

OPERATING STANDARDS

DATE: 03/11/08 SECTION: 6 - Operating & Maintaining STANDARD NO: E-OM1009
STANDARD: Line Clearance and Vegetation Management (Missouri)

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1.0 PURPOSE:

The purpose of this operating standard is to provide a uniform line clearance program. The line clearance program is to provide for safe and reliable electrical service while adhering to the recommendations of the International Society of Arborists and Utility Arborists Association.

2.0 REGULATORY / CODE REQUIREMENTS:

The National Electrical Safety Code provides a vague guidance for a line clearance program. The NESC C2-1997, Rule 218 reads, "Trees that may interfere with ungrounded supply conductors should be trimmed or removed. Note: normal tree growth, the combined movement of trees and conductors under adverse weather conditions, voltage, and sagging of conductors at elevated temperatures are among the factors to be considered in determining the extent of trimming required."

"Pruning, Trimming, Repairing, Maintaining, and Removing Trees and Cutting Brush – Safety Requirements, 2006." This document also known as ANSI Z133.1-2006, is published by the American National Standards Institute, 1819 L Street, NW., Suite 600, Washington, DC 20036.

Part 1 of the document entitled *Tree, Shrub, and Other Woody Plant Maintenance-Standard Practices, 2001*. This document, also known as ANSI A300-2001, is published by the American National Standards Institute, 1819 L Street, NW., Suite 600, Washington, DC 20036.

The North American Electric Reliability Council (NERC) made fourteen recommendations after its investigation of the August 14, 2003 East Coast Blackout.

Recommendation 4a: All transmission line trips due to vegetation shall be reported to the Regional Reliability Council and the Aquila Forester.

Recommendation 4b: Effective January 1, 2004, each transmission operator will submit an annual report of all vegetation related line trips. The annual report is due no later than March 31 for the preceding year. The first report is due by March 2005. The Forester will be responsible for the Transmission report.

Missouri 4CSR 240-23.030 *Electrical Corporation Vegetation Management Standards and Reporting Requirements*.

This rule sets forth requirements that electrical corporations shall follow in managing vegetation in proximity to an energized distribution conductor and sets reporting requirements for transmission line vegetation management in order to promote a safe, efficient and reliable supply of electric power. The requirement of this rule provides the minimum standards for the vegetation management programs of electric corporations.

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Each electrical corporation must have a vegetation management plan and keep appropriate records to ensure timely vegetation management is accomplished. These records must be made to the Missouri Public Service Commission upon request.

3.0 COMMUNICATIONS REQUIREMENTS:

External: Aquila will make a diligent effort to notify all property owners or occupants that may be affected by planned vegetation management. Notification will be made at least seven (7) days, but not more than ninety (90) days prior to performing vegetation management. Notice may be provided by direct mailing, door hanger, postcard, bill insert or personal contact.

Aquila will keep a record of dates, content, and addresses to which notices were given until the subsequent vegetation management cycle has occurred for each property owner or occupant.

Aquila will provide written notice of any planned pending vegetation management activities to a primary contact for each county and municipality affected. This notice will be provided at least two (2) months in advance of the planned vegetation management.

Aquila will conduct an annual public education program to inform customers, as well as political subdivisions in our service territory, of the importance of vegetation management, and of the electrical corporation's role in managing vegetation near electric lines. This notification may be by direct mail, bill inserts or other means of communication. These public education materials will be on our website.

The brochure, **The Right Tree In The Right Place**, is available upon request to all Aquila customers. This brochure explains the need for line clearance and planting guidelines to prevent future tree problems. (See Appendix A.)

Internal : The Aquila Foresters shall be responsible for providing safe and reliable service through the line clearance program.

The Aquila Foresters and the Transmission Operations shall establish and maintain the line clearance schedules and budgets.

The Aquila Foresters shall compile the line clearance data and reports to be posted monthly to Aquila WOW page. See Appendix B : Line clearance reports

The Aquila Foresters shall be responsible for all herbicide treatment activities on distribution, transmission right of ways and substations.

The Aquila Foresters shall assist Network Operations and Transmission Operations during any storm emergencies to secure additional tree crews and to provide supervision of the restoration work.

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4.0 CONTRACTORS' REQUIREMENTS:

The Line clearance contractors shall meet all OSHA Standard 29 CFR Part 1910.269 Vertical Standards.

The latest revision of ANSI Z 133.1 outlines the training and safety requirements.

The latest revision of ANSI A300 outlines the standard practices for tree maintenance.

The line clearance contractors shall meet all Local, State and Federal motor carrier safety regulations.

The line clearance contractors shall obtain all required permits and licenses prior to commencement of vegetation management.

The line clearance contractors shall adhere to all Company safety standards.

The line clearance contractor using chemical or biological agents shall comply with any laws or regulations governing the use of those biological or chemical agents.

A Master Service Agreement details all contractor requirements and scope of work.

5.0 RECOMMENDATIONS:

The following recommendations are to help optimize the line clearance pruning and removing activities.

The vegetation manager will supervise all aspects of Aquila's vegetation management program. The vegetation manager's name and contact information will be posted on Aquila's website and included on all notifications.

Line clearance scheduling and supervision shall be done by the Forestry department. Scheduling of the crews shall minimize the use of crews to trim by complaint and hotspot pruning. Complaint and hotspot pruning is extremely inefficient.

The scheduling work methodology indicated in 6.7.2 should be followed after the initial clearance cycle. In order to establish the work requirements to maintain the three phase feeders, which is considered base line clearance work, all feeders shall be cleared initially in a community before working on the laterals.

The Forestry department shall determine the required work on the distribution system by patrolling each substation circuit. The data will be maintained in a database to establish the urban and rural pruning cycles.

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A four year cycle shall be planned for urban areas. Urban areas are those areas in which there are thirty-five (35) or more customers per circuit mile.

A six year cycle shall be planned for rural areas. Rural areas are those areas in which there are fewer than thirty-five (35) customers per mile.

As many rear lot trees as possible with trunk diameters 4 inches or greater, with their trunks entirely within the five foot easement, shall be removed after obtaining written property owner permission. Tree crew foremen are expected to contact the owners, if possible, to obtain the consent. See Appendix D : Tree Maintenance permit. The permit shall be sent to the Aquila Forester.

Trees that are less than 4 inches in diameter shall be considered brush and removed without permission. **Caution:** Judgment is required when applying this requirement. As an example it would not be prudent to cut down a newly planted tree with a trunk of less than 4 inches in diameter without the customer's permission.

The Forestry department shall consider alternate work methods on lines with extremely dense brush.

Line clearance crews assigned to a specific community shall complete all scheduled work in that community before moving to another community. This will ensure that all lines are cleared and crew productivity is maximized.

Hot spot pruning is counter-productive and should be minimized. Hot spot pruning is to be used only in emergency situations. All hot spot work will be approved by the Forestry Department.

The Forestry department shall notify the appropriate Call Center if the line clearance crews are working weekends or after regular Aquila work hours.

6.0 PROCEDURE:

The distribution line clearance program shall apply to Aquila lines rated below 34.5kV. The transmission line clearance program shall apply to lines rated 34.5kV and above. The 34.5 KV lines at SJL&P will be included in the distribution schedule.

6.1 DISTRIBUTION SYSTEM LINE CLEARANCE PROCEDURES

The following specifications shall govern distribution line clearance activities on the Aquila system, except when superseded by federal, state or local regulations.

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6.1.1 Clearance and Inspection Cycles

A visual inspection will be performed at least once every two years on urban circuits to determine whether vegetation management is needed. Urban circuits are circuits with 35 or more customers per mile. Where needed, vegetation management will be provided in a timely manner.

A visual inspection will be performed at least once every three years on rural circuits to determine whether vegetation management is needed. Rural circuits are circuits with less than 35 customers per mile. Where needed, vegetation management will be provided in a timely manner.

Planned vegetation management performed along a circuit during the year will be included as part of the two or three year visual inspection requirement.

The planned clearance cycle for urban circuits shall be twenty-five percent (25%) of the total urban distribution pole miles each year for a four-year clearance cycle.

The planned clearance cycle for rural circuits shall be twenty-five percent (25%) of the total rural distribution pole miles each eighteen (18) months for a six-year clearance cycle.

The Forestry Department shall determine the required work on the distribution system by pre-planning all cycle work to determine amount of vegetation management required.

6.1.2 Minimum Tree-to-Conductor Clearance

All trees shall be pruned to a minimum distance of six feet from the nearest Aquila conductor or edge of right-of-way, whichever is greater.

Trees requiring side clearing shall be cleared at least six feet horizontally from the nearest Aquila conductor and to 6 feet below the lowest Aquila conductor.

Trees shall be cleared to at least six feet below the lowest Aquila conductor, including the neutral.

It is very important that minimum clearances be obtained and that exceptions are kept to an absolute minimum. The Aquila Forester should be notified, verbally, about any trees that can not be cleared to the minimum clearances after Contractor has tried all options to obtain approval.

6.1.3 Line Clearance Methods

Trees requiring clearing shall be pruned using the natural pruning method.

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The latest revision of ANSI A300 outlines the standard practices for tree maintenance.

Under clearance shall be achieved by hand cutting, mowing, or herbicide application.

A herbicide application may be applied to short standing brush, and the brush left uncut.

Vines growing on Aquila poles or structures should be killed and removed if possible.

All stumps shall be cut parallel to and as close to the ground as possible. Herbicide shall be applied to stumps when conditions allow.

Herbicide Use – Herbicide use within the city limits as approved by the Forestry Department.

6.1.4 Pruning Requirements

A. Primary Conductors

The contractor shall prune individual trees to exceed the anticipated growth in four growing seasons lines in urban areas.

The contractor shall prune individual trees to exceed the anticipated growth in six growing seasons lines in rural areas.

Tree limbs and branches shall be side cleared back to the edge of the established right-of-way easement.

Trees growing directly under Aquila primary conductors, that cannot be removed, shall be cleared to a minimum of six feet.

Trees with diameters less than 4 inches under Aquila primary conductors should be considered brush and removed without permission. **Caution:** Judgment is required when applying this requirement.

All tree branches overhanging Aquila conductors shall be removed back to the first lateral outside the right-of-way easement.

All tree branches overhanging Aquila conductors, that cannot be removed, shall be cleared to a height such that if falling they will hinge clear of the conductors.

B. Sole Secondary Conductors

The contractor shall clear secondary conductors to provide a minimum of six feet of clearance. This would apply to primary/secondary and secondary only spans.

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C. Service Conductors

The contractor should clear service drop conductors only when necessary to prevent existing abrasion.

D. Pruning After Storms

When storms damage trees and limbs such that they tear down or land on Aquila conductors, Aquila will clear as necessary to restore service. Under these conditions, brush and logs will be left on the customer's premises and remain the responsibility of the property owner.

6.1.5 Removal Requirements

A. Urban Utility Easements

On urban rear lot utility easements, trees and brush having stems entirely within five feet of the utility pole line will be removed whenever possible after obtaining written property owner permission. Tree crew foremen are expected to obtain as many removals as possible and practical. See Appendix D, Tree maintenance permit.

Trees with less than 4 inches in diameter under Aquila primary conductors should be considered brush and removed without permission. **Caution:** Judgment is required when applying this requirement.

The Forestry department shall consider alternate work methods on lines with extremely dense brush.

Dwarf fruit trees, low-growing ornamentals, and evergreens shall not be removed without written property owner permission.

Trees and brush growing into the utility easement, but which have the trunk partially or wholly outside the easement shall be pruned to standard clearances using the natural pruning method.

Trees and brush growing into the utility easement, but which have the trunk partially or wholly outside the easement, may be removed, depending on its conditions and proximity to the conductor, with written property owner consent. The contractor should be responsible to determine the removal of these trees. See Appendix D, Tree maintenance permit.

B. Rural Easements

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On rural utility easements, all trees and brush having stems entirely within five feet of the utility pole line centerline will be removed. Tree crew foremen are expected to obtain as many removals as possible and practical. See Appendix D, Tree maintenance permit. **Caution:** Judgment is required when applying this requirement.

The contractor general foreman shall be notified of any removals requiring more than three crew hours to complete.

Trees less than 4 inches in diameter under Aquila primary conductors shall be considered brush and removed without permission. **Caution:** Judgment is required when applying this requirement.

The Forestry department shall consider alternate work methods on lines with extremely dense brush.

Trees and brush growing into the utility easement, but which have the trunk partially or wholly outside the easement shall be pruned to standard clearances using the natural pruning method.

Trees and brush growing into the utility easement, but which have the trunk partially or wholly outside the easement, may be removed, depending on its conditions and proximity to the conductor, with written property owner consent. The contractor shall be responsible to determine the removal of these trees.

Careful measurements and species identification must be made to avoid automatic removal of the species excluded or trees whose trunks do not stand entirely on the easement.

Where Aquila has specified easements below extremely tall overhead conductors a drop zone or fall space shall be cleared to aid in any restoration work to be completed on the lines.

C. Customer Requests

All customer requests for the removal of trees shall be evaluated by the Forestry department. Only trees that pose a danger to Aquila facilities or a danger to independent tree workers will be considered. Good judgment is important for customer relations and the effectiveness of the Aquila line clearance program.

A pole to house service drop should be dropped, for the safety of the customer, if the customer plans the removal of a tree where no Aquila tree work is required.

The contractors shall top trees for safe removal if there is a danger of the private individuals contacting primary or secondary conductors. Trees shall be cleared to a

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minimum of ten feet from the nearest Aquila conductor before private individuals are permitted to complete their work. All wood and brush shall be the responsibility of the customer. Upon completion of the work, the tree shall be girdled to prevent tree re-growth.

The customer requesting the work shall sign a written permit describing the removal and the debris cleanup before the work is to begin. The permit shall be sent to the Aquila Forester. See Appendix D.

6.1.6 Danger Trees

All trees posing an immediate or imminent danger to conductors, whether within or adjacent to an easement, shall be removed. This applies primarily to dead, dying, or diseased trees which may either drop limbs or fall onto conductors. An Aquila supervisor should be consulted to determine the appropriate action. Property owners shall be notified accordingly.

6.1.7 Cleanup

A. Urban Pruning

All wood and brush which can be fed into a brush chipper will be chipped and trucked away.

Yards will be raked.

All wood from large limbs and cut trees too large to be chipped will be cut into fireplace length and piled around the tree or stump.

The customer shall be notified if cleanup cannot be completed the same day as pruning.

B. Rural Pruning

All roadside brush will be chipped after cutting.

Where practical, chippers may be set to discharge along the side of the road rather than into trucks provided that chips are not allowed to accumulate into piles.

Under no circumstances will brush be thrown into streams, ponds or lakes.

Any chip or brush disposal other than hauling must be lawful and have property owner permission.

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- C. All trimming and cut vegetation completed during storms will be left on the property and cleaned up by the customer.

6.2 TRANSMISSION SYSTEM LINE CLEARANCE PROCEDURES

The following specifications govern transmission line clearance activities on the Aquila system, except when superseded by federal, state or local regulations.

Note: Aquila will send the Commission's Energy Department a copy of every filing it makes on vegetation management of its transmission lines with the FERC, regional reliability organization or the NERC.

6.2.1 Clearance Cycle Length

Rural transmission right of ways shall be scheduled every six years for brush removal and all tree clearing, which shall include side clearing, "danger" trees, and any other required tree work.

Urban transmission right of ways shall be scheduled every four years for brush removal and all tree clearing, which shall include side clearing, "danger" trees, and any other required tree work.

In addition to normal scheduling, all right of ways should be inspected, by the Transmission Department, annually for remedial clearance. Emergency or remedial clearance shall be performed as needed, and treated as top priority to maintain public safety and service reliability.

6.2.2 Minimum Tree-to-Conductor Clearance

A. Urban Transmission Clearance

Trees requiring side clearing will be pruned to clear the nearest Aquila conductor at least fifteen feet (15') or edge of the right-of-way, whichever is less and to six feet (6') below the lowest conductor.

Trees which require clearance shall be pruned, without permission, as necessary to clear the nearest conductor safely in high humidity, lowest sag, and greatest conductor sway.

It is very important that minimum clearances be obtained and that exceptions be kept to an absolute minimum. The Aquila Foresters should be notified, verbally, about any trees that can not be cleared to the minimum clearances after Contractor has tried all options to obtain approval.

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B. Rural Transmission Clearance

All trees shall be side cleared, without permission, back to the edge of the established right-of-way as necessary to clear the nearest conductor safely in high humidity, lowest sag, and greatest conductor sway. Clearances shall be a minimum of fifteen feet (15') or to the edge of the right-of-way whichever is less and six feet (6') below the lowest conductor.

All trees except low growing ornamentals, and fruit trees shall be removed, without permission, when they stand on the right of way. In all cases remaining trees must be spaced far enough apart that work equipment can gain access to the line.

Dwarf fruit trees, low growing ornamental trees and evergreen trees immediately near residences shall only be cut down after notifying the property owner. Permission is required. The permit shall be sent to the Aquila Forester. See Appendix D.

6.2.3 Cleanup

A. Urban Transmission Cleanup

All brush and leaves associated with the tree work performed shall be removed from the property. This shall include raking, if necessary.

Large limbs and trunks shall be cut to fireplace length and stacked in piles for the use of the resident.

B. Rural Transmission Cleanup

Debris from pruning or removal work performed shall be chipped, burned or stacked along the right-of-way edge as conditions allow. Firewood will normally be stacked separately in four foot lengths.

All roadside brush will be chipped after cutting.

Where practical, chippers may be set to discharge along the side of the road rather than into trucks, provided that chips are not allowed to accumulate into piles.

Under no circumstances will brush be thrown into streams, ponds or lakes.

Any chip or brush disposal other than hauling outside the right-of-way must be lawful and have property owner permission.

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C. Danger Trees

Trees standing off the right-of-way which would contact the conductor if they broke at the base will be removed or pruned to clear the conductor. These trees are considered a danger to public safety and the owner's permission for clearing these trees is not necessary.

D. Customer Inquiries

Customer or residents with questions concerning the transmission tree program shall be referred to the Aquila Forester.

E. Right of Way Clearing Guide

See Appendix E, Drawing C.6: Transmission Line Full Cut Right of Way Clearing Guide.

6.3 PROPER PRUNING TECHNIQUES

Natural Tree Pruning: The latest revision of ANSI A300 outlines the standard practices for tree maintenance.

The natural tree pruning method should be used to clear all trees. This technique involves the cutting of limbs back to a suitable lateral, parent limb, or trunk.

Natural pruning requires making fewer but larger cuts deeper into the tree than other pruning methods. Side limbs are pruned to major crotches; the tree is trained to grow in a desired direction by guiding its natural branch structure.

Natural tree pruning is preferable to stubbing or shearing, both of which result in accelerated resurgent sucker growth back toward conductors. Natural tree pruning, if done properly, directs future growth away from conductors while also promoting rapid wound closure.

Limbs should be cut to laterals at least one-third the diameter of the limb being removed to avoid adventitious sucker growth around the cut and reduce the possibility of disease.

The use of tree paint or wound dressings is not recommended. To avoid customer complaints of excessive clearance, the crew foreman should discuss the appropriate pruning procedure and results with the property owner if possible.

Refusals shall be reported to the Aquila Foresters to resolve.

Mechanical Tree Pruning: The mechanical clearing of trees is performed by use of a Timberland or Giraffe type hydraulic cutter.

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Limbs will not be cut to laterals as in the Natural Tree Pruning method. Stubs will be left.

Mechanical Pruning should only be used in non populated rural areas.

6.4 PRUNING TYPES

Conductors are generally located in one of a few positions relative to trees, and broad clearing methods can be applied to each relationship. However, species characteristics, age, and individual growth conditions will also dictate the appropriate pruning method used. Each tree's individual characteristics should be utilized to best advantage to clear conductors as required while maintaining the tree's form and health.

6.4.1 Side Pruning

All limbs facing the conductors should be cleared to the required clearances which will facilitate access to faulty conductors, while maintaining the trees' symmetry.

Trees with trunks positioned less than six feet from the nearest conductor will be side cleared of all limbs.

All limbs overhanging conductors should be cleared back, using the natural tree pruning method, to a distance which would reduce the likelihood of their falling onto conductors if they should break.

Limbs underneath the conductors are to be pruned to clear the lowest Aquila conductor and direct new growth out away from the conductor rather than up into it. Avoid leaving an unsightly notch in the foliage under the conductor by clearing the foliage tips below the conductors as necessary.

Mechanical side pruning shall be permitted along the right-of-way where possible. Mechanical pruning should not be used in close proximity to a residence.

See Appendix E, Drawing D.2.a.: Side Pruning Versus Shear Pruning Procedures and results.

6.4.2 Through or 'V' Pruning

Trees positioned directly below the conductors and capable of growing into them should be removed if possible, or cleared to allow the conductors to pass through the crown while maintaining the required clearance.

After a tree has started major leaders around the conductor, all inside shoots must be removed for sufficient clearance during growth.

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Mature trees that have grown around the conductors must have limbs removed back to the main structural limbs heading around the conductors.

Small branches must be removed to eliminate sucker growth toward the conductor. An open 'V' form in the trunk may result, but the interior usually fills with side shoots and the appearance improves.

See Appendix E, Drawing D.2.b.: Through or 'V' Pruning Procedure

6.4.3 Crown Reduction

Smaller species standing directly below the conductors and which are growing into the conductors, but are not large enough to grow around them, may require a crown reduction.

Crown reduction involves removal of a portion of the crown by cutting back toward the center of the tree until adequate clearance is achieved.

No more than one-third of the crown should be removed, as to do so may result in weakening or death of the tree.

"Topping" should be avoided in favor of through pruning because new growth usually cannot be directed out from the conductors.

Clearing of previously topped trees consists mostly of removing sprout regrowth by clearing to laterals deeper into the crown. This practice maximizes directional training, and lengthens future clearing cycles.

See Appendix E, Drawing D.2.c.: 'Natural' Topping Versus 'Shear' Topping Procedures and Results.

6.5 HERBICIDE TREATMENT PROCEDURES

The following minimum standards shall be strictly adhered to except when exceeded by applicable regulations or manufacturers' specifications. The Aquila Foresters shall be responsible for any herbicide treatment programs.

6.5.1 Herbicide Application Certification

The Contractor shall be fully responsible for equipment and personnel licenses as required by federal, state, and local regulations pertaining to herbicide treatment and related operations.

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The Aquila Foresters shall have a certified non-commercial applicators license from the state of Missouri.

6.5.2 Professionalism and Safety Regulations

The Contractor shall perform all herbicide treatment and related operations in a proper manner according to all applicable regulations and label instructions.

Work practices shall optimize current safety practices: public, private, and environmental interests.

Any performance attempted or accomplished violating an existing applicable law, regulation or approved safety practice, shall be the Contractor's sole responsibility.

6.5.3 Materials and Work Responsibility

The Aquila Forester shall consult with the Contractor as to the herbicide treatment to be applied by the Contractor including the herbicides and the carriers, the mix formulation and the methods, rates and timing of such applications.

Such written instructions shall be signed by authorized representatives of Aquila and the Contractor. The authorized representatives shall be state-licensed applicators of the materials to be applied in the jurisdiction in which the application will be applied.

The contractor shall implement the herbicide treatment in a careful, non-negligent and workmanlike manner.

The contractor shall be liable for all damages incurred as a result of herbicide treatments only if and to the extent that Contractor fails to implement the herbicide treatment in conformity with the written instructions provided by Aquila or in a careful, non-negligent and workmanlike manner.

The contractor shall make all necessary arrangements for right-of-way entry and exit. Any shrubbery, flowers, crops, or other susceptible vegetation must be located and avoided.

The Contractor shall make frequent right-of-way width measurements to assure uniform treatment boundaries and avoid exceeding the right-of-way in application.

The Contractor shall guarantee 90 percent or greater kill, based on later inspection. If the kill is less than 90 percent, the Contractor shall re-treat the designated area within a reasonable time and in the most effective manner. Re-treatment under these conditions will be at the Contractor's expense.

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No herbicides shall be applied during rain, or when the plant portion to receive treatment is wet from rain. Surfaces treated or sprayed less than 30 minutes prior to rain will be re-treated or re-sprayed. No foliar sprays shall be applied in winds exceeding 15 mph.

6.5.4 Herbicide Containers

The contractor shall provide and warehouse all chemicals used on Aquila property. The chemical shall be billed to Aquila after the applications.

All herbicides will be kept in specified, manufacturer-approved containers at all times. It is the responsibility of the contractor to dispose of containers properly.

Depleted herbicide containers will be triple-rinsed, punctured, and disposed of in accordance with federal and state environmental laws and container label requirements.

Empty containers shall never be left on right-of-ways, roadsides, or in garbage containers.

6.5.5 Herbicide Spills

All herbicide spills in excess of one gallon shall be verbally reported to the Aquila Forester immediately followed by a written description of the incident.

Herbicide spills in excess of a "Reportable Quantity (RQ)", as defined by regulations promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act, shall be reported immediately to the National Response Center, the appropriate state emergency response commission, and the local emergency planning committee and the Aquila Forester.

Releases of any amount to a public drinking water supply or surface water shall be reported immediately as required by state and federal regulations promulgated under the Safe Drinking Water Act and the Clean Water Act. Further, it shall be the responsibility of the Contractor to make all appropriate verbal and written notifications as required by federal and state environmental regulations.

It shall also be the responsibility of the Contractor to take all necessary steps to remediate and/or arrange for the remediation of contaminated property and water supplies.

All costs of remediation shall be burdened by the Contractor until such time as a "clean Bill of Health" is issued by the appropriate state and federal agencies.

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6.5.6 Herbicide Application Methods

Aquila became a Partner in The Edison Electric Institute, Pesticide Stewardship Program in 1996. The Best management Practices have been prepared to assist in the planning and implementation of an herbicide program.

The Aquila Forester will determine the appropriate herbicide program for all Aquila distribution and transmission systems.

The following factors should be considered in the planning of an herbicide program:

Brush species

Height and density of brush and trees

Land use: within and adjacent to the right-of-way

Label restrictions

Natural and man-made restrictions.

The following chart can be used to aid in planning an application program:

Technique	Average Height		Density		
	< 8 ft.	> 8 ft	Light	Medium	Heavy
Low volume foliage	Yes	No	Yes	Yes	No
High volume foliage	No	Yes	No	Yes	Yes
Low volume basal	Yes	Yes	Yes	Yes	No
Cut surface	No	Yes	Yes	Yes	No

6.5.7 Technique Descriptions

Low volume foliar, (LVF) is effective in controlling low to medium stem densities of brush with heights seven feet or less. Crews apply LVF to the foliage of individual plants using a backpack sprayer. LVR requires minimum equipment, herbicide and personnel. LVF is limited to the growing seasons.

High volume foliar, (HVF) is effective in controlling heavy stem densities of brush with heights greater than eight feet. Crews apply HVF to foliage to the entire right of way with a high volume pump sprayer mounted on a 4x4 vehicle. HVF is a non-selective treatment and limited by accessibility. High volume foliar is not normally used on Aquila properties.

Low volume basal, (LVB) is effective in controlling low to medium stem densities of brush and trees. Crews apply LVB to the lower 18 - 20 inches of the tree trunk using a back pack sprayer. LVB is very selective, requires minimum equipment, herbicide and

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personnel. LVB can be applied year- round except when snow or water prevents treatment.

Cut surface treatments is effective in preventing the resprouting of brush and trees from the stumps of removals. Crews apply the treatment to the stump surface using a hand-held sprayer or backpack sprayer. The stump surface shall be cut as close to the ground as possible. All trees removed on Aquila property should be stump treated with the exception of trees within city limits.

6.5.8 Substation Vegetation Management

Vegetation within the substation fence and 10 feet around the outside of the fence is to be maintained annually. An appropriate herbicide is to be used to control the weeds and tall growing brush or trees in and around the substation. **Note:** All brush will be cleared around 10 feet of fence perimeter.

6.6 CREW REPORTING PROCEDURES

The following procedures shall govern the reporting of all tree, brush, and spray crews under contract with Aquila.

6.6.1 Definitions

A. Tree

A woody perennial plant, normally maturing at 12 or more feet in height usually having a single trunk and a definite foliage crown.

Trees should be measured 4.5 feet above the ground, diameter breast height (DBH), and have a diameter of at least 4 inches.

Trees with multiple trunks originating from a single stump should be recorded as one tree.

B. Brush

A woody tree normally maturing at greater than 12 feet in height, and presently less than four inches, Diameter at Breast Height (DBH) shall be removed and counted as square feet of brush.

A woody plant normally maturing at less than 12 feet in height, and/or presently less than four inches, Diameter at Breast Height (DBH) should not be removed unless posing an access problem.

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Square yardage of brush cut shall be determined by crown cover. Thus, if the crown of a bush covers one square yard on the ground directly under it, that bush occupies one square yard.

Tally all trees and brush. If a tree stands in the middle of a brush area, and that tree is pruned or removed, count the tree as well as square yardage of brush cut.

C. Footage worked (trim and remove)

All footage trimmed shall be measured with a measuring wheel. Record only the liner footage of the power lines. The linear footage trimmed is a measurement of trees worked drip line to drip line, and brush crown cover removed.

Where power lines have trees and brush along both sides of the easement record, only the linear footage of line worked. Do not double the linear footage in these situations.

Do not include the clear portions of a span.

Do not include footage trimmed on the service lines.

D. Footage cleared

Estimated linear footage of primary line miles clear of trees and brush.

Record all primary spans that have been cleared of trees and brush, even the spans requiring no line clearance work.

E. Brush treated

Estimated square footage of brush or trees chemically treated.

6.6.2 Weekly Operation Report

The original weekly operation reports and other paperwork shall be sent to the Aquila Forester. Copies shall be sent to the Forestry inspectors.

In areas not covered by an Aquila Forestry Supervisor the foreman shall send a copy of the time sheet to Networks Operation Supervisor. See Appendix F : Weekly operation reports.

Time sheets should show production figures on the number of trees pruned, the number of trees removed, and the square yards of brush treated, footage cleared, and footage trimmed with appropriate man-hours listed for each category.

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Time sheets should show type of work, substation and feeder numbers, electrical device numbers, and if it is a three phase or single phase line.

Any discrepancies found in later reviews will discount the work shown for that period, and the crew will not be awarded credit for its performance.

6.6.3 Herbicide Logs

All crews involved in herbicide application will be required to turn in weekly herbicide reports to the Aquila Forester along with the weekly operation report. See Appendix G.

These reports will include: type of herbicide, quantity used, total brush acreage sprayed/treated, total number of spans sprayed/treated, temperature, precipitation, wind conditions, location, and locations bypassed for any reason.

The line clearance contractors should use their own company herbicide report to comply with state regulations.

6.6.4 Distribution Patrol Reports

The Distribution Patrol Report form should only be used if defects are found during the routine scheduled line clearance program. The form should be sent to the Operations Supervisor as needed.

Tree crews should report any obvious problems found to their supervisors or the Aquila Foresters.

Any major problems found shall be reported to the Networks Operation Supervisors immediately.

6.7 CREW SUPERVISION PROCEDURE

The Aquila Foresters shall perform the line clearance supervision. The following specification shall govern contract tree crew supervision by the Aquila personnel.

The Southern Region with the help of the Aquila Foresters shall perform the line clearance supervision in their districts.

6.7.1 Customer Notification

The customers should be notified before the tree crew performs the tree work. The crew foreman shall knock on the door and try to make the personal contact. If contact is made the foreman shall inform the customer about the tree work and give the customer a survey card and then proceed with the work.

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If the customer cannot be reached by knocking on the door, the foreman shall leave the survey card on their doorknob and proceed with the work.

6.7.2 Scheduling Work

The Aquila Foresters will be responsible for the scheduling and supervision of the line clearance crews assigned to a state and region.

The Southern Region with the help of the Aquila Foresters will be responsible for the scheduling and supervision of the line clearance crews assigned to their region.

The Forester, based on the current years approved budget, will assign the number of crews to each state and region.

The scheduling methodology indicated below is contingent on the availability of normal budget levels. The first priority should be given to the three phase feeders.

The Foresters with input from the Network Operations shall determine the locations where tree crews are to be assigned based on service reliability problems and past line clearance work completed.

The Foresters shall pre-plan all circuits before assigning them to the contractor. The work load for the circuit should be estimated by using a measuring wheel. Chemical and mowing work should be identified at this time.

Work schedules should minimize crew travel time between job sites, and otherwise eliminate unproductive periods to maximize efficiency.

Line Clearance crews shall not be used for new construction for customer/developer initiated projects. The customer is responsible for all required pruning or removal to serve this project. Line Clearance crews shall only be used in new construction for company initiated system improvement projects.

Scheduling of crews shall minimize use of crews to prune by complaint and hotspot pruning. Complaint and hotspot pruning is extremely inefficient.

In order to establish the work requirements to maintain the three phase feeders, which is considered base line clearance work, all feeders shall be cleared initially in a community before working on laterals.

The Foresters will provide crews with copies of operating maps covering the areas in which they are to work. They are to indicate where clearing has been completed. The completed map should be returned to the Foresters to be filed.

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Line clearance crews assigned to the state should be scheduled to maximize productivity as indicated below.

A. Distribution Scheduling

1.) One Crew Assigned to a Community / Area

The crew should be scheduled to first clear individual three phase feeders, one at a time, starting at the substation.

The substation three phase feeders should be cleared before clearing individual single phase laterals.

After all of the three phase feeders are cleared, the crew should start at the substation and clear all single phase laterals off a feeder, one feeder at a time.

The total community / area should be cleared before transferring the crew to another community.

Hot spot pruning is discouraged and should be kept to an absolute minimum since this is the most inefficient use of tree crews.

2.) Multiple Crews assigned to a Region

Aquila Foresters should determine whether to clear all feeders first as outlined above for the single crew or to schedule the work as follows. This decision will most likely be determined by the size of the area, reliability problems and the number and type of crews assigned to the region.

The crews should be assigned to clear individual three phase feeders out of a substation starting at the substation.

Single phase laterals should be cleared as the crews progress down the three phase feeder.

Depending on the type and number of crews assigned to the region, more than one crew should be assigned to a feeder, one crew working the feeder and the others working the laterals.

All feeders and laterals out of one substation should be completed before starting another substation.

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All substations in a community should be cleared before transferring crews to another community or region.

Hot spot pruning is discouraged and should be held to an absolute minimum since this is the most inefficient use of tree crews.

B. Transmission Scheduling

The Aquila Forester with input from Transmission Operations will determine the line clearance schedule for the transmission system. The crews should be scheduled to maximize productivity as follows:

C. Urban Transmission

Urban transmission systems normally have distribution under-build lines attached to the same poles. The transmission lines should be scheduled and cleared in conjunction with the distribution schedule.

The clearing costs will be divided between the transmission and distribution groups.

Urban transmission lines require greater clearances than distribution voltage lines and should be patrolled annually by the transmission group.

Hot spot pruning should be avoided to maximize crew productivity.

D. Rural Transmission

Rural transmission systems should be scheduled every five years for clearing based on voltage, customer load, and past clearance cycles.

Clearing should start at the substation and continue to the next substation or change of ownership.

Remedial herbicide treatments should extend the need for mechanical clear cutting.

Rural transmission systems should be patrolled, by helicopter, each year by the transmission group. Patrol reports should be used to help determine the scheduled maintenance.

6.7.3 On-Site Crew Inspections

Contract tree crews are to be inspected at the work site by the Aquila Foresters. In regions without an Aquila Forester the Networks Operation Supervisor should inspect the tree crews. Times of these inspections should be varied so they are not anticipated

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or expected by the tree crews. The following shall be observed, and corrected if found deficient during crew inspection.

A. Safety

Adherence to all safety provisions as required by the Aquila Safety Rules and the Occupational Safety and Health Act.

Adherence to all Local, State, and Federal motor carrier safety regulations.

Tree crews shall exercise all due caution when working in the vicinity of energized conductors. All line clearance shall be done in such a way as to prevent service interruptions.

Contact with any conductor shall be reported to the nearest Aquila Service Center immediately. In the event that a conductor knocked to the ground, at least one man on the crew will remain at the site to warn the public of potential danger, while the crew foremen makes notification. **DO NOT TOUCH THE CONDUCTORS.**

The Contractor shall also notify the Aquila Forester as soon as possible.

Damage to Aquila's or customers' property caused by contract tree crews engaged in routine pruning or removal will be resolved by the appropriate general foreman, and will not be the responsibility of Aquila.

B. Pruning Techniques

All crews will be checked to determine whether or not they are abiding by natural pruning specifications. Round-overs, topping, shearing, and pollarding is to be avoided. Proper collar cuts should be used.

C. Clearance

A random check of cleared trees should be made to determine if proper clearances are being obtained. A minimum of six feet shall be cleared of all conductors. Also, the removal policy shall be strictly adhered to.

D. Clean up

Yards and properties must be left in as clean a condition as found upon the crew's arrival. Logs shall be cut into firewood lengths and piled or stacked by the tree. Brush from the pruning work should not be left overnight.

E. Equipment and Personnel

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Trucks, chippers, and lifts should appear clean and well maintained and in good working order. Inoperative equipment shall not be billed to Aquila.

An Aquila decal "Contracting for Aquila" shall be on all trucks, one on each side of the dump bed.

All personnel shall maintain a reasonable appearance. No sleeveless shirts are permitted. No shirts with any printing other than the Contractor's logo are permitted. All clothing must be free of rips or tears at the start of the work day.

Aquila reserves the right to require the Contractor to remove any individual whose appearance or conduct reflects negatively on the Utility.

F. Crew Courtesy

If possible, one or two customers whose trees have been adjusted should be checked with to determine if contract tree crews are performing professionally.

G. Crew Evaluation

Crews will be evaluated on the basis of weekly operation reports, survey cards and supervisor inspections. Tallies and quality are subject to inspection at any time.

Customer survey cards will be used to evaluate crew professionalism and courtesy. The survey cards are to be left at each residence where work is performed.

7.0 KEY PERFORMANCE INDICATORS

Key performance indicators will be calculated from weekly operation reports. The following performance indicators shall govern how the line clearance program and contractors are evaluated for effectiveness. All of the indicators should be used together to monitor the line clearance program.

The Contractor and the Aquila Foresters will be responsible for evaluating and resolving the unsatisfactory production figures.

The Aquila Foresters shall be responsible for evaluations and audits.

The Aquila Forester should compile the reports and make available to Network Operations and Transmission Operations monthly. The reports will be posted online on the WOW page. Engineering department, Forestry department

The Aquila Forester is responsible for evaluating and maintaining the key performance indicator figures. Proper account coding of special assignments, keeping "hot-spot

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pruning" to a minimum and competitive bidding should help improve the line clearance program.

The Aquila Forester and the Procurement Group shall competitively bid contractor labor and equipment rates, insuring Aquila gets the best rates possible for each state.

7.1 LINE FOOTAGE WORKED (TRIM OR REMOVE)

The line footage worked is the linear measurement of the power line that has trees and brush requiring work adjacent to it. The footage is measured from the drip line to drip line of the trees requiring work. Trees growing directly opposite of each other and the power line will only be counted once. The footage is to be measured by a measuring wheel.

A Six Sigma team has determined that a crew should work approximately 57 feet of power line per hour or 370 feet of power line per day.

The line footage worked measurement will be influenced by type of crew, trees on one side or both sides of the line and clean-up.

7.2 LINE FOOTAGE CLEARED

The line footage cleared is the linear measurement of the power line that is clear of trees due to the pruning work, removal work or no trees present. Spans of power lines with no trees present should be tallied as line footage cleared. The linear footage is to be estimated.

The line footage cleared measurement will be influenced by rural vs. urban settings. Rural areas will normally have more line miles clear.

7.3 CONTACTS PER MAN-HOUR

The contact per man-hour figure is a good indicator of the contractor crew's production effectiveness. This figure reflects the total number of trees pruned or removed divided by the total number of man-hours involved.

The following situations will influence a below average value: Large trees, travel time, special assignments, low tree density and crew ineffectiveness.

The following situations will influence an above average value: Brush smaller than four inches counted as trees, lack of removals, inadequate clearance.

7.4 COSTS PER CONTACT

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The cost per contact figure reflects the total line clearance operating costs divided by the total amount of trees, pruned or removed. Cost per contact figures will be influenced by regional labor and equipment billing rates.

The following situations will influence a high cost per tree: Labor and equipment rates, large removals, travel time, and special assignments.

The cost per contact figures should be used to help determine the budget forecast

7.5 COSTS PER MILE CLEARED

The cost per mile cleared figure reflects the total line clearance operating costs divided by the miles cleared. The costs per mile cleared figures are influenced by tree densities, urban/rural lines, and geography.

7.6 OUTAGE INDICES

Outages are recorded each month at Aquila using the various outage reports. The Aquila Forester will monitor these reports for the customer hours interrupted and the percentage of the total hours interrupted due to trees.

The outage reports should be used to help determine the line clearance scheduling and budgeting process.

The Aquila Foresters should investigate all tree related outages to determine the cause of the outage, whether it was preventable or not, and to determine the last time the line and circuit were cleared. If the outage was found not to be tree related, the outage report should be corrected to identify the appropriate cause.

8.0 RECORDKEEPING AND REPORTING REQUIREMENTS

A copy of Aquila's line clearance and vegetation management standards shall be filed with the Missouri Public Service Commission by July 1, 2008 with verification by affidavit of an officer who has knowledge of the matters stated therein.

If changes are made to the line clearance and vegetation management standards, a copy of the revised standard shall be filed with the Missouri Public Service Commission no later than thirty (30) days prior to implementing the change.

Aquila will monitor and document all scheduled vegetation management and related activities to include but not limited to:

- Identification of each circuit and substation where vegetation management was performed.

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- The type of vegetation management performed including removals, trimming and spraying and methods used.
- The crew size and supervisor's name.
- The date of the activity.
- Any safety hazards encountered.
- Any unexpected occurrence or accident resulting in death, life threatening or serious injury to a person assigned to perform vegetation management activities or the public.

Aquila will provide a summary of the information above about its vegetation management during the past year and vegetation management planned for the following year to the Missouri Public Service Commission by April of each year.

The annual report shall also include the following items:

- Expenditures for vegetation management in the preceding year
- Vegetation management budget for the current year
- Circuits, completion dates and miles trimmed in the preceding year
- Circuits, scheduled completion dates and miles scheduled for the current year
- Total distribution miles for the system and corresponding classification between rural and urban

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APPENDIX A

Communication Requirements



Aquila

(Please detach and mail)

Dear Valued Customer,

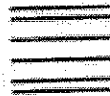
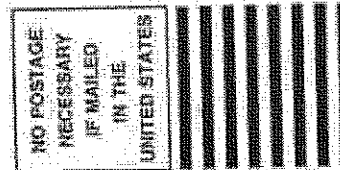
Aquila employed a professional contractor to perform maintenance and/or trim trees near the power lines on your property. This service helps us maintain safe, reliable electric service. Please take a minute to complete our postage-paid survey. Your comments will help us provide the best possible service to you.

1. I received notification or was contacted by Aquila in advance of work performed on my property.
☐ Yes ☐ No
2. My property was left in satisfactory condition when the work was completed.
☐ Yes ☐ No
3. The workers were friendly and courteous.
☐ Yes ☐ No
4. I would like a tree planting brochure at no charge.
☐ Yes ☐ No

Please include additional comments, or call us at
(816) 737-7592.

Name _____
Address _____
City _____ State _____ Zip _____
Telephone Number _____

Date _____ Contractor _____
Foreman _____



Aquila



BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 657 KANSAS CITY MO

POSTAGE WILL BE PAID BY ADDRESSEE

FORESTRY SUPERVISOR
PO BOX 11739
KANSAS CITY MO 64138-9952

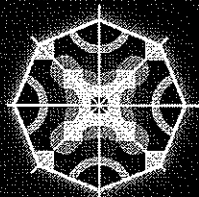


The Right Tree in the Right Place

A homeowner's guide to choosing and planting trees for a lifetime of beauty, safety and efficiency.



aquila.com



Aquila

Providing Energy
For Better Living.

Copies of this booklet are available from the Aquila Forester at

john.norris@aquila.com

Notification Letters to be developed by Aquila's Communications Department.

WE CHECKED INTO YOUR CONCERN

Aquila provides safe and reliable electric service. Controlling plant growth around overhead power lines is essential to maintaining safety and reliability.

We visited your property to check possible tree interference with electric lines and found the situation(s) indicated on the back of this card.

Thank you for your interest in helping Aquila maintain safe and reliable electric service to your neighborhood.



Aquila
Providing Energy
For Better Living™

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☐ The tree(s) presented an immediate problem for our electrical facilities. **We took the necessary corrective action.**

☐ The tree(s) presents a **serious problem** for our electrical facilities. We will return as soon as possible to clear the lines by pruning or removing the trees or other vegetation.

Please call

at _____ so we can discuss the tree(s) that presents an immediate problem for our electrical facilities.

The tree(s) you called about does not need to be addressed immediately. Trees will be pruned / removed on our **regular clearing schedule**.

It could be up to _____ before we return to complete this work.

The tree(s) interferes with ☐ Telephone wires
☐ Cable television wires
☐ Other wires not owned by Aquila

We suggest that you contact that company about your concern.

☐ The tree(s) **does not present a problem** for our electrical facilities, and **Aquila cannot help you** with the trimming or removal. If you still want to have the work done at your expense, we suggest that you contact an independent contractor. If you cannot complete this work safely, contact Aquila to discuss having the electrical line de-energized while you or your contractor completes the task. Please contact Aquila at least **three** working days before you plan to do the work.

If you have any other electrical questions or concerns, please call Aquila Customer Service at

1-800-303-0752

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APPENDIX B

APPENDIX B

Sample Reports

MPS Cost per Contact

MONTH	CONTRACTOR	TOTAL CONTACT	FOOTAGE CLEARED	FOOTAGE TRIMMED	TOTAL COSTS	COST/ CONTACT	COST/ MILE/CLEAR	COST/ MILE/TRIM
JAN	ATE	8,541	266,631	99,222	\$ 276,755	\$ 32.40	\$ 5,480.48	\$ 14,727.24
FEB	ATE	12,748	388,211	175,401	\$ 413,375	\$ 32.43	\$ 5,622.25	\$ 12,443.60
MAR	ATE	17,798	761,477	248,320	\$ 532,743	\$ 29.93	\$ 3,693.98	\$ 11,327.65
APR	ATE	13,473	489,696	191,443	\$ 418,170	\$ 31.04	\$ 4,508.79	\$ 11,533.13
MAY	ATE	11,517	366,658	168,656	\$ 378,723	\$ 32.88	\$ 5,453.74	\$ 11,856.43
JUN	ATE	15,984	444,923	217,181	\$ 532,203	\$ 33.30	\$ 6,315.77	\$ 12,938.66
JUL	ATE	11,708	367,588	212,983	\$ 433,508	\$ 37.03	\$ 6,226.87	\$ 10,746.97
AUG	ATE	11,116	483,216	347,862	\$ 483,422	\$ 43.49	\$ 5,282.25	\$ 7,337.59
SEPT	ATE	13,635	617,338	461,736	\$ 600,000	\$ 44.00	\$ 5,131.71	\$ 6,861.06
OCT	ATE	12,242	448,901	248,287	\$ 523,094	\$ 42.73	\$ 6,152.66	\$ 11,123.97
NOV	ATE							
DEC	ATE							
TOTAL	ATE	128,762	4,634,639	2,371,091	\$ 4,591,993	\$ 35.66	\$ 5,231.42	\$ 10,225.56

Total costs adjusted for flagging and mowing and chemical crews

Miles	878
Tree/mile	147

SJLP Cost per Contact

MONTH	CONTRACTOR	TOTAL CONTACT	FOOTAGE CLEARED	FOOTAGE TRIMMED	TOTAL COSTS	COST/ CONTACT	COST/ MILE/CLEAR	COST/ MILE/TRIM
JAN	ATE	1900	119669	27919	\$ 62,319	\$ 32.80	\$ 2,749.62	\$ 11,785.68
FEB	ATE	2039	76145	30289	\$ 68,694	\$ 33.69	\$ 4,763.34	\$ 11,974.79
MAR	ATE	1789	151240	32738	\$ 90,095	\$ 50.36	\$ 3,145.34	\$ 14,530.56
APR	ATE	1274	99816	20822	\$ 50,035	\$ 39.27	\$ 2,646.72	\$ 12,687.77
MAY	ATE	1657	115601	23177	\$ 57,853	\$ 34.91	\$ 2,642.40	\$ 13,179.61
JUN	ATE	2672	119738	43309	\$ 95,509	\$ 35.74	\$ 4,211.59	\$ 11,643.94
JUL	ATE	2096	118373	85871	\$ 73,399	\$ 35.02	\$ 3,273.95	\$ 4,513.13
AUG	ATE	1561	94720	35202	\$ 97,130	\$ 62.22	\$ 5,414.34	\$ 14,568.67
SEPT	ATE	3370	137616	31961	\$ 114,812	\$ 34.07	\$ 4,405.06	\$ 18,967.10
OCT	ATE	2891	107280	35915	\$ 93,401	\$ 32.31	\$ 4,596.92	\$ 13,731.23
NOV	ATE							
DEC	ATE							
TOTAL	ATE	21249	1140198	367203	\$ 803,247	\$ 37.80	\$ 3,719.66	\$ 11,549.86

Total costs adjusted for flagging and mowing

Miles	216
Tree/mile	98

2007 MISSOURI YEAR TO DATE PRODUCTION

GENERAL FOREMAN	CREW #	CREW TYPE	FOREMAN	TRIMS	TRIM HRS	TRIM/ HR	REM	REM HRS	REM/ HR	TOTAL CONTACT	TOTAL HRS	CONTACT/ HR
SMITH	66323	M-3	Compton	1999	2343	0.85	1170	810	1.44	3169	3153	1.01
	66350	A-2	Ballentine	5198	2954	1.76	271	194	1.40	5469	3148	1.74
	66352	M-3	Neitch	2549	2331	1.09	967	621	1.56	3516	2952	1.19
	66354	M-3	Wren	2309	1976	1.17	3354	1419	2.36	5663	3395	1.67
	66356	M-3	Fountain	1659	1617	1.03	2171	1554	1.40	3830	3171	1.21
	66523	A-2	Roundtree	2939	2011	1.46	679	496	1.37	3618	2507	1.44
	66556	A-2	Wooden	2556	2166	1.18	1127	370	3.05	3683	2536	1.45
	66603	A-2	Larson	3418	2541	1.35	233	72	3.24	3651	2613	1.40
Pruitt				0	0		0	0		0	0	
				0	0		0	0		0	0	
				0	0		0	0		0	0	
				0	0		0	0		0	0	
				0	0		0	0		0	0	
SUBTOTAL				22627	17939	1.26	9972	5536	1.80	32599	23475	1.39

GENERAL FOREMAN	CREW #	CREW TYPE	FOREMAN	TRIMS	TRIM HRS	TRIM/ HR	REM	REM HRS	REM/ HR	TOTAL CONTACT	TOTAL HRS	CONTACT/ HR
HARBISON Down	66336	M-3	Knight	560	523	1.07	515	240	2.15	1075	763	1.41
	66351	A-2	Cannon	4650	2516	1.85	741	251	2.95	5391	2767	1.95
	66361	A-2	Yelton	3550	3407	1.04	583	448	1.30	4133	3855	1.07
	66362	A-2	Hill	3542	2160	1.64	511	194	2.63	4053	2354	1.72
	66364	A-2	McClure	4518	2461	1.84	958	383	2.50	5476	2844	1.93
	66367	A-2	Wells	4290	2590	1.66	432	208	2.08	4722	2798	1.69
	66365	A-2	Bohanan	4328	2422	1.79	84	53	1.58	4412	2475	1.78
				0	0		0	0		0	0	
				0	0		0	0		0	0	
				0	0		0	0		0	0	
				0	0		0	0		0	0	
SUBTOTAL				25438	16079	1.58	3824	1777	2.15	29262	17856	1.64

GENERAL FOREMAN	CREW #	CREW TYPE	FOREMAN	TRIMS	TRIM HRS	TRIM/ HR	REM	REM HRS	REM/ HR	TOTAL CONTACT	TOTAL HRS	CONTACT/ HR
PRUITT	66353	M-3	Taylor	1845	2112	0.87	2986	995	3.00	4831	3107	1.55
	66357	M-3	Hernandez	1704	1864	0.91	992	503	1.97	2696	2367	1.14
	66507	A-2	Becker	3379	2505	1.35	88	50	1.76	3467	2555	1.36
	66521	M-3	Hutson	2456	3083	0.80	2138	905	2.36	4594	3988	1.15
Transfer	66522	M-3	Ford	2558	2123	1.20	2992	1525	1.96	5550	3648	1.52
	66526	M-3	Wilson	2498	2355	1.06	3998	1595	2.51	6496	3950	1.64
	66529	A-2	Newport	2896	2336	1.24	569	235	2.42	3465	2571	1.35
	66531	M-3	Hurst	1644	2681	0.61	2401	1341	1.79	4045	4022	1.01
Smith	66554	A-2	Landreth	4001	2210	1.81	116	47	2.47	4117	2257	1.82
	66561	A-2	Bogardus	5762	2343	2.46	904	252	3.59	6666	2595	2.57
	66606	A-2	Self	2779	1947	1.43	778	278	2.80	3557	2225	1.60
	66501	M-3	Cason	1046	1396	0.75	1075	615	1.75	2121	2011	1.05
	66502	M-3	Marley	707	1488	0.48	1746	779	2.24	2453	2267	1.08
				0	0		0	0		0	0	
				0	0		0	0		0	0	
				31522	25559	1.23	17962	7726	2.32	49484	33285	1.49

GENERAL FOREMAN	CREW #	CREW TYPE	FOREMAN	TRIMS	TRIM HRS	TRIM/ HR	REM	REM HRS	REM/ HR	TOTAL CONTACT	TOTAL HRS	CONTACT/ HR
Williams	66306	M-3	Stuckey	1003	1038	0.97	1304	757	1.72	2307	1795	1.29
	66360	A-2	Callahan	2126	1483	1.43	1128	620	1.82	3254	2103	1.55
	66549	A-2	Eads	3157	1412	2.24	4125	1892	2.18	7282	3304	2.20
				0	0		0	0		0	0	
				0	0		0	0		0	0	
SUBTOTAL				6286	3933	1.60	6557	3269	2.01	12843	7202	1.78

ASPLUNDH TOTAL				85873	63510	1.35	38315	18308	2.09	124188	81818	1.52
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March Production 2008 Bucket Crews

FOREMAN	CREW #	TRIMS	TRIMHRS	REM	REM/HRS	BRUSH	BHRS	SPRAY	HRS	CLEAR	FOOTRIM	CONT/HR	FEET/DAY
TSL	A2	2166372	377	266	121	78	4000	8	0	7897	17250	1.45	784
TWB	A2	2166561	928	353	7	5	0	20540	8	60660	17371	2.61	759
DMK	A2	2166520	402	367	1	3	0	0	0	29775	13902	1.09	601
RGG	A2	2166322	292	351	25	15	0	0	0	25111	13720	0.87	600
DLI	A2	2166529	401	375	1	3	0	0	0	29275	13878	1.06	587
RJS	A2	2166606	220	161	69	35	0	0	0	21495	7180	1.47	586
GDE	A2	2166549	391	184	252	128	0	0	0	22200	9210	2.06	472
JPB	A2	2166507	283	368	0	0	0	0	0	16233	9768	0.77	425
JNN	A2	2166352	560	196	410	147	12430	41	0	14225	10190	2.53	425
PDW	A2	2166367	399	344	24	14	1800	5	1000	29588	9594	1.18	422
MTT	A2	2166353	276	378	0	0	0	0	0	11006	9902	0.73	419
JAR	A2	2166523	434	280	70	36	16910	56	0	23711	9721	1.59	418
BSS	A2	2166554	289	210	236	135	800	7	0	10909	9002	1.52	409
RRL	A2	2166603	454	336	0	0	0	0	0	8461	8461	1.35	403
TRS	A2	2166300	275	269	48	35	0	0	0	27800	7650	1.06	403
DRW	A2	2166574	191	237	154	100	0	0	0	58000	8200	1.02	389
RCC	A2	2166358	127	153	75	47	4800	16	0	6000	5250	1.01	389
MDH	A2	2166362	323	343	11	11	0	0	0	26875	8539	0.94	386
LFW	A2	2166556	119	167	84	19	2220	6	0	9444	4610	1.09	384
MEE	A2	2166003	197	158	107	56	0	0	0	10400	4886	1.42	369
MGG	A2	2166373	117	80	34	32	0	0	0	12000	2564	1.35	365
LSS	A2	2166306	234	162	155	115	15300	108	0	10796	8741	1.40	363
MDD	A2	2166565	418	308	113	66	0	0	0	12060	8451	1.42	362
MDC	A2	2166360	236	130	120	56	9750	53	0	7637	5353	1.91	358
RAA	A2	2166328	105	126	1	2	0	0	0	9800	2825	0.83	353
BBB	A2	2166350	587	280	263	72	0	0	0	10222	7500	2.41	345
EBB	A2	2166365	417	351	34	35	4300	14	0	23700	8562	1.17	342
TOC	A2	2166206	218	273	43	68	0	0	0	23400	7164	0.77	336
JMC	A2	2166351	383	338	14	11	0	0	0	20800	7242	1.14	332
RMM	A2	2166364	469	336	54	25	3650	8	0	25995	7419	1.45	322
Bucket Totals		10122	7880	2526	1349	75860	322	21540	9	605459	284195	1.37	442

March Production 2008 Manual Crews

FOREMAN	CREW #	TRIMS	TRIMHRS	REM	REMHRS	BRUSH	BHRS	SPRAY	HRS	CLEAR	FOOTRM	CONT/HR	FEET/DAY
LGW	M3	366454	302	189	321	131	0	0	0	5525	5202	1.95	390
JFF	M3	366366	561	476	84	27	14250	6750	11	20920	8653	1.28	382
JSF	M3	366356	275	181	398	221	10400	102	0	10661	7642	1.67	364
JMM	M3	366502	218	512	223	78	0	0	0	11000	8732	0.75	355
JFH	M3	366576	130	180	264	205	19650	106	0	5103	6983	1.02	341
MJW	M3	366354	309	255	558	274	7555	30	0	8577	7794	1.64	335
DJH	M3	366357	213	186	168	151	20950	175	0	8551	7133	1.12	333
MDF	M3	366522	297	299	353	267	4700	9	0	9573	7944	1.15	332
JLH	M3	366521	401	381	403	196	5500	13	0	17600	8075	1.39	328
SCC	M3	366503	130	197	159	108	3800	30	0	6212	4581	0.95	328
ABS	M3	366323	313	274	403	266	24500	84	0	13308	8341	1.33	321
MAH	M3	366531	203	338	408	235	6500	7	0	9405	7161	1.06	296
PCC	M3	366501	252	416	184	171	3000	8	0	7949	6969	0.74	281
DWW	M3	366526	193	273	556	308	21500	32	0	8850	7028	1.29	275
JSS	M3	366415	259	385	256	173	0	1500	4	7571	6206	0.92	265
Manual Totals		4066	4544	4736	2811	142305	626	8250	15	150805	108444	1.20	325

System Footage Per Day

Contacts/HR

Miles Cleared

401

1.29

143

OPERATING STANDARDS

DATE: 03/11/08 SECTION: 6 - Operating & Maintaining

STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management (Missouri)

APPENDIX C

APPENDIX C

Master Services Agreement

Agreement Number: M15
Vendor Number: 183
Request Number: M1733
Document Type: Master Services Agreement

**MASTER SERVICES AGREEMENT
BY AND BETWEEN
AQUILA, INC.
AND
ASPLUNDH TREE EXPERT COMPANY**

This MASTER SERVICES AGREEMENT ("Agreement") is effective January 1, 2008 ("Effective Date"), between Aquila, a Delaware corporation ("Aquila"), with offices located at 20 West Ninth, Kansas City, Missouri 64105, and Asplundh Tree Expert Company, a Pennsylvania corporation ("Supplier"), with offices located at 708 Blair Mill Road, Willow Grove, Pennsylvania 19090-1784

The parties agree as follows:

1.0 Services.

1.1 Scope.

This Agreement is for the provision of Services, including incidental deliverables or goods, to Aquila by Supplier, as authorized and specified in various Requests for Proposal or other requests by Aquila ("Request") and Proposals of Supplier ("Proposal") in response thereto. The Services will be defined in a separate contract order ("Contract Order") and which upon execution by Aquila and Supplier, will become a part of this Agreement by reference. The Request, Proposal and Contract Order may be referred to collectively as the "Project Documents."

If the terms of any Project Documents are inconsistent with the terms of this Agreement, this Agreement shall take precedence. All Project Documents relating to the Services shall be deemed to incorporate the terms of this Agreement whether or not they specifically refer to this Agreement. The Services shall be governed by the terms and conditions of this Agreement and by the Project Documents which may from time to time be signed by the parties.

1.2 Acceptance of Requests.

All Requests shall become a binding obligation of the parties upon the earlier of: a) receipt by Aquila of an acknowledgment copy of the Request signed by Supplier; or b) Aquila's written acceptance of Supplier's Proposal.

Aquila and Supplier may desire to facilitate certain commercial transactions between them electronically in Electronic Data Interchange ("EDI") format in substitution for conventional paper-based documents. EDI transactions under this Agreement may include transmitting and receiving EDI data for ordering, invoicing and payment. Prior to initiating an EDI transaction, Aquila and Supplier will separately execute an agreement which will set forth the terms and conditions of the EDI transaction.

1.3 Service Requirements.

This Agreement does not commit Aquila to purchase any quantity or dollar amount of Services or obligate Aquila to purchase all required services of a particular type from Supplier. Aquila reserves the right to purchase any or all services from sources other than Supplier. Supplier may not perform any Services without a Request authorizing the Services, signed by both Aquila and Supplier.

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1.4 Standard of Performance.

Supplier's performance will represent its best efforts and be of the highest professional standards. Aquila may inspect Supplier's performance and Supplier will facilitate inspection. Aquila's inspection (or lack of inspection) will not be an acceptance of Services or a waiver of any right or warranty or preclude Aquila from rejecting defective Services.

1.5 Changes.

Aquila may, upon written notice to Supplier, make changes in specifications, designs, schedules, testing, destination or any other terms contained in the Project Documents. Subject to the provisions of this Section, if a change causes an increase or decrease in the cost of or the time required for performance of the Services, an adjustment may be made in the cost of Services or the performance schedule, or both. A claim by Supplier for adjustment under this Section will be waived unless Aquila receives notice from Supplier of a claimed adjustment within seven (7) days after the date of Aquila's notice of change. Price increases or extensions of time for performance are not binding on Aquila unless agreed to in writing by Aquila. Supplier must include with its claim for adjustment a detailed estimate of the affect of Aquila's changes on the cost of Services and time for performance, as applicable. Supplier agrees to continue performance pending resolution of its claim.

2.0 Compensation.

2.1 Rates. The cost of Services for Missouri shall be set forth in the attached Exhibit A. As additional states or areas are added to the Agreement, pricing will be incorporated as attachments to Exhibit A. Supplier warrants that the prices and rates to be charged for Services are at least as favorable as those charged to any of Supplier's other customers for the same or similar services or tasks under the same labor and economic conditions. If Supplier offers more favorable prices to any other customer during the term of this Agreement, such prices shall be applicable to all outstanding and future Services.

2.2 Reimbursement. Aquila or the Aquila Affiliate (as defined below), whichever entity makes the Request, will reimburse Supplier, in accordance with Aquila policies, for actual and reasonable travel, lodging, meal and other expenses which are incurred by Supplier in connection with performing the Services and which are approved by Aquila.

2.3 Taxes, Duties and Fees. Supplier will pay when due, and the cost of Services will be inclusive of, all local, state and federal sales and use taxes, excise taxes, taxes on personal property owned by Supplier, duties and all other governmental fees and taxes (excluding income taxes) of whatever nature applicable to the performance of the Services. Such taxes, if any, will be separately stated, but not billed, on Supplier's invoices.

2.4 Invoicing, Itemization and Payment Procedures. Supplier shall invoice Aquila once the Services have been accepted by Aquila, but no more frequently than weekly throughout the term of this Agreement. Itemized time records and expense reports will be submitted by Supplier with each invoice.

Payment shall be net thirty (30) days from Aquila's receipt of an invoice and Aquila's acceptance of Services covered thereby. Acceptance by Aquila shall be deemed to have occurred when weekly operation reports have been delivered by Supplier and accepted, reviewed and approved by Aquila's Forester.

All communications, invoices and Project Documents must reference the Agreement Number set forth above and the Proposal Number, if one, and must be directed to Aquila or to the Aquila Affiliate, whichever issued the Request, pursuant to instructions in the Request. Performance on behalf of any Aquila Affiliate will be billed to and collected only from the Aquila Affiliate issuing the Request. Only the Aquila Affiliate issuing the

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Request will incur any obligation or liability to Supplier for any claim which may arise from or relate to that Request.

- 2.5 **Right to Offset.** Aquila, without waiver or limitation of any rights, may deduct from any amounts due Supplier in connection with this Agreement or otherwise any amounts owed by Supplier to Aquila.

3.0 **Affiliate Transactions.**

This Agreement is entered into by Aquila on its own behalf and for the benefit of all Aquila affiliated entities ("Aquila Affiliates"). The term Aquila Affiliates means: (a) any entity in which Aquila holds or controls an equity or similar interest, directly or indirectly, (b) any entity controlling, controlled by or under common control with Aquila directly or indirectly, or (c) any entity which is a successor to Aquila or any of the foregoing entities by merger, consolidation or otherwise. All references to Aquila refer equally to Aquila Affiliates issuing Requests under this Agreement.

4.0 **Term and Termination.**

- 4.1 **Term.** The term of this Agreement begins on the Effective Date and ends December 31, 2008, unless sooner terminated in accordance with this Agreement. The term of this Agreement will continue in effect for any Request that is outstanding at the time of termination under this Agreement or expiration of the term.

- 4.2 **Supplier's Termination.** Supplier shall provide Aquila with not less than five (5) business days notice following a breach by Aquila of this Agreement, including any failure to pay for Services in accordance with this Agreement. If the noticed breach is not cured within thirty (30) days from the date Aquila receives such notice, Supplier may immediately terminate any Services then being performed and/or terminate this Agreement upon notice to Aquila.

- 4.3 **Aquila's Termination.** Aquila may terminate this Agreement and/or any Services, immediately upon notice to Supplier, for any reason, without penalty. Supplier shall give Aquila at least ninety (90) days prior notice of any proposed change in control or ownership of Supplier or of any proposed sale of all or substantially all of Supplier's assets. Aquila may terminate this Agreement and/or any Services, immediately upon notice to Supplier, upon the occurrence of any such event.

5.0 **Supplier's Personnel and Contractors.**

- 5.1 **Employment Practices.** Supplier must comply with all laws, regulations, rules and orders relating to equal employment opportunity, workers' compensation, unemployment compensation and FICA. Upon request, Supplier will furnish Aquila with its EEO policies and procedures, verification of workers' compensation, unemployment compensation, FICA and the number of hours any individual performs Services for Aquila within any consecutive twelve (12) month period. Supplier will indemnify, defend and hold harmless Aquila, Aquila Affiliates and their respective directors, officers, shareholders, employees, agents and affiliates from all claims by any person or governmental agency, including penalties and interest, arising out of Supplier's failure to comply with any such laws, regulations, rules and orders.

- 5.2 **Independent Contractor.** Supplier, its subcontractors, employees and agents are independent contractors for all purposes related to and at all times during this Agreement. Supplier has the responsibility for, and control over, the means and details of performing the Services in accordance with this Agreement and the Project Documents. Subject to compliance with this Agreement, Supplier will provide all training, hiring, supervising, hours of work, work policies and procedures, work rules, compensation, payment for expenses, and discipline and termination of its employees performing Services.

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- 5.3 **Agents.** Aquila will incur no responsibility or obligation to employees, agents, subcontractors or other parties utilized by Supplier to perform the Services set forth in this Agreement. Such person or parties will, at all times, remain employees, agents or subcontractors (whichever is applicable) of Supplier.
- 5.4 **Responsibilities.** Supplier is solely responsible for payment of wages, salaries, fringe benefits and other compensation of, or claimed by, Supplier's employees including, without limitation, contributions to any employee benefit, medical or savings plan, and is responsible for all payroll taxes including, without limitation, the withholding and payment of all federal, state and local income taxes, FICA, unemployment taxes and all other payroll taxes. Supplier is also solely responsible for compliance with applicable workers' compensation laws with respect to maintenance of workers' compensation coverages on Supplier's employees. Supplier will indemnify and defend Aquila from all claims by any person, government or agency relating to payment of taxes and benefits, including without limitation, any penalties and interest which may be assessed against Aquila. Supplier will similarly indemnify and defend Aquila from all claims by any person or governmental agency which arise directly or indirectly from any failure by Supplier to comply with applicable workers' compensation laws with respect to maintenance of workers' compensation coverage on Supplier's employees.
- 5.5 **Qualifications.** Supplier's personnel named in the Proposals shall perform the Services contemplated by such Proposals and all Services performed by such personnel shall be controlled and supervised exclusively by Supplier. All persons assigned to perform the Services shall have adequate education, experience, training, skills, expertise and knowledge relating to the Services being performed by them. Aquila shall have the right to request the substitution of any personnel assigned by Supplier to perform the Services and shall not be liable for any costs associated with the substitution, including any increase in the cost of Services resulting therefrom. The Services shall, at the request of Aquila and at the direction of Supplier, be performed at Aquila's offices, Supplier's offices or elsewhere. The times during which Services are rendered shall be at Supplier's discretion, except as expressly stated otherwise in the Project Documents.
- 5.6 **Compliance by Agents.** Supplier will require its employees, agents and subcontractors to comply with the terms and conditions of this Agreement.
- 5.7 **Subcontractors.** Supplier may not subcontract any of the Services without Aquila's prior consent. If Supplier engages subcontractors to perform any Services, it will ensure such contractors' compliance with the terms of this Agreement and be fully liable for the Services performed by them and for their acts and omissions. Supplier will timely pay for all services, materials, equipment and labor used by its subcontractors in connection with performing the Services and will keep Aquila's premises free from the claims and liens of all persons. Notwithstanding anything to the contrary contained in this Agreement, Supplier will provide Aquila with lien waivers from all of its contractors prior to being entitled to payment hereunder.
- 6.0 **Proprietary Information.**
- 6.1 **Trade Secrets.** Supplier acknowledges that while performing this Agreement it may have access to Aquila-owned trade secrets, including but not limited to products, planned products, service or planned service, suppliers, customers, prospective customers, data, financial information, computer software, processes, methods, knowledge, data, inventions, ideas, marketing promotions, discoveries, current or planned activities, research, development or other information relating to Aquila's business activities or operations or those of its customers or suppliers ("Proprietary Information").
- 6.2 **Confidentiality.** This Agreement creates a confidential relationship between Aquila and Supplier. Supplier will keep Proprietary Information confidential and, except as authorized by Aquila in writing, Supplier may only use Proprietary Information to perform the Services as required under this Agreement, and may only make copies necessary for performing the Services. Supplier will label all Proprietary Information as proprietary to Aquila. Upon cessation of Services, termination or expiration of this Agreement, upon Aquila's request, ,

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Supplier will return all Proprietary Information and all documents, data and other materials in Supplier's control that contain or relate to Proprietary Information.

- 6.3 **Non-Disclosure.** Aquila may require signed Non-Disclosure Agreements from Supplier's employees, agents or subcontractors, and Supplier will obtain such agreements immediately upon Aquila's request.
- 6.4 **Exceptions.** Proprietary Information does not include information that Supplier can demonstrate by written documentation:
- a) is rightfully known to Supplier prior to negotiations leading to this Agreement;
 - b) except as developed pursuant to Section 7, is independently developed by Supplier without any reliance on Proprietary Information; or
 - c) is or later becomes part of the public domain through no fault of Supplier or is lawfully obtained by Supplier from a third party.
- 6.5 **Solicitation.** Supplier will not directly or indirectly employ or solicit for employment, or utilize for any Services any Aquila employee for two (2) years after termination or expiration of this Agreement.
- 6.6 **Relief.** Supplier acknowledges that disclosure of Proprietary Information by Supplier will cause irreparable injury to Aquila, its customers and other suppliers, that is inadequately compensable in monetary damages. Accordingly, Aquila may seek injunctive relief in any court of competent jurisdiction for the breach or threatened breach of this section, in addition to any other remedies in law or equity.
- 7.0 **Ownership.**
- 7.1 **Information.** All equipment, materials, drawings, software or data of every description that Supplier receives directly or indirectly from Aquila or from a third party on behalf of Aquila, or that is paid for, in whole or in part, by Aquila, is and shall remain the property of Aquila ("Aquila-owned"). Supplier must mark all such property as Aquila owned, and must return all Aquila-owned property to Aquila upon Aquila's request. Supplier is responsible and must account for all Aquila-owned property, and bears the risk of loss while the property is in Supplier's possession. Aquila-owned property may only be used in Supplier's performance of this Agreement. Aquila may inspect any agreements and associated records at any time, including invoices, by which Supplier acquires Aquila-owned property.
- 7.3 **License.** Supplier grants to Aquila fully paid-up, perpetual and worldwide license to utilize in any manner any work previously owned by Supplier but delivered to Aquila under this Agreement, in all media now known or later conceived or created.
- 7.4 **Integration.** Supplier will, upon Aquila's request, interact part or all of its automated system to any one or a number of Aquila's current or future automated systems.
- 8.0 **Supplier Warranties.**
- 8.1 **Defects.** Supplier hereby warrants that the Services, all goods incidental to the Services, and all documentation, transfer of knowledge, installations and designs will conform to the Project Documents, will be free from defects in materials and workmanship, will be accurate and complete in all respects, fit for their intended purpose and merchantable. Supplier further warrants that all analysis and interpretations provided as a part of this Agreement will be accurate and complete in all respects and that all materials and equipment provided by Supplier incidental to the Services will be new. At the request of Aquila or the Aquila Affiliate making the Request, Supplier will promptly correct defects in the Services as determined by Aquila. If

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Supplier fails to do so within ten (10) days of Aquila's notice to Supplier of the defect, Aquila may cause the defect to be corrected and charge all costs associated therewith to Supplier. Supplier's warranties shall continue for one (1) year after Aquila's payment for Services.

- 8.2 **Other Obligations.** Supplier hereby warrants its performance under this Agreement will not be in violation of any existing obligation of Supplier or its personnel and will not violate or infringe upon the rights of third parties, including but not limited to property, contractual, employment, trademark, trade secrets, copyright, patent, proprietary information and non-disclosure rights.
- 8.3 Supplier will not disclose or deliver any proprietary information of Supplier or any third party (such as software and documentation) to Aquila except pursuant to a written license agreement.
- 8.4 Neither Supplier, nor any of Supplier's employees or agents, has offered or given anything of value to Aquila employees or agents to secure this Agreement.

9.0 Environmental.

Supplier will comply with all Occupational Safety & Health Act (OSHA) regulations and all other applicable federal, state and local rules and regulations which may apply to performance of the Services. Specifically, in its performance of Services, Supplier shall observe and comply with all federal, state and local environmental laws, rules, regulations, policies and orders, including but not limited to those relating to the discharge, generation, removal, transportation, storage and handling of all hazardous substances or waste materials (collectively, "Hazardous Substances"). Supplier shall remove all Hazardous Substances caused by Supplier to be located in or surrounding any premises of Aquila and remediate such premises in compliance with all applicable laws, regulations and orders, and pay all costs associated with such removal and remediation. The indemnification provisions of Section 12 of this Agreement apply to any claims made against Aquila or an Aquila Affiliate related to the subject matter of this Section 9. Supplier will not use any product or material in connection with performing the Services which fails to comply with any applicable rules, regulations or standards of any governmental agency or which could present a risk to the public health or safety or to the environment. Supplier must immediately notify Aquila by telephone (followed by written confirmation within twenty-four (24) hours) of any product or material used in providing Services which fails to comply with any applicable safety rules, regulations or standards of any governmental agency (including but not limited to the Environmental Protection Agency) or which could present a risk to the public health or safety or to the environment. Additionally, Supplier must immediately notify Aquila by telephone (followed by written confirmation within twenty-four (24) hours) of any event, occurrence or incident required to be reported to an administrative agency pursuant to its rules, regulations or orders, including but not limited to the Department of Transportation.

10.0 Cancellation of Services.

- 10.1 Time is of the essence. Aquila may cancel Services in whole or in part if Supplier refuses to deliver Services or if Supplier, in Aquila's sole judgment, is not performing in accordance with this Agreement or the terms of any Project Documents. Aquila's acceptance of all or any part of the Services will not waive any claims which Aquila may have for delays in Supplier's performance.
- 10.2 If Aquila cancels any Services for cause or other breach by the Supplier, Aquila may procure similar Services and Supplier shall reimburse Aquila for the difference between the cost of such Services from Supplier and the cost of any and all replacement services. If cancellation is partial, Supplier shall continue the performance of the remaining Services.
- 10.3 Aquila may cancel all or any part of the Services immediately upon notice to Supplier. Upon receipt of such notice, Supplier shall discontinue work, preserve and protect materials, work in progress and completed work and conclude performance in accordance with Aquila's instructions. Aquila will pay Supplier's costs properly

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incurred prior to such termination (substantiated by documentation satisfactory to Aquila) in accordance with this Agreement. Supplier will not be entitled to any damages on account of cancellation.

11.0 Federal requirements.

11.1 Federal Acquisition Requirements. If Aquila or the federal government determines that this Agreement supports specific requirements included in an Aquila contract or subcontract with the federal government, Supplier will be subject to certain federal acquisition regulations ("FARs") contained in Aquila's contract or subcontract. Supplier agrees to comply with and to perform in accordance with such FARs. Supplier will be subject only to FARs that must be included in all subcontracts as a matter of law. The applicable FAR will be attached to the affected Project Documents and incorporated herein by reference. The failure of any applicable FAR to be attached to the Project Documents shall not be excuse or cause for Supplier not to comply with or perform in accordance with any such applicable FAR.

11.2 Small and Minority Businesses. Supplier must make an accounting of all dollars that are paid to firms that are Small Businesses, Small Disadvantaged Businesses, or Women-Owned Businesses under Small Business Administration regulations. These dollars will be reported in writing to the following address:

Small Business Coordinator
Aquila Inc.
20 West 9th. St. Kansas City, MO 64105

12.0 Liability and Indemnification.

12.1 Indemnification. Supplier agrees to release, irrevocably and forever, Aquila, Aquila Affiliates and their respective employees, officers, directors, shareholders, insurers, agents, representatives and affiliates (collectively, "Aquila Indemnitees"), and to indemnify, defend and save harmless the Aquila Indemnitees, from all claims, liabilities, suits, proceedings, costs and expenses, including attorneys' fees (collectively "Indemnified Losses"), for any damage, injury, death, loss or destruction of any kind, including but not limited to loss or damage to any property or injury to or death of any person, including but not limited to personnel of any Aquila Indemnitee and/or Supplier, if the damage, injury, death, loss or destruction results or allegedly results, in whole or in part, from the conduct, negligence, error, omission, willful misconduct or breach of this Agreement on the part of Supplier or any of its agents, servants, representatives, employees, contractors or subcontractors, except to the extent caused by or arising from gross negligence or willful misconduct of any Aquila Indemnitee, Aquila. In the event a court of competent jurisdiction declares void or unenforceable Supplier's agreement to indemnify any Aquila Indemnitee against Indemnified Losses resulting from damage, injury, death, loss or destruction of any kind caused in part by an Aquila Indemnitee, Supplier's indemnification obligation shall not thereby be extinguished but shall instead be limited to the extent to which Supplier is adjudged, under comparative fault or similar rules, to be the cause of such damage, injury, death, loss or destruction.

12.2 Defense. Supplier agrees to handle the defense of all claims subject to indemnification under this Agreement, including but not limited to all claims that the Services or the goods furnished or developed by Supplier in the course of this Agreement or any resulting use or sale of any work or goods constitutes an infringement of any patent or copyright of any country, or misappropriation of any trade secret, or constitutes a breach of any moral right, or any other intellectual right (collectively, "Infringement Claims"). Infringement Claims are subject to the indemnification provisions of this Agreement.

12.3 Enjoined Services. If the sale or use of any goods or Services is enjoined, Supplier must, at Aquila's option and Supplier's expense, either:

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- a) procure for Aquila and its customers the right to use the goods or Services; or
- b) replace the goods or Services with equivalent non-infringing goods or Services; or
- c) modify the goods or Services so they become non-infringing; or
- d) discontinue the Services and refund all monies paid by Aquila for the goods and Services, including transportation, installation, removal and other incidental charges incurred by Aquila and its customers.

12.4 **Notice of Claims.** Aquila will notify Supplier in writing of any claims subject to indemnification hereunder, and will provide, to the extent necessary and reasonable, information, assistance and authority for Supplier's handling and defense of such claims, all at Supplier's expense.

12.5 **Settlement.** Notwithstanding Supplier's obligations to handle and defend all claims as set forth above, Aquila may, at Aquila's sole option, elect to participate in the handling, defense, or settlement of any claim, without lessening Suppliers indemnification obligations under this agreement. Supplier will be bound to indemnify Aquila for all settlement expenses.

12.6 **Damages.** Aquila will not be liable to Supplier for special, indirect, consequential or punitive damages.

12.7 **Aquila Property.** Supplier will be responsible for any loss of Aquila property arising out of or relating to its failure to perform its obligations under this Agreement. Supplier will reimburse Aquila for any such loss of Aquila property at replacement cost.

13.0 **Insurance.** Supplier will obtain and maintain at its sole cost and expense during the term of this Agreement or, if later, the termination of all outstanding Contract Orders, and ensure that its contractors obtain and maintain at their sole cost and expense, with insurers licensed to do business in all jurisdictions where Services are performed and that have a Best's rating and policy holder surplus of A-VII, the following minimum insurance coverages:

(a) workers compensation as required under any workers compensation or similar law in the jurisdiction where the Services are performed, and employers liability insurance. Employers liability limits may not be less than \$1,000,000 each accident for bodily injury by accident or \$1,000,000 each employee for bodily injury by disease.

(b) commercial general liability with a limit of not less than \$1,000,000 each occurrence and \$2,000,000 aggregate. The aggregate limit, must apply separately to this project/location. The policy must cover liability arising from premises, operations, independent contractors, products-completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract). Completed Operations coverage is to extend for two years following the last to occur of the following events: (i) the termination of this Agreement; or (ii) the termination of all outstanding Contract Orders.

(c) automobile liability with a limit of not less than \$1,000,000 each accident. Such insurance must cover liability arising out of any automobile (including owned, hired, and non-owned autos).

(d) commercial umbrella liability insurance excess of employers liability, general liability and automobile liability with a limit of not less than \$5,000,000 each accident.

(e) if the Services are professional services, errors and omissions liability coverage appropriate to the service being provided. Coverage must apply to economic damages resulting from a professional error, act,

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or omission arising out of the scope of services defined in this contract. Coverage must be maintained in an amount of at least \$5,000,000 per occurrence and aggregate.

Aquila assumes no responsibility for loss or damage to Supplier's and/or subcontractor's personal property while on Aquila's premises.

Aquila must be included as an additional insured under the policies described in paragraphs 20(b), (c) and (d). Insurance will apply on a primary and non-contributory basis, with respect to any other insurance or self-insurance programs afforded to Aquila. The policy will be so endorsed if necessary. Policies must contain a severability of interest clause. Any deductibles or self-insured retentions carried by Supplier are the sole responsibility of Supplier and must be declared on certificates of insurance.

- 13.2 **Certificates of Insurance.** Supplier must, as a material condition of this Agreement, prior to performance of any Services and prior to any renewal of insurance, deliver to Aquila certificate of insurance, satisfactory in form and content to Aquila, naming Aquila and the Aquila Affiliate making the Request as additional insureds and evidencing that the above insurance is in force and will not be canceled or modified without giving Aquila thirty (30) days prior written notice.
- 13.3 **Endorsements; Subrogation.** All such insurance shall be endorsed as follows: (a) provide that all insurance shall be primary and any other valid and collectable insurance available to Aquila shall be Excess; (b) waive the rights of recovery or subrogation against Aquila and Aquila Affiliates; and (c) retentions and deductibles shall be at the sole expense and for the account of Supplier.
- 13.4 **Limitation on Liability.** The insolvency, bankruptcy or failure of any insurer of Supplier or of its contractors to pay any claim will not affect, negate or waive Supplier's liability under this Agreement. Nothing contained in this section limits Supplier's liability to the limits of insurance certified or carried.
- 14.0 **Right of Audit.**
- 14.1 **Records.** Supplier will maintain all records pertaining to Services performed for a period of at least three (3) years after termination or expiration of this Agreement or final payment of all invoices issued pursuant to this Agreement. Aquila may audit, copy and inspect such records at reasonable times during the term of this Agreement and during the three (3) year period stated above.
- 14.2 **Performance.** Aquila and its authorized representatives will have the right to audit Supplier's performance under this Agreement.
- 15.0 **Notice**

All communications, consents, invoices, and notices relating to this Agreement must be identified by the Contract Number, Proposal Number, if one, and Request Number and (except for invoices) must be sent by certified mail, return receipt requested, telex, facsimile or overnight mail to the following:

Aquila: John Norris
10750 East 350 Highway
PO Box # 11739
Kansas City, MO 64138
Phone: (816) 737-7590
Mobile: (816) 898-1688

Supplier: Mel Riley
Asplundh Tree Expert Company

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10575 Widmer
Lenexa, KS 66215
Phone: (913) 469-5440
Mobile: (913) 207-0124

or to such other addresses or facsimile numbers as either party shall notify the other of in writing.

16.0 Arbitration.

16.1 Arbitration. Except as otherwise provided in this Agreement, any dispute arising out of or relating to this Agreement, including any issues relating to arbitrability or the scope of this arbitration clause, will be finally settled by arbitration in accordance with the rules of the American Arbitration Association applying the substantive law of Missouri without regard to any conflict of laws provision. The arbitration will be governed by the United States Arbitration Act, 9 U.S.C. § 1, *et seq.*, and judgment upon the award rendered by the arbitrator(s) may be entered by any court with jurisdiction. The arbitration will be held in the Kansas City, Missouri metropolitan area.

16.2 Continuing Performance. Supplier agrees to continue performance during the pendency of any dispute, unless performance is terminated pursuant to this Agreement.

16.3 Limitation of Claims. No claim may be brought by Supplier after Aquila has made final payment to Supplier. Claims made by Supplier may only be brought against the Aquila Affiliate which issued the Request related to the claim.

17.0 Security.

17.1 Background Checks. Supplier warrants and agrees to provide pre-employment screening background checks on each Supplier employee, agent, contractor and subcontractor (collectively, "Agent") assigned to perform Services, in accordance with Aquila guidelines required for Aquila employees and as per DOT requirements, including at a minimum: a) criminal history checks; b) education checks (if degree indicated); c) employment checks (last three (3) positions or last five (5) years if with same employer); d) three (3) reference checks; and e) drug screen checks. On positions that do not fall under DOT pre-employment screening, backgrounds checks are to include at a minimum: a) education /job certification checks and b) drug screen checks. Supplier warrants and agrees that only those Agents who have successfully passed these background security checks will perform the Services. Aquila may inspect Supplier's records from time to time to determine compliance with the foregoing obligations.

17.2 Badges. All Agents will receive a contract vendor security badge from Aquila prior to performing any Services on Aquila premises and will be required to wear the badge at all times while on any Aquila premises.

17.3 Access. Security access rights to Aquila premises will be provided to Supplier by Aquila for the designated premises where Services are performed. Supplier will abide by all procedures and policies applicable to such Aquila premises and ensure compliance by its Agents.

17.4 Weapons. Supplier is prohibited at all times from carrying, and shall not carry, weapons or ammunition onto the premises of Aquila or any Aquila Affiliate. Supplier agrees to comply with all postings and notices located on any such premises and with all policies, rules and regulations of Aquila and Aquila Affiliates, whether or not relating to security matters, and including but not limited to those regarding safety, security and weapons.

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- 17.5 **Compliance.** Supplier will be responsible for establishing, maintaining and ensuring adherence to all applicable Aquila security requirements. Security access rights to any Aquila premises will be designated by Aquila in accordance with Aquila security guidelines. Supplier will abide by all applicable procedures and policies.
- 17.6 **Breach of Security.** Security breaches will be referred to aquila's Corporate Security department. Supplier must make Supplier's employees available to facilitate investigations related to loss or incidents arising out of Supplier's performance of Services on Aquila's premises, at Supplier's expense. Any breach by Supplier, its employees or contractors, of any of the provisions of this Section 17 shall be cause for removal from the premises and immediate termination of this Agreement and all Services, at Aquila's option.
- 17.7 If Supplier's work under this Agreement involves performance on Aquila's or its customers' premises, Supplier must take necessary precautions to prevent injury to persons or property during the work and adhere to security procedures of Aquila or its customers.
- 17.8 **Compliance with DOT Anti-Drug and Alcohol Misuse Regulations.** Aquila, under Title 49 of the Code of Federal Regulations (49 CFR") Parts 199 and 40, as amended is required by law to ensure compliance with the pipeline safety regulations for drug and alcohol testing applicable to its Suppliers, subcontractors and their agents who perform operations, maintenance, or emergency response functions, in connection with its performance under this Agreement on a pipeline or liquefied natural gas facility subject to Parts 191, 192, 193 and 195 of 49 CFR. Therefore, in connection with its performance under this Agreement: (a) Supplier, its subcontractors, and their agents agree to abide by a DOT Anti-Drug Plan and Alcohol Misuse Program which applies to all employees of Supplier, its subcontractors and agents, if performing any operations, maintenance or emergency response function; (b) Supplier, its subcontractors and their agents agree to provide to their respective employees (including without limitations supervisory employees) an Anti-Drug Plan and Alcohol Misuse Program and the drug and alcohol testing, education, and training required by 49 CFR Parts 199 and 40; (c) Supplier represents that all employees of supplier, its subcontractors and their agents, are in compliance with the drug and alcohol testing regulations at 49 CFR Parts 199 and 40 and the Motor Carrier Regulations at 49 CFR Parts 382 and 383, if applicable; and (d) Supplier, its subcontractors and their agents agree to allow Aquila and the administrator and/or representative of a state agency (as defined in 49 CFR Part 199) access to its property and records for the purpose of monitoring compliance with the requirements of the Research and Special Programs Administration for drug testing at 49 CFR Part 199. This access shall occur periodically and without prior notice to allow Aquila, the administrator and/or representative of a state agency to audit Supplier, its subcontractors and their agents' Anti-Drug Plan and Alcohol Misuse Program, the required drug and alcohol testing and results thereof.

Supplier, its subcontractors and their agents shall have sole responsibility for all costs of compliance with any drug or alcohol testing law, regulation or policy. Supplier further agrees that if an employee of Supplier, its subcontractors or its agents tests positive for illegal drugs or alcohol during any test performed in accordance with DOT requirements or otherwise during the term of this Agreement, the employee will not be permitted to perform services for Aquila until the employee has successfully completed a rehabilitation program approved by Aquila and at no cost to Aquila; such employees participation in such program will be at the discretion of Aquila. By entering into this Agreement, Aquila makes no representation as to Supplier's compliance with any drug or alcohol testing law, regulation or policy as compliance with such laws, regulations and policies remains exclusively with Supplier.

Supplier's employees may be included in Aquila's Research and Special Projects Administration ("RSPA") random pool for random drug testing, if agreed to by Aquila's Drug and Alcohol Program Manager. In such cases, Supplier's employees will only be included in such pool to the extent such employees are providing services to Aquila during the term of and pursuant to this Agreement. If Supplier's employees are included in such pool, supplier agrees to notify Aquila in writing if any of Supplier's employees perform functions covered

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by 49 CFR Parts 191, 192, 193 or 195 for any entity other than Aquila during the term of this Agreement. The following additional provisions apply to this Agreement, if checked:

____ Aquila agrees to include Supplier's employees in Aquila's RSPA random drug testing pool for random drug testing. Supplier has developed and will comply with all applicable terms of Supplier's DOT Anti-Drug Plan and Alcohol Misuse Program.

____ Aquila agree to include Supplier's employees in Aquila's RSPA random drug testing pool for random drug testing. Supplier further agrees to comply with all applicable terms of Aquila's Anti-Drug Plan and Alcohol Misuse Program; provided, however, Supplier agrees to be solely responsible for the cost of any drug or alcohol test required by Aquila and/or the DOT, and will not be compensated for time Supplier spends complying with such drug or alcohol testing obligations. Aquila will provide one (1) copy of Aquila's Anti-Drug Plan and Alcohol Misuse Program to Supplier; Supplier is solely responsible for providing additional copies of Aquila's Anti-Drug Plan and Alcohol Misuse Program to employees of Supplier, as required by applicable law and such Program.

In addition to all other reasons for termination of this Agreement, Supplier agrees that this Agreement may be terminated immediately by Aquila if supplier, its subcontractors, or their agents violate any provision of this provision.

18.0 General.

18.1 Supplier Performance. Time is of the essence in Supplier's performance under this Agreement. Aquila is not obligated to pay for Services performed or goods delivered which do not conform to the Project Documents.

18.2 Force Majeure. Aquila will be excused from accepting all or any part of Services tendered for delivery by Supplier due to governmental action, statute, ordinance, rule or regulation, strike or other labor trouble, fire, acts of God, or other incidents outside of Aquila's control that makes acceptance impossible or impracticable.

18.3 Assignment. Aquila may assign this Agreement to any person without the consent of and upon notice to Supplier. Supplier may not assign this Agreement or any of its rights or delegate its obligations without the prior written consent of Aquila.

18.4 Governing Law: Jurisdiction. This Agreement shall be governed by and construed in accordance with the laws of the State of Missouri without regard to any conflict of laws provision. Supplier hereby consents and submits to the personal jurisdiction and venue of the state and federal courts sitting in the State of Missouri and acknowledges that the foregoing covenant is a material inducement for Aquila to enter into this Agreement.

18.5 Laws and Regulations. Supplier will comply with all applicable laws, orders, codes and regulations in the performance of this Agreement. Supplier will indemnify, defend and hold harmless Aquila, Aquila Affiliates, and their respective employees, officers, directors, shareholders, agents and affiliates, from all claims by any person, government or agency relating to any violation thereof, including without limitation, any penalties and interest which may be assessed against Aquila in connection therewith.

18.6 Permits and Licenses. Supplier will obtain and keep current at Supplier's expense all governmental permits, certificates and licenses (including but not limited to professional licenses, if applicable) necessary for Supplier to perform the Services.

18.7 Waiver. The waiver of a breach of any term or condition of this Agreement will not constitute the waiver of any other breach of the same term or any other term or condition. Waivers must be in writing to be enforceable.

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- 18.8 **Severability.** If any provision of this Agreement is held to be unenforceable by a court of competent jurisdiction, the remaining provisions will remain in effect, to be construed as if the unenforceable provisions were originally deleted.
- 18.9 **Survival.** Sections 2, 5, 6, 7, 8, 9, 11, 12, 14, 15, 16 and 18 will survive the termination or expiration of this Agreement, in addition to any other provisions that by their content are intended to survive the termination or expiration of this Agreement.
- 18.10 **Publicity.** Supplier will not, without Aquila's prior written consent, make any news release, public announcement or confirmation of this agreement or its subject matter.
- 18.11 **Remedies.** All rights and remedies of the parties, in law or equity, are cumulative and may be exercised concurrently or separately. The exercise of one remedy will not be an election of that remedy to the exclusion of other remedies.
- 18.12 **Captions.** The captions and section headings of this Agreement are for convenience of reference only and shall not be used to interpret this Agreement.
- 18.13 **Exhibits.** The following exhibits are attached to and incorporated in this Agreement:
Exhibit A Contract Order
- 19.0 **Entire Agreement.**

This Agreement, together with all Project Documents executed from time to time, constitutes the entire Agreement between Aquila and Supplier with respect to their subject matter, and may not be amended or modified except by written document signed by both parties.

THIS AGREEMENT CONTAINS A BINDING ARBITRATION PROVISION WHICH MAY BE ENFORCED BY THE PARTIES.

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be executed, effective as of the day and year first above written.

SIGNED:

AQUILA, INC.

ASPLUNDH TREE EXPERT, INC.

Joseph Steve
(signature)

Mel Riley
(signature)

JOSEPH STEVE
(print name)

MEL RILEY
(print name)

LEAD NEGOTIATOR
(title)

VICE PRESIDENT
(title)

11-15-2007
(date)

11-15-2007
(date)

OPERATING STANDARDS

DATE: 03/11/08 SECTION: 6 - Operating & Maintaining

STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management (Missouri)

APPENDIX D

APPENDIX D

Permits



Aquila

TREE MAINTENANCE PERMIT

We request your approval to trim or remove trees at the following address: _____

Trim trees as follows: _____

Remove trees as follows: _____

THANK YOU

Aquila Networks

I/We the owners of the above described trees ☐ give
☐ do not give permission to trim or remove trees as described above.

Date

Signature of Property Owner

MPS-121
REV 11-03

WHITE - CUSTOMER YELLOW - AQUILA PINK - CONTRACTOR

OPERATING STANDARDS

DATE: 3/11/08 SECTION: 6 - Operating & Maintaining

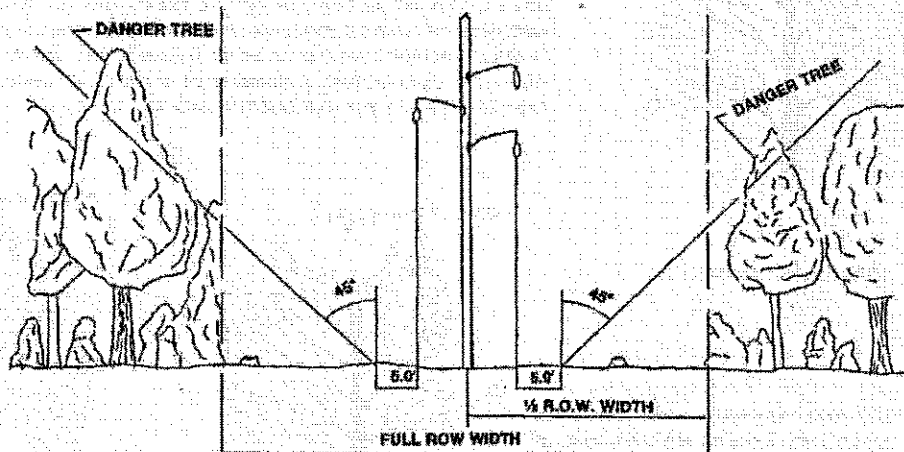
STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management

APPENDIX E

APPENDIX E

Guidelines and Specifications



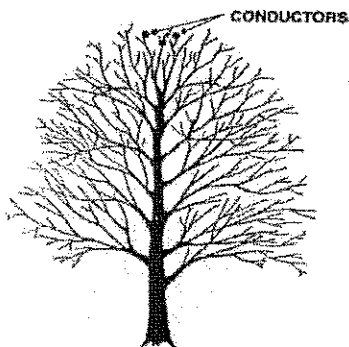
NOTES:

1. DANGER TREES SHALL BE REMOVED OR TOPPED.
2. PORTIONS OF THE RIGHT OF WAY SHALL BE CLEARED SO THAT STUMPS WILL NOT PREVENT THE PASSAGE OF TRACTORS AND TRUCKS.
3. STUMPS SHALL BE CUT TO A MAXIMUM OF 6" HEIGHT AND TREATED WITH APPROPRIATE CHEMICAL TO PREVENT SPROUTING, WHEN APPROPRIATE.
4. DESIGNATE FULL CUT R/W - (WIDTH), 1/2 CUT AS 1/2 R/W - (WIDTH).

**TREE ADJUSTMENT: GUIDELINES AND SPECIFICATIONS
— DRAWING —**

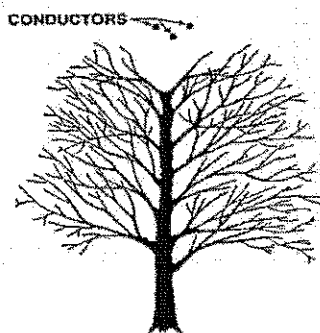
C.S.
**TRANSMISSION - FULL CUT RIGHT-OF-WAY
CLEARING GUIDE**

Prepared By	Checked	Approved	Date Approved	Authorized	Revised	Revised	Revised	Revised	Revised
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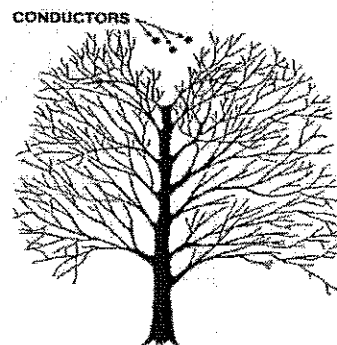


TREE TO BE TRIMMED

THE "NATURAL TOPPING" METHOD IS DONE BY CUTTING BACK LARGE PORTIONS OF THE UPPER TREE CROWN. THE MAIN LEADERS ARE TO BE CUT BACK TO SUITABLE LATERALS. THE REMAINING LATERAL SHOULD BE AT LEAST 1/3 THE SIZE OF THE LIMB REMOVED TO MINIMIZE SPROUT REGROWTH. IT IS RECOMMENDED TO NOT REMOVE MORE THAN 1/4 OF THE TREE'S CROWN. WHERE POSSIBLE, SMALL AMOUNTS OF SHADE SHOULD BE LEFT ON THE FRESHLY CUT CROWN AREA. DIRECTIONAL TRIMMING SHOULD BE DONE TO GUIDE THE GROWTH OF THE TREE AWAY FROM THE CONDUCTOR. A MINIMUM OF 6 FEET OF CLEARANCE SHOULD BE OBTAINED BETWEEN THE CONDUCTOR AND THE TREE.



CORRECT METHOD
(NATURAL TRIMMING METHOD)

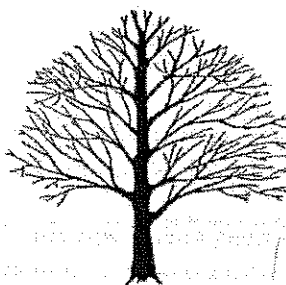


CORRECT METHOD RESULTS
(NATURAL TRIMMING METHOD)
W/TOP OF TREE SHADED

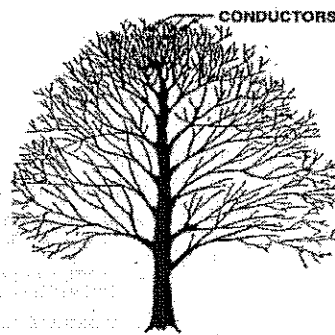
THE "NATURAL TOPPING" METHOD WILL REQUIRE FEWER AND LARGER LIMB CUTS. THE RESULTS SHOULD PRODUCE A NATURAL LOOKING TREE. "NATURAL TOPPING" WILL RESULT IN LONGER TRIMMING CYCLE AND A HEALTHIER TREE.



THE "SHEAR TOPPING" METHOD WILL REQUIRE MANY SMALL CUTS, WITH A UNIFORM ROUNDING EFFECT. THE METHOD WILL GREATLY CONTRIBUTE TO VERY RAPID REGROWTH OF SPROUTS BACK TOWARD THE CONDUCTORS. SHEARING MAY PRODUCE WOOD ROT AND UNHEALTHY TREE CONDITIONS. EXAMPLE: AN ELM TREE TRIMMED BY THE SHEAR METHOD WILL GROW SPROUTS, ON THE AVERAGE, TWICE AS LONG AS THE "NATURAL" METHOD, IN THE SAME TIME PERIOD.



WRONG METHOD
(SHEAR TRIMMING METHOD)



WRONG METHOD RESULTS
(SHEAR TRIMMING METHOD)

Missouri Public Service Company

TREE ADJUSTMENT: GUIDELINES AND SPECIFICATIONS

-DRAWING-

D.2.c.

'NATURAL' TOPPING VERSUS 'SHEAR' TOPPING PROCEDURES AND RESULTS

PREPARED BY	SAS	DATE	1/12/86	APPR.	APPROVED	APPROVED	APPROVED	REV.	REV.	REV.
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OPERATING STANDARDS

DATE: 3/11/08 SECTION: 6 - Operating & Maintaining

STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management (Missouri)

APPENDIX F

APPENDIX F

Forms

[illegible]

Daily Crew Work Log

Crew # _____

Foreman

Device # _____

[illegible]

OPERATING STANDARDS

DATE: 03/11/08 SECTION: 6 - Operating & Maintaining

STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management (Missouri)

APPENDIX G

APPENDIX G

Herbicide Report

DAILY CHEMICAL REPORT

[illegible]

OPERATING STANDARDS

DATE: 03/11/08 SECTION: 6 - Operating & Maintaining

STANDARD NO: E-OM1009

STANDARD: Line Clearance and Vegetation Management (Missouri)

APPENDIX H

APPENDIX H

Schedules

2008 Distribution Trim Schedule

Region	Premise Area	Substation Name	Feeder	Overhead Miles	Start Date	End Date	% Complete	Miles Completed	Customer Count	Urban Rural
East	Blue Springs	Grain Valley	264-502	4.69				0.00	1781	Urban
East	Blue Springs	Grain Valley	264-503	44.00				0.00	1807	Urban
East	Blue Springs	Lakewood	418-507	5.82	March-08		85%	4.95	489	Urban
East	Blue Springs	Lakewood	418-502	14.32	March-08		50%	7.16	1341	Urban
East	Blue Springs	Lakewood	418-508	7.63	March-08			0.00	2069	Urban
East	Blue Springs	Lakewood	418-501	7.13	March-08		95%	6.77	1035	Urban
East	Blue Springs	Sibley	820-502	69.57				0.00	1198	Rural
East	Blue Springs	Sibley	820-501	16.05				0.00	928	Urban
East	Blue Springs	Strother Rd	838-503	2.58	January-08	March-08	100%	2.58	1129	Urban
East	Blue Springs	Strother Rd	838-502	13.19	January-08	March-08	100%	13.19	1569	Urban
East	Henrietta	Norborne	582-501	11.79				0.00	424	Urban
East	Henrietta	Norborne	582-502	11.42				0.00	105	Rural
East	Henrietta	Richmond	729-503	5.09				0.00	122	Rural
East	Henrietta	Richmond	729-509	115.1	November-07		80%	92.08	1347	Rural
East	Henrietta	Richmond	729-504	83.28	January-08		45%	37.48	2085	Rural
East	Liberty	Hallmark	291-505	12.27	February-08		50%	6.14	598	Urban
East	Liberty	Liberty South	480-503	16.61	February-08		5%	0.83	1067	Urban
East	Liberty	Moss Street	474-592	12.12				0.00	1319	Urban
East	Platte City	Platte City	658-503	57.12	April-08		7%	4.00	3445	Urban
East	Platte City	Staley Road	830-507	7.81				0.00	305	Urban
East	Platte City	Staley Road	830-508	17.61				0.00	1781	Urban
North	Maryville	Fairfax	FX160	84.41	February-08		20%	16.88	662	Rural
North	Maryville	Grant City	GC135	16.68				0.00	338	Rural
North	Maryville	Grant City	GC136	11.21				0.00	344	Rural
North	Maryville	Maitland	ML175	29.99				0.00	630	Rural
North	Maryville	Worth	WH130	20.01				0.00	158	Rural
North	Maryville	Worth	WH131					0.00		
North	St. Joseph	Belt Jct	570-61	1.96	April-08			0.00	103	Urban
North	St. Joseph	Belt Jct	570-64	1.72	staged			0.00	75	Urban
North	St. Joseph	Cook	CK113	8.33				0.00	1288	Urban
North	St. Joseph	Cook	CK114	65.96				0.00	1347	Rural
North	St. Joseph	Cook	CK18	12.10				0.00	767	Urban
North	St. Joseph	Cook	CK19	21.40	March-08		30%	6.42	1896	Urban
North	St. Joseph	East	ES111	7.26				0.00	727	Urban
North	St. Joseph	Edmond st	501-14	3.89	staged			0.00	334	Urban
North	St. Joseph	Edmond st	501-15	4.77	staged			0.00	704	Urban
North	St. Joseph	Gower	563-65	68.01				0.00	454	Rural
North	St. Joseph	Gower	563-66	32.94				0.00	649	Rural

2008 Distribution Trim Schedule

Region	Premise Area	Substation Name	Feeder	Overhead Miles	Start Date	End Date	% Complete	Miles Completed	Customer Count	Urban Rural
North	St. Joseph	LR-12	552-50	3.46	April-08	April-08	100%	3.46	40	Rural
North	St. Joseph	LR-12	552-56	2.28	April-08	April-08	100%	2.28	18	Rural
North	St. Joseph	Messanie	565-46	8.33	February-08	March-08	100%	8.33	1288	Urban
North	St. Joseph	Messanie	565-47	10.03	January-08	February-08	100%	10.03	1484	Urban
North	St. Joseph	Messanie	565-48	8.25	January-08	February-08	100%	8.25	1577	Urban
North	St. Joseph	Messanie	565-49	10.49	December-07	January-08	100%	10.49	1606	Urban
North	St. Joseph	Oak	556-22	6.63	mapping			0.00	426	Urban
North	St. Joseph	Oak	556-23	1.72	mapping			0.00	11	Rural
North	St. Joseph	Rushville	571-54	32.17				0.00	361	Rural
North	Trenton	Laredo	415-501	63.64				0.00	439	Rural
North	Trenton	Trenton	859-501	14.41	March-08	April-08	100%	14.41	55	Rural
North	Trenton	Trenton	859-502	23	April-08		10%	2.30	182	Rural
North	Trenton	Trenton	859-503	24.08				0.00	165	Rural
North	Trenton	Trenton	859-507	8.29				0.00	65	Rural
South	Clinton	Appleton City	018-501	18.41				0.00	408	Rural
South	Clinton	Appleton City	018-503	28.6				0.00	406	Rural
South	Clinton	East Lynne	202-501	34.76	February-08	March-08	100%	34.76	320	Rural
South	Clinton	East Lynne	202-503	13.19	February-08	March-08	100%	13.19	121	Rural
South	Clinton	Garden City	252-501	7.86	March-08	March-08	100%	7.86	347	Urban
South	Clinton	Garden City	252-502	11.35	March-08	March-08	100%	11.35	492	Urban
South	Clinton	Lowery City	504-501	5.79				0.00	192	Rural
South	Clinton	Lowery City	504-502	7.01				0.00	165	Rural
South	Nevada	Nevada Plant	550-501	59.31	February-08		20%	11.86	727	Rural
South	Nevada	Nevada Plant	550-502	22.54	January-08		80%	18.03	1157	Urban
South	Nevada	Nevada 3M	553-506	12.40	January-08		90%	11.16	1005	Urban
South	Nevada	Nevada Plant	550-503	10.71	January-08		100%	10.71	1055	Urban
South	Nevada	Nevada Plant	550-504	10.33	February-08		70%	7.23	693	Urban
South	Sedalia	Sedalia West	764-502	26.8	April-08		10%	2.68	406	Rural
South	Sedalia	Sedalia West	764-503	16.22	March-08		98%	15.90	1177	Urban
South	Sedalia	Sedalia West	764-506	10.8				0.00	826	Urban
South	Sedalia	Sedalia West	764-521	12.27	April-08	May-08	100%	12.27	1517	Urban
South	Sedalia	Sedalia West	764-554	26.76	May-08		5%	1.34	1386	Urban
South	Warrensburg	Lamonte	406-501	11.55				0.00	519	Urban
South	Warrensburg	Elm	213-501	52.83				0.00	723	Rural
South	Warrensburg	Elm	213-502	1				0.00	173	Urban
South	Warrensburg	Greenridge	282-501	26.48				0.00	297	Rural
South	Warrensburg	Harris Rd	295-502	63.69				0.00	924	Rural
South	Warrensburg	Holden	336-501	24				0.00	409	Rural

2008 Distribution Trim Schedule

Region	Premise Area	Substation Name	Feeder	Overhead Miles	Start Date	End Date	% Complete	Miles Completed	Customer Count	Urban Rural
South	Warrensburg	Holden	336-502	8.33				0.00	397	Urban
South	Warrensburg	Holden	336-503	24				0.00	533	Rural
South	Warrensburg	Knob Noster	378-501	22.25				0.00	1113	Urban
South	Warrensburg	Knob Noster	378-502	24.49				0.00	779	Rural
West	Belton	Adrian	014-507	41.66	March-08		70%	29.16	1553	Urban
West	Belton	Adrian	014-524	148.80	March-08		5%	7.44	1271	Rural
West	Belton	Belton South	38-5533	3.25	April-08	April-08	100%	3.25	932	Urban
West	Belton	Belton South	38-5544	7.22	February-08		80%	5.78	765	Urban
West	Belton	Belton South	38-5511	18.71	January-08		60%	11.23	1501	Urban
West	Belton	Belton South	38-5522	9.00	February-08		70%	6.30	301	Rural
West	Belton	Belton South	38-5555	8.88	March-08	April-08	100%	8.88	1787	Urban
West	Belton	Belton South	38-502	12.78				0.00	1785	Urban
West	Belton	Grandview East	267-507	14.11	January-08	February-08	100%	14.11	1321	Urban
West	Belton	Grandview East	267-508	13.3	February-08		98%	13.03	1695	Urban
West	Belton	Turner Road	862-503	19.94				0.00	2068	Urban
West	Lee's Summit	Kansas City South	371-502	3.25				0.00	677	Urban
West	Lee's Summit	Kansas City South	371-504	6.83				0.00	1179	Urban
West	Lee's Summit	Kansas City South	371-509	5.60				0.00	668	Urban
West	Lee's Summit	Longview	426-502	6.54				0.00	1217	Urban
West	Lee's Summit	Longview	426-503	8.56				0.00	676	Urban
West	Lee's Summit	Longview	426-504	8.57				0.00	1128	Urban
West	Lee's Summit	Longview	426-5505	9.56				0.00	1402	Urban
West	Lee's Summit	Longview	426-5510	10.76				0.00	736	Urban
West	Lee's Summit	Hook Road	337-502	4.99				0.00	1152	Urban
West	Lee's Summit	Hook Road	337-503	3.12				0.00	32	Rural
West	Lee's Summit	Hook Road	337-509	24.09				0.00	1673	Urban
West	Lee's Summit	Raytown #1	702-506	16.68	January-08	March-08	100%	16.68	1702	Urban
West	Lee's Summit	Raytown #1	702-502	12.75	March-08		50%	6.38	1193	Urban
West	Lee's Summit	Raytown #1	702-503	16.59	February-08		95%	15.76	1650	Urban
West	Lee's Summit	Raytown #1	702-504	15.48	January-08	March-08	100%	15.48	1326	Urban
West	Lee's Summit	Raytown #1	702-507	13.13				0.00	1082	Urban
West	Lee's Summit	Raytown #1	702-508	18.12	April-08		1%	0.18	235	Rural
West	Lee's Summit	Raytown #2	696-501	0				0.00	0	

Total Miles Completed 570.02

Miles Remaining 1648.59

2008 TRANSMISSION SCHEDULE

2008

LINE #	DESCRIPTION	MILES	LAST YEAR Herbicide	LAST YEAR MOW	LAST YEAR TRIMMED	LAST YEAR HOTSPOT	SCHEDULED WORK	
	Clinton plant / Post Oak	13.6	2006	2002	1998	2004	Herbicide, Trim, Mow	
	Post Oak/ Warrensburg Plant	13.7	2006	2002	1997		Herbicide, Trim, Mow	
014	Sibley 161 to Hallmark	16.7	2000		1998	2005	Herbicide, Trim	
014	Hallmark to Nashua to Smithville	10.8	2000	2005	1998		Herbicide, Mow	
016	Smithville to Platte City	8.1	2000	2007	2007		Herbicide	
016	KCI to Platte City Tap	7.8	2000		1998	2006	Herbicide, Trim, Timberland	
028	Platte City Tap to Platte City 161		2005				Herbicide, Trim, Timberland	
020	KCI to Ferrelview	4.6	2000		1998	2006	Herbicide, Trim, Timberland	
031	Ferrelview to TWA	2.4			1998	2003	Herbicide, Trim, Timberland	
031	TWA to Roanridge	4.7	2000		1998	2005	Herbicide, Trim, Timberland	
032	Platte City 161 to Stranger Creek	13.8	2005		1998	2004	Herbicide, Trim, Timberland	
011	Adrian to (Butler) Nevada 161	37.6	2007	2006	2006-07			
003	Archie to Adrian	11.3	2007	2006	2006-07	2005		
022	Belton South to (Peculiar, Freeman) Service Pipe	15.6	2001		2006-07	2006		
140	Harrisonville 161 to (Harr. West, Anaconda) Service Pipe	11.2	2007	2006		2005	Timberland, Trim	
057	Power Coal to (Urich) Clinton Plant	23.2		2001		2006	Timberland	
635	Metz to Dedrick Junction	11.4			2007			
635	Dedrick Junction to Rockville	14.6			2007			
635	Appleton City to Rockville	11.8			2007			
635	Appleton City to Deepwater 34kv	21			2007			
001	Sibley 345 to Overton	16.3	2005		1997	2005	Herbicide, Timberland	
700	Odessa 161 to (Odessa City) 13/40 Junction	15.6		2002	1998		Herbicide, Timberland	