

**PHOSPHOGYPSUM STACK SYSTEM
CLOSURE, WATER MANAGEMENT AND LONG-TERM CARE COST ESTIMATE**

Date: _____

Date of DEP Approval: _____

Approval Signature: _____

INSTRUCTIONS:

1. If a facility is using the current inflation factor to adjust the cost estimates, ONLY pages 1 and 2 must be completed. In addition, engineer certification is NOT REQUIRED for Part III when using the inflation factor. When adjusting with the inflation factor, only the signature, name and title, and phone number of the owner/operator are required for Part III.
2. If a facility is recalculating the cost estimates using an engineer, pages 1-15 must be completed [exception: Part II(a)].
3. This form is to be sent to: Chief
Bureau of Mine Reclamation
2051 East Dirac Drive
Tallahassee, Florida 32310

I. GENERAL INFORMATION

Facility Name: _____ Facility ID #: _____

Facility Address: _____

Permittee: _____

Mailing Address: _____

II. ESTIMATE ADJUSTMENT

Rule 62-673.640(3)(a), Florida Administrative Code (F.A.C.), sets forth the requirement that during the life of the phosphogypsum stack system, the owner or operator shall submit annually a closure, water management and long-term care cost estimate that is adjusted for inflation and shall re-estimate the closure, water management and long-term care costs in conjunction with the issuance, renewal or modification of the permit.

(a) **Inflation Factor Adjustment**

Inflation adjustment using an inflation factor may only be made when a Department approved closure, water management and long-term care cost estimate exists and no changes have occurred in the facility operation which would necessitate modification to the closure plan. Rule 62-673.640(3)(a), F.A.C., states that the **inflation factor must be derived from the most recent Implicit Price Deflator for Gross National Product published in the U.S. Department of Commerce in its Survey of Current Businesses.**

This adjustment is based on the Department approved **closure cost** estimate dated _____.

Latest Department Approved Closure Cost Estimate:		X		=	
_____			_____		Inflation Adjusted Closure Cost Estimate: _____

This adjustment is based on the Department approved **water management** cost estimate dated _____.

Latest Department Approved Water Mgmt. Cost Estimate:		X		=	
_____			_____		Inflation Adjusted Water Mgmt. Cost Estimate: _____

This adjustment is based on the Department approved **long-term care** cost estimate dated _____.

Latest Department Approved Annual Long-Term Care Cost Estimate:		X		=	
_____			_____		Inflation Adjusted Annual Long-Term Care Cost Estimate: _____
Number of Years of Long-Term Care Remaining:				X	_____
Inflation Adjusted Long-Term Care Cost Estimate:				=	_____

GRAND TOTAL INFLATION ADJUSTED ESTIMATE: _____

(b) **Recalculate Estimates** (see Section IV)

III. CERTIFICATION BY ENGINEER

This is to certify that the Closure, Water Management and Long-Term Care Cost Estimates pertaining to the engineering features of this phosphogypsum stack system facility have been examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgement, the Cost Estimates are a true, correct and complete representation of the financial liabilities for closing, water management and long-term care of the facility and comply with the requirements of Florida Administrative Code (F.A.C.), Rule 62-673.640 and all other Department of Environmental Protection rules, and statutes of the State of Florida. It is understood that the Closure, Water Management and Long-Term Care Cost Estimates shall be submitted to the Department **annually**, revised or adjusted as required by Rule 62-673.640(3), F.A.C.

Signature of Engineer

Name & Title (please type)

Florida Registration Number (affix seal)

Mailing Address

Telephone Number

Engineer E-Mail Address

Signature of Owner/Operator

Name & Title (please type)

Telephone Number

Owner/Operator E-Mail Address

IV. CALCULATE ESTIMATED CLOSURE COST

**** Third Party Estimate must be provided for each item. Attach documentation if information does not fit in space provided.**

**** Costs must be for a third party providing all material and labor.**

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
1. Engineering					
Closure Plan Report	LS	_____	_____	_____	_____
Design Plans/Specifications	LS	_____	_____	_____	_____
Construction QA/QC	LS	_____	_____	_____	_____
Final Surveying	LS	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____
Subtotal Engineering:					_____
2. Permitting					
Permitting Fees	LS	_____	_____	_____	_____
Consulting Fees	LS	_____	_____	_____	_____
Subtotal Permitting:					_____
3. Monitoring Wells (New & Existing)					
	EA	_____	_____	_____	_____
Subtotal Monitoring Wells:					_____
4. Slope and Fill					
Excavation	CY	_____	_____	_____	_____
Placement & Spreading	CY	_____	_____	_____	_____
Compaction	CY	_____	_____	_____	_____

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
Off-Site Material	CY	_____	_____	_____	_____
Delivery	CY	_____	_____	_____	_____
Subtotal Slope and Fill:					_____
5. Cover Material					
Off-Site Clay	CY	_____	_____	_____	_____
Geosynthetics – 40 mil	SF	_____	_____	_____	_____
Geosynthetics – 60 mil	SF	_____	_____	_____	_____
Geosynthetics – 80 mil	SF	_____	_____	_____	_____
Geosynthetics – GCL	SF	_____	_____	_____	_____
Geosynthetics – Geonet	SF	_____	_____	_____	_____
Geosynthetics – Other	SF	_____	_____	_____	_____
Other: _____ (describe)	SF	_____	_____	_____	_____
Subtotal Cover Material:					_____
6. Top Soil Cover					
Off-Site Material	CY	_____	_____	_____	_____
Delivery	CY	_____	_____	_____	_____
Spread	CY	_____	_____	_____	_____
Subtotal Top Soil Cover:					_____

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
7. Vegetative Layer					
Sodding	AC	_____	_____	_____	_____
Hydroseeding	AC	_____	_____	_____	_____
Seed, Fertilizer, Mulch	AC	_____	_____	_____	_____
Erosion Control	AC	_____	_____	_____	_____
Other: _____ (describe)	AC	_____	_____	_____	_____
6-Month Maintenance	AC	_____	_____	_____	_____
Subtotal Vegetative Layer:					_____
8. Stormwater Control System					
Earthwork	CY	_____	_____	_____	_____
Grading	SY	_____	_____	_____	_____
Piping	LF	_____	_____	_____	_____
Ditches	LF	_____	_____	_____	_____
Berms	SY	_____	_____	_____	_____
Control & Drainage Structures	EA	_____	_____	_____	_____
Pump Stations	EA	_____	_____	_____	_____

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
Erosion Protection	SF	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____
Subtotal Stormwater Control:					_____
9. Leachate Control					
Manholes	EA	_____	_____	_____	_____
Toe Drain	LF	_____	_____	_____	_____
Side Slope Drains	LF	_____	_____	_____	_____
Monitoring Probes	SY	_____	_____	_____	_____
Sumps	EA	_____	_____	_____	_____
Pump Stations	EA	_____	_____	_____	_____
Cut-Off Wall	LF	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____
Subtotal Leachate Controls:					_____
10. Sludge & Soft Material Handling	CY	_____	_____	_____	_____
Subtotal Sludge & Soft Material Handling:					_____
11. Security System					
Fencing	LF	_____	_____	_____	_____
Gate(s)	EA	_____	_____	_____	_____

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
Sign(s)	LS	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____
Subtotal Security System:					_____
TOTAL CLOSURE COSTS:					=====

V. CALCULATE ESTIMATED WATER MANAGEMENT COST

**** Third Party Estimate must be provided for each item. Attach documentation if information does not fit in space provided.**

**** Costs must be for a third party providing all material and labor.**

DESCRIPTION	UNIT	QUANTITY	UNIT COST	SOURCE OF ESTIMATE	TOTAL
Process Water Treatment/Discharge and/or Consumption					
Discharge Monitoring	Per 1,000 Gal. of water discharged	_____	_____	_____	_____
Treatment	Per 1,000 Gal. of water treated	_____	_____	_____	_____
Sludge Mgmt.	CY	_____	_____	_____	_____
Consumption	Per 1,000 Gal. of water consumed	_____	_____	_____	_____
TOTAL WATER MGMT. COST:					=====

VI. ANNUAL COST FOR LONG-TERM CARE (Term length of 50 years)

**** Third Party Estimate must be provided for each item. Attach documentation if information does not fit in space provided.**

**** Costs must be for a third party providing all material and labor.**

DESCRIPTION MONITORING	SAMPLING FREQUENCY (EVENTS/YR.)	NUMBER OF WELLS	NUMBER OF LOCATIONS	\$/SAMPLE/ EVENT	SOURCE OF ESTIMATE	\$ / YEAR
1. Ground Water Monitoring						
Monthly	12	_____	_____	_____	_____	_____
Quarterly	4	_____	_____	_____	_____	_____
Semi-Annual	2	_____	_____	_____	_____	_____
Annual	1	_____	_____	_____	_____	_____
Subtotal Ground Water Monitoring:						_____
2. Surface Water Monitoring						
Monthly	12	_____	_____	_____	_____	_____
Quarterly	4	_____	_____	_____	_____	_____
Semi-Annual	2	_____	_____	_____	_____	_____
Annual	1	_____	_____	_____	_____	_____
Subtotal Surface Water Monitoring:						_____
3. Leachate Monitoring						
Monthly	12	_____	_____	_____	_____	_____
Quarterly	4	_____	_____	_____	_____	_____
Semi-Annual	2	_____	_____	_____	_____	_____

DESCRIPTION MONITORING	SAMPLING FREQUENCY (EVENTS/YR.)	NUMBER OF WELLS	NUMBER OF LOCATIONS	\$/SAMPLE/ EVENT	SOURCE OF ESTIMATE	\$/ YEAR
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Annual

1

Subtotal Leachate Monitoring:

DESCRIPTION MAINTENANCE	UNIT	QUANTITY	MATERIAL COST	INSTALL COST	SOURCE OF ESTIMATE	ANNUAL COST
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4. Leachate Collection/System Maintenance

Drains & Outlets

LS

Sumps

EA

Pump Stations

EA

Cleaning

LS

Manholes

EA

Liner Repair

LS

**Subtotal Leachate Collection/
System Maintenance:**

5. Treatment System Maintenance

Treatment Plant

LS

Floating Aerators

EA

Spray Aerators

EA

DESCRIPTION MAINTENANCE	UNIT	QUANTITY	MATERIAL COST	INSTALL COST	SOURCE OF ESTIMATE	ANNUAL COST
Sludge Ponds	LS	_____	_____	_____	_____	_____
Sprayfield	LS	_____	_____	_____	_____	_____
Leachate Disposal /						
Leachate Consumption 1,000 Gal.		_____	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____	_____
Subtotal Treatment System Maintenance:						_____
6. Ground Water Monitoring Well Maintenance						
Repairs/Maintenance	EA	_____	_____	_____	_____	_____
Replacement	EA	_____	_____	_____	_____	_____
Subtotal Ground Water Monitoring Well Maintenance:						_____
7. Landscape Maintenance						
Top Gradient	AC	_____	_____	_____	_____	_____
Side Slopes	AC	_____	_____	_____	_____	_____
Drainage Ditches	AC	_____	_____	_____	_____	_____
Subtotal Landscape Maintenance:						_____
8. Erosion Control and Cover Maintenance						
Regrading/Regrassing	SY	_____	_____	_____	_____	_____

DESCRIPTION MAINTENANCE	UNIT	QUANTITY	MATERIAL COST	INSTALL COST	SOURCE OF ESTIMATE	ANNUAL COST
Liner Repair	LS	_____	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____	_____
Subtotal Erosion Control and Cover Maintenance:						_____

DESCRIPTION MAINTENANCE	UNIT	QUANTITY	UNIT COST/YR	SOURCE OF ESTIMATE	ANNUAL COST
9. Stormwater Management System Maintenance					
Conveyance Maintenance	LS	_____	_____	_____	_____
Drainage Structures	LS	_____	_____	_____	_____
Pump Stations	LS	_____	_____	_____	_____
Other: _____ (describe)	LS	_____	_____	_____	_____
Subtotal Stormwater Management System Maintenance:					_____

10. Security System Maintenance					
Fences	LF	_____	_____	_____	_____
Gate(s)	EA	_____	_____	_____	_____
Sign(s)	EA	_____	_____	_____	_____

DESCRIPTION MAINTENANCE	UNIT	QUANTITY	UNIT COST/YR	SOURCE OF ESTIMATE	ANNUAL COST
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Other: _____ LS _____
(describe)

Subtotal Security System Maintenance: _____

DESCRIPTION	UNIT	HOURS/YEAR	\$/HOUR	TOTAL
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11. Administrative

P.E. Supervisor	HR	_____	_____	_____
On-Site Engineer	HR	_____	_____	_____
On-Site Technician	HR	_____	_____	_____
Certification of Closure	HR	_____	_____	_____
Other (explain)	HR	_____	_____	_____

Subtotal Administrative: _____

12. Contingency _____% of Administrative Subtotal

TOTAL ANNUAL LONG-TERM CARE COST (\$/Year): _____

NUMBER OF REMAINING YEARS OF LONG-TERM CARE: _____

TOTAL LONG-TERM CARE COST (\$): _____

SUMMARY

TOTAL CLOSURE COST: _____

TOTAL WATER MANAGEMENT COST: _____

TOTAL LONG-TERM CARE COST: _____

GRAND TOTAL: _____