.70E-03	6.83E-04	5.20E-03	4.01E-03	6.76E-04
Ground	Low Boom	25	9.00E-03	1.25E-02	1.36E-03	1.79E-02	2.50E-02	2.73E-03
Ground	Low Boom	100	5.50E-03	3.67E-03	7.48E-04	1.10E-02	7.33E-03	1.50E-03
Ground	Low Boom	900	1.20E-03	3.80E-04	1.44E-04	2.40E-03	7.59E-04	2.89E-04
Ground	High Boom	25	1.42E-02	2.10E-02	2.19E-03	2.84E-02	4.19E-02	4.38E-03
Ground	High Boom	100	8.40E-03	5.94E-03	1.15E-03	1.68E-02	1.19E-02	2.31E-03
Ground	High Boom	900	1.50E-03	5.02E-04	1.83E-04	3.10E-03	1.00E-03	3.66E-04

Table C-16. AgDRIFT Model Results for Spray Drift Scenarios: 2,4-D Aquatic Application Submerged

Mode of Application	Application Type	Distance From Receptor (ft)	Typical Application Rate			Maximum Application Rate		
			Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)	Terrestrial Concentration (lb /acre)	Stream Concentration (mg a.e./L)	Pond Concentration (mg a.e./L)
Plane	Forested	100	--	--	--	--	--	--
Plane	Forested	300	--	--	--	--	--	--
Plane	Forested	900	--	--	--	--	--	--
Plane	Non-Forested	100	2.18E-01	2.14E-01	3.15E-02	3.65E-01	3.95E-01	5.56E-02
Plane	Non-Forested	300	8.26E-02	7.05E-02	1.13E-02	1.00E-01	9.96E-02	1.44E-02
Plane	Non-Forested	900	1.36E-02	9.39E-03	1.68E-03	1.03E-02	7.81E-03	1.33E-03
Helicopter	Forested	100	--	--	--	--	--	--
Helicopter	Forested	300	--	--	--	--	--	--
Helicopter	Forested	900	--	--	--	--	--	--
Helicopter	Non-Forested	100	1.72E-01	1.77E-01	2.59E-02	2.82E-01	3.31E-01	4.51E-02
Helicopter	Non-Forested	300	4.74E-02	4.97E-02	7.04E-03	5.19E-02	6.49E-02	8.35E-03
Helicopter	Non-Forested	900	3.50E-03	2.44E-03	4.38E-04	2.50E-03	1.87E-03	3.24E-04
Ground	Low Boom	25	4.85E-02	6.76E-02	7.36E-03	9.69E-02	1.35E-01	1.47E-02
Ground	Low Boom	100	2.98E-02	1.98E-02	4.04E-03	5.96E-02	3.96E-02	8.07E-03
Ground	Low Boom	900	6.60E-03	2.05E-03	7.79E-04	1.32E-02	4.10E-03	1.56E-03
Ground	High Boom	25	7.66E-02	1.13E-01	1.18E-02	1.53E-01	2.26E-01	2.36E-02
Ground	High Boom	100	4.53E-02	3.20E-02	6.23E-03	9.05E-02	6.41E-02	1.25E-02
Ground	High Boom	900	8.30E-03	2.71E-03	9.89E-04	1.66E-02	5.42E-03	1.98E-03