STAR STONE QUARRIES, INC.
TORREY QUARRY
NOTICE OF INTENTION to COMMENCE LARGE MINING OPERATIONS

Submitted March 20, 2006 to:
State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801
A copy was also sent to the BLM, Henry Mountains Field Station

1. Rule R647-4-102- DURATION OF THE NOTICE OF INTENTION

This Notice of Intention (NOI) is for the duration of this quarrying operation. For planning purposes, the content of this NOI is directed to the first 5-year development and reclamation plan with operations planned to continue beyond five years.

2. Rule R647-4-104- OPERATOR, SURFACE AND MINERAL OWNER(S)

A. Mine Name: Torrey Quarry

B. Name of Applicant: Star Stone Quarries, Inc.

(1) Applicant is registered to do business in several counties, including Wayne County, within the state of Utah

(2) Business license number: Wayne County does not require a license

(3) Registered Agent: Lon Thomas
4040 South 300 West
Salt Lake City, UT 84107
Ph.: (801) 262-4300
Fax: (801) 262-4474

C. Permanent Address: 4040 South 300 West
Salt Lake City, UT 84107
Ph.: (801) 262-4300
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D. Company Representative: Lon Thomas
President, Star Stone Quarries, Inc.
See previous address information

E. Location of Operation: Wayne County, Utah
NW 1/4 and SW 1/4 of the SE 3 Section 8,
Township 28 South, Range 4 East

F. Ownership of the Land Surface: Public Domain

Name: Bureau of Land Management
122 West 500 South
Hanksville, UT 84734

G. Owner(s) of Record of the Minerals to be Mined: Public Domain

Name: Bureau of Land Management
122 West 500 South
Hanksville, UT 84734

H. BLM Project File Number: UTU-70593

I. Adjacent Land Owners: Public Domain

Name: Bureau of Land Management
122 West 500 South
Hanksville, UT 84734

J. Have the land, mineral and adjacent land owners been notified in writing?

Yes

K. Does the Operator have the legal right to enter and conduct mining operation on the land covered by this notice?

Yes

3. Rule R647-4-105- MAPS, DRAWINGS, PHOTOGRAPHS

A. 105.1B Base Maps

(1) Property boundaries of surface ownership of all lands which are to be affected by the mining operations: **MAP # 1**

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The quarry area is completely surrounded by public (Bureau of Land Management) land. All lands to be affected are on public lands. Any adjacent properties, belonging to private owners and/or state lands are 2 miles or greater distance away from the quarry area and will not be affected by the operation.

(2) Perennial, intermittent, or ephemeral streams, springs and other bodies of water, quarries, roads and buildings within 500 feet of the proposed operation: **MAP # 2**

There are no other quarries or buildings within 500 feet of the proposed operation. There are no landing strips, electrical transmission lines, oil and/or gas pipelines, or other surface and subsurface facilities located within 500 feet of the proposed mining activity. No ponds, lakes or other bodies of water are present within 500 feet. Ephemeral streams and other transient drainage that may be crossed by roads and quarries do not support fish populations or other aquatic life.

There is a public pit that is south of our quarry site that is managed by the BLM. This pit is **not** within 500 feet of the proposed operation.

(3) The route of access from the nearest publicly maintained highway; State Highway 24 East from Torrey Utah **MAP # 2**

(4) Known areas, previously impacted by mining or exploration activities within the proposed land affected: **MAP # 2**

There are no known areas previously impacted by mining that are not part of our current mine site.

(5) Area proposed to be developed over the 5-year mining plan in this notice: **MAP # 2**

The additional area proposed to be developed in this 5-year mining plan totals 1.5 acres. There is approximately 0.25 acre proposed above the current waste pile, which will extend the acreage of the waste pile to a total of approximately 0.75 acre. There is an additional 1.25 acres proposed at the very south end of the mine site. This is the working area of the quarry. This will extend the acreage of the area where rock is extracted and processed for removal from the site.

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B. 105.2 - Surface Facilities Maps

(1) Proposed surface facilities, which include: roads, location of topsoil storage area, overburden/waste dumps, mining/processing equipment.
MAP # 3

There are no plans to construct the following facilities for this operation: buildings, utilities, power lines, drainage control structures, tailings or processed waste facilities, solid or liquid wastes and wastewater containment and discharge treatment facilities.

(2) The border and extent of the surface area proposed to be affected by the operation and the number of acres affected. **MAP # 3**

The operation, already affecting a total of seven acres, is proposed to increase by approximately 1. 5 acres to a new total of 8.5 acres.

(3) There are no known test boring or core holes on the property and none are planned for development.

105.3 - Reclamation Treatments Maps

(1) Quarrying is expected to be ongoing at the end of this 5-year NOI. There will be some concurrent reclamation.

The concurrent reclamation practice will be to construct a shallow sediment pond. We will place large stones slightly below the pond to trap sediment and slow water discharge. The pond will be located where the wash bottom exits the operation.

Final reclamation practices will include ripping, backfilling, regrading and recontouring to approximate indigenous slopes, replacing soil and hand broadcasting seed. There are no permanent buildings on site and no building foundations. All equipment and living quarters are portable and are expected to be in use at the end of the 5-year NOI. No reclamation or removal is planned for these facilities during the 5 year NOI.

All reclamation indicated on the map is indicative of final reclamation.
MAP # 4-A & MAP #4-B

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(2) A border outlining the extent of the area to be reclaimed after mining, the number of acres disturbed and number of acres proposed for reclamation. **MAP # 4-A**

The final reclaimed area will include all working areas, dump site, topsoil stockpile and any other disturbed land that was disturbed in our mining operation. There are three exceptions: 1) the road going through the quarry; 2) two areas that are bare, exposed rock; and 3) the bedrock ephemeral drainage area. Please refer to letter (c) below and R647-4-112. This comes to a total of 7.25 acres.

(3) Areas disturbed by this operation which are included in a request for a variance from the reclamation standards:

MAP # 4-A

The road leading into the quarry and proceeding through the quarry site and then continuing out of the quarry site to the east is in a request for variance. (See R647-4-112) This road existed prior to any mining operation and therefore is not subject to reclamation by Star Stone Quarries.

No variance approved; see variance section.

There are two locations where the stone was bare, exposed rock with no soil or ground cover in a request for variance. We are requesting at final reclamation to leave these exposed, bare rocks similar to the way we found them; bare and exposed with no ground cover or vegetation.

There is a dry, bedrock drainage that crosses over the work area that is bare, exposed rock with no soil or ground cover in a request for variance. This will become a self-draining impoundment in final reclamation.

(4) There are no high-walls, which are proposed. Any slopes which are proposed will not remain steeper than 3:1.

4. Rule R467-4-106 - OPERATION PLAN

106.1 - Mineral(s) to be Mined

Sandstone to be used as building stone and decorative stone.

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106.2 - Type of Operation Conducted

This is an open pit, single bench mining operation with a side hill. Stone is dug from the quarry with a hydraulic excavator; the rock is spread on the dump with a front-end loader for the men to process. Stone splitting is done by hand using hammers and chisels. The stone is then graded and sorted according to size, thickness and quality and stacked on pallets, secured and loaded onto flatbed trucks with forks that attach to the front-end loader. There is a track saw that is used by the men for cutting stone. The track saw uses water as a cooling mechanism, and for dust control. 500 gallons per day are used in the operation on the days that the saw is utilized. The stone cut with the track saw is also palletized, secured and loaded onto flatbed trucks for shipping.

106.3 - Estimated Acreage

Areas of actual mining including bare rock (1 acre):	3.0 acres
Overburden/Waste dumps:	.75 acre
Product stockpiles, trailer site, machinery parking, (no soil removed):	2.25 acres
Access/Haul roads:	.25 acre
Haul Roads	.25 acre
Associated on-site processing facilities:	0.00 acres
Tailings disposal:	0.00 acres
Other: inactive mining areas	2 acres
Total Acreage:	8.50 acres

106.4 - Nature of Material Including Waste Rock/Overburden and Estimated Tonnage.

The mined material consists of sandstone that comes in two colors, which are referred to as Torrey Buff and Torrey Red. Their names, in themselves are descriptive of the two sandstones. These sandstones are used as decorative stone for exterior and interior walls of buildings, patios, floors, fireplaces, rock retaining walls and lawn decorations.

The mineralogy of sandstone consists of common sedimentary rock made up of tiny grains of Oolitic sandstone held together by a type of cement. Sandstone is produced by sand, which has been deposited, and then cement precipitated between the grains by groundwater percolating through it. The

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most common cements are calcium carbonate, silica and iron oxide. A description of the geologic setting is found in Rule R647- 106.8.

Thickness of overburden:	0 – 20 inches
Thickness of mineral deposit:	100+ feet
Estimated annual volume of overburden:	100 cu yds
Estimated annual volume of tailings/reject material:	0 cu yds
Estimated annual volume of ore mined:	400 cu yds

Overburden is a combination of soil, fine rock and decomposed rock. Waste is rock, which is not considered salable as decorative stone. Waste rock breaks into pieces, which are smaller than the minimum salable size. The waste material originates from a couple of different sources. Some waste material is a product of natural decomposition. Other rock waste is a result of handling during quarrying operations when rock breaks into small pieces. These types of undersized rock are identified as fine rock. Every effort is made to maximize the amount of salable rock and minimize the amount of waste. Typical particle size and size fractions of the waste rock are three to twelve inches in diameter.

106.5 - Existing Soil Types and Location of Plant Growth Material

An Order 3 Soil Survey of the area has **not** been completed by the U.S. Department of Agriculture; Natural Resources Conservation Service. There is no published information on soils in that specific area. Vic Parslow at the National Resource Conservation Service (NRCS) Office in Richfield offered information on the soils in the quarry area utilizing the information on soils from a comparable area located in Capitol Reef National Park. The following is paraphrased from the information received:

The soils in the quarry appear to be derived from an analogous formation that exists in Capitol Reef National park. This soil is called the Skos Rock Outcrop Complex with 8-25% slopes. The quarry is also in a similar geomorphic position. The parent soil material is mixed sandstone, shale, and mudstone. The upper two inches, typically, is an extremely channery sandy loam. From 2-8 inches is a channery sandy clay loam. The soil depth varies from 0 to 20 inches. There could be some specific areas with salt or gypsum concentrations, but there isn't enough horizon differentiation to merit any attempts to exclude these areas. Generally speaking, the plan should be to

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recover all unconsolidated material above a certain depth, possibly 18 inches, and then to redistribute this salvaged material upon reclamation.

Depth of soil material:	0 - 20 inches
Volume for stockpiling: (see 106.6)	1600 cu yards

106.6 - Plan for Protecting and Redepositing Existing Soils

Thickness of soil to be salvaged and stockpiled:	0 – 12 inches
Area from which soil material can be salvaged:	0.5 acres - none **
	1.0 acre – 12"
Volume of soil to be stockpiled:	1600 cu yds

**Areas of less than one inch of soil cannot be salvaged. Approximately 66% of the 1.5 acre area has salvageable soil totaling 1 acre.

Salvageable soils over quarry and areas for waste dumps will be scraped from the surface with a front end loader or excavator bucket and stock piled. Soil includes topsoil, subsoil, decomposed rock and fine rock.

There will be approximately three acres of exposed bedrock in the bottom of the quarry areas. Material in the waste dump, which contains broken rock subsoil and fines will be spread to a depth of approximately 14 inches, with a front-end loader over these areas with bedrock exposed. This area may become a self-draining impoundment connected to the ephemeral drainage that crosses the work area.

Inactive soil stock piles will be planted with an approved interim seed mixture for stabilization. There are approximately 1000 cu yards currently stocked piled, a majority of which has been recontoured and reseeded.

There will be approximately two and a half acres of product stockpiles, trailer site, machinery parking, and access/haul roads, where significant material will not be removed, only graded or compacted. These areas will be ripped, except the road, to 18 inches or to bedrock whichever is less or pock marked with an excavator. Since no soil was removed no soil will be imported in these areas.

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106.7 - Existing Vegetative Communities to Establish Revegetation Success

Since there is no official vegetation information at our quarry site, all vegetative information is from the NRCS. The NRCS gathered information from sites that are similar to our quarry site and we apply that information for our purposes. The details of the information are not particularly specific to our quarry site but should be adequate.

Ground cover vegetation includes:

Buffaloberry	24.0 %
Green Ephedra	24.0 %
Bigelow Sage	4.8 %
Snakeweed	3.9 %
Cliffrose	9.6 %
Utah Serviceberry	4.8 %
Bitterbrush	4.8 %
Indian Ricegrass	14.4%
Galleta	6.8 %
Purple Three-Awn	2.9 %
	100 %

Existing vegetation canopy coverage is about 10 % and includes pinions, junipers and understory vegetation.

(1) Vegetation Survey

Sampling method used: Mine operator's observation

(2) Ground Cover

Vegetation , and understory	10 %
Litter	5 %
Rock/rock fragments	60 %
Bare ground	25 %
	100 %
Revegetation Requirement (70% of 10% vegetative ground cover)	7.0 %

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106.8 - Depth to Groundwater, Overburden Material and Geologic Setting

No wells are located on or within the vicinity of the operation. Therefore the exact depth to groundwater is not known.

The overburden material is composed of a combination of non-salable rock, decomposed rock, subsoil, and topsoil. By volume, the greatest portion is non-salable rock. The non-salable rock usually breaks into pieces that are too small to be a commercially salable product.

Geology: The operation is located on the west side of Waterpocket Fold, which is part of the Colorado Plateau. Waterpocket Fold is a nearly 100 mile long warp in the earth's crust and is protected in Capital Reef National Park. The mining operation is at an altitude of approximately 6700 feet and is situated in Calf Canyon. The area is characterized by sandstone formations and some shales, in varying shades of reddish brown. The climate is arid. Pinion, juniper, and semi-desert grasses and shrubs form the principal vegetative cover here (see 106.7) Fruits such as apples, pears, apricots, peaches and plums are raised in Torrey and Capitol Reef National Park which are on either side of the operation. The stone that is quarried is primarily of the Moenkopi Formation from the Triassic and Jurassic periods of the Mesozoic Era.[1]

106.9 - Location and Size of Ore and Waste Stockpiles, Tailing and Treatment Ponds, and Discharges

Location and size of any existing and proposed waste/overburden dumps and stockpiles: See **Map # 3** and section **106.3**.

Existing stockpiles are located on already developed areas. Proposed stockpiles will be located on existing developed areas in the quarry site and extend into new areas indicated on the map. No separate area will be needed for stockpiles. No tailing facilities or treatment ponds are to be developed as part of this NOI. There are water storage tanks for the track saw. Each tank holds up to 2000 gallons of water. These water storage tanks are mounted on trucks so that they are mobile and can be moved to the working area of the

[1] This information gathered from Canyon Country Geology by F.A. Barnes, p 43; Roadside Geology of Utah by Halka Chronic p188-193; and Geology of Utah by William Lee Stokes, inside back cover)

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quarry and back to the parking/storage area when not in use. The saw is also mobile and the power unit is mounted to one of these trucks for convenience and mobility. The locations of the tanks and the saw are indicated on **MAP # 3**.

Overburden will be removed using a front end loader and/or excavator bucket and pushed or transported to the dump site. When fine overburden is unearthed, which is determined to be suitable as a growing medium for vegetation, it will be saved in the topsoil stock pile for reclamation purposes.

The acreage and capacity of waste dumps are shown on **Map # 3** and in section **106.3**.

There will be no tailing ponds or water storage ponds constructed. We have a water storage tank on the premises, which holds meager amounts of water. For this reason, no hydrologic calculations are necessary. For this same reason, there are no proposed effluent discharge points (UPDES).

5. Rule R647-4-107 - OPERATION PRACTICES

During operation the operator (Star Stone Quarries, Inc.) shall conform to the following practices unless the Division grants a variance in writing.

A. Measures Taken to Minimize Hazards to Public Safety During Mining Operations:

1. *Closing or guarding of shafts and tunnels to prevent entry in accordance with MSHA regulations;*

   There are no shafts or tunnels to guard or prevent entry. The mine is an open pit, single bench mining operation.

2. *Disposal of trash, scrap metal, wood and extraneous debris;*

   Trash, scrap metal, wood and any extraneous debris will be removed from the property and taken to an off-site disposal site.

3. *Plugging/capping of drill, core or other exploratory holes;*

   This measure is unnecessary as there will be no drill holes, core holes or any other types of exploratory holes as part of this NOI.

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4. *Posting of warning signs in location of public access;*

A sign will be posted warning the public that heavy equipment is operating at the site.

"No Smoking" signs will be placed near the impervious secondary containment area (see number "b" and "d" below) where the diesel tank and other fluids are stored, along with the Mine Safety and Health Administrations required "HazCom" signs.

5. *Berms, fences or barriers above highwalls or other excavations;*
There are no berms, barriers or highwalls or other excavations as part of this NOI.

B. Measures Taken to Avoid or Minimize Environmental Damages to Drainage Channels Affected by this Mining Operation

The diesel tank is placed within a impervious secondary containment area designed to hold twice the volume of the tank. Barrels of motor oil and hydraulic fluid are stored within the same containment area.

A shallow sediment pond will be constructed during mining. We will place large stones slightly below the pond to trap sediment and slow water discharge. The pond will be located where the wash bottom exits the operation. While the quarry is operating the sediment will be cleaned out as needed.

Loose debris that would restrict the flow of natural drainage will be removed from natural drainage channels.

C. Measures Taken to Control and Minimize Sediment and Erosion on Areas Affected by this Mining Operation.

Inactive soil stock piles will be planted with an approved interim seed mixture for stabilization. They will also be sloped at angles necessary to maintain the piles at an angle, which would minimize sedimentation and erosion.

Road and work areas will be covered with some of the waste rock to help stabilize the roadways. This will decrease mud and help mitigate erosion and sedimentation during storm events.

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The water tank will not pose an erosion concern because the volumes are not capacious enough to cause even nominal erosion.

D. Potentially Deleterious Materials Stored on Site

During our time of operation, which is seasonal and only a few weeks out of each year, diesel fuel is stored on site along with motor oil and hydraulic fluid. These materials, of a potentially low deleterious nature, are stored in an impervious secondary container, which has a volume capacity of about 1000 gallons, which is twice our maximum storage volume of diesel fuel. These materials will be labeled appropriately, according to Mine Safety and Health Administration Standards, with "HazCom" labels and "No Smoking" signs.

E. Measures Taken to Salvage and Store Soils to be Used in Reclamation

Recoverable soils will be stripped and stockpiled in the topsoil stockpiles for use at the time of reclamation. Soil salvaging and storing are discussed in more detail in section **R647-7-106.5** and **106.6.** See also **Map # 3**. Soil stockpiles will be vegetated to provide stabilization and protected from erosion

F. Reclamation to be Done During Active Mining Operations Prior to Final Closure

There will be some concurrent reclamation during active mining operations. The concurrent reclamation practice will be to construct a shallow sediment pond. We will place large stones slightly below the pond to trap sediment and slow water discharge. The pond will be located where the wash bottom exits the operation. The sediment pond will be slightly lower than the wash bottom creating a self-draining impoundment, which will be cleaned out as needed while the quarry is in operation. Eventually the quarry floor will all be lower than the discharge point. This will, at final reclamation, be left as a self-draining impoundment, which will eventually fill in with sediment. Please refer to **Map # 4-A**

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6. Rule R647 - 108 - HOLE PLUGGING REQUIREMENTS

There are no drill or test holes in connection with this operation. No drilling is being done in connection with the operation. Any future drilling will be limited to blast hole drilling. These holes will be entirely consumed during quarrying. No blast hole drilling is currently being done. There are no known abandoned drill or test holes on the property. Drill hole plugging will not be required.

7. Rule R647 - 109 - IMPACT STATEMENT

109.1 - Surface and Groundwater Systems

There is no ground water near this operation. This operation will not impact any groundwater or surface water. There are no wells at the operation nor are there any plans to drill a well.

109.2 - Wildlife Habitat and Endangered Species

There is little wildlife (rabbits only) and no endangered species in the area. The impact, if any, on the rabbit population is insignificant.

109.3 - Existing Soil and Plant Resources

The existing soil on the new areas will be stockpiled for later use at the time of final reclamation. There are no known endangered plant species in this area.

109.4 - Slope Stability, Erosion Control, Air Quality, Public Health and Safety

The slopes of our stockpiles are minimal and therefore highly stable. The dump is only ten feet high and on relatively flat ground. There are no highwalls and most of the mining is on flat surface. Air quality permits are not required. There are no extenuating hazards to public health and safety due to any conditions introduced by our mining operation.

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8. Rule R647 - 110 - RECLAMATION PLAN

110.1 - Current Land Use and Postmining Land Use

Current or premining land use [other than mining]:	Barren desert with possible wildlife grazing.
Future post-mine land use proposed:	Barren desert with possible wildlife grazing.

110.2 - Reclamation of Roads, highwalls, slopes, leach pads, dumps, etc.

The following features will be reclaimed as explained: Refer to **MAP # 4**

Roads: The road in and through the quarry was an existing road at the initial time Star Stone began operations. It was not created by Star Stone and therefore will not be reclaimed by Star Stone. Please refer to R647- 4 -112 for details.

Highwalls: There are no highwalls to be included in this NOI. There will be no highwalls created, or are there any existing highwalls.

Slopes: All slopes will be regraded and recontoured to approximate the original slope. They will be regraded to a slope less than 3 horizontal: 1 vertical configuration. This is in order to comply with the Mineral Rules. The slopes will have topsoil distributed from the topsoil stockpiles. The slopes will then be seeded via hand broadcasting with the recommended seed mix provided by both the BLM and the NRCS. (**Appendix # 1 part A, B & C**). The density of seeds will be sufficient to ensure, at least, a 70% of original revegetation rate.

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Impoundments, Pits & Ponds:

There will be one small pond constructed on the quarry site, additionally; there will be two water tanks, which are on trucks.

A shallow sediment pond will be constructed during mining. We will place large stones slightly below the pond to trap sediment and slow water discharge. The pond will be located where the wash bottom exits the operation. The sediment pond will be slightly lower than the wash bottom creating a self-draining impoundment, which will be cleaned out as needed while the quarry is in operation. Eventually the quarry floor will all be lower than the discharge point. This will, at final reclamation, be left as a self-draining impoundment, which will eventually fill in with sediment.

Each of the two water tanks holds a maximum of 2000 gallons. This water is for use with the track saw. The tanks will be removed from the property at the time of final reclamation. This is done by just driving them off of the premises to another site owned by Star Stone Quarries. Final reclamation is not scheduled for the duration of this NOI.

The quarry pit will be partially backfilled with an amount of overburden and waste material to a depth of 14" or more where it is needed to accommodate a slope less than 3:1. The pit will be graded and contoured to approximate the natural contour of the surrounds. Fines will be spread over the area and seeded with the recommended seed mix. Vegetation will be established at 70 % of original ground cover as required. There are no ponds to be reclaimed. The final size of the reclaimed area will be 7.25 acres.

Drainages: The quarry operation will minimize the effects to drainages or waterways, which are primarily bedrock, by directing any storm run-off that is in the drainage area to the self-draining sediment pond, by removing layers of bedrock as necessary. The water will exit the self-draining sediment pond into the ephemeral drainage channel.

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The waste dumps at final reclamation will be mostly consumed for unconsolidated material for the quarry floor. This will reduce the effort of regrading the dump edge 3:1 slope. It will also minimize any effect on the adjacent drainage.

Waste Dumps:

The waste dumps are active and therefore exist at their natural slide rate. At the time of final reclamation, the dumps will be tapered to a stable grade of 3 horizontal : 1 vertical or less. The waste dumps are composed of material from two sources; product of natural decomposition and as a result of handling during quarrying operations when rock breaks into small pieces. These types of undersized rock are identified as fine rock. The composition of the waste dumps would then be small and fine pieces of the sandstone naturally found at the site. Topsoil will be replaced across the dump piles. Topsoil will be recovered from our topsoil stockpiles. The topsoil will act as a medium for revegetation. The recontoured waste dumps will then be hand seeded with a seed mixture recommended by both the BLM and the NRCS. (Please see **Appendix #1 part A, B and C**) This will be done at a rate to ensure a 70 % revegetation rate.

Shafts, adits: There are no shafts or adits. No reclamation is required.

Drill holes: There are no drill holes. No reclamation is required.

Tailings: There are no tailings. No reclamation is required.

Leach Pads: There are no leach pads. No reclamation is required.

110.03 - Surface Facilities to be Left

There will be no surface facilities left on site following final reclamation. The water holding tanks and saw, the diesel fuel barrel along with the motor oil and hydraulic fluid will be removed. The trailer for the men will be removed. All equipment will be removed. All areas, other than those requested for variance will be reclaimed at the time of final reclamation.

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110.04 - Treatment, Location and Disposition of Deleterious Materials

The potentially deleterious materials that will be located on site are diesel fuel, motor oil and hydraulic oil. The diesel fuel will be in a 500-gallon tank; the motor oil and hydraulic oil are in 55-gallon drums. All of these materials will be stored in an impervious secondary container as described in **R647-4-107 (d)** and the location is shown on **Map # 3**. These materials along with the impervious secondary storage container will be removed at the time of final reclamation. Also, during the times of non-operation, since this is a seasonal operation, the diesel fuel, motor oil and hydraulic oil barrels will be removed from the site and brought back during the next active time at the mine. There are no permanent buildings or foundations on the site. Trash and other waste materials will be removed and hauled to a licensed disposal site.

110.05 - Revegetation Planting Program and Topsoil Redistribution

Soil Material Replacement:

Salvaged soil material from the topsoil stockpile will be spread at a 3" depth on the dumps and quarry floor with Komatsu 500, six-yard front-end loader. Salvaged soil material from the topsoil stockpile will be worked in and spread out. This should provide a surface with sufficient fines to support vegetation.

Seed Bed Preparation:

The seedbed will be scarified, if needed. Most likely the soil will be sufficiently loose from being spread with the loader. Any compacted surfaces will be deep ripped a minimum of 18 inches with ripper bars spaced no more than 36' apart or pock marked with an excavator. The soil will be left in a roughened condition to allow water harvesting, erosion control and revegetation success.

Seed Mixture:

We propose to use the following seed mixture, which is a combination of the mixes recommended by The NRCS, Richfield, Utah division and by the Bureau of Land Management, Henry's Mountain. (See **Appendix #1 part A, B & C**)

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Common Name	Species Name	Hand broadcasting Rate
Grasses:		
Crested Wheatgrass	*Agropyron cristatum*	4 lbs/acre
Russian Wild Rye	*Elymus junceus Fisch*	4 lbs/acre
Galleta Grass or Curly Grass	*Hilaria jamesii*	4 lbs/acre
Indian Rice Grass	*Oryzopsis hymenoides*	2 lbs/acre
Sand Drop Seed	*Sporobolus cryptandrus*	0.1 lb/acre
Shrubs:		
Gooseberryleaf globemallow	Unknown	0.25 lb/acre
Cliffrose	*Purshia Mexicana var. Stansburiana*	1 lb/acre
Fourwing Saltbush	*Atriplex canescens*	2 lb/acre
Shadscale Saltbush	*Atriplex confertifolia*	1 lb/acre
	TOTAL:	**16.85 lbs/acre**

Seeding Method:

The seed will be planted via hand broadcasting. The seed will be broadcast in the fall just after the fines and topsoil mixture has been spread over the ground. This should provide an ideal setting to begin germination of the seeds.

Fertilization:

Fertilization should not be necessary. The seeds will be planted in the fall and germinate in the winter and spring months.

Other Revegetation Procedures: None

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9. Rule R647 -4 – 11 – RECLAMATION PRACTICES

111.2 – Reclamation Of Natural Channels

A shallow sediment pond will be constructed during mining. We will place large stones slightly below the pond to trap sediment and slow water discharge. The pond will be located where the wash bottom exits the operation. The sediment pond will be slightly lower than the wash bottom creating a self-draining impoundment. If at final reclamation the quarry floor is above the water exit the impoundment will be left as constructed. If the quarry floor is lower than the discharge point it will become a self-draining impoundment, which will eventually fill in with sediment restoring the ephemeral drainage.

10. Rule R647 -4 - 112 VARIANCE

Road Reclamation Variance Request:

The dirt road leading into the quarry from the west and passing through the quarry grounds and continuing east beyond the quarry area was an existing road prior to any mining operations on Star Stone's part. This area is outlined on **Map # 4.** A variance is requested for this road under rules R647-4-105.3.3 and R647-4-110.2. The road will be a post mine-use road.

Bare, Exposed Rock Variance Request: NOT APPROVED 4/19/07 SMW

There are two locations marked on Map #4-A where the stone was bare, exposed rock with no soil or ground cover. We request a variance at final reclamation to leave these exposed, bare rocks similar to the way we found them; bare and exposed with no ground cover or vegetation.

The ephemeral drainage area, which is dry bedrock, crosses through the work area. We request a variance at final reclamation to leave the drainage area as dry bedrock, similar to the way we found it, dry bedrock.

11. Rule R647 - 4 - 113 SURETY

Reclamation Surety Estimates are attached as **Appendix # 2 part A and part B**. Our reclamation surety estimate, using Davis-Bacon wages where available and on the premise that the third party contractor would come from either Bicknell or Torrey comes to $13,591.23. A transitional reclamation surety in the form of a CD has previously been submitted for the amount of $ 35,000.

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11. PERMIT FEE [Mined Land Reclamation Act 40-8-7(i)]

The annual large mining fee of $500.00 for surface disturbance of 50 or less acres is included with this application.

12. SIGNATURE REQUIREMENT

I hereby certify that the foregoing is true and correct.

Signature of Permitee / Operator Lon Thomas

Name (typed or printed) Lon Thomas

Title/Position President, Star Stone Quarries, Inc.

Date: 11-27-06

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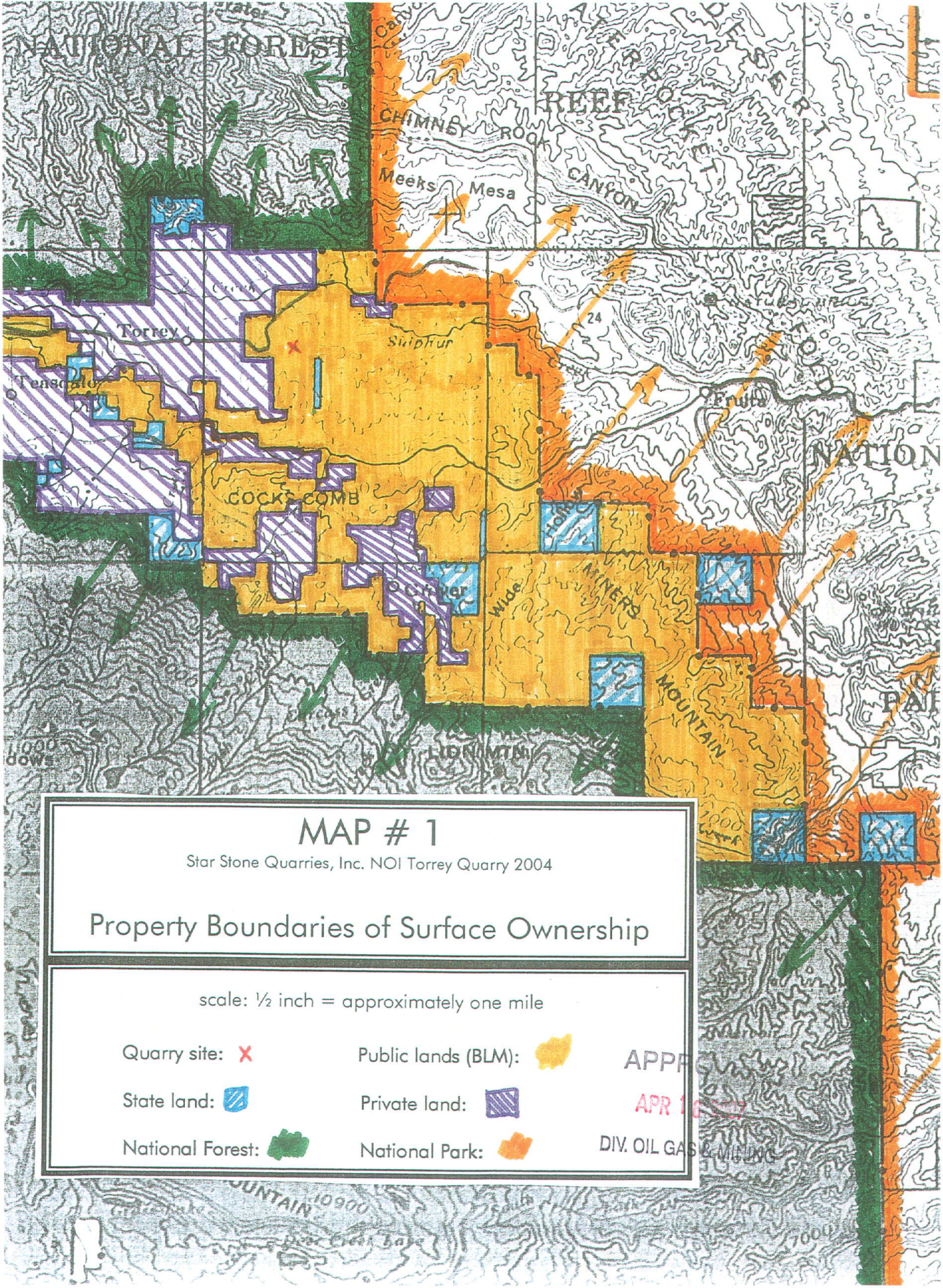
NATIONAL FOREST
REEF
CHIMNEY ROCK CANYON
Meeks Mesa
Torrey
Sulphur
COCKS COMB
Fruita
NATION
MOUNTAIN
LION MTN
MAP # 1
Star Stone Quarries, Inc. NOI Torrey Quarry 2004
Property Boundaries of Surface Ownership
scale: ½ inch = approximately one mile
Quarry site:
Public lands (BLM):
State land:
Private land:
National Forest:
National Park:
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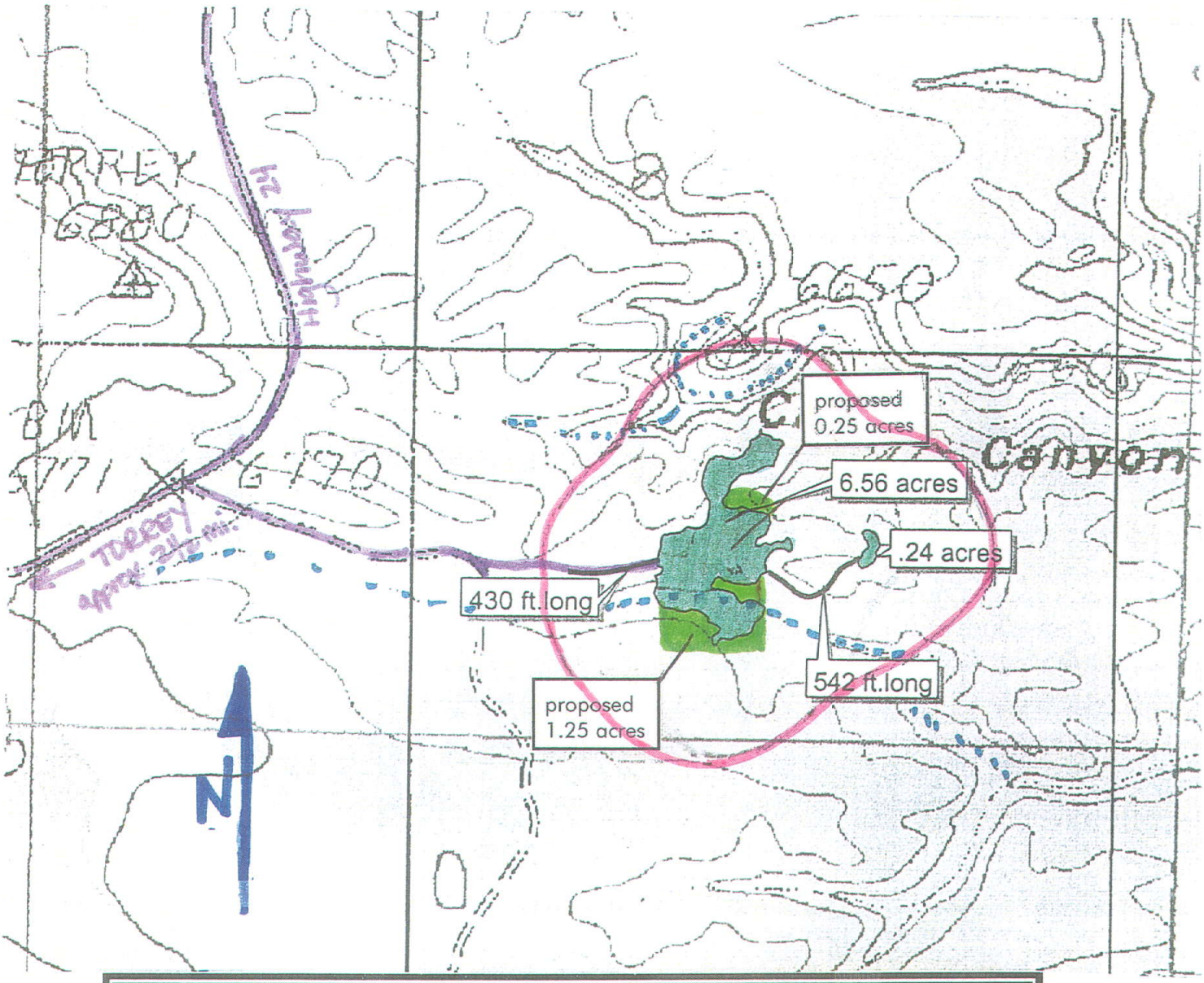

MAP # 2

Star Stone Quarries, Inc. NOI Torrey Quarry 2004

Route of Access & Location of Existing Surface and Subsurface Facilities & Proposed Area to be Developed

scale: ¾ inch = 500 feet

Route of Access: From State Highway 24 approximately 3 miles east of Torrey Utah. (Shown in purple)

500 foot border: 500 foot distance around proposed and existing operation. (Shown in pink)

Existing Area: (7 acres) **Proposed Area:** (1.5 acres)

Ephemeral or impermanent drainage:

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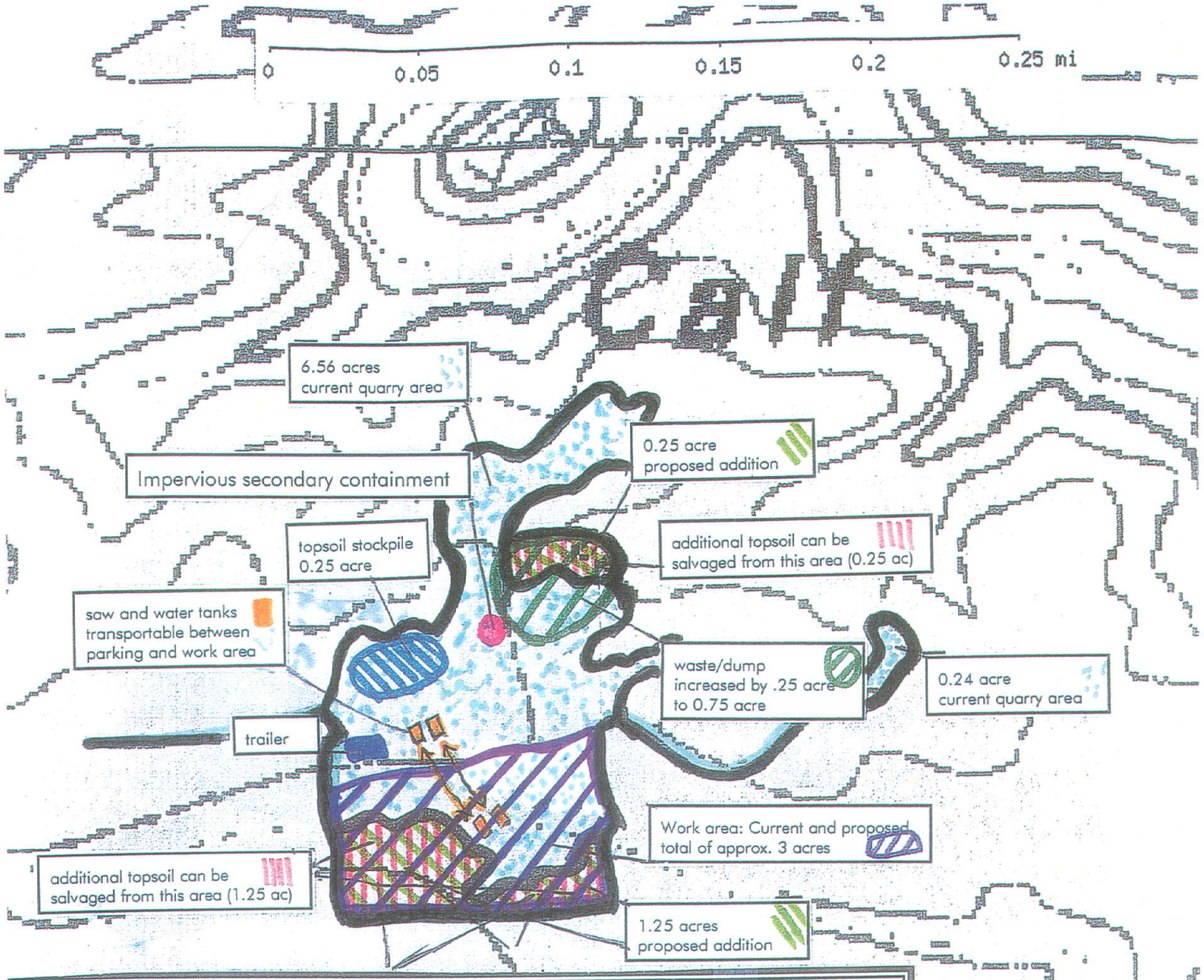

MAP # 3

Star Stone Quarries, Inc. NOI Torrey Quarry 2004

Proposed and Existing Surface Facilities

scale: 1 inch = 264 feet

Current mining area:

Proposed mining area:

Topsoil stockpile:

Dump/waste pile:

Area for topsoil salvage:

Active mining work area:

Trailer:

Saw and Water tanks:
(Transportable between the areas shown)

Impervious containment for potentially deleterious materials:

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MAP #4-A

Star Stone Quarries, Inc. NOI Torrey Quarry 2004

Reclamation Treatment Map

Scale: 1 inch = 264 feet

Reclamation Treatments:

Backfill Areas:

Bare, Exposed Rock

Seed (hand broadcast):

Self-draining impoundment:

Border of Reclamation Area:

Total area disturbed: 8.5 acres (including road)

Total area to be reclaimed: 7.25 acres (total area minus the road and bare rock)

Variance Request Area:

- Total area – 1.25 Acres
- Bare rock – 1 Acre
- Road Variance – .25 Acre

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MAP #4-B

Star Stone Quarries, Inc. NOI Torrey Quarry 2004

Reclamation Treatment Map

Scale: 1 inch = 264 feet

Reclamation Treatments:

Soil/Broken Rock/Fine Material up to 14" – topped with topsoil:

Ripping/Scarifying or Pock Marking with an Excavator: (if necessary)

Self-draining impoundment

No Soil Removed:

Total area disturbed: 8.5 acres (including road)

Total area to be reclaimed: 7.25 acres (total area minus the road and bare rock)

Variance Request Area:

- Total area – 1.25 Acres
- Bare rock – 1 Acre
- Road Variance – .25 Acre

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APPENDIX 1 – Part A

Seed mix recommended by the Bureau of Land Management

Seed Mixer for American Stone Torrey Pit

Seed mixer for the Torrey Pit, depending on the method of planting the seed use of a seed drill or hand casting.

With the use of a seed drill 10 pounds of seed per acre.
Hand casting 15 pounds per acre.

Seed Mixer; for use with a seed drill

Grasses
Indian Rice Grass (*Oryzopsis hymenoides*) One pounds per acre
Galleta Grass (*Hilaria jamesii*) Curly grass Six pounds per acre
Sand Drop seed (*Sporobolus cryptandrus*) Two pounds per acre

Shurbs
Fourwing Saltbush (*Atriplex canescens*) Half pound per acre
Shadscale Saltbush (*Atriplex confertifolia*) Half pound per acre

* Seed Mixer; hand cast

Grasses
Indian Rice Grass (*Oryzopsis hymenoides*) Two pounds per acre
Galleta Grass (*Hilaria jamesii*) Curly grass Eight pounds per acre
Sand Drop seed (*Sporobolus cryptandrus*) Four pounds per acre

Shrubs
Fourwing Saltbush (*Atriplex canescens*) Half pound per acre
Shadscale Saltbush (*Atriplex confertifolia*) Half pound per acre

You will have trouble with Fourwing Saltbush and Indian Rice Grass when using a seed drill. It is difficult to get Fourwing Saltbush to go through a drill and Indian Rice Grass needs to be planted deeper into the soil then Galleta grass and Sand drop seed. So you could hand cast the Galleta grass, Sand drop seed, and Fourwing Saltbush by hand and then drill seed the remaining seed at controlled depth. The use of this method would cover the seed that was hand cast when the seed from the drill in planted.

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APPENDIX 1 – Part B

Seed mix recommended by the Natural Resource Conservation Service

In Capitol Reef National Park, there is a soil called the Skos Rock Outcrop Complex 8-25% slopes. This soil appears to be derived from the same formation as the quarry and is in a similar geomorphologic position. The parent material is mixed sandstone, shale, and mudstone. Typically, the upper two inches is an extremely channery sandy loam, and from 2 to 8 inches is a very channery sandy clay loam. The soil depth varies from 0 to 20 inches. There may be some specific areas with salt or gypsum concentrations, but there is not enough horizon differentiation to warrant any attempts to exclude these areas. In general, the plan should be to salvage all unconsolidated material above some depth—say 18 inches—and then to redistribute this material upon reclamation.

The vegetation information is not as specific but is probably adequate. The place where they took this measurement is in the park at a lower elevation, and it is managed for wildlife and not livestock. It does worse because it is at a lower elevation, but it does better because there is essentially no livestock use. Here are the numbers:

25% bare ground
60% rock
15% ground cover including both understory vegetation and litter

adjusted #'s = 105%

Vegetation in the ground cover includes:
25% Buffaloberry 24
25% Green Ephedra 24
5% Bigelow Sage 4.8
4% Snakeweed 3.9
10% Cliffrose 9.6
5% Utah Serviceberry 4.8
5% Bitterbrush 4.8
15% Indian Ricegrass 14.4
7% Galleta 6.8
3% Purple Three-Awn 2.9

94%

I realize this comes to more than 100%, so I suggest you use these numbers and scale everything back so the total is 100%.

Canopy coverage is about 10% and is split about evenly between pinyons and junipers. Canopy coverage almost certainly overlaps with understory vegetation.

The seed mix they recommended was:

Species	Pounds PLS/Acre
Crested Wheatgrass variety either Nordan or Hycrest	4
Russian Wild Rye variety Bozoisky	4
Indian Ricegrass	2
Sand Dropseed	0.1
Gooseberryleaf globemallow	0.25
Shadscale	1
Cliffrose	1

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ATTN: GLENDA
FROM: RYAN T.:

APPENDIX 1 - Part c

Star Stone Quarries, Inc. NOI Torrey Quarry 2004

Combined Seed Mix and Cost Estimate from Granite Seed Company

$190 ST/AC.

Common Name	Species Name	Hand broadcasting Rate
Grasses:		
Crested Wheatgrass	*Agropyron cristatum*	4 lbs/acre
Russian Wild Rye	*Elymus junceus Fisch*	4 lbs/acre
Galleta Grass or Curly Grass	*Hilaria jamesii*	4 lbs/acre
Indian Rice Grass	*Oryzopsis hymenoides*	2 lbs/acre
Sand Drop Seed	*Sporobolus cryptandrus*	0.1 lb/acre
Shrubs:		
Gooseberryleaf globemallow	unknown	0.25 lb/acre
Cliffrose	*Purshia Mexicana var. Stansburiana*	1 lb/acre
Fourwing Saltbush	*Atriplex canescens*	½ lb/acre
Shadscale Saltbush	*Atriplex confertifolia*	1 lb/acre
	TOTAL:	16.85 lbs/acre

granite SEED
1697 W. 2100 N.
LEHI, UT 84043
(801) 768-4422

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APPENDIX 2 - Part A

RECLAMATION COST ESTIMATE SUMMARY SHEET

Amount of disturbed area to be reclaimed: 7.25 acres
Total disturbed are for this mine: 8.5 acres

#	ACTIVITY	Time	Equip.	Material	Labor	TOTAL
1	Clean up and removal of structures	2 hours	$1,000/day		$36.00	$1,036.00
2	Backfilling, grading and contouring	16 hours	$3,530.00		Inc. in equipment totals	$3,520.00
3	Soil material redistribution and stabilization	8 hours	$1,760.00		Inc. in equipment totals	$1,760.00
4	Revegetation (preparation, seeding, mulching)	4 hours		$1,381.66	$112.00	$1,493.66
5	Safety gates, berms, barriers, signs, etc.					$0.00
6	Demolition, removal or burial of facilities/structures, regrading/ripping of facilities areas	3 hours			$30.00	$30.00
7	Regrading, ripping of waste dump tops and slopes	see # 2 & 3	Included	in the totals	for # 2 & 3	
8	Ripping pit floors and access roads	see # 2 & 3	Included	in the totals	for # 2 & 3	
9	Drainage reconstruction	see # 2 & 3	Included	in the totals	for # 2 & 3	
10	Mulching, fertilizing and seeding the affected areas	see # 4	Included	in the totals	for # 4	
11	General site clean up and removal of trash and debris	2 hours		$20.00	$20.00	$40.00
12	Removal/disposal of hazardous materials	8 hours			$3,000.00	$3,000.00
13	Equipment mobilization and demobilization	1 hour each round trip	$131.00	$65.00	$48.00	$244.00
14	Supervision during reclamation	40+ hours + 1 hour each round trip			$1,232.00	$1,232.00
					SUBTOTAL:	$12,355.66
					Contingency 10%:	$1,235.57
					GRAND TOTAL:	**$13,591.23**

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APPENDIX 2 – Part B

RECLAMATION COST WORKSHEET

An explanation of how the totals in Part A were acquired

- All Labor is based on Bacon Davis Wages (if available)
- Hours and mileage is based on the premised that any contractor utilized would come from either Bicknell or Torrey

1. Clean Up and Removal of Structures: Estimated time of 3 hours inc. travel time

Haul trailer off premises:	Loading	2 hrs		
	Transport	1 hr		
Flat bed truck rental:		1 day @ $1000/day	=	$ 1000.00
Driver:		2 hrs@$16/hr	=	$ 36.00
				$ 1,036.00

2. Backfilling, Grading and Contouring: Estimated time of 16 hours for all areas

Dozer/Loader with ripper rental: 16 hrs @ @220/hr = $ 3,520.00
(This includes the dozer/loader operator in the cost)

3. Soil Material Redistribution and Stabilization: Estimated time of 8 hours for all areas

See also: Totals for item # 2 and # 4. Item # 2 will cover material redistribution and parts of the stabilization (based on slope of the contours) and item # 4 which will cover stabilization via revegetation.

Redistribution of topsoil stockpiles and waste dump:
Dozer/Loader with ripper rental: 8 hrs @ $220/hr = $ 1,760.00
(This includes the dozer/loader operator in the cost)

4. Revegetation: Estimated time of 4 hours for all areas

On man hand broadcasting seeds:	4 hrs @ $10/hr	=	$ 112.00
Recommended see mix:	$11.31/lb x 16.85 lbs/ac x 7.25 ac	=	$ 1,381.66
			$ 1,493.66

5. Safety Gates, Berms Barriers, Signs, etc.

There will be no safety gates, berms, or barriers of any kinds. The quarry area is flat and there are no holes, highwalls or anything else that poses a risk to public safety post reclamation.

6. Demolition, Removal or Burial of Facilities/Structures, Regrading/Ripping of Facilities Areas:

See also: Item #'s 1, 2, and 3. The regarding/ripping of the facilities area are included in the totals in the #'s 2 and 3.

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Removal of water tanks and saw: Estimated time of 3 hours each including travel time

Manpower (if need more than foreman: 3 hrs @ $10/hr = $ 30.00

7. Regrading/Ripping of Waste Dump Tops and Slopes:

See item #'s 2 and 3. Items # 2 and 3 include all areas of the quarry site.

8. Ripping Pit Floors and Access Roads:

See item #2 and 3. Items # 2 and 3 include all areas of the quarry site.

9. Drainage Reconstruction:

Any drainage reconstruction will occur when the land is recontoured. Please see item # 2.

10. Mulching, Fertilizing, and Seeding the Affected Areas:

Please see item # 4, revegetation. Mulching and fertilization will not need to be done.

11. General Site Clean Up and Removal of Debris and Trash: Estimated time of 2 hours

One man clean-up:	2 hrs @ $10/hr	= $	20.00
Materials for clean up:		= $	20.00

12. Removal/Disposal of Hazardous Materials Estimated time of 8 hours

Hazardous material company to remove any oil, fuel, etc.: approx. $3,000.00
(This includes disposal fees, environmental fees, etc.)

13. Equipment Mobilization and Demobilization: One hour each trip

Item # 1:	Mileage:	25 mi @ 0.12/mi	= $	3.00
	Travel time (dozer driver)	1 hr @ $ 16/hr	= $	16.00
			$	19.00
Item # 2:	"Overweight Permit" for transport of dozer or loader		= $	65.00
	Transport of dozer or loader	25 mi @ $5.00/mi	= $	125.00
	Travel time (dozer driver)	1 hr @ $16/hr	= $	16.00
			$	206.00

Item # 3: Dozer or loader will already be there so there are no mobilization charges. Also the men will be there so there are no additional travel time charges.

Item # 6:	Mileage:	25 mi @ 0.12/mi	= $	3.00
	Travel time (dozer driver)	1 hr @ $ 16/hr	= $	16.00
			$	19.00

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14. Supervision During Reclamation: 40+ hours and an additional 1 hour each round trip

Loading trailer for removal:	2 hrs @ $ 28/hr	=	$	56.00
Backfilling, grading, contouring:	16 hrs @ $ 28/hr	=	$	448.00
Soil material redistribution:	8 hrs @ $ 28/hr	=	$	224.00
Revegetation:	4 hrs @ $ 28/hr	=	$	112.00
Safety features:	2 hrs @ $ 28/hr	=	$	56.00
General site clean up:	2 hrs @ $ 28/hr	=	$	56.00
Removal of hazardous waste:	8 hrs @ $ 28/hr	=	$	224.00
Travel time: approx.	4 hrs @ $ 28/hr	=	$	112.00
			$	1,232.00

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