Presidio Systems, Inc.

LOW TEMPERATURE THERMAL DESORPTION (LTTD)

McCLELLAN PARK OPERATIONS CENTER

The McClellan Low Temperature Thermal Desorption (LTTD) Unit is capable of treating between 20-30 tons of soil per hour.

Thermal desorption verses incineration.

Thermal desorption is an environmental remediation technology that utilizes heat to increase the volatility of contaminants such that they can be removed from the soil without thermally destroying it

LTTD is a separation technology, not a destruction technology

ADVANTAGES

Just about any media can be treated with thermal desorption to remove organic contaminants

Very Rapid Treatment Time

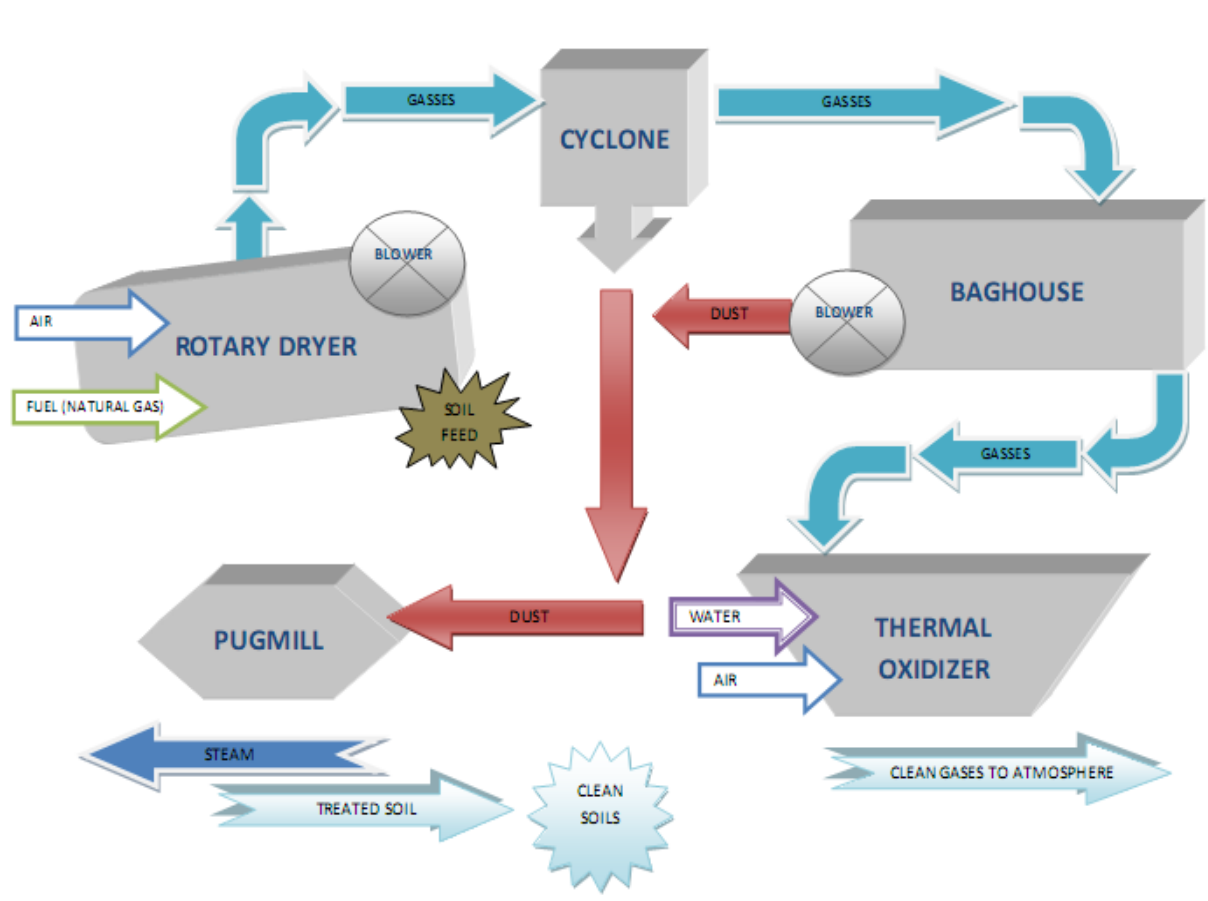
Cost competitive for large volumes

Beneficial Reuse of soils

Easily combined with other remedial technologies

DISADVANTAGES

Moisture and project size are the two factors that most dramatically affect treatment cost



LOW TEMPERATURE THERMAL DESORPTION

As a technology, thermal desorption is a mature process that is widely accepted, especially when compared to on-site incineration.

The technology has been proven suitable for virtually all organic contaminants

The U.S. Department of Defense (DoD) has reported in the 2010 Federal Remediation Technology Roundtable (FRTR):

LTTD is a full-scale technology that has been proven successful for remediating contamination in all types of soil.

Contaminant destruction efficiencies in the afterburners of these units are greater than 99%.

Decontaminated soil retains its physical properties. Unless being heated to the higher end of the LTTD temperature range, organic components in the soil are not damaged, which enables treated soil to retain the ability to support future biological activity.

Why LTTD?

Low Temperature Thermal Desorption (LTTD) is a safe and effective method of destroying non hazardous contaminants, takes a much shorter time than other treatment technologies and the method is cost effective when compared to other options including Class I, II or III landfills.

How clean will the soil be?

As a rule of thumb, most contaminants can be reduced to less than 1.0 mg/kg (ppm) if the starting level is less than 500 mg/kg. Another way to make a preliminary estimate is to assume a removal efficiency (not to be confused with DRE) of 98 to 99.99%. Most volatile organic compounds and solvents can easily be reduced to less than 0.1 mg/kg and frequently to below 0.01 mg/kg. Most semi-volatile compounds can be reduced to less than 1.0 mg/kg and frequently to less than 0.1 mg/kg. The various PCB Aroclors will have a 99.5 to 99.99% removal ability.

How can we ensure that Environmental and Safety Requirements are met at McClellan?

Proof of performance test before regular operations. Before regular operations begin, the unit is required to pass a proof of performance test. Tests conducted during the proof of performance will include:

Air emissions for site-related hazardous air pollutants, total volatile organic compounds, carbon monoxide, dioxins and hydrochloric acid. For some of these parameters, such as dioxins and hazardous air pollutants, samples of air emissions from the stack will be collected and sent to a laboratory for analysis. Our unit would be shut down until laboratory results are available showing that emission standards were met.

The regulatory community has established a stringent standard that requires the LTTD unit to meet before operational approval is granted. This standard is 99.9999 DRE per dry standard cubic meter of air (air with moisture removed). A nanogram is 1 billionth (0.000000001) of a gram and a gram is approximately 4 hundredths (0.04) of an ounce.

Operating conditions such as temperature, residence time (the length of time the vapors are in the afterburner), rate that soil would be fed into the unit, oxygen, carbon monoxide and other parameters that can be monitored in real time. Real time monitoring means the monitoring results are available immediately.

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For Additional Information:

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