1.0 Purpose
- This section covers Ardent’s program related to Valley Fever. The intent of this program is to provide Ardent employees with general knowledge and guidelines enabling employees to anticipate, recognize, evaluate, and control industrial hygiene hazards related to Arthroconidia (spores) of Coccidioides Immitis, a soil fungus found in the southwestern United States.

2.0 Scope
- This Valley Fever Awareness Program and Policy is intended for support of and use by company operations both in business units and project operations. This is a hazard recognition and education focused program and does not imply that any training associated with this program certifies or qualifies any Ardent employee to analyze worksites for arthroconidia (Coccidioides Immitis Spores), measure contaminants or determine safe exposure levels.

3.0 Regulatory References
- This Valley Fever Program is primarily intended to satisfy the following regulatory requirements:
  - Best Practices

4.0 Policy
4.1 Stop the Work – All employees are authorized to stop the work and immediately inform their supervisor if they believe an operation is unsafe or presents hazards that have not been identified or for which methods of control have not been determined.

4.2 Train Employees – All employees assigned to job-sites within suspected areas of concentration (Endemic Areas) shall be trained in Valley Fever Hazard Awareness.

4.3 Hazard Identification & Control – All employees assigned to job-sites within suspected areas of concentration (Endemic Areas) shall participate in the identification, evaluation, and control of Valley Fever hazards.

4.4 Exposure Limits – No practical method exists for determining safe or unsafe exposure limits in the fields. Ardent’s program is one of education and awareness aimed at reducing exposure risk. Exposure levels are assumed to be within acceptable levels unless
When a jobsite is posted or identified by a state or local health department as containing un-safe levels of Coccidioides Immitis Spores.

4.5 Exposure Monitoring – Medical surveillance shall be limited to documenting confirmed cases of Valley Fever among employees and the subsequent medical management of such cases.

5.0 Responsibilities

5.1 Management – Ardent Management is responsible for the following:

- Ensure that the HSE Management System adequately addresses Valley Fever Awareness and that the program is reviewed annually and revised as necessary.
- Provide Valley Fever Awareness training for all employees assign to at-risk areas.
- Provide resources to address Valley Fever related issues.
- Determine when medical surveillance is required.
- Ensure that confirmed employee infections are adequately documented.

5.2 Supervision – Ardent Supervision is responsible for the following:

- Understand the Ardent Valley Fever Awareness program.
- Provide guidance to employees on recognition and control of Valley Fever hazards.
- Implement site controls reducing employees’ risk related to Valley Fever hazards.
- Provide on-the-job training for all employees assigned to jobsites within suspected areas of concentration (Endemic Areas) regarding Ardent’s Valley Fever Awareness program.
- Report suspected Valley Fever infection cases; document confirmed cases.
- Enforce PPE requirements and provide discipline as necessary for PPE or any hazard control violation.

5.3 Employees – Ardent Employees are responsible for the following:

- Participate in and understand Valley Fever Awareness training.
- Follow safety rules and guidelines regarding Valley Fever hazard protection.
- Participate in JSA and hazard recognition activities. Make every effort to identify Valley Fever hazards during daily JSA’s.
- Stop the work and immediately inform your supervisor if you believe an operation is unsafe or presents hazards that have not been identified during the daily JSA.
- Wear appropriate PPE.
- Inform your supervisor of concerns regarding Valley Fever hazards in the workplace.
6.0 What is Valley Fever?

- Coccidioidomycosis (Valley Fever) is an infection caused by the inhalation of arthroconidia (spores) of Coccidioides immitis, a soil fungus found in the southwestern United States. The disease may occur in any individual residing, visiting, or even passing through areas of concentration (endemic areas). Any occupation or activity that creates dust from the soil is at increased risk, such as farm workers, construction workers, landscapers, soil scientists, ranchers, etc.

6.1 Valley Fever the Infection – Infections are caused by inhalation of the spores into the lungs. Once in the lungs the spores change and multiply, increasing the infection. Most cases are limited to the lungs.

6.2 Signs & Symptoms – About 60% of people infected are asymptomatic and not noticeable except by testing. Most symptomatic cases result in primary infection with relatively mild cold or influenza-like symptoms. Only about 10% of these ever seek medical attention. The symptoms may include fever, chills, night sweats, chest pains, cough, appetite loss, muscle and joint aches and skin rashes.

6.3 Severe Cases – In a very small percentage (approx. 1%) of cases the infection spreads to other organs. Infection of a vital organ can lead to death if not diagnosed and treated.

6.4 High Risk Individuals – Of those cases that become severe, the following groups tend to be at higher risk: Pregnant Women, African-Americans, Filipinos, and possibly Asians, Hispanics, and Native Americans. Individuals with AIDS or suppressed immune systems or using immunosuppressing medical treatments are also at higher risk for severe or life-threatening cases.

6.5 Infection Rates – Most long-term residents in areas of spore concentration (endemic areas) are ultimately infected. Infections are highest during hot dry spells that follow cooler rainy seasons. Infection rates also spike following large dust storms and ground disturbing activities such as construction, mining, agriculture, etc. Once a person has been infected, with even a minor case, immunity to additional infection is developed.
6.6 Endemic Regions – An endemic area or region is an area with a known concentration of the fungus that produces the arthroconidia (spores). With some exceptions endemic areas are generally arid to semiarid with low to moderate rainfall, mild winters, and long hot summers. States with endemic areas are Arizona, California, New Mexico, Nevada, Texas, and Utah.

7.0 Hazard Recognition & Control

- The fungus responsible for hazardous Valley Fever spores typically grows in concentrated areas or colonies within the upper 30cm of topsoil. The spores become airborne when the soil is disturbed. Spores are extremely small and will remain suspended in air long after visible dust particles have settled-out and air appears clear. Since spore size is below the limits of human vision, identification is impossible except by laboratory analysis. As a method of hazard recognition, employees should become familiar with the condition in which the fungus typically exists, and the way spores are release into the air.

7.1 Recognition

Factors and Sites Favorable for the Valley Fever Fungus
- **Upper 30cm** - Undisturbed upper level of soil to a depth of 20-30cm.
- **Virgin Undisturbed Soil** – Areas that have not been cultivated or urbanized.
- **Sandy & Aerated** – Sandy well aerated soil with water holding capacities.
- **Near Arroyos** – Areas adjacent to arroyos where residual moisture is available.
- **Sparse Vegetation** - Areas with sparse vegetation and alkaline soils
- **High Salinity** – Soils with higher salinity levels
- **Rodent Burrows** – believed favorable because temperature are more moderate and contain higher humidity than ground surface.

Factors and Sites LESS Favorable for the Valley Fever Fungus
- **Heavily Urbanized Areas** – Areas where little undisturbed soil exists.
- **Cultivated Fields**
- **Heavily Vegetated Areas**
- **Higher Elevations** - (above 7000’)
- **Areas Commercially Fertilized**
- **Areas Continually Wet**
- **Soils Containing Abundant Microorganisms**
- **Paved or Asphalt Areas** – or areas where oil or other contaminants have been spilled on the ground.

### 7.2 Control
- Controlling dust is the primary method of protection against infection. The following are suggestions for reducing infection risk by limiting exposure to dust in area of concentration.
- Avoid working outdoors during windy conditions
- Use equipment with closed cabs and air-conditioning if possible
- Avoid unnecessary digging
- Wet soils before digging
- Use dust masks – masks have not been scientifically evaluated for their effectiveness against the spores, but masks are available proven to be effective against dust particles as small as 0.4 microns, spores are many times larger.
- Use fungicides to kill the fungus - but may not be effective below the surface.
- Work up-wind of dust producing machinery.

### 8.0 Training
- Ardent will provide Valley Fever hazard awareness training for all employees assigned to at-risk areas or jobsites.

#### 8.1 Training Content
- Training will cover the following topics:
  - Ardent Valley Fever Awareness Program
  - Responsibilities
  - Hazard Recognition & Control

#### 8.2 Personnel Training
- Ardent personnel shall receive the following training:
  - **8.2.1** All employees assigned to at-risk areas or jobsites shall receive Valley Fever hazard awareness training.

#### 8.3 Training Frequency
- Training and re-training frequency shall be as follows:
  - **8.3.1** Valley Fever awareness shall be included as a topic in the Industrial hygiene awareness training and shall be refreshed semi-annually as part of the Toolbox Safety Meeting Program, Hazard Communication agenda.
9.0 Reporting and Recordkeeping

9.1 Reports – All confirmed Valley Fever related events shall be reported.

9.1.1 Incident Report - All Valley Fever events resulting in illness of an employee and confirmed by positive medical tests shall be recorded as Incidents on an Ardent Incident Report.

9.1.2 Near Miss Reports – Due to the nature of the hazard near miss events are impossible to identify.

9.2 Control & Retention – Records associated with this program shall be handled in the following manner. Illnesses shall be handled per the Incident Reporting and Record Keeping Program. Records shall be retained for a minimum of the employee’s duration of employment plus 30 years.