

IN THE HOUSE OF REPRESENTATIVES

HOUSE BILL NO. 239

BY RESOURCES AND CONSERVATION COMMITTEE

AN ACT

1 RELATING TO PHOSPHATE; AMENDING SECTION 39-176A, IDAHO CODE, TO REVISE LEG-  
2 ISLATIVE FINDINGS AND PURPOSE; AMENDING SECTION 39-176B, IDAHO CODE,  
3 TO REVISE PROVISIONS REGARDING SCOPE AND APPLICABILITY; AMENDING SEC-  
4 TION 39-176C, IDAHO CODE, TO REVISE DEFINITIONS AND TO DEFINE TERMS; RE-  
5 PEALING SECTION 39-176D, IDAHO CODE, RELATING TO BOARD POWERS; AMENDING  
6 SECTION 39-176E, IDAHO CODE, TO REVISE PROVISIONS REGARDING CONSTRUC-  
7 TION REQUIREMENTS; AND AMENDING SECTION 39-176F, IDAHO CODE, TO PROVIDE  
8 FOR CERTAIN FEES.  
9

10 Be It Enacted by the Legislature of the State of Idaho:

11 SECTION 1. That Section 39-176A, Idaho Code, be, and the same is hereby  
12 amended to read as follows:

13 39-176A. LEGISLATIVE FINDINGS ~~AND PURPOSE~~. ~~(1)~~ The legislature finds  
14 that:

15 (a~~1~~) A domestic supply of phosphate fertilizers is critical to our na-  
16 tion's food security and Idaho's agricultural economy;

17 (b~~2~~) The production of phosphoric acid is a key ingredient in phosphate  
18 fertilizers and, given Idaho's rich supply of phosphate rock, the state is  
19 home to phosphoric acid production facilities;

20 (c~~3~~) Phosphogypsum is a calcium sulfate by-product produced by the re-  
21 action of sulfuric acid with phosphate rock to produce phosphoric acid and is  
22 disposed of and placed in phosphogypsum stacks near phosphoric acid produc-  
23 tion facilities;

24 (d~~4~~) The United States congress and the environmental protection  
25 agency exempted certain high-volume, low-toxicity solid wastes, including  
26 phosphogypsum and process water from phosphoric acid production, from regu-  
27 lation as a hazardous waste under subtitle C of the resource conservation and  
28 recovery act (42 U.S.C. 6901 et seq.), as amended; and

29 (e~~5~~) To both facilitate and encourage the continued manufacturing of  
30 phosphate fertilizers, and to benefit the surface water and groundwater en-  
31 vironmental resources, the legislature recognizes the need for ~~the depart-~~  
32 ~~ment of environmental quality to develop a program to assure the proper de-~~  
33 ~~sign and construction of phosphogypsum stacks and phosphogypsum stack sys-~~  
34 ~~tems.~~

35 ~~(2) Therefore, it is the intent of the legislature to authorize the~~  
36 ~~board of environmental quality to initiate negotiated rulemaking consistent~~  
37 ~~with the requirements of sections 39-176A through 39-176F, Idaho Code.~~

38 SECTION 2. That Section 39-176B, Idaho Code, be, and the same is hereby  
39 amended to read as follows:

1 39-176B. SCOPE AND APPLICABILITY. (1) Nothing in this chapter shall  
 2 be construed as superseding, amending, or modifying the mineral processing  
 3 waste exemption provided in 40 CFR 261.4(b) (7) and IDAPA 58.01.05.005, for  
 4 process wastewater and phosphogypsum from phosphoric acid production.

5 (2) Nothing in this chapter is intended to supersede or modify any ex-  
 6 isting or future agreement with or approvals from the environmental protec-  
 7 tion agency or the department of environmental quality relating to the con-  
 8 struction of a phosphogypsum stack, phosphogypsum stack system, or compo-  
 9 nent thereof.

10 (3) The requirements in sections 42-1710 through 42-1721, Idaho Code,  
 11 shall not apply to phosphogypsum stacks and phosphogypsum stack systems.

12 (4) This chapter establishes and clarifies minimum design and con-  
 13 struction requirements to ensure that phosphogypsum stack system impound-  
 14 ments meet critical safety standards and do not cause unplanned releases  
 15 into the environment.

16 SECTION 3. That Section 39-176C, Idaho Code, be, and the same is hereby  
 17 amended to read as follows:

18 39-176C. DEFINITIONS. Wherever used or referred to in sections  
 19 39-176A through 39-176F, Idaho Code, unless a different meaning clearly  
 20 appears from the context:

21 (1) "Auxiliary holding pond" (AHP) means a lined storage pond typically  
 22 used to hold process wastewater for the purpose of increasing system storage  
 23 above that otherwise provided by a collection pond or ponds.

24 (2) "Board" means the Idaho board of environmental quality.

25 (3) "Intermediate liner" means a liner placed on top of an existing  
 26 lined or unlined phosphogypsum stack to allow continued use of the existing  
 27 phosphogypsum stack.

28 (4) "Lateral expansion" means a horizontal expansion of the waste  
 29 boundaries of an existing phosphogypsum stack system.

30 (45) "Leachate" means liquid or drainable pore water that has passed  
 31 through or emerged from phosphogypsum and that may be collected within the  
 32 phosphogypsum stack system or in a seepage collection drain.

33 (56) "Operator" means any person or persons, any partnership, limited  
 34 partnership, corporation, or any association of persons, either natural or  
 35 artificial, that own, control, or direct the management of a phosphogypsum  
 36 stack.

37 (67) "Phosphogypsum" means calcium sulfate and by-products produced by  
 38 the reaction of an acid, such as sulfuric acid or fluoride acid, with phos-  
 39 phate rock to produce phosphoric acid.

40 (78) "Phosphogypsum stack" means any defined geographic area asso-  
 41 ciated with a phosphoric acid production facility in which phosphogypsum  
 42 and process wastewater from phosphoric acid production are disposed of or  
 43 stored, other than within a fully enclosed building, container, or tank.

44 (89) "Phosphogypsum stack system" means the defined geographic area  
 45 associated with the phosphoric acid production facility in which phospho-  
 46 gypsum and process wastewater are disposed of or stored together, including  
 47 ~~all components such as pumps, piping, ditches, drainage, conveyances, water~~  
 48 ~~control structures, collection ponds, cooling ponds, decant ponds, surge~~  
 49 ~~ponds, auxiliary holding ponds, and any other collection or conveyance sys-~~

1 tem associated with the transport of phosphogypsum from the plant to the  
 2 phosphogypsum stack, its management at the stack, and the process wastewa-  
 3 ter return to phosphoric acid production to the phosphogypsum stack. This  
 4 includes toe drain systems and ditches and other leachate collection sys-  
 5 tems, but does not include conveyances within the confines of the fertilizer  
 6 production plant or emergency diversion impoundments used in emergency cir-  
 7 cumstances caused by power outages or rainfall events.

8 (10) "Phosphogypsum stack system component" means collection ponds,  
 9 cooling ponds, decant ponds, surge ponds, and auxiliary holding ponds.

10 (911) "Process wastewater" means process wastewater from phosphoric  
 11 acid production operations.

12 SECTION 4. That Section 39-176D, Idaho Code, be, and the same is hereby  
 13 repealed.

14 SECTION 5. That Section 39-176E, Idaho Code, be, and the same is hereby  
 15 amended to read as follows:

16 39-176E. CONSTRUCTION REQUIREMENTS FOR NEW PHOSPHOGYPSUM STACKS --  
 17 LATERAL EXPANSIONS OF EXISTING PHOSPHOGYPSUM STACKS. Any operator desiring  
 18 to construct a new phosphogypsum stack, a material component thereof, or  
 19 a lateral expansion shall submit to the department of environmental qual-  
 20 ity for review and approval prior to commencing construction a design and  
 21 construction plan, including construction quality control, that includes  
 22 minimum design and construction requirements to control and minimize the  
 23 movement of waste and waste constituents into the environment. Plans and  
 24 specifications submitted to satisfy the requirements of sections 39-176A  
 25 through 39-176F, Idaho Code, shall be certified by a registered professional  
 26 engineer. The minimum design requirements include the following features  
 27 and standards:

28 (1) Run-on and runoff controls for the phosphogypsum stack systems for  
 29 the collection, control, and treatment, as needed, of run-on and runoff from  
 30 the systems. The controls shall be capable of managing a flow resulting  
 31 from a twenty-four (24) hour, twenty-five (25) year rainfall event or from a  
 32 combined peak precipitation and snowmelt event over a twenty-four (24) hour  
 33 period using snowfall, precipitation, and other meteorological data from  
 34 the historical record.

35 (2) Any new phosphogypsum stack or lateral expansion shall be designed  
 36 with an overall factor of safety of 1.5 for any potential failure surface en-  
 37 compassing the impoundment on top of the stack and passing through the phos-  
 38 phogypsum slope or bottom liner interfaces or extending into earthen mate-  
 39 rial in contact with the bottom liner.

40 (3) Liner and leachate control systems that achieve the following mini-  
 41 mum design standards:

42 (a) Phosphogypsum stacks, collection ponds, decant ponds, and cooling  
 43 ponds shall be constructed atop a composite liner or approved alterna-  
 44 tive of equivalent hydraulic conductivity and durability. Liners shall  
 45 be constructed of materials that have appropriate physical, chemical,  
 46 and mechanical properties to prevent failure. A composite liner will  
 47 have both a synthetic and a nonsynthetic component.

1 (i) The synthetic component shall consist of a sixty (60) mil or  
 2 thicker HDPE or equivalent geomembrane with a maximum water va-  
 3 por transmission rate of twenty-four hundredths (0.24) of one gram  
 4 per square meter per day as determined by the American society for  
 5 testing and materials (ASTM) method E96-80, procedure BW.

6 (ii) The nonsynthetic component shall consist of either soil,  
 7 phosphogypsum, or sedimented phosphogypsum or equivalent mate-  
 8 rial.

9 1. Soil or equivalent material. A layer of compacted soil  
 10 or other equivalent material at least eighteen (18) inches  
 11 thick, placed below the geomembrane, with a maximum hy-  
 12 draulic conductivity of  $1 \times 10^{-7}$  centimeters per second,  
 13 constructed in six (6) inch lifts.

14 2. Phosphogypsum. A layer of mechanically compacted phos-  
 15 phogypsum at least twenty-four (24) inches thick, placed  
 16 above the geomembrane, with a maximum hydraulic conductiv-  
 17 ity of  $1 \times 10^{-4}$  centimeters per second. A layer of compacted  
 18 phosphogypsum is not required for any vertical expansion or  
 19 natural ground slopes steeper than 2.5H:1V abutting a ver-  
 20 tical or horizontal expansion where phosphogypsum slurry is  
 21 discharged in the expansion area.

22 (iii) The nonsynthetic layer of the composite liner is not re-  
 23 quired for vertical expansions where:

24 1. It has been demonstrated that a synthetic liner alone or  
 25 in contact with sedimented phosphogypsum placed in slurry  
 26 form will be equivalent or superior to a composite liner;

27 2. It has been demonstrated that a synthetic liner in con-  
 28 tact with sedimented phosphogypsum placed in a slurry form  
 29 is equivalent or superior to a composite liner with twenty-  
 30 four (24) inches of compacted phosphogypsum placed above the  
 31 geomembrane; or

32 3. For lateral expansions, it has been demonstrated and  
 33 certified by a third-party professional engineer that a  
 34 synthetic liner in contact with sedimented phosphogyp-  
 35 sum placed in slurry form, and with consideration of the  
 36 physical hydrogeological setting of the specific lateral  
 37 expansion, provides an equivalent or superior degree of pro-  
 38 tection for human health and the environment.

39 (iv) The nonsynthetic layer of the composite liner will not be re-  
 40 quired for an alternative liner, such as a double synthetic liner,  
 41 that has the equivalent hydraulic conductivity and durability to a  
 42 composite liner.

43 (v) An approved alternative shall have the equivalent hydraulic  
 44 conductivity and durability of a composite liner.

45 (vi) For an intermediate liner, a composite liner is not required.

46 (b) All liner and leachate control system components shall have ap-  
 47 propriate quality control and quality assurance standards, specifica-  
 48 tions, and procedures for construction, including:

1           (i) Procedures and tests that will be used to monitor the instal-  
 2           lation of the liner system components shall be described in de-  
 3           tail;

4           (ii) Description of sampling activities, sample size, sample lo-  
 5           ocations, minimum frequency of testing, acceptance and rejection  
 6           criteria, and plans for implementing corrective measures that may  
 7           be necessary; and

8           (iii) Description of reporting for constructive quality assur-  
 9           ance and quality control activities, including observation data  
 10           sheets, problem identification, corrective measures, and final  
 11           documentation.

12       (c) Phosphogypsum stacks shall have a leachate control system. Any  
 13       leachate emanating from a phosphogypsum stack system shall be routed to  
 14       a collection pond, such as a decant pond or similar water structure, to  
 15       be contained within the system or recirculated to the production plant,  
 16       or, if discharged, treated if required to meet applicable water quality  
 17       and discharge requirements. ~~Collection ponds shall be constructed with~~  
 18       ~~a composite liner or an approved alternative of equivalent hydraulic~~  
 19       ~~conductivity and durability.~~ All toe drain or leachate collection sys-  
 20       tems shall be constructed within the lined system. Leachate control  
 21       systems shall:

22           (i) Have a perimeter underdrain system designed to stabilize the  
 23           side slopes of the phosphogypsum stack that is installed above the  
 24           geomembrane liner; and

25           (ii) Have perimeter drainage conveyances that either consist  
 26           of covered or uncovered ditches that are lined continuously with  
 27           sixty (60) mil or thicker HDPE or equivalent geomembrane, or of  
 28           chemically compatible leachate collection pipes. Covered ditches  
 29           shall have manholes or appropriate cleanout structures at ap-  
 30           propriate intervals unless a third-party engineer certifies and  
 31           identifies areas where manholes or cleanout structures in piped  
 32           systems are not feasible.

33       (d) Auxiliary holding ponds shall be designed with a synthetic liner or  
 34       an approved alternative of equivalent hydraulic conductivity and dura-  
 35       bility; ~~and.~~

36       (e) Process wastewater conveyances shall be constructed with a liner or  
 37       pipe.

38       (34) Perimeter dikes that shall incorporate minimum design standards  
 39       for freeboard, safety, and slope stability design factors, construction  
 40       methods, and other related parameters, including:

41           (a) Ground that will become the foundation of perimeter dikes shall be  
 42           stripped of vegetation and organic detritus or residue, including muck,  
 43           slimes, or other material that would flow or undergo excessive consoli-  
 44           dation under heavy loading. All earth foundation surfaces on which fill  
 45           is to be placed shall be scarified, or moistened and compacted, prior to  
 46           spreading the first course of fill material.

47           (b) A program of soil sampling and testing adequate to determine  
 48           the characteristics of the foundation material that will support the  
 49           proposed perimeter dike and the material to be used to construct the  
 50           perimeter dike.

1        (c) The crest of the perimeter dike shall be graded toward the inside  
2        slope or the outside slope. Both inside and outside slopes shall not  
3        be steeper than two and one-half (2.5) horizontal to one (1.0) verti-  
4        cal (2.5H:1V). A liner shall be constructed on the inside slope of the  
5        perimeter dike and be suitably connected to the remainder of the liner  
6        system to provide seepage control.

7        (d) The freeboard of an above-grade perimeter dike shall not be less  
8        than five (5) feet unless a freeboard of less than five (5) feet is  
9        justified based on results of seepage and stability analysis and wave  
10       run-up analysis. In no event shall the freeboard of an above-grade  
11       perimeter dike be less than three (3) feet.

12       (e) A stability analysis shall be performed taking into consideration  
13       the minimum fluid level as well as the fluid level at the freeboard on  
14       the upstream slope of the perimeter dike and possible fluctuations of  
15       the tailwater level. When applicable, the stability analysis will in-  
16       clude a seepage or flow net analysis.

17       (f) The following minimum safety factors will be used for perimeter  
18       dikes: 1.75 for horizontal shear at base of fill; 1.5 for horizontal  
19       shear within the fill due to seepage through the outer face; 1.5 for  
20       horizontal shear or circular arc failure through the foundation soils;  
21       1.5 for protection against shear failure of any circular arc in either  
22       inside or outside slope. In determining design safety factors, water  
23       pressure distribution must be addressed.

24       (g) A seismic stability analysis shall be performed.

25       (h) Appropriate quality control and quality assurance standards,  
26       specifications, and procedures for perimeter dike construction shall  
27       be implemented.

28       (45) Any lateral expansion must be constructed in accordance with the  
29       same requirements as a new phosphogypsum stack. Except for incidental de-  
30       posits of phosphogypsum entrained in the process wastewater, or conditioned  
31       phosphogypsum used as a cushion layer against rock slope, placement of phos-  
32       phogypsum outside the phosphogypsum stack footprint is considered a lateral  
33       expansion; and.

34       ~~(5) A groundwater monitoring plan.~~

35       (6) The design and construction plan submitted to the department must  
36       contain a process for notification and department approval of deviations  
37       from the approved design and construction plan.

38       SECTION 6. That Section 39-176F, Idaho Code, be, and the same is hereby  
39       amended to read as follows:

40       39-176F. PLAN -- APPROVAL OR REJECTION BY DEPARTMENT. (1) Upon receipt  
41       by the department of environmental quality of a design and construction plan  
42       submitted by an operator, the department shall have ninety (90) days to re-  
43       view the plan.

44       (2) Upon determination by the department that a design and construction  
45       plan submitted by an operator meets the requirements of this section, the de-  
46       partment shall deliver to the operator, in writing, a notice of approval of  
47       such plan, and thereafter said plan shall govern and determine the nature  
48       and extent of the obligations of the operator for compliance with sections

1 39-176A through 39-176F, Idaho Code, with respect to the phosphogypsum stack  
2 system for which the plan was submitted.

3 (3) If the department determines that a design and construction plan  
4 fails to fulfill the requirements of this section, it shall deliver to the  
5 operator, in writing, a notice of rejection of the plan and shall set forth in  
6 said notice of rejection the reasons for such a finding. Upon receipt of said  
7 notice of rejection, the operator may submit amended plans within forty-five  
8 (45) days. The department shall have sixty (60) days to review an amended  
9 plan. Upon further determination by the department that the amended plan  
10 does not fulfill the provisions of sections 39-176A through 39-176F, Idaho  
11 Code, it shall deliver to the operator, in writing, a notice of rejection of  
12 the amended plan in the same manner as provided for rejection of the original  
13 plan.

14 (4) A notice of rejection may be appealed by the operator to the board.

15 (5) The time periods in this section may be adjusted if agreed to by both  
16 the department and the operator.

17 (6) A construction completion report shall be submitted to the depart-  
18 ment within ninety (90) days of completion of construction activities. The  
19 report shall include final record drawings and conformance of construction  
20 to the approved design and construction plan, including construction qual-  
21 ity control plans for phosphogypsum stack components.

22 (7) ~~The board may require a fee sufficient for the~~ operator shall pay  
23 the following fees for the department review and approval of plans and asso-  
24 ciated documents required by this section:

25 (a) Fifteen thousand dollars (\$15,000) for a review of a new phospho-  
26 gypsum stack system;

27 (b) Ten thousand dollars (\$10,000) for a review of a horizontal or ver-  
28 tical phosphogypsum expansion;

29 (c) Five thousand dollars (\$5,000) for a review of the placement of an  
30 intermediate liner; and

31 (d) Two thousand five hundred dollars (\$2,500) for a review of a phosph-  
32 ogypsum stack component.