Bovine respiratory disease (BRD) is the most costly disease of feedlot cattle in the United States. Costs associated with BRD have been estimated from $13.90 to $15.57 per head with annual losses to the cattle industry exceeding $750 million. A presumptive diagnosis of BRD is usually based on clinical signs including elevated rectal temperatures. Physical exam alone lacks high sensitivity and specificity, leading to misclassification and unnecessary treatment or failure to treat true cases. More sophisticated diagnostic tests exist but are not practical in feedlot settings. The aim of this study was to evaluate three acute phase proteins [Haptoglobin (Hpt), Lipopolysaccharide binding protein (LBP) and Transferrin (Tf)] in feedlot cattle with naturally occurring respiratory disease diagnosed by a calf health scoring chart (CHSC). Seventy-seven beef calves was observed for signs of Bovine Respiratory Disease (BRD) during the first 28 days after arrival at the feedlot. Fourteen cases and pen matched controls were selected based on the CHSC. BRD cases were defined as a score of ?5, while controls were defined as a score ? 4. The mean CHSC score in cases was 6.9 which was significantly greater than the controls 2.8 (P < 0.01). Mean plasma LBP and Hpt concentrations were significantly greater in cases than controls (P < 0.01). Our study results show that measurement of Hpt and LBP could be useful in detecting respiratory disease in feedlot conditions. Transferrin concentrations between the two groups were not statistically different.