1 Status

1.1 Update of existing policy, effective 11/18/11.

2 Purpose

2.1 Understanding the health hazards for both Lyme disease and West Nile from prevention to risk areas to symptoms and treatment.

3 Applicability

3.1 This policy applies to all subsidiary companies and departments of the Cianbro companies.

3.2 All organizations are required to comply with the provisions of this policy and procedure.

4 Definitions

4.1 CDC: Center for Disease Control.

4.2 West Nile Encephalitis: Inflammation of the brain caused from the West Nile virus and is transmitted by the bite of infected mosquitoes.

4.3 WNV: West Nile Virus.

5 Policy

5.1 Team members, subcontractors, and others in our control, will follow all requirements of this policy and procedure.

6 Responsibilities

6.1 Corporate Safety is responsible for maintaining this document.
7.1 Lyme Disease is A Bacterial Infection

Lyme disease is a bacterial infection. In the northeastern and north-central United States it is carried only by deer ticks. Lyme disease is the most common insect borne disease in the U.S. Initially it affects the skin but if left untreated can progress to involve joints, the nervous system and other important organs. If diagnosed early and treated with antibiotics, Lyme disease is almost always easily cured! The disease was first identified in Lyme, Connecticut, the most common state to carry in southern New England. However, the disease has spread into Maine. South of Maryland has carried less than 5% of deer ticks are infected with the disease.

7.2 Determining Risk of Lyme Disease

Team members are at risk for Lyme disease if both of the following two conditions exist.

7.2.1 The job site is located in a moderate to high-risk area of the country (moderate to high density of infected Deer Ticks) as determined by reported cases of the disease. Reference the list of states in Appendix A and the map of reported cases in Appendix B. Deer Tick populations are highly localized. Contact state and local health authorities to determine the specific risk in your location.

7.2.2 The team member(s) have frequent or prolonged exposure to the habitat of the Deer Tick. Deer ticks prefer a moist, shaded environment provided by leaf litter and low-lying vegetation. Wooded, brushy, or overgrown grassy areas are favored by deer and white-footed mice are a prime habitat for Deer Ticks. If the team members' work activities require frequent or prolonged exposure to these types of areas, then they have a higher risk.

7.3 Identifying Deer Ticks

There are three types of ticks, the Blacklegged (Deer) Tick, the American Dog Tick, and the Lone Star Tick that are known to pass diseases to humans. See the pictures to the left and in Appendix C (page 10) The Deer tick is the only one that carries Lyme disease and is the smallest of the three. There are three stages in the life cycle of a deer tick: larva, nymph, and adult, each stage requiring one blood meal. There are other ticks closely related to the Deer Tick found in Maine but they are not believed to transmit Lyme disease. In some states you can send ticks to a laboratory for identification. However, some states will not test the tick unless it has been engorged (filled with blood). Contact your local or state health departments for the availability of tick identification programs in your state.
7.4 Symptoms and Signs of Lyme disease
Early detection and treatment of Lyme disease is crucial. Don’t take any chances; consult with a physician if any the following symptoms are experienced.

7.4.1 Early stage symptoms and signs
- Expanding rash – solid red or “bulls eye” type, 1-2 weeks after bite, often at the site of the bite
- Generalized achiness
- Headache
- Swelling of lymph glands (nodes) near site of bite

7.4.2 Later symptoms and signs
- Multiple rashes away from bite
- Migrating aches and joint pains
- Headache and stiff neck
- Tingling in the extremities
- Fatigue
- Fever

Note: There are less common diseases carried by ticks. If a tick has bitten you, watch for and report any unexplained symptoms.

7.5 Prevention of Tick Bites
Deer Ticks do not jump or fly. Direct contact is the only way you acquire a tick. The risk of being bitten by a tick can be reduced by taking some or all of the following precautions:

- Keep the grass cut.
- Remove leaf litter and clear tall grass and brush areas.
- Avoid tick habitat. Stay on cleared, well-traveled paths and areas whenever possible. Avoid sitting directly on the ground or on stonewalls.
- Wear light colored clothing with a tight weave so ticks can be more easily spotted.
- Scan clothes and exposed skin frequently for ticks while outdoors.
- You can tape the area where your pants and socks meet to prevent ticks from crawling under your clothes.
- To kill ticks that you may have missed, wash your clothes with hot water and dry them using high heat for at least one hour.
- Wear long sleeved shirts, gloves, and tuck pants into socks or boots to help prevent ticks from contacting the skin.
- Use insect repellent containing DEET (n, n-diethyl-m-toluamide) on skin and clothes if you will be in overgrown areas. Read labels and MSDS follow all manufactures guidelines carefully. Use products with no more than 10-15% DEET on children and no more than 30-35% DEET on adults. Do not use insect repellents on infants. Wash skin thoroughly after returning indoors. Rare but serious reactions to repellents can occur.
- In high risk situations consider the use of an insecticide on your clothes that contains Permethrin (which kills ticks on contact). Never use on exposed skin. Follow the manufacturer’s guidelines. Always wash hands thoroughly after using.
- Insecticide application in tick inhabited areas. There are several insecticides that can be used to treat an infested area from granules, fogs and sprays. As you would with any other chemical products follow the manufactures guidelines. Be sure to check on any local state and federal guidelines before administering any insecticide.
- Remove leaf litter, brush, and piles of wood etc. on the jobsite whenever possible.
- Do a final, full-body tick check at the end of the day. Inspect all parts of your body carefully including your armpits, scalp, and groin. This is also important at home for kids and pets.

When taking the above precautions, consider that ticks will climb upward in search of exposed skin. This means they may climb into hidden areas of the head and neck if not intercepted first; spot check clothes frequently. Upon returning home, clothes can be put in the dryer for twenty minutes to kill any unseen ticks. A shower and shampoo may help but is only somewhat effective and is not a replacement for a full body check. The risk of contracting Lyme disease is greatest from the tiny, inconspicuous nymphs, which are the size of a poppy seed.
Take extra precautions in May, June, and July. This is when ticks that transmit Lyme disease are most active.

7.6 Tick Removal
If you do find a tick attached to your skin, don’t panic. Not all ticks are infected, and studies of infected deer ticks have shown that they begin transmitting Lyme disease on average of 36 to 48 hours after attaching to the skin. Therefore, your chances of contracting the disease are greatly reduced if you remove a tick within the first 24 hours. Remember, that the vast majority of early Lyme disease cases are easily treated and cured.

Note: Please refer to Appendix D for step-by-step instructions on proper tick removal.

Monitor the site of the bite for the appearance of a rash beginning 3 to 30 days after the bite. Review the other early Lyme disease symptoms and watch to see if they appear in the same time frame. If these or any other unexplained symptoms develop, report it and see a physician immediately.

Report all tick bites to your supervisor. Supervisors, be sure to complete a First Report on all bites.

7.7 Lyme Disease Vaccine
The Lyme disease vaccine has been taken off the market. The company that was producing the vaccine said that no one was buying it and it cost too much to produce.

7.8 West Nile Virus
West Nile virus (WNV) is a potentially serious illness. Experts believe WNV is established as a seasonal epidemic in North America that flares up in the summer and continues into the fall. The virus was first identified in the U.S. in New York City in 1999. Since 1999, there have been 1,258 fatalities from the virus and over 30,702 infected cases according to the CDC.

7.9 Determining the Risk of West Nile Virus
Team members are at risk for West Nile encephalitis in all areas that we currently work. Whenever working outside, we are at risk for being bitten by a mosquito. To date, mosquitoes are the only insect known to transmit the virus to humans. There is no evidence that you can get the virus from birds and it is not transmitted through person to person contact.

7.10 Symptoms of West Nile Encephalitis
- Most infections are mild and range from no symptoms to fever, headache, body aches, skin rash, and swollen lymph glands.
- More severe infections may be marked by headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis.
- If you have any of these symptoms, seek medical attention as soon as possible. There is a blood test to determine if you have been infected with the West Nile virus.
- The elderly are most at risk of death.
- Currently there is no vaccine available.

7.11 Prevention
Preventing mosquito bites will prevent the West Nile virus infection. Team members should take the following precautions to protect themselves and their families:
A. If possible, stay indoors at dawn, dusk, and early evening when mosquitoes are most active.
B. Wear long sleeved shirts and pants whenever you are outdoors.
C. Apply insect repellent to exposed skin and to thin clothing. A recent study at the Florida Medical Entomology Laboratory showed that products with DEET as the active ingredient are most effective against mosquitoes. Always follow the manufacturer’s “Directions for Use” as printed on the product. Use products with no more than 10-15% DEET on children and no more than 30-35% DEET on adults.
D. Mosquitoes lay their eggs in standing water. Limit the number of places around your home for mosquitoes to breed by getting rid of items that hold water.
   Examples:
   - Old tires, drums, pails, containers etc. that can hold water.
   - Drill holes in the bottom of recycling containers and trash cans to drain water.
   - Don’t let water accumulate in secondary containment, wheelbarrows, boats, toys, birdbaths, pools, etc.
• Eliminate standing water on the ground. In warm weather, mosquitoes can breed in any puddle of water.

People over 50 have a greater risk of severe illness. People over the age of 50 are more likely to develop serious symptoms of WNV if they do get sick and should take special care to avoid mosquito bites.

7.12 Symptoms and Signs of West Nile Virus
Serious symptoms in a few people: About one in 150 people infected with WNV will develop severe illness. The severe symptoms can include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks, and neurological effects may be permanent.

Milder symptoms in some people: Up to 20 percent of the people who become infected have symptoms such as fever, headache, and body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach and back. Symptoms can last for as short as a few days, though even healthy people have become sick for several weeks. Even if the symptoms go away consult your doctor as the absence of symptoms does not mean that the disease is gone.

Approximately 80 percent of people (about 4 out of 5) who are infected with WNV will not show any symptoms at all.

7.13 Treatment
In more severe cases, people usually need to go to the hospital where they can receive supportive treatment including intravenous fluids, help with breathing and nursing care.

If you think that you have the virus keep in mind that milder WNV illness improves on its own, and people do not necessarily need to seek medical attention for this infection though they may choose to do so. If you develop symptoms of severe WNV illness, such as unusually severe headaches or confusion, seek medical attention immediately. Severe WNV illness usually requires hospitalization. Pregnant women and nursing mothers are encouraged to talk to their doctor if they develop symptoms that could be WNV.

7.14 Reporting Dead Birds
Dead birds in an area may mean that West Nile virus is circulating between the birds and the mosquitoes in that area. Over 110 species of birds are known to have been infected with West Nile virus. Although birds, particularly crows and jays, infected with West Nile virus can die or become ill, most infected birds do survive.

The public can play an important role in monitoring West Nile virus through reporting dead birds to state and local health departments. States have different policies for collecting and testing birds.

Go to http://www.cdc.gov/ncidod/dvbid/westnile/city_states.htm to find out how to report dead birds in your area. If you find a dead bird: Don't handle the body with your bare hands. Contact your local health department for instructions on reporting and disposing of the body. They may tell you to dispose of the bird after they log your report.

For more information go to www.cdc.gov or www.pestfacts.org or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (Español)

8 Budget / Approval Process

8.1 It is the responsibility of each jobsite to procure and provide all materials and PPE required and provide necessary training.

9 Related Documents and References

9.1 See attachments for related documents.

9.2 References
Pictures and info used in this Safety Policy and Procedure are from:
• Department of Entymology, Univ. of Nebraska-Lincoln web site, Jim Kalisch
• John VanDyk, Iowa State University web site
• Centers for Disease Control and Prevention web site (CDC)
9.2 Appendix B

Deer Tick (*Ixodes scapularis*)

American Dog Tick (*Dermacentor variabilis*)

Lonestar Tick (*Amblyomma americanum*)
Tick Removal Procedure

Using a pair of pointed precision tweezers whose tips align tightly when pressed together, grasp the tick by the head or mouthparts right where they enter the skin. Do not grasp the tick by the body.

Without jerking, pull firmly and steadily outward. The barbed mouth parts may not let go easily, so be patient. It may take several minutes or more. Do not handle ticks with your bare hands.

Do not twist the tick out or apply petroleum jelly, a hot match, or any other irritant in an attempt to get it to back out. These methods can backfire and even increase the chances of the tick transmitting the disease.

Place the tick in a vial or jar of alcohol to kill it. Clean the bite wound with a disinfectant.

Monitor the site of the bite for the appearance of a rash beginning 3 to 30 days after the bite. Review the other early Lyme disease symptoms and watch to see if they appear in the same time frame. If these or any other unexplained symptoms develop, report it and see a physician immediately.
Map shows the distribution of non human activity (shaded in light green) and human infections including PVDs (dark green) occurring during 2010 by state as reported to CDC's ArboNET system for public distribution by state and local health departments. If West Nile virus infection is reported from any area of a state, that entire state is shaded.