CLAIMS

1. A method for removing contaminants from a gas stream exiting an incineration device comprising the steps:

a) Feeding waste, fuel and an air supply to a combustion chamber in the incineration device;

b) Feeding oxygen to a mixture of the waste, fuel and air supply;

c) Combusting the mixture thereby forming a combustion waste gas stream containing contaminants;

d) Feeding the combustion waste gas stream to a quench unit; whereby the combustion waste gas stream is reduced in temperature and the formation of additional contaminants is reduced;

e) Feeding the combustion waste gas stream to a reaction zone;

f) Feeding ozone to the reaction zone whereby the ozone and combustion waste gas stream remain in contact for a predetermined period of time; and

g) Feeding the combustion waste gas stream to a scrubber, wherein the contaminants are removed.

2. The method as claimed in claim 1 wherein steps f) and g) are reversed and the combustion waste gas stream is fed to a device selected from the group consisting of an electrostatic precipitator and a bag house.

3. The method as claimed in claim 1 wherein the waste is selected from the group of chemical and hazardous waste.

4. The method as claimed in claim 1 wherein the fuel is selected from the group consisting of coal and oil.

5. The method as claimed in claim 1 wherein the contaminants are nitrogen oxides.

6. The method as claimed in claim 5 wherein the nitrogen oxides are selected from the group consisting of thermal, prompt and fuel.

7. The method as claimed in claim 1 wherein the oxygen is fed to the mixture in an amount in excess of stoichiometry for combustion.

8. The method as claimed in claim 1 further comprising feeding the combustion waste gas stream to a waste heat boiler.

9. The method as claimed in claim 1 where a portion of the oxygen is fed to an ozone generator thereby generating ozone.

10. The method as claimed in claim 1 wherein the ozone will react with nitrogen oxides thereby forming higher oxides.

11. The method as claimed in claim 1 wherein the amount of ozone added to the combustion waste gas stream is controlled by measuring the amount of nitrogen oxides and ozone present in the combustion waste gas stream.

12. A method for removing contaminants from a gas stream exiting an incineration device comprising the steps:

a) Feeding waste to a combustion chamber of an incineration device;

b) Injecting air for supporting combustion into the incineration device;

c) Supplying gaseous oxygen to the incineration device;

d) Incinerating the waste thereby forming a combustion waste gas stream containing contaminants;

e) Feeding the combustion waste gas stream to a quench unit; whereby the combustion waste gas stream is reduced in temperature and the formation of additional contaminants is reduced;

f) Feeding the combustion waste gas stream to a reaction zone;

g) Feeding ozone to the reaction zone whereby the ozone and combustion waste gas stream remain in contact for a predetermined period of time; and

h) Feeding the combustion waste gas stream to a scrubber, wherein the contaminants are removed.

13. The method as claimed in claim 12 wherein the oxygen is fed to the incineration device by injecting into the air.

14. The method as claimed in claim 12 wherein the oxygen is fed to the incineration device by injecting into the incineration unit.

15. The method as claimed in claim 12 wherein steps f) and g) are reversed and the combustion waste gas stream is fed to a device selected from the group consisting of an electrostatic precipitator and a bag house.

16. The method as claimed in claim 12 wherein the waste is selected from the group of chemical and hazardous waste.

17. The method as claimed in claim 12 wherein the fuel is selected from the group consisting of coal and oil.

18. The method as claimed in claim 12 wherein the contaminants are nitrogen oxides.

19. The method as claimed in claim 18 wherein the nitrogen oxides are selected from the group consisting of thermal, prompt and fuel.

20. The method as claimed in claim 12 wherein the oxygen is fed to the mixture in an amount in excess of stoichiometry for combustion.

21. The method as claimed in claim 12 further comprising feeding the combustion waste gas stream to a waste heat boiler.

22. The method as claimed in claim 12 where a portion of the oxygen is fed to an ozone generator thereby generating ozone.

23. The method as claimed in claim 12 wherein the ozone will react with nitrogen oxides thereby forming higher oxides.

24. The method as claimed in claim 12 wherein the amount of ozone added to the combustion waste gas stream is controlled by measuring the amount of nitrogen oxides and ozone present in the combustion waste gas stream.