

Test of the Hy-Drive  
System at Queenstake's  
Jerritt Canyon Mine

# Test run from September 20, 2006 To January 4, 2007

- Unit tested - Elphinstone AD30  
Underground Haultruck
- Engine Tested – Cat 3406E-ATAAC  
engine
- 400HP//14.6L
- Hours on Engine start test 8125
- Hours on Engine end test 9742
- Total Engine hours of test 1617

# Objective of test

- Test for fuel economy
- To test Hy-Drive's impact on Exhaust emissions
- Durability of Hy-drive unit
- Increase in engine performance

# Fuel Economy

- Gallons per hour used prior to Hydrive install 9.26
- Gallons per hour used after Hydrive install 9.15
- Less than 1% improvement in fuel economy- considered negligible

# Impact on emissions

- How gases were impacted
- CO prior to Hydrive 107 after 92.5
- 15% improvement
- NOX prior to Hydrive 528 after 493
- 7% improvement

# Emissions - Particulate

- Average of smoke dot tests prior to Hydrive 6.75
- Average of smoke dot tests after Hydrive 5.5
- 20% reduction in particulate on average

# Durability of Hydrive

- Unit installed 9/20/06
- Ran for 625 hours until unit failed-would not take on water
- New unit installed 11/02/06
- Ran for 982 hours until unit was taken off machine. During this time unit had some small problems taking on water and had a code which required some maintenance
- Unit was never damaged by use during test

# Increase Engine Performance

- We were not able to capture any data that substantiated a gain in engine performance using ET scanner to measure engine function during operation

# Conclusions

- During the test we did see some minimal gains in emissions, however we felt they were relatively small
- Our experience during a short time on one unit, we felt that the unit had some issues with durability and could be labor intensive
- No real gains were realized in fuel economy

# Questions