



Dry Sorbent Injection for Simultaneous SO₂, HCl, and Hg Removal

October 2011



DSI for SO₂, HCL, and Hg Removal

- Numerous tests completed in 2011 using Dry Sorbent Injection for simultaneous SO₂, HCl, Hg removal
- EGU MACT Compliance
- CSAPR Compliance
- Other
 - State requirements, consent orders, etc.

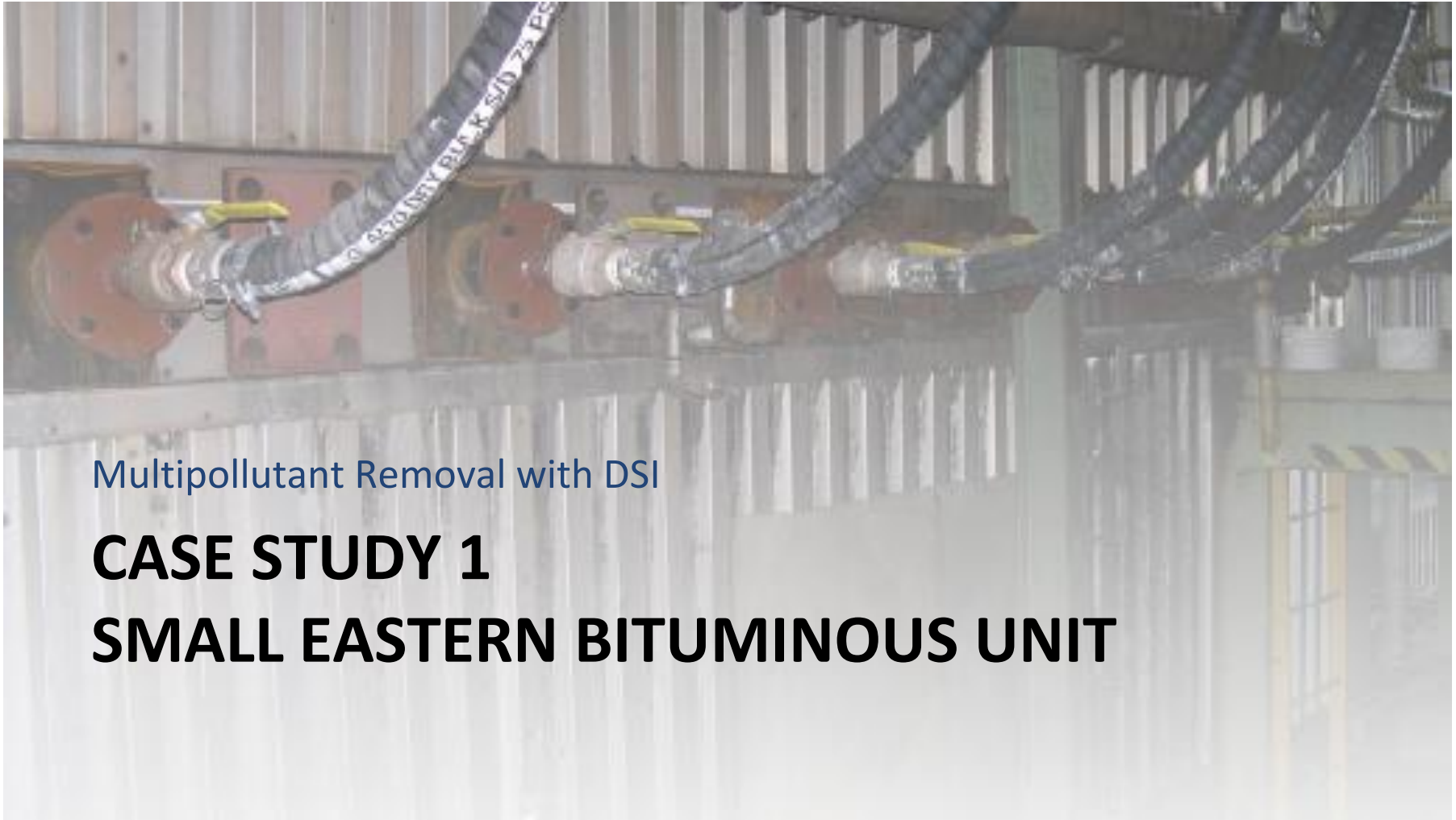
SO₂/HCL Tests with High Capacity VIPER™ Mill Demo Trailer





DSI Demonstration Tests





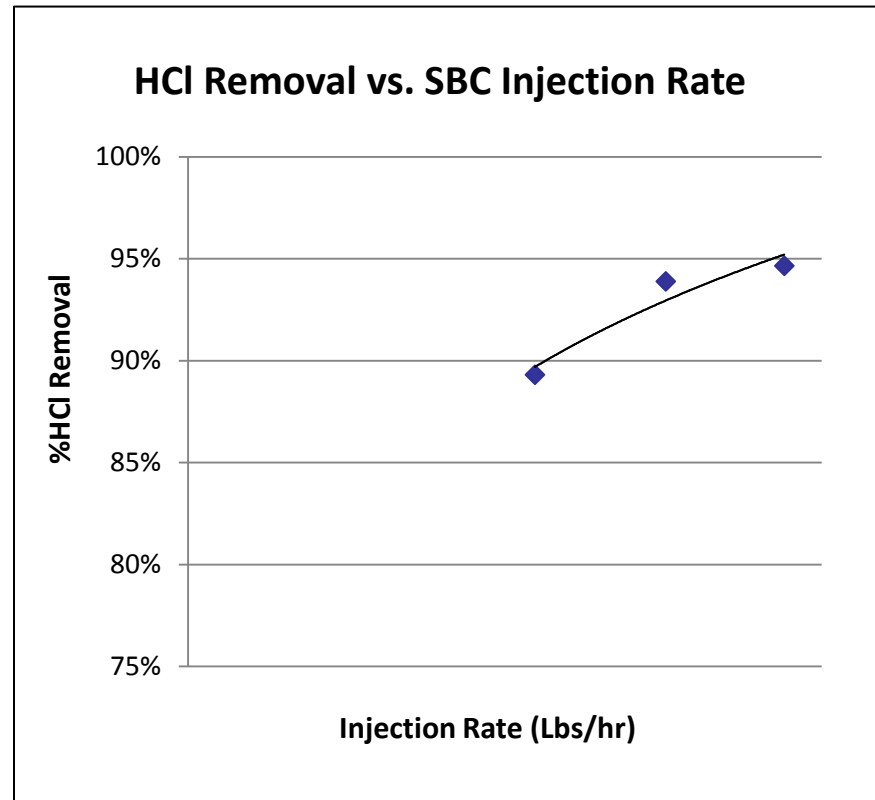
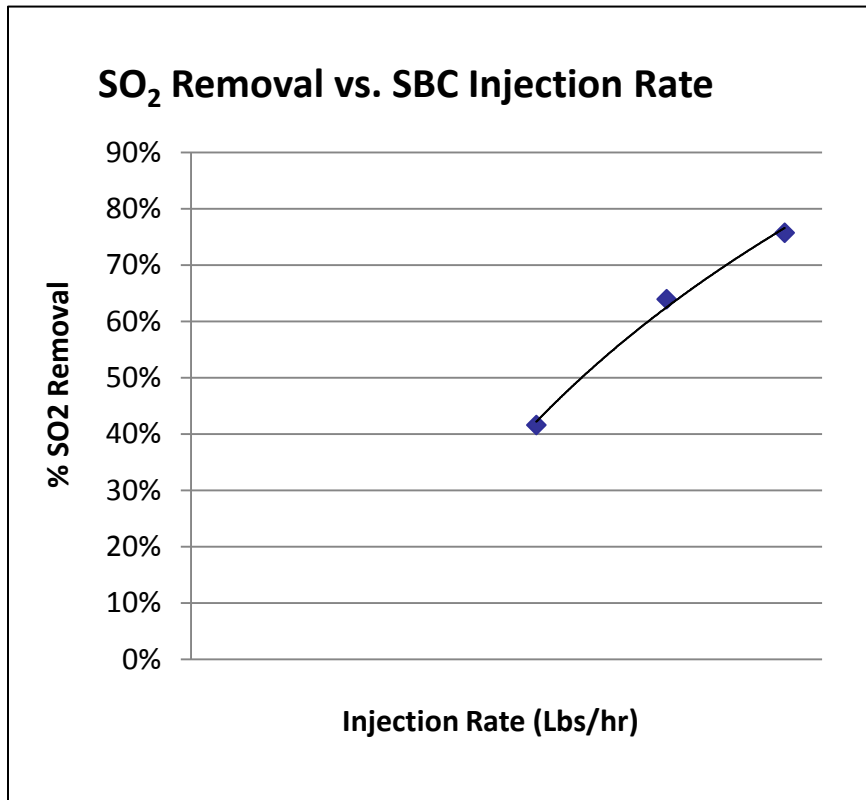
Multipollutant Removal with DSI

CASE STUDY 1

SMALL EASTERN BITUMINOUS UNIT



Multipollutant Removal with SBC for E. Bit.

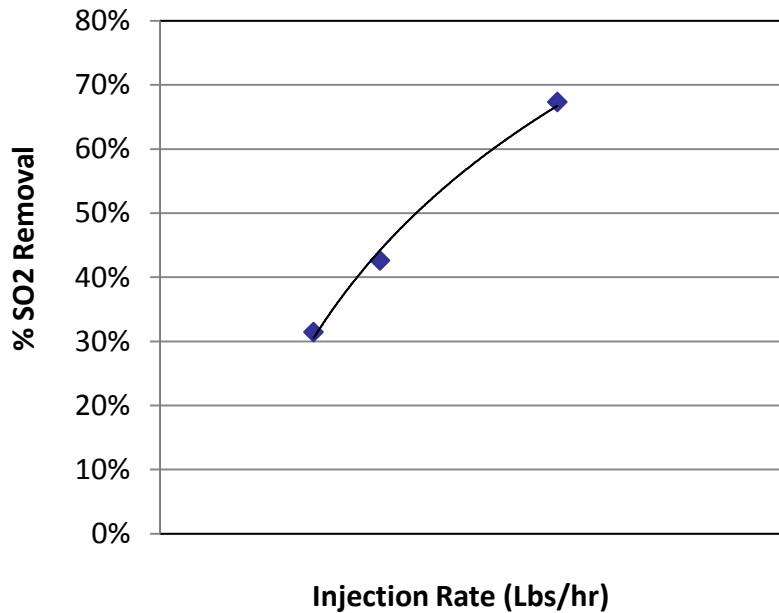


Mercury Emissions Reduced Approx. 40%

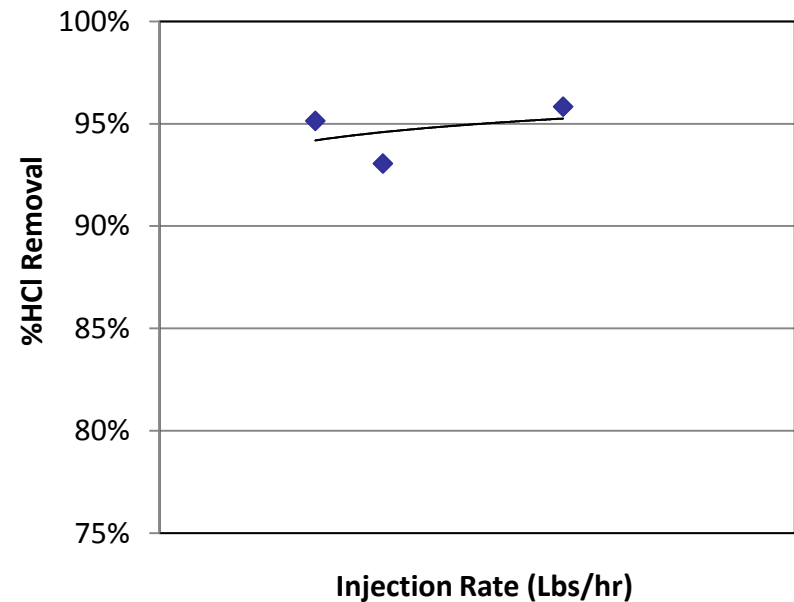


Multipollutant Removal with Trona for E. Bit.

SO₂ Removal vs. Trona Injection Rate



HCl Removal vs. Trona Injection Rate



Mercury Emissions Reduced Approx. 40%

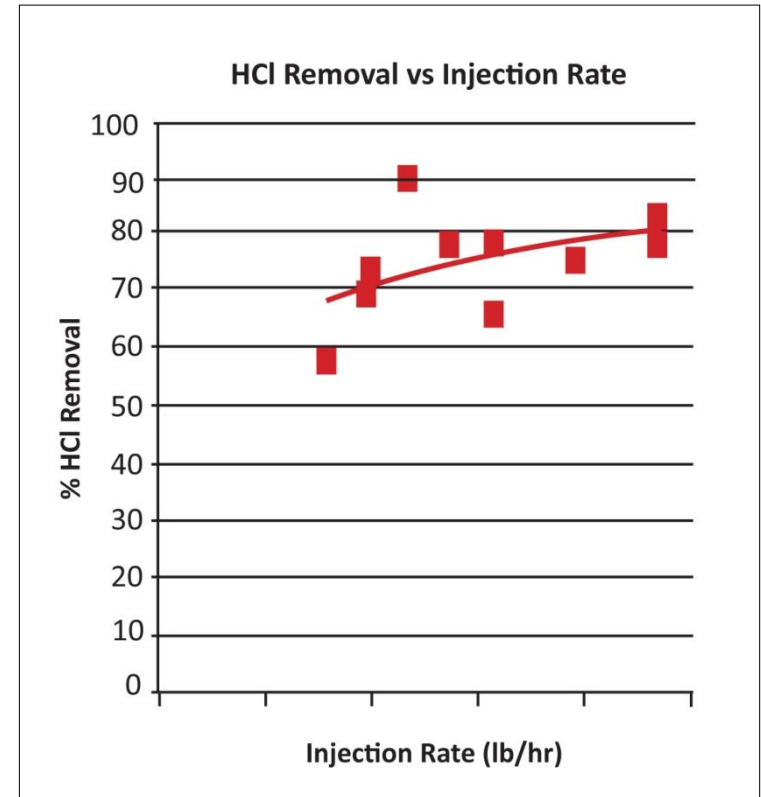
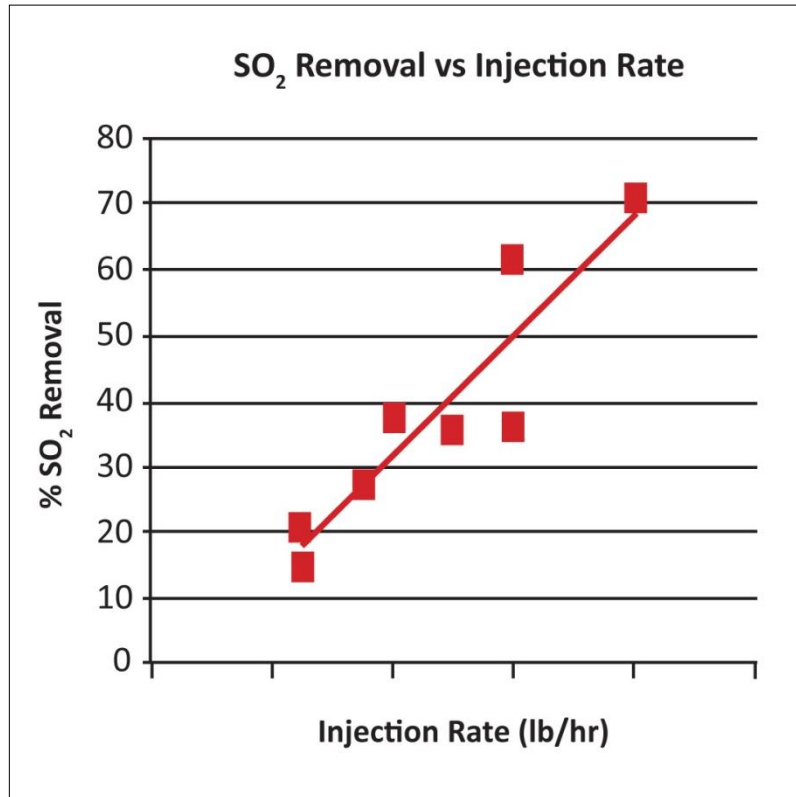


Multipollutant Removal with DSI

CASE STUDY 2

LARGE PRB UNIT

Multipollutant Removal with SBC for PRB Unit





Multipollutant Removal with DSI

CONCLUSIONS





Conclusions

- Sodium bicarbonate and trona demonstrated as very effective sorbents for simultaneous SO₂ and HCl removal
- Although SBC is more effective than trona for SO₂ removal, there is no apparent advantage for HCl removal versus trona
- Mercury removal generally is about 40% for E. Bit. coals as a co-benefit of SO₂/HCl removal
 - Higher Hg removals require carbon injection
- Mercury removal is very low as a co-benefit of SO₂/HCl removal for PRB coals
 - Hg removal requires ACI and/or fuel additives for PRB
 - If fuel additive or halogenated carbon is used upstream of air heater, SBC or trona should be injected downstream of air heater

Questions





Thank You!

**For Further Information on
Dry Sorbent Injection Systems for SO₂ and HAP Reduction**

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