

**BONDING WORKSHEETS
FOR
AGRICULTURAL UTILIZATION OF MUNICIPAL AND
RESIDUAL WASTE OTHER THAN SEWAGE SLUDGE**

Revised June 2, 2008



General Information

Permits: Please list all permits, approvals, licenses, registrations, other bonds, etc. for this facility.

[illegible]

1. List the permit I.D. number, registration number, etc. If there is no number, put in "none".
2. List the issuing authority's name, address and telephone number
3. List any closure features or monitoring requirements. As examples: For storage tanks, list the number, type and size of tanks. For NPDES permits list the number of outfalls to be monitored and ponds/plants to be maintained and/or closed.

Date Prepared

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

I.D. Number

BONDING WORKSHEET A
AGRICULTURAL UTILIZATION OF MUNICIPAL AND RESIDUAL WASTES
OTHER THAN SEWAGE SLUDGE

How do I start? Select a likely "worst case" scenario where you would have a maximum amount of the facility open and in need of closure. Provide a description of the scenario with references to site development stages:

1. Number of acres of the facility _____ acres
2. Maximum volume of waste, residue, and other materials to be removed _____ CY
3. Unit cost to dispose of waste off-site (this should include, but not be limited to removal, transportation and disposal costs). _____ \$/CY
4. Unit cost to maintain pH at 6.5 or greater at the site _____ \$/acre
5. Maximum amount of contaminated soils and materials to be removed and disposed of off-site _____ CY
6. Unit cost to dispose of contaminated materials (this should include but not be limited to sampling and analysis, excavation, transportation and disposal) _____ \$/CY
7. Cost to decontaminate equipment \$ _____ (LS)
8. Describe sedimentation & erosion controls:

9. Cost for maintaining erosion & sedimentation controls \$ _____ (LS)
10. Revegetation Cost

(Seeding rate used: _____ lbs/acre)

(Lime rate used: _____ tons/acre)

(Fertilizer rate used: _____ tons/acre)

(Mulch rate used: _____ tons/acre)

Unit cost to revegetate¹ \$ _____ \$/acre

¹ The unit price should include the material cost, transportation cost, handling cost and installation cost.

11. Cost for facility maintenance: \$_____ LS

12. Engineering and QA/QC costs _____ LS

13. Cost Summary

a. Waste Removal (line 2 x line 3) \$ _____

b. pH maintenance (line 1 x line 4) \$ _____

c. Contaminated soil disposal (line 5 x line 6) \$ _____

d. Equipment decontamination (line 7) \$ _____

e. Erosion & sedimentation controls (line 9) \$ _____

f. Revegetation (line 1 x line 10) \$ _____

g. Maintenance (line 11) \$ _____

h. QA/QC (line 12) \$ _____

Total \$ _____

(Place this total on Summary Cost Worksheet – line 1)

Date Prepared

COMMONWEALTH OF PENNSYLVANIA
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BONDING WORKSHEET B GROUNDWATER MONITORING SYSTEM

1. Number of wells in the approved monitoring plan. _____
 - a. Shallowest well depth _____ ft.
 - b. Deepest well depth _____ ft.
 - c. Average well depth _____ ft.
 - d. Number with dedicated pumps _____
2. Unit cost to upgrade a well with a dedicated pump _____ \$/well
3. Unit cost to install a well (including, drilling, installation, developing and pump installation) _____ \$/well
4. Number of wells to be installed (wells in the approved plan that haven't been installed) _____
5. Number of wells to be replaced over the life of the monitoring period (use 10% of line 1 and round up) _____
6. Number of pumps to be replaced/repared (use 25% of line 1 over the monitoring period) _____
7. Unit cost to purge and sample a well (include methane monitoring, record keeping and shipping) _____ \$/well
8. Unit cost to analyze sample(s)
 - a. Quarterly (25 PA Code §291.315) _____ \$/well
 - b. Annually (25 PA Code §291.315) _____ \$/well
9. Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, statistical analysis and data review) _____ \$/well
10. Cost to purge, sample and analyze: quarterly (line 7 + line 8a + line 9) _____ \$/well
11. Cost to purge, sample and analyze: annually (line 7 + line 8b + line 9) _____ \$/well
12. Number of years of sampling (_____ + time to close) _____ years

13. Cost Summary – Groundwater Monitoring System

- a. System upgrade ([line 1 – line 1d] x line 2) \$ _____
- b. Wells to be Installed (line 3 x line 4) \$ _____
- c. Wells to be replaced (line 3 x line 5) \$ _____
- d. Pumps to be replaced (line 2 x line 6) _____
- e. Cost of Quarterly Monitoring
(line 1 x "4" x line 10 x line 12) \$ _____
- f. Cost of Annual Monitoring
(line 1 x line 11 x line 12) \$ _____

Subtotal \$ _____

Adjustment for resampling, assessments, etc.

- a. Use 0% of subtotal if no assessments in last 2 yrs.
- b. Use 5% of subtotal if assessment in last 2 yrs.
- c. Use 10% if in assessment, abatement or increase monitoring \$ _____

Total \$ _____

(Place this total on Summary Cost Worksheet – line 2)

Date Prepared

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BONDING WORKSHEET C

UNSATURATED ZONE MONITORING SYSTEM

1. Number of lysimeters monitored _____
 Shallowest depth _____ ft.
 Deepest depth _____ ft.
 Average depth _____ ft.
 2. Number of samples per year _____ #/yr/lys
 3. Unit cost to install a lysimeter (including, drilling, installation, and developing) _____ \$/lys
 4. Number of wells to be replaced over the life of the monitoring period (use 10% of line 1 and round up) _____
 5. Unit cost to purge and sample a well (include record keeping and shipping) _____ \$/lys
 6. Unit cost to analyze sample(s) _____ \$/lys
 7. Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, and data review) _____ \$/lys
 8. Cost to purge, sample and analyze (line 5 + line 6 + line 7) _____ \$/well
 9. Number of years of sampling (_____ + time to close) _____ years
 10. Cost Summary –Groundwater Monitoring System
 - a. Wells to be replaced (line 3 x line 4) \$ _____
 - b. Cost of monitoring
(line 1 x line 2 x line 8 x line 9) \$ _____
- Subtotal** \$ _____
- Adjustment for resampling, assessments, etc.
- a. Use 0% of subtotal if no assessments in last 2 yrs.
 - b. Use 5% of subtotal if assessment in last 2 yrs.
 - c. Use 10% if in assessment, abatement or increase monitoring \$ _____

Total \$ _____

(Place this total on Summary Cost Worksheet – line 3)

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BONDING WORKSHEET D SUMMARY COST WORKSHEET

Cost Summary –Agricultural Utilization

- | | |
|-----------------------------------|-----------------|
| 1. Decontaminating the Facility | \$ _____ |
| 2. Groundwater Monitoring System | \$ _____ |
| 3. Unsaturated Zone Monitoring | \$ _____ |
| 4. Other Costs ¹ _____ | \$ _____ |
| Subtotal | \$ _____ |

Inflation

- | | |
|--|----------|
| 5. Inflation rate (projected inflation for the next three years based on the inflation for the prior three years). | _____ % |
| 6. Inflation cost for facility (subtotal x line 5) | \$ _____ |

Contingency and administrative fees

- | | |
|---|-----------------|
| 7. Administrative fees (10%) (subtotal x 0.1) | \$ _____ |
| 8. Contingency fee amount (subtotal x rate of contingency fee from Table 1) | \$ _____ |
| Total (subtotal + line 6 + line 7 + line 8) | \$ _____ |

¹ You should include any costs that would be incurred by the Department, but were not included in these sheets. Provide separate sheets for documentation