

CLAIMS

What is claimed is:

1. A method comprising:
anaerobically biotreating an anaerobic biotreatment feed comprising wastewater to produce an anaerobically biotreated product, and aerobically biotreating an aerobic biotreatment feed comprising wastewater to produce a treated water, wherein the anaerobic biotreatment feed, the aerobic biotreatment feed, or both comprise wastewater from a POSM process.
2. The method of claim 1, wherein the aerobic biotreatment feed comprises at least a portion of the anaerobically biotreated product.
3. The method of claim 1 further comprising producing, via an incinerator/boiler combination, a flue gas, a salts blowdown, and steam from an incinerator feed comprising wastewater from the POSM process.
4. A method comprising:
producing, via an incinerator/boiler combination, a flue gas and steam from an incinerator feed comprising wastewater; and
producing a treated water by biotreating a biotreatment feed comprising wastewater,
wherein the incinerator feed, the biotreatment feed, or both comprise wastewater from a POSM process.
5. The method of claim 4 wherein biotreating a biotreatment feed comprising wastewater further comprises anaerobically biotreating an anaerobic biotreatment feed comprising wastewater to produce an anaerobically biotreated product, and aerobically biotreating an aerobic biotreatment feed comprising wastewater to produce the treated water, and wherein the treated water can be discharged onto public waters within required environmental specifications.
6. The method of claim 5, wherein the aerobic biotreatment feed comprises the anaerobically biotreated product.
7. The method of claim 4, further comprising removing at least one contaminant from the flue gas, the contaminant comprising particulates, NO_x, or a combination thereof, and wherein removing the at least one contaminant comprises introducing the flue gas into a bag house filter configured to remove a particulate contaminant from the flue gas, introducing the flue gas into a selective catalytic reduction (SCR) unit configured to remove NO_x contaminant from the flue gas, or a combination thereof.

8. The method of any claim 4, wherein the incinerator is operated via dry incineration technology with salts blowdown, and produces a salt product.
9. The method of any claim 4, wherein the wastewater comprises caustic wash water, MBA dehydration water, other POSM process wastewater, sewer water, sanitary water, rainwater, or a combination thereof.
10. The method of claim 4, wherein the POSM process produces a volume of wastewater for disposal, wherein the method further comprises pretreating at least a portion of the volume of wastewater to make it more biotreatable, to reduce the volume thereof, or both, and wherein pretreating comprises subjecting the at least a portion of the wastewater to wet air oxidation, distillation, or a combination thereof.
11. A system comprising:
 biotreatment apparatus comprising anaerobic biotreatment apparatus configured to anaerobically biotreat an anaerobic biotreatment feed comprising wastewater to produce an anaerobically biotreated product, and aerobic biotreatment apparatus operable to produce a treated water from an aerobic biotreatment feed comprising wastewater; and
 POSM apparatus configured to produce at least a portion of the wastewater in the anaerobic biotreatment feed, the aerobic biotreatment feed, or both.
12. The system of claim 11, wherein the aerobic biotreatment feed comprises the anaerobically biotreated product.
13. The system of claim 11 further comprising an incinerator/boiler combination operable to produce a flue gas and steam from an incinerator feed comprising wastewater.
14. A system comprising:
 an incinerator/boiler combination operable to produce a flue gas and steam from an incinerator feed comprising wastewater; and
 biotreatment apparatus operable to treat a biotreatment feed comprising wastewater and produce a treated water,
 wherein the incinerator feed, the biotreatment feed, or both, comprise wastewater produced in a POSM apparatus.
15. The system of claim 14, wherein the biotreatment apparatus comprises an anaerobic biotreatment apparatus configured to anaerobically biotreat an anaerobic biotreatment feed comprising wastewater to produce an anaerobically biotreated product, and an aerobic biotreatment apparatus operable to produce the treated water from an aerobic biotreatment feed.

16. The system of claim 15, wherein the aerobic biotreatment feed comprises the anaerobically biotreated product.
17. The system of claim 14 further comprising flue gas treatment apparatus configured to remove at least one contaminant from the flue gas.
18. The system of claim 17, wherein the contaminant comprises particulates, NO_x, or a combination thereof.
19. The system of claim 18, wherein the flue gas treatment apparatus comprises a bag house filter configured to remove a particulate contaminant from the flue gas, a selective catalytic reduction (SCR) unit configured to remove NO_x contaminant from the flue gas, or a combination thereof.
20. The system of claim 14, wherein the POSM apparatus is configured to produce a volume of wastewater for disposal, wherein the system further comprises pretreatment apparatus operable to increase a biotreatability of at least a portion of the volume of wastewater, to reduce the volume thereof, or both.