

**Aggregate Mining Unit Reclamation Plan
Guidelines**

**Division of
Mined Land Reclamation**

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**Arizona State Mine Inspector
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1.0 INTRODUCTION

1.1 OVERVIEW OF RECLAMATION PLAN SUBMITTAL PROCESS FOR AGGREGATE MINING

This publication contains guidance on the reclamation plan submittal process for aggregate mining required by state law and regulations, specifically Arizona Revised Statutes [A.R.S.] Title 27, Articles 1 – 6;[Aggregate Mined Land Reclamation Act or the Act] and Arizona Administrative Code [A.A.C.], Title 11, Chapter 3, State Mine Inspector, Aggregate Mined Land Reclamation. The intent of this publication is to provide guidance on and to supplement those laws and regulations and not to be all inclusive or exhaustive. The reader is strongly encouraged to review this publication in conjunction with all applicable laws and regulations. References to secondary materials in the text and text and bibliography are also intended for guidance purposes only and should not be considered an endorsement of such materials.

A Reclamation Plan is required by state law for all aggregate mining operations that are located on private land, which create disturbance larger than 5 acres, and have continued operations after April 1, 1997. Submittal of this plan to the Arizona State Mine Inspector [ASMI] is required before January 1, 2007. Beginning January 1, 2007, all new aggregate mining operations located on private land must have an approved reclamation plan before exceeding a cumulative disturbance of 5 acres.

The ASMI will assess a one-time fee for each reclamation plan submitted. Upon submittal of reclamation plans, the operator will be notified if the plan is administratively complete or incomplete within 30 days. Reclamation plans are subject to certain statutorily defined public notice, meeting and comment requirements. Once the reclamation plan has been approved and acceptable financial assurance has been provided, mining may commence immediately.

Aggregate mining reclamation plans remain in effect until the reclamation is complete and all financial assurance is released. However, facilities are required to submit annual status reports within 60 days of the reclamation plan anniversary date.

2.0 PREPARING AN AGGREGATE MINING UNIT RECLAMATION PLAN

A reclamation plan must be submitted for all new and existing aggregate mining facilities (larger than 5 acres total disturbance). If an owner/operator has multiple aggregate mining disturbances within the same general location, and they are operated as a single mining complex, a single mining reclamation plan which encompasses the entire aggregate mining facility may be submitted. The proposed aggregate mining reclamation plan must include (at a minimum) the following required information.

2.1 OWNER/OPERATOR INFORMATION (A.R.S. 27-1271; and A.A.C. R11-3-201-B)

The proposed reclamation plan will need to include the names and addresses of the owners and/or the operators, along with the name, address, phone number, and fax number of the individual who will be the regulatory contact. In addition, a statement is required from the owner or operator assuming responsibility for reclamation of the facility.

2.2 CERTIFICATE OF DISCLOSURE (IF APPLICABLE) (A.R.S. 27-1205; and A.A.C. R11-3-201-A)

A statement of disclosure must be submitted disclosing whether any of the following conditions apply:

- Any person (including corporate officers, partnerships, LLC's, and associations) engaged in activity associated with the proposed reclamation or plan has been convicted of a felony involving laws related to mined land reclamation within the preceding 5-year period.
- Any person (including corporate officers, partnerships, LLC's, and associations) engaged in activity associated with the proposed reclamation of plan has been subject to any civil proceeding involving an injunction, decree, judgment, or permanent order of any court within the preceding 5-year period, that involved a violation of laws relating to mined land reclamation.

If any of the above conditions apply, the certificate of disclosure must include the following information:

- Identification of the person, including present full name, all prior names or aliases, full birth name, present house address, and all prior addresses for the immediately preceding 5-year period, date and place of birth, and social security number.
- The nature and description of each conviction, the date and place, the court, and public agency involved and the file or cause number of the case.
- A written declaration that each signer swears to its contents under penalty of perjury.

The certificate of disclosure submitted on behalf of a corporation must be signed by any two executive officers or directors of the corporation. Instead of the certificate of disclosure described above, a corporation may submit copies of annual reports filed with the Securities and Exchange Commission, commonly known as a "10-K form", within 90 days after filing the annual report. The initial submission shall include 10-K forms for the preceding 5 years.

Initial certificates must be delivered to the ASMI within 90 days of the person first becomes subject to these disclosure requirements. Certificates of disclosure must be filed annually thereafter within 90 days after the close of the fiscal year as reported on the initial certificate.

2.3 RECLAMATION PLAN NARRATIVE (A.R.S. 27-1271; and A.R.S. 27-1273)

The reclamation plan narrative must contain the current ownership and the current condition and use of the land that will be included in the reclamation plan. Included in the narrative must be a description of the current operation, current or necessary permits, licenses, or approvals and the planned future disturbances that will be created. In addition, the following subjects need to be addressed in the narrative.

2.3.1 Post-Mining Land Use (A.R.S. 27-1271(B)(4); A.A.C. R11-3-501(A); and A.A.C. R11-3-503)

The proposed post-mining land use must be described for entire area of the disturbance. A plan may list multiple post-mining land uses if each area is designated and the designated land use does not conflict with the overall plan.

The ultimate goal of the reclamation plan is to ensure that the mined land is returned to a safe, productive use. It is appropriate to consider both natural and cultural land use factors in the post mining land use. Natural land use factors include: geomorphic, climatic, hydrologic, and soil characteristics of a site. Cultural factors include geographic, demographic, and economic characteristics that result from man's activities.

*Current land use patterns in the local area provide the best guidance for post mining land use. For instance, an area of land that was heavily forested before mining that is adjoining a pasture may be more desirable as a pasture following mining. (Adapted from **SME Mining Engineering Handbook**)*

Approved post mining land uses may include:

- Open Space (Naturalized) - This category may include Habitat Areas and Resource Conservation Areas. Recreational uses such as equestrian, hiking, or bird watching may be integrated into the final post-mining land use.
- Recreation – Passive parks, botanical gardens, golf, and water-based recreation may be integrated into this final post-mining land use.
- Agriculture – This post-mining land use creates pasture and crop land.
- Water Storage / Recharge – This land use aids in water conservation and is amenable to uses similar to open spaces and recreation.

- Development – Reclaiming the site for future residential, commercial, or industrial development can be considered a viable post-mining land use.
- Inert Landfill – This post-mining land use backfills the pits with inert materials and creates alternate, secondary land uses such as open spaces and passive parks.
- Other – Alternative land uses as approved by ASMI on a case-by-case basis.

An owner or operator may list multiple post-aggregate mining land uses for an aggregate mining unit if the reclamation plan shows the post-aggregate mining land use for each area and each use satisfies the requirement of the Act. For reclamation plans where the post-mining land use is designated as grazing, fish/wildlife habitat, forestry, or recreation, A.R.S. 27-1271(B)(9)(d) requires that the reclamation plan must describe the type of habitat planned, and the reclamation measures which will be used to encourage that type of habitat. The proposed habitat measures can not be incompatible with the habitat on adjacent lands.

2.3.2 Post-Mining Re-grading and Erosion Control (A.R.S. 27-1271-B(9)(b); and A.A.C. R11-3-602)

A section of the plan narrative must address a description of the current topography and the proposed final topography, the measures to be taken (including the final slope configuration) in the reclamation of overburden dumps and waste rock stockpiles, along with sediment ponds and fines piles. Re-grading measures must create a landscape which is suitable for the stated post-mining land use, must be considered stable, and consistent with good engineering practices.

The goal of reclamation is to restore natural shapes that blend with surrounding landform. Irregular slopes will catch more runoff, reduce the water's velocity, trap seeds, and speed re-vegetation.

*Curved sinuous slopes can be formed by mining directly to the final reclamation slope angle (this is generally the most inexpensive means of reclamation) or by using the cut-and-fill method, which will require a setback for the cut or materials from overburden dumps to be hauled in for the fill slopes. Post mining backfilling to create the final slopes can be the most expensive reclamation technique. A reclaimed facility must consist entirely of stable slopes. (Adapted from **Best Management Practices for Reclaiming Surface Mines in Washington and Oregon**)*

In addition, the plan must address the measures to be taken to address erosion control. The site-specific erosion control measures need to be developed to allow surface drainage to occur in a manner that does not contribute to excessive erosion which can compromise the reclaimed slope stability.

Following is a list of some possible short and long term erosion control measures:

SHORT-TERM (EROSION CONTROL)	LONG-TERM (RECLAMATION)
Straw or Hay Mulch	Slope Shape (Convex or Concave)
Strawbale Barrier	Straw or Hay Mulch
Silt Fence barrier	Extreme Surface Roughening
Straw Wattles	Permanent Seeding
Rock Formations	Erosion-control Matting
	Rock Mulch

*Successful erosion control begins with planning. The erosion control methods chosen should permit flexibility so that modifications can occur as needed. Individual erosion control technologies can reduce, but not eliminate soil erosion; often a combination of temporary and permanent techniques is needed to control erosion. (Adapted from **The Practical Guide to Reclamation in Utah**)*

2.3.3 Post-Mining Plan for Structures and Equipment (A.R.S. 27-1271(B)(9)(a); A.R.S. 27-1275; A.A.C. R11-3-601)

The plan narrative must address the removal and reclamation of structures, facilities, improvements, and other equipment. Removal of scrap metal, wood, and trash is mandatory. Removal of a structure can be excluded from the reclamation plan if it is integrated into the approved post-mining land use or the effort to reclaim the structure is deemed not feasible. Un-reclaimed structures must have adequate measures proposed to restrict access and maintain public safety. The plan may also address the removal of all hazardous or rejected materials that are stored and used on the site. The removal of petroleum storage facility structures (above ground storage tanks or below ground storage tanks), Emergency Planning and Community Right-to-Know Act (EPCRA) chemical storage, and any historical environmental conditions should also be addressed.

2.3.4 Post-Mining Plan for Excavations, Pits, and Rock Faces (A.R.S. 27-1271(B)(9)(a); A.R.S. 27-1275; and A.A.C. R11-3-601)

The plan must address the re-grading and reclamation measures to be taken in regards to excavations, ponds, open pits, and rock faces. The re-grading and reclamation of excavations, ponds, pits, and rock faces can be excluded from the reclamation plan if they will be integrated into the approved post-mining land use, or the reclamation effort is deemed not feasible.

The following factors are to be addressed in the determination of whether the re-grading and reclamation of excavations, ponds, pits, and rock faces are not feasible:

- Time and cost to perform the reclamation;
- Topography of the site;
- Geology and stability of the site;
- The amount of resources needed to perform the reclamation;
- Future access to aggregate resources; and
- Regional or local hydrogeology.

If open pits, and rock faces are to be left un-reclaimed, adequate measures must be proposed to restrict access and maintain public safety. Hazards to public safety can be reduced by the installation and maintenance of berms, fences, barriers, and warning signs.

2.3.5 Post-Mining Road Reclamation (A.R.S. 27-1271(B)(7); and A.A.C. R11-3-603)

The proposed reclamation plan will need to address the length and location of the roads which will be left in place for post-mining land use (recreational, operational, or monitoring purposes) and the reclamation plans for those roads not necessary for post-mining land use. Reclamation of non-necessary roads included in the plan should begin as soon as the road is no longer needed for operations, reclamation, or monitoring purposes. Reclaimed roads should have surface drainage patterns restored or new patterns established. Bridges and culverts should be removed. Bridges and culverts not removed should be stabilized and protected from erosion with riprap. Reclaimed roadbeds will need to be ripped, scarified, and re-vegetated to achieve the planned post mining land use.

2.3.6 Soil Conservation and Re-Vegetation (A.R.S. 27-1274; and A.A.C. R11-3-Article 7)

The reclamation plan narrative must address the conservation, redistribution, and substitution of the topsoil located on the mining area. Stockpiles of conserved soil need to be stabilized against erosion and clearly marked with signs identifying the pile as 'SOIL'. Before redistribution of the soil, the regraded area needs to have extreme surface roughening performed to minimize slippage of the soil. The redistributed soil must not be excessively compacted and the thickness of the soil layer must be consistent with the proposed post-mining land use. Soil may be brought in from an off-site location or manufactured onsite and used as part of the reclamation plan as long as it will provide a stable growing medium, supports vegetation, and will not create a hazard to public safety.

“A suitable plant growth medium is essential for land rehabilitation. Because soils develop very slowly in the arid West, topsoil is a valuable resource. Topsoil is valued as the most superior plant growth medium and therefore should be selectively handled and preserved for use during reclamation.” *”Once stockpiled, do not disturb the soil again until final reclamation. The stored topsoil should: remain in place for the duration of the mining, not be subject to water or wind blown erosion, or compaction.”* **(From The Practical Guide to Reclamation in Utah)**

The topsoil on the mining location must be conserved to support re-vegetation unless one or more of the following factors are demonstrated:

- There is insufficient soil to make recovery possible.
- Soil recovery is not practicable due to topography, thickness, or some other physical, climatic, or biological constraint.
- Direct re-vegetation of the disturbed areas with or without soil is reasonably expected to be successful.

If the reclamation plan is to include re-vegetation, then a narrative describing the following is needed:

- Location and amount of acreage planned to be re-vegetated;
- The time of the year re-vegetation is to occur (planting should occur during the most favorable period of the year for the plants to establish and grow); and
- The type of planting method to be used.

The re-vegetation narrative should also include a discussion on mulching, irrigation, pest control, and disease control techniques planned to be used. If re-vegetation is planned in locations where the surface has been compacted, then ripping and/or disking should be planned in order to establish a suitable root zone.

The proposed re-vegetation plan should support the planned post-mining land use described in the plan narrative. The types and density of plants proposed for the re-vegetation plan do not need to be identical to current or pre-mining or that are on adjacent lands if:

- The post-mining land use is different than the pre-mining land use or the use of adjacent lands.
- The site-specific soil conditions and/or topography make it technically or economically unfeasible.
- There are other plants that would provide better erosion control or site stability.

2.3.7 Proposed Tentative Schedule for Disturbance and Reclamation (A.R.S. 27-1271(B)(10) and A.R.S. 27-1226(A))

The reclamation plan narrative must include a tentative schedule listing the proposed start of disturbance, anticipated start of reclamation, and anticipated reclamation completion. Surface disturbances should be reclaimed concurrent with the mining operation. If concurrent reclamation is not possible, then reclamation needs to start within one year of completing mining operations or within one year of cessation of mining (unless extensions are granted).

It is usually economically advantageous to try and begin the reclamation process as early in the mine life cycle as possible. Depending on the geologic, economic, and operational requirements of the facility, reclamation of the facility will occur in one of three forms:

1. Post-Mining Reclamation begins after all resources are depleted from the entire mine. The advantage of post-mining reclamation is that there is complete depletion of the resource. The disadvantages are that the stockpiled soils have deteriorated during the mine's life, re-vegetation will take longer and be more expensive, and there is little to no cash flow to offset reclamation costs.
2. Segmental or Phased Reclamation occurs when the mine is divided into segments (or Phases) with fairly uniform characteristics. As each segment is mined out, the previous segment is reclaimed using the topsoil and overburden from the new segment. The advantages of

Segmental Reclamation are that the topsoil is not stored for long periods, final slope angles can be established during excavation rather than as a separate operation, and reclamation is less expensive. The disadvantages of segmental reclamation are that it requires detailed pre-mine planning in order to effectively phase the mining operation.

3. Concurrent or Progressive Reclamation involves transporting the material from the current working area directly to the reclamation area in one circuit. The advantages of concurrent reclamation are that soils are moved directly to the reclamation area, material is moved only once, disturbance at any given time is minimized, and it is generally viewed by the public as the preferred technique. The disadvantages are that operations that blend material from multiple areas of the mine usually have difficulty in performing concurrent reclamation, and progressive reclamation is generally not feasible in deep sand and gravel operations.

*Proper production planning and scheduling can reduce the costs associated with reclamation. Selective, pre-planned backfilling can create new pit slopes while shortening waste haul cycles. Overburden dumps can be constructed on receding lifts creating flatter slopes that require minimal dozer work for final grading. (Adapted from **Open Pit Mine Planning and Design**)*

2.3.8 Estimating Costs for Proposed Reclamation (A.R.S. 27-1271(B)(11); and A.A.C. R11-3-802)

The reclamation plan narrative must include the estimated cost for third-parties to perform the proposed reclamation measures. These estimated costs will be used to determine the financial assurance requirements for the aggregate mining unit. All activities in the reclamation plan need to be addressed including: earthwork and re-grading costs, all re-vegetation preparation and seeding costs, demolition of buildings and other structures, compliance with other permits, equipment mobilization/de-mobilization costs, periodic care and maintenance, contractor profit, and administrative overhead. The plan narrative must also include the source of the estimated costs and documentation of the calculations of the costs.

There are a number of sources for estimating costs for reclamation and bonding:

1. Department of Interior – Office of Surface Mining has developed “Handbook for Calculation of Reclamation Bond Amounts” found at www.osmre.gov.
2. State of Nevada has developed an Excel workbook to help estimate reclamation costs, it can be found at http://ndep.nv.gov/pio/file/03-2006-mine_reclamation_bonding.pdf.
3. The cost of equipment costs and earthwork productivity can be estimated using The Caterpillar Performance Handbook.
4. The cost of mining and reclamation activities can be estimated using Western Mine Engineering mining cost service found at www.westernmine.com/.
5. Another all inclusive cost estimator for construction and demolition type projects is R.S. Means found at <http://www.rsmeans.com/>.
6. Others as approved by the ASMI.

2.4 AGGREGATE MINING FACILITY RECLAMATION PLAN FIGURES (A.R.S. 27-1251(B); and A.A.C. R11-3-501(B))

Providing accurate maps of the aggregate mining facility and its surroundings is an important factor in creating an approvable reclamation plan. Maps allow geographic information to be summarized in a compact form, show the spatial relations of these features, and enable long-range planning of the mine resource and reclamation. The map size recommended for submittal is 11 x 17 inches, which is easy to photocopy and store. Because 11 x 17 inches is generally not practical for internal working purposes, draft and working copies may be larger.

Maps must provide sufficient detail to characterize the site and at a minimum provide the following information:

- *A site access map* showing the regional setting of the site and the facilities position relative to local municipalities, infrastructure, land uses, and watercourses (use a United States Geologic Survey [USGS] base topographic map or similar).
- *A reclamation sequence map*: showing the borders and sequence of segments to be mined and reclaimed, including the directions in which soils will be moved during salvage and replacement, and the location of storage areas and other mine-related features. Include on this map the pre-mining (or existing) topographic contours with sufficient resolution (contour interval) to accurately represent the site.
- *A post-mining/pre-reclamation map* showing the mine site topography as it will appear after mining is completed but before reclamation begins. Include any resulting water features, roads, stockpiles, storage areas, buildings, or structures that will exist at the end of mining, and post-mining topographic contours.
- *A post-mining final reclamation map* showing the mine site topography as it will appear after reclamation and re-vegetation. Include the location and types of plants used for re-vegetation, any resulting water features, buildings, or structures that are to remain in place, un-reclaimed roads, and post-mining land use designations for each area.

2.4.1 Map Elements

Every map should have the following elements:

- map scale, both written out as a ratio and shown graphically as a bar or rake scale
- north arrow
- explanation block or legend for any symbols used
- title block with map title, name of operator/owner, facility, and date

2.4.2 Map Scale

Every map should include a scale. The scale that best represents a mining operation will depend on the size of the facility. Suggested Map Scale:

- Locations of less than 10 acres in size, 1 inch = 50 feet
- Locations of 10 to 50 acres in size, 1 inch = 100 feet,
- Locations of 50 to 100 acres in size, not less than 1 inch = 200 feet,
- Locations of greater than 100 acres in size, not less than 1 inch = 400 feet.

2.4.3 Map Features

The following map features should be shown on one or more of the submitted maps:

- Topographic Contours – Current, Post-Mining, Reclaimed
- Permit Area Boundary
- Property Lines
- Current, Post-Mining, and Post-Reclamation Watercourses, Ponds, and Wetlands
- Current, Post-Mining, and Post-Reclamation Processing Plants, Buildings, and Utilities
- Haul Roads – Current, Post-Mining, and Post-Reclamation
- Soil and Overburden Stockpiles
- Product Stockpiles, Waste-Rock Dumps, and Fines Storage
- Current, Post-Mining, and Post-Reclamation Drainage Ditches and Settling Ponds

3.0 ANNUAL STATUS REPORT OF MINE RECLAMATION PLAN (A.A.C. R11-3-504)

An approved reclamation plan, along with any approved changes, remains in effect until the reclamation is complete and all financial assurance is released. Annually, all aggregate mining unit (and facility) owner/operators are required to submit an Annual Status Report within 60 days of the anniversary of the approval date of the plan. The status report is required to provide the status of the mining operation, state the total current area of surface disturbance, the area reclaimed during the past year, and the area not yet reclaimed. The Report must include a map and/or an aerial photo defining the areas of disturbance and the reclaimed areas (and the year in which the reclamation was completed). If there have been no changes in disturbance and reclamation from the previous year, no map or photograph is necessary.

**4.0 EXTENSION OF TIME FOR SUBMITTAL OF PLAN
(A.A.C. R11-3-203)**

As of January 1, 2007, an approved Reclamation Plan is required for all aggregate mining and aggregate exploration operations that are located on private land and that have a surface disturbance larger than 5 acres. This plan is required to be submitted to the ASMI before January 1, 2007. An owner/operator of an existing exploration or mining operation may request extensions of time for the submission of reclamation plans. The request must be submitted in writing and the extension can only be granted for a maximum of 90 days. Further requests for extensions must provide any changes in the relevant factors for the time extension.

**5.0 EXTENSION OF TIME FOR INITIATION OF RECLAMATION
(A.R.S. 27-1226(B); and A.A.C. R11-3-205)**

Reclamation of surface disturbances should be concurrent with on-going mining or exploration operations. When that is not practical, reclamation efforts should begin within one year of completing the mining or exploration operations. The owner/operator can request up to three 5-year extensions before reclamation has to begin. The request must be submitted in writing at least 45 days before the reclamation process is required to begin. Approval of time extensions will be based on the demonstration of a reasonable likelihood of the operation continuing based on factors such as: presence of additional aggregate or other minerals being mined, historical fluctuations in the value of the product being mined or other materials being mined, and the design life of any process components existing at the mining operation.

**6.0 CESSATION OF MINING ACTIVITY
(A.R.S. 27-1291(A)(2); and A.A.C. R11-3-208)**

The ASMI can make the determination that mining or exploration activity has ceased on a property if any of the following is found:

- The operation has gone out of business.
- No activity has occurred at the site after one year of the most recent annual status report.
- The extension of time for reclamation has expired and no additional time has been granted.
- The ASMI has made a written determination that the operation has been abandoned.

The ASMI should provide the owner/operator with written notice of a Proposed Determination of Cessation of Mining Activity by certified mail or hand delivery. The owner/operator will have 30 days to respond to the proposed determination, after which the ASMI can make a Final Determination of Cessation of Mining Activity. Once a final determination has been made, reclamation must be started within one year (either by the owner/operator or by the ASMI through the activation of a Financial Assurance Mechanism).

**7.0 REQUEST A VARIANCE
(A.A.C. R11-3-206)**

The State Mine Inspector may allow a party of an aggregate mining unit to vary from a requirement of the rules, or condition written into the reclamation plan, if the inspector finds that allowing the variance will not endanger public safety and will not be inconsistent with the criteria established in A.R.S. § 27-1273. The request must include the following: the owner/operator's name; the Facility's name and location; the specific part of the reclamation plan that a change is requested for; why the change is needed; and the alternative methods proposed. The ASMI will grant or deny the variance within 30 days after receiving the request.

8.0 SUBSTANTIAL CHANGE TO APPROVED RECLAMATION PLAN (A.R.S. 27-1227; A.A.C R11-3-207)

If an owner/operator would like to incorporate a change into an approved reclamation plan, a “Notice of Proposed Change” will need to be submitted the ASMI, and the ASMI must approve the change before it can become a part of the approved reclamation plan. The ASMI will notify the owner/operator within 15 days if the change to the plan is considered a “substantial change”. A “substantial change” is defined by A.A.C. R11-3-207(A) and includes:

- Changes in the post-mining land use designation.
- Changes to the planned reclamation for any new disturbance that is substantially different from the approved reclamation plan.
- Significant changes to the final topography stated in the plan (including slopes, stockpiles, and fines areas).
- Changes to the plan that allow easier public access to areas that may be a hazard to public safety.
- Changes in the reclamation measures planned that will measurably decrease the ability to achieve the desired post-mining land use.
- Significant decreases in the cost estimate of the financial assurance needed to perform reclamation measures.

If the change is found to be “not substantial”, the owner/operator is only required to amend the financial assurance as necessary to account for the change. If the ASMI determines that the requested change is a “substantial change”, the owner/operator must submit an amendment to the reclamation plan. The ASMI will schedule public meetings and public notices on the proposed amendment as described in the “Public Notice and Meetings” section. Before a “substantial change” can be implemented, a revised financial assurance mechanism must be submitted.

9.0 PUBLIC NOTICES AND MEETINGS
(A.R.S. 27-1229; A.R.S. 27-1230; and A.A.C. R11-3-210)

The ASMI is required to publish notice, conduct public meeting and provide for public comment on all proposed reclamation plans as required by A.R.S. 27-1229 for new operations and proposed substantial changes to existing reclamation plans and as required by A.R.S. 27-1230 for existing operations. The exploration or mining operation's representative is required by A.R.S. 27-1229(C) and A.R.S. 27-1230(C) to attend the public meetings and respond to questions relating to the reclamation plan.

**10.0 SUBMISSION FEES FOR PLANS
(A.R.S. 27-1233; A.A.C. R11-3-209)**

The ASMI will assess a one time submission fee for each proposed reclamation plan or proposed change to a reclamation plan. The fee schedule is as follows:

- Reclamation Plan for an Exploration operation (or General Plan) - \$1,565
- Substantial Change to an Exploration Operation Reclamation Plan (or General Plan) - \$1,565
- Reclamation Plan for an Aggregate Mining Unit (or Facility) - \$3,800
- Substantial Change to an Aggregate Mining Unit (or Facility) Reclamation Plan - \$3,800
- Changes to all Reclamation Plans that are declared not substantial - \$500

In addition to the above fees, the owner/operator is required to reimburse the ASMI for all postal, advertisement, and meeting room costs incurred by the publishing and mailing of the public notices required for reclamation plan approval process.

11.0 FINANCIAL ASSURANCE (A.R.S. 27-1291 AND A.R.S. 27-1292)(R11-3-ARTICLE 8)

All owner/operators of aggregate mining units which have or will create greater than 5 acres of surface disturbance will need to provide to the ASMI financial assurance mechanisms (FAM) of sufficient financial ability to cover the estimated cost of reclamation (as listed above) within 60 days of approval of the reclamation plan. A blanket FAM covering multiple operations is acceptable provided the total amount of the mechanism is at least the combined estimated cost of reclamation for all operations covered. The following types of FAM (or combination) are acceptable:

- Surety Bonds – should be an indemnity agreement with the sum payable to the State of Arizona.
- Certificates of Deposit – should name the State of Arizona as the beneficiary. The institution issuing the certificate is required to be a Federal Deposit Insurance Corporation (FDIC) insured entity.
- Trust Funds – should name the State of Arizona as the primary beneficiary. The trustee must be an entity whose trust operations are regulated and examined by federal or state agencies. The trust fund must be initially funded with at least the estimated cost of reclamation of existing disturbance plus the estimated cost of reclamation for the disturbance planned in the coming year. Payments into the trust fund must be made at least annually, and must cover the estimated additional cost of reclamation for any additional disturbance planned that year.
- Letters of Credit (LOC) – should be irrevocable and issued for a period set to exceed one year by at least 90 days. It should be an amount at least equal to the estimated reclamation costs. The LOC should automatically renew each year for a period of at least one year. If the issuing institution cancels the LOC, it must provide the owner and the ASMI at least 120 days notice. If the LOC is cancelled, the owner/operator must obtain an alternate FAM within 120 days after the notice of cancellation.
- Insurance – should be obtained through a non-captive insurance company that is licensed by the Arizona Department of Insurance. The policy needs to guarantee that funds will be available when the reclamation plan is not followed, the policy must pay at the direction of the ASMI, to the party specified by the ASMI. The insurance policy may not be cancelled, terminated, or not renewed except for failure to pay the premium. If there is a failure to pay the premium, the insurer may cancel the policy by providing the owner and the ASMI at least 120 days notice. The policy will stay in full force if the premium due is paid before the expiration date.
- Self Insurance – the owner, operator, or an outside guarantor can be responsible for self insuring the estimated total reclamation cost in an approved plan if they pass one of the two financial tests listed in R11-3-809.

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- Cash Deposits – receipt of deposit with the State Treasurer. The Deposit can be invested and the interest earned on the investment is the depositor's.
- Annuities - should name the State of Arizona as the beneficiary. The institution issuing the certificate is required to be licensed in the State of Arizona.
- Bonding Pools - should be an indemnity agreement with the sum payable to the State of Arizona.
- Additional financial assurance mechanisms which are acceptable to the ASMI.

12.0 REFERENCES

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