pscleanair.org
Puget Sound Clean Air Agency

PUGET SOUND CLEAN AIR AGENCY

Additional Notice of Construction Application Requirements for

ADSORBERS

General

Equipment or Process Being Controlled *[Specify the source(s) of the contaminants to be controlled. If the source(s) are also new, complete the applicable permit forms]*

Identify which of the following categories the project fits into:

1. New Construction *(New construction also includes existing, unpermitted equipment or processes*)
2. Reconstruction *(Reconstruction means the replacement of components of an existing facility to such an extent that the fixed capital cost of the new components exceeds 50% of the fixed capital cost that would be required to construct a comparable entirely new facility)*
3. Modification *(Modification means any physical change in, or change in the method of operation of, a source, except an increase in the Hours of Operation or production rates (not otherwise prohibited) or the use of an alternative fuel or raw material that the source is approved to use under an Order of Approval or operating permit, that increases the amount of any air contaminant emitted or that results in the emission of any air contaminant not previously emitted)*
4. Amendment to Existing Order of Approval Permit Conditions

Estimated Hours of Operation (hr/day, day/wk, wk/yr) *[Estimate the hours of operation for the new adsorber - not necessarily the entire facility]*

Estimated Installation Date *[Estimate the date when the new adsorber will be put into service]*

Inlet Gas Stream Characteristics *[If the temperature is significantly >100 °F, it will need to be precooled. If the relative humidity is significantly >50%, the gas will need to be dehumidified. If the flammability is above 25% of the lower explosive limit, it will need to be diluted. If the total VOC concentration is significantly >10,000 ppm, it will need to be diluted. The design information submitted should address this issue]*

Flowrate (acfm) *[Specify the airflow in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the adsorber]*

Temperature (°F) *[Specify the temperature of the waste gas going to the adsorber in degrees Fahrenheit]*

Pollutant Concentrations (lb/hr or ppmv of each pollutant) *[Specify the pollutant concentrations in the waste gas going to the adsorber in pounds per hour or parts per million by volume]*

Moisture (% by volume) *[Specify the moisture (water vapor) concentration of the waste gas going to the adsorber in percent by volume]*

Design *[Most design information is available from the manufacturer or vendor. Submittal of a brochure, scale drawing or process and instrumentation diagram will facilitate the review of the permit application]*

Make & Model *[Specify the manufacturer and model of the adsorber - not the serial number]*

Type of Adsorbent *[Specify activated carbon, silica gel, activated alumina, zeolite (molecular sieve), or other (be specific).]*

Adsorbent Manufacturer *[Specify the manufacturer of the adsorbent]*

Saturation Capacity of Adsorbent (lb of each chemical per lb of adsorbent) *[Specify the working capacity of the adsorbent for each pollutant in the waste gas]*

Bed Depth (ft) *[Specify the depth of the adsorbent (or the length of the adsorbent for horizontal flow). After installation, some settling may occur and additional adsorbent should be added to return it to the design level]*

Bed Volume (ft3) *[Specify the total volume of adsorbent in cubic feet]*

Number of Beds *[Specify the number of adsorbent beds to be installed and their configuration (in series or in parallel)]*

Method Used to Design/Size the Adsorber *[Specify the method used to select this design and size of adsorber. If design calculations were performed, they should be submitted. If the design and sizing was based on similar (successful) applications, list the owners and the city and state where they are located]*

For Adsorbers with Regeneration Systems:

Adsorption Time per Bed (minutes) *[Specify the amount of time each adsorption bed is on-line before being regenerated]*

Regeneration Time per Bed (minutes) *[Specify the amount of time each adsorption bed is off-line for regeneration]*

Method Used to Regenerate Carbon *[Specify steam or vacuum. If steam is used, specify the amount per regeneration cycle. If vacuum is used, specify the vacuum in inches of water gauge]*

Residual Loading After Regeneration (lb of each chemical per 100 lb of adsorbent) *[Specify the weight of pollutants remaining in the adsorbent after regeneration]*

Disposition of Contaminants During and After Regeneration *[Specify what happens to the pollutants removed from the adsorbent]*

Method Used to Cool and Dry the Adsorbent After Regeneration *[If steam is used to regenerate the adsorbent, specify the method used to cool and dry it after regeneration and the time required]*

Stack

Stack Height (ft) *[Specify the height of the top of the stack above ground level - not above the building or sea level]*

Stack Diameter or Rectangular Cross-Sectional Dimensions (inches) *[Specify the internal dimensions - not the external dimensions]*

Exhaust Flowrate (acfm) *[Specify the airflow in actual cubic feet per minute. This is usually determined from the fan performance 'curve' based upon the expected static pressure caused by the sum of the pressure losses from each component in the ductwork, including the cyclone]*

Exhaust Temperature (ºF) *[Specify the temperature of the exhaust leaving the stack]*

Distance to Nearest Property Line (ft) *[Specify the distance from the base of the stack to the nearest property line]*

Height, Length and Width of Buildings (ft) *[Specify the approximate dimensions of any buildings that are >40% of the stack height and are located within 5 building heights from the stack]*

Operation and Maintenance

Describe Preventive Maintenance *[Specify the inspection frequency for monitoring bed temperatures, outlet concentrations, pressure drop, steam supply, etc. Also specify the records to be kept (e.g., records of all inspections and repairs) and any spare parts to be kept on-site]*