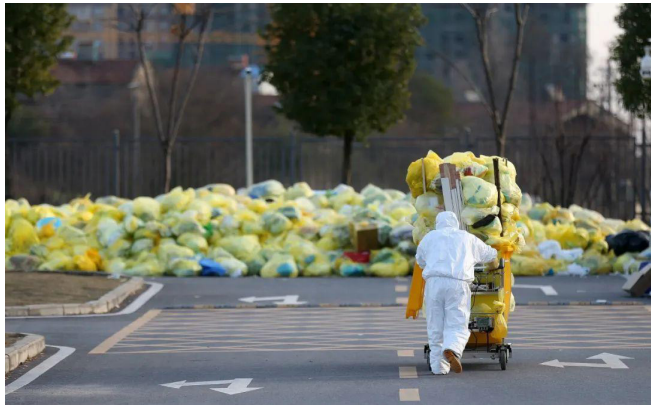
PARAGON
WASTE SOLUTIONS
A SEER Company

Executive Summary
March 2020

THE IMMEDIATE & GROWING NEED

The recent coronavirus outbreak needs no description. It is real and it is spreading. In the wake of this outbreak, the need to implement a cleaner and safer method to destroy the huge spike in dangerous and infectious medical waste has never been greater or more urgent.

While most of the world-wide discussion is understandably focused on "a cure" and containment, a very real and growing problem is occurring: How to cleanly and safely destroy the enormous amount of medical and infectious waste that is being generated worldwide; testing kits, masks, suits, by the tens of thousands and even millions. Moreover, ideally, we need to destroy the waste at or near its origin and minimize or eliminate loading, offloading and transporting the infectious waste. While Incineration around the world is, in theory, "regulated," in reality, incinerators are run in a manner that results in risk to the operators, the public and the environment. In short, incinerators around the world, for a host of reasons, are pollutive and very unsafe. No matter how well operated, incineration necessitates transporting the infectious waste across cities, provinces and states and, in some cases, even countries. The pictures below were taken in China the last week of February 2020 and depict how overwhelming and unsafe the problem really is, including the incineration itself. Unfortunately, this is or will be happening all around the world.



THE SOLUTION EXISTS

Paragon Waste Solutions, LLC (Paragon) (www.paragonws.com) has developed a far cleaner, safer, and cheaper technology that can thermally destroy medical and pharmaceutical waste at or very near its source. The Paragon system design was reviewed and classified by the US EPA as a Sub Part X; meaning that it is not classified as an incinerator for a host of key performance parameters. It can be mobilized and deployed locally or regionally and scaled to most efficiently destroy the coronavirus waste where the waste is being generated. Once the waste is destroyed, the systems can be staged and redeployed when and where appropriate. The technology minimizes handling and exposure risk, and minimizes, if not completely eliminates dangerous transportation of infectious waste along with the pollution and carbon footprint caused by transporting the waste. The technology has become the gold-standard in the waste destruction industry with annual emissions cleaner than the exhaust from a single automobile. The emissions have been tested extensively and approved by many agencies in many states. Paragon is currently operating fully permitted medical waste and pharmaceutical thermal destruction facilities in California and Texas with plans to expand in Pennsylvania and North Carolina. The technology has been fully permitted by the California SCAQMD, the TCEQ in Texas, the DAQ in North Carolina, and the DOH and DEP in Florida.

Paragon's Houston 7-system facility

Before Paragon destruction

After Paragon destruction

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SUPERIOR TECHNOLOGY

The system is NOT incineration. The patented Paragon system has 3 phases. 1) The first stage operates at relatively low temperatures and close to oxygen free. It uses the BTU value in the waste as the primary energy source. This prevents the creation of certain harmful emissions and makes the system much lower in carbon emissions. In the first phase, the solid waste is turned into smoke. 2) The smoke is passed through a highly-excited electrical field (i.e., free radical bombardment) that breaks down the molecules and starts a chain reaction of breakdown and reforming. This accelerates the breakdown of pollutants and harmful constituents in the gas. 3) The third stage provides a sustained heat environment to allow/create residence time for the full and complete breakdown of particulates to occur. In short, the Paragon technology uses the energy value in the waste to convert the solid waste to gas and then destroy the waste in gas

In comparison, incineration uses the constant blasting of flame on and around the waste to destroy it. As depicted above, most international incinerators result in flames lapping outside of any containment; an extremely hazardous operation creating risk of airborne contamination. It is inherently costly to operate, inconsistent in destruction, and costly to maintain due to its inherent mechanical approach for continuous feed. The residue or "char" from incineration can be as high as 20% of the original material. This means a significant portion of the waste has not been completely destroyed. This char is potentially hazardous and toxic, and must be handled and treated accordingly with secondary exposure risk during maintenance and transport. The Paragon "residue," primarily glass, the fillers from the plastic and paper, and metal, is completely sterile and can be deposited in any municipal landfill.

Because of the economic and operational limitations of incinerators, it is necessary to build centralized, very large facilities, and then transport the waste from far and wide to the incinerator at great expense and potential risk. Hence, the construction of large-scale incinerators is not a viable option to address virus outbreaks and small-scale incineration is pollutive (even if permittable) and can be unsafe and impractical. The patented technology is designed to be a distributable, "modular" destruction process, where any number of units can be placed at or near hospitals or clinics where the waste is being generated. This is one of the unique advantages of the Paragon process. Unlike large fixed sites that can't be moved once built, Paragon systems can be located/relocated to better and more effectively address the waste stream creation. Only Paragon can bring the solution to the problem.

The container on the right contains toxic incineration residue, while the container on the left contains sterile Paragon residue.

The parallel operation of multiple units at any given site effectively eliminates downtime. With multiple parallel units, even if one system is being serviced, the others can continue to operate. The initial capital expenditure is minimal (a small fraction compared to incineration) and the system is designed to be operated "as needed." Since the technology can be easily containerized, stored and strategically staged for deployment and operation, we can be more responsive to the regional outbreaks and be better prepared for the next outbreak. A single system can cleanly and safely destroy approximately 2.5 tons of infectious medical waste every day.

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CONCLUSION

Paragon's proven and patented technology is by far the cleanest, safest and most cost-effective way to destroy the medical and infectious waste being created by the coronavirus outbreak. It is a readily deployable and scalable solution proven to be far superior than the incineration methods currently being used; and not destroying the waste is not an option.

Photo taken during actual UK agency testing of a Paragon system. A picture is worth a thousand words, and "you can't trick a seagull."

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