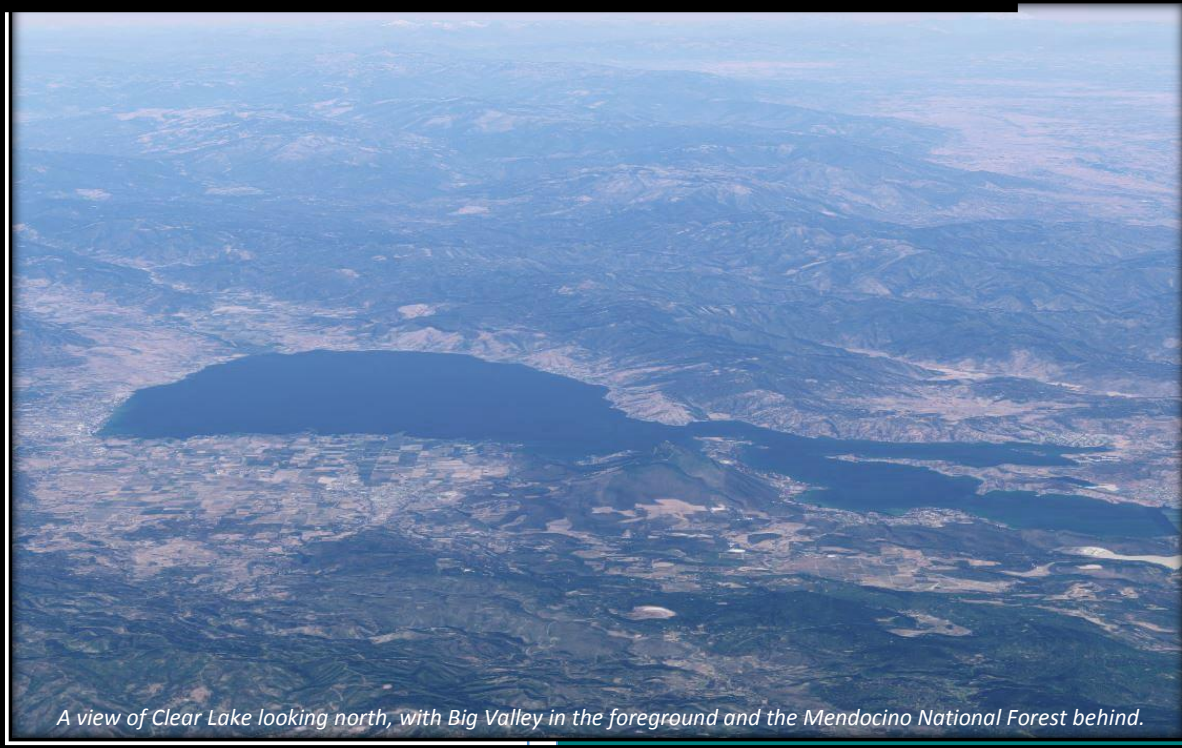
2016

Lake County Reduced Monitoring Management Practices Alternative



A view of Clear Lake looking north, with Big Valley in the foreground and the Mendocino National Forest behind.

Lake County Farm Bureau Education Corporation

1/29/2016

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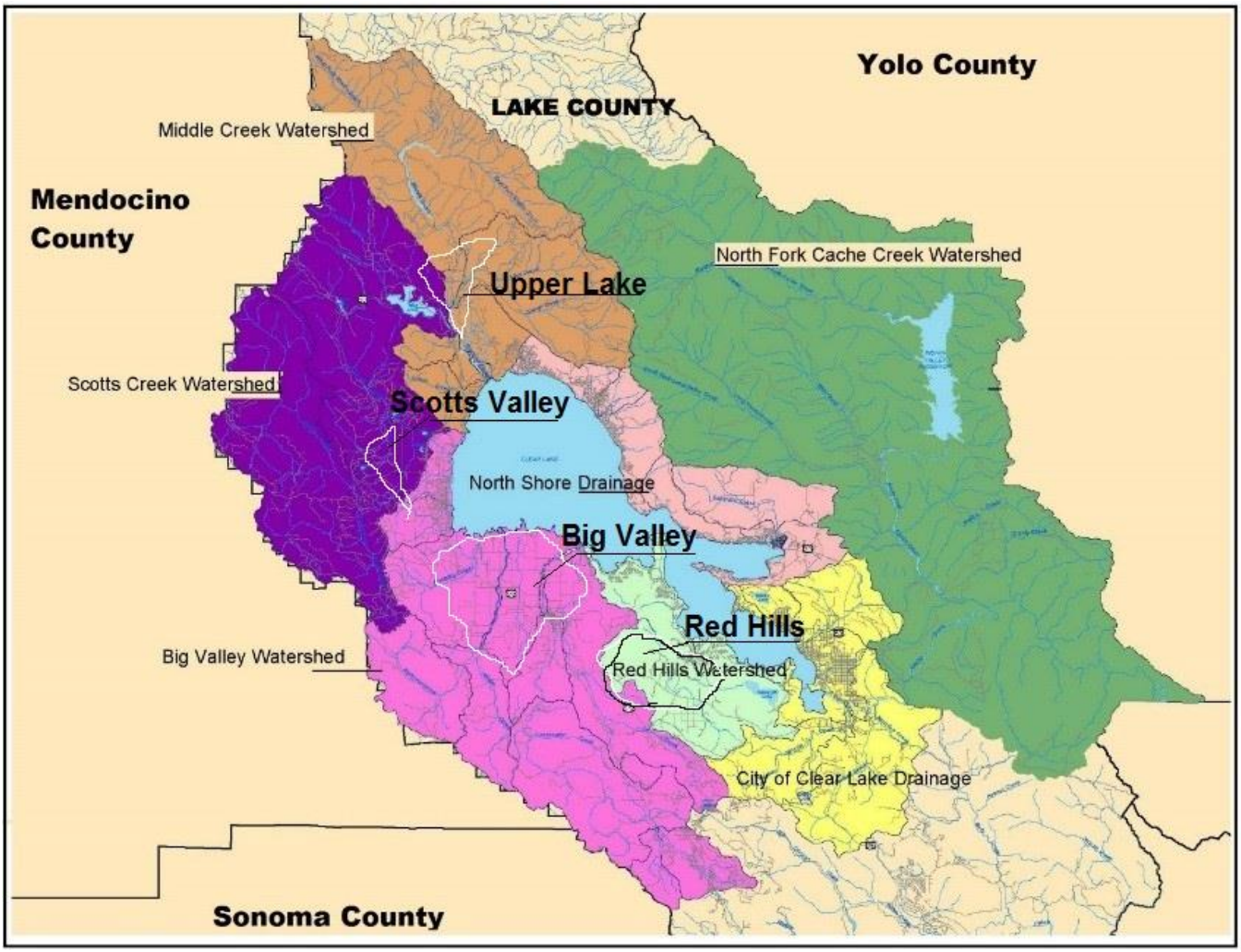


Figure 1: Watershed drainages in Lake County with principle growing areas outlined in white and labeled. Agriculture is found primarily in the Big Valley, Middle Creek/Upper Lake, and the Red Hills watersheds and to a lesser extent in Scotts Valley in the Scotts Creek Watershed.

I. Overview

Lake County is a unique rural area encompassing 1,329 square miles (850,560 total acreage) in the coastal ranges north of Napa County. The geology of the Lake County area comprises of mostly volcanic and Franciscan complex hills with alluvial and lakebed soils in the valley floors. Lake County's primary feature, Clear Lake, encompasses 17,720 hectares and receives inflow primarily from the north-west corner of the lake (see Figure 2) and outflows through Cache Creek on the south-east portion of the lake. The Lake County sub-watershed area receives an average of 25-30 inches of rain mostly from October through March.

Agriculture constitutes a very small portion of land use in the county and is found mostly on the porous volcanic soils of the hills and the rich soils of Big Valley, Scotts Valley and Middle Creek Basin. Of the 850,560 acres of Lake County, there are approximately 17,127 acres in agricultural production (Lake County Crop Report 2014), of which 10,073 are irrigated acres; roughly 1.2% of Lake County's total acreage. Dry farmed walnuts, wine grapes and hay crops make up for the majority of the unirrigated agricultural acres in production.

Wine grapes are Lake County's biggest crop both in value and acreage. In 2014, there were 8,070 acres of vineyards which constitute almost 50 % of Lake County's productive agricultural acres and over 60% of Lake County irrigated agriculture. Micro-irrigation systems are used almost exclusively for wine grape irrigation, although a small percentage of vineyards utilize overhead sprinklers for early spring frost protection of grapevines. Walnuts, pears and hay crops account for a lesser portion of agriculture. Other land uses in Lake County include non-irrigated rangeland, rural residential development, and native woodlands, chaparral, grasslands, and wetlands.

The Lake County Winegrape Commission (LCWC) has been very involved in setting standards of stewardship and sustainability in the watershed. They offer outreach through the form of their Sustainable Winegrowing Program which certifies practices sensitive to erosion control and water quality protection. Pear growers in Big Valley have also been at the fore-front of integrated pest management practices that reduce the amount and frequency of pesticide application. Pesticide use has declined in recent years, with sulfur applied on wine grapes as the most highly used pesticide.

Since monitoring of the Middle Creek and McGaugh Slough sites began, there has been no substantial evidence or exceedances that suggest that Lake County irrigated agriculture is contributing to water quality degradation. The county's grading ordinance (see Appendix C) also protects the watershed and streams against erosion and run-off by imposing strict agricultural grading guidelines.

The Lake County Farm Bureau Education Corporation (LCFBEC) was formed by the Lake County Farm Bureau in 2006 as a response to the Irrigated Lands Regulatory Program. The Board of the LCFBEC is composed of the Lake County Farm Bureau Board of Directors with the Lake County Agricultural Commissioner and the Lake County UC Extension Center as advisors. The LCFBEC finds that since there is a low intensity of agricultural land-use in the watershed, a low threat of pesticide discharges from irrigated lands and no history of pesticide, nutrient, copper, metals or toxicity water quality exceedances, the Lake County Subwatershed is a suitable candidate for a Reduced Monitoring and a Management Practices Alternative.

II. Watershed Areas: Geology and Climate

Lake County lies in the coastal range north of Napa. In general, the county can be characterized by broad valleys surrounded by rolling hills, rugged mountains, volcanic terrain and uplifted hills. Franciscan complex hills form the base for the county's geology with volcanic and tertiary sediments deposited in the late Quaternary. The Clear Lake volcanic field runs in a north-east direction, traversing the county through the middle. Included in the Clear Lake Volcanic Field are Cobb Mountain, the Red Hills and Mt Konocti. The site of late-Pliocene to early Holocene activity, the volcanic field consists of lava domes, cinder cones, and maars with eruptive products varying from basalt to rhyolite (USGS 2008). Cobb Mountain and Mount Konocti are the two highest peaks in the volcanic field, at 4,724 feet and 4,285 feet respectively (USGS 2008).

The volcanic soils of the Red Hills area have excellent drainage and poor water retention capacity (NRCS 1989). These soils are characteristically gravelly or rocky and very well-drained. Examples include Aiken, which formed on basalt; Arrowhead, which formed on obsidian; and Soda Bay, which formed on scoria, the porous red gravel used in landscaping (LCWC 2012). Lake County hillside volcanic soils are red, a color often associated with old, highly weathered soils. However, the Clear Lake volcanics are recent in geologic origin. The scoria formations near High Valley and the lower arm of Clear Lake are as young as 10,000 years. (LCWC 2012).

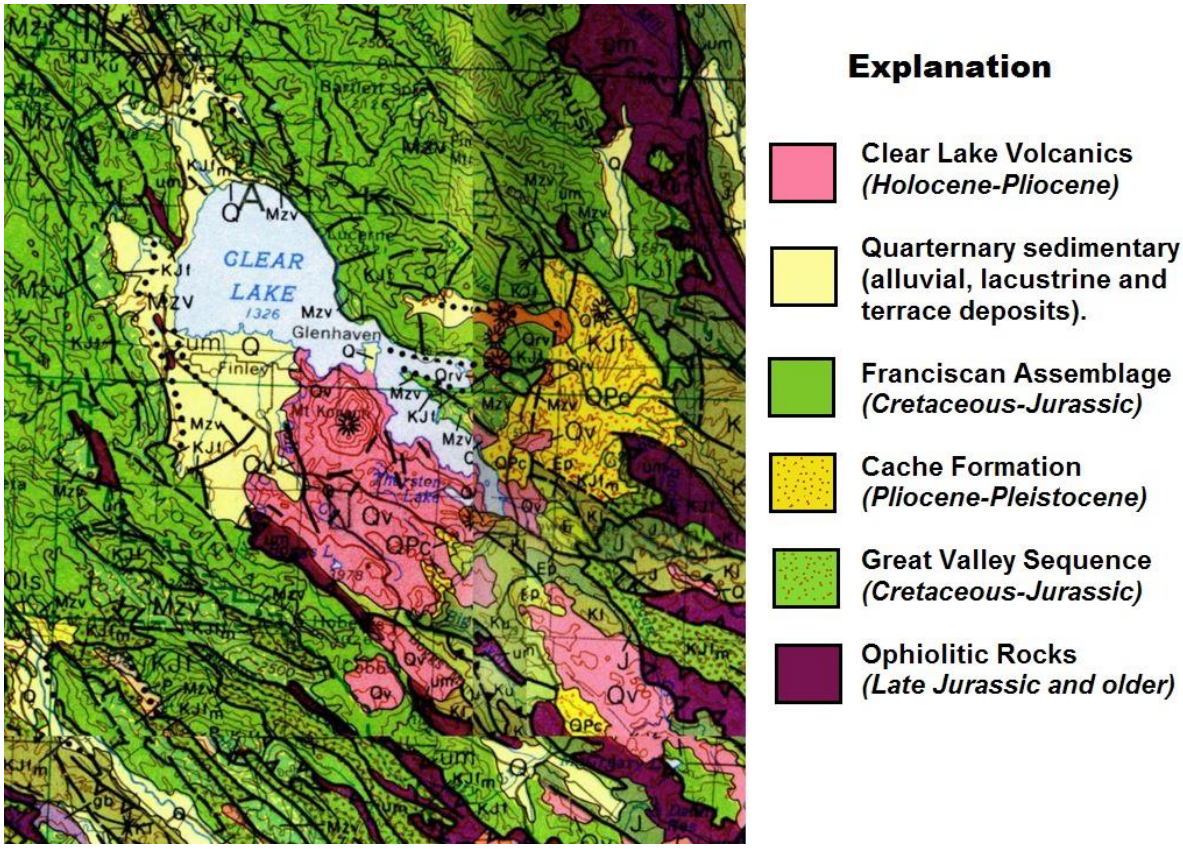


Figure 2: Geologic map of Lake County. Principle agricultural areas occur in Big Valley on alluvial, lacustrine and terrace deposits, in Upper Lake on alluvial deposits and in the Red Hills area in the Clear Lake Volcanic Field. (Sims 1988).

Mountain valleys around Clear Lake, including Big Valley District, Upper Lake Valley, Clover Valley, Bachelor Valley, and Scotts Valley, are level with deep alluvial deposits. The soils often have layers with differing gravel content and amounts of sand, silt, and clay, created by the movement of stream courses in the past. Well-drained alluvial soils found in these areas include Still and Lupoyoma loams (LCWC 2012). The principle valleys of Big Valley and Upper Lake are filled with unconsolidated sediment, in places more than 500 ft. thick (NRCS 1989). Internal soil drainage is poor in the soils that lie in the depressional areas of the valleys (NRCS 1989).

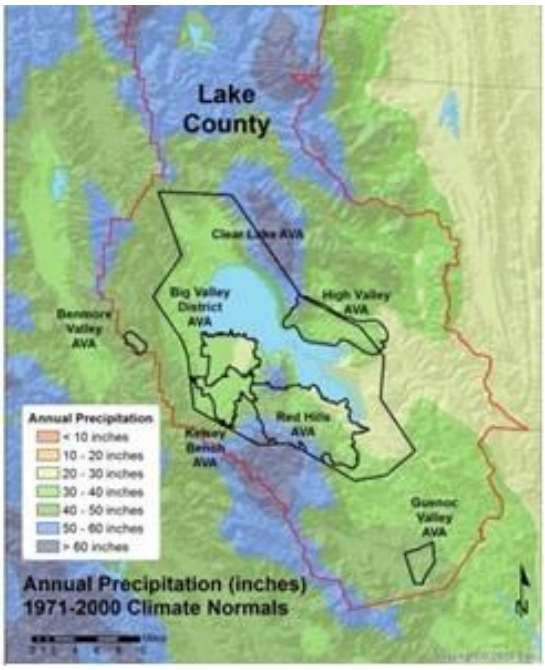


Figure 3: Lake County annual precipitation (1970-2000 climate normal) with the 7 regional Lake County AVAs. (Data source: Daly et al 2008).

Hillside soils formed on sandstone and shale are found in the Franciscan complex hills. These soils are well-drained and frequently shallow, with underlying sandstone found at a depth of two to four feet. Common soil types include Maymen, Mayacama, and Hopland (LCWC 2012). These soils are found on the northwest hills surrounding Clear Lake.

The climate of Lake County is characterized by warm, dry summers and cool, moist winters. Lake County also enjoys a plethora of microclimates in its hills and valleys. The average annual precipitation ranges from 25 inches in the valleys to 60 inches or more in the mountains (NRCS 1989). The growing season, which is the average number of days between the last freeze in the spring and the first freeze in the fall varies from 150 to 210 depending on location, and air drainage patterns (NRCS 1989). The evaporation rate is high because of high summer heat and low humidity.

Monitoring sites for the Irrigated Lands Regulatory Program are located at Middle Creek (MDLCR) in Upper Lake as the representative monitoring site and at McGaugh Slough (MGSLU) in Big Valley. Both monitoring sites capture a similar proportion of Lake County agriculture with Middle Creek's site being skewed slightly towards walnuts. Monitoring is also done at Middle Creek for the Clear Lake nutrient TMDL as Rodman Slough is the lake's largest nutrient source; predominantly from BLM and National Forest Land in the Scotts Creek and Middle Creek watersheds.

III. Agriculture and Land Use

Lake County agriculture originated with cattle operations in the early to mid-1800s and was followed by orchard operations that mainly included pears, walnuts, and plums for the prune market. Vineyards were planted in the 1870s in numerous areas of the county and by the early 20th century the area was earning a reputation for producing some of the world's best wines (LCWC 2014). In the 1990s, the Lake County pear industry suffered a rapid and near-catastrophic decline and orchards were removed for vineyard planting. Since the early 2000s, pear acreage has stabilized at around 2000 acres, and vineyards account for roughly 8000 acres in the county.

The major agricultural areas in the county are in Big Valley, the Red Hills, Upper Lake and Scotts Valley to a lesser extent. Winegrapes are the predominant crop grown in the Red Hills area. In Big Valley, Upper Lake and Scotts Valley, a mix of winegrapes, walnuts, pears and hay crops are grown. There are some isolated orchards and vineyards in Lower Lake and Clear Lake as well.

The American Viticultural Association has established 7 wine-growing regions in Lake County distinct in growing conditions and terroir. The Clear Lake AVA encompasses the general growing region around the lake. The biggest wine-producing AVAs are Big Valley, Kelsey Bench and Red Hills. Both Big Valley and Kelsey Bench AVAs have the alluvial and lacustrine-type soils and flat terrain of Big Valley while Red Hills enjoys well-drained volcanic soils and steeper topography. These areas receive similar amounts of precipitation except the higher vineyards in the Red Hills which receive higher annual rainfall.

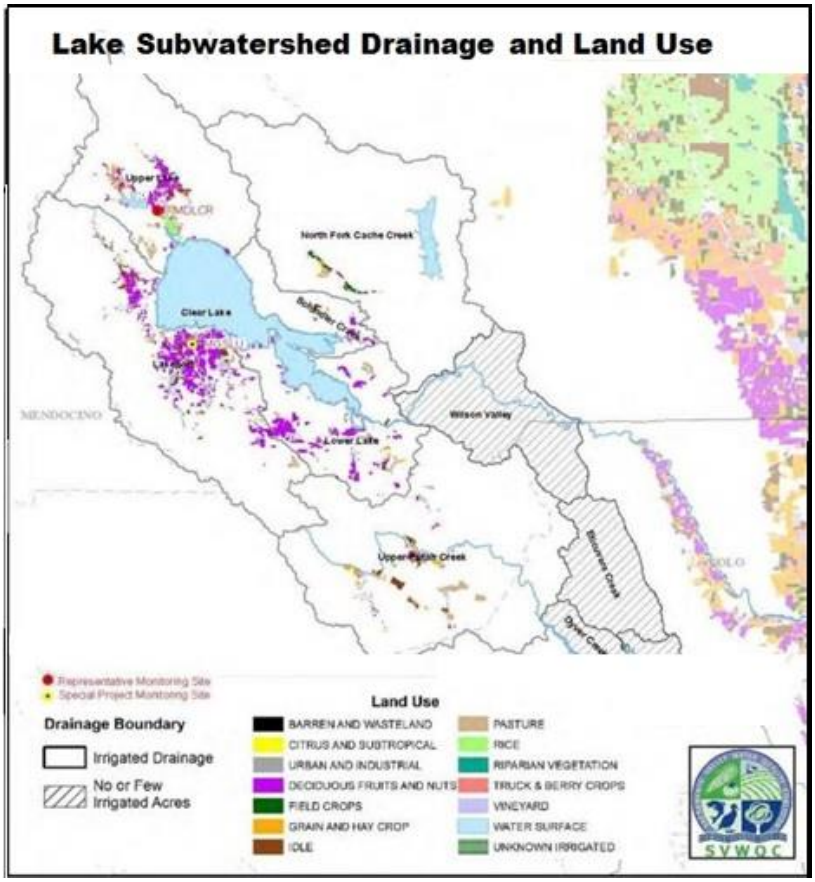


Figure 4: The majority of Lake County agriculture lies in the Big Valley and Middle Creek watershed basin in Upper Lake. Deciduous trees and fruit nuts refers to Lake County's top three crops: winegrapes, walnuts and pears. The Middle Creek monitoring site (MDLCR) is the representative monitoring site. McGaugh Slough (MGSLU) runs through Big Valley (SVVWQC 2012).

Pears and walnuts are predominantly grown in the valleys, with the majority of pears grown around Big Valley and the majority of walnuts split between Big Valley and the Middle Creek/Upper Lake area both of which feature flat topography and alluvial soils.

Runoff from farmlands is only a factor during the winter and spring rainy seasons. By the time initial runoff begins, usually in November or December, cover crops are providing ample control of runoff and erosion. Cover crops are considered to be the most effective water quality protection measure as they provide effective control of soil detachment and also enhance soil infiltration rates. This is well-documented by the USDA's Universal Soil Loss Equation. The best management practices of the Lake County winegrape growers on the volcanic soils of the Red Hills area ensure low erosion. Anecdotally, most Red Hills winegrape growers report no water run-off in the vineyard even in winter due to the well-drained soil.

Crop reports for Lake County indicate that total agricultural acreage has stabilized over recent years with a slight increase in walnuts and pasture/hay crops. There is a sizable portion of Lake County agriculture that is dry-farmed. In 2014, there were 17,127 acres in agricultural production (Lake County Crop Report 2014), and 10,053 acres enrolled in the Irrigated Lands Program. The roughly 7100 acres of dry-farmed agriculture is in pasture hays, walnuts and wine grapes. Pasture hay in Lake County tends to

not be irrigated; there is very little irrigated alfalfa. Taking dry farmed and irrigated agriculture into account, almost 50% of Lake County agricultural acreage is in wine grapes (see Figure 5).

Overall, agricultural acreage has held steady over the past few years with wine grapes and pears at around 8070 and 2070 acres respectively in 2014. Pasture and hay crops have remained at around 3000 acres over the past 4 years. Walnuts have increased by around 500 acres in the past four years due to very favorable walnut prices in 2013 and 2014. However, prices have dropped off in 2015 and the Lake County Agricultural Commissioner expects that walnut acres will remain stable over the next few years, or even slightly decline. Vineyard plantings increased steadily from 2000 through 2011, but have topped out recently, perhaps due to economic factors in the county. Since 2002, there has been a 45% increase in grape acreage and a decline in pears. Walnut acreage has essentially stayed the same but with more irrigated acreage (CR 2000-2014). There were 10,073 agricultural acres enrolled in the Irrigated Lands Regulatory Program in 2015, and roughly 11,000 acres in 2014.

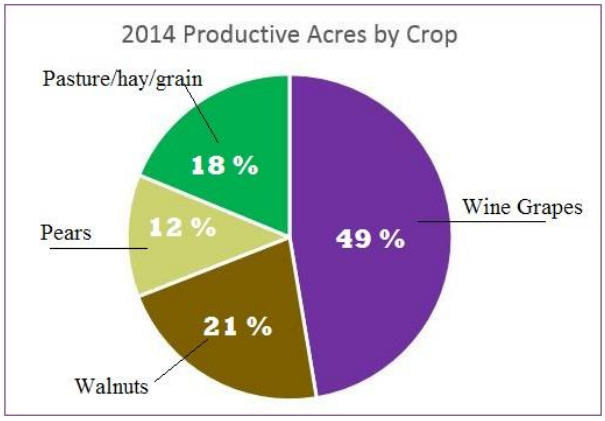
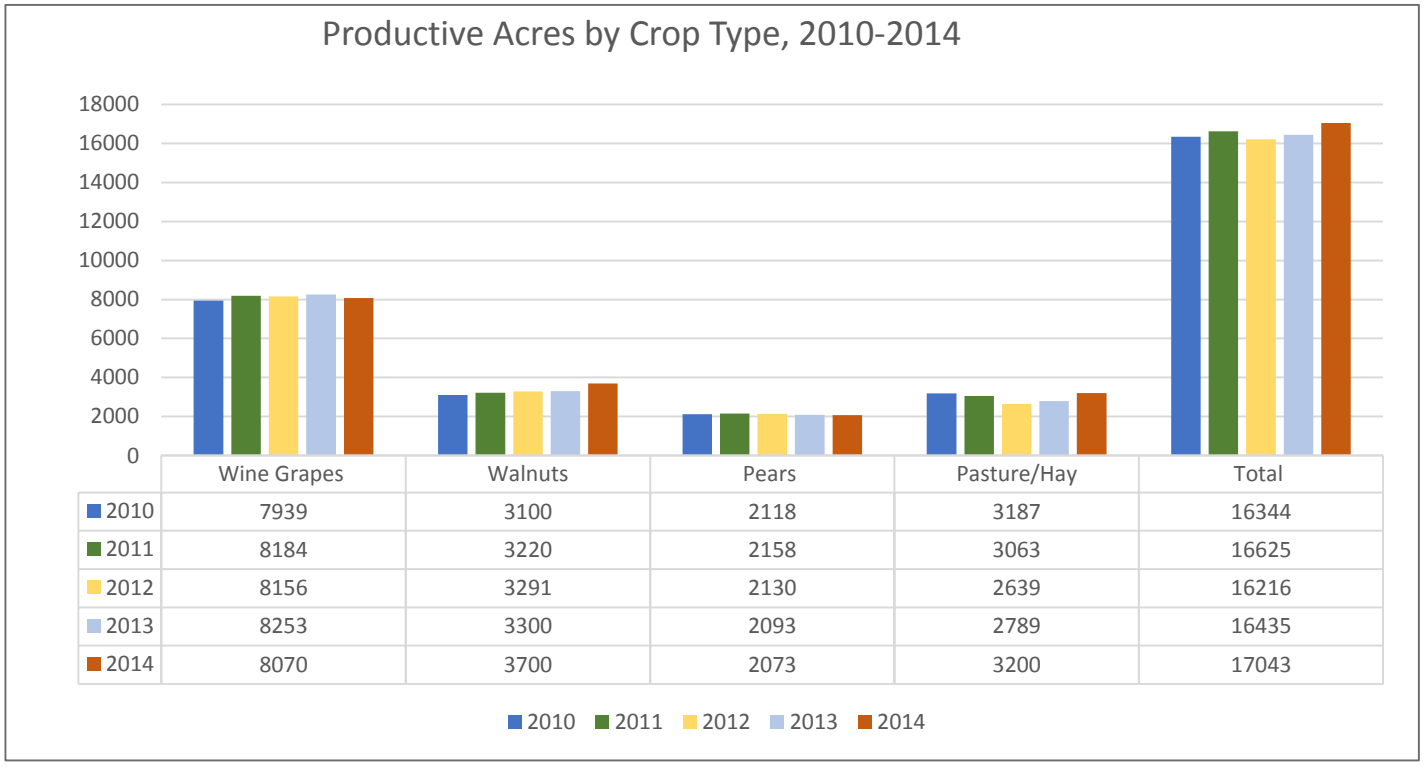


Figure 5: Productive crop acres by percentage in 2014 including irrigated and dry-farmed agriculture. Wine grapes accounted for nearly half of all acres in agricultural production in 2014. (Data source: Lake County Crop Report 2014)



	Wine Grapes	Walnuts	Pears	Pasture/Hay	Total
2010	7939	3100	2118	3187	16344
2011	8184	3220	2158	3063	16625
2012	8156	3291	2130	2639	16216
2013	8253	3300	2093	2789	16435
2014	8070	3700	2073	3200	17043

Figure 6: Productive acres in Lake County by crop type on a 5-year trend. These numbers reflect irrigated and dry-farmed acreage. (Data source: Lake County Crop Reports, 2010-2014)

IV. Pesticide Use in Lake County

Lake County has a generally low threat of pesticide discharges off irrigated land due to an advantageous climate, timing of pesticide application and low agricultural land-use. Lake County's climate is beneficial to pest control with its high elevation, cold winters, hot dry summers and short growing seasons. Pears, winegrapes and walnuts all suffer from significantly less pest problems than in surrounding regions. Elemental sulfur is the most heavily applied material in Lake County agriculture (see Table 1). Sulfur applied on winegrapes and pears accounted for 40% of all pounds of agricultural pesticides applied in the county in 2013 (CDPR 2013). There has been a downward trend in organophosphate use over the last 20 years due in part to management practices in the pear industry and the conversion of orchards to vineyards. Growers conduct intensive monitoring of pest and nutrient needs before applying materials to the land and crop using UC IPM standards. The IPM standard incorporates grower usage of pest monitoring, scouting, and application of precisely-applied materials or organic alternative materials to address pest control. This kind of precise pest management program – as compared to applying a standard series of pesticide material on a calendar basis -- provides a high degree of certainty that materials are being applied according to need and proper timing. Lake County growers also work closely with Pest Control Advisors (PCAs) and Crop Control Advisors (CCAs) to formulate nitrogen management plans on their operations. Overall, pesticide use in the top three commodities (winegrapes, pears and walnuts) in Lake County has been reduced by almost 60% since 1990 and by 21% since 2004. (CDPR 1990-2013).

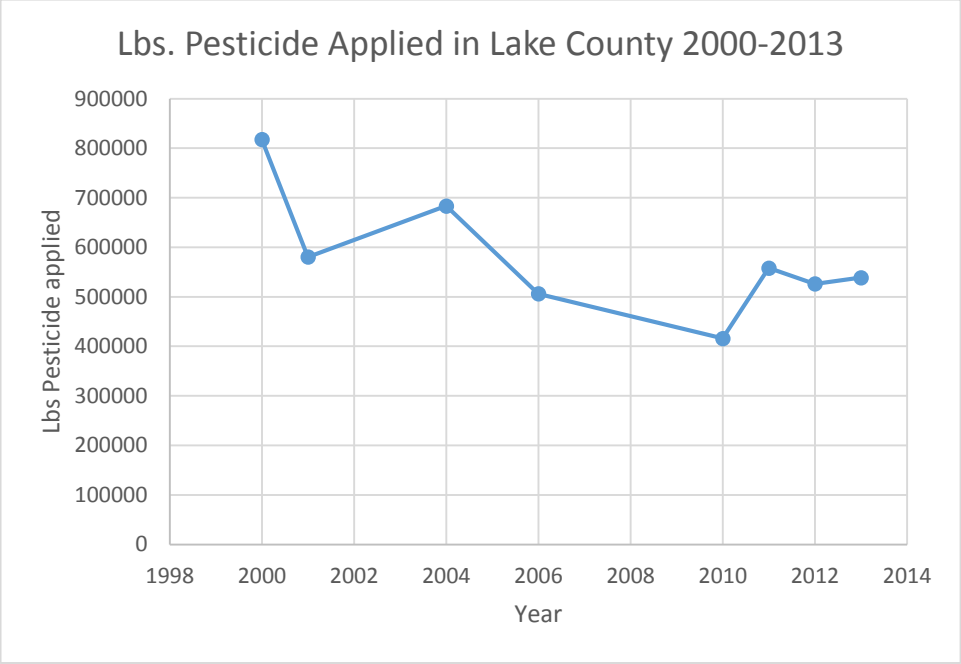


Figure 7: The trend of pesticide use in Lake County has decreased over the past 13 years due to changes in cultural management practices, integrated pest management and crop-types on the land.

Lake County: Top 5 pesticides used in 2013

Chemical	Commodity	Pounds	Num. Apps	Acres
SULFUR	GRAPE, WINE	167,297	836	22,065
	PEAR	30,010	135	2,694
	GRAPE	1,119	8	129
	PEACH	18	3	4
	APPLE	5	1	1
	ALL OTHER SITES	7	2	1
TOTAL AI		198,455	985	24,893
OXYTETRACYCLINE, CALCIUM COMPLEX	PEAR	2,873	926	19,624
	APPLE	< 1	1	1
	ALL OTHER SITES			
TOTAL AI		2,873	927	19,625
DIMETHYLPOLYSILOXANE	GRAPE, WINE	536	524	10,750
	PEAR	59	141	1,992
	WALNUT	1	51	1,032
	OAT (FORAGE - FODDER)	< 1	5	152
	WATER AREA	< 1	1	20
	ALL OTHER SITES	< 1	2	6
TOTAL AI		596	724	13,951
STREPTOMYCIN SULFATE	PEAR	655	656	13,873
	APPLE	< 1	3	3
	ALL OTHER SITES			
TOTAL AI		655	659	13,876
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY(OXYETHYLENE)*	GRAPE, WINE	812	239	6,795
	PEAR	462	113	1,853
	WALNUT	77	48	992
	OAT (FORAGE - FODDER)	16	3	115
	WATER AREA	12	1	20
	ALL OTHER SITES	39	11	16
TOTAL AI		1,418	415	9,792
ALL OTHER AIS including non-ag. land use and structural control		390,738	5,831	108,878
LAKE TOTAL		594,735	9,210	184,088

Table 1: The top pesticide used in Lake County is sulfur; primarily used on wine grapes. Sulfur applied on wine grapes accounts for 82% of all pounds applied by the top five pesticides in the county. Note: acres treated is calculated by summing the acres treated in each application even when the same field is treated more than once in a year. (For example, if one acre is treated three times in a year with an individual active ingredient, it is counted as three acres treated.) (Data source: CDPR 2013).

None of the top 5 pesticides used in Lake County pose a serious threat to aquatic life or human health. Elemental sulfur is applied in organic operations and is relatively harmless to humans and aquatic animals, but is toxic to some bacteria and fungi, hence its application as a fungicide and insecticide in winegrapes and pears. Calcium complex oxytetracycline (OxyTc) is an antibiotic used to treat fire blight and is a restricted use material only for fire blight control in an organically certified crop (UC IPM 2015). This means that while it is a synthetic, the National Organic Program has included antibiotics for use only on fire blight on apples and pears as part of the National List of Allowed Synthetics (TFREC 2014). Calcium complex OxyTc is usually applied on the order of tenths of a pound per acre. Dimethylpolysiloxane is a surfactant adjuvant used to carry pesticides through to the plant. In 2001, the EPA ruled that there was no required maximum permissible level for residues of dimethylpolysiloxane; when used as an inert ingredient in or on growing crops, and when applied to raw agricultural commodities after harvest. In addition, the EPA found that:

> "Dimethylpolysiloxane meets all the criteria for a polymer to be considered low risk under 40 CFR 723.250. Based on its conformance to the above criteria, no mammalian toxicity is anticipated from dietary, inhalation, or dermal exposure to dimethylpolysiloxane." (EPA 2001).

Streptomycin Sulfate, like oxytetracycline (OxyTc) is an antibiotic used to control fire blight in pears. Like OxyTc, Streptomycin was an approved antibiotic for use on organic orchards up until 2012

(TFREC 2014). In comparison to most pesticides, streptomycin and oxytetracycline are relatively non-toxic and have been assigned the lowest toxicity rating of the EPA (EPA 2000). Oxyethylene, the last in the 'top 5' is an adjuvant and is exempted from the requirement of a tolerance when used in accordance with good agricultural practice as inert (or occasionally active) ingredients in pesticide formulations applied to growing crops only (EPA 2000).

According to the Lake County Agricultural Commissioner, most pesticides in the county are applied from April through harvest season in late summer, after seasonal rains. For winegrapes, sulfur application starts in April up until 3 weeks before harvest in September or October. Any pesticide application in winegrapes during the winter months is light weed and herbicide work. Pears begin receiving applications for fire blight and scab in April or May after a majority of the rain. There is no spraying after June until the end of harvest and then usually applications following harvest for blister mite. Walnuts are "low maintenance in terms of pest control" according to the Lake County Ag. Commissioner. Many growers mow their orchards instead of applying herbicides to control weeds. In August, some orchards will be treated for husk fly, but the treatment occurs once every five years with GF 20, an organic-approved product. Overall, pesticides in Lake County are applied prior to and after the winter rainy season, which reduces the potential for pesticide discharges in storm water run-off.

Pesticide use in Winegrapes

In general, Lake County's climate is advantageous when it comes to winegrape pest protection. Higher and drier mountains have less pest and mildew pressure, cold winters reduce pest populations, and a shorter season requires fewer pesticide and other applications. As a result, Lake County is among the lowest pesticide use areas of any wine region in California (LCWC 2012). Sulfur is the most applied pesticide on winegrapes in Lake County and accounts for 72 % of pesticide applied on winegrapes (CDPR 2013).

Lake County winegrapes grew in acreage from approximately 5000 acres in 2001 to 8200 acres in 2013; a growth of 40%. Pesticide use grew at a slower rate; from 165,158 total pounds applied to 230,858 total pounds applied in 2013; a growth of only 27% reflecting improving integrated pest management practices (CDPR 2001-2013). Lake County's total pesticide use on winegrapes is small compared to other regions; 230,858 lbs. compared to 587,079 lbs. applied in Mendocino County and 1,186,251 lbs. applied in Napa County in 2013 (CDPR 2013). While this data is not significant in terms of management, it is significant in terms of the total pesticide load in the watershed.

Lake County winegrape growers prescribe to a culture of sustainability and stewardship that is promoted through the Lake County Winegrape Commission.

Pesticide use in Pears

Lake County is one of the few remaining pear growing regions in the state due to its climate. Fire blight has become such a problem in the Sacramento Valley that a majority of the original orchards have been removed. While Lake County enjoys a better climate for pears, the crop is traditionally hard to grow to for production.

In 1996, codling moth was listed as the 'key insect pest causing major damage to the fruit" and was partially responsible for 86% of pounds of pesticide applied on pears (CDPR 1996). Organophosphates such as azinphosmethyl (e.g. 'Guthion') and encapsulated methyl parathion (e.g. "Penncap") were widely used to control coddling moths up until 1999 (Elkins 2002). In 1996, codling moth mating disruption was studied and 'puffers', or pheromone dispensers were first tested in pear orchards in Lake County. (Elkins 2002). Progress and results of the 2001 Kelseyville project season and for 1996-2001 were presented to California pear growers in 2002. At that time, roughly 30% of Lake County growers used puffers. Since Lake County's pioneer trials in 2001, puffers are used in more than 2000 acres of pears in Lake County; almost 100% of the productive acreage (Johnson 2010). Not only do the puffers reduce codling moths to negligible levels, but the elimination of traditional agricultural chemicals also allows beneficial insects to build up to such high levels that they largely control some other orchard pests like pear psylla and mites (Zoller 2015). As mating disruption took precedence in Lake County as the standard practice in codling moth management, pear acreage declined due to economic factors. Today, there are 2073 acres of pears in production according to the 2014 Crop Report, down from around 5000 acres in the early 1990s (Johnson 2010). The virtual elimination of organophosphates for codling moth control coupled with a steady decline of pear acreage over the past 20 years has greatly reduced potential pesticide loading in the watershed from pear production.

The other two issues affecting Lake County pears are pear psylla and fire blight. Pear psylla injects a toxin into the tree, burning the foliage. When orchards stopped using organophosphates for codling moth control, a host of natural pear psylla predators recovered in population (UC IPM 2012). Fire blight is a bacteria that can be controlled with copper or oxytetracycline, but as of now, the only effective treatment is removal of affected limbs (UC IPM 2012).

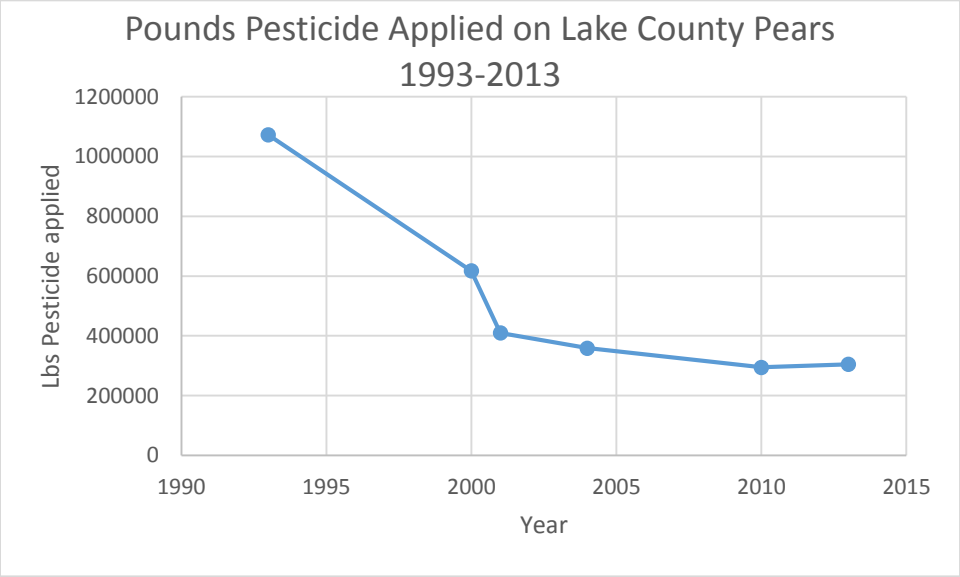


Figure 8: Total pounds of pesticide applied on Lake County pears from 1993 to 2013. Since 2010, the pear acreage has largely stabilized, as has pesticide use. The large reduction in use between 1998 and 2001 is due to the testing and implementation of codling moth pheromone mating disruption and marked a large shift in the Lake County pear industry away from organophosphates for controlling that particular pest. In 1993, there were almost 800,000 lbs. of petroleum oil applied on pears.

From 1990 to 2014, pesticide used on pears in Lake County has decreased from 1,215,373 lbs. to 304,829 lbs: a 75% reduction. Adjusting for a 60% percent loss in acreage from 5200 to 2073 during that time period, this is still a 36% overall reduction, mostly due to codling moth mating disruption. Adjusting for codling moth mating management practices after 2000, Lake County pear growers still had a reduction in pesticide use from 409,610 lbs. applied in 2001 to 304,829 lbs. applied in 2015, a 25% loss, despite a 33% increase in sulfur applied from roughly 20,000 lbs. to 30,000 lbs. (CDPR 1990-2013). The reduction in organophosphates as a result of pheromone mating reduction in the Lake County pear industry's largest pest has been significant.

Pesticide use in Walnuts

Nearly half of the 3700 acres of walnuts in the county are organic (Crop Report 2014). Additionally, a sizable acreage of walnuts in the county are dry-farmed. Walnuts in Lake County have very little pest problems in the county; far less than orchards in the Central Valley (Western Farm Press 2015). The only insect Lake County growers spray for is walnut husk fly every 5 years. Dryland growers fare even better; they tend to have less pressure from walnut husk fly than those who irrigate their trees. There were less than 2100 pounds of pesticide applied on Lake County walnut orchards in 2013 (CDPR 2013). Walnut pesticide application has followed the general downward trend of pesticide application in the county.

V. Water Quality Results

Water Quality monitoring through the Irrigated Lands Program started in 2005 at McGaugh Slough and Middle Creek. In the ten year period from 2005 until 2015 in monitoring done by the Sacramento Valley Water Quality Coalition, there were only 2 pesticide exceedances; one for DDT and one for Malathion, neither of which triggered a Management Plan. DDT is no longer used in Lake County according to CDPR pesticide use reports data. Malathion use in Lake County is generally split between structural pest control and agriculture. In 2005, for example, there were approximately 20 lbs. of Malathion applied for agricultural use (on walnuts) and 112 lbs. applied for structural pest control (CDPR 2005). There has only been one nitrate + nitrite as N exceedance in 10 years.

Figure 9: McGaugh Slough had standing water in April 2012. By summer of that year, the creek bed was dry with pools of stagnant water.

McGaugh Slough and Middle Creek have flowing water during the spring or winter but are often dry or stagnant during the summer and fall. This has been especially true during California's unprecedented drought from 2012 to 2015. The stagnant or dry nature of the testing sites (and therefore, the concentration of chemicals, pathogens and pesticides) during the summer months, suggests that if agricultural pesticides applications were contributing to water quality degradation, there would be water quality exceedances every summer. The low nature of water quality exceedances over the past 10 years suggests the opposite.

In 10 years, there were exceedances in dissolved oxygen that also suggest the stagnant nature of the monitoring sites during the summer. The 9 electrical conductivity exceedances in 10 years also suggest stagnant water, as concentrations of ions in the water would be higher in instances of standing pools of water in high evaporation conditions. Overall, there have been no significant exceedances in 10 years that suggest Lake County agriculture is discharging pesticides or nutrients causing a degradation of water quality. The full water quality results for Lake County from the year 2005 to 2015 can be found in Appendix B.

VI. Clear Lake TMDL

The Clear Lake Watershed TMDL Monitoring Program was originally developed to monitor gaged streams to develop a scientifically defensible estimate of mercury (total and methyl) and nutrient loading to Clear Lake. The TMDL was later expanded and refined to monitor phosphorus and iron; two nutrients likely responsible for the toxic blue-green algae blooms in Clear Lake. The 2012 Clear Lake TMDL update found that phosphorus naturally occurs in the soils surrounding Clear Lake, and was likely entering the lake through streams and tributaries. Lake County conducted a monitoring program in 2007 and 2008 in the three largest tributaries of Clear Lake. Based on three stream gages, the total phosphorus loading from the watershed was estimated at 90,000 to 125,000 kilograms per year, which were roughly 20-43% less than previous estimates (RWQCB 2012).

Efforts to implement the Clear Lake TMDL have largely involved the Middle Creek Flood Damage Reduction and Ecosystem Restoration Project which has aimed to acquire 1,650 acres of reclaimed land at the north end of Clear Lake and restore it to wetlands. Restoring wetlands on the north end of the lake has been estimated to potentially reduce phosphorus loading by 40% as the Middle/Scotts Creek watershed contributes over 1/2 of the total sediment load to the lake (RWQCB 2012). As of March 26, 2015, thirteen flood prone residential homes and three hundred sixty seven acres of land have been purchased. An additional six hundred seventy six acres of property, including three flood prone homes are currently in the acquisition process. (County of Lake, 2015).

Additional efforts to implement the Clear Lake TMDL involve load allocations and monitoring for the other potential source categories. These include US Forest Service, BLM, Cal Trans, the cities of Clearlake and Lakeport (for storm water), cannabis production and irrigated agriculture. Since 2005, the Lake County Farm Bureau Education Corporation has been responsible for implementing the Irrigated Lands Regulatory Program (ILRP) as part of the Sacramento Valley Water Quality Coalition. This has included grower outreach and education through grower meetings and seminars, collection of farming practices data, and monitoring of Middle Creek, in Upper Lake. Best management practices (BMPs) that are protective of water quality have been implemented and improved, especially in the Lake County winegrape industry, and the county grading ordinance requires BMP implementation in ag-land conversions to mitigate erosion (County of Lake, 2007). Management practices promoted by the Lake County Winegrape Commission include soil management, cover cropping for erosion control and irrigation and nutrient management practices (Larry Walker Associates, 2011).

The Lake County Agricultural Lands Group recognizes that the Clear Lake TMDL is ongoing, and contends the obligation is to the TMDL monitoring as opposed to the whole suite of monitoring required in other sub-watersheds. The success of the Lake County wine and tourism industry relies heavily on the

health of Clear Lake. For years, the winegrape community has recognized that wine industry will not be as successful in attracting wine tourism to the county with frequent toxic algal blooms in the lake. The implemented best management practices, phosphorus and nitrogen fertilizer reduction and low pesticide and erosion footprint left by winegrape growers in the county imply a decreasing impact on the nutrient loading in the lake. The Lake County Farm Bureau Education Corporation and the Lake County Winegrape Commission will continue to educate growers to minimize any impact irrigated agriculture may have on the Clear Lake TMDL.

VII. Best Management Practices in Lake County

Management Practices reported in 2015 Farm Evaluations

Of the 10,073 acres enrolled in the Irrigated Lands Program in 2015, the Lake County Agricultural Lands Watershed received Farm Evaluations back on 9,375 acres. In these Farm Evaluation Summaries, a series of management practices was answered. Overall, a majority of Lake County growers are following management practices that are protective of water quality.

In the category of "Pesticide Management Practices", there was between 80 and 90% of reported acreage that followed the County permit, followed label restrictions, monitored rain forecasts, monitored wind conditions, attended trainings, avoided surface water when spraying and used end of row shutoff when spraying. Pesticides were not applied to 10% of the acreage. 87% of growers use a PCA to help develop their crop fertility plan, while 25% used a professional soil scientist. Only 4% of growers reported using no professional help in developing a crop fertility plan.

In the category of "Nitrogen Management" between 50 and 70% of acreage split fertilizer applications, used tissue/petiole testing, soil testing and fertigation as part of standard nitrogen management practices. Nitrogen was not applied in 5% of acreage. Lake County growers work closely with their PCAs to develop nitrogen management plans, as captured in 87% if acreage above.

Drip irrigation as a primary method of irrigation was reported in 65% of acreage with 52% reporting sprinkler as their secondary method of irrigation. There were cover crops or native vegetation cover in almost 80% of acreage, and 70% of acreage used drip or micro-irrigation to mitigate surface water run-off. There was also no irrigation drainage due to field or soil conditions in 70% of acreage reported and no storm drainage due to field or soil conditions in 16% of acres. Growers reported that they practiced minimum tillage to reduce erosion risk in 75% of the acreage reported.

When asked if their farm has the potential to discharge sediment, 72% of acreage reported no potential. However, the Lake County Farm Bureau office received calls from growers who were confused by the question as 'potential' is an unspecific term. It is the Lake County Farm Bureau's opinion that given management practices and soil conditions, the percentage of farms with no potential to discharge sediment is higher than 72%.

While there is room for improvement with continued education and outreach, a majority of Lake County farmers are practicing management practices that mitigate against pesticide, nutrient and sediment discharges. The full Farm Evaluation Summary from Larry Walker and Associates can be found in Appendix A.

Cultural Practices of Winegrape Growers

The Lake County Winegrape Commission (LCWC) is a marketing order established in 1991 to assist winegrape growers through marketing, research, and educational programs. Since 1991, the LCWC has provided education and outreach to growers regarding best management practices that are protective of water quality and that promote erosion control. These best management practices used by winegrape growers capture a majority of Lake County irrigated agriculture. Through the LCWC, growers have access to the latest research in viticulture, real-time weather data and grower education. The Lake County Winegrape Commission is committed to ensuring Lake County vineyard operations continue to work toward the goal of certified sustainability, which they define as "being environmentally sound, socially equitable, and economically viable." (LCWC 2014).

Figure 10: Education and out-reach is a mission of the LCWC. Jeff Lyon explains irrigation practices to vineyard managers in the Master Vigneron Academy.

As part of this sustainability goal, the LCWC has a variety of programs. The Sustainable Winegrowing Program (SWP) produces education material and newsletters for growers. In 2012, the LCWC implemented two new programs: Certified California Sustainable Winegrowing (CCSW-Certified) and the Master Vigneron Academy (MVA). The CCSW-Certified program assists owners of small vineyards to become certified sustainable. Management practices promoted by the CSWA include: soil management, cover cropping for erosion control and irrigation and nutrient management practices (Larry Walker Associates, 2011). The Master Vigneron Academy works to maintain a consistency in cultural practices in winegrape growing throughout the county and focuses on educating a professional vineyard workforce on the latest research and standards. The LCWC reports that more than 70 percent of Lake County growers have participated in their Code of Sustainable Winegrape Practices Self-Assessment Workbook and expect to increase that number every year (LCWC 2014). Through all these programs, the Lake County Winegrape Commission has maintained qualities of consistency and good stewardship throughout the county's vineyards.

Cultural practices in Lake County vineyards focus around water conservation, deficit irrigation, stout erosion control and sound site selection. The larger vineyards encompassing the most acreage in Lake County are the most likely to prescribe to the most sustainable management practices. According to Glenn McGourty of the UC Research and Extension Center, Lake County winegrape growers use a fraction of the water used by other commodities; 8 acre inches/year in the Red Hills compared to 18 acre inches/year used by San Joaquin Valley winegrapes or 38 acre inches/year used by Sacramento Valley almonds (McGourty et. al 2014). A combination of efficient irrigation systems and water management technology have been attributed to a 70% reduction in vineyard water use since 1984 (LCWC 2014).

Using Technology for Vineyard Water Management.

Lake County wine grape growers use the latest water management technology to maximize grape quality, refine and limit water use and to keep their operations sustainable. Growers use a combination of monitors, models and field data combined with sophisticated drip irrigation systems to determine precise levels of watering needed by the vine to produce quality fruit. Traditional cultural practices involved watering up until the berries had color, and then reducing irrigation until harvest. However, research has changed practices, and growers now practice deficit irrigation before berries show color, which reduces berry size and increases quality. According to the LCWC, the goal is to get the berries to 20% water deprivation stress before June 24th, 30% water stress by July 8th and then to hold this moderate water stress until harvest.

Lake County winegrape growers use a variety of instruments and monitoring methods to achieve deficit irrigation as accurately as possible. The Lake County Department of Agriculture and the LCWC maintain some of Northern California's most sophisticated weather stations which produce data that can be analyzed in real time. (Figure 14). But to refine the process even further, additional checks are made with a variety of probes interspersed throughout the individual vineyard. These devices measure the amount of moisture in the soil with accuracy to a hundredth of an inch per ft. of strata. (Figure 12). Other data must be gathered by hand. Shoot length measurements are taken every week to gauge how fast the vines are growing. Growers can also feel the temperature of the leaves by hand to estimate the water stress level of the vine (Figure 14). Leaves that feel cool to the touch under mid-day sunlight indicate that the vine is using water to cool itself. Warm leaves indicate the ideal moderate level of stress. When growers wish for more accuracy, pressure chambers are used to tell the grower exactly how much stress the grape leaf is experiencing. (Figure 15). Soil moisture data, shoot length and stress index evaluations are inputted into a computer that generates up to 500-600 reports per week. These reports inform growers whether or not they need to irrigate and how much water to apply.

Figure 11: Lake County Growers use an extensive network of weather stations and monitoring devices to make sure they are applying just enough water. This device monitors evapo-transpiration: the amount of water the plant loses to the atmosphere. Evapo-transpiration, or ET, is calculated based on measurable data such as relative, wind, temperature, and solar radiation. Once growers know the ET, they can replace a percentage of that water through irrigation, typically 25% to 30%. This data used in conjunction with weather prediction and soil condition is inputted into the vine's dripline for accurate irrigation.

Lake County wine grape growers prescribe to the philosophy that water management is the key to the quality of the wine grape. Local growers have used sophisticated water management practices for more than 30 years and demonstrate a long-term

commitment to sustainability. Coastal Viticultural Consultants have estimated that Lake County vineyard water use has dropped by more than 70% since 1984 (LCWC 2014) which has correlated with an increase in the quality of Lake County wine. Water management practices as described above have become common cultural practices in Lake County vineyards and wine grape growers continue to refine their growing practices and levels of sustainability each year.

Figure 14: The Lake County Winegrape Commission has teamed up with the County Dept. of Agriculture to support highly sophisticated weather stations which produce data that can be analyzed in real time.

Figure 12: Soil moisture monitors are placed around the vineyard to measure moisture in the strata column. This particular monitor is considered the 'gold standard' for soil moisture monitoring equipment. Growers take weekly measurements during the growing season and can measure to the hundredths of an inch of water in the strata column.

Figure 15: Pressure chambers measure the heat and water stress in the grape leaf. Growers can use these instruments to hit their target 30% water stress by the end of July.

Figure 13: Growers can easily estimate the water stress in the leaf by feeling the outer canopy in the heat of the day. Leaves which are cool to the touch, are irrigated too much as the vine is cooling itself with water.

Irrigation Practices in Lake County Vineyards

Drip irrigation systems are the standard for Lake County vineyards as they provide a precise and uniform amount of water that can be managed in real time. These sophisticated systems allow growers to use only enough water that the vine needs. They also conserve water by watering in small, consistent quantities, which greatly reduces losses from evaporation and produces no effective water run-off (LCWC 2014). Drip irrigation is essential for deficit irrigation, where growers intend to moderately stress the vine and not provide as much water as it would use. Glenn McGourty of the University of California Research Extension Center in Hopland has worked closely with Lake County vineyard managers to develop irrigation practices that both maximize fruit quality and conserve water. Growers have relied on his research and outreach in their drought management practices, as well his soil moisture research. McGourty uses Australian vineyard irrigation studies to inform local growers on deficit irrigation, and maintins that the Australian deficit model can be used as an example for the amount of water that can be used on Lake County vineyards (McGourty 2014). In site selection, Lake County growers often choose for areas with high soil porosity, as is typical in the hills and bench areas characterized by the Red Hills, Kelsey Bench and High Valley American Viticultural Areas (AVAs). In these volcanic soil types, water is absorbed quickly and efficiently. These soils limit water run-off in rain-fall, and increase the efficiency of drip irrigation.

Figure 16: Randy Krag of Beckstoffer Vineyards demonstrates a drip emitter which compensates for changes in water pressure depending on slope and delivers consistent water to the vine.

Sprinkler systems are rarely used in the growing season, but are sometimes used for frost protection during the early spring in Lake County vineyards.

Erosion Control in Lake County Vineyards

Winegrape growers take great steps to reduce erosion in the vineyards, as soil depth can be shallow in the Red Hills and Kelsey Bench AVAs. Waddles are used both in vineyards and along avenues to keep sediment in place, especially during new vineyard development. It is standard practice to grow cover crops between rows and to either seed with a grass mix or native cover crop, such as the wild mustard pictured in Figure 17. On the valley floors, such as in Big Valley, Scotts Valley and High Valley, cover crops grow readily. In the Red Hills, straw is used as a standard practice to protect the soil until grass can seed.

Figure 17: Vineyard growers promote cover crops between the rows year long.

Figure 18: Orchard grass used as a cover crop in Big Valley.

Figure 19: Straw is laid down in a new vineyard development in the Red Hills.

Figure 20: Wattles are used on slopes and in the avenues as standard practice.

Growers must undergo strict erosion control standards when developing new vineyards. The County of Lake developed an Agricultural Grading Ordinance (see Appendix C) and requires a grading permit for any grading or clearing of non-current agricultural land or for ponds and resevoires over 1 acre foot in capacity. Under the current Grading Ordinance (Chapter 30, adopted July 17, 2007) implementation of BMP's is required for new agricultural properties (native vegetation to agriculture) and conversions of deep rooted crops (orchard to vineyard) on soils with a moderate to severe hazard rating. Detailed in this ordinance are restrictions to grading on certain soil types, proximaties to waterways or riparian habitats and required mitigation practices for revegetation and dust control.

Some orchard to vineyard conversions that occur in Big Valley fall under the ordinance exemption for crop conversions as long as they do not expand the footprint of the existing farming activity or operation, do not occur within thirty feet of the top of bank of a water body, do not remove other plants having stable woody root systems extending at least twelve inches below the soil surface and occur on soils with a moderate or severe erosion hazard rating, do not occur during winter period and do not cut or fill slope with a 2:1 or greater ratio. This is because the Big Valley is flat farmland with lakebed and alluvial soils.

Vineyards that get developed or converted in the Red Hills area usually fall under the ordinance and must adhere to strict standards of grading and mitigation. Vineyard managers take great care in preserving the shallow volcanic top soil in these areas with wattles and straw during development and cover crop in the mature vineyards. The grading ordinance also outlines restrictions and mitigations on roadways and infrastructure in the vineyards to reduce erosion hazard on access roads. These

Figure 21: Straw placed in this vineyard has facilitated the seeding and growth of a cover crop.

Figure 22: Straw is laid down on the avenues during development until gravel and water bars are used to protect against sediment run-off.

Figure 23: A reservoir catches any potential water runoff in the vineyards and avenues of Amber Knolls in the Red Hills.

provisions outlined in the ordinance serve to protect water quality from sediment run-off and protect the vineyards from loss of top-soil.

In the large Red Hills vineyards such as Amber Knolls, any potential water run-off from winter storms is diverted into a water catchment system producing effectively zero off-site runoff from the vineyards and avenues. While smaller vineyards may not have these sophisticated catchment systems, the majority of irrigated vineyard acreage in the Red Hills AVA falls under these management systems.

Erosion control management practices are implemented to limit the amount of sediment runoff and fertilizer runoff. A 2007 survey conducted by the Lake County Farm Bureau Education Corporation indicated that 90% of vineyard acreage is maintaining a permanent or winter annual cover crop

Cultural Practices of Pear and Walnut Growers

Pears are most productive on loam-textured, deep uniform soils, which is why pear orchards are predominently found in Big Valley and Scotts Valley. Sprinkler irrigation is the predominant form of irrigation. Flood irrigation continues to fall out of fashion; this practice is used only on a few isolated and out-dated orchards in Big Valley accounting for 8 % of the acres (FE 2015). Wind turbines are used in the orchards as a primary method for frost protection.

Figure 24: Pear orchards have year-round no- till cover crops, like the orchard grass in this Big Valley orchards. Wind turbines are used as frost protection.

Cover crops in the form of orchard grass are used as common practice in the pear orchards resulting in excellent soil retention. Orchard grasses in the pear orchards are rarely tilled. Given the standard practice of cover crops and the flat topography in Big Valley, there is very low probability of surface water run-off in the pear orchards.

Lake County pear growers were at the fore-front of pest management research in the late 1990s to control codling moth using pheromone mating disruption. Due to the success and overwhelming implementation of pheromone puffers in the orchards, Lake County pear growers have been able to reduce their pesticide application by 75% since 1990 (CDPR). Other integrated pest management practices include the use of owl boxes to help control ground squirrels and other rodents and reduce the need for baiting or other forms of eradication. (Guisti 2011).

Figure 25: Pear orchards grow year-round cover crops, especially in the winter when rainfall is high.

Irrigated walnuts orchards also commonly have a cover crop of orchard grass. The grass is mowed during harvest to accommodate the machinery which comes into vacuumn the fallen nuts in non-handpicked orchards. In the 1940s and 1950s, there were many walnut orchards planted in the Red Hills area. These orchards were not irrigated and poorly managed, leading to erosion problems on the steeper slopes in the 1980s and 1990s. These orchards have been steadily converted into winegrapes over the years due to the superior winegrape growing conditions and economic factors in the area. A majority of irrigated walnut orchards are located in the Middle Creek drainage in Upper Lake and Big Valley which have flat topographies.

Figure 26: Orchard grass in the walnut orchards during the early summer and early fall after harvest. The orchard on the right was hand-picked.

VIII. Reduced Monitoring Management Practices Alternative

The Reduced Monitoring Management Practices Alternative was set out in SWRCB ORDER R5-2014 and stipulated that:

The Executive Officer may approve the reduced monitoring/management practices verification option if the following conditions are met as documented in the proposal submitted by the thirdparty:

• There is a low threat of pesticide discharges from irrigated lands causing or contributing to a surface water quality exceedance or trend of degradation.

• The parameters associated with any existing management plans in the subwatershed do not include toxicity, pesticides, copper, or nutrients.
• There is a low intensity of agricultural land use in the subwatershed.

Lake County meets all these criteria with continued monitoring through the Clear Lake TMDL. The Lake County Farm Bureau Education Corporation is dedicated to continued grower education and a management verfication strategy that both fulfills the requirement and is protective against water quality degradation.

IX. Education and Outreach Strategy

The Lake County Farm Bureau has traditionally held annual workshops educating growers on the Irrigated Lands Regulatory Program which take place in the winter and spring before the growing season. The Lake County Farm Bureau will continue to provide annual workshops and training for the ILRP program, but plans to incorporate an educational forum for management practice training. Member growers will be required to attend, or send a designated representative to attend these Annual Grower Meetings, which will include technical discussions on Best Management Practice implementation. Attendance records will be cross-checked with a questionnaire created by the Lake County Farm Bureau Education Corporation, or by 2015 Farm Evaluation responses. The LCFBEC and the Lake County Farm Bureau will also collaborate with the Lake County Winegrape Commission to continue to promote their sustainability programs and capture an increasing number of winegrape growers.

Other outreach strategies include published information and pamphlets. The Lake County Farm Bureau publishes a bi-monthly newsletter and features a grower outreach and education section in every issue. In this section of the newsletter, the Lake County Farm Bureau will focus on helping growers meet BMP requirements. The newsletter reaches 500 Farm Bureau members in Lake County and is available online for free viewing.

The Lake County Farm Bureau will also continue its outreach to pull land owners of irrigated agriculture into the program. Through these outreach strategies, the Lake County Farm Bureau Education Corporation hopes to capture and educate all growers enrolled in the Irrigated Lands Program.

X. Verification of Management Practices Strategy

Through its various Sustainability programs, the Lake County Winegrape Commission has outlined a series of Best Management Practices that are protective of water quality. These practices capture the majority of Lake County irrigated acres. While the LCWC reports a high rate of grower participation in these management practices, there is as of yet, no similar guidelines in the county for pear and walnut orchards. Given the high rate of good management practices already in place for pears and walnuts (wide use of cover crops and integrated pest management), the process to develop and incorporate best management practices in all crops in Lake County will not be a difficult task.

The Lake County Farm Bureau Education Corporation will be collarborating with the Lake County Natural Resources Conservation Service (NRCS) in 2016 to develop a series of BMPs that will incorporate pear and walnut growers into the LCWC’s standards and to further refine standards already

in place. NRCS standards will be used for Lake County BMPs including irrigation management, nutrient management, pest management and cover crops. Lake County will model their BMPs closely to the standards that Napa County has set.

Management of irrigated wine grape vineyards, pears and walnuts will be based on resource concerns and quality criterion outlined in the USDA NRCS Field Office Technical Guide. This conservation planning guidance document indicates that excess soil erosion, excess irrigation system runoff, and suspended sediments, nutrients, and pesticides should be prevented from entering waterways adjacent to irrigated farm lands. The following table summarizes management objectives, organized according to NRCS Quality Criterion:

1. Soil

Resource Concern	NRCS Quality criterion
Sheet and rill erosion (Includes potential for soil-borne nutrients and pesticides)	Erosion does not exceed "2T+1" *, based on USDA Universal Soil Loss Equation, (USLE)
Farm road erosion	Adequate storm runoff control in place to prevent visible rills or washes.

2. Water Quality

Resource Concern	NRCS Quality criterion
Excess irrigation runoff	Irrigation water is uniformly applied according to crop needs, avoiding runoff.
Suspended sediments (Sourced from farmed lands and farm roads)	Conservation practices are in place to control excessive amounts of sediment transport from farmed fields.
Excessive nutrients in surface waters (Crop-applied)	Crop nutrients are applied in a manner that prevents drift or runoff of materials. Any applied manures or other potential sources of the E-coli bacterium are composted prior to application, or are applied to the soil only during non-storm runoff periods of the growing season.
Pesticides in surface waters (Crop-applied)	Pesticides are applied in a manner that prevents drift or runoff of materials.

**"T" refers to the USDA rating for soil loss tolerance, based on the soil map unit in question*

Table 2: NRCS Quality Criterion outlined in Field Office Technical Guide.

Through its ongoing, existing free technical assistance program, NRCS would also be available to assist growers with on-farm management practice evaluations and planning assistance on a continuous basis as a part of its ongoing conservation program. Growers needing to improve their existing conservation systems or needing to implement management practices could also

apply for incentive funding grants through NRCS's farm bill programs, such as the EQIP. Grower in Lake County rely heavily on the UC Cooperative Extension and will be encouraged to continue to do so.

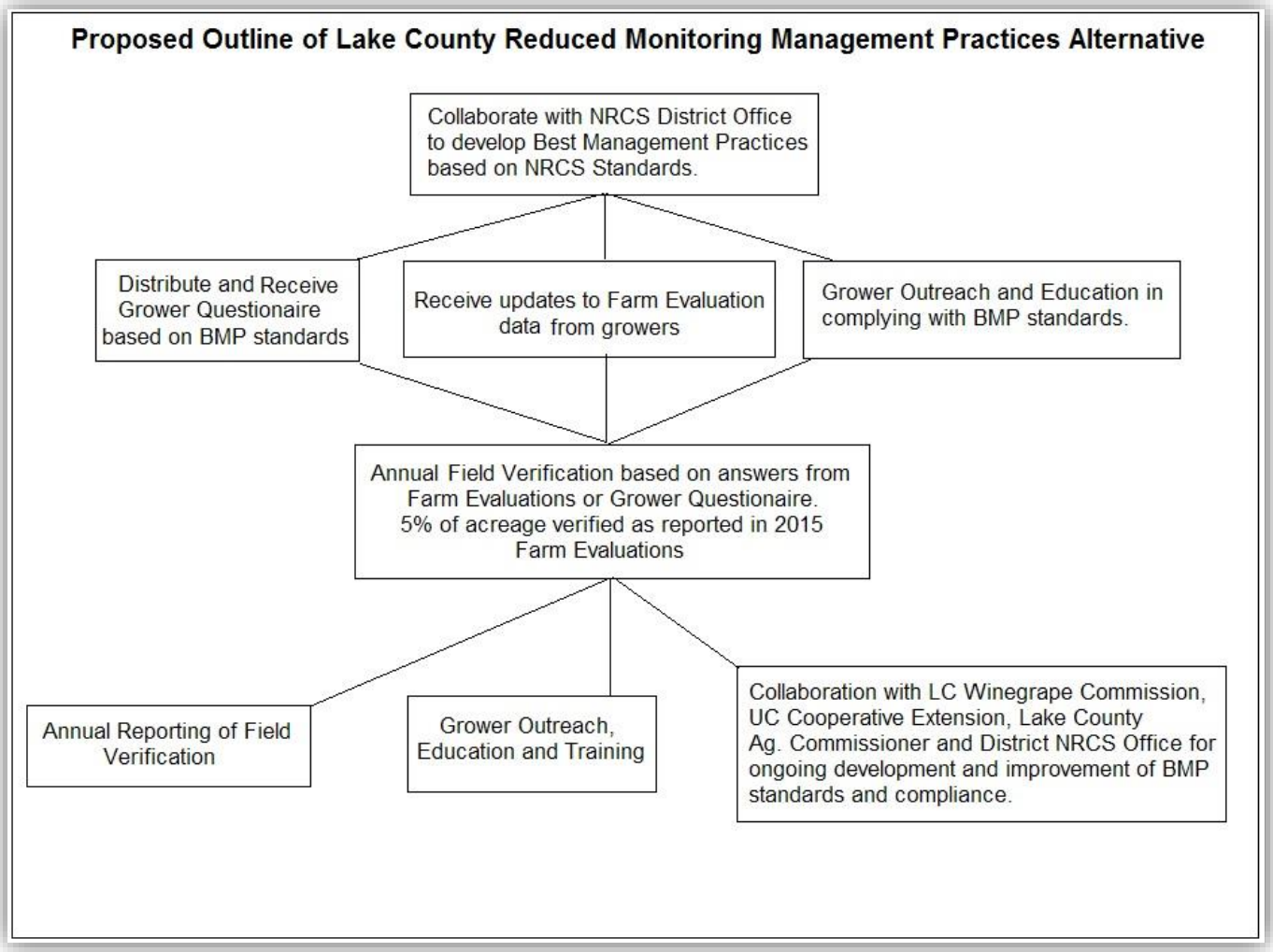


Figure 27: Reduced Monitoring Management Practices Alternative Flow Chart for proposed implementation.

The Lake County Farm Bureau Education Corporation (LCFBEC) will use Farm Evaluation data as well as a grower questionaire sent out in the early spring to evaluate BMPs. LCFBEC will model its Grower Management Practices Questionaire loosely on the questionaire developed by Napa County, but will incorportate Best Management Practices for walnuts and pears developed by the Lake County NRCS office in collaboration with the Lake County Ag. Commissioner and the Lake County UC Research Extension.

LCFBEC will evaluate and verify 5% of its 10,053.13 irrigated acreage based on the 2015 Farm Evaluation surveys, which is 502 acres annually. LCFBEC will model its procedure for selecting sites for field confirmation and certification documentation based on Napa County's model in its 2010 Pilot

Program. The selection will be at random, but will include more than 3 but less than 20 growers in a single year with acreage totaling not less than 500 acres. Lands subject to certification will not require recertification for a period of at least 5 years. Re-evaluation of irrigated acreage will occur as part of the 5-year Farm Evaluation cycle.

The LCFBEC will develop a standard form for recording in-field observations related to visual indicators of features including the presence of cover crops, active soil erosion processes, and irrigation system type. The standard form will also include a checklist of grower-submitted BMP implementation records as referenced on the Grower's Management Practices Questionnaire or 2015 Farm Evaluation responses. Field visit times may vary, but the LCFBEC will focus visits during the late fall or winter season, to allow for a better visual gauge of BMP implementation. Farms selected for inspection will be asked to produce records that provide evidence of NRCS Best Management Practices. These records may include Pest Control Advisor monitoring reports, records of pesticide use, soil or crop petiole analysis reports, ecords of plant nutrient application and Lake County Agricultural Commissioner pesticide application permits.

Annual reporting of field verification will be completed in the spring for the previous year. Following field verification will be a continued cycle of grower education and outreach to promote best management practices as well as continuing collaboration with the District NRCS office, the Lake County Winegrape Commission, the Agricultural Commissioner and the UC Cooperative Extension.

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XII. Appendix A: Lake County Farm Evaluation Data 2015

Baseline Summary of Agricultural Practices Implemented in Lake County

PRACTICE CATEGORY / **Individual Practice**	**Acres Reported**	**Percent of Total Acres Reported (9,375 acres)**
PESTICIDE APPPLICATION PRACTICES		
County Permit Followed	8,377	89.4
Follow Label Restrictions	8,362	89.2
Monitor Rain Forecasts	8,154	87.0
Monitor Wind Conditions	8,090	86.3
Attend Trainings	8,057	85.9
Avoid Surface Water When Spraying	7,917	84.4
End of Row Shutoff When Spraying	7,895	84.2
Use Appropriate Buffer Zones	7,018	74.9
Use PCA Recommendations	5,994	63.9
Reapply Rinsate to Treated Field	5,052	53.9
Use Drift Control Agents	3,965	42.3
Use Vegetated Drain Ditches	3,555	37.9
Sensitive Areas Mapped	1,696	18.1
Chemigation	1,502	16.0
No Pesticides Applied	948	10.1
Target Sensing Sprayer used	803	8.6
Other1	673	7.2
WHO DO YOU HAVE HELP DEVELOP YOUR CROP FERTILITY PLAN?		
Pest Control Advisor (PCA)	8,140	86.8
Certified Crop Advisor (CCA)	4,442	47.4
Professional Soil Scientist	2,345	25.0
Professional Agronomist	1,391	14.8
Certified Technical Service Providers by NRCS	663	7.1
None of the above	359	3.8
No Selection	77	0.8
Independently Prepared by Member	15	0.2
DOES YOUR FARM HAVE THE POTENTIAL TO DISCHARGE SEDIMENT TO OFF-FARM SURFACE WATERS?		
No	6,777	72.3
Yes	2,597	27.7
IRRIGATION PRACTICES		
Drip	6,109	65.2

PRACTICE CATEGORY **Individual Practice**	**Acres Reported**	**Percent of Total Acres Reported (9,375 acres)**
Sprinkler	2,615	27.9
Flood	760	8.1
Micro Sprinkler	360	3.8
No Selection	53	0.6
SECONDARY IRRIGATION		
Sprinkler	4,850	51.7
No Selection	4,193	44.7
Micro Sprinkler	802	8.6
Flood	109	1.2
Drip	101	1.1
Border Strip	5	0.1
IRRIGATION EFFICIENCY PRACTICES		
Water application scheduled to need	6,790	72.4
Use of moisture probe	3,176	33.9
Use of ET in scheduling irrigations	2,863	30.5
Pressure Bomb	2,447	26.1
Soil Moisture Neutron Probe	1,910	20.4
Other	1,170	12.5
Laser Leveling	613	6.5
No Selection	150	1.6
NITROGEN MANGEMENT METHODS TO MINIMIZE LEACHING PAST THE ROOT ZONE		
Cover Crops	6,542	69.8
Split Fertilizer Applications	6,432	68.6
Tissue/Petiole Testing	5,592	59.7
Soil Testing	5,190	55.4
Fertigation	4,934	52.6
Irrigation Water N Testing	2,143	22.9
Foliar N Application	1,886	20.1
Do Not Apply Nitrogen	496	5.3
Other	376	4.0
Other2	96	1.0
No Selection	93	1.0
Variable Rate Applications using GPS	12	0.1
DO YOU HAVE ANY IRRIGATION WELLS ON PARCELS ASSOCIATED WITH THIS SURVEY?		
Yes	8,457	90.2
No	864	9.2

PRACTICE CATEGORY **Individual Practice**	**Acres Reported**	**Percent of Total Acres Reported (9,375 acres)**
No Selection	32	0.3
ARE YOU AWARE OF ANY KNOWN ABANDONED WELLS ASSOCIATED WITH THIS SURVEY?		
No	6,090	65.0
Yes	2,502	26.7
No Selection	760	8.1
WELLHEAD PROTECTION PRACTICES		
Good “Housekeeping” Practices	8,346	89.0
Backflow Preventive / Check Valve	7,419	79.1
Ground Sloped Away from Wellhead	7,395	78.9
Standing water avoided around wellhead	6,994	74.6
Cement Pad	6,227	66.4
Air Gap (for non-pressurized systems)	3,699	39.5
N/A (Has No Irrigation Wells)	864	9.2
No Data Entered	16	0.2
ABANDONED WELL PRACTICES		
N/A (Has No Abandoned Wells)	6,066	64.7
Destroyed - Unknown method	2,471	26.4
No Data Entered	815	8.7
IRRIGATION PRACTICES FOR MANAGING SEDIMENT AND EROSION		
Use drip or micro-irrigation to eliminate irrigation drainage.	6,376	68.0
No irrigation drainage due to field or soil conditions.	6,202	66.2
The time between pesticide applications and the next irrigation is lengthened as much as possible to mitigate runoff of pesticide residue.	3,105	33.1
Shorter irrigation runs are used with checks to manage and capture flows.	2,599	27.7
No Selection	791	8.4
Catchment Basin.	754	8.0
Tailwater Return System.	519	5.5
Use of flow dissipaters to minimize erosion at discharge point.	262	2.8
In-furrow dams are used to increase infiltration and settling out of sediment prior to entering the tail ditch.	123	1.3
Other	62	0.7
CULTURAL PRACTICES TO MANAGE SEDIMENT AND EROSION		
Cover crops or native vegetation are used to reduce erosion.	7,284	77.7
Minimum tillage incorporated to minimize erosion.	7,052	75.2

PRACTICE CATEGORY **Individual Practice**	**Acres Reported**	**Percent of Total Acres Reported (9,375 acres)**
Soil water penetration has been increased through the use of amendments, deep ripping and/or aeration.	3,050	32.5
Vegetated ditches are used to remove sediment as well as water soluble pesticides, phosphate fertilizers and some forms of nitrogen.	2,847	30.4
Subsurface pipelines are used to channel runoff water.	2,479	26.4
Creek banks and stream banks have been stabilized.	2,366	25.2
Vegetative filter strips and buffers are used to capture flows.	2,239	23.9
No storm drainage due to field or soil conditions.	1,521	16.2
Hedgerows or trees are used to help stabilize soils and trap sediment movement.	1,473	15.7
Sediment basins / holding ponds are used to settle out sediment and hydrophobic pesticides such as pyrethroids from irrigation and storm runoff.	1,449	15.5
Berms are constructed at low ends of fields to capture runoff and trap sediment.	1,335	14.2
Field is lower than surrounding terrain.	1,146	12.2
Storm water is captured using field borders.	1,031	11.0
Crop rows are graded, directed and at a length that will optimize the use of rain and irrigation water.	649	6.9
No Selection	464	4.9
Other	20	0.2

Appendix B: Lake County Surface Water Monitoring Data 2005-2015

PARAMETERS	Unit	Middle Creek U/S Hwy 20		McGaugh Slough Finley Rd		Total # Analyses	Total # Exceedance	Minimum Result	Maximum Result
		Dry	Wet	Dry	Wet				
GENERAL									
Alkalinity	mg/L			2	2	4		36	354
Color	CU	1	2	2	2	7		4	150
Dissolved Oxygen	mg/L	35	26	12	10	83	19	2.32	13.5
Electrical Conductivity	µS/cm	35	26	12	10	83	9	93	1329
Hardness as CaCO3	mg/L	5	3	2	2	12		36	462
pH	-log[H+]	35	26	12	9	82	2	6.12	8.57
Total Dissolved Solids	mg/L	5	6	2	2	15	1	90	630
Dissolved Organic Carbon	mg/L			1	1	2		4.4	13
Total Organic Carbon	mg/L	32	24	2	2	60		0.49	15
Total Suspended Solids	mg/L	32	26	2	2	62		<4.2	260
Turbidity	NTU	32	26	2	2	62		<0.03	110
Ultraviolet Absorption (254nm)	ABS/cm			1	1	2		0.13	0.47
PATHOGENS									
E. coli	MPN/100mL	32	26	2	3	63	9	5.2	2419.6
Fecal Coliforms	MPN/100mL	3	1			4		30	240
WATER COLUMN TOXICITY									
Ceriodaphnia Survival	% of control	6	5	2	2	15	1	6.7	105.6
Pimephales Survival	% of control	5	2	2	2	11		94.7	102.6
Selenastrum Growth	% of control	11	8	2	1	22		131.6	436.3
PESTICIDES									
Aldicarb	µg/L	1	2	1		4		<0.2	<0.2
Aldrin	µg/L	6	5	1	1	13		<0.001	<0.009
Allethrin	µg/L			2	1	3		<0.005	<0.005
Ametryn	µg/L	2	3	1	1	7		<0.005	<0.005
Aminocarb	µg/L	1	2	1		4		<0.2	<0.2
Atraton	µg/L	2	3	1	1	7		<0.005	<0.005
Atrazine	µg/L	2	3	1	1	7		<0.005	<0.005
Azinphos methyl	µg/L	4	3	2	2	11		<0.01	<0.05
Barban	µg/L	1	2	1		4		<1.75	<1.75
Benomyl/Carbendazim	µg/L	1	2	1		4		<0.2	<0.2
Bifenthrin	µg/L			2	1	3		<0.005	<0.005
Bromacil	µg/L	1	2	1		4		<0.2	<0.2
Carbaryl	µg/L	1	2	1		4		<0.05	<0.05
Carbofuran	µg/L	1	2	1		4		<0.05	<0.05
Chlordane, cis	µg/L	6	5	1	1	13		<0.001	<0.007
Chlordane, trans	µg/L	6	5	1	1	13		<0.001	<0.006
Chlorothalonil	µg/L	2	1			3		<0.1	<0.1
Chloroxuron	µg/L	1	2	1		4		<0.2	<0.2
Chlorpropham	µg/L	1	2	1		4		<0.4	<1.75
Chlorpyrifos	µg/L	8	5	2	2	17		<0.005	0.0016

Cyanazine	µg/L	2	3	1		6		<0.005	<0.005
Cyfluthrin	µg/L			2	1	3		<0.005	<0.005
Cypermethrin	µg/L			2	1	3		<0.005	<0.005
Dacthal	µg/L	5	4	1		10		<0.005	<0.008
DDD(o,p)	µg/L	6	5	1	1	13		<0.001	<0.005
DDD(p,p)	µg/L	6	5	1	1	13		<0.001	<0.003
DDE(o,p)	µg/L	6	5	1	1	13		<0.001	<0.005
DDE(p,p)	µg/L	6	5	1	1	13		<0.001	<0.004
DDT(o,p)	µg/L	6	5	1	1	13		<0.001	<0.003
DDT(p,p)	µg/L	6	5	1	1	13	1	<0.007	0.0095
Deltamethrin	µg/L			2	1	3		<0.005	<0.005
Demeton	µg/L	6	4	2	2	14		<0.001	<0.01
Diazinon	µg/L	8	5	2	2	17		<0.005	<0.005
Dichlorvos	µg/L	8	5	2	2	17		<0.003	<0.02
Dicofol	µg/L	5	4	1		10		<0.01	<0.05
Dieldrin	µg/L	6	5	1	1	13		<0.001	<0.005
Dimethoate	µg/L	6	3	2	2	13		<0.003	<0.005
Disulfoton	µg/L	6	4	2	2	14		<0.001	<0.01
Diuron	µg/L	1	2	1		4		<0.2	<0.2
Endosulfan I	µg/L	6	5	1	1	13		<0.001	<0.005
Endosulfan II	µg/L	6	5	1	1	13		<0.001	<0.004
Endosulfan sulfate	µg/L	6	5	1	1	13		<0.001	<0.005
Endrin	µg/L	6	5	1	1	13		<0.001	<0.007
Endrin Aldehyde	µg/L	6	5			11		<0.001	<0.009
Endrin Ketone	µg/L	6	5	1	1	13		<0.001	<0.006
Esfenvalerate/Fenvalerate	µg/L			1		1		<0.005	<0.005
Ethoprop	µg/L	6	4	2	2	14		<0.001	<0.01
Fenchlorphos	µg/L	6	4	2	2	14		<0.002	<0.01
Fenitrothion	µg/L	1	1			2		<0.01	<0.01
Fenpropathrin	µg/L			2	1	3		<0.005	<0.005
Fensulfothion	µg/L	6	4	2	2	14		<0.001	<0.01
Fenthion	µg/L	6	4	2	2	14		<0.002	<0.01
Fenuron	µg/L	1	2	1		4		<0.2	<0.2
Fluometuron	µg/L	1	2	1		4		<0.2	<0.2
Glyphosate	µg/L	1	3			4		<4.0	<4.0
HCH, alpha	µg/L	6	5	1	1	13		<0.001	<0.005
HCH, beta	µg/L	6	5	1	1	13		<0.001	<0.008
HCH, delta	µg/L	6	5	1	1	13		<0.001	<0.005
HCH, gamma	µg/L	6	5	1	1	13		<0.001	<0.005
Heptachlor	µg/L	6	5	1	1	13		<0.001	<0.008
Heptachlor epoxide	µg/L	6	5	1	1	13		<0.001	<0.007
Hexachlorobenzene	µg/L	1	1			2		<0.001	<0.001
Hexazinone	µg/L	2	1			3		<0.1	<0.1
L-Cyhalothrin	µg/L			1	1	2		<0.005	<0.005
Linuron	µg/L	1	2	1		4		<0.2	<0.2
Malathion	µg/L	8	5	2	2	17	1	<0.03	0.0115
Merphos	µg/L	2	3	2	2	9		<0.001	<0.01

Methamidophos	µg/L	2	2	2	1	7		<0.05	<0.05
Methidathion	µg/L	6	2	2	2	12		<0.005	<0.01
Methiocarb	µg/L	1	2	1		4		<0.2	<0.2
Methomyl	µg/L	1	2	1		4		<0.05	<0.05
Methoxychlor	µg/L	6	5	1	1	13		<0.001	<0.008
Metolachlor	µg/L	2	2			4		<0.005	<0.26
Mevinphos	µg/L	6	4	2	2	14		<0.005	<0.01
Mexacarbate	µg/L	1	2	1		4		<0.4	<0.4
Mirex	µg/L	3	4	1	1	9		<0.001	<0.001
Molinate	µg/L		1			1		<0.05	<0.05
Monuron	µg/L	1	2	1		4		<0.2	<0.2
Naled	µg/L	2	1			3		<0.2	<0.2
Neburon	µg/L	1	2	1		4		<0.2	<0.2
Nonachlor, cis-	µg/L	3	4	1	1	9		<0.001	<0.001
Nonachlor, trans-	µg/L	3	4	1	1	9		<0.001	<0.001
Oryzalin	µg/L	1	2	1		4		<0.2	<0.2
Oxamyl	µg/L	1	2	1		4		<0.2	<0.2
Oxychlordane	µg/L	3	4	1	1	9		<0.001	<0.001
Oxyfluorfen	µg/L	12	8			20		<0.05	0.0086
Paraquat	µg/L	1	3			4		<0.2	<0.25
Parathion, Ethyl	µg/L	2	2	2	2	8		<0.01	<0.01
Parathion, Methyl	µg/L	6	4	2	2	14		<0.001	<0.01
Pendimethalin	µg/L		1			1		<0.05	<0.05
Permethrin	µg/L			2	1	3		<0.005	<0.005
Perthane	µg/L	3	4			7		<0.005	<0.005
Phorate	µg/L	6	4	2	2	14		<0.005	<0.01
Phosmet	µg/L	6	2	2	2	12		<0.005	<0.05
Prallethrin	µg/L			2	1	3		<0.005	<0.005
Prometon	µg/L	2	3	1	1	7		<0.005	<0.005
Prometryn	µg/L	2	3	1	1	7		<0.005	<0.005
Propachlor	µg/L	1	2	1		4		<0.2	<1.75
Propargite	µg/L		1			1		<0.05	<0.05
Propazine	µg/L	2	3	1	1	7		<0.005	<0.005
Propham	µg/L	1	2	1		4		<0.4	<1.75
Propoxur	µg/L	1	2	1		4		<0.2	<0.2
Secbumeton	µg/L	2	3	1	1	7		<0.005	<0.005
Siduron	µg/L	1	2	1		4		<0.2	<0.2
Simazine	µg/L	4	4	1	1	10		<0.12	0.224
Simetryn	µg/L	2	3	1	1	7		<0.005	<0.005
Sulprofos	µg/L	6	4	2	2	14		<0.002	<0.01
Tebuthiuron	µg/L	1	2	1		4		<0.2	<0.2
Terbuthylazine	µg/L	2	3	1	1	7		<0.005	<0.005
Terbutryn	µg/L	2	3	1	1	7		<0.005	<0.005
Tetrachlorvinphos	µg/L	6	4	2	2	14		<0.002	<0.01
Thiobencarb	µg/L		4			4		<0.05	<0.05
Tokuthion	µg/L	6	4	2	2	14		<0.003	<0.01
Toxaphene	µg/L	2	4	1	1	8		<0.01	<0.01

Trichloronate	µg/L	6	4	2	2	14		<0.001	<0.01
Trifluralin	µg/L		1			1		<0.001	<0.001
METALS									
Antimony - Dissolved	µg/L	1			1	2		<0.3	0.1
Antimony - Total	µg/L	1			1	2		<0.1	<0.3
Arsenic - Dissolved	µg/L	2	3	2	1	8		0.2	1.3
Arsenic - Total	µg/L	2	3	2	1	8		0.2	2
Beryllium - Dissolved	µg/L	1			1	2		<0.7	<0.12
Beryllium - Total	µg/L	1			1	2		<0.7	<0.12
Boron - Dissolved	µg/L	1	2	1	1	5		24	170
Boron - Total	µg/L	1	3	1	1	6		26	180
Cadmium - Dissolved	µg/L	2	3	2	1	8		<0.04	0.04
Cadmium - Total	µg/L	2	3	2	1	8		<0.04	0.04
Chromium - Dissolved	µg/L	1			1	2		1.7	3.6
Chromium - Total	µg/L	1			1	2		1	5.9
Copper - Dissolved	µg/L	5	3	2	1	11		0.12	2
Copper - Total	µg/L	5	3	2	1	11		0.21	13
Lead - Dissolved	µg/L	2	3	2	1	8		<0.1	0.16
Lead - Total	µg/L	2	3	2	1	8		<0.1	3
Molybdenum - Total	µg/L	3	3			6		0.17	0.31
Nickel - Dissolved	µg/L	2	3	2	1	8		0.8	15
Nickel - Total	µg/L	2	3	2	1	8		1.3	47
Selenium - Dissolved	µg/L	2		2	1	5		<0.98	2
Selenium - Total	µg/L	2		2	1	5		<0.90	0.42
Silver - Dissolved	µg/L	1			1	2		<0.02	<0.02
Silver - Total	µg/L	1			1	2		<0.02	<0.02
Thalium - Dissolved	µg/L	1			1	2		<0.006	<0.01
Thalium - Total	µg/L	1			1	2		<0.01	0.01
Zinc - Dissolved	µg/L	2	3	2	1	8		1	3
Zinc - Total	µg/L	2	3	2	1	8		2	28
NUTRIENTS									
Ammonia, Total as N	mg/L	18	16	3	3	40		<1.0	0.24
Nitrate as N	mg/L	2	4			6		<0.01	0.52
Nitrate+Nitrite, as N	mg/L	30	22	9	7	68	1	<0.02	11
Nitrite as N	mg/L	2	4			6		<0.004	0.012
Orthophosphate, as P - Dissolved	mg/L	18	16	1	1	36		<0.01	0.34
Phosphorus as P, Total	mg/L	32	24	10	7	73		<0.007	1.9
Total Kjeldahl Nitrogen	mg/L	9	9	2	1	21		<0.08	1.1
SEDIMENT TOXICITY									
Hyalella	% of control	6			1	7		83.6	108

Appendix C: Lake County Grading Ordinance

**For brevity, sections that do not pertain to agriculture have been omitted.*

ARTICLE I. - GENERAL PROVISIONS

Sec. 30-1. - Title.
1.1 This chapter shall be known and be cited as the "Grading Ordinance" of the County of Lake.

(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-2. - Purpose and Scope.
2.1 This chapter is enacted for the purpose of regulating grading on public and private lands within the unincorporated areas of Lake County. This chapter sets forth rules and regulations to control activities involving excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for the issuance of permits; provides for approval of plans and inspection of grading construction and provides for enforcement and penalties for violation in order to:

(a) Minimize hazards to life and property;
(b) Maintain slope stability, protect against soil erosion and the degradation of Clear Lake, watercourses and other waterbodies from nutrients, sediments or other deleterious materials;
(c) Protect the safety, use and stability of public rights-of-way and drainage courses;
(d) Protect drainage courses and watercourses from obstruction, and protect life and property from the deleterious effects of flooding;
(e) Protect fish, wildlife and their habitats and promote the retention and restoration of riparian vegetation;
(f) Ensure that the intended use of a graded site is consistent with the Lake County General Plan and any applicable area plan;
(g) Protect against the destruction of cultural resources and human burials;
(h) Minimize degradation of air quality from fugitive dust and the release of asbestos from earth disturbance activities in naturally occurring asbestos (NOA) areas.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-4. - General.
4.1 Grading and erosion control plans shall conform to the standards set forth herein. In the event of conflict between the grading standards set forth in this chapter and other requirements of law, the more stringent or protective requirement shall prevail. The following general requirements apply to all grading:

(a) Minimize the amount of soil exposed at any one time by proper coordination of grading and construction.
(b) Divert runoff, away from steep, bare slopes or other critical areas with proper diversion structures such as barriers, berms, ditches, or other devices.
(c) Design grading slopes to be compatible with adjacent area and to cause minimal disturbance to the terrain and natural features.
(d) Prevent silt, sedimentation, dust or other materials exceeding the natural background levels from leaving the disturbed area through the use of best management practices.
(e) Retain as much natural vegetation as possible on site to stabilize hillsides, retain moisture, minimize erosion and siltation and preserve natural habitat.
(f) Conduct routine site inspections to ensure that erosion and dust control measures are in place and functioning properly and to correct problems where needed.
(g) Grading proposed in areas of naturally occurring asbestos (NOA) shall comply with the asbestos dust mitigation measures.
(h) Certain projects may be required to obtain coverage under the construction general permit for discharges of storm water administered by the Regional Water Quality Control Board. As a grading permit condition of approval, applicants may be required to file a notice of intent (NOI) to comply with the construction general permit.

(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-6. - Erosion Hazard Rating.
6.1 The erosion hazard rating (EHR) system is used to classify the erodibility of soils based on their classification in the current Lake County soil survey. The classification organizes soils into three (3) categories: slight, moderate, and severe erosion hazard rating. The classification is determined from evaluation of a combination of the erodibility of the particular soil profile and the percent slope on which it is found. The system was developed in conjunction with the Natural Resources Conservation Service and can be found in Appendix A codified at the end of this chapter.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-7. - Cultural Resources.
7.1 Historical, archaeological, paleontological, and Native American sites shall be protected to the maximum extent possible. Pursuant to California Code of Regulations, Title 20, Section 2501 et seq., all information pertaining to cultural resource documentation associated with any grading permit application is considered confidential.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-8. - Watercourses and Drainage.
8.1 Watercourse Corridors.

8.1.1 Watercourse Corridors are determined as a function of Erosion Hazard Rating and the watercourse classification according to Table 1 below. Lakes that provide fish habitat shall be treated as Class I watercourses for the purposes of this section. Lakes, vernal pools and wetlands that do not provide fish habitat but do provide habitat for aquatic non-vertebrates or macro-invertebrates shall be treated as Class II watercourses. Lakes, wetlands and vernal pools providing no habitat for aquatic life shall be treated as Class III watercourses. Corridors are measured outward from the top of the bank of a watercourse or the high water mark of a lake, wetland or vernal pool.

Table 1. Watercourse Setbacks

Table 1. Watercourse Setbacks

Erosion Hazard Rating (See Appendix A)	Class I	Class II	Class III	Class IV
Slight	50 ft	50 ft	20 ft	0 ft
Moderate	75 ft	50 ft	35 ft	0 ft
Severe	100 ft	100 ft	50 ft	0 ft

8.2 Standards.

8.2.1 No person shall level, cause to be leveled or move, excavate, remove, dredge, pile, stockpile or otherwise change or cause to change the drainage patterns within his or their lands in any manner which changes the place of entry of such waters to his land, or to change the velocity and/or place of exit of waters from his land so as to cause damage to adjacent properties.

8.2.2 Fill placed in the FEMA-mapped floodplain shall be consistent with the requirements of Chapter 25 of the Lake County Code, Floodplain Management.

8.2.3 Excavated materials shall not be deposited or stored in or alongside watercourses, or where the materials may be displaced by high water or storm runoff mechanical disturbance, or wind erosion.

8.2.4 All soil disturbances shall use appropriate BMPs to the maximum extent practicable to prevent or minimize the discharge of sediments to the County's storm water conveyance system.

8.2.5 Critical areas such as watercourse corridors and drainage channels shall be protected against erosion and construction site runoff.

8.2.6 Unless otherwise indicated on the approved grading plan, drainage devices and terracing shall conform to the provisions of this section for cut and fill slopes steeper than three (3) units horizontal in one (1) unit vertical (33.3%). Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

8.2.7 All drainage devices shall be designed to carry surface water to the nearest practicable drainage facility approved by the Administrative Official. Erosion in the area of discharge shall be prevented by installation of non-erosive down drains or other devices.

8.2.8 Where necessary, check dams, riprap, interceptor drains, terraces or other devices or methods shall be employed to control erosion and ensure stability.

8.2.9 When drainage swales are used to divert surface waters, they shall be vegetated or protected, as necessary.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-9. - Driveways and Roads.
9.1 New road construction in state responsibility areas (SRA) areas shall be implemented according to standards and guidelines specified in Chapter 7 of Public Resources Code, Section 4290 and 4291, California Department of Forestry and Fire Protection, Fire Safe Regulations.

9.2 New road construction occurring concurrent with or as a result of the development of a subdivision shall conform to the Subdivision Ordinance, Chapter 17, of the Lake County Code and the Lake County Road Design and Construction Standards.

9.3 Driveways shall be constructed and surfaced in accordance with requirements of the Lake County Zoning Ordinance.

9.4 New road construction should be minimized by using existing roads when possible.

9.5 Roads should be contoured to the landscape to the maximum extent possible so as to minimize cuts, fills and vegetation clearing.

9.6 In-stream crossings shall be avoided whenever possible. Stream crossings should be designed to be consistent with the Lake County Hydrology Design Standards. California Department of Fish and Game Streambed Alteration Agreements are required for diversion or obstruction of the natural flow of, or substantial change or use of any material from the bed, channel, or bank of any watercourse or lake, or the deposit or disposal of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any watercourse or lake. A 404 permit may also be required from the United States Army Corps of Engineers as well as a 401 Water Quality Certification from the California Regional Water Quality Control Board.

9.7 Road design should avoid flood plains, landslide or slip prone geologic areas, areas of highly erodible soils and mapped NOA areas when possible.

9.8 Road width and gradient should be minimized.

9.9 For commercial use, a driveway access grade of no more than eight (8) percent shall be allowed for the first forty (40) feet, thereafter a grade of over twelve (12) percent shall not be acceptable without prior approval of the Community Development Department and the Department of Public Works.

9.10 Private roads and driveways to residences shall have a gradient that is not to exceed sixteen (16) percent unless approved by the local fire district, California Department of Forestry and Fire Protection, or the Administrative Official.

9.11 All single lane roads shall provide for turnouts for passing. Turnouts should be located within visible distance of the others to allow for safe passing.

9.12 Dead end roads shall provide turnarounds at the end of the road.

9.13 Encroachment permits from the Lake County Department of Public Works or California Department of Transportation are required when any road or driveway intersects county or state roadways, or for any work within the County or State right-of-way.

9.14 No driveway shall be allowed to encroach closer than twenty (20) feet to the end or beginning of the radius on any street corner unless approved by the Department of Public Works.

9.15 The width of a driveway providing access to a parking lot from the public street or between separate parking areas on a site is to be a minimum of twelve (12) feet for one-way access, twenty (20) feet for multiple-family residential, and commercial or industrial two-way access.

9.16 No driveway entering onto a right-of-way shall exceed a width of thirty (30) feet.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-10. - Bridges.
10.1 Bridges built to span a watercourse shall be constructed to avoid altering the stream channel wherever possible. As much native riparian vegetation as possible shall be retained. All bridge plans shall be designed by a registered civil engineer. The bridge shall be constructed in compliance with requirements, when necessary, of the California Department of Fish and Game, the United States Army Corps of Engineers, Lake County Hydrology Design Standards, the Lake County Floodplain Management Ordinance and any other agency with jurisdiction over the project.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-11. - Cuts and Fills.
11.1 General. Cuts and fills shall be limited to the minimum amount necessary to provide stable embankments and conform to the standards within this section.

11.1.1 Grading project design and implementation shall maximize the retention of natural landforms and features. Contours, elevations and shapes of finished surfaces shall be blended with adjacent natural terrain to the maximum extent feasible.

11.1.2 Subsurface Drainage. Cut and fill slopes shall be provided with subsurface drainage as necessary for stability.

11.1.3 All slopes shall be monitored and maintained by the permittee to assure the success of the erosion control measures and/or revegetation. Temporary or permanent irrigation shall be provided where necessary to assure the successful establishment of vegetation.

11.1.4 The faces of cut and fill slopes shall be prepared and maintained to control against erosion. This control may consist of effective planting. The protection for the slopes shall be installed as soon as practicable and prior to final inspection.

11.1.5 Any area proposed for cut or fill shall be cleared. For the purposes of this section, clearing shall consist of removal and disposal of all trees, roots, brush or other vegetation, as well as the removal of any down timber, and debris.

11.1.6 All topsoil should be stockpiled separate from other spoils so as to preserve the resource for revegetation and contained using approved BMPs to prevent sediment-laden storm water from leaving the site.

11.2 Cuts. Unless otherwise recommended in an approved soils engineering or engineering geology report, cuts shall conform to the provisions of this section.

11.2.1 The slope of the cut shall be no steeper than is safe for the intended use and shall be no steeper than two (2) units horizontal in one (1) unit vertical fifty (50) percent unless the permittee furnishes a soils engineering and/or geology report affirming the stability and safety of a steeper slope.

11.2.2 The toe of the cut shall be made no closer to the property boundary line than one-half (½) the height of the slope with a minimum of two (2) feet and a maximum of ten (10) feet. The setback may be increased if interceptor drains are required. Setback dimensions shall be horizontal distances measured perpendicular to the property boundary.

11.2.3 The Administrative Official may approve alternative setbacks. The Administrative Official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

11.2.4 Trenches and pits shall be promptly backfilled and compacted to reduce the risk of erosion.

11.2.5 Excavated materials removed during grading operations shall be handled in accordance with the following methods:

(a) Stockpile sufficient topsoil onsite if necessary to use on area to be revegetated.
(b) Locate and protect stockpiled soil, using approved BMPs, so that it will not erode as a result of wind or rain.
(c) Apply mulch or other protective coverings on stockpiled material that will be exposed through the winter season.
(d) Dispose of material not intended to be used onsite in a manner and location approved by the Administrative Official and in compliance with the asbestos dust mitigation plan, if applicable.

11.3 Fills. Unless otherwise recommended in the approved soils engineering report, fills shall conform to the provisions of this section. In the absence of an approved soils engineering report, these provisions may be waived by the Administrative Official for minor fills not intended to support structures.

11.3.1 The source for all fill materials shall be identified and submitted with the application. The Ultramafic, Serpentine Rock and Soils Map of Lake County shall be consulted to determine the potential for serpentine in fill materials. Use of serpentine material as fill shall require an Asbestos Dust Mitigation Plan. Import of serpentine fill shall require a Lake County Air Quality Management District-issued plan.

11.3.2 Fill slopes shall not be constructed on natural slopes steeper than one (1) unit vertical in two (2) units horizontal fifty (50) percent. The ground surface shall be prepared to receive fill by removing vegetation, unsuitable fill, topsoil and other unsuitable materials, scarifying to provide a bond with the new fill and, where the slopes are steeper than one (1) unit vertical in five (5) units horizontal twenty (20) percent and the height is greater than five (5) feet, by benching into sound bedrock or other competent materials as determined by the soils engineer.

11.3.3 When fill is to be placed over a cut, the bench under the toe of a fill in a slope steeper than five (5) units horizontal in one (1) unit vertical twenty (20) percent shall be at least ten (10) feet wide, but the cut shall be made before placing the fill and acceptance by the soils engineer or engineering geologist or both as a suitable foundation for fill.

11.3.4 The toe of the fill slope shall be made no closer to the property boundary line than one-half (½) he height of the slope with a minimum of two (2) feet and a maximum of twenty (20) feet. Setback dimensions shall be horizontal distances measured perpendicular to the property boundary. Where a fill slope is to be located near the site boundary and the adjacent off-site property is developed, special precautions shall be incorporated in the work as the Administrative Official deems

necessary to protect the adjoining property from damage as a result of such grading. These precautions may include but are not limited to:

(a) Additional setbacks;
(b) Provisions for retaining or slough walls;
(c) Stabilization of the fill slope surface to minimize erosion;
(d) Provisions for the control and protection of surface waters. The Administrative Official may approve alternative setbacks. The Administrative Official may require an investigation and recommendation by a qualified engineer or engineering geologist to demonstrate that the intent of this section has been satisfied.

11.3.5 Unsuitable materials shall not be permitted in fills. Unsuitable fill materials include: rocks or other irreducible materials exceeding twelve (12) inches in diameter, broken asphalt, vegetation and brush, soils high in organic material or other materials not capable of proper compaction, not conducive to stability or having the potential for environmental impact.

11.3.6 Except as permitted by the Administrative Official, no rock or similar irreducible material with a maximum dimension greater than twelve (12) inches shall be buried or placed in fills. However, the Administrative Official may permit placement of larger rocks when the soils engineer properly devises a method of placement, and continuously inspects its placement and approves the fill stability. The following conditions shall also apply:

(a) Prior to issuance of a grading permit, potential rock disposal areas shall be delineated on the grading plan.
(b) Rock sizes greater than twelve (12) inches in maximum dimension shall be ten (10) feet or more below grade, measured vertically.
(c) Rocks shall be placed so as to assure filling of all voids with well-graded soil.
11.3.7 All fills shall be planted, mulched and maintained or otherwise protected from the effects of storm runoff and wind erosion.

11.3.8 All fills shall be compacted to a minimum of ninety percent of maximum density. All fills shall be tested for relative compaction by a qualified geotechnical testing agency, unless waived by the Administrative Official.

Compaction Exceptions:

(a) Compaction may be less than ninety (90) percent of maximum density within six (6) inches of the slope surface when surface material is placed and compacted by a method acceptable to the Administrative Official for the planting of slopes.
(b) Fills not intended to support structures or roads may not need to be compacted to these standards if the Administrative Official determines that such compaction is unnecessary for safety and the purpose of the grading project.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-12. - Dams and Reservoirs.
12.1 The proposed site of the reservoir or dam should avoid locations:

(a)Identified as a lake, marsh, Class I or II Watercourse, wetland, identified on the Lake County General Plan Critical Resource Area Map, or any vernal pool habitat areas unless the project is reviewed subject to CEQA; or
(b)Identified on any published geology or soils map as prone to slip or landslide without the preparation of a geotechnical report.

12.2 All construction operations shall be so conducted as to avoid stream sedimentation in accordance with the requirements of the State Water Resources Control Board and the Department of Fish and Game.

12.3 All cuts or fills shall be carried to lines, grades, and dimensions shown on the approved site plan.

12.4 Areas to be cleared shall consist of the reservoir area, site of dam embankment, a twenty-five (25) foot strip adjoining the downstream toe of the dam embankment, spillway area, and borrow and stockpile areas. Clearing shall consist of removal and disposal of all trees, brush, down timber, and debris.

12.5 The entire foundation area for the dam embankment and other structures and all portions of the borrow areas shall be grubbed. Grubbing of foundation areas shall consist of the removal of all stumps and roots one and one-half (1 ½) inches or more in diameter to a depth of three (3) feet below natural ground surface. The borrow areas shall be grubbed to the extent necessary to obtain material free of stumps and roots. The entire area to be occupied by the foundation of the dam shall be stripped to material having strength parameters equal to or greater than those required of the embankment material.

12.6 It is the intent of these standards that all required excavation materials suitable for embankment shall be utilized in the permanent construction. Suitable materials shall be excavated separately from the materials to be wasted. The suitable materials shall be segregated by loads during the excavation operations and shall be placed in the designated final locations directly from excavation. Excavated materials, if any, which are unsuitable for, or in excess of, dam embankment or other construction requirements, shall be disposed of within the vicinity as directed. Waste areas shall be left reasonably smooth, shall be sloped to drain, and shall be revegetated or surfaced according to the appropriate standards.

12.7 The source for all material necessary for construction of required embankments shall be identified and submitted with the application. Use of material from approved borrow areas shall be stripped of all topsoil containing humus, roots, rubbish, and other materials not suitable for placing in the compacted fill. Materials containing brush, root, sod, or other perishable materials will not be considered suitable. The sequence of stripping operations shall be coordinated with the excavation and fill so as to effect required moisture control with minimum addition of moisture to the excavated material.

12.8 Embankments shall be constructed to the lines and grades and cross-sections indicated on the approved site plan. The applicant shall maintain and protect the embankment in a satisfactory condition at all times until final completion and acceptance of all work by the Lake County Community Development Department.

12.9 The planting of trees and shrubs is not allowed on embankments and within fifteen (15) feet of the toe of the dam.

12.10 Approval of an application to construct a dam or reservoir does not grant the right to appropriate water. For information concerning water rights, applicants are referred to Division 1 of the Water Code and to the State Water Resources Control Board.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-13. - Clearing of Vegetation.
13.1 Native vegetation shall be retained and protected, where its removal is not necessary to implement the grading project or to meet fire safety regulations.

13.1.1 Where vegetation must be removed, the method shall be one that minimizes the erosive effects of the removal.

13.1.2 When vegetation is to be removed, the location of mature trees, defined as greater than five (5) inches diameter at breast height (DBH), that are to be removed and retained shall be clearly indicated. Vegetation to be preserved shall be clearly flagged or fenced off before any clearing or land disturbance begins.

13.1.3 Clearing shall be staged so as to minimize soil exposure during any one time, particularly during the winter season.

13.1.4 Cleared vegetation should be disposed of by chipping and spreading as mulch wherever feasible.

13.1.5 If vegetation disposal is proposed to be accomplished through burning, material to be burned shall be piled in a manner and in such locations as will cause the least fire risk and damage to adjacent vegetation as well as neighboring residences. Burning shall comply with the Lake County Air Quality Management District and local fire district regulations and permits.

13.2 Rangeland Management.

13.2.1 Rangeland management constitutes land management practices including, but not limited to, burning, chipping, chaining and grubbing, that are related to fire control and clearing of understory vegetation without disturbing mature trees as defined by exceeding five (5) inches diameter at breast height (DBH). Rangeland management activities do not constitute agricultural activities under this chapter and past rangeland management activities do not fall under the definition of agricultural grading.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-14. - Revegetation.
14.1 Whenever possible, topsoil onsite shall be separated and stored, protected from erosion and storm water runoff utilizing approved BMPs appropriate to the site conditions, in preparation of revegetation.

14.2 All land clearing that is not intended to support a structure shall be revegetated, preferably with native species consistent with fire safe practices, unless otherwise determined by the Administrative Official to be impractical due to site characteristics.

14.3 Temporary vegetation such as annual grasses and legumes shall be planted on sites that will not be brought to final grade by the end of the grading season or for sites that are likely to be re-disturbed.

14.4 Whenever practical, mulching, seeding, plantings of shrubs and trees and/or other stabilization measures shall be used for slope protection and for stabilization of soil storage areas and sediment containment systems. Preference should be given to using native, locally adapted grasses, shrubs and trees whenever feasible. Drought tolerant and fire-resistant native plants species shall be encouraged. Plants shall be maintained and watered at intervals sufficient to assure survival and growth.

14.5 Vegetation shall be maintained until permanent establishment is achieved. Temporary or permanent irrigation shall be provided where necessary to assure the successful establishment of vegetation.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-15. - Dust Control.
15.1 Dust control measures shall be implemented on all sites to minimize fugitive dust emissions from the project site.

15.2 Asbestos dust mitigation measures shall be utilized for all grading located where naturally occurring asbestos is disturbed.

15.3 Dust control is considered a temporary measure and shall be used as an interim treatment between site disturbance and final construction, paving or revegetation.

15.4 Dust control measures may consist of approved chemical, structural, or mechanical methods and shall be reapplied at the necessary intervals to prevent wind erosion.

15.5 Proper equipment and adequate water and/or dust palliatives, minimized vehicular speeds, installation and maintenance of cover crops and avoidance of work during periods of sustained high winds shall be used to minimize airborne particulates.

15.6 Adequate dust control measures shall prevent dust from exiting the project site and prevent the occurrence of a detriment, nuisance, or annoyance or endanger the comfort, repose, health, safety of any considerable number of persons or the public or cause, or have the tendency to cause, injury or damage to business or property.

15.7 All grading operations on a project should be suspended when winds carry dust beyond the project site property lines despite the implementation of dust control measures or, in mapped NOA areas, when sustained wind speeds exceed ten (10) mph, unless adequate dust control can be maintained to prevent visible dust generation.

15.8 If the grading project is located in a mapped NOA area or if soils containing greater than one-quarter (0.25) percent asbestos are subject to disturbance, grading activities shall meet the requirements of the asbestos dust mitigation plan.

15.9 Serpentine materials shall not be used for surfacing and are required to be encapsulated and maintained with non-asbestos containing cover material that will prevent the release of asbestos fibers pursuant to the specifications of the approved plan.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-16. - Exemptions.
16.1 Grading activities exempt from the requirement to obtain a grading permit shall conform to the standards set forth in Chapter 29 of the Lake County Code—the Lake County Storm Water Ordinance and shall implement Best Management Practices and Asbestos Dust Mitigation requirements where applicable for the duration of the project, including, but not limited to pre-construction, construction and post construction activities.

16.2 Exemption from the requirements of obtaining a grading permit shall not be deemed to grant authorization for any work to be done in violation of the provisions of this chapter or any other laws or ordinances of this jurisdiction.

16.3 Grading activities determined to be exempt from this chapter remain subject to the requirements of other county, state, and other federal agencies. Applicants are encouraged to consult with Community Development Department staff regarding permits that may be required from other agencies.

16.4 The following activities are exempt from the requirement to obtain a grading permit:

16.4.1 The clearing of not more than ten thousand (10,000) square feet of vegetation, provided that:

(a) Such clearing is not otherwise exempt from the requirement to obtain a grading permit,
(b) Does not exceed the other criteria for simple grading, and
(c) Is not in addition to other clearing of vegetation on the same parcel per grading season, pursuant to this exemption.

16.4.2 (a) Routine mechanical practices including, but not limited to: discing, harrowing, raking, chiseling, or plowing to till the soil for the production of agricultural crops on land historically used for that purpose.

(b) Agricultural grading also includes grading to support, keep, replace, maintain or continue existing agricultural operations, including drainage and erosion control facilities, irrigation systems, agricultural roads, and ponds or reservoirs not exceeding one (1) acre foot in capacity.
The construction of agricultural roads, reservoirs, ponds and buildings in mapped NOA areas are not exempt from asbestos dust mitigation plan requirements.

Grading proposed on lands where such practices have not been implemented and cannot be field verified by the Administrative Official shall not fall under this exemption.

16.4.3 All crop conversions involving agricultural grading are exempt provided the grading activities:

(a) Do not expand the footprint of the existing farming activity or operation.
(b) Do not occur within thirty (30) feet of the top of bank of a watercourse, wetland, lake or vernal pool.
(c) Do not remove previously cultivated trees, vines or other plants having stable woody root systems extending at least twelve (12) inches below the soil surface and occur on soils with a moderate or severe erosion hazard rating.
(d) Do not occur during the winter period.
(e) Do not create any cut or fill slope of a ratio greater than two is to one (2:1).

16.4.4 If the crop conversion meets all the above criteria, but not subsection 16.4.3(c) of this section, it shall be deemed simple grading only.

16.4.5 Grading for the creation of building pads, provided the grading is incidental to and regulated under a valid County building permit or has been issued an agricultural exempt building permit, does not exceed the criteria for simple grading, and is not located in a mapped NOA area. However, grading for the creation of such building pads within a watercourse corridor, as established in Table 1 in Section 30-8.1.1, on lots in recorded subdivisions shall not trigger the need for a grading permit provided the grading:

(a) Does not occur on soils with a severe erosion hazard rating or in a mapped NOA area,
(b) Does not propose to remove riparian vegetation, and
(c) Does not exceed any other criterion for simple grading set forth in Section 30-19.1.

16.4.6 Grading for the creation of building pads within a watercourse corridor in recorded subdivisions with soils having a severe erosion hazard rating or in a mapped NOA area shall be deemed simple grading only, provided the grading:

(a) Does not exceed any other criteria for simple grading set forth in Section 30-19.1, and
(b) Does not propose to remove riparian vegetation. If the proposed grading exceeds other criteria for simple grading, the building pad shall be deemed either standard or complex grading depending upon the criteria established in this article. Building pads that propose to remove riparian vegetation shall be deemed complex grading.

16.4.7 The excavation of material below finished grade for sewage disposal systems, tanks, vaults, basements, or swimming pools where such excavation is authorized and under the provisions of a valid County building permit; or Environmental Health Division permit.

16.4.8 The stockpiling of rock, sand or aggregate involved in the construction of a building authorized by a valid County building permit.

16.4.9 Cuts less than two (2) feet in depth or which do not create a cut slope exceeding five (5) feet in height and steeper than two (2) horizontal to one (1) vertical, which does not exceed fifty (50) cubic yards and do not alter any drainage course.

16.4.10 Fills less than one (1) foot in depth and placed on undisturbed natural terrain with a slope no greater than five (5) horizontal to one (1) vertical, or less than three (3) feet in depth, not intended to support structures, not exceeding fifty (50) cubic yards and not obstructing or altering any drainage course.

16.4.11 Surface mining conducted in accordance with County and State Surface Mining and Reclamation Act regulations.

16.4.12 Tunnels (including wine caves) when such activities are under the direction of a civil engineer.

16.4.13 Grading for water well pads or utilities.

16.4.14 Temporary holes or trenches located outside of any watercourse corridor, for geotechnical, geological, or archeological exploration, under the direction of soil engineers or engineering geologists, not exceeding one hundred (100) cubic yards of material.

16.4.15 Grading for activities related to clearing of understory vegetation in an area up to but not exceeding, three (3) acres, without disturbing mature trees as defined by a trunk of five (5) inches diameter at breast height (DBH), and leaving at least fifty (50) percent crown cover. This exemption does not apply to the following circumstances:

(a) Grading on soils with a severe erosion hazard rating.
(b) Grading within a watercourse corridor as defined within this chapter.

(c) Grading in an area with the potential for the presence of special status plant or animal species as indicated by the CNDDB or the Lake County General Plan.

16.4.16 Any grading or related activity conducted as part of a County of Lake public works project or activities related to maintenance or repair of an existing County facility, including, but not limited to public roads, emergency access roads, bridges, levees and flood control facilities, undertaken by a public agency.

16.4.17 Grading occurring in conjunction with a Lakebed Administrative Encroachment Permit pursuant to the Clear Lake Shoreline Ordinance, Chapter 23 of the Lake County Code.

16.4.18 Grading that is for the construction of improvements for parcel maps and subdivisions for which the Department of Public Works supervises.

16.4.19 Routine maintenance of existing roads, highways, trails, firebreaks and driveways, however, widening or lengthening shall not be exempt.

16.4.20 Grading for new firebreaks that disturb one (1) acre or less, provided firebreak design and standards are consistent with the California Forest Practices Rules and Public Resources Code, Section 4290. Grading for new firebreaks that disturb more than one (1) acre shall be deemed simple grading; provided the grading:
(a) Does not exceed any other criteria for simple grading, and
(b) Does not propose to remove riparian vegetation.

16.4.21 Timber operations as defined in Section 4527 of the Public Resources Code. Operations exempt from a grading permit include, but are not limited to, timber harvest plans, non-industrial timber management plans, and those exempt activities listed in Section 4584 of the Public Resources Code and regulated under 14 CCR 1038 and 14 CCR 1104.1.

16.4.22 Ponds less than one (1) acre foot in capacity and not within the active channel of a Class I or II watercourse are exempt from permit requirements unless the pond is located in a mapped NOA area where an asbestos dust mitigation plan is required. Construction of agricultural ponds shall not impact habitat areas for threatened or endangered species as identified on the California Department of Fish and Game's Natural Diversity Database (CNDDB) in order to qualify for an exemption.

16.5 Notwithstanding, even when exempted from the requirements of a grading permit, should any grading activities encounter human remains, all grading activities shall cease and the Lake County Coroner shall be contacted as well as the Lake County Community Development Department and the local tribal office.

16.6 Notwithstanding, even when exempted from the requirements of a grading permit, all grading activities in mapped NOA areas shall implement NOA control measures consistent with Lake County Air Quality Management District requirements. Exempt grading activities specified in Sections 16.4.2(b), 16.4.11, 16.4.15, 16.4.16, and 16.4.20 may require an asbestos dust mitigation plan and review by the Lake County Air Quality Management District.

16.7 Notwithstanding, even when exempted from the requirements of a grading permit, certain of the above activities may require filing and compliance with the requirements for a construction general permit issued by the California Regional Water Quality Control Board.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30.17. - Permit Requirements.
17.1 If a development permit is required in conjunction with any of the following grading permit categories, the grading permit shall be consistent with and satisfy all the conditions of the development permit.

17.2 Each application for a grading permit shall be completed by the applicant on a form provided by the Lake County Community Development Department, including information necessary to make determinations required by this section and

accompanied by a fee. The completed application shall be submitted to the Community Development Department for processing.

17.3 All applications for a grading permit shall include the following information:

(a) The completed and signed grading permit application form.
(b) At least three (3) sets of the proposed grading plans that contain the following information, to scale, with north arrow:
(1) Name and address of property owner and the individual who prepared the plans.
(2) Assessors parcel number and address of the project site.
(3) Vicinity map indicating location of project site in relation to adjacent roads, and mapped NOA area(s).
(4) Site plan accurately detailing the area to be graded, existing and proposed roads/driveways, structures, watercourses, drainage ditches and drainage structures, springs, seeps, existing drainage patterns and proposed changes to existing drainage pattern, location of large trees, easements/rights-of-way, wells and sewage disposal systems, topographical features such as existing rock outcroppings, type of existing vegetation, and other geologic features.
(5) Existing and proposed land contours with cross-sections showing depths and volumes of cuts and fills, clearly indicating the top and toe of slopes. Contours shall be shown at intervals suitable to ensure clarity.
(6) Estimate of the total surface area to be disturbed, represented in square feet, as well as the estimated volume of earth to be moved, expressed as cubic yards. This may require calculations to support the estimate if deemed necessary by the Administrative Official. Calculations should separately specify amounts of cut and fill.
(7) Schedule for major stages of grading activities.
(8) Source location for any fill material imported to the site or destination location of material to be exported from the site.
(9) Locations of access routes to the site as well as proposed haul routes for import/export of materials.
(10) Excess soil stockpile location, if applicable.
(c) At least three (3) copies of an erosion control and sediment detention plan that describes the measures, where applicable, to:
(1)Protect native and naturalized vegetation;
(2)Minimize disturbance or removal of native vegetation;
(3) Revegetate disturbed area;
(4) Detain sediment;
(5) Protect drainages;
(6) Protect cut and fill slopes;
(7) Dispose of spoil material;
(8) Protect stockpile material;
(9) Control fugitive dust;
(10) Minimize the generation, transport and discharge of other construction-related pollutants;
(11) Monitor the site after construction.
(d) The plan may be presented in narrative and/or graphic form and shall include both construction and post-construction measures that includes the following:
(1) Schedule for the implementation of the control measures.
(2) Description of methods to be used to protect exposed, unstable areas during and post-construction including mulching, seeding, and other BMP surface soil stabilization measures.
(3) Description of temporary and permanent methods to prevent erosion and surface water runoff from cut and fill slopes, including interceptors, diversions, energy dissipaters, and other BMP velocity reducing measures.
(4) Description of temporary and permanent measures to retain sediment onsite, including sediment traps and basins, vegetative filter strips, and other BMP sediment retention measures. Included shall be a schedule for the maintenance of these devices.
(5) Description of temporary and permanent measures for revegetation of surfaces that will not be developed including proposed seed mix, types of plants to be installed, application technique, seed and fertilizer rate, and other BMP revegetation measures. Included shall be a schedule for implementation and maintenance of vegetation.
(6) Descriptions of measures to limit access to the project site, stabilize access points, and limit tracking of sediment onto roadways.
(7) Erosion hazard rating (EHR) for the site.

(e) For projects that trigger regulation under the construction general permit for discharges of storm water administered by the California Regional Water Quality Control Board, the erosion control and sediment detention plan may be incorporated as part of a storm water pollution prevention plan.
(f)Grading applications proposing earth disturbance within an NOA area shall submit three (3) copies of an asbestos dust mitigation plan.
(g)Additional plans, calculations, drawings, or information requested by the Community Development Department, which are necessary to adequately review and evaluate the proposed erosion control measures.

17.4 All records not exempted from disclosure by state or federal law shall be available for public inspection as provided in the California Public Records Act, Section 6250 et seq.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-18. - Levels of Review.
18.1 All grading, not exempt from the requirements of a grading permit, is classified as "Simple Grading," "Standard Grading" or "Complex Grading." Each classification requires a different level of review prior to issuance of a grading permit, i.e., simple grading requires the lowest level of review, standard grading requires a higher level, and complex grading requires the highest level of review.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-19. - Simple Grading.
19.1 Simple grading is grading that (1) is not exempt under Section 30-16.4 from the requirement of a grading permit, and (2) does none of the following:

(a) Clears more than one (1) acre of vegetation.
(b) Disturbs more than five hundred (500) cubic yards of material.
(c) Disturbs more than two hundred fifty (250) cubic yards of material or one-half (½) acre in a mapped NOA area.
(d) Affects any sensitive species or habitat identified by the California Natural Diversity Data Base (CNDDB) or by a biological survey, unless determined by a biological survey that no sensitive species or habitats exist in the area to be graded.
(e) Occurs on slopes greater than twenty-five (25) percent grade.
(f) Creates a filled area for the support of a structure.
(g) Adversely changes any existing drainage.
(h) Occurs in a FEMA mapped floodway.
(i) Occurs within the watercourse corridor of a Class I, II or III watercourse, lake, wetland or vernal pool.
(j) Affects a site with known archaeological or historical resources.
(k) Occurs during the winter period, unless authorized by the Administrative Official.

19.2 An application for a simple grading permit requires the submission of the information described under Section 30.17 "Permit Requirements" and will be exempt from review pursuant to the California Environmental Quality Act (CEQA).
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-20. - Standard Grading.
20.1 Standard grading is grading that (1) is not exempt under Section 30-16.4 from the requirement of a grading permit, (2) is not simple grading, and (3) falls within all of the following criteria:

(a) Clears more than one (1) acre of vegetation, or disturbs the following volumes of material:
(1) Five hundred (500) to one thousand (1,000) cubic yards on soil units with a severe erosion hazard rating.
(2) Five hundred (500) to two thousand (2,000) cubic yards of soil units with a moderate erosion hazard rating.
(3) Five hundred (500) to five thousand (5,000) cubic yards of soil units with a slight erosion hazard rating.
(4) Two hundred fifty (250) to one thousand (1,000) cubic yards of NOA soil, or soil in a mapped NOA area.
(b) Excavates material to a depth not greater than ten (10) feet from original grade, unless engineered plans are provided and approved by the Administrative Official for a deeper excavation.

(c) Creates any cut or fill of a ratio of two is to one (2:1) or less, unless engineered plans are provided and approved by the Administrative Official for a steeper ratio.
(d) Creates a fill depth of eight (8) feet or less, unless engineered plans are provided and approved by the Administrative Official for a greater fill.
(e) Does not adversely impact existing drainage.
(f) Does not occur within the watercourse corridor of a Class I or II watercourse, lake, wetland or vernal pool, unless limited to the construction or alteration of a seawall within a man-made canal that does not remove wetland vegetation.
(g) Does not affect any sensitive species or habitat identified by the CNDDB or by a biological survey, unless determined by a biological survey that no sensitive species or habitats exist.
(h) Does not result in the clearing of oak trees to the extent that the clearing may have a significant effect on oak woodlands as defined in Section 21083.4 of the Public Resources Code.
(i) Does not occur in a FEMA mapped floodway, unless engineered plans are presented and approved by the Administrative Official.
(j) Does not affect a site with known archaeological or historical resources.

20.2 See Section 30-24 "Application Processing and Review" for additional cultural resources requirements pertaining to standard and complex grading projects.

20.3 An application for a standard grading permit requires the submission of the information described under "Permit Requirements" and normally will fall under CEQA Categorical Exemption Section 15304 (Minor Alterations to Land). However, a more detailed review may be required at the discretion of the Administrative Official if site-specific conditions indicate the project may have a significant effect on the environment.

20.4 Any project that qualifies as standard grading shall be noticed to the public as follows before the project is finally determined to be Categorically Exempt under CEQA. Notice shall be sent by first class mail to owners of all parcels within one hundred (100) feet of the property lines of the parcel upon which the grading is proposed at least fourteen (14) calendar days prior to any determination being made by the Administrative Official. Said notice shall briefly describe the proposed project, including the presence of NOA, and indicate the date that the Administrative Official intends to make a determination on the project. The notice shall further indicate that anyone may submit in writing any comments on the proposal to be considered by the Administrative Official.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-21. - Complex Grading.
21.1 Grading that exceeds the limits described above for simple grading and standard grading shall be designated as complex grading and will require the submission of information described under "Permit Requirements" as well as the preparation and completion of an Initial Study pursuant to the California Environmental Quality Act (CEQA). Additionally, the following types of grading will normally require the submission of plans designed and stamped by a qualified professional in the field of civil engineering or engineering geology:

(a) Grading involving the excavation or fill of more than five thousand (5,000) cubic yards of material.
(b) Construction of a reservoir or dam larger than one (1) acre foot or larger than five (5) acre feet if constructed totally below natural grade and not on a watercourse.
(c) Grading of more than one thousand (1,000) cubic yards of material on sites with a severe erosion hazard rating.
(d) Grading that will disturb more than one thousand (1,000) cubic yards of NOA.
(e) Grading resulting in cuts or fills greater than fifteen (15) feet.
(f) Dredging of lake, watercourses, or wetlands.
(g) Grading in areas designated as geologic or landslide hazard areas.
(h) Grading in a FEMA-mapped floodway.

21.2 The Administrative Official may waive the requirements for engineered plans for subsections 21.2(a) through (g) above upon a determination that the plans submitted are adequate and that the scope, location, design and conduct of the proposed activity will pose no substantial impact to the protection of resources, life or property.

21.3 Public notice to neighbors shall be given pursuant to Section 21-57 of the Lake County Zoning Ordinance.

21.4 Application for complex grading may require the submission of additional reports such as a biological or cultural resources survey, geotechnical report, hydrologic study, or other site-specific analyses as deemed necessary by the Administrative Official.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-23. - Grading Season.
23.1 Excavation, filling, vegetation clearing or other disturbance of the soil shall not occur between October 15 and April 15 unless authorized by the Administrative Official. The actual dates of this defined grading period may be adjusted according to weather and soil conditions at the discretion of the Administrative Official.

23.2 All sites shall have erosion control measures in place by the end of the grading season of any given year. Onsite construction slash and debris shall be removed and any remaining spoil piles shall be stabilized or removed.

23.3 Grading during the winter period may be permitted with approval by the Administrative Official. However, no winter grading shall be permitted on sites with a severe erosion hazard rating or within a watercourse corridor.

23.4 In addition to the normal requirements for a grading permit application, the applicant shall submit a statement detailing why it is necessary to conduct winter grading activities.

23.5 If the site will be active during the winter period, permanent sediment and erosion control BMPs shall be in place including, but not limited to paving or rocking of the site entrance or driveway.

23.6 The smallest practicable area of land shall be exposed at any one time and the time of exposure shall be minimized.

23.7 During the winter period, temporary or permanent erosion control measures shall be in place at the end of each workday and prior to any weather event. No grading activities shall take place during major storm events.

23.8 During the winter period, the site shall be regularly monitored by the permittee, especially following any weather event, to monitor the effectiveness of erosion control measures. Erosion control measures that fail or prove to be ineffective shall be modified so as to create an effective means of erosion control and/or sediment retention.

23.9 Grading in mapped NOA areas shall consider the dust suppression advantages of performing the work during damp soil conditions.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-42. - Administration.
42.1 It shall be the duty of the Administrative Official (or appointed designee) to enforce all the provisions of this chapter relative to grading activities regulated by this chapter in the unincorporated areas of the County.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-43. - Penalty.
43.1 Any grading performed in violation of this chapter shall be unlawful and deemed a public nuisance.

43.2 Notwithstanding these regulations, no person shall cause or allow a significant environmental impact to occur as a result of new or continued grading as defined herein, including grading that is exempt from these regulations. In the event that the Administrative Official determines that a significant environmental impact is likely to occur or has occurred as a result of grading activities, the Administrative Official may deny or revoke any grading permit.

43.3 If necessary, the Administrative Official may also require a grading permit for work that is otherwise exempt from these regulations in order to address the identified significant impact.

43.4 It is the intent of this chapter that the conduct of grading exempted or waived from the requirement to obtain a permit shall incorporate practices consistent with the standards incorporated in this chapter.

43.5 A violation of any of the provisions of this chapter, or of any codes adopted by reference in this chapter, is punishable as an infraction or a misdemeanor. Violations prosecuted as an infraction shall be punishable by fines as specified in Government Code Section 25132. Violations prosecuted as misdemeanors shall be punishable, by imprisonment in the County jail for a term not exceeding six (6) months, or by a fine of one thousand dollars ($1,000.00), or both such fine and imprisonment, as well as all administrative costs associated with such prosecution.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-44. - Arrest and Citation Powers.
44.1 The following officers and employees of the Lake County Community Development Department are hereby given arrest and citation powers pursuant to Section 836.5 of the Penal Code.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-45. - Stop Work Orders.
45.1 The Administrative Official may order that any grading operations performed in violation of the requirements of this chapter, the approved plans and specifications, any permit conditions, or any grading operations that have otherwise become hazardous to the property of others or the public welfare be stopped.

45.2 It shall be unlawful and a violation of this code for any person to resume grading operations that were ordered to be stopped, unless the Administrative Official has first required, and the violator has agreed to, any necessary corrective measures, and the Administrative Official has authorized the resumption of work.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-46. - Corrective Action.
46.1 Whenever the Administrative Official finds that a grading operation has become, or is threatening to become, hazardous to the property of others, the public welfare or the environment, or that violates or will violate the provisions of this chapter, the Administrative Official may require that the operator submit for approval, a detailed schedule of specific remedies that can be undertaken immediately to bring the work into compliance with this chapter.

46.2 Within twenty-four (24) hours after acceptance of said remedies by the Administrative Official, the operator/property owner shall at his/her expense undertake the required immediate remedial action as necessary to eliminate the emergency hazard prior to, or concurrent with, any necessary permit application for any further work regulated by this chapter.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-47. - Notice of Violation.
47.1 A notice of violation shall specify the violation and the corrective action required to abate the violation.

47.2 The notice of violation shall also state that failure to abate the violation could subject the responsible party(ies) to administrative and criminal penalties and could result in the imposition of a lien on the property.

47.3 Notice shall be given as specified in Section 13.33.2 of the Lake County Ordinance Code.
(Ord. No. 2830, § 1, 7-17-2007)

Sec. 30-48. - Nuisance and Hazard Abatement.
48.1 Any work done or maintained in violation of the provisions of this chapter and any use of land operated or maintained in violation of the provisions of this chapter are hereby declared to be public nuisances and full abatement and restoration may be required and an assessment of cost may be levied pursuant to Chapter 13 of the Lake County Ordinance Code.

Soil Map unit and Erosion Hazard Rating.

Aiken-Sobrante association, 5 to 15% slopes moderate
102 Aiken-Sobrante association 15 to 30% slopes moderate
103 Asbil clay loam, 5 to 8% slopes moderate
104 Asbil clay loam, 8 to 15% slopes moderate
105 Badland severe
106 Bally Phipps gravelly loams, 2 to 8% slopes slight
107 Bally-Phipps complex, 15 to 30% slopes severe
108 Bally-Phipps Haploxeralfs association, 30 to 75% slopes severe
109 Bamtush-Neuns gravelly loams, 15 to 30% slopes moderate
110 Bamtush-Speaker-Sanhedrin gravelly loams, 30 to 50% slopes severe
111 Bamtush-Speaker-Sanhedrin gravelly loams, 50 to 75% slopes severe
112 Benridge-Konocti association, 15 to 30% slopes severe
113 Benridge-Konocti association, 30 to 50% slopes severe
114 Benridge-Sodabay loams, 8 to 15% slopes moderate
115 Benridge-Sodabay loams, 15 to 30% slopes severe
116 Benridge Variant loam, 2 to 15% slopes moderate
117 Bottlerock-Glenview-Arrowhead complex, 5 to 30% slopes moderate
118 Bottlerock-Glenview-Arrowhead complex, 30 to 50% slopes severe
119 Bressa Millsholm loams, 8 to 15% slopes moderate
120 Bressa Millsholm loams, 15 to 30% slopes severe
121 Clear Lake clay, drained, cool slight
122 Clear Lake Variant clay, drained slight
123 Cole clay loam, drained slight
124 Cole Variant clay loam slight
125 Cole Variant clay loam, calcareous substratum slight
126 Collayomi complex, 50 to 75% slopes severe
127 Collayomi-Aiken-Whispering complex, 5 to 30% slopes moderate
128 Collayomi-Aiken-Whispering complex 30 to 50% slopes severe
129 Collayomi-Whispering complex, 30 to 50% slopes severe
130 Deadwood-Sheetiron association, 50 to 75% slopes severe
131 Fluventic Haplaquolls, nearly level slight
132 Forbesville loam, 2 to 5% slopes slight
133 Forbesville loam, 5 to 15% slopes moderate
134 Forward Variant-Kidd association, 30 to 50% slopes severe
135 Forward Variant-Kidd association, 50 to 75% slopes severe
136 Freezeout-Yollabolly very gravelly sandy loams, 30 to 50% slopes moderate
137 Freezeout-Yollabolly very gravelly sandy loams, 50 to 75% slopes severe
138 Glenview-Arrowhead complex, 5 to 15% slopes moderate
139 Glenview-Arrowhead complex, 15 to 30% slopes severe
140 Glenview-Bottlerock complex, 2 to 5% slopes slight
141 Henneke-Montara complex, 8 to 15% slopes moderate
142 Henneke-Montara-Rock outcrop complex, 15 to 30% slopes severe *
143 Henneke-Okiota complex, 30 to 50% severe *
144 Jafa loam, 2 to 5% slopes slight
145 Jafa loam, 2 to 5% slopes moderate
146 Jafa complex, 5 to 30% slopes severe
147 Kelsey fine sandy loam slight
148 Kidd-Forward complex, 5 to 30% slopes moderate
149 Kidd-Forward complex, 30 to 50% slopes severe
150 Kilaga Variant loam, 0 to 5% slopes slight

151 Konocti-Benridge complex, 50 to 75% slopes severe
152 Konocti-Hambright complex, 5 to 15% slopes moderate
153 Konocti-Hambright complex, 15 to 30% slopes severe
154 Konocti-Hambright-Rock outcrop complex, 30 to 75% slopes severe
155 Konocti Variant-Konocti-Hambright complex, 2 to 15% slopes moderate
156 Konocti Variant-Konocti-Hambright complex, 15 to 30% slopes moderate
157 Landlow Variant silty clay loam slight
158 Lupoyoma silt loam, protected slight
159 Manzanita loam, 2 to 5% slopes slight
160 Manzanita loam, 5 to 15% slopes moderate
161 Manzanita loam, 15 to 25% slopes severe
162 Manzanita gravelly loam, 2 to 8% slopes moderate
163 Manzanita gravelly loam, 8 to 25% slopes severe
164 Maxwell clay loam, 0 to 2% slopes slight *
165 Maxwell clay loam, 2 to 8% slopes moderate *
166 Maymen-Etsel-Mayacama complex, 15 to 30% slopes moderate
167 Maymen-Etsel-Mayacama complex, 30 to 75% slopes severe
168 Maymen-Etsel-Snook complex, 15 to 30% slopesmoderate
169 Maymen-Etsel-Snook complex, 30 to 75% slopessevere
170 Maymen-Etsel-Speaker association, 30 to 50% slopes severe
171 Maymen-Hopland-Etsel association, 15 to 50% slopes severe
172 Maymen-Hopland-Mayacama complex, 9 to 30% slopes moderate
173 Maymen-Hopland-Mayacama association, 30 to 50% slopes severe
174 Maymen-Hopland-Mayacama association, 50 to 75% slopes severe
175 Maymen-Millsholm-Bressa complex, 30 to 50% slopes severe
176 Maywood variant sandy loam slight
177 Millsholm-Bressa loams, 30 to 50% slopes severe
178 Millsholm-Bressa-Hopland association, 30 to 50% slopes severe
179 Millsholm-Squawrock-Pomo complex, 30 to 50% slopes severe
180 Mocho Variant loam slight
181 Neice-Sobrante-Hambright complex, 30 to 75% slopes severe
182 Neice-Sobrante-Hambright complex, 30 to 75% slopes severe
183 Neuns-Bamtush-Deadwood association, 30 to 50% slopes severe
184 Neuns-Deadwood-Bamtush association, 50 to 75% slopes severe
185 Neuns-Decy-Sanhedrin complex, 30 to 50% slopes severe
186 Neuns-Sanhedrin-Deadwood complex, 30 to 50% slopes severe
187 Neuns-Sanhedrin-Deadwood complex, 50 to 75% slopes severe
188 Neuns-Sanhedrin-Speaker gravelly loams, 30 to 50% slopes severe
189 Neuns-Sheetiron-Deadwood complex, 30 to 50% slopes severe
190 Neuns-Sheetiron-Deadwood complex, 50 to 75% slopes severe
191 Neuns-Speaker gravelly loams, 15 to 30% slopes moderate
192 Okiota-Henneke complex, 5 to 30% slopes moderate *
193 Okiota-Henneke-Dubakella association, 15 to 50% slopes severe *
194 Oxalis Variant silt loam slight
195 Phipps complex, 5 to 15% slopes moderate
196 Phipps complex, 15 to 30% slopes severe
197 Phipps complex, 30 to 50% slopes severe
198 Pomo-Bressa loams, 15 to 50% slopes severe
199 Riverwash varies according to water velocities
200 Rock outcrop-Etsel-Snook complex, 50 to 80% slopes severe
201 Sanhedrin-Kekawaka-Speaker complex, 15 to 30% slopes severe
202 Sanhedrin-Kekawaka-Speaker complex, 30 to 50% slopes severe

203 San Joaquin Variant fine sandy loam, 0 to 5% slopes slight
204 Sheetiron-Deadwood association, 30 to 50% slopes severe
205 Sheetiron-Deadwood association, 50 to 75% slopes severe
206 Shortyork Variant-Yorkville-Squawrock association, 15 to 50% slopes severe *
207 Skyhigh-Asbil complex, 8 to 15% slopes moderate
208 Skyhigh-Asbil complex, 15 to 50% slopes severe
209 Skyhigh-Millsholm loams, 15 to 50% slopes severe
210 Skyhigh-Sleeper-Millsholm association, 8 to 15% slopes moderate
211 Skyhigh-Sleeper-Millsholm association, 15 to 30% slopes severe
212 Skyhigh-Sleeper-Millsholm association, 30 to 50% slopes severe
213 Sleeper Variant-Sleeper loams, 5 to 15% slopes moderate
214 Sleeper Variant-Sleeper loams, 15 to 30% slopes severe
215 Sleeper Variant-Sleeper loams, 30 to 50% slopes severe
216 Sobrante-Collayomi-Whispering association, 15 to 30% slopes severe
217 Sobrante-Collayomi-Whispering association, 30 to 50% slopes severe
218 Sobrante-Guenoc-Hambright complex, 2 to 15% slopes moderate
219 Sobrante-Guenoc-Hambright complex, 15 to 30% slopes moderate
220 Sobrante-Hambright-Guenoc complex, 30 to 50% slopes severe
221 Sodabay loam, 5 to 15% slopes moderate
222 Sodabay loam, 15 to 30% slopes severe
223 Sodabay-Konocti association, 5 to 30% slopes severe
224 Speaker-Marpa-Sanhedrin gravelly loams, 30 to 50% slopes severe
225 Speaker-Maymen-Marpa association, 30 to 50% slopes severe
226 Speaker-Maymen-Marpa association, 50 to 75% slopes severe
227 Speaker-Maymen-Millsholm association, 30 to 50% slopes severe
228 Speaker-Sanhedrin gravelly loams, 50 to 75% slopes severe
229 Speaker-Sanhedrin-Maymen association, 30 to 50% slopes severe
230 Speaker-Speaker Variant-Sanhedrin association, 5 to 30% slopes moderate
231 Squawrock-Shortyork Variant gravelly loams, 15 to 30% slopes moderate
232 Still loam slight
233 Still loam, stratified substratum Slight
234 Still gravelly loam slight
235 Still-Talmage complex, 2 to 8% slopes moderate
236 Stonyford-Guenoc complex, 30 to 50% slopes severe
237 Talmage very gravelly sandy loam slight
238 Tulelake silty clay loam, flooded slight
239 Tulelake silty clay loam, protected slight
240 Tyson-Neuns gravelly loams, 30 to 75% slopes severe
241 Vitrandepts-Cinder land complex, 15 to 75% slopes
242 Wappo loam, 2 to 8% slopes moderate
243 Wappo loam, 8 to 15% slopes moderate
244 Wappo variant clay loam, 2 to 8% slopes moderate
245 Whispering-Collayomi complex, 50 to 75% slopes severe
246 Wolfcreek gravelly loam slight
247 Wolfcreek loam slight
248 Xerofluvents, very gravelly slight
249 Xerofluvents-Riverwash complex slight
250 Yollabolly-Freezeout very gravelly sandy loams, 30 to 50% slopes moderate
251 Yollabolly Rock outcrop-Freezeout complex, 50 to 75% slopes severe
252 Yorktree-Hopland-Squawrock complex, 15 to 50% slopes severe
253 Yorkville-Pomo complex, 15 to 50% slopes severe
255 Yorkville Variant clay loam, 2 to 8% slopes moderate *

Department of Pesticide Regulation
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Lake County

Commodity Chemical	Pounds Applied	Agricultural Applications	Amount Treated	Unit Type
APPLE				
ABAMECTIN	0.02	1	1.00	A
CARBARYL	0.86	1	1.00	A
COPPER OXIDE (OUS)	0.21	1	1.00	A
DIURON	0.98	1	1.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	3.50	3	3.00	A
MANCOZEB	4.95	2	2.00	A
MINERAL OIL	147.76	2	2.00	A
NAA, AMMONIUM SALT	0.09	1	1.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX	0.32	1	1.00	A
SIMAZINE	0.50	1	1.00	A
SPINETORAM	0.22	1	1.00	A
STREPTOMYCIN SULFATE	0.16	3	3.00	A
SULFUR	4.80	1	1.00	A
TRIFLUMIZOLE	2.12	2	2.00	A
ZIRAM	5.13	2	2.00	A
Site Total	171.61	23		
BEEHIVE				
AMITRAZ	0.06	1	15.00	U
Site Total	0.06	1		
COMMODITY FUMIGATION				
SULFUR DIOXIDE	19.20			
Site Total	19.20			
FORAGE HAY/SILAGE				
BROMOXYNIL OCTANOATE	14.53	1	20.00	A
Site Total	14.53	1		
FUMIGATION, OTHER				
SULFUR DIOXIDE	162.05			
Site Total	162.05			
GRAPE				
BOSCALID	0.09	1	0.33	A
ETOXAZOLE	2.34	1	34.00	A
IMIDACLOPRID	0.30	1	8.00	A
PYRACLOSTROBIN	0.05	1	0.33	A
SULFUR	1,118.60	8	129.00	A
TETRACONAZOLE	0.59	2	16.00	A
TRIFLOXYSTROBIN	0.75	1	8.00	A
Site Total	1,122.72	14		
GRAPE, WINE				
ABAMECTIN	27.07	53	1,630.97	A
ACETAMIPRID	18.59	5	220.96	A
ALPHA-ALKYL (C8-C18)-OMEGA-HYDROXYPOLY (OXYETHYLENE) POLY(OXYPROPYLENE)	2.09	1	78.99	A
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	465.80	161	3,968.50	A
ALPHA-PINENE BETA-PINENE COPOLYMER	3.46	2	12.00	A
ALKYL (C8,C10) POLYGLUCOSIDE	211.05	160	3,507.97	A

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Commodity Chemical	Pounds Applied	Agricultural Applications	Amount Treated	Unit Type
ALLYLOXYPOLYETHYLENE GLYCOL ACETATE	40.74	104	1,396.65	A
AMMONIUM NITRATE	106.47	184	4,322.49	A
AMMONIUM PROPIONATE	4.79	1	27.04	A
AMMONIUM SULFATE	418.05	200	4,795.33	A
AZADIRACHTIN	0.53	2	21.00	A
BACILLUS PUMILUS, STRAIN QST 2808	0.54	1	15.00	A
BIFENAZATE	148.98	21	344.34	A
N,N-BIS-(2-OMEGA-HYDROXYPOLY(OXYETHYLENE)ETHYL) ALKYLAMINE, ALKYL DERIVED FROM TALLOW FATTY ACIDS	0.15	2	12.00	A
BOSCALID	422.56	70	2,214.17	A
BUPROFEZIN	61.43	7	117.00	A
BUTYL ALCOHOL	6.44	3	278.50	A
CALCIUM CHLORIDE	211.61	43	1,027.89	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.35	8	123.90	A
CARFENTRAZONE-ETHYL	15.25	58	1,151.60	A
CHENOPODIUM AMBROSIODES NEAR AMBROSIODES	5.47	2	6.00	A
CHLORPYRIFOS	9.47	1	12.00	A
CITRIC ACID	599.28	59	1,500.73	A
COPPER HYDROXIDE	413.23	36	1,624.20	A
COPPER OXIDE (OUS)	43.00	2	41.00	A
COPPER OXYCHLORIDE	305.48	26	1,300.95	A
CYFLUFENAMID	0.71	1	30.79	A
CYPRODINIL	316.57	31	880.98	A
2,4-D, DIMETHYLAMINE SALT	357.15	32	797.61	A
DIETHYLENE GLYCOL	7.09	5	76.00	A
DIFENOCONAZOLE	42.83	7	448.98	A
3,7-DIMETHYL-6-OCTEN-1-OL	2.02	4	122.20	A
DIMETHYLPOLYSILOXANE	536.02	524	10,749.62	A
DINOTEFURAN	4.64	11	73.90	A
DIPHACINONE	0.02	10	175.00	A
DIURON	140.36	6	286.10	A
ETOXAZOLE	37.04	16	287.82	A
FARNESOL	0.81	4	122.20	A
FATTY ACIDS, MIXED	2.76	14	297.20	A
FENARIMOL	5.04	9	111.57	A
FENHEXAMID	268.15	20	536.55	A
FENPYROXIMATE	22.93	8	190.36	A
FLAZASULFURON	4.63	2	270.98	A
FLUMIOXAZIN	504.10	214	2,205.17	A
GERANIOL	2.02	4	122.20	A
GLUFOSINATE-AMMONIUM	204.22	22	636.51	A
GLYCEROL	49.75	15	445.80	A
GLYPHOSATE, ISOPROPYLAMINE SALT	4,445.82	305	3,239.76	A
GLYPHOSATE, POTASSIUM SALT	5,954.05	198	4,132.24	A
HEPTAMETHYLTRISILOXANE-1,3-PROPANEDIOL ETHER, ETHOXYLATED PROPOXYLATED	0.45	2	88.46	A
HYDROTREATED PARAFFINIC SOLVENT	39.57	27	1,594.67	A
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE	176.12	111	1,627.63	A
IMIDACLOPRID	278.47	141	3,277.64	A
ISOPROPYL ALCOHOL	64.21	181	4,348.12	A
ISOXABEN	21.00	5	185.00	A
KAOLIN	2,101.76	4	128.49	A
KRESOXIM-METHYL	138.48	26	398.45	A
LECITHIN	34.51	11	272.20	A
LIME-SULFUR	153.40	1	5.00	A

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MALATHION	36.80	3	36.00	A
METHOXYFENOZIDE	2.26	1	12.00	A
METHYLATED SOYBEAN OIL	75.78	2	88.46	A
METRAFENONE	484.74	51	1,749.94	A
MINERAL OIL	7,938.51	60	600.50	A
MODIFIED PHTHALIC GLYCEROL ALKYD RESIN	99.32	3	330.00	A
MYCLOBUTANIL	278.36	71	2,844.67	A
MYROTHECIUM VERRUCARIA, DRIED FERMENTATION SOLIDS & SOLUBLES, STRAIN AARC-0255	1,041.12	8	114.72	A
NEROLIDOL	2.02	4	122.20	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	118.72	27	1,594.67	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	812.31	239	6,794.85	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE), PHOSPHATE ESTER	3.47	1	27.04	A
OLEIC ACID, METHYL ESTER	30.72	2	132.98	A
ORYZALIN	319.47	13	166.53	A
OXYFLUORFEN	702.18	56	1,528.81	A
PARAQUAT DICHLORIDE	9.85	4	16.20	A
PENDIMETHALIN	1,029.68	16	563.36	A
PETROLEUM DISTILLATES, REFINED	28,075.41	399	5,790.08	A
PHOSPHORIC ACID	35.34	140	2,994.48	A
PIPERONYL BUTOXIDE	0.65	1	1.00	A
PIPERONYL BUTOXIDE, OTHER RELATED	0.16	1	1.00	A
POLYACRYLAMIDE POLYMER	5.00	15	445.80	A
POLYALKENE OXIDE MODIFIED HEPTAMETHYL TRISILOXANE	0.84	1	85.07	A
POLYETHER MODIFIED POLYSILOXANE	4.85	1	27.00	A
POLYETHYLENE GLYCOL	281.73	178	4,086.86	A
POLYETHYLENE GLYCOL DIACETATE	3.70	104	1,396.65	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	190.62	22	922.32	A
POLY-I-PARA-MENTHENE	6.20	4	40.00	A
POLYOXIN D, ZINC SALT	2.63	1	60.00	A
POTASSIUM BICARBONATE	1,232.28	35	463.00	A
PROPIONIC ACID	34.51	11	272.20	A
PROPYLENE GLYCOL	1.84	1	85.07	A
PYRACLOSTROBIN	214.63	70	2,214.17	A
PYRAFLUFEN-ETHYL	2.11	21	670.56	A
PYRETHRINS	26.40	61	940.90	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	17.27	14	137.20	A
QUILLAJA	50.52	11	182.70	A
QUINOXYFEN	290.38	167	2,949.38	A
REYNOUTRIA SACHALINENSIS	26.44	10	96.00	A
RIMSULFURON	8.63	11	297.00	A
SETHOXYDIM	4.02	17	383.55	A
SIMAZINE	67.42	9	156.00	A
SODIUM HYDROXIDE	27.26	15	445.80	A
SODIUM POLYACRYLATE	0.12	1	27.04	A
SPIROTETRAMAT	2.49	6	150.00	A
STRYCHNINE	0.31	3	62.00	A
STYRENE BUTADIENE COPOLYMER	11.89	2	164.06	A
SULFUR	167,296.58	836	22,064.79	A
TALL OIL	18.27	27	1,594.67	A
TALL OIL FATTY ACIDS	7.29	6	334.68	A
TEBUCONAZOLE	6.98	6	62.05	A
TETRACONAZOLE	161.41	293	4,022.21	A
THIOPHANATE-METHYL	0.14	1	15.00	A

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TRIFLOXYSTROBIN	213.30	236	3,318.79	A
TRIFLUMIZOLE	82.97	8	352.72	A
ALPHA-2,6,8-TRIMETHYL-4-NONYLOXY-OMEGA-HYDROXYPOLY(OXYETHYLENE)	1.15	1	85.07	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	0.69	1	12.00	A
ZINC PHOSPHIDE	0.01	1	0.50	A
Site Total	230,858.28	4,800		
HOPS				
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	2.31	2	16.00	A
BOSCALID	2.21	1	10.00	A
COPPER HYDROXIDE	7.74	6	48.00	A
COPPER OXYCHLORIDE	8.58	6	48.00	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	3.99	1	10.00	A
PYRACLOSTROBIN	1.12	1	10.00	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	16.35	6	48.00	A
QUINOXYFEN	1.29	1	10.00	A
REYNOUTRIA SACHALINENSIS	13.87	6	48.00	A
SILICONE	0.10	1	10.00	A
SPINETORAM	0.63	1	10.00	A
SPINOSAD	1.47	2	16.00	A
Site Total	59.65	27		
LANDSCAPE MAINTENANCE				
ABAMECTIN	0.04			
ALPHA-PINENE BETA-PINENE COPOLYMER	2.73			
ALKYL (C8,C10) POLYGLUCOSIDE	4.72			
D-TRANS ALLETHRIN	< 0.01			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	39.77			
AMMONIUM NITRATE	2.25			
AMMONIUM SULFATE	4.50			
BIFENTHRIN	0.15			
N,N-BIS-(2-OMEGA-HYDROXYPOLY(OXYETHYLENE)ETHYL) ALKYLAMINE, ALKYL DERIVED FROM TALLOW FATTY ACIDS	0.12			
BROMACIL	41.60			
BROMETHALIN	< 0.01			
CARBARYL	0.69			
CARFENTRAZONE-ETHYL	< 0.01			
CHLORSULFURON	31.78			
CLETHODIM	0.35			
CLOPYRALID, MONOETHANOLAMINE SALT	2.51			
COPPER ETHYLENEDIAMINE COMPLEX	134.15			
COPPER HYDROXIDE	2.74			
COPPER OXYCHLORIDE	3.04			
COPPER TRIETHANOLAMINE COMPLEX	151.42			
2,4-D, 2-ETHYLHEXYL ESTER	0.08			
DELTAMETHRIN	< 0.01			
DICAMBA	< 0.01			
DICAMBA, DIMETHYLAMINE SALT	< 0.01			
DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID	56.53			
DIKEGULAC SODIUM	0.55			
DIMETHYLPOLYSILOXANE	0.10			
DIPHACINONE	0.01			

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DIQUAT DIBROMIDE	35.09			
DISODIUM OCTABORATE TETRAHYDRATE	0.14			
DITHIOPYR	37.01			
DIURON	2,644.79			
ENDOTHALL, DIPOTASSIUM SALT	3,426.26			
ENDOTHALL, MONO [N,N-DIMETHYL ALKYLAMINE] SALT	49.95			
ESFENVALERATE	< 0.01			
ETHEPHON	0.19			
FATTY ACIDS, C16-C18 AND C18-UNSATURATED, METHYL ESTERS	8.10			
FIPRONIL	0.19			
FLUAZIFOP-P-BUTYL	0.53			
FLUMIOXAZIN	52.18			
FLURIDONE	1.00			
GLYPHOSATE, ISOPROPYLAMINE SALT	5,056.93			
GLYPHOSATE, MONOAMMONIUM SALT	58.81			
GLYPHOSATE, POTASSIUM SALT	436.04			
HALOSULFURON-METHYL	0.07			
IMIDACLOPRID	0.76			
INDAZIFLAM	0.55			
ISOPROPYL ALCOHOL	2.23			
ISOXABEN	0.18			
LAMBDA-CYHALOTHRIN	0.07			
LIME-SULFUR	1.15			
LIMONENE	40.49			
MANCOZEB	15.60	1	2.20	A
MCPA, DIMETHYLAMINE SALT	0.07			
MECOPROP-P	0.02			
MINERAL OIL	30.30			
MYCLOBUTANIL	0.47			
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	18.38			
ORYZALIN	2.44			
PENDIMETHALIN	64.39			
PERMETHRIN	< 0.01			
PHENOTHRIN	< 0.01			
POLYETHYLENE GLYCOL	8.28			
PRALLETHRIN	< 0.01			
PRODIAMINE	46.20			
PYRACLOSTROBIN	1.25	1	2.20	A
SIMAZINE	476.09			
STRYCHNINE	< 0.01			
SULFENTRAZONE	0.26			
SULFOMETURON-METHYL	26.70			
TALL OIL	0.24			
TALL OIL FATTY ACIDS	0.04			
THIOPHANATE-METHYL	4.00			
TRICLOPYR, BUTOXYETHYL ESTER	33.38			
TRICLOPYR, TRIETHYLAMINE SALT	331.49			
TRIFLURALIN	0.70			
TRINEXAPAC-ETHYL	0.06			
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	5.40			
Site Total	13,398.35	2		
N-OUTDR TRANSPLANTS				
GLYPHOSATE, ISOPROPYLAMINE SALT	18.09	8	8.00	A

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METALDEHYDE	2.31	3	3.00	A
Site Total	20.40	11		
OAT (FORAGE - FODDER)				
ALKYL (C8,C10) POLYGLUCOSIDE	8.01	2	37.00	A
AMMONIUM NITRATE	3.81	2	37.00	A
AMMONIUM SULFATE	7.63	2	37.00	A
BROMOXYNIL HEPTANOATE	12.40	1	35.00	A
BROMOXYNIL OCTANOATE	12.86	1	35.00	A
CARFENTRAZONE-ETHYL	0.51	1	35.00	A
DIMETHYLPOLYSILOXANE	0.12	5	152.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	9.65	3	82.00	A
ISOPROPYL ALCOHOL	1.36	3	115.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	15.80	3	115.00	A
OXYFLUORFEN	3.01	2	80.00	A
POLYETHYLENE GLYCOL	8.62	3	115.00	A
Site Total	83.78	12		
OLIVE				
KAOLIN	7.60	2	8.00	A
Site Total	7.60	2		
PASTURELAND				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	1.02	4	37.50	A
DIPHACINONE	0.02	7	111.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	57.89	2	5.00	A
Site Total	58.93	13		
PEACH				
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	2.48	4	4.60	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.14	9	10.35	A
COPPER HYDROXIDE	13.72	6	7.50	A
COPPER OXIDE (OUS)	16.85	3	2.15	A
COPPER OXYCHLORIDE	6.67	4	5.50	A
DIURON	0.98	1	1.00	A
ESFENVALERATE	0.13	2	3.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	4.52	3	4.00	A
MINERAL OIL	184.70	3	3.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	0.27	9	10.35	A
QUILLAJA	0.28	9	10.35	A
SIMAZINE	0.50	1	1.00	A
SPINOSAD	0.36	5	5.75	A
SULFUR	18.40	3	4.00	A
ZIRAM	9.12	1	1.00	A
Site Total	259.11	41		
PEAR				
ABAMECTIN	53.50	102	2,471.75	A
ACIBENZOLAR-S-METHYL	0.50	2	8.00	A
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	31.12	5	138.50	A

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ALKYL (C8,C10) POLYGLUCOSIDE	141.82	37	267.98	A
AMINO ETHOXY VINYL GLYCINE HYDROCHLORIDE	22.37	17	219.00	A
AMMONIUM NITRATE	67.53	37	267.98	A
AMMONIUM SULFATE	135.07	37	267.98	A
AUREOBASIDIUM PULLULANS STRAIN DSM 14940	5.81	3	18.00	A
AUREOBASIDIUM PULLULANS STRAIN DSM 14941	5.81	3	18.00	A
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	68.04	5	63.00	A
N6-BENZYL ADENINE	3.17	8	102.00	A
BIFENAZATE	84.35	10	203.50	A
BUPROFEZIN	110.52	10	164.00	A
CALCIUM CHLORIDE	16.86	13	144.00	A
CHLORANTRANILIPROLE	48.22	38	623.75	A
CHROMOBACTERIUM SUBTSUGAE STRAIN PRAA4-1	9.00	1	12.00	A
CITRIC ACID	58.27	14	146.00	A
CODLING MOTH GRANULOSIS VIRUS	0.03	23	270.00	A
COPPER HYDROXIDE	272.84	60	592.75	A
COPPER OXYCHLORIDE	274.26	44	473.50	A
CYPRODINIL	7.44	1	38.00	A
2,4-D, DIMETHYLAMINE SALT	465.10	26	327.70	A
DIAZINON	728.35	20	576.50	A
DIFENOCONAZOLE	2.59	1	38.00	A
DIFLUBENZURON	39.97	15	196.00	A
DIMETHYLPOLYSILOXANE	58.62	141	1,992.38	A
DIPHACINONE	< 0.01	2	24.00	A
DISODIUM PHOSPHATE	6.06	1	2.00	A
DIURON	62.36	5	40.14	A
E,E-8,10-DODECADIEN-1-OL	336.13	85	1,884.85	A
Z-8-DODECENOL	0.66	138	2,941.00	A
E-8-DODECENYL ACETATE	3.61	138	2,941.00	A
Z-8-DODECENYL ACETATE	53.71	138	2,941.00	A
DODINE	2,816.72	111	2,314.00	A
ESFENVALERATE	24.92	57	1,226.50	A
ETOXAZOLE	2.03	1	15.00	A
FENPYROXIMATE	4.70	3	39.00	A
FLUMIOXAZIN	82.68	29	236.68	A
FREE FATTY ACIDS AND/OR AMINE SALTS	4.81	3	34.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	984.14	83	832.28	A
GLYPHOSATE, POTASSIUM SALT	469.91	28	529.64	A
HEPTAMETHYLTRISILOXANE-1,3-PROPANEDIOL ETHER, ETHOXYLATED PROPOXYLATED	0.36	1	38.00	A
HYDROTREATED PARAFFINIC SOLVENT	24.98	16	329.50	A
IMIDACLOPRID	15.06	17	485.00	A
ISOPROPYL ALCOHOL	32.15	96	1,485.90	A
KAOLIN	1,899.98	4	65.00	A
LAMBDA-CYHALOTHRIN	1.98	4	51.50	A
LAURYL ALCOHOL	21.39	29	358.85	A
LIME-SULFUR	30,539.28	50	956.00	A
MANCOZEB	4,291.43	65	1,378.25	A
METHOXYFENOZIDE	438.32	81	1,718.00	A
METHYLATED SOYBEAN OIL	60.54	1	38.00	A
MINERAL OIL	206,205.88	343	7,197.50	A
MYRISTYL ALCOHOL	4.34	29	358.85	A
NAA, AMMONIUM SALT	173.59	88	1,970.50	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	74.95	16	329.50	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	461.53	113	1,853.40	A

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ORYZALIN	841.29	26	409.60	A
OXYFLUORFEN	269.95	28	492.59	A
OXYTETRACYCLINE, CALCIUM COMPLEX	2,872.86	926	19,623.75	A
PETROLEUM OIL, PARAFFIN BASED	1,546.82	6	111.00	A
PETROLEUM OIL, UNCLASSIFIED	3,475.96	12	293.00	A
PHOSPHORIC ACID	12.62	2	78.00	A
PIPERONYL BUTOXIDE	3.82	1	6.00	A
PIPERONYL BUTOXIDE, OTHER RELATED	0.95	1	6.00	A
POLYETHER MODIFIED POLYSILOXANE	41.90	4	117.00	A
POLYETHYLENE GLYCOL	203.05	96	1,485.90	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	116.60	6	83.50	A
POTASSIUM BICARBONATE	49.14	2	15.00	A
PYRAFLUFEN-ETHYL	0.04	1	8.00	A
PYRETHRINS	8.24	15	152.00	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	34.02	8	83.00	A
RIMSULFURON	0.50	1	8.00	A
SAFLUFENACIL	1.67	1	38.00	A
SILICONE	0.42	2	25.00	A
SIMAZINE	71.33	5	40.14	A
SPINETORAM	75.94	39	745.50	A
SPINOSAD	11.92	9	128.00	A
STREPTOMYCIN SULFATE	655.18	656	13,872.75	A
SULFUR	30,009.70	135	2,693.75	A
TALL OIL	11.53	16	329.50	A
TALL OIL FATTY ACIDS	1.78	1	38.00	A
TRIFLOXYSTROBIN	0.69	1	11.00	A
TRIFLUMIZOLE	9.31	3	22.50	A
ZINC PHOSPHIDE	4.68	7	117.00	A
ZIRAM	12,688.20	136	2,814.25	A
Site Total	304,829.44	3,746		
PUBLIC HEALTH				
BACILLUS SPHAERICUS, SEROTYPE H-5A5B, STRAIN 2362	284.70			
BACILLUS THURINGIENSIS (BERLINER), SUBSP. ISRAELENSIS, SEROTYPE H-14	403.81			
BACILLUS THURINGIENSIS, SUBSP. ISRAELENSIS, STRAIN AM 65-52	36.36			
ALPHA-ISOOCTADECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	22.76			
METHOPRENE	0.23			
S-METHOPRENE	30.67			
PERMETHRIN	72.14			
PETROLEUM DISTILLATES	1.25			
PIPERONYL BUTOXIDE	294.89			
PIPERONYL BUTOXIDE, OTHER RELATED	19.62			
PYRETHRINS	15.91			
SILICA AEROGEL	0.06			
SPINOSAD	6.61			
Site Total	1,189.01			
RANGELAND				
DIPHACINONE	0.01	10	399.00	A
Site Total	0.01	10		

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REGULATORY PEST CONTROL					
CHLORSULFURON		1.20			
CLETHODIM		15.90			
COPPER ETHYLENEDIAMINE COMPLEX		141.46			
FLURIDONE		683.02			
GLYPHOSATE, ISOPROPYLAMINE SALT		117.09			
IMAZAPYR, ISOPROPYLAMINE SALT		0.10			
IMIDACLOPRID		< 0.01			
SULFOMETURON-METHYL		2.20			
Site Total		960.97			
RIGHTS OF WAY					
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		0.19	1	1.50	A
ALKYL (C8,C10) POLYGLUCOSIDE		13.51			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT		22.53			
AMMONIUM NITRATE		6.43			
		0.02	1	1.50	A
Total Pounds On This Chemical	6.46				
AMMONIUM SULFATE		12.87			
		0.60	1	1.50	A
Total Pounds On This Chemical	13.47				
BENZOIC ACID		2.90			
BIFENTHRIN		0.19			
BORAX		16,141.43			
BUTYL ALCOHOL		0.09	1	1.50	A
CARFENTRAZONE-ETHYL		0.04	1	1.50	A
CHLORSULFURON		2.64			
CLOPYRALID, MONOETHANOLAMINE SALT		3.96			
COPPER HYDROXIDE		1,135.57			
COPPER 8-QUINOLINOLEATE		1.42			
DIMETHYL ALKYL TERTIARY AMINES		3.15			
DIMETHYLPOLYSILOXANE		0.17			
		< 0.01	1	1.50	A
Total Pounds On This Chemical	0.17				
DIPHACINONE		< 0.01			
		< 0.01	1	1.50	A
Total Pounds On This Chemical	< 0.01				
DIQUAT DIBROMIDE		93.23			
DIURON		3.37			
GLYPHOSATE, DIMETHYLAMINE SALT		5.30			
GLYPHOSATE, ISOPROPYLAMINE SALT		522.35			
		2.89	3	3.00	A
Total Pounds On This Chemical	525.25				
GLYPHOSATE, POTASSIUM SALT		325.52			
		12.41	5	9.50	A
Total Pounds On This Chemical	337.93				
ISOPROPYL ALCOHOL		1.45			
KEROSENE		5.61			
METAM-SODIUM		11,549.00			
METHYLATED SOYBEAN OIL		107.15			
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		16.73			
		0.83	1	1.50	A
Total Pounds On This Chemical	17.57				

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ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE) SULFATE, AMMONIUM SALT	< 0.01			
OLEIC ACID, METHYL ESTER	21.84			
ORYZALIN	16.86			
PETROLEUM OIL, PARAFFIN BASED	0.08			
POLYETHYLENE GLYCOL	9.13			
POLYOXYETHYLENE SORBITAN MIXED FATTY ACID ESTERS	0.01			
PYRAFLUFEN-ETHYL	< 0.01			
RIMSULFURON	7.63			
SIMAZINE	357.64			
SORBITAN FATTY ACID ESTERS	< 0.01			
SOYBEAN OIL	131.16			
SULFOMETURON-METHYL	1.52			
TEBUCONAZOLE	0.95			
TRICLOPYR, BUTOXYETHYL ESTER	8.25			
TRICLOPYR, TRIETHYLAMINE SALT	155.47			
Site Total	30,704.13	12		
SOIL FUMIGATION/PREPLANT				
1,3-DICHLOROPROPENE	3,329.27	1	10.00	A
Site Total	3,329.27	1		
STRAWBERRY				
ABAMECTIN	0.06	2	6.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	3.26	1	3.00	A
Site Total	3.32	3		
STRUCTURAL PEST CONTROL				
ABAMECTIN	< 0.01			
ABAMECTIN, OTHER RELATED	< 0.01			
ACEPHATE	7.79			
ACETAMIPRID	< 0.01			
ALKYL (50%C14, 40%C12, 10%C16) DIMETHYLBENZYL AMMONIUM CHLORIDE	0.01			
D-TRANS ALLETHRIN	0.10			
BIFENTHRIN	145.14			
BORAX	0.39			
BORIC ACID	1.38			
BRODIFACOUM	< 0.01			
BROMADIOLONE	0.04			
BROMETHALIN	< 0.01			
CHLORFENAPYR	6.29			
CHLORSULFURON	1.45			
CHOLECALCIFEROL	0.04			
COPPER NAPHTHENATE	0.94			
CYFLUTHRIN	7.40			
BETA-CYFLUTHRIN	45.38			
CYPERMETHRIN	797.70			
DELTAMETHRIN	201.65			
DIATOMACEOUS EARTH	0.65			
DIDECYL DIMETHYL AMMONIUM CHLORIDE	0.02			
DIFETHIALONE	< 0.01			
DIFLUBENZURON	< 0.01			
DINOTEFURAN	0.11			
DIPHACINONE	< 0.01			

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DIQUAT DIBROMIDE	93.23			
DISODIUM OCTABORATE TETRAHYDRATE	1,301.47			
ESFENVALERATE	1.98			
ETOFENPROX	< 0.01			
FIPRONIL	25.99			
GLYPHOSATE, ISOPROPYLAMINE SALT	6.99			
HYDRAMETHYLNON	0.03			
HYDROPRENE	1.44			
IMIDACLOPRID	3.83			
INDOXACARB	2.61			
IRON PHOSPHATE	< 0.01			
ISOPROPYL ALCOHOL	9.09			
LAMBDA-CYHALOTHRIN	1.80			
METHOMYL	< 0.01			
METHOPRENE	0.06			
S-METHOPRENE	0.02			
MUSCALURE	< 0.01			
NOVIFLUMURON	< 0.01			
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	4.27			
OIL OF ANISE	0.01			
PARATHION	0.22			
PERMETHRIN	35.48			
PETROLEUM DISTILLATES	0.02			
PHENOTHRIN	0.11			
PHENYLETHYL PROPIONATE	0.58			
PIPERONYL BUTOXIDE	12.53			
PIPERONYL BUTOXIDE, OTHER RELATED	3.00			
PRALLETHRIN	< 0.01			
PROPETAMPHOS	0.06			
PROPOXUR	< 0.01			
PYRETHRINS	3.45			
PYRIPROXYFEN	3.50			
SILICA AEROGEL	0.43			
SIMAZINE	419.49			
SULFOMETURON-METHYL	2.90			
SULFURYL FLUORIDE	26.73			
THIAMETHOXAM	< 0.01			
THYME	0.95			
XYLENE RANGE AROMATIC SOLVENT	0.21			
Site Total	3,179.00			
TOMATO				
GLYPHOSATE, ISOPROPYLAMINE SALT	5.79	2	1.20	A
NONANOIC ACID	21.31	2	0.50	A
NONANOIC ACID, OTHER RELATED	1.12	2	0.50	A
PYRETHRINS	0.02	5	0.10	A
SPINOSAD	0.04	6	0.46	A
Site Total	28.28	15		
UNCULTIVATED AG				
DIPHACINONE	< 0.01	2	65.00	A
Site Total	< 0.01	2		
UNCULTIVATED NON-AG				
CHLORSULFURON	30.47	1	250.00	A

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CLOPYRALID, MONOETHANOLAMINE SALT	81.60	1	250.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	14.41	5	13.50	A
OLEIC ACID, ETHYL ESTER	65.71	1	250.00	A
POLYOXYETHYLENE DIOLEATE	11.50	1	250.00	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	3.29	1	250.00	A
Site Total	206.98	8		
UNKNOWN				
DIMETHYLPOLYSILOXANE	0.01	1	4.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	5.31	1	4.00	A
ISOPROPYL ALCOHOL	0.26	1	4.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	3.04	1	4.00	A
POLYETHYLENE GLYCOL	1.66	1	4.00	A
Site Total	10.28	2		
VERTEBRATE CONTROL				
BROMADIOLONE	< 0.01			
Site Total	< 0.01			
WALNUT				
ACETAMIPRID	23.42	4	253.00	A
ALPHA-ALKYL (C12-C14)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	0.39	5	134.00	A
ALKYL (C9-C11) OLIGOMERIC D-GLUCOPYRANOSIDE	1.25	5	134.00	A
ALKYL (C8,C10) POLYGLUCOSIDE	37.38	8	173.30	A
AMMONIUM NITRATE	29.69	13	307.30	A
AMMONIUM SULFATE	35.60	8	173.30	A
BOSCALID	0.25	3	13.00	A
CARFENTRAZONE-ETHYL	1.17	2	40.00	A
CHLORPYRIFOS	285.74	20	449.00	A
COPPER HYDROXIDE	1.69	5	84.60	A
COPPER OXYCHLORIDE	1.88	5	84.60	A
CORN PRODUCT, HYDROLYZED	100.85	50	665.50	A
CORN STEEP LIQUOR	59.91	4	57.75	A
DIMETHYLPOLYSILOXANE	0.59	51	1,031.79	A
DIPHACINONE	0.08	71	1,282.50	A
DIURON	7.82	2	24.00	A
ESFENVALERATE	0.10	6	3.50	A
FATTY ACIDS DERIVED FROM TALLOW	0.16	5	134.00	A
GLUFOSINATE-AMMONIUM	0.69	1	6.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	799.00	64	1,189.46	A
GLYPHOSATE, POTASSIUM SALT	159.30	7	152.00	A
ISOPROPYL ALCOHOL	6.59	43	858.49	A
KAOLIN	22.33	2	0.47	A
MALATHION	164.14	43	640.50	A
METCONAZOLE	0.05	1	1.00	A
MINERAL OIL	10.43	1	0.30	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	76.70	48	992.49	A
ORGANO/MODIFIED POLYSILOXANE	0.03	5	134.00	A
ORYZALIN	50.13	5	55.67	A
OXYFLUORFEN	66.38	45	924.49	A
PARAQUAT DICHLORIDE	36.97	4	75.00	A
POLYETHYLENE GLYCOL	41.63	43	858.49	A

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PYRACLOSTROBIN	0.13	3	13.00	A
SPINETORAM	2.61	3	34.75	A
SPINOSAD	6.13	45	662.00	A
SPIROTETRAMAT	2.42	1	40.00	A
SUCROSE OCTANOATE	0.42	2	0.47	A
SULFUR	7.20	2	0.60	A
UREA	8.92	5	134.00	A
Site Total	2,050.15	449		
WATER AREA				
COPPER ETHYLENEDIAMINE COMPLEX	511.58		124.50	A
COPPER SULFATE (PENTAHYDRATE)	544.50	11	132.00	A
DIMETHYLPOLYSILOXANE	0.05	1	20.00	A
DIQUAT DIBROMIDE	74.58	1	20.00	A
ENDOTHALL, DIPOTASSIUM SALT	645.15		124.50	A
ISOPROPYL ALCOHOL	1.05	1	20.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	12.15	1	20.00	A
POLYETHYLENE GLYCOL	6.63	1	20.00	A
SODIUM CARBONATE PEROXYHYDRATE	212.50	2	40.00	A
Site Total	2,008.19	15		
Lake County Total	594,735.29	9,210		

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APPLE					
ABAMECTIN		0.02	1	1.00	A
CARBARYL		4.00	1	1.00	A
COPPER HYDROXIDE		0.05	1	1.00	A
COPPER OXIDE (OUS)		0.14	1	0.50	A
COPPER OXYCHLORIDE		0.06	1	1.00	A
DIMETHYLPOLYSILOXANE		< 0.01	3	3.00	A
ISOPROPYL ALCOHOL		0.16	3	3.00	A
LIME-SULFUR		61.36	2	2.00	A
MANCOZEB		13.50	3	3.00	A
MINERAL OIL		73.88	1	1.00	A
NAA, AMMONIUM SALT		0.11	2	2.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		1.82	3	3.00	A
OXYFLUORFEN		1.03	1	1.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX		0.32	1	1.00	A
PARAQUAT DICHLORIDE		1.03	1	1.00	A
POLYETHYLENE GLYCOL		0.99	3	3.00	A
SPINETORAM		0.19	3	3.00	A
SULFUR		32.00	2	2.00	A
TRIFLUMIZOLE		0.37	1	1.00	A
ZIRAM		< 0.01	2	2.00	A
Site Total		191.03	26		
BEEHIVE					
POTASSIUM SALT OF HOP BETA ACIDS		0.07	3	55.00	U
Site Total		0.07	3		
CHRISTMAS TREE					
GLYPHOSATE, ISOPROPYLAMINE SALT		15.05	2	7.80	A
OXYFLUORFEN		1.22	2	7.80	A
Site Total		16.27	4		
COMMODITY FUMIGATION					
SULFUR DIOXIDE		5.97			
Site Total		5.97			
FUMIGATION, OTHER					
SULFUR DIOXIDE		258.91			
		26.88	2	2.00	A
Total Pounds On This Chemical	285.78				
Site Total		285.78	2		
GRAPE					
ABAMECTIN		0.26	1	13.00	A
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		3.79	3	33.00	A
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES		3.78	1	7.00	A
FENARIMOL		0.03	2	1.50	A
GLYPHOSATE, ISOPROPYLAMINE SALT		38.06	3	43.30	A
IMIDACLOPRID		4.66	5	92.00	A
MYCLOBUTANIL		2.00	2	20.00	A
POTASSIUM BICARBONATE		2.46	1	1.00	A

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SULFUR	4,488.40	30	494.00	A
TETRACONAZOLE	0.33	1	8.00	A
TRIFLOXYSTROBIN	0.09	3	2.25	A
TRIFLUMIZOLE	5.63	2	23.00	A
Site Total	4,549.50	54		
GRAPE, WINE				
ABAMECTIN	24.82	32	1,428.96	A
ACETAMIPRID	2.84	3	33.00	A
ACRYLIC ACID	2.01	2	65.07	A
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	1,905.68	171	8,805.65	A
ALPHA-PINENE BETA-PINENE COPOLYMER	40.26	11	249.00	A
ALKYL (C8,C10) POLYGLUCOSIDE	297.17	96	1,900.65	A
ALLYLOXYPOLYETHYLENE GLYCOL ACETATE	2.40	1	83.52	A
AMMONIUM NITRATE	147.58	107	2,630.80	A
AMMONIUM PROPIONATE	60.03	34	844.38	A
AMMONIUM SULFATE	448.25	141	3,475.18	A
AZOXYSTROBIN	54.06	2	234.90	A
BACILLUS PUMILUS, STRAIN QST 2808	3.12	1	26.00	A
BENZOIC ACID	0.67	2	117.50	A
BIFENAZATE	174.93	21	351.85	A
N,N-BIS-(2-OMEGA-HYDROXYPOLY(OXYETHYLENE)ETHYL) ALKYLAMINE, ALKYL DERIVED FROM TALLOW FATTY ACIDS	1.81	11	249.00	A
BOSCALID	855.91	98	4,466.17	A
BUPROFEZIN	169.20	17	335.47	A
BUTYL ALCOHOL	14.75	6	386.50	A
CALCIUM CHLORIDE	65.38	25	551.24	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.07	2	36.00	A
CARFENTRAZONE-ETHYL	12.81	29	894.66	A
CHLORANTRANILIPROLE	0.56	1	9.00	A
CHLORPYRIFOS	16.99	2	24.00	A
CHROMOBACTERIUM SUBTSUGAE STRAIN PRAA4-1	9.00	1	10.00	A
CITRIC ACID	211.62	59	1,395.62	A
COPPER HYDROXIDE	601.47	84	2,270.50	A
COPPER OXIDE (OUS)	115.78	7	122.00	A
COPPER OXYCHLORIDE	512.08	74	1,887.00	A
CYPRODINIL	150.96	7	356.21	A
2,4-D, DIMETHYLAMINE SALT	710.45	48	1,051.44	A
DIFENOCONAZOLE	0.55	1	31.00	A
DIMETHYL ALKYL TERTIARY AMINES	0.73	2	117.50	A
3,7-DIMETHYL-6-OCTEN-1-OL	2.01	7	131.50	A
DIMETHYLPOLYSILOXANE	316.61	326	9,384.29	A
DINOTEFURAN	1.69	1	96.48	A
DIPHACINONE	0.06	15	673.51	A
DIURON	140.89	12	317.10	A
ETOXAZOLE	37.43	5	247.60	A
FARNESOL	0.81	7	131.50	A
FATTY ACIDS, MIXED	2.18	2	15.50	A
FENARIMOL	68.13	18	1,718.02	A
FENHEXAMID	215.31	18	504.00	A
FENPROPATHRIN	1.17	1	6.00	A
FENPYROXIMATE	8.93	2	75.81	A
FLUMIOXAZIN	414.58	65	2,590.83	A
GARLIC	7.79	11	142.40	A

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GERANIOL	2.01	7	131.50	A
GLUFOSINATE-AMMONIUM	605.28	46	2,352.33	A
GLYPHOSATE, ISOPROPYLAMINE SALT	4,163.29	173	4,022.06	A
GLYPHOSATE, POTASSIUM SALT	3,275.74	79	1,767.00	A
HYDROTREATED PARAFFINIC SOLVENT	60.92	29	1,995.01	A
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE	8.29	1	83.52	A
IMIDACLOPRID	280.21	97	2,834.97	A
ISOPROPYL ALCOHOL	108.11	174	5,561.30	A
ISOXABEN	4.99	2	5.00	A
KAOLIN	142.50	1	6.00	A
KRESOXIM-METHYL	162.62	27	1,162.95	A
MALATHION	12.27	1	13.00	A
METHOXYFENOZIDE	2.28	1	12.00	A
METHYLATED SOYBEAN OIL	25.55	2	117.50	A
MINERAL OIL	10,216.06	51	1,649.08	A
MYCLOBUTANIL	421.10	89	3,764.81	A
MYROTHECIUM VERRUCARIA, DRIED FERMENTATION SOLIDS & SOLUBLES, STRAIN AARC-0255	1,202.22	11	227.00	A
NEROLIDOL	2.01	7	131.50	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	184.54	32	2,017.01	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	1,599.63	216	8,016.31	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE), PHOSPHATE ESTER	24.78	36	909.45	A
ORYZALIN	1,167.65	12	416.49	A
OXYFLUORFEN	480.87	38	763.63	A
PARAQUAT DICHLORIDE	10.95	2	13.00	A
PENDIMETHALIN	549.98	10	1,159.00	A
PETROLEUM DISTILLATES, REFINED	19,354.73	180	4,756.37	A
PHOSPHORIC ACID	8.00	52	1,145.70	A
POLYALKENE OXIDE MODIFIED HEPTAMETHYL TRISILOXANE	0.94	3	48.00	A
POLYETHER MODIFIED POLYSILOXANE	58.09	4	120.93	A
POLYETHYLENE GLYCOL	679.21	173	5,534.26	A
POLYETHYLENE GLYCOL DIACETATE	0.22	1	83.52	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	123.35	15	338.97	A
POLY-I-PARA-MENTHENE	19.91	9	91.50	A
POLYMERIZED ACRYLIC ACID	27.62	33	817.34	A
POTASSIUM BICARBONATE	581.38	22	197.00	A
PROPYLENE GLYCOL	2.08	3	48.00	A
PYRACLOSTROBIN	434.75	98	4,466.17	A
PYRAFLUFEN-ETHYL	1.99	30	550.12	A
PYRETHRINS	11.84	23	273.30	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	74.12	13	239.52	A
QUILLAJA	23.14	7	91.50	A
QUINOXYFEN	364.85	101	3,788.52	A
REYNOUTRIA SACHALINENSIS	2.17	6	39.00	A
SETHOXYDIM	29.78	31	732.16	A
SIMAZINE	54.82	2	42.60	A
SODIUM POLYACRYLATE	0.12	1	27.04	A
SPIRODICLOFEN	1.28	1	5.01	A
SPIROTETRAMAT	2.45	5	182.00	A
STRYCHNINE	0.80	14	697.00	A
STYRENE BUTADIENE COPOLYMER	2.81	3	48.00	A
SULFUR	147,453.27	886	21,093.11	A
TALL OIL	28.12	29	1,995.01	A

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TALL OIL FATTY ACIDS		0.60	11	249.00	A
TEBUCONAZOLE		115.83	26	1,016.98	A
TETRACONAZOLE		58.43	44	1,538.39	A
THIOPHANATE-METHYL		89.33	1	85.07	A
TRIFLOXYSTROBIN		220.54	72	3,416.28	A
TRIFLUMIZOLE		137.11	16	572.50	A
ALPHA-2,6,8-TRIMETHYL-4-NONYLOXY-OMEGA-HYDROXYPOLY(OXYETHYLENE)		1.29	3	48.00	A
YUCCA SCHIDIGERA		23.37	11	142.40	A
Site Total		202,533.70	3,301		
HOPS					
COPPER HYDROXIDE		1.07	1	10.00	A
COPPER OXYCHLORIDE		1.19	1	10.00	A
3,7-DIMETHYL-6-OCTEN-1-OL		0.10	1	10.00	A
FARNESOL		0.04	1	10.00	A
GERANIOL		0.10	1	10.00	A
NEROLIDOL		0.10	1	10.00	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS		7.01	2	20.00	A
REYNOUTRIA SACHALINENSIS		2.17	1	10.00	A
Site Total		11.78	5		
LANDSCAPE MAINTENANCE					
ABAMECTIN		< 0.01			
ALKYL (C8,C10) POLYGLUCOSIDE		63.46			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT		90.56			
AMMONIUM NITRATE		30.22			
AMMONIUM SULFATE		60.43			
AZOXYSTROBIN		3.00	1	22.00	A
		0.28			
Total Pounds On This Chemical	3.28				
BIFENTHRIN		8.79			
		0.71	1	2.20	A
Total Pounds On This Chemical	9.50				
BROMACIL		42.40			
BROMADIOLONE		< 0.01			
BROMETHALIN		< 0.01			
CARFENTRAZONE-ETHYL		1.28	10	22.00	A
		0.01			
Total Pounds On This Chemical	1.30				
CHLOROTHALONIL		30.18	1	2.20	A
CHLORSULFURON		24.70			
CLETHODIM		0.01			
CLOFENTEZINE		0.06			
CLOPYRALID, MONOETHANOLAMINE SALT		4.98			
CLOTHIANIDIN		1.44	1	2.20	A
COPPER ETHANOLAMINE COMPLEXES, MIXED		59.02			
COPPER ETHYLENEDIAMINE COMPLEX		149.10			
COPPER HYDROXIDE		3.53			
COPPER OXYCHLORIDE		3.92			
COPPER TRIETHANOLAMINE COMPLEX		94.64			
2,4-D, DIMETHYLAMINE SALT		1.32	3	6.60	A
		1.20			
Total Pounds On This Chemical	2.52				
2,4-D, 2-ETHYLHEXYL ESTER		11.31	7	15.40	A
		0.26			

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Total Pounds On This Chemical	11.57				
DELTAMETHRIN		< 0.01			
DICAMBA		0.72	7	15.40	A
		0.02			
Total Pounds On This Chemical	0.74				
DICAMBA, DIMETHYLAMINE SALT		0.55	3	6.60	A
		0.30			
Total Pounds On This Chemical	0.84				
DIETHYLENE GLYCOL		0.04	1	1.00	A
DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID		40.76			
DIKEGULAC SODIUM		1.65			
DIMETHYLPOLYSILOXANE		0.48			
		< 0.01	1	1.00	A
Total Pounds On This Chemical	0.48				
DINOTEFURAN		0.03			
DIPHACINONE		< 0.01			
DIQUAT DIBROMIDE		203.80			
DIURON		3,496.20			
ENDOTHALL, DIPOTASSIUM SALT		6,498.99			
ETHEPHON		0.16			
FATTY ACIDS, MIXED		0.06	1	1.00	A
FATTY ACIDS, C16-C18 AND C18-UNSATURATED, METHYL ESTERS		10.80			
FLUAZIFOP-P-BUTYL		0.16			
FLUMIOXAZIN		42.67			
FLURIDONE		14.00			
FLUROXYPYR		0.82			
GLYPHOSATE, ISOPROPYLAMINE SALT		4,780.61			
		7.75	13	27.40	A
Total Pounds On This Chemical	4,788.36				
GLYPHOSATE, MONOAMMONIUM SALT		33.50			
GLYPHOSATE, POTASSIUM SALT		342.39			
IMIDACLOPRID		7.39			
ISOPROPYL ALCOHOL		1.42			
ISOXABEN		1.30			
LAMBDA-CYHALOTHRIN		< 0.01			
LIME-SULFUR		9.95			
LIMONENE		53.98			
MANCOZEB		33.60	1	2.20	A
MCPA, 2-ETHYL HEXYL ESTER		< 0.01			
MCPP-P, DIMETHYLAMINE SALT		2.14	3	6.60	A
		0.58			
Total Pounds On This Chemical	2.72				
MECOPROP-P		2.87	7	15.40	A
		0.07			
Total Pounds On This Chemical	2.93				
S-METOLACHLOR		0.57			
MINERAL OIL		32.48			
MSMA		50.17	12	26.40	A
		3.58			
Total Pounds On This Chemical	53.75				
MYCLOBUTANIL		3.53	2	4.40	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		10.10			
		0.09	1	1.00	A
Total Pounds On This Chemical	10.19				
OLEIC ACID, ETHYL ESTER		15.02			

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ORYZALIN		7.00			
OXYFLUORFEN		0.10	1	1.00	A
PENDIMETHALIN		87.75			
PERMETHRIN		< 0.01			
PETROLEUM DISTILLATES, REFINED		0.05			
PHENOTHRIN		< 0.01			
PIPERONYL BUTOXIDE		< 0.01			
POLYETHYLENE GLYCOL		4.03			
POLYOXYETHYLENE DIOLEATE		2.63			
POLYOXYETHYLENE SORBITAN MONOOLEATE		0.75			
PRALLETHRIN		< 0.01			
PRODIAMINE		9.14			
PROPICONAZOLE		3.25	3	6.60	A
		0.03			
Total Pounds On This Chemical	3.28				
QUINCLORAC		0.02			
SIMAZINE		103.33			
STRYCHNINE		< 0.01			
SULFENTRAZONE		0.04			
SULFOMETURON-METHYL		14.53			
TALL OIL		0.21			
TETRAMETHRIN		< 0.01			
TRICLOPYR, BUTOXYETHYL ESTER		11.71			
TRICLOPYR, TRIETHYLAMINE SALT		627.80			
TRIFLURALIN		1.90			
TRINEXAPAC-ETHYL		0.90	6	13.20	A
		0.10			
Total Pounds On This Chemical	1.00				
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		7.20			
		0.09	1	1.00	A
Total Pounds On This Chemical	7.29				
ZINC PHOSPHIDE		< 0.01			
Site Total		17,274.71	55		
N-OUTDR TRANSPLANTS					
GLYPHOSATE, ISOPROPYLAMINE SALT		17.06	10	60.00	A
METALDEHYDE		2.00	5	30.00	A
Site Total		19.06	15		
OAT					
GLYPHOSATE, ISOPROPYLAMINE SALT		0.31	1	0.25	A
Site Total		0.31	1		
OAT (FORAGE - FODDER)					
CARFENTRAZONE-ETHYL		0.85	3	54.00	A
DIETHYLENE GLYCOL		2.05	7	243.00	A
DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID		9.45	2	50.00	A
DIMETHYLPOLYSILOXANE		0.05	7	243.00	A
FATTY ACIDS, MIXED		3.65	7	243.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT		49.01	6	201.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		5.34	7	243.00	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		5.34	7	243.00	A
Site Total		75.75	18		

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OLIVE				
SPINOSAD	< 0.01	2	6.00	A
Site Total	< 0.01	2		
PASTURELAND				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	2.32	3	24.50	A
GLYPHOSATE, ISOPROPYLAMINE SALT	23.16	2	6.00	A
GLYPHOSATE, POTASSIUM SALT	96.54	1	250.00	A
Site Total	122.02	6		
PEACH				
ABAMECTIN	0.02	1	1.00	A
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	4.86	6	9.00	A
COPPER HYDROXIDE	1.61	1	1.50	A
COPPER OXIDE (OUS)	30.88	3	3.80	A
COPPER OXYCHLORIDE	1.79	1	1.50	A
LIME-SULFUR	61.36	2	2.00	A
OXYFLUORFEN	1.03	1	1.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX	15.12	4	4.00	A
PARAQUAT DICHLORIDE	1.03	1	1.00	A
SPINETORAM	0.09	1	1.00	A
SULFUR	16.00	1	1.00	A
ZIRAM	9.12	1	1.00	A
Site Total	142.90	22		
PEAR				
ABAMECTIN	25.27	63	1,131.50	A
ACETAMIPRID	2.10	1	20.00	A
ALPHA-PINENE BETA-PINENE COPOLYMER	10.55	5	63.00	A
ALKYL (C8,C10) POLYGLUCOSIDE	70.01	49	446.34	A
AMINO ETHOXY VINYL GLYCINE HYDROCHLORIDE	17.51	13	169.00	A
AMMONIUM NITRATE	33.34	49	446.34	A
AMMONIUM SULFATE	66.68	49	446.34	A
AZADIRACHTIN	1.79	10	93.00	A
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	167.40	15	158.00	A
N6-BENZYL ADENINE	3.83	5	55.00	A
BIFENAZATE	276.57	39	820.00	A
N,N-BIS-(2-OMEGA-HYDROXYPOLY(OXYETHYLENE)ETHYL) ALKYLAMINE, ALKYL DERIVED FROM TALLOW FATTY ACIDS	0.45	5	63.00	A
CALCIUM CHLORIDE	7.79	8	109.00	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.14	3	51.00	A
CHLORANTRANILIPROLE	51.78	32	617.50	A
CHLORPYRIFOS	42.28	2	45.00	A
CITRIC ACID	21.63	8	109.00	A
CODLING MOTH GRANULOSIS VIRUS	0.02	19	227.00	A
COPPER HYDROXIDE	434.31	44	483.00	A
COPPER OXYCHLORIDE	117.38	36	334.00	A
CORN PRODUCT, HYDROLYZED	3.12	2	2.00	A
2,4-D, DIMETHYLAMINE SALT	657.08	33	495.70	A
DIAZINON	608.75	23	480.00	A
DIFLUBENZURON	77.85	24	520.50	A
DIMETHYLPOLYSILOXANE	177.30	95	1,177.49	A

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DIPHACINONE	< 0.01	4	3.50	A
DIURON	838.47	27	371.64	A
E,E-8,10-DODECADIEN-1-OL	75.49	20	417.00	A
Z-8-DODECENOL	0.61	123	2,551.50	A
E-8-DODECENYL ACETATE	3.31	123	2,551.50	A
Z-8-DODECENYL ACETATE	49.24	123	2,551.50	A
DODINE	2,995.36	97	2,551.50	A
ESFENVALERATE	19.43	40	907.25	A
ETOXAZOLE	3.60	3	35.00	A
FENPYROXIMATE	4.70	3	39.00	A
FLUMIOXAZIN	40.70	14	118.94	A
GLYPHOSATE, ISOPROPYLAMINE SALT	1,571.56	99	1,409.24	A
GLYPHOSATE, POTASSIUM SALT	139.99	8	114.80	A
HEPTAMETHYLTRISILOXANE-1,3-PROPANEDIOL ETHER, ETHOXYLATED PROPOXYLATED	0.14	1	15.20	A
HYDROTREATED PARAFFINIC SOLVENT	21.15	26	467.00	A
INDAZIFLAM	0.98	1	15.20	A
ISOPROPYL ALCOHOL	19.51	33	457.15	A
KAOLIN	1,947.50	8	147.00	A
LAMBDA-CYHALOTHRIN	0.49	2	25.00	A
LAURYL ALCOHOL	1.55	8	79.00	A
LIME-SULFUR	66,955.93	123	2,848.00	A
MALATHION	5.73	2	2.00	A
MANCOZEB	6,444.75	102	2,503.75	A
METHOXYFENOZIDE	343.77	90	1,497.50	A
METHYLATED SOYBEAN OIL	24.22	1	15.20	A
MINERAL OIL	159,077.84	249	4,749.00	A
MYRISTYL ALCOHOL	0.32	8	79.00	A
NAA, AMMONIUM SALT	171.71	99	1,992.75	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	63.46	26	467.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	297.90	63	990.35	A
ORYZALIN	367.35	9	88.30	A
OXYFLUORFEN	155.11	16	224.80	A
OXYTETRACYCLINE, CALCIUM COMPLEX	2,284.25	656	14,825.50	A
PARAQUAT DICHLORIDE	3.08	1	3.00	A
PENDIMETHALIN	375.83	14	132.30	A
PETROLEUM OIL, UNCLASSIFIED	13,811.48	57	1,173.50	A
POLYETHYLENE GLYCOL	123.19	33	457.15	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	36.19	6	74.00	A
POLYOXYETHYLENE POLYOXYPROPYLENE	1.35	2	41.00	A
PYRAFLUFEN-ETHYL	0.06	1	20.00	A
PYRETHRINS	3.44	5	63.00	A
PYRIPROXYFEN	2.80	3	32.00	A
QUILLAJA	0.29	3	51.00	A
SAFLUFENACIL	0.67	1	15.20	A
SETHOXYDIM	42.02	19	215.10	A
SIMAZINE	409.50	17	153.74	A
SPINETORAM	46.20	27	522.75	A
SPINOSAD	7.89	7	79.00	A
STREPTOMYCIN SULFATE	522.94	544	12,823.00	A
STRYCHNINE	0.18	2	35.00	A
SULFUR	45,764.37	226	5,104.50	A
TALL OIL	9.76	26	467.00	A
TALL OIL FATTY ACIDS	0.86	6	78.20	A
TRIFLUMIZOLE	545.61	73	1,718.25	A

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ZINC PHOSPHIDE	3.72	3	116.00	A
ZIRAM	11,358.58	138	2,997.00	A
Site Total	319,871.04	3,397		
PUBLIC HEALTH				
BACILLUS SPHAERICUS, SEROTYPE H-5A5B, STRAIN 2362	352.82			
BACILLUS THURINGIENSIS (BERLINER), SUBSP. ISRAELENSIS, SEROTYPE H-14	587.01			
BACILLUS THURINGIENSIS, SUBSP. ISRAELENSIS, STRAIN AM 65-52	8.03			
ALPHA-ISOOCTADECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	26.65			
METHOPRENE	0.04			
S-METHOPRENE	16.50			
PERMETHRIN	70.56			
PHENOTHRIN	3.73			
PIPERONYL BUTOXIDE	275.46			
PIPERONYL BUTOXIDE, OTHER RELATED	15.94			
PRALLETHRIN	0.75			
PYRETHRINS	14.66			
SILICA AEROGEL	0.05			
Site Total	1,372.20			
RANGELAND				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	30.85	1	150.00	A
DIPHACINONE	< 0.01	14	297.25	A
GLYPHOSATE, ISOPROPYLAMINE SALT	9.84	2	1.50	A
OXYFLUORFEN	0.09	1	0.75	A
Site Total	40.79	18		
REGULATORY PEST CONTROL				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	0.48			
CHLORSULFURON	10.97			
CLETHODIM	19.37			
CLOPYRALID, MONOETHANOLAMINE SALT	24.69			
COPPER ETHYLENEDIAMINE COMPLEX	819.22			
FLURIDONE	1,264.71			
GLYPHOSATE, ISOPROPYLAMINE SALT	43.06			
IMAZAPYR, ISOPROPYLAMINE SALT	0.99			
IMIDACLOPRID	< 0.01			
SULFOMETURON-METHYL	2.34			
Site Total	2,185.84			
RICE, WILD				
GLYPHOSATE, ISOPROPYLAMINE SALT	154.37	1	80.00	A
Site Total	154.37	1		
RIGHTS OF WAY				
ALKYL (C8,C10) POLYGLUCOSIDE	57.30			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	23.84			
AMMONIUM NITRATE	27.29			
AMMONIUM SULFATE	54.57			
BENZOIC ACID	2.95			
BIFENTHRIN	0.16			
BORAX	973.09			

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CHLORSULFURON		0.39			
COPPER HYDROXIDE		56.85			
COPPER 8-QUINOLINOLEATE		1.20			
DIMETHYL ALKYL TERTIARY AMINES		3.21			
DIMETHYLPOLYSILOXANE		0.41			
DIPHACINONE		< 0.01			
		< 0.01	2	2.50	A
Total Pounds On This Chemical	< 0.01				
DIURON		343.61			
FLUMIOXAZIN		0.38			
GLYPHOSATE, DIMETHYLAMINE SALT		0.70			
GLYPHOSATE, ISOPROPYLAMINE SALT		385.50			
		7.91	3	3.00	A
Total Pounds On This Chemical	393.41				
GLYPHOSATE, POTASSIUM SALT		285.67			
		6.90	4	8.00	A
Total Pounds On This Chemical	292.57				
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE		1.31			
IMAZAPYR, ISOPROPYLAMINE SALT		< 0.01			
KEROSENE		5.70			
METAM-SODIUM		345.86			
METHYLATED SOYBEAN OIL		108.95			
OLEIC ACID, METHYL ESTER		24.97			
OXYFLUORFEN		1.10	2	11.75	A
PENDIMETHALIN		4.66			
PRODIAMINE		2.93			
PYRAFLUFEN-ETHYL		0.01			
RIMSULFURON		7.81			
SOYBEAN OIL		127.01			
SULFENTRAZONE		1.12			
SULFOMETURON-METHYL		0.19			
TEBUCONAZOLE		0.80			
TRICLOPYR, BUTOXYETHYL ESTER		5.05			
TRICLOPYR, TRIETHYLAMINE SALT		2.98			
Site Total		2,872.39	11		
SOIL FUMIGATION/PREPLANT					
1,3-DICHLOROPROPENE		3,372.87	2	10.10	A
Site Total		3,372.87	2		
STONE FRUIT					
DIPHACINONE		< 0.01	1	0.25	A
Site Total		< 0.01	1		
STRAWBERRY					
ABAMECTIN		0.15	2	6.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT		3.62	1	3.00	A
Site Total		3.77	3		
STRUCTURAL PEST CONTROL					
ABAMECTIN		< 0.01			
ACEPHATE		0.15			
ACETAMIPRID		0.05			
ALKYL (C8,C10) POLYGLUCOSIDE		32.72			

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D-TRANS ALLETHRIN	0.19			
AMMONIUM NITRATE	15.58			
AMMONIUM SULFATE	31.16			
BIFENTHRIN	113.70			
BORAX	1.36			
BORIC ACID	5.39			
BRODIFACOUM	< 0.01			
BROMADIOLONE	0.03			
BROMETHALIN	< 0.01			
CARBARYL	0.02			
CHLORFENAPYR	1.94			
CHLORSULFURON	1.28			
CHOLECALCIFEROL	0.03			
CYFLUTHRIN	11.22			
BETA-CYFLUTHRIN	19.20			
CYPERMETHRIN	680.29			
DELTAMETHRIN	4.51			
DIATOMACEOUS EARTH	0.71			
DIFETHIALONE	< 0.01			
DIMETHYLPOLYSILOXANE	0.23			
DINOTEFURAN	0.13			
DIPHACINONE	< 0.01			
DISODIUM OCTABORATE TETRAHYDRATE	999.85			
ESFENVALERATE	0.08			
ETOFENPROX	< 0.01			
FIPRONIL	48.18			
GLYPHOSATE, ISOPROPYLAMINE SALT	411.99			
HYDRAMETHYLNON	0.13			
HYDROPRENE	0.40			
IMIDACLOPRID	3.44			
INDOXACARB	3.83			
LAMBDA-CYHALOTHRIN	0.18			
LIMONENE	0.03			
MALATHION	99.60			
METALDEHYDE	0.08			
S-METHOPRENE	0.02			
MUSCALURE	< 0.01			
NAA	< 0.01			
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	4.33			
OIL OF ANISE	0.01			
PERMETHRIN	40.50			
PERMETHRIN, OTHER RELATED	< 0.01			
PETROLEUM DISTILLATES	0.19			
PHENOTHRIN	0.16			
PHENYLETHYL PROPIONATE	0.94			
PIPERONYL BUTOXIDE	10.87			
PIPERONYL BUTOXIDE, OTHER RELATED	2.54			
PROPETAMPHOS	0.17			
PROPOXUR	0.05			
PYRETHRINS	3.10			
PYRIPROXYFEN	0.40			
SILICA AEROGEL	0.49			
SIMAZINE	193.53			
SULFOMETURON-METHYL	2.55			
SULFURYL FLUORIDE	238.77			
TETRAMETHRIN	< 0.01			
THIAMETHOXAM	< 0.01			

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THYME	1.49			
TRICLOPYR, BUTOXYETHYL ESTER	21.03			
Site Total	3,008.85			
TOMATO				
GLYPHOSATE, ISOPROPYLAMINE SALT	3.86	1	0.80	A
NONANOIC ACID	10.66	1	0.25	A
NONANOIC ACID, OTHER RELATED	0.56	1	0.25	A
PYRETHRINS	0.01	2	0.24	A
SPINOSAD	0.05	3	0.41	A
Site Total	15.14	7		
TURF/SOD				
CARFENTRAZONE-ETHYL	0.03	1	1.00	A
Site Total	0.03	1		
UNCULTIVATED AG				
ALKYL (C8,C10) POLYGLUCOSIDE	0.96	1	6.00	A
AMMONIUM NITRATE	0.46	1	6.00	A
AMMONIUM SULFATE	0.92	1	6.00	A
CARFENTRAZONE-ETHYL	0.14	1	6.00	A
DIMETHYLPOLYSILOXANE	< 0.01	1	6.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	34.78	3	34.00	A
PHOSPHORIC ACID	0.10	1	6.00	A
TRICLOPYR, BUTOXYETHYL ESTER	11.85	1	10.00	A
Site Total	49.20	7		
UNCULTIVATED NON-AG				
GLYPHOSATE, ISOPROPYLAMINE SALT	10.85	2	6.00	A
Site Total	10.85	2		
UNKNOWN				
GLYPHOSATE, ISOPROPYLAMINE SALT	0.06	1	0.50	A
Site Total	0.06	1		
VERTEBRATE CONTROL				
BROMADIOLONE	< 0.01			
Site Total	< 0.01			
WALNUT				
ALKYL (C8,C10) POLYGLUCOSIDE	21.35	1	80.00	A
AMMONIUM NITRATE	10.17	1	80.00	A
AMMONIUM SULFATE	20.34	1	80.00	A
CARFENTRAZONE-ETHYL	0.44	1	15.00	A
CHLORPYRIFOS	478.13	24	701.00	A
COPPER HYDROXIDE	67.29	10	112.66	A
COPPER OXYCHLORIDE	74.59	10	112.66	A
CORN PRODUCT, HYDROLYZED	95.10	27	358.00	A
DIETHYLENE GLYCOL	5.25	24	408.00	A
DIMETHYLPOLYSILOXANE	0.58	43	898.00	A
DIPHACINONE	0.04	53	605.00	A
DIURON	2.00	2	2.00	A
ESFENVALERATE	0.06	5	2.50	A

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FATTY ACIDS, MIXED		9.35	24	408.00	A
GLUFOSINATE-AMMONIUM		0.69	1	23.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT		973.28	51	842.16	A
GLYPHOSATE, POTASSIUM SALT		88.27	6	152.00	A
ISOPROPYL ALCOHOL		6.45	18	410.00	A
MALATHION		279.32	21	400.00	A
METCONAZOLE		0.22	3	4.00	A
MINERAL OIL		1,147.75	2	60.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		88.34	42	818.00	A
ORYZALIN		35.21	4	93.00	A
OXYFLUORFEN		143.73	51	1,128.66	A
PARAQUAT DICHLORIDE		1.67	5	130.00	A
POLYETHYLENE GLYCOL		40.72	18	410.00	A
SOYBEAN OIL		1.35	3	0.99	A
SPINETORAM		1.22	1	23.00	A
SPINOSAD		4.21	47	735.50	A
SPIROTETRAMAT		1.81	1	30.00	A
SUCROSE OCTANOATE		0.34	2	1.00	A
SULFUR		1.60	2	0.30	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		13.68	24	408.00	A
Site Total		3,614.54	365		
WATER AREA					
COPPER SULFATE (PENTAHYDRATE)		297.00	12	12.00	A
		173.25	7	7.00	U
Total Pounds On This Chemical	470.25				
ENDOTHALL, DIPOTASSIUM SALT		423.05		20.00	A
SODIUM CARBONATE PEROXYHYDRATE		42.50	1	1.00	A
TRICLOPYR, TRIETHYLAMINE SALT		2.11	1	0.19	A
Site Total		937.91	21		
Lake County Total		562,738.70	7,351		

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ALFALFA				
DIETHYLENE GLYCOL	0.13	1	8.00	A
DIMETHYLPOLYSILOXANE	< 0.01	1	8.00	A
FATTY ACIDS, MIXED	0.23	1	8.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	13.51	3	20.50	A
ISOPROPYLAMINE DODECYLBENZENE SULFONATE	0.08	2	12.50	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	0.34	1	8.00	A
OXYFLUORFEN	1.82	3	20.50	A
PETROLEUM OIL, PARAFFIN BASED	12.92	2	12.50	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	0.32	2	12.50	A
POLYOXYETHYLENE SORBITAN TRIOLEATE	2.09	2	12.50	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	0.34	1	8.00	A
Site Total	31.78	9		
APPLE				
ABAMECTIN	0.06	1	1.00	A
N6-BENZYL ADENINE	0.12	1	1.00	A
CARBARYL	0.25	1	1.00	A
COPPER OXIDE (OUS)	0.03	1	0.50	A
Z-8-DODECENOL	< 0.01	1	1.00	A
E-8-DODECENYL ACETATE	0.01	1	1.00	A
Z-8-DODECENYL ACETATE	0.21	1	1.00	A
ESFENVALERATE	0.07	1	1.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	5.73	2	2.00	A
METHOXYFENOZIDE	0.28	1	1.00	A
MINERAL OIL	18.47	1	1.00	A
OXYFLUORFEN	1.03	1	1.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX	1.89	4	4.00	A
SPINETORAM	0.40	4	4.00	A
ZIRAM	18.24	2	2.00	A
Site Total	46.80	21		
CHERRY				
GLYPHOSATE, ISOPROPYLAMINE SALT	1.06	1	0.75	A
Site Total	1.06	1		
CHRISTMAS TREE				
GLYPHOSATE, ISOPROPYLAMINE SALT	6.37	1	3.30	A
OXYFLUORFEN	0.52	1	3.30	A
Site Total	6.89	2		
COMMODITY FUMIGATION				
GLYPHOSATE, ISOPROPYLAMINE SALT	4.00			
SULFUR DIOXIDE	16.00			
Site Total	20.00			
CORN, HUMAN CONSUMPTION				
GLYPHOSATE, ISOPROPYLAMINE SALT	177.53	1	1.00	A
Site Total	177.53	1		
FORAGE HAY/SILAGE				
CLOPYRALID, MONOETHANOLAMINE SALT	3.96	1	30.00	A

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DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID		30.25	1	40.00	A
Site Total		34.20	2		
FUMIGATION, OTHER					
GLYPHOSATE, ISOPROPYLAMINE SALT		11.99			
SULFUR DIOXIDE		211.50			
		16.50	2	2.00	U
Total Pounds On This Chemical	228.00				
Site Total		239.99	2		
GRAPE					
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		3.83	5	40.25	A
BOSCALID		16.47	2	46.00	A
CYPRODINIL		3.92	2	12.00	A
DIFENOCONAZOLE		1.37	2	12.00	A
ETOXAZOLE		1.76	1	13.00	A
FATTY ACIDS, MIXED		0.34	2	89.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT		0.84	2	0.75	A
GLYPHOSATE, POTASSIUM SALT		42.75	2	89.00	A
HYDROGEN PEROXIDE		29.57	2	12.00	A
IMIDACLOPRID		3.46	7	104.25	A
KRESOXIM-METHYL		0.08	2	2.00	A
LECITHIN		7.94	2	89.00	A
LIME-SULFUR		257.71	1	12.00	A
MANCOZEB		21.47	2	12.00	A
MYCLOBUTANIL		3.35	4	33.25	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		2.13	2	89.00	A
OXYFLUORFEN		15.55	2	89.00	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER		5.18	1	13.00	A
POLYOXIN D		0.04	1	1.00	A
POTASSIUM BICARBONATE		223.04	5	72.00	A
PROPIONIC ACID		7.94	2	89.00	A
PYRACLOSTROBIN		8.37	2	46.00	A
QUINOXYFEN		0.96	2	20.00	A
SULFUR		5,099.68	39	655.50	A
TETRACONAZOLE		2.53	3	89.00	A
TRIFLOXYSTROBIN		3.03	4	49.00	A
TRIFLUMIZOLE		12.24	1	50.00	A
Site Total		5,775.54	92		
GRAPE, WINE					
ABAMECTIN		10.03	15	642.89	A
ACETAMIPRID		9.30	4	84.97	A
ALPHA-ALKYLARYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		3.84	6	117.73	A
ALPHA-ALKYL (C9-C11)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		970.21	129	7,457.23	A
ALPHA-ALKYL (C10-C14)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		167.32	18	1,297.19	A
ALPHA-ALKYL (C12-C16)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		20.79	18	1,297.19	A
ALPHA-PINENE BETA-PINENE COPOLYMER		5.17	6	24.00	A
ALKYL (C8,C10) POLYGLUCOSIDE		188.79	62	1,602.60	A

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ALLYLOXYPOLYETHYLENE GLYCOL ACETATE	6.33	4	217.52	A
AMMONIUM NITRATE	94.66	72	2,244.00	A
AMMONIUM PROPIONATE	111.16	11	199.00	A
AMMONIUM SULFATE	830.49	90	2,670.66	A
AZADIRACHTIN	0.91	2	23.56	A
AZOXYSTROBIN	14.16	4	128.47	A
BACILLUS PUMILUS, STRAIN QST 2808	11.91	13	154.65	A
BIFENAZATE	266.01	29	584.50	A
N,N-BIS-(2-OMEGA-HYDROXYPOLY(OXYETHYLENE)ETHYL) ALKYLAMINE, ALKYL DERIVED FROM TALLOW FATTY ACIDS	0.22	6	24.00	A
BOSCALID	501.91	49	2,328.68	A
BUTYL ALCOHOL	6.00	4	264.00	A
CALCIUM CHLORIDE	22.97	12	458.33	A
CARBARYL	12.01	1	6.07	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.37	8	129.30	A
CARFENTRAZONE-ETHYL	13.10	54	1,386.02	A
CHLOROPHACINONE	0.01	2	53.74	A
CITRIC ACID	159.00	41	1,954.52	A
COPPER	15.00	1	5.00	A
COPPER HYDROXIDE	339.12	24	760.78	A
COPPER OXIDE (OUS)	127.49	8	136.49	A
COPPER OXYCHLORIDE	369.65	10	282.68	A
COPPER SULFATE (BASIC)	113.76	1	54.00	A
COPPER SULFATE (PENTAHYDRATE)	117.58	8	255.00	A
CYPRODINIL	265.93	13	610.36	A
2,4-D, DIMETHYLAMINE SALT	217.26	20	428.32	A
DIALKYL PHTHALATE	5.69	6	117.73	A
DIETHYLENE GLYCOL	0.56	2	11.00	A
DIFENOCONAZOLE	6.94	5	60.00	A
3,7-DIMETHYL-6-OCTEN-1-OL	1.26	3	76.00	A
DIMETHYLPOLYSILOXANE	18.19	169	4,246.07	A
DINOTEFURAN	6.83	4	292.61	A
DIPHACINONE	0.08	5	257.29	A
DIURON	63.12	2	27.90	A
ETOXAZOLE	77.15	12	583.59	A
FARNESOL	0.50	3	76.00	A
FATTY ACIDS, MIXED	14.36	27	376.64	A
FENARIMOL	71.62	26	1,740.98	A
FENHEXAMID	266.91	19	538.60	A
FENPROPATHRIN	24.54	3	125.50	A
FENPYROXIMATE	14.58	6	119.12	A
FLUMIOXAZIN	385.70	71	1,767.53	A
GARLIC	5.50	7	102.30	A
GERANIOL	1.26	3	76.00	A
GLUFOSINATE-AMMONIUM	821.47	54	1,525.83	A
GLYPHOSATE, ISOPROPYLAMINE SALT	4,985.86	209	4,448.24	A
GLYPHOSATE, POTASSIUM SALT	2,701.95	77	1,461.98	A
HEPTAMETHYLTRISILOXANE-1,3-PROPANEDIOL ETHER, ETHOXYLATED PROPOXYLATED	0.02	1	3.50	A
HYDROGEN PEROXIDE	22.49	2	11.00	A
HYDROTREATED PARAFFINIC SOLVENT	43.38	24	1,881.60	A
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE	22.49	5	232.52	A
IMIDACLOPRID	150.15	101	3,053.48	A
ISOPROPYL ALCOHOL	68.36	101	2,368.76	A
KAOLIN	186.49	7	58.90	A

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KRESOXIM-METHYL	387.48	35	2,048.26	A
LAVANDULYL SENECIOATE	18.16	1	1.00	A
LECITHIN	29.28	12	266.07	A
LIME-SULFUR	1,665.48	18	250.50	A
MALATHION	12.27	1	12.00	A
MANCOZEB	45.00	4	30.00	A
METHOXYFENOZIDE	2.26	1	12.00	A
METHYLATED SOYBEAN OIL	4.21	1	3.50	A
MINERAL OIL	4,435.78	54	734.80	A
MYCLOBUTANIL	185.90	41	1,666.00	A
MYROTHECIUM VERRUCARIA, DRIED FERMENTATION SOLIDS & SOLUBLES, STRAIN AARC-0255	1,108.44	4	123.05	A
NEROLIDOL	1.26	3	76.00	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	152.92	31	2,216.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	1,089.28	180	6,496.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE), PHOSPHATE ESTER	80.59	11	199.00	A
NONYL PHENOXY POLYOXYETHYLENE ETHANOL-IODINE COMPLEX	0.02	1	1.00	A
ALPHA-OCTYLPHENYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	18.20	1	42.00	A
OLEIC ACID, METHYL ESTER	1.82	1	15.00	A
ORYZALIN	857.09	16	334.18	A
OXYFLUORFEN	645.55	52	1,045.38	A
PARAQUAT DICHLORIDE	8.33	3	13.25	A
PENDIMETHALIN	799.48	14	358.34	A
PETROLEUM DISTILLATES	16.16	1	43.00	A
PETROLEUM DISTILLATES, REFINED	32,687.86	229	6,856.18	A
PHOSPHORIC ACID	59.51	59	1,423.42	A
POLYETHER MODIFIED POLYSILOXANE	243.09	48	1,083.95	A
POLYETHYLENE GLYCOL	393.68	94	2,209.03	A
POLYETHYLENE GLYCOL DIACETATE	0.58	4	217.52	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	275.56	28	662.44	A
POLYOXIN D	0.88	1	20.00	A
POTASH SOAP	24.98	2	7.80	A
POTASSIUM BICARBONATE	1,610.10	40	558.46	A
PROPIONIC ACID	29.28	12	266.07	A
PROPYLENE GLYCOL, METHYL ETHER	5.54	6	117.73	A
PYRACLOSTROBIN	254.94	49	2,328.68	A
PYRAFLUFEN-ETHYL	< 0.01	3	10.00	A
PYRETHRINS	8.90	12	175.33	A
PYRIMETHANIL	26.33	1	96.48	A
QST 713 STRAIN OF DRIED BACILLUS SUBTILIS	140.33	20	362.95	A
QUILLAJA	0.76	8	129.30	A
QUINOXYFEN	177.18	64	2,398.76	A
RIMSULFURON	6.69	9	107.00	A
SETHOXYDIM	0.93	1	3.50	A
SIMAZINE	25.98	4	35.00	A
SODIUM POLYACRYLATE	2.78	11	199.00	A
SPIROTETRAMAT	0.23	1	15.00	A
STRYCHNINE	1.22	14	204.97	A
SULFUR	169,374.44	943	23,448.14	A
TALL OIL	20.02	24	1,881.60	A
TALL OIL FATTY ACIDS	0.20	7	27.50	A
TEBUCONAZOLE	119.95	32	1,127.06	A
TETRACONAZOLE	67.58	64	1,806.43	A

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TRIFLOXYSTROBIN		203.04	83	2,932.94	A
TRIFLUMIZOLE		586.70	44	2,340.87	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		1.45	2	11.00	A
YUCCA SCHIDIGERA		16.50	7	102.30	A
Site Total		232,892.05	3,221		
LANDSCAPE MAINTENANCE					
ABAMECTIN		< 0.01			
ACEPHATE		0.32			
D-TRANS ALLETHRIN		< 0.01			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT		19.79			
BIFENTHRIN		< 0.01			
BROMACIL		42.40			
BROMADIOLONE		< 0.01			
BROMETHALIN		< 0.01			
CARFENTRAZONE-ETHYL		0.87	10	22.00	A
		0.06			
Total Pounds On This Chemical	0.93				
CHLOROTHALONIL		32.50			
CHLORSULFURON		30.73			
CLOPYRALID, MONOETHANOLAMINE SALT		52.33			
COCONUT DIETHANOLAMIDE		0.20			
COPPER ETHANOLAMINE COMPLEXES, MIXED		159.62			
COPPER ETHYLENEDIAMINE COMPLEX		919.14			
COPPER HYDROXIDE		23.68			
COPPER TRIETHANOLAMINE COMPLEX		452.94			
CYPERMETHRIN		283.19			
2,4-D, DIMETHYLAMINE SALT		0.14			
2,4-D, 2-ETHYLHEXYL ESTER		3.20	7	15.40	A
		1.16			
Total Pounds On This Chemical	4.35				
DELTAMETHRIN		< 0.01			
DICAMBA		5.04			
		0.20	7	15.40	A
Total Pounds On This Chemical	5.25				
DICAMBA, DIMETHYLAMINE SALT		0.02			
DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID		7.99			
DIKEGULAC SODIUM		0.93			
DIMETHYLPOLYSILOXANE		0.25			
DIPHACINONE		0.01			
DIQUAT DIBROMIDE		279.29			
DITHIOPYR		1.29			
DIURON		2,987.20			
DODECYLBENZENE SULFONIC ACID		0.87			
EDTA, TETRASODIUM SALT		0.05			
ENDOTHALL, DIPOTASSIUM SALT		1,905.94			
ENDOTHALL, MONO [N,N-DIMETHYL ALKYLAMINE] SALT		188.46			
ETHEPHON		0.21			
FATTY ACIDS, C16-C18 AND C18-UNSATURATED, METHYL ESTERS		1.62			
FLUAZIFOP-P-BUTYL		0.99			
FLUMIOXAZIN		47.50			
FLUTOLANIL		35.00	2	4.40	A
GLYPHOSATE, ISOPROPYLAMINE SALT		4,936.94			
		3.87	13	28.60	A
Total Pounds On This Chemical	4,940.81				

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GLYPHOSATE, MONOAMMONIUM SALT		9.32			
GLYPHOSATE, POTASSIUM SALT		240.56			
HYDRAMETHYLNON		< 0.01			
HYDROGEN PEROXIDE		365.99			
IMIDACLOPRID		2.81			
IPRODIONE		6.25	1	2.20	A
		2.04			
Total Pounds On This Chemical	8.29				
ISOPROPYL ALCOHOL		5.39			
LIMONENE		8.10			
MECOPROP-P		0.81	7	15.40	A
		0.29			
Total Pounds On This Chemical	1.10				
MINERAL OIL		69.28			
MSMA		3.25	11	24.20	A
MYCLOBUTANIL		3.14	2	4.40	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		59.32			
ORYZALIN		33.44			
PENDIMETHALIN		131.95			
PHENOTHRIN		< 0.01			
PHOSPHORIC ACID		0.17			
POLYETHYLENE GLYCOL		32.36			
PRODIAMINE		22.84			
PROPICONAZOLE		2.27	2	4.40	A
		2.02			
Total Pounds On This Chemical	4.29				
PYRACLOSTROBIN		1.13	1	2.20	A
QUINCLORAC		0.06			
RIMSULFURON		0.70			
SILICONE DEFOAMER		0.02			
SIMAZINE		68.11			
SODIUM CARBONATE PEROXYHYDRATE		9,435.00			
SODIUM XYLENE SULFONATE		0.27			
STRYCHNINE		0.08			
SULFENTRAZONE		3.02			
SULFOMETURON-METHYL		4.28			
ALPHA-[PARA-(1,1,3,3-TETRAMETHYLBUTYL)PHENYL]- OMEGA-HYDROXYPOLY(OXYETHYLENE)		1.02			
TETRAPOTASSIUM PYROPHOSPHATE		0.13			
THIOPHANATE-METHYL		16.10			
TRICLOPYR, BUTOXYETHYL ESTER		23.88			
TRICLOPYR, TRIETHYLAMINE SALT		1,386.56			
TRIETHANOLAMINE		0.34			
TRINEXAPAC-ETHYL		1.01	8	17.60	A
		0.36			
Total Pounds On This Chemical	1.37				
TRITICONAZOLE		1.29	5	11.00	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)		1.08			
ZINC PHOSPHIDE		0.02			
Site Total		24,372.01	55		
N-OUTDR TRANSPLANTS					
GLYPHOSATE, ISOPROPYLAMINE SALT		9.74	11	11.00	A
METALDEHYDE		0.95	2	2.00	A
Site Total		10.68	13		

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OAT (FORAGE - FODDER)				
CARFENTRAZONE-ETHYL	0.73	2	50.00	A
DIGLYCOLAMINE SALT OF 3,6-DICHLORO-O-ANISIC ACID	9.45	2	50.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	3.09	4	4.00	A
ISOPROPYLAMINE DODECYLBENZENE SULFONATE	0.01	4	4.00	A
OXYFLUORFEN	0.75	4	4.00	A
PETROLEUM OIL, PARAFFIN BASED	2.43	4	4.00	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	0.06	4	4.00	A
POLYOXYETHYLENE SORBITAN TRIOLEATE	0.39	4	4.00	A
Site Total	16.92	16		
PASTURELAND				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	0.51	3	16.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	28.94	1	15.00	A
GLYPHOSATE, POTASSIUM SALT	5.52	1	1.00	A
Site Total	34.97	5		
PEACH				
BACILLUS THURINGIENSIS, SUBSP. KURSTAKI, STRAIN ABTS-351, FERMENTATION SOLIDS AND SOLUBLES	6.48	6	9.00	A
COPPER HYDROXIDE	5.35	2	2.00	A
COPPER OXIDE (OUS)	32.00	4	4.75	A
COPPER OXYCHLORIDE	1.67	1	1.00	A
ESFENVALERATE	0.07	1	1.50	A
GLYPHOSATE, ISOPROPYLAMINE SALT	1.09	1	1.00	A
MINERAL OIL	221.64	1	1.00	A
OXYFLUORFEN	0.77	1	1.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX	0.63	2	2.00	A
SPINOSAD	0.07	1	1.50	A
SULFUR	8.00	1	1.50	A
ZIRAM	18.24	2	2.00	A
Site Total	296.01	22		
PEAR				
ABAMECTIN	36.77	101	1,909.00	A
ACETAMIPRID	11.15	7	82.50	A
ALKYL (C8,C10) POLYGLUCOSIDE	27.35	15	102.34	A
AMINO ETHOXY VINYL GLYCINE HYDROCHLORIDE	6.91	5	63.00	A
AMMONIUM NITRATE	13.02	15	102.34	A
AMMONIUM SULFATE	26.05	15	102.34	A
AZINPHOS-METHYL	25.50	1	34.00	A
BACILLUS THURINGIENSIS (BERLINER), SUBSP. KURSTAKI, STRAIN SA-11	88.40	4	72.00	A
N6-BENZYL ADENINE	1.54	9	57.00	A
BIFENAZATE	65.10	6	157.00	A
CARBO METHOXY ETHER CELLULOSE, SODIUM SALT	0.03	1	8.00	A
CHLORANTRANILIPROLE	20.54	15	238.50	A
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	60.18	5	63.00	A
CODLING MOTH GRANULOSIS VIRUS	< 0.01	5	63.00	A
COPPER HYDROXIDE	476.49	35	583.00	A
COPPER OXIDE (OUS)	19.22	8	108.00	A
COPPER OXYCHLORIDE	40.35	19	231.00	A
CYPRODINIL	47.13	9	284.00	A
2,4-D, DIMETHYLAMINE SALT	538.95	35	417.10	A

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DIAZINON	1,078.75	54	1,290.00	A
DIFENOCONAZOLE	7.43	3	114.00	A
DIFLUBENZURON	36.45	9	154.00	A
DIMETHYLPOLYSILOXANE	41.41	42	474.34	A
DIMETHYL SILICONE FLUID EMULSION	0.16	1	12.50	A
DIURON	306.35	26	226.80	A
E,E-8,10-DODECADIEN-1-OL	105.35	64	1,273.00	A
Z-8-DODECENOL	0.53	94	2,196.50	A
E-8-DODECENYL ACETATE	2.89	94	2,196.50	A
Z-8-DODECENYL ACETATE	43.07	94	2,196.50	A
DODINE	1,290.34	61	1,124.00	A
ESFENVALERATE	28.40	58	1,050.00	A
ETOXAZOLE	0.18	1	2.00	A
FATTY ACIDS, MIXED	48.74	47	704.20	A
FENARIMOL	80.16	31	900.50	A
FENPYROXIMATE	1.51	1	12.50	A
FLUMIOXAZIN	42.65	16	111.54	A
FREE FATTY ACIDS AND/OR AMINE SALTS	5.66	7	100.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	1,657.01	117	1,497.86	A
GLYPHOSATE, POTASSIUM SALT	273.01	12	257.50	A
HEPTAMETHYLTRISILOXANE-1,3-PROPANEDIOL ETHER, ETHOXYLATED PROPOXYLATED	0.70	10	99.30	A
HYDROTREATED PARAFFINIC SOLVENT	106.46	60	1,560.00	A
INDAZIFLAM	0.42	1	6.00	A
ISOPROPYL ALCOHOL	15.06	21	174.00	A
KAOLIN	1,923.75	6	105.00	A
KEROSENE	12,305.25	9	159.00	A
KRESOXIM-METHYL	2.50	1	12.50	A
LAURYL ALCOHOL	9.36	20	230.50	A
LIME-SULFUR	41,795.39	77	1,588.00	A
MANCOZEB	4,500.00	45	1,251.00	A
METHOXYFENOZIDE	197.70	38	810.50	A
METHYLATED SOYBEAN OIL	118.67	10	99.30	A
MINERAL OIL	176,564.20	279	5,276.00	A
MYRISTYL ALCOHOL	1.90	20	230.50	A
NAA, AMMONIUM SALT	153.85	82	1,760.00	A
4-NONYLPHENOL, FORMALDEHYDE RESIN, PROPOXYLATED	319.38	60	1,560.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	778.86	139	2,545.50	A
OXYFLUORFEN	136.12	15	273.00	A
OXYTETRACYCLINE, CALCIUM COMPLEX	2,468.20	761	17,169.50	A
PENDIMETHALIN	11.07	1	20.00	A
PETROLEUM DISTILLATES, REFINED	995.51	1	14.00	A
PETROLEUM OIL, UNCLASSIFIED	26,448.41	94	2,203.50	A
PHOSMET	5.60	1	2.00	A
POLYETHER MODIFIED POLYSILOXANE	5.83	1	12.00	A
POLYETHYLENE GLYCOL	95.12	21	174.00	A
POLYETHYLENE GLYCOL MONO(3-(TETRAMETHYL-1-(TRIMETHYLSILOXY)DISILOXANYL)PROPYL)ETHER	37.36	6	68.75	A
PSEUDOMONAS FLUORESCENS, STRAIN A506	23.99	8	102.00	A
PYRETHRINS	6.90	10	126.00	A
QUILLAJA	0.06	1	8.00	A
SAFLUFENACIL	5.25	12	134.50	A
SETHOXYDIM	32.57	14	173.10	A
SIMAZINE	41.40	4	38.50	A
SPINETORAM	115.40	63	1,299.50	A
SPINOSAD	25.10	22	275.00	A

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STREPTOMYCIN SULFATE	550.97	580	13,249.50	A
STRYCHNINE	0.45	1	25.00	A
SULFUR	17,483.38	103	1,956.50	A
TALL OIL	49.14	60	1,560.00	A
TALL OIL FATTY ACIDS	3.49	10	99.30	A
TRIFLUMIZOLE	764.39	94	1,968.25	A
ZIRAM	23,611.68	300	6,775.25	A
Site Total	318,265.57	3,589		
PUBLIC HEALTH				
BACILLUS SPHAERICUS, SEROTYPE H-5A5B, STRAIN 2362	265.68			
BACILLUS THURINGIENSIS (BERLINER), SUBSP. ISRAELENSIS, SEROTYPE H-14	530.85			
BACILLUS THURINGIENSIS, SUBSP. ISRAELENSIS, STRAIN AM 65-52	9.41			
BENZOIC ACID	< 0.01			
CHLORSULFURON	< 0.01			
DIMETHYL ALKYL TERTIARY AMINES	< 0.01			
ETOFENPROX	4.13			
FLUMIOXAZIN	< 0.01			
GLYPHOSATE, ISOPROPYLAMINE SALT	0.01			
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE	< 0.01			
ALPHA-ISOOCTADECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	10.96			
KEROSENE	< 0.01			
METHOPRENE	14.10			
S-METHOPRENE	0.02			
METHYLATED SOYBEAN OIL	0.01			
OLEIC ACID, METHYL ESTER	< 0.01			
PERMETHRIN	25,156.95			
PETROLEUM DISTILLATES	12.02			
PIPERONYL BUTOXIDE	75,524.32			
PIPERONYL BUTOXIDE, OTHER RELATED	13.37			
PYRETHRINS	12.05			
SULFOMETURON-METHYL	< 0.01			
Site Total	101,553.88			
RANGELAND				
2,4-D, DIMETHYLAMINE SALT	6.77	1	4.00	A
DIPHACINONE	< 0.01	4	14.00	A
GLYPHOSATE, POTASSIUM SALT	2.76	1	12.00	A
Site Total	9.53	6		
REGULATORY PEST CONTROL				
AMINOPYRALID, TRIISOPROPANOLAMINE SALT	3.34			
CHLORSULFURON	4.45			
CLETHODIM	11.06			
COPPER ETHYLENEDIAMINE COMPLEX	327.16			
FLUAZIFOP-P-BUTYL	6.07			
FLURIDONE	1,432.43			
GLYPHOSATE, ISOPROPYLAMINE SALT	21.01			
IMAZAPYR, ISOPROPYLAMINE SALT	2.00			
Site Total	1,807.54			

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RIGHTS OF WAY					
AMINOPYRALID, TRIISOPROPANOLAMINE SALT		25.31			
BENZOIC ACID		3.90			
CHLORSULFURON		6.96			
CLOPYRALID, MONOETHANOLAMINE SALT		0.25			
DIMETHYL ALKYL TERTIARY AMINES		4.25			
DIMETHYLPOLYSILOXANE		0.06			
DIPHACINONE		< 0.01	2	3.00	A
DIURON		4.05			
FLUMIOXAZIN		1.83			
GLYPHOSATE, DIMETHYLAMINE SALT		9.73			
GLYPHOSATE, ISOPROPYLAMINE SALT		119.17			
		11.58	7	6.00	A
Total Pounds On This Chemical	130.75				
GLYPHOSATE, POTASSIUM SALT		409.28			
2-(3-HYDROXYPROPYL)-HEPTA-METHYL TRISILOXANE, ETHOXYLATED, ACETATE		0.61			
ISOPROPYL ALCOHOL		1.26			
KEROSENE		7.56			
METHYLATED SOYBEAN OIL		144.45			
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)		14.58			
OLEIC ACID, METHYL ESTER		9.02			
POLYETHYLENE GLYCOL		7.95			
PRODIAMINE		24.38			
RIMSULFURON		2.89			
SOYBEAN OIL		122.46			
SULFOMETURON-METHYL		2.86			
TRICLOPYR, BUTOXYETHYL ESTER		12.97			
TRICLOPYR, TRIETHYLAMINE SALT		168.57			
Site Total		1,115.94	9		
STRAWBERRY					
GLYPHOSATE, ISOPROPYLAMINE SALT		0.90	1	1.00	A
Site Total		0.90	1		
STRUCTURAL PEST CONTROL					
ABAMECTIN		< 0.01			
ACEPHATE		0.61			
ACETAMIPRID		0.02			
ALKYL (50%C14, 40%C12, 10%C16) DIMETHYLBENZYL AMMONIUM CHLORIDE		< 0.01			
D-TRANS ALLETHRIN		0.23			
AMINOPYRALID, TRIISOPROPANOLAMINE SALT		0.45			
BIFENTHRIN		137.48			
BORAX		1.48			
BORIC ACID		7.73			
BRODIFACOUM		< 0.01			
BROMADIOLONE		0.03			
BROMETHALIN		< 0.01			
CARBARYL		0.72			
CHLORFENAPYR		4.40			
CHLORSULFURON		1.16			
CHOLECALCIFEROL		0.03			
CLETHODIM		7.17			
CYFLUTHRIN		5.83			

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BETA-CYFLUTHRIN	10.87			
CYPERMETHRIN	771.51			
DELTAMETHRIN	7.54			
DIATOMACEOUS EARTH	1.25			
DIDECYL DIMETHYL AMMONIUM CHLORIDE	0.01			
DIFETHIALONE	< 0.01			
DINOTEFURAN	0.11			
DIPHACINONE	< 0.01			
DISODIUM OCTABORATE TETRAHYDRATE	743.22			
ESFENVALERATE	0.23			
FIPRONIL	33.53			
GLYPHOSATE, ISOPROPYLAMINE SALT	462.90			
GLYPHOSATE, POTASSIUM SALT	276.35			
HYDRAMETHYLNON	0.05			
HYDROPRENE	0.57			
IMIDACLOPRID	15.27			
INDOXACARB	1.77			
IRON PHOSPHATE	< 0.01			
ISOPROPYL ALCOHOL	6.74			
LAMBDA-CYHALOTHRIN	0.35			
LIMONENE	5.00			
MALATHION	202.10			
METALDEHYDE	0.13			
METHOMYL	< 0.01			
METHOPRENE	< 0.01			
S-METHOPRENE	0.04			
MUSCALURE	0.04			
NICOSULFURON	1.41			
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	6.61			
OIL OF ANISE	0.04			
PERMETHRIN	60.37			
PERMETHRIN, OTHER RELATED	< 0.01			
PETROLEUM DISTILLATES	0.58			
PHENOTHRIN	0.20			
PHENYLETHYL PROPIONATE	0.47			
PIPERONYL BUTOXIDE	12.61			
PIPERONYL BUTOXIDE, OTHER RELATED	2.78			
PRALLETHRIN	0.12			
PROPETAMPHOS	0.26			
PROPOXUR	0.07			
PYRETHRINS	3.55			
PYRIPROXYFEN	0.05			
SILICA AEROGEL	1.59			
SIMAZINE	60.70			
SODIUM DECYL SULFATE	0.31			
SODIUM LAUROAMPHO ACETATE	0.24			
SODIUM LAURYL SULFATE	0.16			
SULFAQUINOXALINE	< 0.01			
SULFOMETURON-METHYL	0.92			
SULFURYL FLUORIDE	13.90			
TETRAMETHRIN	< 0.01			
THIAMETHOXAM	< 0.01			
THYME	0.66			
TRICLOPYR, BUTOXYETHYL ESTER	44.58			
WARFARIN	< 0.01			
Site Total	2,919.15			

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UNCULTIVATED AG				
AMMONIUM PROPIONATE	0.22	1	5.00	A
AMMONIUM SULFATE	0.06	1	5.00	A
CITRIC ACID	0.11	1	5.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	1,730.03	25	256.00	A
GLYPHOSATE, POTASSIUM SALT	2.76	1	1.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE), PHOSPHATE ESTER	0.16	1	5.00	A
OLEIC ACID, ETHYL ESTER	249.26	18	177.00	A
OXYFLUORFEN	2.25	1	4.50	A
POLYOXYETHYLENE DIOLEATE	43.62	18	177.00	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	12.46	18	177.00	A
RIMSULFURON	0.31	1	5.00	A
SODIUM POLYACRYLATE	< 0.01	1	5.00	A
TRICLOPYR, BUTOXYETHYL ESTER	1,776.82	1	60.00	A
Site Total	3,818.07	48		
UNCULTIVATED NON-AG				
DIPHACINONE	0.01		10.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	14.71	3	11.00	A
ISOPROPYLAMINE DODECYLBENZENE SULFONATE	0.02	1	5.00	A
OXYFLUORFEN	0.94	1	5.00	A
PETROLEUM OIL, PARAFFIN BASED	3.04	1	5.00	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	0.07	1	5.00	A
POLYOXYETHYLENE SORBITAN TRIOLEATE	0.49	1	5.00	A
Site Total	19.29	5		
UNKNOWN				
GLYPHOSATE, ISOPROPYLAMINE SALT	0.63	1	0.50	A
Site Total	0.63	1		
VEGETABLE				
GLYPHOSATE, ISOPROPYLAMINE SALT	3.86	1	0.80	A
LIMONENE	0.83	1	0.02	A
PIPERONYL BUTOXIDE	0.19	2	0.40	A
PIPERONYL BUTOXIDE, OTHER RELATED	0.05	2	0.40	A
PYRETHRINS	0.04	7	0.67	A
SPINOSAD	< 0.01	4	0.24	A
Site Total	4.97	13		
VERTEBRATE CONTROL				
BROMADIOLONE	< 0.01			
Site Total	< 0.01			
WALNUT				
ALKYL (C8,C10) POLYGLUCOSIDE	18.68	1	70.00	A
AMMONIUM NITRATE	8.90	1	70.00	A
AMMONIUM SULFATE	17.79	1	70.00	A
BOSCALID	2.14	10	38.80	A
CARFENTRAZONE-ETHYL	0.88	2	30.00	A
CHLORPYRIFOS	262.91	19	430.00	A
COPPER HYDROXIDE	41.49	2	18.00	A
CORN PRODUCT, HYDROLYZED	56.38	16	265.00	A

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2,4-D, DIMETHYLAMINE SALT	2.91	1	15.00	A
DIETHYLENE GLYCOL	14.40	19	427.99	A
DIMETHYLPOLYSILOXANE	0.46	21	513.99	A
DIPHACINONE	0.01	15	96.75	A
ESFENVALERATE	0.11	7	4.00	A
FATTY ACIDS, MIXED	25.65	19	427.99	A
GLYPHOSATE, ISOPROPYLAMINE SALT	458.02	38	764.32	A
GLYPHOSATE, POTASSIUM SALT	13.19	3	17.00	A
ISOPROPYL ALCOHOL	0.10	1	16.00	A
ISOPROPYLAMINE DODECYLBENZENE SULFONATE	0.26	10	139.50	A
LIMONENE	8.14	3	57.00	A
MALATHION	178.78	10	253.00	A
ALPHA-(PARA-NONYLPHENYL)-OMEGA-HYDROXYPOLY (OXYETHYLENE)	38.74	20	443.99	A
ORYZALIN	4.51	3	39.00	A
OXYFLUORFEN	93.25	35	708.32	A
PARAQUAT DICHLORIDE	0.64	2	36.00	A
PETROLEUM OIL, PARAFFIN BASED	42.08	10	139.50	A
POLYETHYLENE GLYCOL	0.66	1	16.00	A
POLYOXYETHYLENE SORBITAN MONOOLEATE	1.03	10	139.50	A
POLYOXYETHYLENE SORBITAN TRIOLEATE	6.81	10	139.50	A
PYRACLOSTROBIN	1.09	10	38.80	A
SOYBEAN OIL	0.90	2	0.60	A
SPINOSAD	29.49	42	641.00	A
SPIROTETRAMAT	0.45	1	15.00	A
SUCROSE OCTANOATE	1.35	8	4.00	A
SULFUR	3.20	2	17.00	A
ALPHA-UNDECYL-OMEGA-HYDROXYPOLY(OXYETHYLENE)	37.53	19	427.99	A
ZINC PHOSPHIDE	< 0.01	1	1.00	A
Site Total	1,372.96	253		
WATER AREA				
ACID BLUE 9, DIAMMONIUM SALT	4.36	2	2.00	A
COPPER ETHYLENEDIAMINE COMPLEX	1,038.29		43.00	A
COPPER SULFATE (PENTAHYDRATE)	247.50	4	4.00	A
COPPER TRIETHANOLAMINE COMPLEX	1,172.01		43.00	A
2,4-D	24.50	1	0.25	A
DIQUAT DIBROMIDE	55.94		8.50	A
ENDOTHALL, DIPOTASSIUM SALT	1,455.28		43.00	A
FLURIDONE	8.10		14.00	A
GLYPHOSATE, ISOPROPYLAMINE SALT	4.16	2	2.00	A
SODIUM CARBONATE PEROXYHYDRATE	191.25	7	7.00	A
TARTRAZINE	0.44	2	2.00	A
TRICLOPYR, TRIETHYLAMINE SALT	2.11		0.50	A
Site Total	4,203.94	16		
Lake County Total	699,048.80	7,403		