

CONTAMINATED SOIL
and/or
GROUNDWATER CLEAN-UP SYSTEM
SUMMARY FORM

I. GENERAL INFORMATION

1. Location of the Project : _____

Type of Facility (Gasoline Station, Dry Cleaner) : _____

2. Type of Contamination : _____ (e.g. Unleaded gasoline)

a. Molecular Weight of Contaminant: _____ gr/mol

3. Extent of Contamination :

a. Volume (cubic ft.) _____ b. Porosity _____

c. Bulk Density of Soil _____ ton/cubic ft.

d. VOC Analysis. The analysis must be speciated for total petroleum hydrocarbons (TPH), benzene, toluene, xylene, 1,2-dichloroethane, and other organics as may be required. The analysis must indicate where the samples were taken and the maximum and average concentrations for the project. The analysis required and the proper units are specified below:

- [] Contaminated Soil Remediation
- i. Soil Analysis, with pollutant concentration in mg/kg.
 - ii. Vapor Analysis, with pollutant concentration in ppm.

- [] Groundwater Remediation
- i. Water Analysis, with pollutant concentration in ppm.

4. Project Urgency : Specify if you are under a clean-up and abatement order by the Regional Water Quality Control Board or if this site poses a threat to the public. Provide Documentation.

Has Santa Barbara County Environmental Health been notified of this facility?
[] Y [] N Is an approved remedial action plan attached? [] Y [] N

5. Facility Plot Plan Attached : [] Show tank locations, property line, and surrounding area up to 2,500 feet away. Identify all land uses in the area and highlight sensitive areas such as schools, residential areas, restaurants, and shopping areas.

6. Method of cleanup (check all applicable methods) If "Phased" Project, indicate the order of implementation:

_____ Bio-Reclamation _____ Liquid/Air Stripper
_____ In-situ Vacuum Extraction _____ Aboveground Vacuum Extraction
_____ Other (please describe) _____

7. Air Pollution Control Treatment Method :

Vapor Treatment

_____ Carbon Adsorption _____ Thermal Oxidizer
_____ Catalytic Oxidizer _____ Internal Combustion Engine
Other (please Describe) _____

8. Site Characteristics : (eg: Paved Lot, Unpaved Lot, Cement Cover)

9. Mitigation Methods for dust, odors, and emissions during the project :

10. Treatment Operating Schedule :

a. Start Date: ____/____/____ Stop Date: ____/____/____ Total Days: _____

b. ____ Hr/Day (____ am/pm to ____ am/pm) _____ Days/Week _____ Weeks/Year

11. Equipment List Attached . [] A detailed equipment list shall be submitted with the application. This list shall include the manufacturer and model number of all process equipment and measuring devices. In addition, list the capacities of all vessels, the maximum ratings of all equipment, and electrical motor horsepower ratings.

(Complete the appropriate sections II thru IV, below, attach additional information as necessary to adequately describe your system.)

II. VAPOR EXTRACTION PROCESSES

1. Process Flow Diagram :

Include a process flow diagram showing all wells, header/manifolding, lines, valves, pumps/fans, temperature sensors, air flow meter, magnehelic equipment and measurement devices attached. []

2. Vacuum Extraction Blower :

a. Manufacturer _____ Model _____ Motor Hp _____
b. Design Flow, Max _____ SCFM Average _____ SCFM
c. Blower Power Source (electric, etc): _____

3. Exhaust Blower :

a. Manufacturer _____ Model _____ Motor Hp _____
b. Design Flow, Max _____ SCFM Average _____ SCFM
c. Blower Power Source (electric, etc): _____

4. Extraction Well Information : (Complete Sections 4 & 5 for In-Situ Process)

a. _____ # of Wells b. Well Dimensions _____ ft. dia by _____ ft. deep
c. Well Spacing _____ ft. d. Radius of Influence _____ ft.

5. Air Infiltration Well Information (if any): Ambient Air Y ____ N ____

a. _____ # of Wells Design Flow Rate _____ SCFM
b. Well Dimensions _____ ft. dia. by _____ ft. deep

6. Contaminated Soil Storage : (Complete Sections 6 & 7 for Aboveground Extraction Processes)

a. Stockpile Configuration:
_____ Number Volume/Pile _____ cubic feet
Dimensions: _____ ft. wide by _____ ft. long by _____ ft. high
b. [] Other Configuration _____

6. Contaminated Soil Storage : (Continued)

c. Total Volume to be Treated _____ cubic feet
d. Mitigation Measures to Prevent Direct Emissions to the Atmosphere (Covers, etc.): _____
e. Storage Layout/Drawings Attached. []

7. Vapor Collection Process :

of Collection Lines _____ Design Flow _____ SCFM/Line
Line Spacing _____ ft. Area of Influence _____ ft.
Line Dimensions _____ ft. Diameter by _____ ft. long

III. WATER/AIR STRIPPING PROCESSES

1. Process Flow Diagram :

Include a process flow diagram showing all wells, header/manifolding, lines, valves, pumps/fans, temperature sensors, air flow meter, magnehelic equipment and measurement devices attached. []

2. Air Stripper Parameters :

- a. Max. Water Flow Rate _____ gal/min Avg. Water Flow Rate _____ gal/min
- b. Max. Air Flow Rate _____ SCFM Avg. Air Flow Rate _____ SCFM
- c. Manufacturer _____ Model _____
- d. Dimensions _____ ft. diameter by _____ ft. height
- e. Efficiency of contaminant removal _____ %.

3. Water Pump Specifications :

- a. Manufacturer _____ Model _____ Motor Hp _____
- b. Design Flow, Max. _____ GPM Average _____ GPM

4. Air Blower Specification :

- a. Manufacturer _____ Model _____ Motor Hp _____
- b. Design Flow, Max. _____ SCFM Average _____ SCFM

IV. BIO-RECLAMATION PROCESSES

- 1. [] Detailed process description attached.
- 2. What is the anticipated time delay for the "bug" population growth _____ days.
- 3. In addition, complete Section II where applicable.

V. MONITORING INFORMATION

- 1. In accordance with the "Guidance Document for Emission Verification of Contaminated Soil/Groundwater Cleanup (August, 1991) the parameters found in Table 1 must be monitored during and after the Emission Verification Test (EVT). Along with a piping and instrumentation diagram of the remediation system, the following information is required regarding the monitoring equipment *(and must be included in the EVT plan submitted with the permit application)*
 - a. An instrumentation list showing the parameter to be monitored, the type of instrument, the span of the instrument, the serial number of the instrument, the date of the most recent calibration, and the calibration method used.
 - b. Calibration data sheets for each instrument which present the results of the most recent calibration.

- c. The manufacturer's recommended maintenance procedure for each instrument used to monitor the parameters in Table 1.

Table 1 Recorded System Parameters

- =====
 a) control device inlet temperature in °F
 b) stack outlet temperature in °F
 c) control device inlet gas flow in scfm
 d) stack outlet gas flow in scfm *
 e) control device inlet pressure in psig
 f) control device outlet pressure in psig *
 g) system influent (well head) flow rate in scfm
 h) catalytic oxidizer bed temperature *
 i) amount of supplemental fuel combusted **
 =====

* Required for thermal oxidizer and catalytic control devices.

** Required for systems which use fossil fuel (e.g., diesel oil, natural gas, propane) for any device within the system (e.g., thermal oxidizer, pump driven by an internal combustion engine)

VI. AIR POLLUTION CONTROL EQUIPMENT

(Complete the appropriate section below, attach additional information as necessary to adequately describe your system.)

1. Carbon Adsorption Systems :

- a. # of Canisters _____ b. Manufacturer _____
 c. Model # _____ d. Canister Dimensions _____ ft diameter by _____ ft High
 e. # in Use _____ f. Arrangement: _____ Series _____ Parallel
 g. Carbon Weight/Canister _____ lbs h. Replacement Schedule _____
 i. Regeneration Process _____
 j. Maximum Organic Concentration: Inlet _____ ppm Outlet _____ ppm
 k. _____ Diagram Attached. *(Submit a detailed diagram of the carbon adsorption system)*

Stack Parameters :

- a. Exhaust Stack Height _____ ft. b. Stack Diameter _____ inches
 c. Design Flow Rate _____ (MAX) SCFM _____ (MIN) SCFM
 d. Gas Exit Velocity _____ (MAX) ft/sec _____ (MIN) ft/sec
 e. Temperature _____ (MAX) °F _____ (MIN) °F

2. Catalytic Oxidizer Systems :

- a. Manufacturer _____ b. Model # _____
 c. Dimensions: _____ ft wide by _____ ft long by _____ ft high

- d. Capacity _____ SCFM e. Rating _____ Btu/hr, KW f. Fuel Type _____
- g. Fuel Usage _____ SCFM/GPM h. Catalyst Type _____
- i. Catalyst Life Expectancy _____ hours
- j. Design Operating Temperature Parameters: Inlet _____ °F Outlet _____ °F
- k. Maximum Organic Concentration: Inlet _____ ppm Outlet _____ ppm

Stack Parameters :

- a. Exhaust Stack Height _____ ft. b. Stack Diameter _____ inches
- c. Design Flow Rate _____ (MAX) SCFM _____ (MIN) SCFM
- d. Gas Exit Velocity _____ (MAX) ft/sec _____ (MIN) ft/sec
- e. Temperature _____ (MAX) °F _____ (MIN) °F

3. Thermal Oxidizer Systems :

- a. Manufacturer _____ b. Model # _____
- c. Dimensions: _____ ft wide by _____ ft long by _____ ft high
- d. Capacity _____ SCFM e. Rating _____ Btu/hr, KW f. Fuel Type _____
- g. Fuel Usage _____ SCFM/GPM
- h. Design Operating Parameters: Combustion Temperature _____ °F
Residence Time _____ secs
- i. Maximum Organic Concentration: Inlet _____ ppm Outlet _____ ppm

3. Thermal Oxidizer Systems : (Continued)

Stack Parameters :

- a. Exhaust Stack Height _____ ft. b. Stack Diameter _____ inches
- c. Design Flow Rate _____ (MAX) SCFM _____ (MIN) SCFM
- d. Gas Exit Velocity _____ (MAX) ft/sec _____ (MIN) ft/sec
- e. Temperature _____ (MAX) °F _____ (MIN) °F

4. Internal Combustion Engine :

- a. Manufacturer _____ b. Model # _____
- c. Number of Cylinders: _____ Horsepower _____
- d. Capacity _____ SCFM e. Rating _____ Btu/hr, KW f. Aux Fuel Type _____
- g. Fuel Usage _____ SCFM/GPM (Circle one) Manifolding: Air Stripper [] Y [] N
- h. Design Operating Parameters: Combustion Temperature _____ °F
Residence Time _____ secs
- i. Maximum Organic Concentration: Inlet _____ ppm Outlet _____ ppm

Stack Parameters :

- a. Exhaust Stack Height _____ ft. b. Stack Diameter _____ inches
c. Design Flow Rate _____ (MAX) SCFM _____ (MIN) SCFM
d. Gas Exit Velocity _____ (MAX) ft/sec _____ (MIN) ft/sec
e. Temperature _____ (MAX) °F _____ (MIN) °F

COMPLETED BY: _____ TITLE: _____
(Please Print)

DATE: _____ PHONE: _____

SIGNATURE: _____

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