

FINAL
ENVIRONMENTAL IMPACT STATEMENT

REZONE FOR
RAGING RIVER QUARRY

King County Department of
Planning and Community Development
Building and Land Development Division
King County, Washington

Prepared for the Review and Comments of Citizens,
Citizen Groups, and Governmental Agencies

In Compliance With

The State Environmental Policy Act of 1971
Revised Code of Washington 43.21.C

and

King County Code 20.44

DATE OF ISSUE: December 12, 1979

COST: \$6.50

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Manager, Division of
Building and Land Development

INTRODUCTION

Action Sponsor: Raging River Mining, Inc.
P.O. Box 691
Redmond, Washington 98502

Action Proposed: The Action Sponsor has requested King County approval for a rezone from Forest Recreation (F-R) potential Quarry Mining (Q=M) to Quarry Mining (Q-M), including lots 27 and 28 for the access road, and a Planned Unit Development (PUD) in conjunction with the rezone request. Total area of the rezone is 42.21 acres.

Project Location: The existing quarry and proposed expansion is located at the western terminus of the A.R. Carmichael Road in the SW quarter of Section 22, Township 24N, Range 7E, W.M., in King County, Washington. (Full legal description attached as Appendix A)

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Location of Background Data: Shapiro & Associates, Inc.
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Licenses & Permits Required:

EIS Draft and Final Approval	King County Building and Land Development Division
Individual Sewage Disposal System	Seattle-King County Health Department
Burning Permit	King County Fire Marshal
Building Permit	King County Division of Building and Land Devel.
Unclassified Use Permit	King County Division of Building and Land Devel.
Grading Permit	King County Division of Building and Land Devel.
Shoreline Area Substantial Development Permit	King County Division of Building and Land Devel.
Surface Mining Permit	State Department of Natural Resources
Approach Roads	Department of Highways, Local Dist. Engineer

Date of Issue of Final EIS: December 12, 1979

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RECIPIENTS OF THIS DOCUMENT

Federal Agencies

Environmental Protection Agency,
Region X
Department of Housing and Urban
Development

State Agencies

The Honorable Dixy Lee Ray,
Governor
Department of Ecology
Department of Fisheries
Department of Game
Department of Natural Resources
Department of Social and
Health Services
Highway Commission

Regional Agencies

Municipality of Metropolitan Seattle
Environmental Management Division
Puget Sound Air Pollution Control
Agency
Puget Sound Council of Governments
Washington Environmental Council
Seattle-King County Department of
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Office of King County Prosecuting
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Department of Public Works
Planning Division
Conservation District
Department of Public Safety
Department of Budget and Program
Development
Policy Development Commission
Chief Deputy Fire Marshal,
Ronald E. Coombs
Office of Zoning and Subdivision
Examiner
Parks Division
Solid Waste Division

Neighboring Cities

City of Fall City
City of Snoqualmie

Utility/Services

Puget Sound Power and Light
King County Fire District #10
Pacific Northwest Bell
Cascade Telephone

Libraries

University of Washington Library
Seattle Public Library
Fall City Library
Snoqualmie Library
Redmond Library

Newspapers

Seattle Times
Seattle Post-Intelligencer
Daily Journal American
Daily Journal of Commerce
Sammamish Valley News
Snoqualmie Valley Record

Parties of Record at Hearing

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SUMMARY

A. THE PROPOSED ACTION

The proposed action is a rezone from Forest Recreation (FR), potential Quarry Mining (QM) to Quarry Mining (QM) zoning and a Planned Unit Development (PUD) in conjunction with the rezone request. Total area of the rezone is approximately 42 acres, of which about 16 acres is a previous quarry that first operated in 1935. The site is located at the western terminus of the A.R. Carmichael Road in the SW quarter of Section 22, Township 24N, Range 7E, W.M. in King County, Washington. The action sponsor, Raging River Mining Company, Inc. has requested the rezone in order to resume and expand rock quarry operations at the proposed quarry site and adjacent areas. It is the intention of the sponsor to provide quarried rock of different sizes. The proposal raises the question of the proper balance between availability, recovery and use of mineral deposits, and other use of land in the County.

B. DIRECT AND INDIRECT IMPACTS

Earth

- . The deposit of andesite rock near the Mitchell Hill area of King County would be depleted by 10-18 million tons, assuming the quarry remains in operation for at least the next 100 years. This figure assumed a rate of removal of 50 truck round trips/day (150,000 tons/year).
- . The removal of rock will extend back into the hill slope from 150-200 feet at the base of the quarry. Slopes are designed to provide essentially vertical faces between benches, but could be modified to 2:1.
- . The soil mantle at the site of operation would be removed.
- . Erosion of the rock face would accelerate from physical and chemical weathering.

Air Quality

- . Significant amounts of dust would be generated by blasting, and vehicle and plant operation.
- . Some intermittent unpleasant diesel odors may occur as a result of vehicle and plant operation.

Water

- . A significant increase over natural undisturbed conditions in the amount of storm water runoff may be anticipated as a result of the large decrease in the site absorption characteristics.

- . Significant changes in the configuration of the site's drainage pattern may be expected as the mining operation changes the surface characteristics of the site. Siltation would occur and erosion would be accelerated on the fringe of the mined areas.
- . Pollution of the local on-site drainage system may occur as a result of oil and grease from plant machinery and operation, and accumulated dust from mining operations.

Flora and Fauna

- . All existing flora and fauna habitats would eventually be eliminated by the proposal.
- . Revegetation would be slow because of the complete removal of the soil mantle and a lack of topsoil will discourage the relocation of floral species.

Noise

- . Significant noise pollution (up to 89 dBA) at 50' can be expected as a result of the proposal. Noise from truck activity on the access road is generally higher than equipment noise operating at the face of the quarry. Truck movement on the access road is expected to be the primary source of noise; the rock drill is expected to be the second greatest noise producer.
- . Noise from properly confined blasts (up to 89 dBA) at 50' will also occur and its predicted occurrence would be twice/week. Because of the importance of this element of the environment, noise has been discussed in this document under the general heading "Special Issues" (Section III).

Natural Resources

- . Approximately 150,000 tons/year of andesite rock would be extracted by the action sponsor. These rock deposits are considered non-renewable resources.

Risk of Explosion or Hazardous Emissions

- . Blasting is a necessary part of the operation of a rock quarry. All blasting would be confined and would be in accordance with federal, state, and county regulations. If an unconfined blast occurred, which is very unlikely, the noise level would be approximately 135 to 145 dBA at 200 feet from the blast.

Population/Housing and Community Attitudes

- . At present there is controversy over the noise generation and visual blight of the present proposal. The area has a stable semi-rural character with very little other pressure for growth and change.
- . If a public water system were developed, there might be greater pressure for increased single family residential development. In this situation the presence of a quarry in the immediate vicinity may reduce or delay development.

Energy

- . Energy use may be expected to increase by approximately 33% above the level of previous quarry operations. Expected daily diesel fuel use at the quarry is 200 gallons, based on comparable operations in another quarry.

Aesthetics

- . Expansion of the quarry to the south and west would increase the amount of exposed cliff face. The direction of quarry expansion is away from existing residential areas and visually will be less obvious. Additionally, a buffer zone would be maintained in natural conditions for view blockage from the highway and adjacent area.
- . Impact on views is much more significant during the winter months due to the high proportion of deciduous trees on the site.

Economic Factors

- . Increasing present production to 150,000 tons/year would mean a proportionate increase in tax revenues due the State of Washington (i.e. from \$12,000 to \$18,000).
- . A slight increase in property taxes due to King County may be expected but would not exceed \$500/year.
- . Increases in public costs as a result of the project are not significant.
- . An increase of up to 10 employees on-site could be expected as a result of the proposal. Up to five indirect and induced jobs may be expected.
- . At the projected annual production figure of 150,000 tons, the proposal would have a marginal effect on state-wide rock production.
- . Within King County, the impact of the proposal would significantly increase the availability of quarried rock. Only two other quarries operate intermittently in King County that provide a full range of quarried rock for public use. Rock brought in from other counties

would be more expensive because of the significant transportation costs.

- . The increased quantity of rocks produced within King County would tend to stabilize price for quarried rock.
- . Should the Raging River Mining Company produce the 150,000 tons of rock projected, and based on total rock production in King County over a 45-year period, Raging River would be mining 15 to 20 percent of the county's production.

C. ALTERNATIVES CONSIDERED

No Action

- . No change in the present state of the proposed development site.

Limitation to Existing Mining Quarry Site

- . This alternative would limit the proposal to the existing quarry site of 16.27 acres.

Scale Down Level of Operation

- . This alternative would limit the rate of extraction of quarried rock.

Increase Level of Production

- . This alternative would increase rock production to meet market demands in King County.

D. MITIGATING MEASURES

Air Quality

- . Dust from quarry operations could be mitigated by frequent watering of all roads and circulation areas on the site.

Water

- . The action sponsor has prepared a drainage plan to mitigate the impacts of the large increase in storm water runoff. It would include sedimentation ponds on the site to prevent any increased sediment buildup on the floodplain of the Raging River. This plan is included in the document as Figure VIa and Figure VIb.

Noise

- . Truck drivers would be instructed on procedures for minimizing noise levels while operating on the quarry access roads. These procedures include strict adherence to 15 mph speed limit and a complete ban on the use of engine brakes.
- . The surface of the access road would be improved to minimize bouncing noise.
- . Fitting trucks with noise mitigation equipment, such as engine compartment baffles and new model mufflers.
- . Noise barriers or berms would be constructed adjacent to the access route separating the proposed QM zone from the SE zoned property to the north and south.
- . Ample warning would be provided to mitigate human response to blasting.
- . All blasting would be confined and would be subject to current federal, state, and county regulations.
- . A new rock drill would be used which has significantly lower noise levels than rock drills used during previous operations.
- . Limiting the hours of business operation of the quarry from 7 a.m. to 5 p.m.

E. ADVERSE IMPACTS WHICH CANNOT BE MITIGATED

Earth

- . Andesite rock deposits in the proposed rezone would be reduced by an estimated 150,000 tons/year.
- . The soil mantle in the area of quarry operation would be removed.
- . The existing hillside will be cut back from 150 to 200 feet, exposing vertical cliff faces of bare rock. Slopes would be cut to State mining regulations of 40 foot rise and 10 foot base.
- . Soil erosion around the edge of the quarry site would increase and erosion of the cliff face would be accelerated. However, these impacts would be minimal.

Flora and Fauna

- . Any existing flora and faunal habitats would eventually be eliminated by the proposed action. However, rehabilitation of areas will comply to required state and county regulation.

Air

- . Dust would be generated from blasting.

Population/Housing and Community Attitudes

- . Possible residential development south of Carmichael Road may be delayed by the presence of the rock quarry.
- . The presence of the quarry would decrease land values in the area.

Aesthetics

- . The view west across the Raging River valley would be negatively impacted by the existence of the rock quarry, which would be particularly visible during winter months.
- . View quality could be expected to improve as quarry operations move south and west.

Section II

THE PROPOSED ACTION

Section II

THE PROPOSED ACTION

The action sponsor, Raging River Mining, Inc., has proposed the rezone of 42.21 acres from Forest Recreation (FR), potential Quarry Mining (QM), to Quarry Mining (QM) zoning in order to expand the operation of an existing rock quarry. In order to satisfy present King County zoning, the action sponsor has also made application for a Planned Unit Development. The quarry is located on the Preston-Fall City Highway approximately 1-1/2 miles south of Fall City and at the western terminus of the A.R. Carmichael Road in the SW¼ of Section 22, Township 24N, Range 7E, W.M. (legal description can be found in Appendix A). The proposed area is bounded on the east by the Raging River and mixed deciduous-coniferous second growth forest on the south, west, and north. The site is zoned FR potential Quarry Mining on the west side of the Raging River and Suburban Estates (SE) on the east side of the river. The developer is the Raging River Mining Company, Inc., Redmond, Washington (see Figure I).

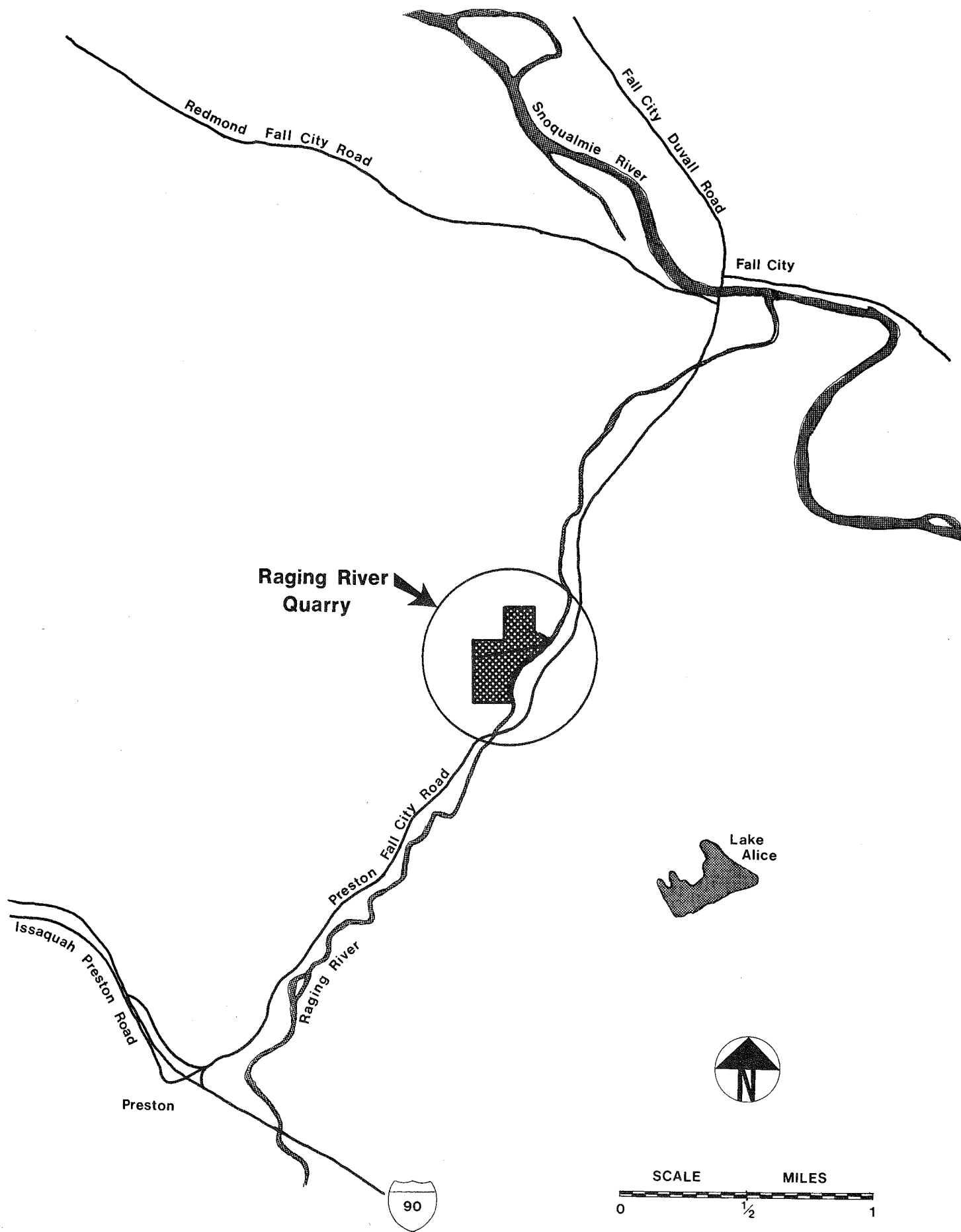
A. DESCRIPTION OF THE PROJECT

The proposed rezone consists of two land parcels on the western side of the Raging River and the Carmichael access road. These include a presently existing rock quarry site of 16.27 acres (owned by Raging River Mining, Inc.) and a 25.94 acre parcel to the south purchased from G.B. Merz. Operation of the quarry expansion will be integrated with the existing quarry in a southerly direction on a demand basis.

A buffer zone of at least 75 feet is included in the expansion proposal for the western boundary and the southern boundary along the Burlington Northern Railroad. A minimum buffer of 200 feet is required from the high water line of the Raging River. The buffer zone will maintain the existing vegetation cover in an attempt to minimize adverse environmental impacts which shall be discussed in a separate section (Figure II).

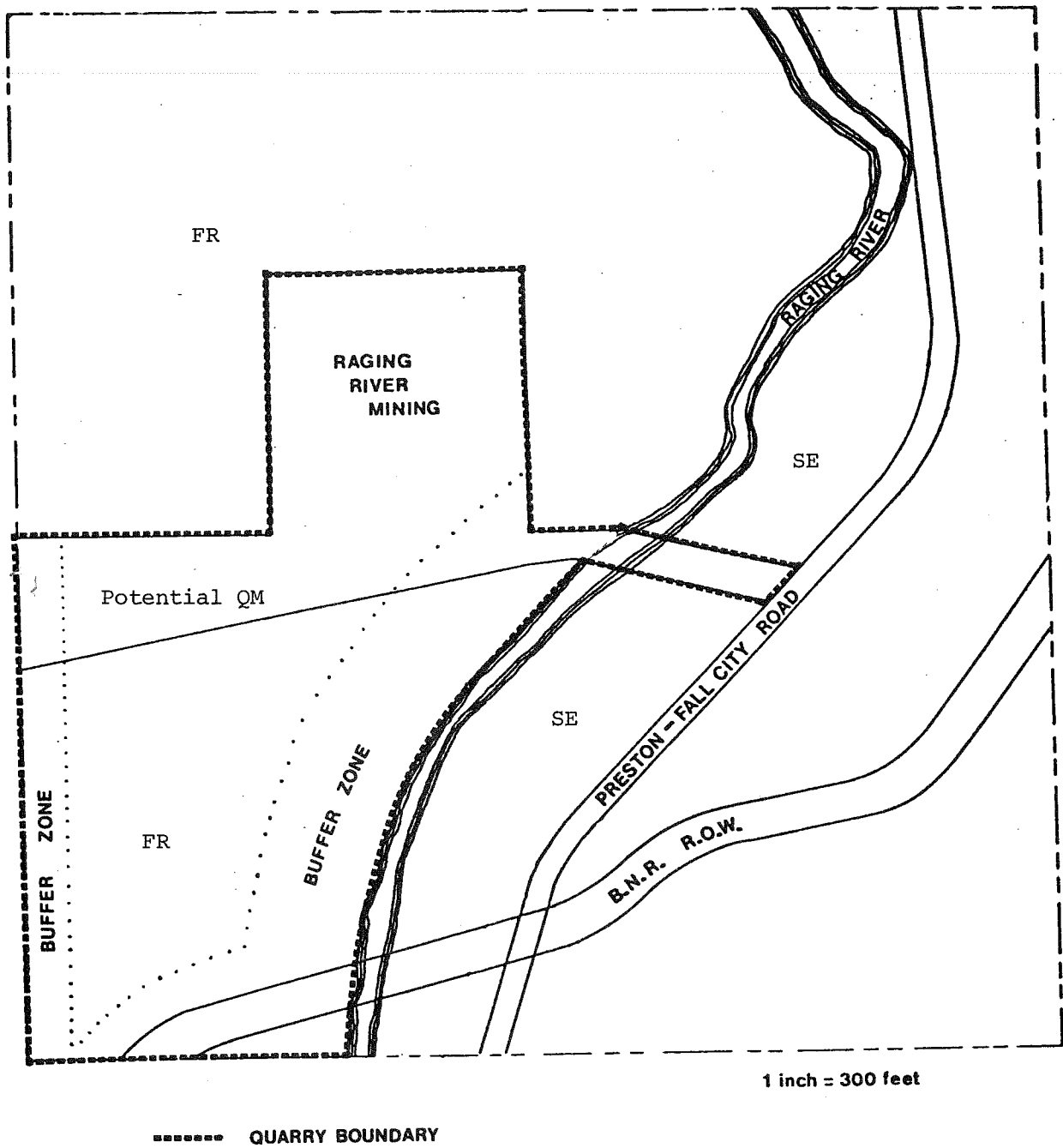
Access to the proposed rezone area is via the Carmichael Road and is located on the eastern side of the river. The proposal includes the construction of a 300 foot long, 12 foot high, 24 foot wide sound barrier berm with 1:1 side slopes on both sides of the access route (see Figure III) in order to mitigate noise impacts on adjoining residential properties. In order to construct the berm, there would also need to be a slight realigning and widening of the Carmichael Road to the south of the existing line (Figure III). The noise berm would be constructed of crushed rock material of pea gravel size and soil from the rock quarry. The berm would be hydro-seeded and planted with evergreen shrubs, bushes, or trees for slope stabilization and to mitigate erosion. The berm would be maintained in good condition at all times by the action sponsor.

The Carmichael Road will be composed of crushed rock and have drainage ditches on either side of it. Oil and grease from passing trucks will be



LOCATION

Figure I



PROPOSED QM REZONE (showing existing zoning)

Figure II

absorbed by the road surface. Any pollution not absorbed by the road surface will be contained by seepage pits filled with gravel and/or rubble to prevent pollution of the Raging River.

Raging River Mining, Inc. estimates 10-18 million tons of rock are available in the requested rezone area. Rock processing procedures can produce rock varying in size from armor stone and rockery size (large rocks) down to crushed material of pea gravel size.

Rock production requires blasting the quarry face wall to dislodge rock; blasting occurs in response to market conditions unless otherwise regulated by the County. Based on present operation conditions, two blasts/week can be expected from the quarry.

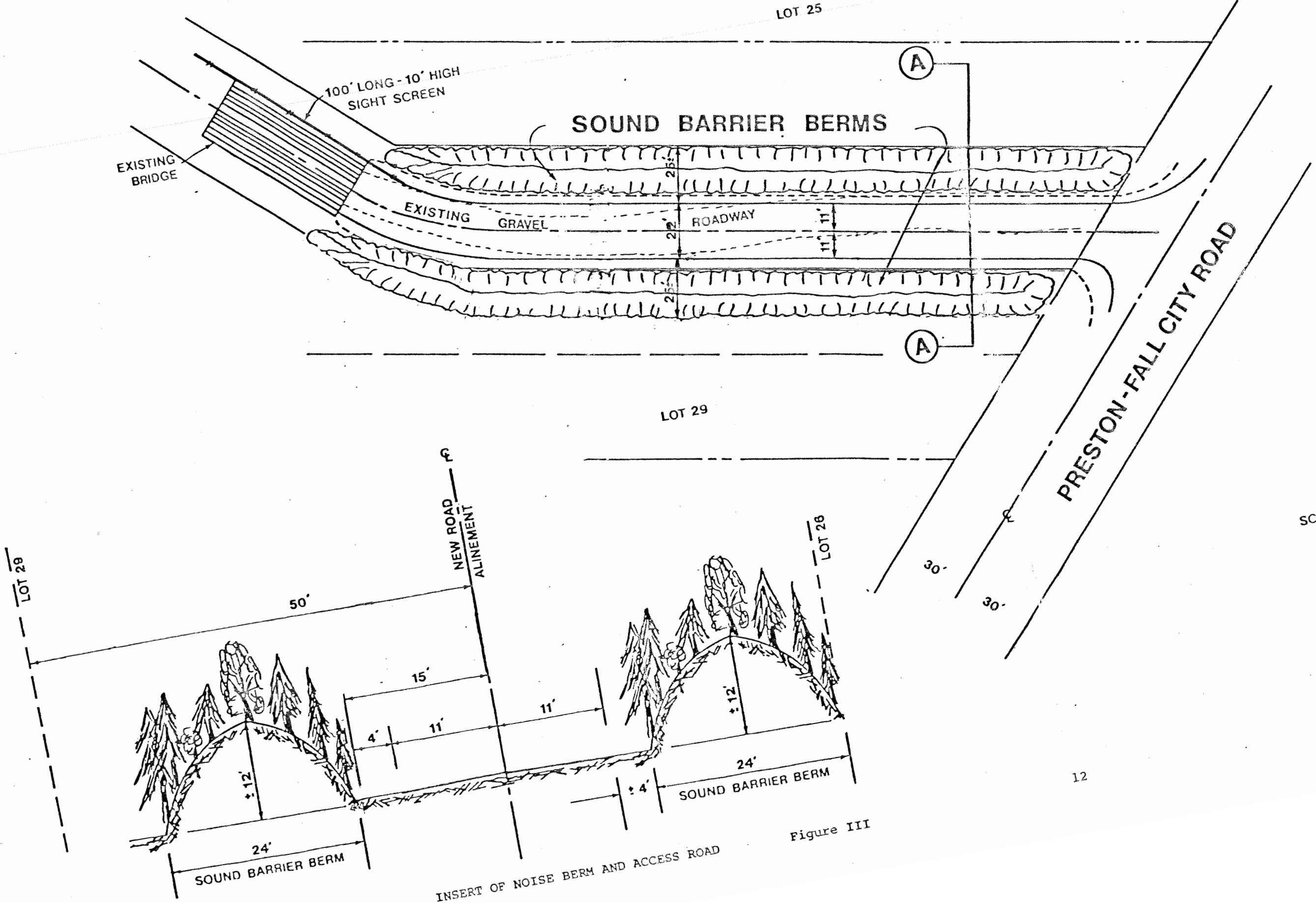
Basic equipment required to operate the quarry include one rock drill, one large bulldozer, two loaders, one rock crusher, two small cranes, one lubrication vehicle, two rock trucks, and one small pickup truck. One small building for yard and administration personnel and a weigh scale with an equipment house are the permanent buildings on site, with mobile personnel shelters and temporary sanitary facilities required as quarry operations move around the site.

B. UTILITIES AND SERVICES

The proposed rezone area would be serviced by Pacific Northwest Bell, Puget Sound Power & Light Company, and Cascade Telephone Company. These are the only utilities necessary for the operation of the site; no utilities would require expansion.

C. DRAINAGE

Drainage and erosion control is necessary to prevent the transportation of sediments to the Raging River. Present drainage is the result of intermittent flow immediately during and after rainstorms. Rills and channels will develop in areas altered by quarry operations, transporting sediment downslope to the Raging River. An interceptor system consisting of collector ditches and settlement ponds would be incorporated with quarry operations to mitigate the amount of sediment discharged into the river. The basic concept of on-site water control ditches and sediment traps will be effective when constructed to fit site conditions. Drainage control measures are incorporated for the existing area under the grading permit and have been prepared by a professional Civil Engineer and submitted to the Department of Public Works for approval under King County Ordinance No. 2281 and 2812 as amended (see Figure IV) and would be revised annually in accordance with the grading permit process as quarry operations expand to the south.



N
SCALE 1" = 40'

Figure III

D. CONSTRUCTION

The only construction required for the proposed rezone relates to the access road (the A. R. Carmichael Road), and construction of the noise berms.

As detailed in Figure III, the present road would be widened on the south, and the noise berms would measure 12' high, 300' long, and 24' wide, and would be composed of crush rock and overburdened material brought from the quarry and its surrounding. Soil from the quarry site would be placed over the surface of the berm to provide vegetative support.

E. RELATIONSHIP TO EXISTING LAWS AND PLANS

Legislation

The proposed project must be consistent with, and is designed to be in conformance with, the following legislation and codes:

Washington State Environmental Policy Act, 1971
(WAC 197-10-440)
Seattle-King County Noise Ordinance
King County Zoning Code

Plans and Policies

The following plans are in effect and apply to the proposed project:

King County Comprehensive Plan and Plan Supplement
Report on Policies and Standards Governing the Extraction and
Processing of Natural Resources, King County Policy De-
velopment Commission, March 1978
Extractive Industries Policy Options, King County Department
of Planning and Community Development, Division of Plan-
ning, December 1976
Hearing Examiner's File Nos. 134-74-R/135-74-P.

Section XII

FORMAT OF THE FINAL EIS

Section XII

FORMAT OF THE FINAL EIS

The following sections of the Draft EIS are reprinted on pages 1-15:

- Introduction
- Table of Contents
- Recipients of the Document
- Summary
- The Proposed Action

The following additions or changes are included in the Final EIS:

- A. Noise Supplement
- B. Washington Surface-mined Land Reclamation Act requirements and restoration plans for the Raging River Quarry
- C. Litigation

Letters of Comment to the Draft EIS are on pages 25-66.

Comments to the Draft EIS and responses are on pages 67-85.

Comments to the June 1977 Draft EIS are on page 87.

Text changes to these pages in response to comments are made by notation on the Errata Sheet included in this document on page 89.

Amended to the Final EIS:

Appendix D - Noise Studies

For other sections of the Draft EIS, including special issues (pages 16-27), the analysis of the elements of the environment (pages 28-57), and Appendices A-C, refer to the Draft Environmental Impact Statement, Raging River Mining, Inc., Proposed Planned Unit Development and Rock Quarry Rezone, August 1979.

ADDITIONS OR CHANGES TO THE DRAFT EIS

- A. Noise
- B. Reclamation
- C. Litigation

A. Noise Supplement

This section is included as a supplement to the Special Issues Section on Noise of the Draft Environmental Impact Statement, based on additional noise studies taken at or within the vicinity of the Raging River Quarry, conducted by Hugh J. Parry, and by personnel at the King County Department of Public Health. Comments raised in letters to the Draft EIS on the noise issue are also presented.

The noise study, Raging River Quarry Noise Measurements by Hugh J. Parry, August 8, 1976 and supplements to the noise measurements, September 10, 1976, are included, along with the five previous noise studies in Appendix D of the Final EIS, page 90.

Existing Conditions

Ambient noise in any area is the background noise made up of all the natural and man-made noises generally considered to be contained within the acoustical environment of that general area. Ambient noise measurements are made in order to establish a base for existing noise conditions, and in order to have a fair reference base for existing conditions, a representative collection of ambient noise data must be taken. The best time to measure ambient noise in the daytime is during lunch breaks when equipment is not operating. Because the quarry is not operating, present conditions are representative of ambient sound levels. However, all noise level measures, except the Health Department measurements, were conducted during quarry operations, and "background" noise levels were conducted on weekends, early in the day, or were not specified. The following table presents data of ambient sound levels. The general source of ambient noise is attributed to the river. These levels range from 36-67 dBA and are influenced by distance from source and to a lesser extent due to seasonal variations of river flow and stage of foliage development.

Background Noise Levels

<u>Study</u>	<u>Date</u>	<u>Noise Source</u>	<u>dBA</u>	<u>Location</u> <u>(Figure V)</u>
1	Oct. 16,17,18, 1976	river	46 min.	
	November 3, 1976	river	53 min.	
2	January 14, 1975	river	50-65	
3	May 3	river	54-67	
4	January 29, 1976	background	54	2
5	October 1977	river (ambient)	46-58	2
	October 1977	ambient (motorcycle)	46-62	3
6	August 28,29	ambient	54-60	
County	August 1979	ambient	36-60	

Impacts

Hugh Parry Noise Study (Appendix D) was conducted at two sites adjacent to the Raging River Quarry: Site (1) 50 feet north of the Carmichael Road and 50 feet east of the Raging River (northeast of the present quarry

bridge); Site (2) the porch deck at the rear of the Guenther residence (west side of the residence facing the quarry). These studies were conducted between 5 August 1976 and 31 August 1976. The quarry was operating at an average of 67 truck trips per day for that month. The mean equivalent energy average sound level for 15 operation samples of approximately one hour duration is 62 decibels. Ambient sound levels of 54 decibels were recorded at 0600 and 0630 on the weekend morning of August 28 and 29. Hugh Parry states, "Of the fifteen measurements made during quarry operations, eleven indicate violations of the State code for the daytime limit (60 dBA) since WAC index value exceeds unity (1). Of these, six were also in violation due to levels in excess of the maximum limit (base level + 15 dB)." Because King County standards for an industrial source intruding on a rural environment are more restrictive by three decibels than the State standard, these studies indicate that all measurements made during quarry operation are in violation of the noise ordinance.

The WAC and KC values were calculated from the equation:

$$\text{WAC (KC)} = \frac{T_1}{15} + \frac{T_2}{5} + \frac{T_3}{1.5}$$

Where: T_1 = Number of minutes in a one-hour interval that sound levels exceed the base level by not more than 5 dB

T_2 = Number of minutes in a one-hour interval that sound levels exceed the base level by more than 5 dB but not more than 10 dB

T_3 = Number of minutes in a one-hour interval that sound levels exceed the base level by more than 10 dB but not more than 15 dB

A code violation occurs when WAC (or KC) exceeds a value of unity (one).

Equipment noise sound levels from 50 feet of the operating machinery were measured on site by D.R. Lehman (Study No. 3, Draft EIS), and equipment sound levels are reported in the Hearing Examiners report of May 1975 (Table 5, p. 22, Draft EIS). These comparisons of equipment noise levels are similar. Quarry equipment is located approximately 800 feet from rural zoned properties and the noise level would decrease by approximately 22 decibels (Table 6). Sound levels measured at location 3, Study 5, indicate that the operating D-8 caterpillar produced a sound range of 46 to 70 dBA. Sound levels determined at this location best represent the potential sound impact on rural properties from the industrial source.

The Parry report does not distinguish machinery noise from vehicular traffic. Noise from caterpillar and drilling, and drilling alone are in violation of the State code, however, caterpillar alone is not in violation of State code.

Noise effects on humans has been described by the Environmental Protection Agency. Continuous noise at high levels above 80 decibels is not only

irritating, it can cause hearing damage. Noise above 55 decibels can interfere with speech communication, and noise above 35 decibels can cause sleep interference. Other physical effects that can occur are blood pressure rises and changes in heart rhythm.

Mitigating Measures

Truck noise levels on the County owned access road, as determined by Study No. 5 and the Parry report, are in violation of the noise ordinance for an industrial source impacting a rural receiving property. Maximum allowable noise levels are dependent on the classification of the access road as a public highway or private road. If the access road is considered a public highway, the maximum permissible noise levels that apply are 86 dBA (less than 35 mph) for trucks over 10,000 pounds, as measured at 50 feet from the center of the lane of travel. If the access road is considered private, then the more stringent noise controls, as described in the Draft EIS, would apply. The Superior Court of the State of Washington for King County on 26 January 1978, concluded that the County has the duty and responsibility to maintain all County roads, including the A.R. Carmichael Road. However, the level of maintenance and extent of performance is discretionary with the County. The County has not maintained the road for several years.

The above studies do not consider barrier effectiveness. As stated by the Department of Public Health, "mitigating measures will have to require the use of berms as proposed and in addition all trucks must comply with the County sound level for motor vehicles as stipulated in Ordinance 3139." These mitigating measures are outlined in the Draft EIS.

Equipment noise levels would be primarily controlled by crushed rock earth berms situated between the quarry equipment and the Raging River and residential properties to the east. Further controls for various equipment are described as follows.

For earth-moving machines, such as the caterpillar, the total noise output consists of engine noise, operating noise (such as knocking and abrasion), and noise caused by the caterpillar track. Intake and exhaust mufflers could be installed in the engine or the effectiveness of existing mufflers can be improved. With optimal intake and exhaust mufflers, a reduction in noise level of as much as 10 dBA can be achieved. The noise level can be further reduced to about 3 dBA if dampening materials are applied to sheet metal surfaces.

The sources of sound in the operation of compressors are in powering the motor and the actual compressing. By placing the compressor in a special sound-shielding skin, the sound level can be reduced by as much as 9 dBA. Fitting the air intake and outlets openings with high quality mufflers could reduce sound levels by as much as 20 dBA.

B. RECLAMATION PLAN AND POLICIES

Rules and regulations relating to protection and restoration of lands disturbed through surface mining that pertain to the Raging River Quarry include preplanning, revegetation, water control, and performance bonds. Operators may submit plans for the method of operation, for grading and backfilling, and for reclamation of contiguous areas to be mined. The requirements for reclamation plans shall be specified in Section 4(11) and Section 10 of the Surface-mined Land Reclamation Act, Chapter 64, Laws of 1970, Section 5 (RCE 78.44).

NEW SECTION. Sec. 10. The reclamation plan shall provide that reclamation activities, particularly those relating to control of erosion, shall, to the extent feasible, be conducted simultaneously with surface mining and in any case shall be initiated at the earliest possible time after completion or abandonment of mining on any segment of the permit area. The plan shall provide that reclamation activities shall be completed not more than two years after completion or abandonment of surface mining on each segment of the area for which a permit is requested.

A reclamation plan will be approved by the department if it adequately provides for the accomplishment of the activities specified in the definition of "reclamation plan," section 4(11) of this act...

A reclamation plan (Permit No. 11047) for the Raging River Quarry has been approved by the Department of Natural Resources under this Act.

The intention of the reclamation process shall be the "reasonable protection of all surface resources subject to disruption from surface mining..." where the objective is to "...reestablish on a continuing basis the vegetative cover, soil stability, water conditions, and safety conditions appropriate to the intended subsequent use of the area."

Reclamation at the Raging River Quarry would proceed as the limits of the quarry and expansion occurs to the south. Topsoil from the newly expanded areas would be transferred to areas of previous excavation. These areas would be reseeded and revegetated under approved methods as outlined in the Act to provide soil stability, to prevent erosion, or to provide screening. Revegetation shall be accomplished within two years upon completion of operations within the segment on which surface mining has occurred.

Water diversion ditches or channels shall be constructed to control surface water runoff, erosion, and siltation and to remove surface water runoff to a safe outlet. These sediment and drainage controls shall be maintained until surface mining and reclamation have been completed. The basic concept of storm water and sediment control measures consist of drainage ditches along the base of the excavated wall that would transfer storm water to detention ponds where the suspended sediment would settle prior to storm water release to the Raging River. Sedimentation and drainage plans are also subject to approval by King County Public Works under Ordinance 2281.

"Upon receipt of an operating permit, an operator....shall not commence surface mining until the operator has deposited with the department an acceptable performance bond on forms prescribed and furnished by the department" (Section 13). Such a bond has been retained by the State Department of Natural Resources. The bond is an amount equal to the estimated cost of completing the reclamation plan for the surface-mined area.

C. LITIGATION

Certain legal actions have occurred or are pending, which will affect this rezone and planned unit development application. Briefly, the background and status of the rezone issue is as follows.

A grading permit was issued by King County to Raging River Mining, Inc. in 1973, authorizing the operation of the Raging River Quarry as a rock quarry. The determination of King County at that time was that the quarry site was a lawful use of land which might be continued as a non-conforming use. On or about March 18, 1975, a further determination was made by the Department of Community and Environmental Development, Division of Land Use Management and Division of Buildings, in connection with rezone petitions number 134-74-R and 135-74-P, (Raging River Mining, Inc.), "that the use of the subject property as a quarry site does not violate section 21.52.030, specifically subsection (2) of the King County Zoning Ordinance," and that the quarry use proposed to be resumed at the site known as the Raging River Quarry was a lawful use. That determination was appealed to the King County Board of Appeals which, on August 14, 1975, rendered its written decision in file number BA-75-P2, which sustained the determination of the building division, that the rock quarry activity constituted a legal non-conforming use, and that such use was still effective. That decision was reviewed by the Washington State Superior Court in Cause No. 800693 for King County, which on April 20, 1977 made an oral opinion reversing the King County Board of Appeals. Judgment was entered on that opinion in June 1977. The quarry owners appealed, and on October 16, 1978, the Court of Appeals of the State of Washington concluded that the Superior Court was in error to decide that the quarry was not a lawful nonconforming use. Consequently, the Court of Appeals reversed the decision of the Superior Court. A petition for discretionary review was filed in the Supreme Court and denied by that Court. The case was then remanded to the Superior Court with instructions to remand the case to the King County Board of Appeals for further proceedings in conformity with the Court of Appeals Decision. The County Board of Appeals on May 18, 1979, reaffirmed its decision of August 14, 1975, sustaining the Building Department. The matter was again taken before the Superior Court in Cause No. 864621, which on June 27, 1979, upheld the Board of Appeals decision. This decision is to be treated as a final decision, notwithstanding a subsequent appeal, unless a supersedeas bond is filed. No such bond has been filed. At the time of writing the draft EIS, there was no litigation pending. Since that time, however, an appeal of the Superior Court decision of June 27, 1979, was filed in the Supreme Court.

Following the June 1977 Superior Court decision, the County declined to reissue the grading permit issued to Raging River Mining, Inc. As a result of the decision in Cause No. 800693, Raging River Mining, Inc. asserted that it was deprived of its property (income) and is seeking a return of that property. That matter is set for trial in September of 1980.

LETTERS OF COMMENT TO THE DRAFT EIS



STATE OF
WASHINGTON

DEPARTMENT OF ECOLOGY

Olympia, Washington 98504

206/753-2800

Mail Stop PV-11

Dixy Lee Ray
Governor

79 OCT 10 All: 54

October 4, 1979

LAND
DEVELOPMENT

Mark Mitchell
King County Building and Land
Development Division
450 King County Administration Bldg.
Seattle, Washington 98104

Dear Mr. Mitchell:

Thank you for the opportunity to comment on the draft environmental impact statement for the Raging River Mining Inc. planned unit development and rock quarry. Headquarters and regional personnel have reviewed the EIS and offer the following comments for your consideration.

Figure II (page 10) shows a 200 foot buffer zone, and the discussion on page 8 indicates the 200 feet will be untouched. However, Figure IV-B shows settling ponds along the river. Any development within 200 feet of the ordinary high water mark will require a shoreline substantial development permit. The final EIS should clarify where development will occur and should also discuss the shoreline area in more detail.

From the information presented in the noise section, it is difficult to determine whether or not the quarry operations, including onsite truck movement, would comply with the King County noise ordinance. Additional information is needed, including a description of measurement locations, operating modes, noise monitoring equipment types, and measurement procedures. Information presented in Table 2, would be more meaningful if it indicated where the trucks were operating and at what distance the noise levels were measured. Table 4 presents noise data for the quarry operation. Were the operations which were measured typical of existing work? Will they be representative of future expanded operations? Predicted increases in existing noise levels due to quarry expansion and the expected reduction due to the proposed mitigation measures should also be determined.

If you have any questions, please contact Ms. Nan Johnson of our Northwest Regional Office (885-1900) or Mr. Ross Potter of our Noise Section (753-6867).

Sincerely,

Barbara J. Ritchie

Barbara J. Ritchie
Environmental Review Section

BJR:mgh

cc: Raging River Mining, Inc. 26



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF FISHERIES

115 General Administration Building, Olympia, Washington 98504
Mail Stop AX-11

206/753-6600

October 1, 1979

King County Department of Planning and Community Development
Building and Land Development Division
450 King County Administration Building
Seattle, Washington 98104

Attention Mark Mitchell

Gentlemen:

Draft Environmental Impact Statement - Proposed
Planned Unit Development and Rock Quarry Rezone
Raging River Mining, Inc., King County WRIA B-07

We have reviewed the above-referenced document and offer the following comments.

1. The discussion of drainage and erosion is accurate. Mitigative measures in the form of settling ponds and a large buffer zone will greatly reduce the adverse impacts of the quarry on the aquatic environment.
2. The drainage plan referenced to on page 4 indicates that it appears as Figure III. This should be changed to Figures IV a and IV b.
3. On page 38, reference is accurately made to salmon populations. For your further information, coho salmon have been observed as high in the system as river mile 11.0.
4. The third paragraph on page 39, listed as "Impacts", should be reworded to describe what fauna habitats will eventually be eliminated. We suspect "terrestrial fauna" is meant. If otherwise, we would appreciate further discussion.

Thank you for the opportunity to comment and if you have any questions, contact our Natural Production Division, (206) 753-6650.

Sincerely,

Gordon Sandison for
Gordon Sandison
Director

bq



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF GAME
600 North Capitol Way/Olympia, Washington 98504

206/753-5700

73 OCT 8 A10: 46

DEVELOPMENT

October 3, 1979

Mark Mitchell
Building and Land Development Division
450 King County Administration Building
Seattle, Washington 98104

DRAFT ENVIRONMENTAL IMPACT STATEMENT:
Proposed Planned Unit Development and Rock
Quarry Rezone: Raging River Mining Inc.
adjacent to Raging River, King County

Mr. Mitchell:

Your document was reviewed by our staff; our comments follow.

Your document is basically well written and we are pleased that you plan to leave a 200 foot buffer strip between the river and the quarry. However, the draft does not list mitigation measures that will be required.

There is no indication what the site will be used for over the long or short term after rock has been removed. Will rehabilitation occur? Will rehabilitation be phased or will potential rehabilitation be left until the entire site is cleared in one hundred years. Will the proposal result in a pit or deep depression? If so, is there any potential for storage and stockpiling of dredge spoil materials from other projects in the county? Is there any guarantee that sedimentation ponds with silt and grease would be properly constructed and cleaned frequently?

We recommend you include a short and long term restoration plan in the final impact statement. Buchart Gardens was at one time a rock quarry and if that could be transformed into an extensive rose garden, proper landscaping with native vegetation could return wildlife habitat value to this land. If water ponds in large depressed areas, potential exists to experiment with creation of wetlands.

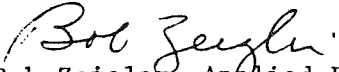
Because what is acceptable now may not be acceptable 50 years from now, we recommend the alternative that would limit the quarry site to the existing 16.27 acres. This would provide rock for 26 years of mining but would not remove existing wooded acres.

page 2
Mark Mitchell
October 3, 1979

Thank you for sending your document. We hope you find our comments helpful.

Sincerely,

THE DEPARTMENT OF GAME


Bob Zeigler, Applied Ecologist
Environmental Affairs Program
Habitat Management Division

BZ:bj

cc: Agencies
Regional Manager



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF TRANSPORTATION

Highway Administration Building, Olympia, Washington 98504

206/753-6005

SEP 14 11:04

September 12, 1979

Mr. Mark Mitchell
Building and Land Development Division
450 King County Administration Building
Seattle, WA 98104

King County
Rezone for Raging River Quarry
Draft Environmental Impact Statement

Dear Mr. Mitchell:

We have reviewed the subject document and have no comments to offer regarding the proposal.

Thank you for the opportunity to review this information.

Sincerely,

ROBERT S. NIELSEN
Assistant Secretary
Public Transportation and Planning

By: WM. P. ALBOHN
Environmental Planner

RSN:ag
WPA/WBH

cc: J. D. Zirkle/T. R. Burke
Environmental Section
R. Albert



410 West Harrison Street, P.O. Box 9863 (206) 344-7330
Seattle, Washington 98109

78 OCT 10 AM: 53

October 4, 1979

DEVELOPMENT

Mr. M. Mitchell
King County Department of Planning
& Community Development
Building & Land Development Division
Room 450
King County Administration Building
Seattle, Washington 98104

Dear Mr. Mitchell:

Rezone for Raging River Quarry

The following comments are submitted in response to the Draft
Environmental Impact Statement for Raging River Quarry.

On page 11 it states the basic equipment includes one rock crusher.
It was not clear whether this is new equipment or not. This can
be a significant source of dust without any control. Agency Guide-
lines for Control of Rock Processing and Roads are enclosed. If
new facilities are installed or if existing facilities are modified
significantly, a permit application known as a Notice of Construction
and Application for Approval must be made to this Agency to comply
with Regulation I, Article 6.

On page 35, Mitigating Measures should include using dust control
on rock processing equipment. Paved roads should be cleaned
periodically.

Thank you for the opportunity to comment.

Very truly yours,

A. R. Dammkoehler
Air Pollution Control Officer

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(206) 383-5851

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(206) 259-0288

sj

Enclosures

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Puget Sound Air Pollution Control Agency

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ENGINEERING DIVISION
Plan Review Section
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Everett Branch Office
703 Medical Dental Building
2730 Colby Avenue
Everett, Washington 98201
Telephone (206) 259-0288

GUIDELINES FOR CONTROL OF AIR POLLUTION FROM ROCK PROCESSING

Air pollution from rock processing equipment and adjacent roads must be controlled so as to meet the requirements of Regulation I, including Sections 9.03, 9.04, 9.09, 9.11, 9.12 and 9.15. Pursuant to Sections 9.12 and 9.15 of Regulation I the Control Officer has established the following control measures as reasonable requirements and precautions to prevent particulate matter from becoming airborne:

ROCK PROCESSING - CONTROL MEASURES

1. Hooding of dust emission points on belts, transfer points and crushers and ducting the collected air to a baghouse or water scrubber, or
2. Application of a water or chemical mist near emission points, (a pressure above 90 pounds per square inch and special nozzles may be required to produce a mist that is both effective and yet not cause plugging of screens), or
3. A combination of 1 and 2 (as shown in Figure 3), or
4. Other control measures such as enclosure which comply with Regulation I.

Visible dust emissions from rock processing equipment are usually indicative of improper design or operation.

ROADS, PILES, TRUCK LOADING, AND ROCK DRILLS - CONTROL MEASURES

1. Dust coming from in-plant roads shall be controlled by paving, or surfacing treatment which will control both air pollution and mud carry out. A wheel wash system may be required to prevent mud carry out under some conditions.
2. Dust coming from fines piles shall be controlled by the use of a dust suppressant or by providing covering to prevent exposure to wind.
3. Dust coming from rock drills and truck loading shall be controlled by hooding or application of a mist.

NOTICE OF CONSTRUCTION REQUIRED

An approved Notice of Construction is required prior to the installation or alteration of rock processing and/or control equipment. The necessary Notice of Construction forms can be obtained by calling the Plan Review Section (344-7334).

5/73

MAINTENANCE AND HOUSEKEEPING

1. The spray system shall be protected from freezing during cold weather by insulation or a change in spray feed formulation.
2. Fugitive dust shall be controlled by good housekeeping, including, but not limited to, the following:
 - a. Sweeping and flushing of paved roads.
 - b. Wetting or chemical coating of unpaved low traffic areas.
 - c. Chemical coating of exposed areas to prevent windblown dust.

CONTROL METHODS

Figure 1 shows the arrangement of atomizing nozzles which develop a flat mist spray pattern. The nozzles are placed on each end of a rubber shield to suppress dust emissions from the bottom of the crusher discharge. Two nozzles which form a cone shape mist spray are often used on the top of a crusher to control dust caused by crushing.

Figure 2 illustrates how a flat mist spray can be applied ahead of a transfer point to eliminate dust. The mist should be applied to the rock before the dust is airborne.

Figure 3 shows a combination mist and baghouse system for crushing plants. The baghouse is believed to be 99% efficient in reducing the emissions from a rock crusher.

Figure 4 shows a mist system for a rock crusher plant. The use of a wetting agent reduces the quantity of liquid required for effective control.

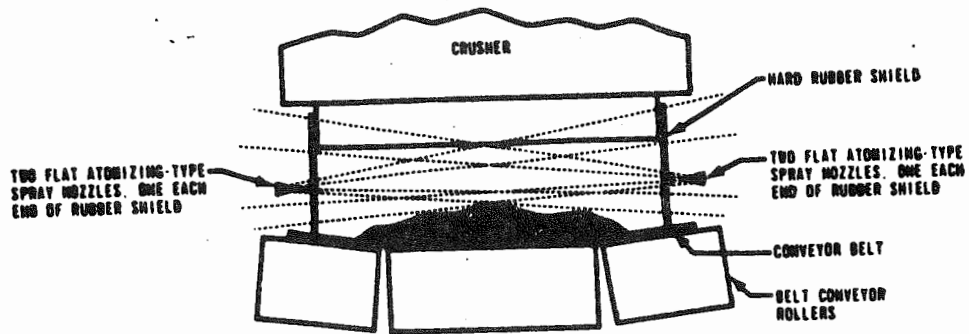


Figure 1. Nozzle arrangement for control of dust emissions upon discharge of crusher.*

*Air Pollution Engineering Manual. AP40, pp. 341

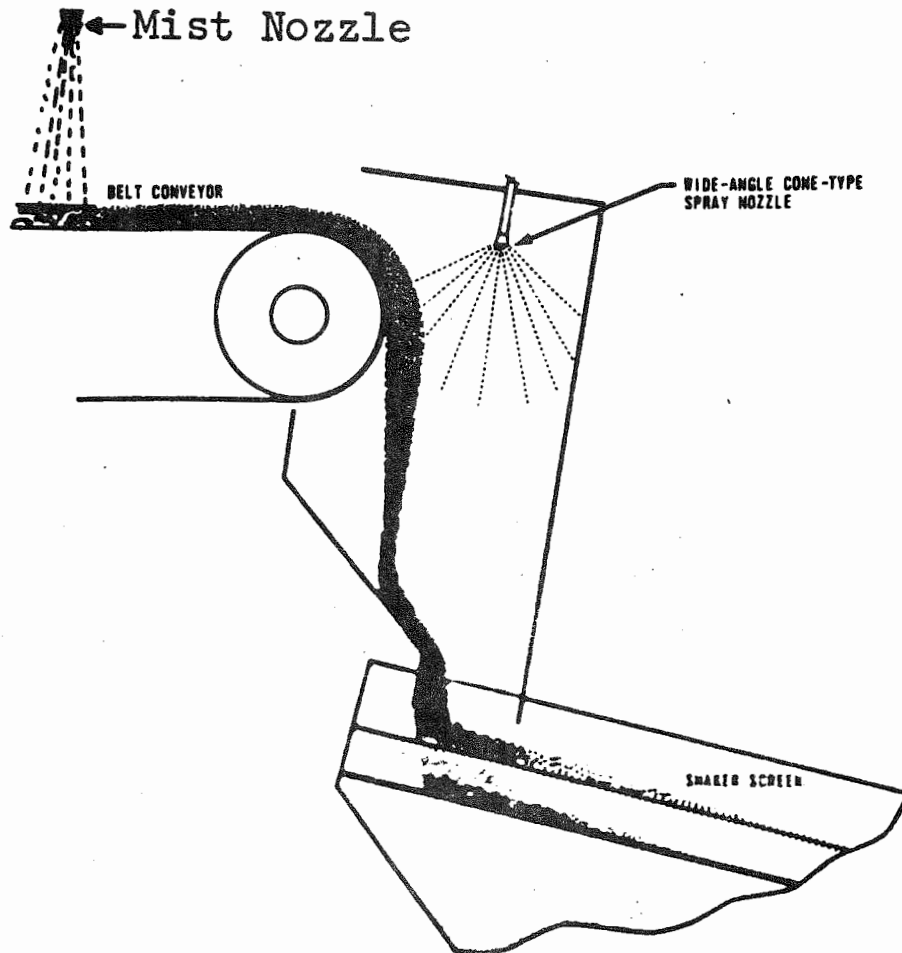
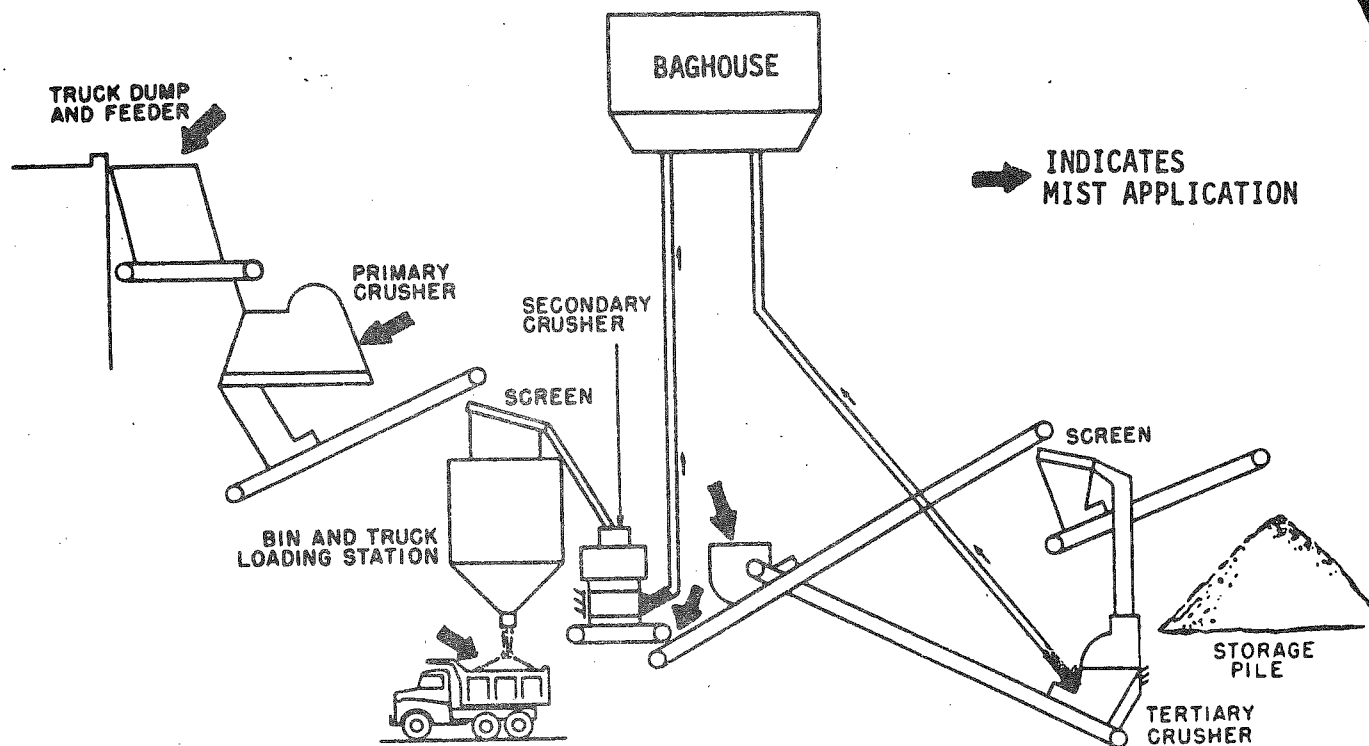
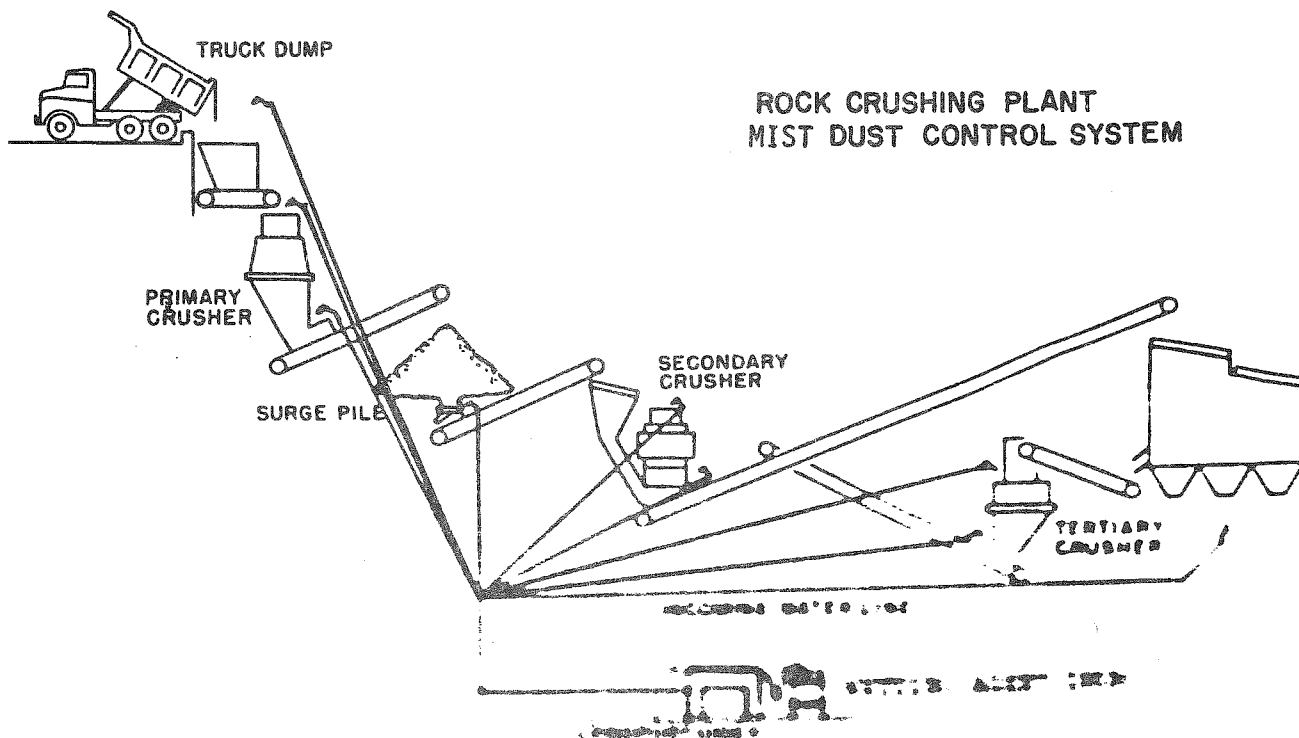


Figure 2. Nozzle arrangement for control of dust emissions from the inlet to the shaker screens.



TYPICAL COMBINATION MIST & BAGHOUSE SYSTEM FOR CRUSHING PLANTS

Figure 3



Puget Sound Air Pollution Control Agency

410 West Harrison Street, Seattle, Washington 98119

(206) 344-7330

GUIDELINES FOR CONTROL OF AIR POLLUTION FROM PARKING LOTS, ROADWAYS AND OPEN AREAS

Air pollution from private roads, parking lots and open areas shall be controlled so as to meet the requirements of Regulation I, including Sections 9.03, 9.04, 9.11 and 9.15.

Pursuant to Section 9.15 of Regulation I the Control Officer has established the following control measures as reasonable requirements and precautions to prevent particulate matter from becoming airborne:

ROADWAYS

Private roads shall be controlled by paving, oiling or other surface treatment which prevents visible dust emission and mud carryout. Good housekeeping measures shall be used to minimize the accumulation of mud or dust on the surface of roads. Unpaved shoulders shall be maintained in such a way as to minimize visible dust being generated by wind or traffic.

PARKING LOTS

Parking lots shall be controlled by paving, oiling or other surface treatment which prevents visible dust emission and mud carryout. Good housekeeping measures shall be used to minimize the accumulation of mud or dust on the surface of parking areas.

OPEN AREAS

Unpaved open areas shall be controlled by vegetation cover or other equally effective method of minimizing wind blown dust.

CONSTRUCTION, REPAIR AND CLEANING

Visible dust generated by construction, repair and cleaning of roads and parking areas shall be minimized by methods such as wetting and the use of chemical suppressants. In addition, at the end of each shift all public roadways shall be cleaned of mud and dust.

LOG STORAGE AREAS

Visible dust from roadways within log storage area shall be minimized by the use of water and/or chemical suppressants. In addition log storage areas shall be equipped with truck wash down facilities whereby trucks and/or log hauling equipment can be cleaned prior to entry upon public access roads.

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Form 50-164 4/74

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Wes Uhlman, Mayor Seattle;

Robert C. Anderson, Mayor Everett;
Glenn K. Jarstad, Mayor Bremerton;
A. R. Dammkoehler, Air Pollution Control Officer.

PSCOG

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Puget Sound Council of Governments

100-8 AUG 47

October 4, 1979

Mr. Mark Mitchell
Building and Land Development Division
450 King County Administration Building
Seattle, WA 98104

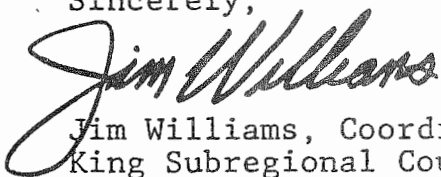
Dear Mr. Mitchell:

The King Subregional Council staff has reviewed the draft Environmental Impact Statement for the Proposed Planned Unit Development and Rock Quarry Rezone, and offers the following suggestions:

1. The final EIS should address the issue of hazardous cargo shipments to the site, noting the efforts of PSCOG to secure Federal funds to study this general issue in the region.
2. The final EIS should address the requirements of the State Surface-Mineral Land Reclamation Act which applies to quarries of over ten acres. The Department of Natural Resources is the administering agency.
3. The treatment of mitigating steps is non-committal in parts of the draft EIS. Which mitigation measures will be taken?

We hope that these comments will be helpful and trust that they will be addressed in the final Environmental Impact Statement.

Sincerely,



Jim Williams, Coordinator
King Subregional Council

JW/sc



Exchange Bldg. • 821 Second Ave., Seattle, Washington 98104

October 3, 1979

Mr. Edward Sand
Building and Land Development
450 King County Administration
Building
Seattle, Washington 98104

Dear Mr. Sand:

Draft Environmental Impact Statement
Raging River Mining, Inc.

Metro staff has reviewed this proposal and anticipates no adverse impacts to its wastewater facilities or the public transportation system.

The measures designed to minimize water quality impacts are adequate and consistent with the 208 Areawide Water Quality Plan.

Thank you for the opportunity to review and comment.

Very truly yours,

Rodney G. Proctor, Manager
Environmental Planning Division

RGP:apm



Seattle-King County / **DEPARTMENT OF PUBLIC HEALTH**
400 Yesler Way Seattle, Washington 98104 (206) 625-2161

LAWRENCE BERGNER, M.D., M.P.H.
Director of Public Health

78 SEP 21 A10: 39

September 14, 1979

DEVELOPMENT

King County Department of Planning
and Community Development
Building and Land Development Division
King County Administration Building
Seattle, Washington 98104

Attention: Edward B. Sand, Manager,
Division of Building & Land Development

Regarding: Draft EIS
Rezone for Raging River Quarry

Dear Sir:

Personnel from our East District Service Center have reviewed
the above-referenced draft EIS and found no adverse environmental
impact.

We, therefore, have no objection to the above project.

Very truly yours,

John Nordin, Chief
Environmental Health Services

JN:kl

DISTRICT SERVICE CENTERS:

CENTRAL
400 Yesler Way
Seattle 98104
625-2571

NORTH
1600 N. E. 150th
Seattle 98155
363-4765

39
EAST
2424 - 156th Ave.
Bellevue 98008
885-1278

SOUTHEAST
3001 N. E. 4th St.
Renton 98055
228-2620

SOUTHWEST
10821 8th Ave. S. W.
Seattle 98146
244-6400



Seattle-King County / **DEPARTMENT OF PUBLIC HEALTH**
400 Yesler Way Seattle, Washington 98104 (206) 625-2161

LAWRENCE BERGNER, M.D., M.P.H.
Director of Public Health

October 2, 1979

Building and Land Development
Attn: Mark Mitchell
450 King County Administration Bldg.
Seattle, WA 98104

Re: Raging River Mining, Inc.

Dear Mr. Mitchell:

Thank you for allowing us to review the Draft Environmental Impact Statement (DEIS) for the Raging River Mining, Inc. Our department feels that the sponsors of the project have not adequately addressed the total problem of noise. Site investigation by our noise personnel reveal that the area may be much quieter than the five noise studies would indicate. The background ambient sound level differs depending on the proximity to the Raging River and the Preston - Fall City Road. The ambient sound level ranged from 36 dB(A) as measured on the side of the Preston - Fall City Road to a high of 56 dB(A) at the gate entrance to the quarry bridge crossing the river. Ambient sound levels in the front yard of the adjacent residence to the North were measured as 38-40 dB(A). The sound of traffic peaked at these residence in the range of 55-60 dB(A).

The noise resulting from the truck egress and ingress seems to have been adequately described. The berming proposed to lessen the impact of the truck passage seems to be adequate, although the people living east of the quarry entrance still will be impacted by the 50 loaded trucks exiting per day and by the noise of the quarry operation.

A second point of concern is that study five "indicates that during truck movement noise level will be equal to or greater than 69 dB(A) 31.4% of the time and will average 18 seconds per minute" or 18 minutes per hour. This greatly exceeds the maximum permissible sound levels of Ordinance 3139 for an industrial source impacting a rural receiver. Section 302 of the ordinance does not provide for exceedance of the temporary exceedance levels. Mitigating measures will have to require the use of berms as proposed and in addition, all trucks must comply with the county sound level for motor vehicles as stipulated in Ordinance 3139.

The last point of concern regards the stationary equipment. This would include the gravel crusher, compressors, and rock drill. The rock drill has been adequately addressed in the EIS. However, no precautions have been considered for the proposed rock crusher or compressors. A plan will have to

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/// - GAL
/// Yesler Way
/// 98104
///

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2424 - 156th Ave.
Bellevue 98008
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SOUTHEAST
3001 N. E. 4th St.
Renton 98055
228-2620

SOUTHWEST
10821 8th Ave. S. W.
Seattle 98146
244-6400

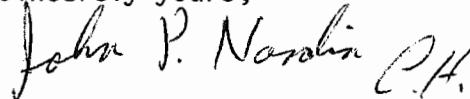
Mr. Mitchell
Page 2
October 2, 1979

be submitted to the noise program, illustrating the use of natural berming for the placement of the crusher. The best available technology will have to be used for the compressors.

In conclusion, the Health Department is opposed to the passage of this project until the noise problem has been completely addressed. This would include presentation of mitigating measures to lessen the impact from the stationary equipment at the quarry (crusher and compressors). Extremeness of the mitigating measures is of primary importance. These measures must be instituted and maintained if this operation is to work within the conditions stated in this draft Environmental Impact Statement and within the boundaries of Ordinance 3139.

If you have any questions, please contact either Curt Horner, Noise Program Coordinator, at 625-2138 or Steven Nakashima at 625-2763.

Sincerely yours,

A handwritten signature in cursive script that reads "John P. Nordin" followed by a large, stylized "P.H." as a monogram.

John P. Nordin, Chief
Environmental Health Services

JPN:SN:sjg

5931 Preston-Fall City Road SE

Fall City WA 98024

October 1, 1979

Mr. Mark Mitchell

Building and Land Division Division

450 King County Administration Building

Seattle WA 98104

Dear Mr. Mitchell:

Following are my comments on the Draft, Environmental Impact Statement: Rezone for Raging River Quarry:

Upon reading this document, though prepared by Shapiro & Associates, Inc., was prepared mostly by information received from the quarry, as it is certainly Opinionated, sided with the Quarry side of the controversy. It is misleading even when dealing with supposed facts, and in certain instances is downright untrue. Either these supposed facts were knowingly told in error by the issuer, or more possibly were given to the issuer by the Quarry. Here follows point by point criticisms by me:

Page 4. Earth, last sentence. " . . . these impacts would be minimal." Certainly an opinion, not a fact.

Page 4. Flora and Fauna. "Rehabilitation of areas will comply . . ."etc. How can they promise that they will or can comply? What if they are bankrupt? I think the "will" should be Changed to "could", or possibly the whole subject should be be deleted as unnecessary and meaningless.

Mitigating measures. D. This whole section deals with things ~~xx~~ that could be done. This does not say that it is guaranteed. Language should be deleted or corrected. In fact, the whole "Mitigating Measures" section could be deletad as being unnecessary and meaningless.

Page 2. ~~XXXX~~ Mitchell.

Page 5. Noise. Par 2. Experience from former operations do not show that much thought was given to improvement of the access road.

Page 5. Noise. Par. 3. "Fitting the trucks with noise mitigating equipment . . ." and ". . . new model mufflers." This could be applied to company owned trucks, but certainly not with trucks owned by others. Previous experience has shown that some trucks were extremely noisy and I have been led to believe these were company ~~removes~~ trucks.

citing Page 5. Noise. Par. 4. Berms. The noise evaluation study by Towne Richards & Chaudiere, Inc., Par. 4 of their letter, ~~cite~~ statistics on berms quotes noise measurements made by others. Detailed noise studies on berms by Hugh Parry are not taken into consideration. I will comment later on on this subject.

Page 5. Blasting. "Ample warning . . ." for blasting. Operators gave no warning on blasting to us on any blasts except once or maybe twice. I believe they made a statement in hearings that some others were warned, but not the Andrews or Guenthers. They said in hearings that notice would be given. So how can we believe they would change their ways?

Page 5. Blasting. Par, 6. "All blasting would be confined , , , " During past operations a home next to us downstream was damaged by rocks from a blast. This is a matter of record in the past hearings, supported by photographs and statements by witnesses.

Page 5. Noise. Par. 7. "A new rock drill would be used . . ." No assurance can be given that this would lower noise levels. An opinion, not an established fact.

Page 3. ~~Sxxx~~ Mitchell.

Page 5. Noise. Par. 8. Here again they might not comply, as they have failed heretofore. How could they be forced to comply? What, if any, penalties?

Page 6. Air. No mention is made of dust generated by trucks and equipment.

Page 6. Population. This should state that property values would undoubtedly decrease. As a matter of fact, the King County Appeals Board granted tax reduction assessments, based on quarry operations to residences close to the quarry, including ours.

Section II. The Proposed Action. Section A, Par. 3, ~~Pxxx~~ Description of the Project. Refer to previous comments on berms. And anyway, even if the berms were built, their effectiveness would be much in doubt, as there can be no berms along the bridge over the Raging River. A 10-foot sight screen would be useless for shutting out noise. Also, the approaches to the bridge and the bridge itself are about the nearest part of the quarry operation to the Andrew and Guenther residences.

Page 17. SPECIAL ISSUES. A. NOISE. The Noise Controversy. ~~Pxxx~~ First Par, The statement that there have been five noise studies made is simply untrue. There was another, later and comprehensive study made by Hugh Parry. If these studies are to be in the book they should all be included. I believe that Hugh Parry pointed out the minimal value of berms. Also, I recall that the Hearing Examiner found that noise levels violated both state ~~had~~ County regulations. And his recommendation was that re-zoning not be granted.

Page 18. Existing Conditions. Here again the ^{E15}~~eis~~ does not give all the information gathered on noise. One is led to believe that the main culprits for noise generation are the river and highway. In fact, highway noise is much less at residences near to the Raging River than they are at the road. I believe study of all the noise reports brought out at the re-zoning

Page 4. Mitchell.

to foist upon us.

Page 23. Noise from Blasting. Par. 2, starting with line 7. The statement that "These studies have found that although structural damage will not ~~xxxxxxxxxx~~ occur . . ." etc. In fact, evidence was ~~presented at the hearing on December 8, 1976~~ obtained about a blast which damaged a house. Photos were obtained, also affidavits from the owner and workmen at the site. This house was then owned by Fred Hobbs, and the house was under construction. Unfortunately there were no zoning hearings after this event. Letter was sent to Mr. Sand with affidavits and I believe photographs. Copies of these should be available through your department. The Guenthers also have copies. I do not have the exact date this happened, but it is available.

This damage could easily have broken windows, and could have caused physical damage or even death upon hitting a person. Why is the misleading information not in the EIS? The statement that "damage will not occur" etc., is certainly an untrue statement. If it happened once it can happen again. The statement in the EIS is clearly not a fact, as was stated.

Page 24. Mitigating Measures. This whole section says what "might be done." In fact, the mining company largely did not comply with these actions, and there is no reason to believe that they would in the future. I comment on the various paragraphs:

Par. 1. I cannot believe they would comply any more than they have in the past.

2. The very nature of a gravel roadway would make the roadway almost impossible to maintain in a smooth condition, especially where the roadway meets the bridge. And how can these rules, if adopted, be enforced? What penalties, if any? They were not well enforced when the previous operation existed.

Page 5. Mitchell.

4. I consider this section to be meaningless. There is obviously no way at present to regulate the trucking industry in matters of safety and noise. All one has to do is to read the newspapers. Recently there has been a spot check on trucks on Interstate 5. This affected only the tip of the iceberg. Many trucks failed in both safety and noise items, including mufflers. Of course there are King County Ordinances on the subject, but the County has no means of inspecting all trucks. certainly like the ones using the Carmichael Road to ~~the~~ the quarry.

5. See previous comments on berms. And the worst noise from traffic on Carmichael Road to the Andrew and Guenther residences is from the approaches to the bridge and on the bridge itself. Also, I refer to the missing Hugh Parry study on the berm study.

The statement is made that the hourly truck traffic would be reduced by 35%. This is either an error or a misstatement. The amount of traffic could be reduced only by a ~~66666666~~ of traffic.

REDUCTION

Page 27. B. Past Litigation, first paragraph. This statement is entirely untrue. There is at present an appeal filed with the State Supreme Court that has not been acted upon.

General. It seems to me that some selected evidence from the Hearings has been the basis of a lot of the material in the EIS. An EIS is supposed to be an unbiased document, but it cannot be when it is being done for and I understand paid for by the Quarry. I consider the whole thing mostly meaningless and should be scrapped. If one is necessary it should be unbiased to be of any value

Very truly yours

cc Roger Leed
Guenthers


Olen V. Andrew

October 3rd 1979

Edward B. Sand, Manager
Building and Land Development
King County Administration Building
Seattle, Washington 98104

Dear Mr. Sand:

This letter is in reference to the draft environmental impact statement for the rezoning for Raging River Quarry, issued August 30th 1979. I have previously stated my standing to comment, which is based in part on my concern for the well-being of close relatives, Gladys and Elmer Guenther, who will be particularly harmed in health and economic standing if the rezoning is granted.

If I understand properly the legal rationale for an EIS it is to provide policy-makers with the pertinent information on which sound policy may be based. It is an instrument of disclosure. Accordingly, it is essential that the EIS be thorough and even-handed if it is to meet its legal requirement. It is not intended to be a propaganda instrument for one side or the other, in which information is carefully selected, emphasized and interpreted in order to favor a given outcome. The decision, in short, is the prerequisite of the appropriate policy-makers, not the purview of those who prepare the EIS.

I do not believe this draft meets that standard. I believe it has selected, omitted and misrepresented data and information in order to promote the interests of the Raging River Mining Company. I shall enumerate many illustrations to underscore that point, and request a response.

Shapiro & Associates, Inc., has a good reputation, which makes this draft EIS a disappointing and puzzling document. The work it has done is certainly an improvement over the previous draft EIS prepared by Raging River Mining Company, which I presume has been deservedly abandoned. However, the glaring lapses and misrepresentations cause me to wonder if the applicant provided the necessary information to the firm. And finally, it is the responsibility of King County, in whose name the EIS is released, to see to its accuracy and adequacy.

The examples that follow are not exhaustive, but will illustrate my contention:

1. The draft EIS contends that blasting will take place twice per week at the quarry operation. (Cf. pp. 2 and 11.) Furthermore, the average rate of removal of rock is at a higher rate than when they were in operation 1975-1977. Did the applicant provide Shapiro & Associates with the information about the frequency of blasts during that period? Is it not true that they were considerably more frequent than twice per week? Is it not the case that there were as many as a half-dozen blasts in a single afternoon? In order that we might test the credibility of the two-per-week assertion, I insist that Raging River Mining Company provide the full record of the dates and times of their blasts during their previous operations. I am particularly interested at this point - and at others - in knowing whether the consulting firm had accurate information and failed to use it, or whether Raging River Mining Company failed to provide Shapiro & Associates with the pertinent information.

2. The claim is made in the draft EIS that "All blasting would be confined" and that an "unconfined blast...is very unlikely." (Pp. 5 and 2.) If I properly understand the point, it is that "blowouts" (to use Albert Teller's word) - in which abnormally high noise levels are created by the release of energy from the hole - would not occur or would not likely occur. It is reminiscent of Mr. Teller's testimony before the King County Hearing Examiner, on January 21st 1975, as follows:

The question was posed: "How many times in a hundred blasts would it [a blowout] happen?" And my answer would be: "None."

Hugh Parry, noise consultant for the residents, contended there likely would be some incidents of blowouts.

Raging River Mining Company operated (with Albert Teller as its blasting consultant) for about two years, and after that time it is incredible that the same misrepresentations are being made. The fact is that there were many blowouts - something on the order of two per month. Now maybe that is and maybe that isn't a strong factor in arriving at a decision on the application, but it seems to me that the applicant, Shapiro & Associates, and the County ought at least to represent the facts as they are rather than as the applicant might wish people to believe them to be.

Here is my question, which I believe is pertinent to these proceedings, respecting both the facts of the case and the credibility of the applicant: Were there or were there not "blowouts" (or "unconfined blasts") during their operations during 1975 through 1977? Aside from the applicant there are many people who live near the site who could provide information on this point.

3. On July 10, 1974, Albert E. Teller of Explosives International wrote to John Preibe [sic.] the following: "All blasting will be done during specific published hours, so as to avoid any impact upon the community from sudden, unexpected noises." That statement appears on page 79 of the draft EIS. Subsequent to that statement, and other similar assurances, Raging River Mining Company operated at the site under discussion. Analogous assurances are now provided in the draft EIS, cf. pages 5 and 26. The question is what credence should be given those assurances? I can think of no better test than to ascertain previous performance measured against previous assurances. Is it true that Raging River Mining Company so handled its blasting as "to avoid any impact upon the community from sudden, unexpected noises.?" That is the standard the company said it would meet, so it certainly is a fair test. How well did it meet it? That is pertinent to the current draft EIS so that one can assess the validity of the statements.

Again, if the information is not fully and accurately forthcoming from the applicant I suggest information be gathered from residents of the surrounding area in order to get at the facts of the matter.

4. The draft EIS says that "Truck drivers would be instructed on procedures for minimizing noise levels while operating on the quarry access roads." That was said previously, in similar language, and fairness demands that there is no close congruence between the assurance - or even the instruction, which it is claimed actually occurred - and the observance by the drivers. I believe that kind of unqualified statement, which strongly implies that there would be a conforming behavior that experience contradicts, is a misleading statement. Once again, if the applicant will not provide full and truthful information there are alternative sources.

5. Similarly, the suggestion that hours of business operation would be limited to 7:00 AM to 5:00 PM leaves a great deal unsaid. Raging River Mining Company repeatedly and flagrantly violated its operating hours during its previous period of operation - despite the fact that at that time they were considerably more generous than those suggested. In order that a full and accurate basis for decision be made, I think the record must reflect these earlier transgressions because they are indicative of future behavior, and of the enforcement burden that would face the County.

In this instance there is quite a detailed record. The Guenthers, aggravated by the chronic violations, and by the apparent inability of response by the County (perhaps due to staff limitations), finally began keeping a daily account of violations. So for at least a sustained period of time there is a careful record of violations, kept to the minute. Of course other neighbors also are cognizant of the record, and King County finally became very threatening before Raging River Mining Company curbed its violations.

6. No item in inquiry is covered as extensively in the draft EIS as that of noise. The authors of the report consistently seem to reach a conclusion that the quarry company can operate within the law and with minimal impact upon neighbors. That conclusion is absolutely fraudulent, and anyone making it certainly risks their professional reputation.

On page 72 there is the summary conclusion of a consulting firm that was asked to review several noise studies, and they conclude that,

...we do not believe the studies adequately address the question of compliance with applicable noise standards.

But perhaps the most unconscionable thing about the noise studies is that the most extensive, most representative, and also most damning report is entirely omitted. That report was prepared by Hugh Parry, noise consultant, and was based on hours upon hours of recordings of actual operations during August 5, 6, 7, 19, 26, 27, 28, 29, 30, and 31, 1976. These are the only records made with proper instrumentation during actual operations - when the operator was not aware that the record was being made. I submit here the conclusion of Mr. Parry:

From all of these data it is clear to me that the quarry operations are in violation of the Washington environmental noise code, the U.S. EPA environmental noise impact guidelines and the proposed King County noise ordinance. Further, it is

my personal and professional opinion that the noise condition created by the quarry is detrimental to the health and welfare of the residents at the Guenther and Andrew properties.

Hugh J. Parry
September 10, 1976

There also were supplemental reports, including an evaluation of the reports prepared by Dr. Peter A. Breysse. The report of October 10, 1976, concluded that "there is no doubt the code is being exceeded by very large values."

I believe that James Young, attorney for Raging River Mining Company, made a copy of Mr. Parry's reports, so they are in the hands of the applicant. I do not know for a fact whether those reports are in the hands of King County, but officials there are aware of them because I referred to them (item #9 under "Noise") when I commented on the previous draft EIS.

Did Shapiro & Associates suppress the reports? Were the reports not given to the consulting firm which was preparing the draft EIS? Did the staff of King County fail to include Mr. Parry's study, when it completed the draft EIS? These are very serious questions because they go to the matter of the integrity under which the EIS draft was prepared, and cast a reflection on the entire document and process. Also, I might add, on those who have participated in the preparation of the draft EIS.

On the occasion of my earlier draft EIS ^{response} (July 9th 1977) I demanded to know why the Parry reports, "which must certainly represent the most extensive record of actual, on-site information," were omitted from the draft EIS. I repeat that demand, and this time with greater urgency. How can you possibly proceed without it - and then go on blithely to the unwarranted conclusions which saturate the noise section of the report?

Previously I asked why that report had been omitted. Now one must ask why, when that omission was pointed out, has it been repeated?

7. Let me give another example of a statement that is simply false, and propose a test of it: On page 18 the draft EIS says the following:

When the quarry is not operating, the background noise levels are generally higher than the 57 dBA limit established by the noise ordinance because of noise from the Raging River and traffic on the Preston-Fall City Highway.

That is simply untrue. Fortunately, during the August 1976 tests previously mentioned, the equipment was run daily each morning prior to quarrying operations so as to obtain a record of background noise. For a period of time, besides that, a noise monitor was provided by the Environmental Protection Agency, and I personally, on several occasions, had the opportunity to measure background noise. Of course, if one set out to misrepresent the case - for instance, by taking readings in a

windstorm and/or immediately by the river (especially after a severe rainstorm when the water would be abnormally high) and/or in some circumstance when an abnormally large number of unusually noisy vehicles were crowding the roadways - in such circumstances you might get a reading like that suggested by the EIS, or possibly even higher. But that is not typical.

Here is what I propose: Let's take a reputable and independent expert, and have him or her survey noise levels in the midst of the property owned by Raging River Mining Company, and on the front porch of the Guenthers, on any reasonably typical day, run the test for twenty-four hours - or for seven consecutive days, or a month if you like - and establish a reliable indication of the background noise. I assure you that 57 dBA will not be approached. But at any rate, re-read the draft EIS statement on page 18 and then test its veracity.

Let's establish the facts of the case, and permit the policymakers to make the decisions, rather than provide false, misleading and selective information to try to lead them to the decision desired by the applicant.

8. I question whether the noise data presented on pages 20 - 23 is valid. While I am confident that Professor Bryesse has reported the readings he actually made, I do not believe they are representative of the operating conditions of a quarry - which is what we are trying to discern. The readings are made by a person employed by the applicant, with equipment and employees provided by the applicant, and I believe can be counted on to operate with a care that is not normal or typical of actual operations.

Hugh Parry - whose work receives scant attention in the draft EIS - and much of it is omitted entirely - proceeded in the following manner: 1. He took the EPA-listed noise quotients for the equipment the operators planned to use, and applying known, scientifically-verified properties of noise, calculated the levels that would be received by neighboring residences. On this basis he concluded the operation would not meet noise standards established by law for the protection of citizens. 2. He tested through many, many hours of actual recordings, the actual operations of Raging River Mining Company at the site in question, and analyzed the data, presenting the information and conclusions in his reports previously referred to. He concluded that noise standards were not met.

How can the draft EIS take the applicant's consultant, whose tests are conducted under such sanitized conditions, and rely on ^{them} ~~it~~, while ignoring the more thorough, definitive, and verifiable reports prepared by Hugh Parry?

9. The new proposal to rezone part of the SE area shows a certain amount of imagination: If you cannot meet noise standards seek to alter zoning categories. It does nothing to protect the citizenry, but it does provide a possible subterfuge to evade protections established by law. In that way we might "solve" all the noise problems everywhere simply by raising noise standards so high that they could never be violated. It is an inventive and altogether irresponsible proposal.

The Carmichael Road is used solely by and for the benefit of the applicant. It is indeed a County right-of-way, but it is not maintained by the County, and the position of the County, and the Office of the Prosecuting Attorney of King County, is that the noise protections provided by law apply to the adjoining SE-zoned properties. The applicant feels a need to get around noise standards he finds it impossible to meet on that road, and his device is to grossly reduce protections and standards by a reclassification of the road.

Instead of merely presenting the rationale of the applicant, with its various emphases and omissions, this "disclosure document" might present other views and perspectives, such as the effects on residents, the legal position taken by King County, and the history of the proposal to reclassify the vicinity around the road. Once again, let us get the full story before the policymakers rather than trying to lead (or mislead) them.

10. On page 23 of the draft EIS it says that "some human response may result as a result of blasting."

There is no need to speculate on the matter, because a large number of blasts occurred there during 1975 - 1977, and evidence can be collected from residents, and their physicians, about effects. Why has this evidence not been collected and presented, and instead there is the vague "may" used, which seems calculated to cast doubt on whether there would, in fact, be any "human response".

I am tempted here to summarize information of which I am intimately aware about the effects of the blasts on humans in the vicinity. I will content myself simply to ask why it has not been included in the draft EIS, and insist that it be part of the final document.

11. Since the draft EIS introduces the topic of the effects of noise on the human population, I contend it should not be only confined to blasting, but must include the entire range of noise. As I observed earlier (when the previous draft EIS was available for comment) there is an extensive, professional literature on the effects of noise on human beings, and in this instance we have the added good fortune (so to speak) of being able to collect and present information on actual, rather than hypothetical, impacts. Why does the draft EIS not present such information? Is that not misleading, to omit that kind of record and data?

12. The issue of berms as a device for reducing noise levels was dealt with at length in the proceedings before the King County Hearing Examiner. Once again, those who prepared and presented the draft EIS have simply selected information that seems to benefit the applicant, and omitted information that detracts from their case. While I do not have the time, expertise and records at hand to comprehensively add to the record, let me give a particular example:

During the hearings (and in my previous comments on a draft EIS) Hugh Parry pointed out that there is no plan to contain noise emanating from the bridge. The bridge is just about as close to the Guenther and Andrews residences as is the Carmichael Road. If there is anything more aggravating than a loud noise, Mr. Parry noted, it is loud noise of a variable pitch. If the berm had the effect of depressing noise levels somewhat (which is not clear, but the applicant so contends) then as the trucks emerged from behind the berm the noise levels would instantly increase, and the ~~variable~~ level would suddenly alter when the truck was going in the opposite direction.

Why is this effect and impact omitted from the draft EIS, while all kinds of information, much of it highly dubious, is included? Is not Mr. Parry's contention sound, and in keeping with known principles of human response to noise?

13. The King County Hearing Examiner previously concluded that a quarrying operation so close to residences would be an "incompatible" use of land. At that time no one thought about the risk to life from flying debris. However, when Raging River Mining Company was operating Fred Hobbs and two workmen at his home were very nearly killed when a large rock was blasted from the quarry and struck his house. His home, by the way, is a fair bit more distant from the site than some other residences, including that of my relatives. The incident was promptly, fully reported to the County.

Why is this matter not treated in the draft EIS? On what grounds is such a manifest threat to public safety omitted from the document? Not only ought the physical threat be included, but the psychological effect on people living in the vicinity, who have the most manifest reason to fear for the safety of their persons and property if a quarry operation resumes in such close proximity to their homes, deserves comment.

Again, I am interested in whether Shapiro & Associates have not been provided the information they need in order to complete a proper report, or whether the information has been withheld ~~from~~ them.

14. On page 23 is the following statement: "There is evidence in the blast consultant report which suggests that although no structural damage would occur..." (emphasis added). That report is included as Appendix C, and gives the very limited and applicant-directed character of the study - "a blast of typical size at a location indicated by you [the applicant]..." This provides yet another

illustration of the deceptive nature of the report. In the period 1975 to 1977 there were a large number of blasts there, and neither in noise impacts nor in vibration do a substantial number of those blasts resemble the apparent "test". Some of the blasts, it is true, are not particularly severe, and it seems that their size, location, characteristics of the ground, and the care with which the charges are set are among the factors in causing certain results. But also there has been a blast, for example, so severe that it shook books off the shelves at the Guenther residence. Frequently windows and pans are rattled by the blasting. I am not aware in that limited period of any manifest structural damage, and if that statement is confirmed by neighboring residents I think it would be fair to include.

Again, what we have presented is the results of a very limited test, conducted by a consultant selected by and paid by the applicant, under terms chosen by the applicant, and then the complete omission of all information from actual operations. The effect is to give a completely distorted impression, and furthermore the impression is given that that is the intention.

15. If my memory is correct of earlier testimony and information, this draft EIS suggests an average operation (150,000 tons/year of rock removed) about 50% higher than that previously proposed. It states that this involves a "rate of removal of 50 truck round trips/day." (Page 1.) On page 20 some noise data is presented which says that "during truck movement noise levels will be equal to or greater than 64 dBA 31.4% of the time and will average 18 seconds per minute."

I cannot figure out how many truck trips they are positing. I do know that it was very common, previously, for the operation to have far, far more than 50 truck round trips/day - and this was when they proposed to operate at a lower level. Also it is certain that a "rate" of 50 truck round trips/day tells the reader nothing about how many trucks there will be on any given day, or any given hour. The noise standards are not measured against a hypothetical rate, but against every single hour and every single day - it is the maximum operation which is germane, not a rate of operation spread over a year.

The report must take a figure which represents the maximum, and test it against standards. For a relevant source, I suggest Raging River Mining Company provide the figure of the largest number of truck-trips they experienced in any given day, and in any given hour, as a basis for the calculations.

16. "Past litigation" is treated in a severely limited and inaccurate manner. It is untrue, to begin with, that no litigation is pending relating to the legal nonconforming use status. I believe the report would be enhanced, and the understanding of the reader would be illuminated, by a reasonably thorough summary of the recent legal history of the site.

17. The matter of the community's water supply is constantly omitted or glossed over in these draft EIS's. It is of course an important matter for the people living there, to have a secure source of water. On page 40 the report seems to have equivocating comments concerning the security of the well, which seem to imply there is no problem, though it is conceivable there could be a problem, depending on various circumstances including casing, soil conditions at the site, etc. Nowhere does it say that the one man, a professional driller who dug the well, who specifically knows the character of the well and the soil conditions, has testified that in his professional judgment blasting at the Raging River Mining Company's property will jeopardize the well, and hence the water supply.

Why are the authors of the report unwilling to report this fact? On page 40 they even make reference to Mr. Cannon's testimony, but only for the purpose of giving the flow of the well. In short, they have the one, best source of specific information about the well, but do not present it. Why?

18. Page 41 provides another example of a completely misleading statement. It seeks to make a case that there is community support for the quarry proposal by referring to letters to Mr. Sand, expressing "A variety of opinions", dated June 28 through July 11, 1977. I believe that refers to a period of concerted effort people associated with the proposal made to find sympathizers. There have been other, and far larger expressions of sentiment, beginning 1974. These are part of the record of the previous hearings - and they included names submitted by the applicant as well as petitions and letters submitted by the residents.

But the point is this: If one is making a point about community sentiment, why present that point, and select a specific period of time, which limits it to expressions favorable to the applicant? Again, in this so-called "disclosure document" the maddening thing is to constantly be confronted with such selective presentation of information which distorts rather than reveals the truth. To repeat an opening comment and assumption, the EIS process is not intended to be a propaganda instrument for one side.

19. On page 37 of the draft EIS it says, "Questions concerning the possible impacts on the groundwater aquifer in the valley, from blasting of the andesite rock, have been raised. In response to this question, the blast consultant (Shannon and Wilson, personal communication) indicates that very little or not /sic./ effect would occur to the aquifer from blasting (see #8, Risk of Explosions or Hazardous Emissions)." The point of the passage seems quite obscure, and ought to be clarified. Given the reference to "#8" it appears to be related to the water supply and well controversy commented upon on Page 40 - the issue referred to above, where specific and pertinent knowledge provided by the professional who prepared the well and water supply is omitted while contradictory speculations are engaged in by people who lack any specific knowledge of the case under consideration.

Please put the pertinent facts of the case forward, whether or not they favor the applicant, and quit selecting and suppressing information in a manner that seems clearly calculated to lead the reader to a predetermined (and often unwarranted) conclusion.

20. When the authors of the report come face-to-face with facts that they find awkward, they go to absurd lengths to try to evade or obscure them. Take the issue of property values, for instance. The report says "The presence of the quarry may affect land values in the area." (Page 6, emphasis added.) Think about that. We are speaking of an operation that would involve all the kinds of equipment mentioned - bulldozers, rock drillers, rock crushers, blasting, etc. - within a few hundred feet of residential properties. Scores of large trucks would barge through a residential zone daily. People who live there have found that they often were pushed beyond their endurance and had to vacate their homes for days at a time, and also encountered noise-induced medical difficulties. Also, as illustrated by the Hobbs incident, debris from the blasts threatens themselves and their homes. So the report concludes that there "may" be an effect on land values.

I suggest that some professional appraisers be retained - independent persons, not beholden to the applicant - and asked to assess the value of the properties with and without the presence of a quarrying operation such as the one proposed. There is simply no plausible question that values will be effected; the only rational question is to how great a degree.

Again, it is insulting to experience those repeated and repeated misrepresentations that so poison the entire EIS process.

21. I recommend further that one not only calculate the loss of property values that can be expected - and which I believe will be very substantial - but also compare those losses with the value of the property owned at the site by the Raging River Mining Company. Without incurring any additional cost one could begin by presenting information on the values of all the properties as assessed by the King County Assessor's Office. I recommend that that be done.

What one will find is that homes and other properties that are quite valuable are by this project being put in jeopardy by a property that is comparatively low in value. Last I knew the entire 174 acres owned by Raging River Mining Company was assessed at a lower rate than the single unimproved lot owned by Mr. Andrews. Of course any single one of the homes in the vicinity was worth far more than the mining company's acreage - yet the County is being asked to compromise the values of the residents' homes and property in order to advance the interests of the applicant.

Since that is the proposal, let us at least have before us the figures, so policymakers can weigh them when making decisions.

22. Similarly, with reference to taxes, on page 52, please add estimates of taxes that will be lost to the County due to the effects of the proposal on neighboring properties.

23. With respect to alternatives to the proposal (page 63), an obvious alternative - and one that will be proposed by the residents - is to restore the status quo ante. The zoning was FR, not FR (potential QM). The "potential QM" is an ill-gotten change that was accomplished through a flagrant misrepresentation to the King County Council.

The history of that incident is all in the County files, and should be included in this draft EIS document, because it illuminates the current zoning status. Here is the history:

Since zoning was introduced in 1953 in that part of King County there has not been a provision for quarrying - or potential QM - reflected in the zone, prior to mid-1973. Until then quarrying was clearly not provided for in the zoning category.

In 1972 King County (through the Policy Development Commission and the King County Council) was engaged in extensive rezoning in east King County. Proper notice was given, and in the area including the site in question roughly 600 citizens and land owners participated. The preferred designation for the property we are considering - a unanimous preference, I believe - was for FR, which was consistent with the preceding zone at that location. The maps were prepared by the County, brought back and shown the residents of the area.

Subsequently, in mid-1973, Raging River Mining Company went before the King County Council and asked for a rezone. Property owners of the area were not notified that that property was under consideration by the Council. Furthermore, the County Council was told in an accompanying staff report that they were considering "an operating quarry" - which was a blatant falsehood. Neighboring residents, however, did not know of the proceeding (and in fact did not learn of it for at least 18 months), while those present who were not familiar with the site and the situation - presumably the Council Members - of course presumed they were being told the truth.

That is how the "potential QM" designation was gained - the combination of a falsehood, misrepresenting the status of the site, and the absence of neighboring residents who did not have notice that the site was under consideration and therefore were not present.

So the most obvious alternative that should be included - and in the opinion of this writer the most appropriate alternative - is to restore the zoning that existed prior to that regrettable incident in 1973.

24. There is reason for serious concern about the Raging River, having such a large blasting and earth-moving operation in such close proximity to an important stream, and one that feeds into the Snoqualmie River. That concern has been addressed in the draft EIS. Once again, however, there is no mention of the performance of the applicant during his previous period of operation, and no attempt to compare the assurances he had earlier provided with his subsequent performance. That, I submit, would be a simple and useful method

to gain particularly relevant information which would help in making an informed judgment.

I suggest that an independent, knowledgeable professional, of impeccable integrity, be sent to scrutinize the site owned by Raging River Mining Company. Have him or her study and evaluate the systems in place for protecting the river and observing the laws that relate to erosion and siltation. There was an operation going on there during the period 1975-1977, so the fair question is whether it was adequate in its protection of the Raging River, and whether it fully conformed with all laws in effect at that time.

25. There are many topics covered in this draft EIS of which I am not informed and have no way of testing. I must say, however, that my confidence in the thoroughness and even-handed presentation of those topics is low, given the handling accorded those subjects with which I am familiar.

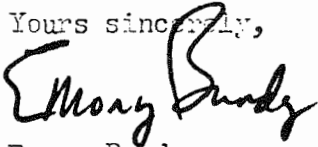
In summary observation, we have here a somewhat unusual situation, in which an applicant for a rezone - who was unable to gain the endorsement of the King County Hearing Examiner after very extensive hearings - nevertheless went ahead with a quarrying operation and continued until the court and the County stopped him. ~~That~~ Two years of operation provided the best possible source of information from which to calculate the impact of the proposal. It also provides an opportunity to test the veracity of the applicant, simply by reviewing the assurances given in 1974-1975 against the conduct in 1975-1977.

That kind of a record and evaluation should appear in the revised EIS.

Furthermore, I really object to the manner in which the EIS process is prostituted in this report, which selects and slants information in order to advance the cause of the applicant, rather than leaving the decision to the policymakers and aiding them by providing the information fully and impartially. This case was heard by Bruce Laing, King County Hearing Examiner, the record was very lengthy, and the hearings were quite thorough. Mr. Laing, also, has a reputation for exceptional fairness, expertise, and impartiality. After his review of all the testimony he recommended against the rezone, because he concluded that its impact made it an incompatible use of land relative to the surrounding area. While I am not saying that it would be impossible to disagree with Mr. Laing, I am saying this: his conclusion would be utterly incomprehensible if it were based on the kind of information presented in the draft EIS. The partial manner in which the draft EIS selects, omits, interprets and slants information makes the document a completely unreliable source on which a fair-minded public official can base a finding. I think that that must be corrected in its future versions.

Finally, the point has been made before that much information is in the hands of the residents of the surrounding area, and furthermore they make a suitable object of investigation. What, for instance, is the impact of noise on the community? One does not have to speculate, one can simply collect data on the effects of the operation during 1975-1977. The residents also can help provide information that the applicant seems to be withholding from those preparing the draft EIS - such as the frequency of blasting. Of course the applicant has the most thorough records of some of these matters, but if he does not provide them for scrutiny there are other sources at least in part.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "Emory Bundy". The signature is written in a cursive, somewhat stylized script.

Emory Bundy
270 Dorffel Drive East
Seattle, Washington 98112

9

September 29, 1979

Mark Mitchell
Building and Land Development Div.
450 King County Administration Bldg.
Seattle, Washington 98104

Regarding: Draft Environmental Impact
Statement - Raging River Mining
Co., Inc August 1979

Dear Mr. Mitchell:

I wish to make a preliminary remark about the method by which the present draft of the EIS was prepared. I am sure you know as well as I, that it is utterly impossible to get an objective statement of the environmental situation from one of the contending parties in this case. I am not placing the blame on Shapiro and Assoc., for if I wrote, or had someone else write an EIS, it also would be biased no matter how honestly I tried to report the facts. Therefore, aside from the proposed drainage and fill grading plans and some general and inoffensive remarks about energy, climate, flora and fauna, this document is worthless when it describes the impacts and their solution which directly affect the parties, such as noise. Now to comment on some of the scientific items of contention, where easy

60

but completely ineffective solutions are proposed as the only improvement data to make a decision, etc.

Review without question the Bureau's complaint of those who have within the vicinity of the quarry. There is no major explanation of the quarry that does not quote made, both of it, both into mutant and continuous. Further who live near the quarry there is no way to get any relief from their mind-distracting distortion, either indoors or out, except to jump in your car and put distance between yourself and your home.

During the night of the EIS, we find five mail trucks, 10 and 12, that that they are carried out of the site. The most important and elaborate study made by our have except the High Park and several supplements have been made. The reports which follow are as follows:

1) Quarry River Quarry River Measurement
make a little bit of positive information the quarry between 5/5/76 - 5/3/76 by High Park, September 10, 1976. The studies on a plan on the instrumentation used.

2) Quarry River Quarry River Measurement
(supplement) by High Park, October 8, 1976
3) Quarry River Quarry River Measurement
(supplement) by High Park, September 21, 1976
4) Quarry River Quarry River Measurement
(supplement) by High Park, October 8, 1976
5) Quarry River Quarry River Measurement
(supplement) by High Park, October 8, 1976

A. Breysse (undated) by Hugh J. Parry
September 10, 1976.

The Omission of these noise studies show that the noise section of the EIS is so incomplete that it invalidates any conclusions which have been drawn from the five studies and completely nullifies the letter from Towne, Rutledge and Chandiere, Inc. Whether these reports of Mr. Parry were available when the draft of this EIS was prepared, I do not know, but it is the inevitable result of one of the contending parties writing it. The attempt to be objective and to be fair would have induced one of the members of Shapiro and Assoc. to have consulted with us. Where would be the harm? They could do as they wish with the material. I suppose, however, that suppression of evidence is a much more serious offense than the negligence of commission.

Many irresponsible statements appear in the EIS and most of them concern so-called "mitigating measures".

Blasting: The EIS states "Even if the chance of a catastrophic explosion is low, there is still some risk involved when dealing with explosives". On December 5, 1976, a house, then owned by Fred Hobbs next to and north of the Andrew Reservoir was hit by a rock (approx. 4 inches in diameter) from a quarry blast. The

We have photographs, witnesses, and the splintered siding from the house to verify this occurrence. The Division of Building and Land Development was sent a letter at that time with the signatures of Mr. Hobbs and two workmen which is in their files.

"The frequency of blasting is relatively low, with a predicted occurrence of twice a week." This statement is utterly uninformative. From our experience, we have records to show that the mining company blasted as frequently as six times in an afternoon. The statement of the low blasting frequency is a good example of the self-serving statement which Shapiro and Assoc. make for their client.

The EIS says no positive determination can be made from existing data from the effete on the near-by well. We have a letter from the driller of this well, R.J. Cannon, that there is definite danger of caving due to the blasts. This letter was entered as an exhibit #42 during our zoning hearings.

Referring again to the Mitigating Measures on page 4 of the EIS. From our experience with this operator none of these measures will be taken unless monitored closely by the County.

Instructing truck drivers how they should drive is laughable if it were

not for the fact that so much noise is produced by their operation. One of the greatest sources of truck noise are those that have defective equipment; loose tail-gates and poor mufflers; these trucks could be heard when they entered on Carmichael Road by their din until they were being loaded up at the quarry site. This carelessness of maintaining equipment will not and could not be undertaken by the mining company. Limiting trucks to 15 MPH speed limit is laudable but large truck noise below 50 MPH does not depend on vehicle speed but rather engine speed, irrespective of transmission gear ratio. Thus, the critical variable here is engine speed, not vehicle speed. This statement is from EPA Report (550/9-73-065).

Limiting hours of business will not be undertaken unless monitored and enforced by the County. Our experience shows that the hours were 7 AM to 7 PM. Many trucks entered the quarry before 7 AM, so we as early as 6:30 AM. I kept a log of these truck movements for weeks and after much pressure from the County it was not until the operator was threatened with having his grading permit revoked that he conformed. These truck logs are available for review.

The effectiveness of terms is
 contained in the ⁶⁴September 10, 1976

Noise report by Hugh J. Parry.

Quarry trucks are a serious driving hazard on a narrow two-lane highway with many curves (Preston-Fall City Highway). Many residents driving this highway have found rocks, some of dangerous size on the highway. We know of two accidents or mishaps at the quarry entrance, one involving a small sports car and another a moving van. Parents of schoolchildren are fearful that quarry trucks could cause a school-bus accident or harm a child walking or waiting near the highway for the school bus.

Referring again to mitigating measures, the EIS would appear a little less irresponsible if this section were deleted. Although health is touched on with respect to blasting, Mrs. Guenther's doctor, Dr. Alfred Broadhead of Group Health stated in part in a letter dated September 21, 1977 "There is no doubt in my mind that this quarry operation has caused patient undue stress and adversely affected her well being." I believe it has now become a universally recognized fact that noise at undue levels can affect a person's health and many doctors, safety experts and noise consultants urge strong measures should be taken to minimize noise along with other pollutants for a safe environment.

page 8

. On page 27 it states... "presently no litigation pending relating to the legal non-conforming use statute." This is not true as the non-conforming use statute is now on appeal to the state supreme court. I want to again make the observation that the method by which EIS reports are prepared renders them not only worthless, but, as in this case, misleading.

Sincerely yours
Gladys Guenther
Clara Guenther

Enclosures: The four noise reports by Hugh Pary are enclosed in the event that they are not in the file of the Division of Buildings and Land Development. These reports should become part of the EIS. I should like to know how this data will modify the report of Shapiro & Associates, Inc. I should also like to know how this data will affect the decision of Towne, Richards & Chandire, Inc. These studies were conducted on site without the operators' knowledge; the reports cited in the EIS were conducted with the full knowledge of the operator

COMMENTS TO DRAFT EIS AND RESPONSES

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Department of Ecology

Comment 1: *Figure 11 (page 10) shows a 200 foot buffer zone, and the discussion on page 8 indicates the 200 feet will be untouched. However, Figure IV-B shows settline ponds along the river. Any development within 200 feet of the ordinary high water mark will require a shoreline substantial development permit. The final EIS should clarify where development will occur and should also discuss the shoreline area in more detail.*

Response 1: The basic concept of on-site water control ditches and sediment traps would be incorporated into the proposed expansion area under the grading permit and submitted to the Department of Public Works for approval. Figure IVb is a preliminary drawing showing system design concept. Actual construction plans would be prepared for the grading permit application. It is understood that a substantial development permit under King County Shoreline Management Code would be required if this system were constructed within 200 feet of the Raging River.

Comment 2: *From the information presented in the noise section, it is difficult to determine whether or not the quarry operations, including on-site truck movement, would comply with the King County noise ordinance. Additional information is needed, including a description of measurement locations, operating modes, noise monitoring equipment types, and measurement procedures.*

Resonse 2: An additional noise measurement, including site description, instrumentation, and operating procedures, conducted within the vicinity of the Raging River Quarry, is included in Appendix D.

Comment 3: *Information presented in Table 2 would be more meaningful if it indicated where the trucks were operating and at what distance the noise levels were measured.*

Response 3: The noise level sampling point was 50 feet north of the center line of Carmichael Road and 200 feet west of the Preston-Fall City Highway (Study No. 5, location 2, Figure V). Sound level measurements were made for the entire length of the round trip--from the time trucks either stopped or slowed down to enter Carmichael Road until they reached the loading site (entering) or completed the return journey (leaving).

Comment 4: *Table 4 presents noise data for the quarry operation. Were the operations which were measured typical of existing work? Will they be representative of future expanded operations? Predicted increases in existing noise levels due to quarry expansion and the expected reduction due to the proposed mitigation measures should also be determined.*

Response 4: Noise level data presented in Table 4 is representative of normal construction operations with the D-8 tractor operating on the quarry rock face. Noise levels at the sample location for this study would decrease as the quarry expands to the south. Quarry expansion denotes greater rock excavation areas, not an increase in activity. Table 6 indicates how sound levels decrease with distance. Berming by natural or artificial means would further decrease equipment noise levels. Up to 22 dBA reduction of truck noise levels occurred with the use of a berm (Noise Study #4).

Department of Fisheries

Comment 1: *The drainage plan referenced to on page 4 indicates that it appears as Figure III. This should be changed to Figures IVa and IVb.*

Response 1: This comment has been incorporated into the Final EIS and is noted on the Errata Sheet.

Comment 2: *The third paragraph on page 39, listed as "Impacts", should be reworded to describe what fauna habitats will eventually be eliminated. We suspect "terrestrial fauna" is meant. If otherwise, we would appreciate further discussion.*

Response 2: The statement concerning elimination of fauna habitats refers to those habitats established within the proposed areas to be excavated and altered by quarry operations. These "terrestrial fauna" also include avian species that have an established habitat in the area.

Department of Game

Comment 1: *Will rehabilitation occur?*

Response 1: Rehabilitation is required for quarries over 10 acres in size under the Washington Surface-mined Land Reclamation Act. This act is administered under the Department of Natural Resources. The action sponsor has established a rehabilitation plan with this agency. See page 22 of this final EIS for a discussion on the requirements and proposed plan for site restoration under the Act.

Comment 2: *Will rehabilitation be phased or will potential rehabilitation be left until the entire site is cleared in one hundred years.*

Response 2: Short-term rehabilitation of the quarry site will be phased as the operation moves in a southerly direction. The rate at which rehabilitation proceeds is dependent on the rate of extraction, controlled by market demand.

Comment 3: *Will the proposal result in a pit or deep depression? If so, is there any potential for storage and stockpiling of dredge spoil materials from other projects in the county?*

Response 3: As shown in Figures IVa and IVb, Proposed Drainage and Site Grading Plans, excavation will not result in a pit or deep depression. The use of the site for disposal of waste could be considered as a secondary use of the quarry site or as an alternative to short or long-term rehabilitation.

Comment 4: *Is there any guarantee that sedimentation ponds with silt and grease would be properly constructed and cleaned frequently?*

Response 4: The Department of Public Works, under the grading permit and drainage ordinance, has authority to approve or disapprove the design and construction of the sedimentation ponds. The grading permit is renewed annually. Quality assurance of construction and maintenance is dependent on site inspection by Public Works staff.

Comment 5: *We recommend you include a short and long term restoration plan in the final impact statement.*

Response 5: A discussion on the requirements and proposed restoration plans under the Reclamation Act are included as Revisions to the Draft EIS on page .

Puget Sound Air Pollution Control Agency

Comment 1: *On page 11, it states the basic equipment includes one rock crusher. It was not clear whether this is new equipment or not. This can be a significant source of dust without any control.*

Response 1: The rock crusher on the quarry site is new machinery that is equipped with atomizing spray nozzles capable of chemical or water application to control the emission of dust.

Comment 2: *On page 35, Mitigating Measures should include using dust control on rock processing equipment. Paved roads should be cleaned periodically.*

Response 2: These comments have been incorporated into the Final EIS and are noted on the Errata Sheet.

Comment 1: *The final EIS should address the issue of hazardous cargo shipments to the site, noting the efforts of PSCOG to secure federal funds to study this general issue in the region.*

Response 1: Hazardous cargo (explosives) for quarry blasting is delivered to the site under State approved guidelines. The detonator and explosives are shipped and stored in separate containers to eliminate the hazard of an accidental charge set off during transportation and storage. Normally, no explosives are stored on site, as the quantity of explosives ordered and delivered are usually specified for a single blast. State approved and licensed magazines exist on site if storage is required. The Puget Sound Council of Governments has been awarded a federal grant to plan ways to prevent problems in transportation of hazardous materials and respond to accidents. The study will identify types and amounts of hazardous cargo moving through the region and how it is moved--by air, highway, waterway, or rail. Agencies responsible for preventing or responding to accidents involving hazardous materials will be identified. The council will develop a prevention and response plan coordinating efforts of federal, state, and local agencies.

Comment 2: *The final EIS should address the requirements of the State Surface-mineral (sic) Land Reclamation Act which applies to quarries of over ten acres.*

Response 2: The requirement set forth by the Washington Surface-mined Land Reclamation Act that applies to the Raging River Quarry and proposed reclamation plans are outlined on pages 22 and 23 of this Final EIS.

Comment 3: *The treatment of mitigating steps is noncommittal in parts of the draft EIS. Which mitigation measures will be taken?*

Response 3: The mitigating measures outlined in the Draft EIS describe possible measures that would mitigate the impact created by the proposed action. Implementation of all or some of these measures may be required by King County Hearing Examiner as conditions of approval.

Department of Public Health

Comment 1: *Site investigation by our noise personnel reveal that the area may be much quieter than the five noise studies would indicate.*

Response 1: The five noise studies that collected ambient sound levels were conducted during seasonal differences when tree foliage development and river stage create differences in sound absorbing and transmission characteristics.

Comment 2: *The berming proposed to lessen the impact of the truck passage seems to be adequate, although the people living east of the quarry entrance still will be impacted by the 50 loaded trucks exiting per day and by the noise of the quarry operation.*

Response 2: Those residents east of the highway would be most impacted by noise generated on that road, which is under public jurisdiction and allowed greater maximum permissible sound levels. The best available technology would be required for trucks entering and exiting the access road subject to the noise ordinance. Noise generated by the quarry equipment would comply with maximum permissible noise levels at the receiving properties west of the highway, and therefore is expected to be met on the east side of the highway.

Comment 3: *A second point of concern is that study five "indicates that during truck movement noise level will be equal to or greater than 64 dB(A) 31.4% of the time and will average 18 seconds per minute" or 18 minutes per hour. This greatly exceeds the maximum permissible sound levels of Ordinance 3139 for an industrial source impacting a rural receiver. Section 302 of the ordinance does not provide for exceedance of the temporary exceedance levels. Mitigating measures will have to require the use of berms as proposed and in addition, all trucks must comply with the county sound level for motor vehicles as stipulated in Ordinance 3139.*

Response 3: Study five and the above conclusion does not consider barrier effectiveness. The barrier may reduce the L_n sound levels to comply with Ordinance 3139. Furthermore, the designation of the County owned access road as a public highway has not been accepted by the County.

Comment 4: *The last point of concern regards the stationary equipment. This would include the gravel crusher, compressors, and rock drill. The rock drill has been adequately addressed in the EIS. However, no precautions have been considered for the proposed rock crusher or compressors. A plan will have to be submitted to the noise program, illustrating the use of natural berming for the placement of the crusher. The best available technology will have to be used for the compressors.*

Response 4: These points are considered in additions or changes to the Draft EIS. Please refer to Noise Supplement.

Comment 1: Page 4. *Earth, last sentence. "...these impacts would be minimal."* Certainly an opinion, not a fact.

Response 1: Page 4 does not contain any reference to Earth. The statement on page 1 (B. Direct and Indirect Impacts, Earth): "Although the impact would be minimal, erosion of the rock face would accelerate from physical and chemical weathering." Erosion over the entire site will increase above natural conditions due to lack of protective vegetative cover and an increase in physical and chemical weathering processes. Erosion will be greatest in areas of highly fractured rock. Erosion rates will be greatest immediately after removal of vegetation and within the first year after rock excavation, with rates decreasing as equilibrium conditions are reached. This may take many tens or even hundreds of years.

Comment 2: Page 4. *Flora and Fauna. "Rehabilitation of areas will comply ..." etc. How can they promise that they will or can comply? What if they are bankrupt? I think the "will" should be changed to "could", or possibly the whole subject should be deleted as unnecessary and meaningless.*

Response 2: Under the Washington Surface-mined Land Reclamation Act an operator shall not commence surface mining until the operator has deposited an acceptable performance bond on forms prescribed and furnished by the Department of Natural Resources. Such a bond has been deposited by Raging River Mining, Inc. See page 22 of this document for additional reclamation requirements.

Comment 3: *Mitigating Measures. D. This whole section deals with things that could be done. This does not say that it is guaranteed. Language should be deleted or corrected. In fact, the whole "Mitigating Measures" section could be deleted as being unnecessary and meaningless.*

Response 3: The mitigating measures outlined in the Draft EIS describe possible measures that would mitigate the impact created by the proposed action. Implementation of all or some of these measures may be required by King County Hearing Examiner as conditions of approval.

Comment 4: Page 5. *Noise, Par. 2. Experience from former operations do not show that much thought was given to improvement of the access road.*

Response 4: Again, improvement of the county access road could be a condition of approval.

Comment 5: Page 5. *Noise. Par. 3. "Fitting the trucks with noise mitigating equipment..." and "...new model mufflers." This could be applied to company owned trucks, but certainly not with trucks owned by others. Previous experience has shown that some trucks were extremely noisy and I have been led to believe these were company trucks.*

Response 5: The action sponsor indicates that company leased or rented trucks have been retrofitted with noise mitigation equipment. These trucks represent approximately 20% of truck traffic. Other trucks would be required to comply with King County Ordinance 3139.

Comment 6: Page 5. *Blasting. "Ample warning..." for blasting. Operators gave no warning on blasting to us on any blasts except once or maybe twice. I believe they made a statement in hearings that some others were warned, but not the Andrews or Guenthers. They said in hearings that notice would be given. So how can we believe they would change their ways?*

Response 6: A warning whistle would be sounded at two minutes and 30 seconds before each blast.

Comment 7: Page 5. *Blasting. Par. 6. "All blasting would be confined..." During past operations a home next to us downstream was damaged by rocks from a blast. This is a matter of record in the past hearings, supported by photographs and statements by witnesses.*

Response 7: The incident was reported during the hearings but no evidence is located in the file on this subject.

Comment 8: Page 5. *Noise. Par. 7. "A new rock drill would be used..." No assurance can be given that this would lower noise levels. An opinion, not an established fact.*

Response 8: A Halcodrill 150 has been obtained by the action sponsor. This is a "down the hole" rock drill that will reduce noise levels by 60 to 70 percent as the drill head extends below the surface.

Comment 9: Page 5. *Noise. Par. 8. Here again they might not comply, as they have failed heretofore. How could they be forced to comply? What, if any, penalties?*

Response 9: Maximum permissible noise levels allowed under Ordinance 3139 permit operation from 7 a.m. to 10 p.m., weekdays. There are no regulations that enforce closure of business operation. The action sponsor could perform quarry operations until 10 p.m. if in compliance with Ordinance 3139.

Comment 10: Page 6. *Air. No mention is made of dust generated by trucks and equipment.*

Response 10. This section refers to Adverse Impacts Which Cannot be Mitigated. Dust generated by trucks and equipment is mentioned on page 1. This dust would be mitigated by watering of roads and circulation areas on the site. PSAPCA requires that dust generated from the rock crusher be controlled by either bag house or water or chemical sprays.

Comment 11: Page 6. *Population. This should state that property values would undoubtedly decrease. As a matter of fact, the King County Appeals Board granted tax reduction assessments, based on quarry operations to residences close to the quarry, including ours.*

Response 11: This comment has been incorporated into the Final EIS and is noted on the Errate Sheet. It should be noted, however, that the tax assessments on such residences have not been increased as a result of the closure of the quarry in 1977.

Comment 12: Page 17. SPECIAL ISSUES. A. NOISE. The Noise Controversy. First Par, The statement that there have been five noise studies made is simply untrue. There was another, later and comprehensive study made by Hugh Parry. If these studies are to be in the book they should all be included.

Response 12: The Raging River Quarry Noise Measurements, and supplements by Hugh J. Parry Noise Consulting, August 8, 1976, is included in Appendix D. Comments concerning this study and others are included in Noise Supplement, page 90.

Comment 13: Page 23. Noise from Blasting. Par. 2, starting with line 7. The statement that "These studies have found that although structural damage will not occur..." etc. In fact, evidence was obtained about a blast which damaged a house.

Response 13: This section refers to structural damage that could result to buildings from blast-induced seismic waves or air blast. We were unaware of the reported damage from a rock apparently thrown over 600 feet from a quarry blast.

Comment 14: 2. The very nature of a gravel roadway would make the roadway almost impossible to maintain in a smooth condition, especially where the roadway meets the bridge. And how can these rules, if adopted, be enforced? What penalties, if any? They were not well enforced when the previous operation existed.

Response 14: Road improvement of the County owned access road does not preclude the application of an asphalt surface.

Comment 15: The statement is made that the hourly truck traffic would be reduced by 35%. This is either an error or a misstatement. The amount of traffic could be reduced only by a reduction of traffic.

Response 15: This statement refers to the noise reduction resulting from a noise berm that would effectively be similar to a 35% reduction in traffic.

Comment 16: Page 27. B. Past Litigation, first paragraph. This statement is entirely untrue. There is at present an appeal filed with the State Supreme Court that has not been acted upon.

Response 16: This comment has been incorporated into the Final EIS as Section C, Additions and Changes to the Final EIS, page 24.

Comment 1: *The draft EIS contends that blasting will take place twice per week at the quarry operation (Cf. p. 2 and 11.) Furthermore, the average rate of removal of rock is at a higher rate than when they were in operation 1975-1977. Did the applicant provide Shapiro & Associates with the information about the frequency of blasts during that period? Is it not true that they were considerably more frequent than twice per week? Is it not the case that there were as many as a half-dozen blasts in a single afternoon?*

Response 1: The proposed rate of extraction of rock from the quarry is 150,000 tons annually. Rock extraction figures for the two year period (1976 and 1977), indicate that 193,000 tons of rock were extracted during 17 months of operation. This would be equivalent to approximately 122,000 tons per year if operation were to occur for 12 months. The proposed 150,000 tons annual extraction is estimated based on market demand and represents a maximum value. An estimated blast frequency of two per week would provide rock for this demand. Exceptional demands for rock, such as for flood relief, may require greater blasting frequencies. Additional blast other than the estimated two per week, significantly smaller than the main confined blast, are set to dislodge rock material that would otherwise be hazardous to safe quarry operation, and to reduce large blocks of rock to a workable size.

Comment 2: *Were there or were there not "blowouts" (or "unconfined blasts") during their operations during 1975 through 1977?*

Response 2: All blastings were "confined" blasts, that is, no explosives detonated in the open air. Blowouts occur when a blast is not properly confined and could result in the ejection of small rock particles several hundred feet. The action sponsor has no knowledge of blowouts occurring at the Raging River Quarry between 1975 and 1977.

Comment 3: *On July 10, 1974, Albert E. Teller of Explosives International wrote to John Preibe [sic] the following: "All blasting will be done during specific published hours, so to avoid any impact upon the community from sudden, unexpected noises." That statement appears on page 79 of the draft EIS. Subsequent to that statement, and other similar assurances, Raging River Mining Company operated at the site under discussion. Analogous assurances are now provided in the draft EIS, cf. pages 5 and 26. The question is what credence should be given those assurances? I can think of no better test than to ascertain previous performance measured against previous assurances. Is it true that Raging River Mining Company so handled its blasting as "to avoid any impact upon the community from sudden, unexpected noises?" That is the standard the company said it would meet, so it certainly is a fair test. How well did it meet it? That is pertinent to the current draft EIS so that one can assess the validity of the statements.*

Response 3: The action sponsor realizes that the suddenness of a blast can have significant impact on human response. As a mitigating measure, an air horn or other similar device, such as used by the logging industry would be acquired. This whistle could be sounded not later than two and one half minutes prior to blasting.

Comment 4: Similarly, the suggestion that hours of business operation would be limited to 7:00 am to 5:00 pm leaves a great deal unsaid. Raging River Mining Company repeatedly and flagrantly violated its operating hours during its previous period of operation - despite the fact that at that time they were considerably more generous than those suggested.

Response 4: Maximum permissible noise levels established by Ordinance 3139 are allowed from 7 a.m. to 10 p.m. Between 10 p.m. and 7 a.m., weekdays, noise levels must be reduced by 10 dBA. There are no other regulations limiting the business hours of the quarry.

Comment 5: No item in inquiry is covered as extensively in the Draft EIS as that of noise. The authors of the report consistently seem to reach a conclusion that the quarry company can operate within the law and with minimal impact upon neighbors. That conclusion is absolutely fraudulent, and anyone making it certainly risks their professional reputation.

Response 5: Conclusive determination of information presented by the five noise studies could not be determined due to the variability of testing conditions at and within the vicinity of the Raging River Quarry. The Noise Section of the Draft EIS has attempted to clarify the admittedly difficult and controversial situation surrounding the noise issue by an analysis of those findings. Noise levels may be attained within the bounds of Ordinance 3139 by proper institution and maintenance of mitigating measures outlined in the Draft EIS.

Comment 6: But perhaps the most unconscionable thing about the noise studies is that the most extensive, most representative, and also most damning report is entirely omitted...Did Shapiro & Associates suppress the reports? Were the reports not given to the consulting firm which was preparing the Draft EIS? Did the staff of King County fail to include Mr. Parry's study, when it completed the Draft EIS?

Response 6: Hugh J. Parry report of August 8-10, 1976 is not in File Nos. 134-74-R, 135-74-P of BALD. Shapiro & Associates had no prior knowledge of the report. This report is included as Appendix D. See also Noise Supplement for discussion on page 90.

Comment 7: Here is what I propose: Let's take a reputable and independent expert, and have him or her survey noise levels in the midst of the property owned by Raging River Mining Company, and on the front porch of the Guenthers, on any reasonably typical day, run the test for twenty four hours - or for seven consecutive days, or a month if you like - and establish a reliable indication of the background noise. I assure you that 57 dBA will not be approached. But at any rate, re-read the Draft EIS statement on page 18 and then test its veracity.

Response 7: Ambient noise study at the quarry site was conducted in August of this year by personnel from King County Department of Public Health (See Letter of Comment, October 2, 1979). Sound levels ranged from 36 dB(A) near the highway to 56 dB(A) near the river. In the front yard of the residence to the north, noise measures were recorded as 38-40 dB(A) with traffic sound

peaking at 55-60 dB(A). Ambient sound levels recorded by the five noise studies were conducted at different seasons, when there are differences in absorbing capabilities due to tree foliage and river discharge volumes. The statement on page 18 is in error, and should be 49 dB(A), not 57 dB(A). See Errata Sheet.

Comment 8: *On page 23 of the draft EIS it says that "some human response may result as a result of blasting." I am tempted here to summarize information of which I am intimately aware about the effects of the blasts on humans in the vicinity. I will content myself simply to ask why it has not been included in the draft EIS, and insist that it be part of the final document.*

Response 8: Blasting will result in ground vibrations, ground-shock induced air blasts, and associated noise created by the blast and falling rock debris. The combined effect of groundshaking and noise on human response is variable, depending on distance to the source and personal health histories. The Draft EIS recognizes that some human responses may occur.

Comment 9: *Since the draft EIS introduces the topic of the effects of noise on the human population, I contend it should not be only confined to blasting, but must include the entire range of noise. As I observed earlier (when the previous draft EIS was available for comment) there is an extensive, professional literature on the effects of noise on human beings, and in this instance we have the added good fortune (so to speak) of being able to collect and present information on actual, rather than hypothetical, impacts. Why does the draft EIS not present such information? Is that not misleading, to omit that kind of record and data?*

Response 9: The effects of noise on human responses have been outlined by the Environmental Protection Agency and State Department of Ecology. Continuous noise at high levels is not only irritating, but it can cause damage to hearing or otherwise affect health. Excessive noise above 80 decibels can cause hearing loss. Noise above 55 decibels can interfere with speech communication, and noise above 35 decibels can cause sleep interference. Other physical effects from continuous and excessively loud noise can result in blood pressure increases, and heart rhythm changes. These reactions are usually temporary, but may become chronic. While environmental noise alone probably does not produce mental illness, the continual bombardment of noise on an already depressed person cannot be helpful. Stress is a factor in mental illness; noise can create stress--a reaction to a person's inability to cope with tensions of daily living.

Comment 10: *The issue of berms as a device for reducing noise levels was dealt with at length in the proceedings before the King County Hearing Examiner. ...Why is this effect and impact omitted from the draft EIS, while all kinds of information, much of it highly dubious, is included? Is not Mr. Parry's contention sound, and in keeping with known principles of human response to noise?*

Response 10: If there is a barrier alongside a roadway, or if the roadway is depressed, there will generally be a reduction in noise levels. The effect of the barrier is different for cars and trucks because of the different noise characteristics and will vary depending on the type of barrier. Sound barriers can be constructed of boards, sheets of wood or metal, or masonry. Walls of earth and piles of materials can also serve as sound shields. The earth berm alongside the access road and a sight-sound shield along the bridge will create a general reduction in sound level. Barriers have been designed to provide attenuation over the range from 5 to 15 dBA, with the median value being 10 dBA. The 15 dBA value represents the maximum practical design limit. The attenuation provided by a barrier is dependent on the geometry of the source-barrier-receiver system.

Comment 11: *The King County Hearing Examiner previously concluded that a quarrying operation so close to residences would be an "incompatible" use of land. At that time no one thought about the risk to life from flying debris. However, when Raging River Mining Company was operating Fred Hobbs and two workmen at his home were very nearly killed when a large rock was blasted from the quarry and struck his house. His home, by the way, is a fair bit more distant from the site than some other residences, including that of my relatives. The incident was promptly, fully reported to the County.*

Why is this matter not treated in the draft EIS? On what grounds is such a manifest threat to public safety omitted from the document? Not only ought the physical threat be included, but the psychological effect on people living in the vicinity, who have the most manifest reason to fear for the safety of their persons and property if a quarry operation resumes in such close proximity to their homes, deserves comment.

Response 11: It is understood that the subject was brought up in the hearings, however, there is no documentation in the file that could be addressed. Guenthers stated that the rock was four inches in diameter and resulted in damage to siding.

Comment 12: *If my memory is correct of earlier testimony and information, this draft EIS suggests an average operation (150,000 tons/year of rock removed) about 50% higher than that previously proposed. It states that this involves a "rate of removal of 50 truck round trips/day." (Page 1.)*

The report must take a figure which represents the maximum, and test it against standards. For a relevant source, I suggest Raging River Mining Company provide the figure of the largest number of truck-trips they experiences in any given day, and in any given hour, as a basis for the calculations.

Response 12: Please refer to Response 1 concerning the rate of extraction. Assume a 13 ton payload for a single truck and 22 ton payload for a double. At 50 truck trips per day, this would amount to between 169,000 tons/year (single only) to 286,000 tons/year (double only). A 50 truck trip day represents one truck every 12 minutes for the hours of operation. Market demand for construction materials is the greatest influencing factor on

operations and cannot be reasonably predicted. However, the summer months are the most productive construction periods. The maximum truck trips recorded in any one day was 229 trips in July 1976. This unusual demand for riprap was for emergency repair work on I-90 near Issaquah. Monthly average daily trips for 1976 during this period were below the proposed 50 trips/day. In all fairness, to evaluate noise generated by the quarry operations, one should also consider minimum days (2-3 truck trips). In reference to noise levels (Table 2) created by truck traffic, the average travel time for trucks entering or leaving via the access road is 52.8 seconds. If one assumes maximum (continuous) flow of truck traffic either entering or leaving for one hour (approximately 60 trucks), noise levels would be equal or greater than 64 dBA for 18 minutes. This does not take into account the noise berm.

Comment 13: *"Past litigation" is treated in a severely limited and inaccurate manner. It is untrue, to begin with, that no litigation is pending relating to the legal nonconforming use status. I believe the report would be enhanced, and the understanding of the reader would be illuminated, by a reasonably thorough summary of the recent legal history of the site.*

Response 13: These comments have been incorporated into the final EIS as Section C, Additions and Changes to the Final EIS, page 24.

Comment 14: *The matter of the community's water supply is constantly omitted or glossed over in these draft EIS's. It is of course an important matter for the people living there, to have a secure source of water. On page 40 the report seems to have equivocating comments concerning the security of the well, which seem to imply there is no problem, though it is conceivable there could be a problem, depending on various circumstances including casing, soil conditions at the site, etc. No where does it say that the one man, a professional driller who dug the well, who specifically knows the character of the well and the soil conditions, has testified that in his professional judgment blasting at the Raging River Mining Company's property will jeopardize the well, and hence the water supply.*

Why are the authors of the report unwilling to report this fact? On page 40 they even make reference to Mr. Cannon's testimony, but only for the purpose of giving the flow of the well. In short, they have the one, best source of specific information about the well, but do not present it. Why?

Response 14: R. J. Cannon in his letter to Mr. Guenther (Exhibit #42) states: "In our opinion, there is a strong possibility that extreme shaking of earth could disturb a flowing well to a point where if a possible cavern has been washed out beneath the pipe a cave-in could result." He also indicated that approximately 10,000 cubic feet of sand was discharged from the well during the first week after drilling. It is assumed this sand was discharged through a cavity in the sand substrate. The well is drilled to a depth of 385 feet. An artesian flow of approximately 125 GPM taps the aquifer located approximately 200 feet deep. Mr. Cannon does not indicate in his letter that blasting would directly jeopardize the well.

Comment 15: Page 41 provides another example of a completely misleading statement. It seeks to make a case that there is community support for the quarry proposal by referring to letters to Mr. Sand, expressing "A variety of opinions", dated June 28 through July 11, 1977. I believe that refers to a period of concerted effort people associated with the proposal made to find sympathizers.

Response 15: The above letters to Mr. Sand refer to those received by Building and Land Development as requested, for comment to the previous Draft EIS, issued 10 June 1977. See comments to the June 1977 Draft EIS, page 87.

Comment 16: On page 37 of the draft EIS it says, "Questions concerning the possible impacts on the groundwater aquifer in the valley, from blasting of the andesite rock, have been raised. In response to this question, the blast consultant (Shannon and Wilson, personal communication) indicates that very little or not [sic.] effect would occur to the aquifer from blasting (see #8, Risk of Explosions or Hazardous Emissions)." The point of the passage seems quite obscure, and ought to be clarified.

Response 16: According to Shannon and Wilson, whom are certified engineering geologists, the maximum peak intensity of seismic energy created by a blast was 0.26 inches per second (ips). This represents approximately 8% of 2.0 ips which is considered to be the threshold in which structural damage could occur. The well is cased, and therefore would not suffer wall collapse. The level of the groundwater table would not be affected by blasting. Water is transmitted up the well by overpressure, creating an artesian situation. Shannon and Wilson indicated that blasting would not effect the well. A significant earthquake in the area, however, may result in a temporary disruption of flow.

Comment 17: When the authors of the report come face-to-face with facts that they find awkward, they go to absurd lengths to try to evade or obscure them. Take the issue of property values, for instance. The report says "The presence of the quarry may effect land values in the area." (Page 6, emphasis added)

I suggest that some professional appraisers be retained - independent persons, not beholden to the applicant - and asked to assess the value of the properties with and without the presence of a quarrying operation such as the one proposed. There is simply no plausible question that values will be effected; the only rational question is to how great a degree.

Response 17: An appraisal of the subject properties was conducted by Yerkes and Associates. The general conclusion regarding property values is as follows:

Since, no clear comparative sales pattern can be established showing possible affect of the alleged problems on property values in the vicinity of the quarry, and the future operation of the quarry is unresolved, any assessment for loss in value as a result of the alleged noise would be strictly subjective and unwarranted.

Therefore, since the comparable market data available does not reflect any adverse influences, or is inconclusive, the subject property has been valued as if the alleged noise problem does not affect value.

Comment 18: *Similarly, with reference to taxes, on page 52, please add estimates of taxes that will be lost to the County due to the effects of the proposal on neighboring properties.*

Response 18: This evaluation cannot be determined in regards to response 17. In all fairness, however, it should be stated that the neighboring property owners have not sought the reinstatement of higher tax assessments following closure of the quarry in 1977 (see Response 11, Olen V. Andrew).

Comment 1: *Turning to page 17 of the EIS, we find five noise studies listed and it is stated that they are carried out at the site. The most important and elaborate study made by our noise expert, Mr. Hugh Parry, and several supplements have been omitted.*

Response 1: This report and supplements are included in the Final EIS as Appendix D.

Comment 2: *The omission of these noise studies show that the noise section of the EIS is so incomplete that it invalidates any conclusion which have been drawn from the five studies and completely nullifies the letter from Towne, Richards and Chaudiere, Inc.*

Response 2: The conclusion of Towne, Richards and Chaudiere, Inc. is that "there is insufficient information to determine whether noise from the proposed quarry operations would comply with King County and State of Washington noise limitations contained in King County Ordinance No. 3139 and WAC 173-60." The noise section of the Draft EIS attempted to present the data, results, and conclusions of the five presented noise studies and to determine what noise levels could be expected from the proposed action.

Comment 3: *"The frequency of blasting is relatively low, with a predicted occurrence of twice a week." This statement is utterly irresponsible. From our experiences, we have records to show that the mining company blasted as frequently as six times in an afternoon.*

Response 3: The proposed rate of extraction of rock from the quarry could be accomplished with an estimated blast frequency of two per week. Exceptional demands for rock, such as for flood relief, may require greater blasting frequencies over a short time period. Quarry operators do not deny that more blasts have occurred in the past. These additional blasts, which are significantly smaller (approximately $\frac{1}{4}$ to $\frac{1}{2}$ stick dynamite), are set to dislodge rock material created by the initial blast that would otherwise be hazardous to safe quarry operations, and to reduce large blocks of rock to a workable size.

Comment 4: *The EIS says no positive determination can be made from existing data from the effects on the nearby well. We have a letter from the drillers of this well, R. J. Cannon, that there is definite danger of caving due to the blasts.*

Response 4: R. J. Cannon, in his letter (Exhibit #42), states: "In our opinion there is a strong possibility that extreme shaking of earth could disturb a flowing well to a point where, if a possible cavern has been washed out beneath the pipe, a cave-in could result." No mention of blasting is mentioned. It is doubtful, based on Shannon and Wilson's study that blasting could create extreme earth shaking.

Comment 5: *Limiting hours of business will not be undertaken unless monitored and enforced by the County.*

Response 5: The applicant has proposed business hours from 7 a.m. to 5 p.m. to mitigate the noise impact after 5 p.m. From this operation, the maximum permissible sound levels established by Ordinance 3139 must be reduced to 10 dBA between 10 p.m. and 7 a.m. weekdays. There are no restrictions that limit the operational hours of a business unless it is not in conformance with the designated ordinance.

Comment 6: *Quarry trucks are a serious driving hazard on a narrow two-lane highway with many curves (Preston-Fall City Highway).*

Response 6: According to King County Division of Traffic and Planning, the Preston-Fall City Road can safely accommodate the truck traffic which would be generated by the proposed quarry, and the sight distance and turning movements at the intersection of the A.R. Carmichael Road with the Preston-Fall City Road will be adequate if a 35-foot radius is used at the intersection.

Comment 7: *On page 27 it states ..."presently no litigation pending relating to the legal nonconforming use statute." This is not true as the nonconforming use statute is now on appeal to the State Supreme Court.*

Response 7: This comment is incorporated in the Final EIS as Section C, Additions and Changes to the Final EIS, page 24.

LETTERS OF COMMENT TO THE
JUNE 1977 DRAFT EIS

Comments to the June 1977 Draft EIS

Letters of comment have been received from public agencies and interested parties in response to the Draft EIS of June 1977. Building and Land Development has requested that an amended Draft EIS be prepared and recirculated for public review. These comments raised by public agencies and interested parties have been taken into consideration in the preparation of the revised Draft EIS, issued August 30, 1979. The following list contains the letters received:

U.S. Environmental Protection Agency
Washington State Highway Commission
State Department of Ecology
State Department of Fisheries
State Department of Game
Puget Sound Air Pollution Control Agency
King County Department of Public Works (2 letters)
Fall City Business and Professional Associates
Fall City Chiropractic Center - G. L. Townsend
Parson Bros. - Eamon Parsons
Lewis P. Stephenson
W. E. Lierley
Ellen M. Lierley
Robert M. Bauman
Carol and Chuck Roddewig
Elmer L. Guenther
Olen V. Andrew
Emory Bundy

ERRATA SHEET

ERRATA SHEET

Modifications to the text of the Draft EIS in response to comments are as follows:

Page 4. D. Mitigating Measures, Water

Change Figure III to Figures IVa and IVb.

Page 6. Population/Housing and Community Attitudes

Change second statement to: The presence of the quarry would decrease land values in the area.

Page 18. Existing Conditions

Change first sentence to: When the quarry is not operating, the background noise levels are generally higher than 49 dBA limit established by the noise ordinance (rural source, rural receiving property), because of noise from the Raging River and traffic on the Preston-Fall City Highway.

Page 35. Air, Mitigating Measures

Add the following: Control of air pollution from rock processing equipment shall meet, but not be limited to, prescribed sections of Regulation I (PSAPCA). These include hooding of dust emission points on belts, transfer points and crushers and ducting the collected air to a bag house or water scrubber, or application of a water or chemical mist near emission points.

Appendix D

Noise Studies

1. Noise Investigation, Quarry Operations, Raging River Mining Company; Peter A. Bryesse, October 17-19, 1975 and November 3, 1975.
2. Noise Study of Proposed Quarry Operation at Raging River; Hugh J. Parry, Noise Consulting, January 14, 1975.
3. Noise Level Study, Raging River Quarry, operated by Raging River Mining Company, Preston-Fall City; Donald R. Lehman, King County, May 3, 1976.
4. Noise Investigation, Raging River Mining, Inc.; Peter A. Bryesse, January 29, 1976.
5. Sound Level Survey, Raging River Mining Company; Peter A. Bryesse, October 10, 1977.
6. Raging River Quarry Noise Measurements; Hugh J. Parry, August 8, 1976, with supplements to noise measurements, September 10, 1976.

NOISE INVESTIGATION
QUARRY OPERATION
RAGING RIVER MINING COMPANY

Continuous monitoring of noise was accomplished from 1200 on October 17, 1975 to 1000 on October 19, 1975 and from 0800 to 1530 on November 3, 1975.

The following equipment was utilized:

1. Bruel and Kjaer Microphone amplifier 2603
2. B & K 1 inch condenser microphone with wind screen
3. B & K Statistical Analyzer 4430
4. B & K Level Recorder - 2305
5. B & K Pistonphone (all equipment was periodically calibrated)

The monitoring station (Figure 1) was located approximately 90 feet from the bank of the Raging River and 50 feet from the centerline of the quarry access road.

RESULTS

Noise levels recorded on the strip chart were evaluated on an hourly basis such that for each hour, maximum, minimum and average levels were determined. An attempt was also made to note the number of vehicles passing on the Preston-Fall City Highway and those vehicles passing the monitoring station that utilized the quarry access road.

On October 17, 18, and 19 (Table 1) the minimum noise level (background river noise) was 46 dBA. At no time during the working day, 0800 to 1700, did the average hourly noise levels exceed 54 dBA while the maximum noise level due to vehicles operating on the Preston-Fall City Highway was 73 dBA during the same working period. During 0700 until 1700 on October 18th, all vehicles passing the monitoring station on the quarry road were counted. One hundred and sixteen vehicle passages were noted with the maximum noise levels ranging from 78 to 82 dBA. Most of the high noise levels resulted from vehicles bouncing over the road surface.

During the hours of 0800 through 1530 on November 3, 1975 (Table 2) the hourly noise level averages ranged from 54 to 56 dBA. It is interesting to note that the minimum noise level due to the river was 53 dBA. On the otherhand the maximum noise level was 71 dBA.

A statistical analysis (Table 3) indicated that during the 7.5 hours of monitoring 13.5 minutes exceeded 60 dBA and during 1.5 minutes of that time noise levels ranged between 65 and 70 dBA. There was no measurable time over 70 dBA.

CONCLUSIONS:

As the result of this investigation along with the results of a previous investigation, there is no doubt that the quarry can operate within the Maximum Environmental Noise Levels adopted by the Washington State Department of Ecology (Table 4).

It should be kept in mind that the measurements recorded in this investigation were taken at a distance of approximately 50 feet from the centerline of the quarry road. The nearest house is probably 100 to 150 feet away from the road so that the maximum noise levels at the nearest house resulting from vehicles operating on the quarry access road would be 5 to 8 decibels lower. In any event certain precautions can be taken to lessen the impact of the peak noises. These precautions included:

1. Instruct drivers on procedures for minimizing noise levels while operating on the quarry access road.
2. Improve access road to minimize vehicle bouncing noise.

Furthermore, if after the above mentioned precautions have been carried out and added noise control is deemed necessary, then a barrier or berm can be constructed alongside the access road facing the residences.

Respectfully submitted,

Peter A. Breysse
Peter A. Breysse
Associate Professor

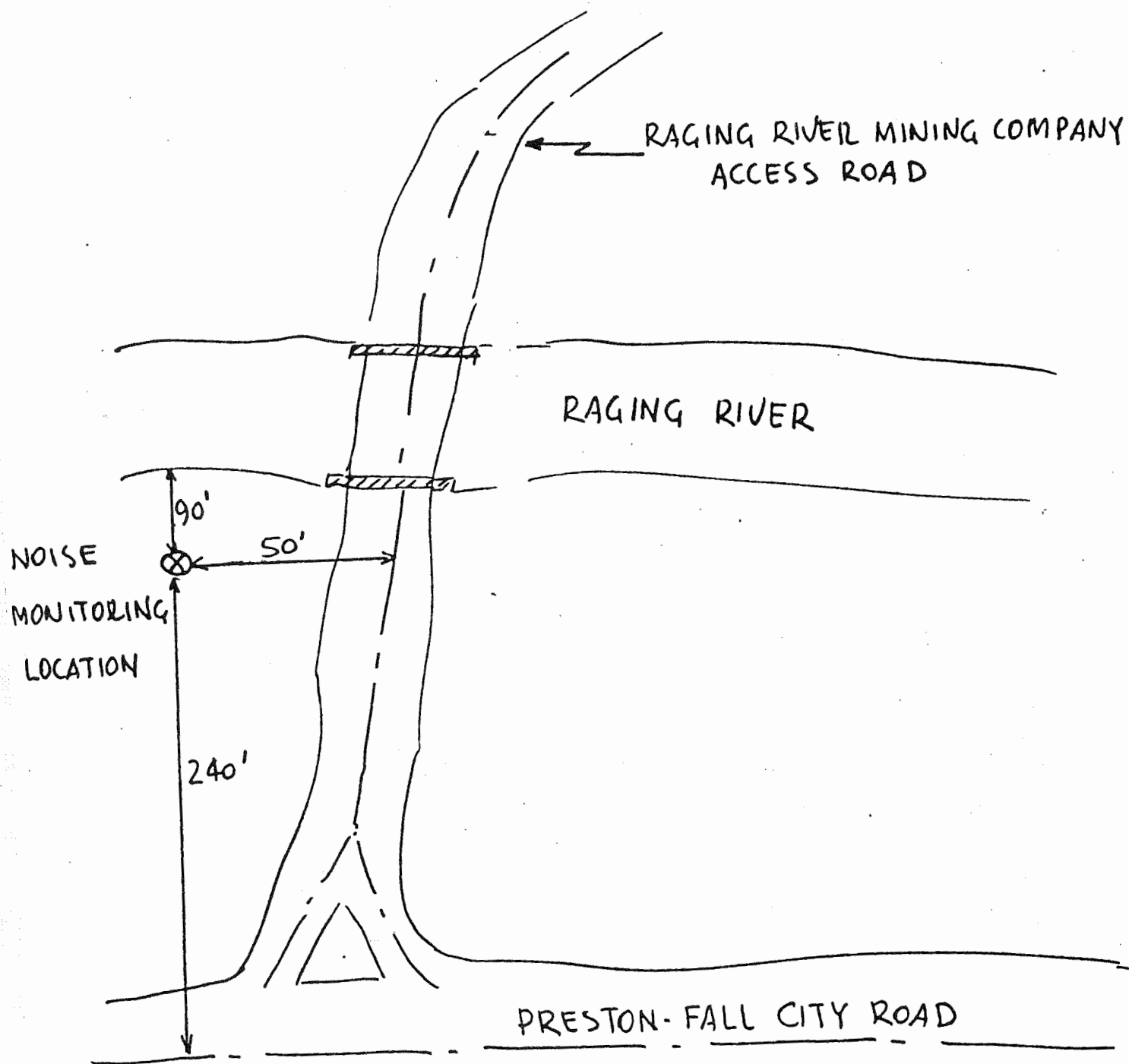


FIGURE 1. LOCATION OF NOISE-MONITORING STATION
RAGING RIVER MINING COMPANY

TABLE 1.

NOISE MEASUREMENTS RAGING RIVER MINING COMPANY

TIME (9-17-75)	SOUND LEVELS MAX.	MIN.	dba AVE.	NO. VEHICLES ON QUARRY ROAD.
1200-1300	73	46	51	
1300-1400	70		53	
1400-1500	69		53	
1500-1600	71		53	
1600-1700	70		51	
1700-1800	78		50	
1800-1900	68		50	
1900-2000	65		50	
2000-2100	66		49	
2100-2200	61		49	
2200-2300	64		48	
2300-2400	62		48	
2400-0100	69		48	
0100-0200	63		47	
0200-0300	62		47	
0300-0400	60		47	
0400-0500	60		47	
0500-0600	70		48	
0600-0700	75		49	
0700-0800	68		51	10
0800-0900	68		54	19
0900-1000	70		54	16
1000-1100	68		54	15

10 } MAX SOUND LEVELS
 19 } RANGED FROM
 16 } 74 to 82 dba.
 15 }

TIME	SOUND LEVELS dBA			NO. VEHICLES	NO. VEHICLES
(3-18-75)	MAX.	MIN.	AVE.	ON HIGHWAY	ON QUARRY ROAD
100-1200	64 (80)	46	53	19	12
1200-1300	71 (75)		49	63	3
1300-1400	64 (82)		54	49	14
1400-1500	68 (80)		53	55	16
1500-1600	65 (80)		50	69	7
1600-1700	70 (80)		50	93	4
1700-1800	69 -		50	88	0
1800-1900	69 (75)		50	83	1
1900-2000	70 (81)		50	70	2
2000-2100	74		49	55	
2100-2200	66		48	47	
2200-2300	64		48	41	
2300-2400	61		48	36	
(9-19-75)					
2400-0100	69		48	25	
0100-0200	62		48	20	
0200-0300	74		47	10	
0300-0400	60		47	10	
0400-0500	68		47	8	
0500-0600	70		48	27	
0600-0700	69		49	83	
0700-0800	67		51	69	
0800-0900	69		52		
0900-1000	70		50		

NOTE: () NOISE LEVELS FROM VEHICLES OPERATING ON QUARRY ROAD.

TABLE 2

NOISE MEASUREMENTS RAGING RIVER MINING COMPANY

TIME (11-3-75)	SOUND LEVELS dBA.			REMARKS.
	MAX.	MIN.	AVE.	
0800-0900	69	53	56	OVERCAST
0900-1000	71	RIVER NOISE ↓	56	SCATTERED SHOWERS
1000-1100	70		56	
1100-1200	67		54	
1200-1300	71		54	
1300-1400	67		55	
1400-1500	70		55	
1500-1530	65		55	

TABLE 3

STATISTICAL DISTRIBUTION ANALYSIS

CHANNEL	dBA RANGE	TIME	
		HOURS	MIN.
1	<40	-	-
2	40-45	-	-
3	45-50	-	-
4	50-55	4	35
5	55-60	2	42
6	60-65	-	12
7	65-70	-	1.5
8	70-75	-	-
9	75-80	-	-
10	80-85	-	-
11	85-90	-	-
12	>90	-	-

TABLE.4 ALLOWABLE NOISE LEVELS DEPARTMENT OF ECOLOGY

MAXIMUM PERMISSIBLE ENVIRONMENTAL NOISE LEVELS.

EDNA OF NOISE SOURCE	EDNA OF RECEIVING PROPERTY.		
	CLASS A dBA	CLASS B dBA	CLASS C dBA
CLASS A (RESIDENTIAL)	55	57	60
CLASS B (COMMERCIAL)	57	60	65
CLASS C (INDUSTRIAL)	60	65	70

EDNA - ENVIRONMENTAL DESIGNATION FOR NOISE ABATEMENT BEING AN AREA OR ZONE WITHIN WHICH MAXIMUM PERMISSIBLE NOISE LEVELS ARE ESTABLISHED.

NOISE LEVELS MAY BE EXCEEDED FOR RECEIVING PROPERTY BY NO MORE THAN

- i. 5 dBA FOR A TOTAL OF 15 MINUTES IN ANY ONE HOUR
- ii. 10 dBA FOR A TOTAL OF 5 MINUTES IN ANY ONE HOUR.
- iii. 15 dBA FOR A TOTAL OF 1.5 MINUTES IN ANY ONE HOUR.

NOISE STUDY
OF
PROPOSED QUARRY OPERATIONS
AT
RAGING RIVER

FOR: Schroeter, Jackson, Goldmark
and Bender

BY: HUGH J. PARRY NOISE CONSULTING
Seattle, Washington 98115

January 14, 1975

. Job 1008

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REFERENCES AND BIBLIOGRAPHY	13

1. INTRODUCTION

A study of the noise from quarrying operations at Raging River has been performed. This study shows that previous studies by and for the Raging River Mining Corporation have been inadequate in defining the impact of quarry noises on nearby residences. A comparison of existing noise levels around the Guenther and Andrew residences with estimates of noise levels from all quarrying operations shows that there will be a substantial increase in ambient noise levels and that Federal and proposed State noise level standards will be exceeded.

The following portions of the report summarize the data that lead to these conclusions.

2. REVIEW OF CASE FILE

Substantial Development Permit, Attachment E - Applicants Environmental Evaluation

Page 4 - Applicant asserts that the proposed development or its use will not increase the existing noise level of the area. In explanation, applicant states that, "A quarry operation must create noise, however --- the effect of the noise will be held to a minimum. Additionally, the rural nature of the site and the lack of population in the area minimize any adverse effects of noise levels."

Comment: The above statements are unclear and misleading. The result is only to say, in effect, a quarry must make noise, but not any more than necessary and since not many people live nearby the effect will be minimum, and hence there will be no noise. The fact is there will be noise, the noise necessary to quarrying, and it will have an effect on the existing noise levels and upon the people living nearby. These facts are demonstrated in the present report sections, "Noise Estimates," and "Criteria."

Exhibit # 05 - Noise Investigation

Comments:

Page 1, Third paragraph: Barrier effect of gravel pile. Noise reduction of a barrier depends critically upon line-of-sight (L/S) distance between source to barrier and depth of break in L/S path created by the barrier. Barrier noise reduction diminishes with increased L/S distance (Ref. 1).

Page 1, Fourth paragraph: Noise levels measured on the riverbank are inappropriate in the present case since homes are located an appreciable distance from the bank. Measurements made by HJPNC on 12-31-74 show that noise levels due to the river are 56 dBA and 50 dBA at side and front, respectively, of O. V. Andrew residence. Also, noise level of the river will change with flow conditions.

Page 1, Fifth paragraph: Statement is in conflict with the table in following paragraph that indicates crusher noise levels would be between 66 and 68 dBA at the river and about 65 dBA at the residences.

Page 2, First paragraph: People do not live on the bank of the river. Their homes are 25 to 75 feet back from the bank and are shielded by the bank itself acting as an acoustic barrier.

Page 2, Second paragraph: Acoustic barrier effect of gravel piles will depend on the height and L/S placement between the crusher and residences. The exact amount is impossible to predict.

Items not accounted for -

1. Effect of 250 foot rock face —
 2. Blasting noise —
 3. Rock drill noise
 4. Truck noise
 5. Bridge and road construction noise
 6. Noise criteria
-

Division of Land Use Management Department of Community and Environmental Development Addendum to Preliminary Report, December 3, 1974 - Public Hearing

Page 4 - E. Technical Committee Findings

13. Noise resulting from the operation of the subject property (crushing, blasting, quarrying) shall not exceed 62 dBA as measured from any point along the Raging River.

Comment: Exhibit #05 states that noise from quarrying crusher operations will be 66 - 68 dBA at 800 feet from the crusher. The nearest point on the river is 700 feet from the initial crusher location where the levels would be about 1 dB higher than at 800 feet or about 67 - 69 dBA. These levels are 5 - 7 dBA higher than the limit set by the above addendum.

Exhibit #07, Letter from Albert E. Teller, President of Explosives International, to Mr. John Preibe of Redmoor Corporation.

Paragraph 3 - "Confined" blasting

Comment: If all explosives are in well packed boreholes, the noise from blasting is probably negligible. However, in the case of a blowout or when using

detonating cord even when covered with several inches of sand or dirt will produce noise levels of 130-140 dBA peak at the nearest residences.

Exhibit #10 -Letter to King County from Raging River Mining, Inc.

Paragraph 3 - Explosives will be used to dislodge rock from the wall and break it into workable size.

Comment: The statement indicates use of explosives not in boreholes. These types of operations are capable of producing 130-140 impulse peaks at the nearest residences.

Paragraph 4 - Operations will use compressors, rock drills and heavy duty deisel trucks (up to 80,000 # gross weight).

Comment: These equipment items will produce noise levels between 73 and 79 dBA at the nearest residences. Rock drills are among the noisiest types of construction equipment. They rank second in level only to pile drivers. (See Figure 1 from U. S. EPA report).

Paragraph 4 - "---, most all noise will be funneled up rather than out."

Comment: This statement would only be true if the operations were located in a deep hole. In fact, the rock face at the base of the operation may act as a corner reflector increasing noise levels by as much as 3 dB due to increased directivity.

Exhibit # 12, "Vibration Damage"

Page 54 - Human Response

Paragraph 4 - "---- the average person can feel vibrations from one-hundredth to one-thousandth of the magnitude required to damage homes; hence it is not difficult to understand the concern of individuals when they can "feel" the vibration. ----"

Comment: The statement confirms the annoyance aspect of blasting operations.

Exhibit # 06, Letter from Albert E. Tiller to Mr. John Priebe.

Paragraph 3 - "----. There is no reason to fire unconfined charges in your quarry."

Comment: Statement contradicts Exhibit #07 statements by Mr. Teller that, "Some use of detonating cord will be used, but any surface work will be covered with layers of dirt to eliminate the noise of detonation." Further, tests by New York State Department of Transportation show limited noise reduction by use of dirt coverings with resulting peak levels of up to 142 dB at 200 feet. These are equivalent to 130 dBA peak at the nearest residences.

3. NOISE CRITERIA

U. S. Department of Housing and Urban Development (Circular 1390.2) "External Noise Exposure Standards for New Construction"

UNACCEPTABLE	NORMALLY UNACCEPTABLE
Exceeds 80 dBA 60 minutes/24 hours or Exceeds 75 dBA, 8 hours/24 hours (Exceptions are strongly discouraged and require a 102(2)C environmental statement and the Secretary's approval.)	Exceeds 65 dBA, 8 hours/24 hours or Loud repetitive sounds on site. (Approvals require noise attenuation measures, the Regional Administrator's concurrence and a 102(2)C environmental statement.)

U. S. Environmental Protection Agency - Region X, "Environmental Impact Guidelines," April 1973

Page 32 - c. Permissible Increase

"--- the degree of annoyance experienced from intrusive sounds depends upon the noise level increase above pre-existing levels as well as upon the existing levels.----

"Some consideration should be given to additional abatement measures or alternate routing or compensation if the range increase is 5 - 10 dBA. If the increase is over 10 dBA, the impact is considered serious and warrants close attention."

Pages D30 - 31: "--- widespread complaints may be expected when the normalized value of the outdoor day-night sound level of the intruding noise exceeds the ambient noise by approximately 5 dB, and vigorous community reaction may be expected when the excess approaches 20 dB. ---"

Comment: The applicable corrections to obtain normalized outdoor day-night sound level values alone total 15 dB; i.e., Quite suburban or rural community (remote from large cities and from industrial activity and trucking), + 10 dB; No prior experience with the intruding noise, + 5 dB.

State of Washington, "Proposed Maximum Environmental Noise Levels"

Environmental Designation of Source	Residential Maximum Noise Levels (dBA)
AA, A (Quiet & Residential Areas)	60
C (Industrial Areas)	55

Article entitled, "Sound Pollution," in Quotation from "Occupational Health Newsletter," Vol. 19, Nos. 1, 2, 3, Jan., Feb., Mar., 1971 (Edited by Peter A. Breysse)

Page 3, Paragraph 5 - "Equally as important and very likely more important than the physical effects are the possible psychological effects. Psychological reactions, similar to physical responses, involve a multiplicity of factors which vary with the characteristics of the sound -- its intensity, frequency, intermittency -- as well as the inappropriateness of the stimulus, interference with speech communications, and the unexpectedness of the noise. The type of noise, rather than the intensity, is

usually the deciding factor in influencing emotional reactions. A sudden scream, a grating piece of chalk, and a dripping faucet -- all involve different yet characteristic emotional responses. Unfortunately, our knowledge has not yet reached the point where the complaint threshold associated with a given noise stimulus can be predicted with any degree of reliability; the variations of human responses are simply too great. Furthermore, we are totally ignorant of the overall long-term effects to our physical and psychological well-being from these continued annoyances."

4. EXISTING (MEASURED) NOISE LEVELS AT RAGING RIVER

Site	Location	Noise Source	Noise Level (dBA)
Andrew Residence	45' from River Edge at side of house	River	56
Andrew Residence	Front of house	River	50
Andrew Residence	15' from river	River	63
Guenther Residence	15' from river	River	64
Bridge	Riverbank	River	65

5. NOISE SOURCE ESTIMATES FOR QUARRY AND CONSTRUCTION OPERATIONS

- A. Truck Noise (@ 50 ft): Reference 2 shows that 96 percent of all trucks over 26,000 pounds are deisel. Six-axle weight limit in Washington is 36,000 pounds. The 80,000 pound load limit for quarry trucks mentioned in Exhibit # 11 must be for Class 9 or 10 (six-axle truck + trailer).

Range of deisel truck noises - 78 to 92 dBA (@ 50')

Mean of deisel truck noises - 84.7 dBA (@ 50')

Therefore, truck noise at the nearest residence (200') = $85 - 6 = 79$ DBA
(25 round trip operations per day).

B. Construction Noise (all pertinent equipment on site)

	<u>Leq (dBA) @ 50'</u>	<u>Leq (dBA) @ 200'</u> (nearest residence)
Ground Clearing	84	78
Excavation	88	82
Foundations	88	82
Erection	79	73

(See Table I-a from Reference 4)

C. Rock Drills

80 - 98 DBA @ 50' (from Reference 4). Levels at nearest residence (850')
will be 55 - 73 dBA.

D. Blasting Noise

From Reference 8: Peak noise levels from primacord or dynamite blowouts
range from 140 - 150 dBC @ 200'. Reference 6 shows that $\text{dBA} \approx \text{dBC} - 5$ for
impulses. Therefore @ 800', blowouts $\approx 130 - 140$ dBA (nearest residence).

E. Rock Crusher Noise

Estimated crusher noise level at residences = 65 - 66 dBA based on Exhibit
05 data and private communication from the State of Washington, Department
of Ecology staff.

6. DISCUSSION

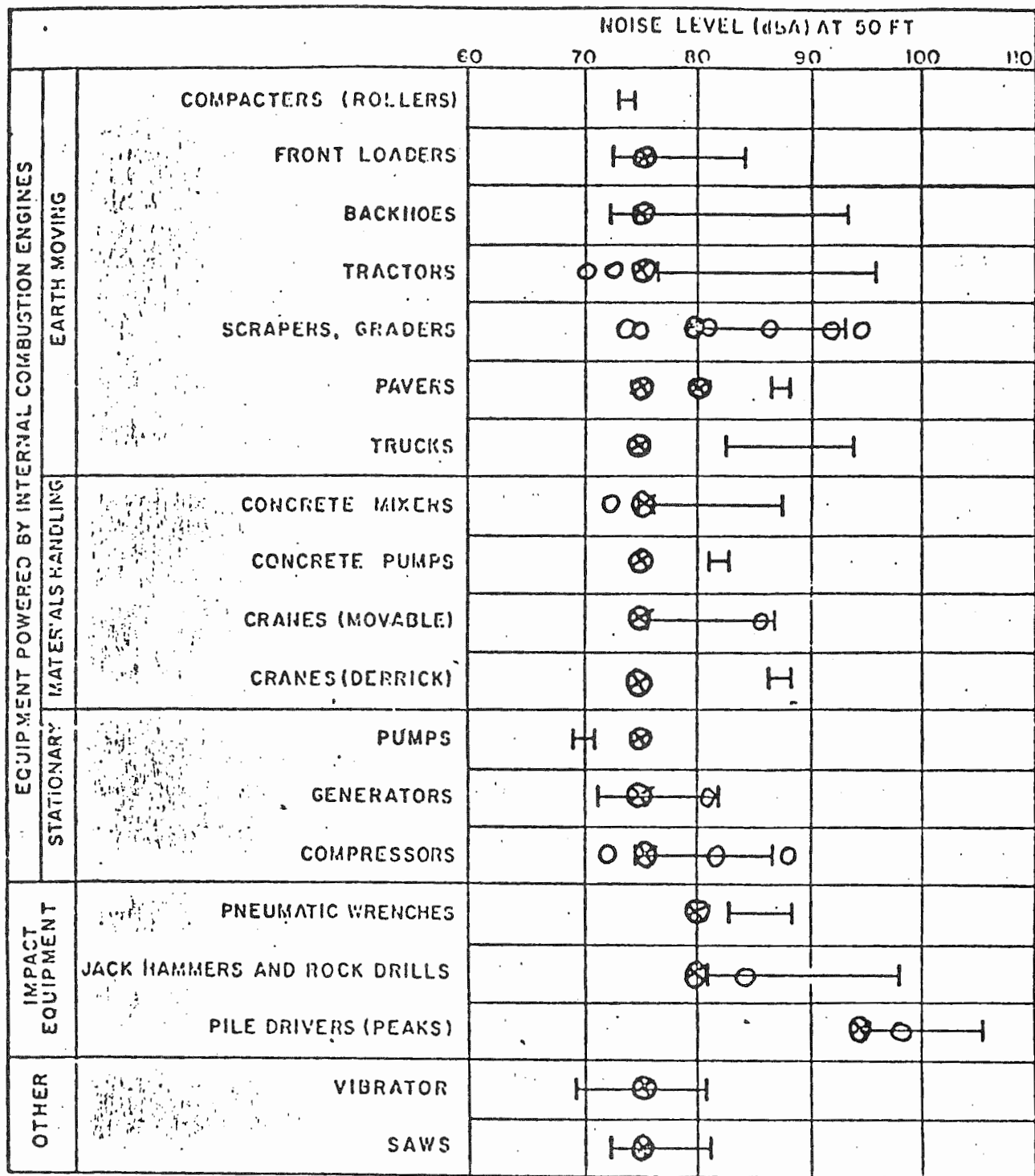
Review of the case file discloses several inherent self-contradicting statements. It is believed that these significantly reduce the credibility of the contention that existing ambient noise levels will not be affected. The noise studies performed for the application are vague as to the implications of quarrying noises and fail to address noises from construction, transportation and blasting and drilling operations.

The exhibits fail to cite any noise criteria. Federal and proposed State as well as published literature indicate that all of these criteria would be seriously exceeded by the quarrying operations.

Existing noise levels around the nearest residences are now between 50 and 56 dBA, whereas the 63 - 65 dBA levels exist only within 15 feet of the river bank. This rapid drop in levels is due to shielding from the bank and from natural sound spreading losses. The latter depend on the ratio of distances between two points. Thus, the level at 60 feet from a source is 12 dB lower than at 15 feet from the source, whereas the level at 800 feet is only about 1 dB lower than at 700 feet. This means that river noise changes much more than would distant quarry noise at places near the river.

7. CONCLUSION

Quarrying operations at the proposed Raging River site would create construction, transportation, blasting, drilling, and rock crushing noises that would be audible at the nearest residences near the Raging River and would violate Federal and proposed State standards as well as published data on the effects of noise on humans.



Note: Based on Limited Available Data Samples

○ - MEASURED AT LOCAL SITES

⊗ - GSA 1975 LIMIT

FIG. 1. CONSTRUCTION EQUIPMENT NOISE RANGES.

From "Noise from Construction Equipment and Operations," U. S. EPA Report number NTID 300.1, 12-31-71

TABLE I-a. TYPICAL RANGES OF NOISE LEVELS AT CONSTRUCTION SITES WITH A
50 dB(A) AMBIENT TYPICAL OF SUBURBAN RESIDENTIAL AREAS

	Domestic Housing		Office Building, Hotel, Hospital School, Public Works		Industrial Parking Garage, Religious, Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches		
	I	II	I	II	I	II	I	II	
Ground Clearing	83 8 103	83 15 122	84 7 101	84 16 123	84 9 106	83 16 124	84 8 103	84 8 104	Energy Average dB(A) Standard Deviation NPL
Excavation	88 8 109	75 14 111	89 6 105	79 2 85	89 6 105	71 2 77	88 7 106	78 3 86	Energy Average dB(A) Standard Deviation NPL
Foundations	81 10 107	81 17 124	78 3 84	78 3 86	77 4 87	77 5 90	88 8 108	88 8 108	Energy Average dB(A) Standard Deviation NPL
Erection	81 10 107	65 9 87	87 6 99	75 2 79	84 9 107	72 7 91	79 9 103	78 11 108	Energy Average dB(A) Standard Deviation NPL
Finishing	88 7 106	72 12 104	89 7 107	75 8 97	89 7 105	74 10 100	84 7 101	84 8 104	Energy Average dB(A) Standard Deviation NPL

I - All pertinent equipment present at site.

II - Minimum required equipment present at site.

From "Noise from Construction Equipment and Operations," U. S. EPA Report No. NTID 300.1, 12-31-71

REFERENCES AND BIBLIOGRAPHY

1. "Model Studies of Acoustic Barriers," James E. Masiak, Masters Thesis, MIT Department of Mechanical Engineering, August 1973.
2. "Transportation Equipment Noise Controls," Environmental Protection Agency, Proposed Standards for Medium and Heavy Duty Trucks, Federal Register, Wed., October 30, 1974.
3. "Highway Noise - A Design Guide for Highway Engineers," Highway Research Board Report No. 117.
4. "Noise from Construction Equipment and Operations," U. S. Environmental Protection Agency Report No. NTID 300.1, 12-31-71.
5. "Fundamentals and Abatement of Highway Traffic Noise," Federal Highway Administration Report No. PB-222 703, June 1973.
6. J. E. Mabry and H. J. Parry, "The Effect of Simulated Sonic Boom Rise Time and Overpressure on Electroencephalograph Waveforms and Disturbance Judgments," Department of Transportation Report No. FAA-RD-73-115, July 1973.
7. Viksne, A., "Measurement and Reduction of Noise from Detonating Cord Used in Quarry Blasting," Bureau of Mines RI 7678, 1972.
8. David E. Suuronen, "Noise Measurement from Dynamite Blasting," Proceedings of Inter-Noise 74, Washington, D. C., September-October 1974.

RECEIVED
KING COUNTY ZONING &
SUBDIVISION EXAMINER

MAY 5 1976

A.M. 7 8 9 10 11 12 1 2 3 4 5 P.M. 6

NOISE LEVEL STUDY

RAGING RIVER QUARRY
OPERATED BY
RAGING RIVER MINING COMPANY
PRESTON-FALL CITY

May 3, 1976

344-4100
Donald R. Lehman, Manager
Certified Safety Professional

344 4006
Boeing Field
2nd Floor -
Terminal 1, Bldg



KING COUNTY

SAFETY & WORKMAN'S COMPENSATION MEMORANDUM

To: Bruce C. Laing, Examiner, Zoning

Date: May 3, 1976, 19

From: Donald R. Lehman, Manager

Subject: Noise Evaluation, Raging River Quarry, Preston-Fall City Road

At your request an evaluation of existing quarry noise levels was made to determine the noise intrusion impact the operation has on surrounding multi-zoned properties with consideration for the additional noise impact to be expected through increased activity if a zoning change is approved.

Equipment used during testing included:

- (1) Bruel and Kjoer, type 2209, Impulse Sound Level Meter with a type 2306 B-K Level Recorder (logarithmic Potentiometer) 50 dB adjustable range with wind screen.
- (2) Bendix Sound Level Meter SLP-21, range 25-130 dB (ABC scales).
- (3) Dwyer wind meter.

NOTE: The sound level meters used during testing were calibrated prior to use and were re-calibrated several times during pressure reading procedures to ensure accuracy of data collected.

- All records were taken under cloudy conditions with winds recording less than 5 mph. Sampling was terminated with onset of rain except for sampling continued from the Andrews property after a sprinkling type rain started.

Quarry operators, John Priebe and Dennis Dougherty offered their cooperation by allowing me to take readings 50 feet from various quarry equipment. Results were as listed:

OPERATING EQUIPMENT AT 50 FEET

Loader, front end, articulating (Model 998 caterpillar)	84 dBA
Crusher, rock	85 dBA
Rock Screen, Hewitt-Robins	85 dBA
P and A Grappler loader	78 dBA
6-wheeler dump truck, diesel (empty)	86 dBA

ADDITIONAL DATA COLLECTED

- (1) Ambient river sound levels 2 feet from water edge produces a steady 67 dBA, masking almost all quarry sound. Readings were taken on SE property 10 feet from the bridge. Ambient river levels produced 53 dBA on SE property (Gunther property). Ambient river levels 30 feet inside SE property on lot #34 produced a steady 54 dBA.
- (2) The front end loader operating inside the quarry produced 54 dBA 90 feet inside SE property (on lot #28).
- (3) Loaded double-axle dump truck leaving the quarry produces 89 dBA on the edge of SE property situated parallel to the Carmichael Road. It should also be noted that trucks take 47 second to travel from the

To: Bruce Laing
From: Donald R. Lehman

Page 2
May 3, 1976

bridge over Carmichael Road until they enter the Preston-Fall City Road. Generally, 6 seconds are consumed while trucks wait to enter the Preston-Fall City Road after stopping for the stop sign. Empty trucks into the quarry produce an average of 86 dBA from the same position.

- (4) According to Mr. Priebe, the average truck traffic will be approximately 50 round trips per day. Truck trips in the past have ranged from 25 to 115 round trips into the quarry per day.
- (5) A bulldozer pushing rock off the face of the quarry produced 63 dBA at a position 100 feet inside the quarry parallel to the SE property.
- (6) For information, a jet aircraft flying high overhead produced 70 dBA on SE property.
- (7) Readings were taken at the northwest corner of the Andrews home while machinery was operating in the quarry. Levels were 3-4 dBA less at this position than the 59 dBA observed on the Gunther property April 23, 1976.
- (8) The U.S. Environmental Protection Agency "Environmental Noise Standards" are informational only and may be used as a guide by state or local noise abatement activities. The EPA insists the guidelines are not to be interpreted as a requirement established on the Federal level. The "rules" therefore do not apply in this case.
- (9) WAC 173-60, effective September 1, 1975, administered by Washington State, Department of Ecology (DOE) entitled Maximum Environmental Noise Levels is the predominant code applying in this case. Several important requirements pertaining to the quarry operation which effects residential properties are listed and will be referred to in the summation of this report:

DEFINITIONS:

EDNA: Environmental Designation for Noise Abatement.

Class A Property: Land where humans reside and sleep.

Class B Property: Commercial, recreation, entertainment.

Class C Property: Industrial.

EDNA OF NOISE SOURCEEDNA OF RECEIVING PROPERTY

	CLASS A	CLASS B	CLASS C
CLASS A	55 dBA	57 dBA	60 dBA
CLASS B	57	60	65
CLASS C	60	65	70

NOTE: At any hour day or night limits for A or B may not be exceeded for receiving property by more than:

- (A) 5 dBA for a total of 15 minutes in any one hour period; or
- (B) 10 dBA for 5 minutes in any one hour, or
- (C) 15 dBA for 1.5 minutes in any one hour.

EXPLANATION:

- (1) A Class C property (Industrial) defined as noise source may not exceed 60 dBA to a Class A receiving property except for durations as listed in (a), (b), and (c) above.
- (2) A Class B property (Commercial) defined as the noise source may not exceed 57 dBA to a Class A, 60 dBA to a Class B, and 65 dBA to a Class C, etc. except as noted in (a), (b) and (c) above.

WAC 173-60-050 EXEMPTIONS (7:00 a.m. - 10:00 p.m.)

- (A) Sound caused by maintenance.
- (B) Sound caused by blasting.
- (C) Others, and
- (D) Motor Vehicle noise regulated by WAC 173-62, operating on a public highway and motor vehicles operating off public highways except where sound is received by Class A EDNA's (residential properties).

NOTE: A public highway is defined as a right of way of any "way" maintained by state, county or city (WAC 173-62-010).

- (10) King County proposed Ordinance No. 75-566 entitled "An Ordinance relating to Noise Control: providing for administration, defining offenses and prescribing penalties should be considered in this matter. Section 5 (e) limits sound intrusion into a residential district to 57 dBA if the sound source is a commercial property and 60 dBA if the source is an Industrial property. Section 6 (B) may create greater limitations than the EPA standard and certainly Section 6 (a) will have heavy impact on the weekend operation of the quarry because of the 10 dBA reduction over weekday allowable levels.

SUMMARY

- 1. Sound intrusion into Class SE (Class A EDNA) residential properties measure 86 dBA caused by unloading trucks travelling Carmichael Road into the quarry. On the trip out, sound levels measure 89 dBA. Measurements were taken on both the Merz property (lot #28) and the Russell property (lot #26). Both parcels are classified as SE residential (Class A EDNA).

To: Bruce Laing
From: Donald R. Lehman

SUMMARY (Continued)

2. At the height of the operation approximately 150 trucks may run in and out of the quarry in one day. 150 trips with an average of 87 dBA X 41 seconds X 2 ways = 12,300 seconds (3.42 hours) per day with noise intrusion into SE property in excess of 86 dBA alongside the Carmichael Road.
3. The Carmichael Road does not meet the definition of a Public Highway since it is not maintained by State, County or a municipality and therefore does not enjoy the higher allowable sound levels listed in WAC 173-62 "Motor Vehicle Noise Performance Standards."
4. Since the Carmichael Road is not classified as a public highway as defined, then it must be classified as either an FR (Forest-Recreation) or an SE (Residential) property as was pointed out by Richard Elliott, Deputy Prosecutor in his report dated October 30, 1975.

Sound levels intruding onto a residential property from an industrial property may not exceed 60 dBA except for an additional 15 dBA during 1½ minutes of any given hour.

CONCLUSION

1. Truck traffic will introduce an average of 87 dBA onto SE residential (Class A EDNA) properties bordering the Carmichael Road for up to 3.42 hours per day. Maximum allowable noise intrusion at peak is 75 dBA for not longer than 1½ minutes in any one hour or 12 minutes during a regular 8-hour working day.
2. Birms will not effectively reduce the levels to an acceptable pressure.
3. The present quarry sound levels intruding into SE residential properties are at the maximum levels allowed.

RECOMMENDATIONS

The request for reclassification should be denied based upon excessive sound intrusion onto residential properties caused by truck traffic passing through SE land via the Carmichael Road. Anticipated levels will be 1700% greater in duration and at least 10 dBA higher than the highest intermittent peaks allowed under present state law.

DRL/lm



NOISE INVESTIGATION

RAGING RIVER MINING INC.

At the request of John Priebe, Raging River Mining Inc., an investigation (May 15, 1975) was conducted to determine noise levels associated with operating large trucks to and from the quarry site at Raging River.

Instruments:

B & K Precision Sound Level Meter Type 2204 with
wind screen

General Radio Sound Level Meter Type 1565 with
wind screen

Both meters were calibrated before and after this
survey utilizing a B & K pistonphone

Noise Measurement - Redmond Sand and Gravel Co.

One of the proposals that was presented at the last hearing to provide protection from noise of passing trucks was to locate a berm 8 to 10 feet high alongside the road facing the homes. A question was raised regarding the effectiveness of such a barrier.

In order to determine the value of such a berm a pile of gravel approximately 8 feet high (see photos) was located at the Redmond Sand and Gravel Company (Figure 1). The following vehicles:-

Truck	Load
A - 1974 Kenworth (10 wheeler - 10 yards)	76,100#
B - 1970 Kenworth (10 wheeler - 10 yards)	78,500#

were utilized to run back and forth past the berm while noise measurements were conducted at two locations.

Results (Table I) indicated that at 50 feet from the center of the road Truck A reached 77 to 80 dBA while accelerating to 15 MPH and 73 to 75 dBA while cruising at 12 MPH. Truck B cruising at 12 MPH reached 76 to 77 dBA.

At 50 feet from the berm while passing in back of the berm Truck A resulted in noise levels of 55 to 58 dBA and Truck B 65 dBA. At 125 feet in front of the berm Truck A reached 54 dBA and Truck B 61 dBA.

Noise Measurements - Raging River Quarry

At the quarry, noise measurements were taken at two locations (Figure 2) closely approximating the location of the nearest residence on the other side of the quarry access road.

Results (Table 2) indicated that at 140 feet from the center of the road and 75 feet from the river bank (location Y) noise levels from the passing unloaded trucks ranged from 60 to 65 dBA and at location X66 to 67 dBA.

On the other hand the same trucks loaded while leaving the area resulted in noise levels ranging from 64 to 71 dBA at location X and 55 to 65 dBA at location Y.

Vehicles passing on the Preston-Fall City Highway resulted in noise levels at location Y of 56, 63, and 65 dBA. The background level at this location was 54 dBA.

A D-8 tractor while operating at the quarry resulted in a 2 dB increase at location X over background of 56 dBA.

Noise levels resulting from the operation of a rock drill on top of the cliff produced 80 dBA 75 feet from the drill and 50 dBA at the quarry level.

Conclusions

Traffic noise from vehicles passing on the highway already result in noise levels at some of the residences in excess of 60 dBA. If results during this investigation can be considered as representing typical vehicle operations then with the 8 to 10 feet berm the addition of 75 trucks entering and leaving the quarry per day will not likely produce any appreciable increased noise impact on the residences in the area.

Peter G. Brunse

TABLE 2. NOISE LEVELS - QUARRY
RAGING RIVER MINING INC.

I. TRUCKS UNLOADED - ENTRY ROAD TO QUARRY

TRUCK	LOCATION	X	Y
A		66-67 dBA	60-65 dBA
B		65-67 dBA	60-65 dBA

II. TRUCKS LOADED - ENTRY ROAD - LEAVING.

TRUCK	LOCATION	X	Y
A - 72,000#		64-70 dBA	55-65 dBA
B - 65,000#		65-71 dBA	55-66 dBA

III. TRUCKS PASSING ON HIGHWAY ~ 45 MPH

TRUCK	LOCATION	X	Y
A		67	66
B		76	

IV. VEHICLES PASSING ON HIGHWAY - LOCATION ■ Y

CAR 56 dBA
TRUCK 63 dBA
TRUCK 64 dBA
BACKGROUND 54 dBA

V. D-8 TRACTOR - OPERATING IN QUARRY - LOCATION X

TRACTOR OPERATING - 58-59 dBA
TRACTOR NOT OPERATING (LUNCH) 57 dBA

VI. ROCK DRILL

TOP OF CLIFF - 75' FROM DRILL 80 dBA
BOTTOM OF QUARRY 50 dBA

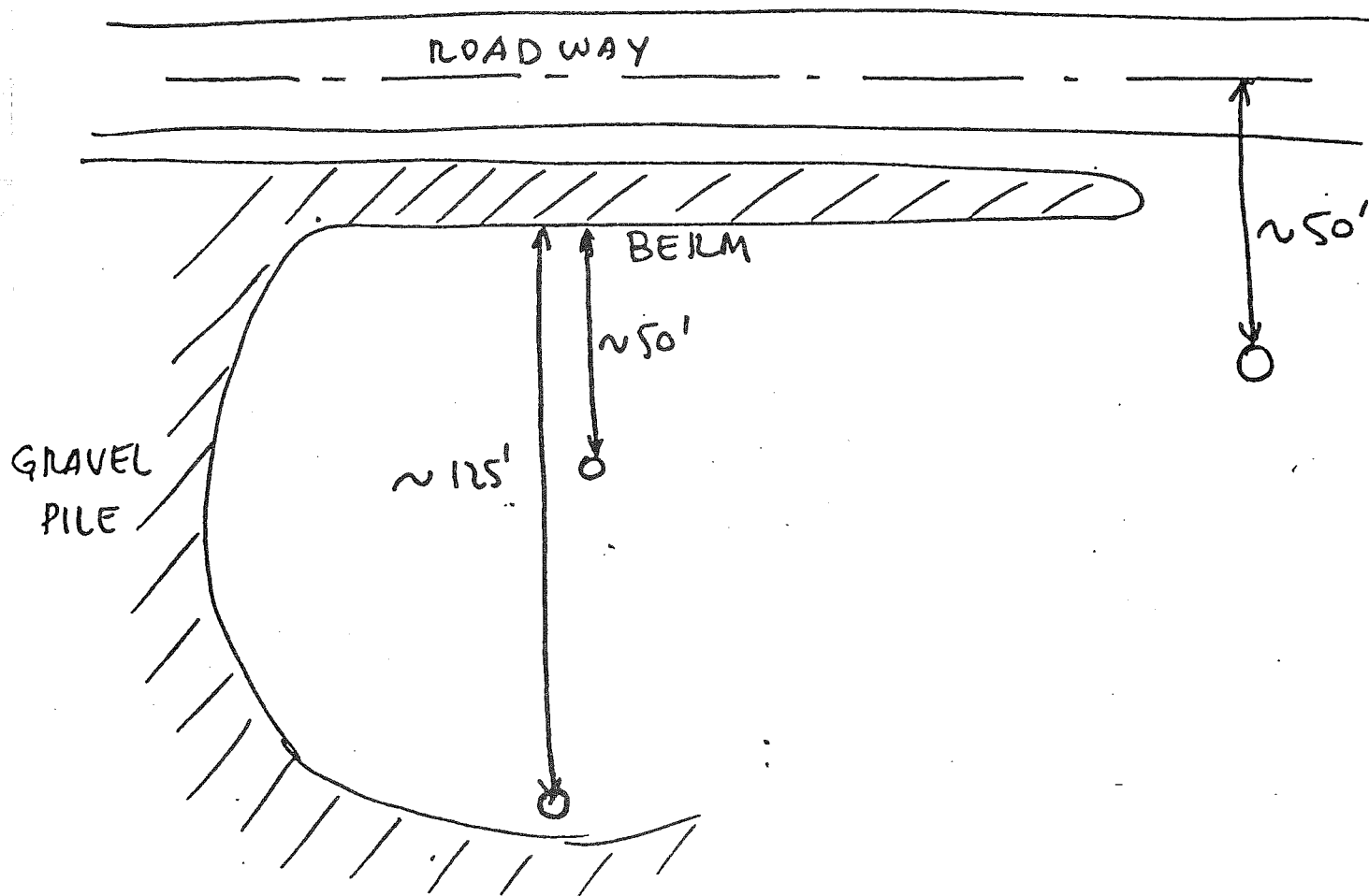


FIGURE 1. LOCATION OF SAMPLING POINTS
REDMOND SAND AND GRAVEL CO.
(RAGING RIVER MINING INC)

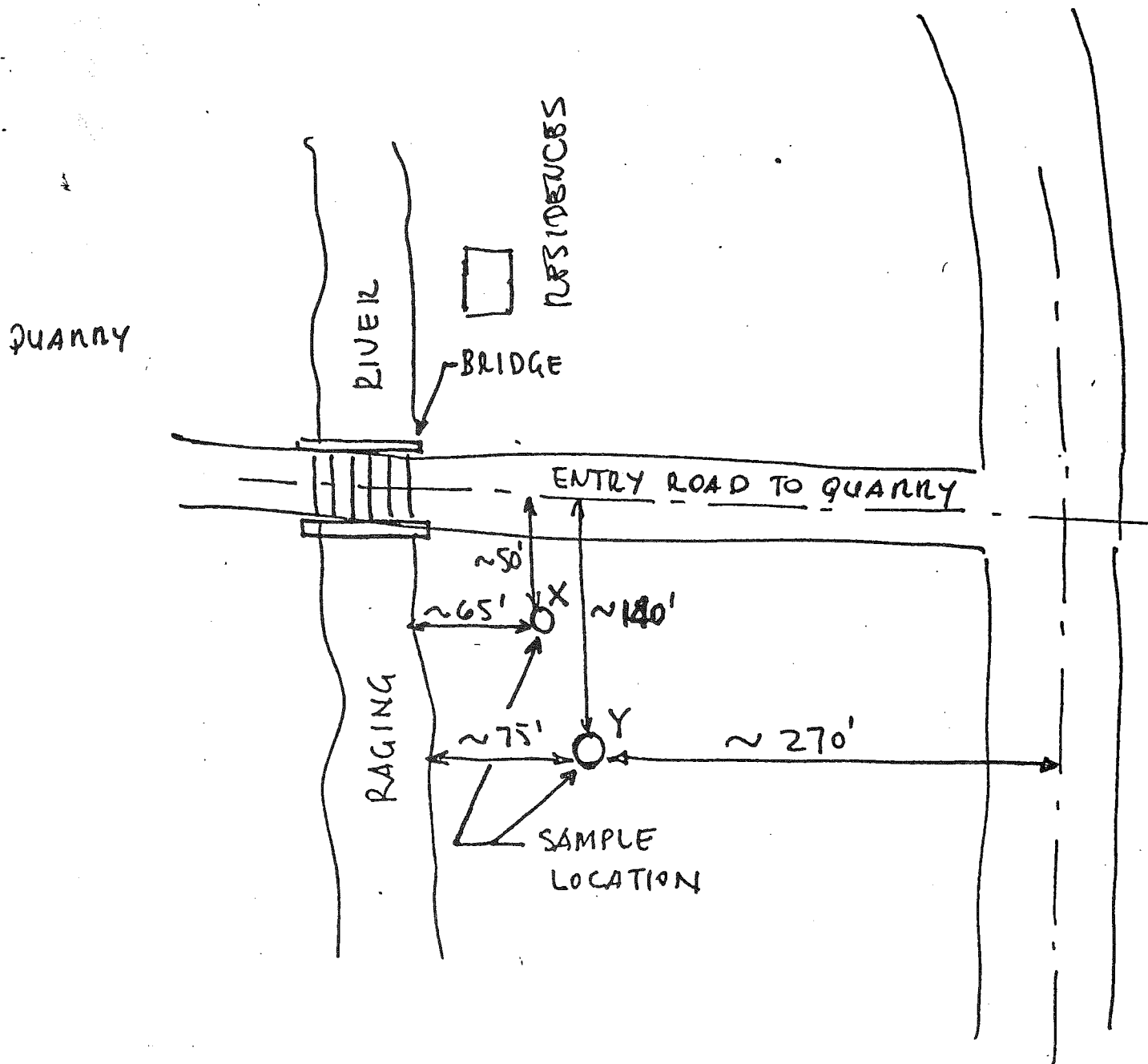


FIGURE 2. SAMPLE LOCATIONS- QUARRY
(RAGING RIVER MINING INC.)

TABLE 1.

NOISE LEVELS REDMOND SAND AND GRAVEL CO. (RAGING RIVER MINING INC.)

I 50 FT. FROM CENTER OF ROAD - NO BERM - TRUCKS LOADED

TRUCK A ~ 16 MPH (ACCELERATING)	77-80 dBA
A ~ 12 MPH	73-75 dBA
B ~ 12 MPH	76-77 dBA

II. 50 FT. FROM BERM - EXHAUST OPPOSITE SIDE - TRUCKS LOADED

TRUCK	APPROACH	BEHIND BERM
A	-	55-56 dBA
A	65 dBA	58 dBA
B	72 dBA	65 dBA
B	70 dBA	65 dBA

III 125' FROM BERM - EXHAUST OPPOSITE SIDE - TRUCKS LOADED

TRUCK	BEHIND BERM
A	53
A	54
B	60
B	61

IV 50 AND 125' FROM BERM - EXHAUST FACING BERM - TRUCKS UNLOAD

TRUCK A	63-68 dBA (50')	60-63 dBA (125')
B	65-70 dBA (50')	62-66 dBA (125')

V. LOADER OPERATING. LOADING TRUCK
15 to 70 FT 68-87 dBA.

Sound Level Survey

RAGING RIVING MINING COMPANY

At the request of Mr. Priebe a sound level investigation was conducted at the Raging River Mining site.

Sound levels were determined utilizing a Bruel and Kjaer Type 4426. This instrument was calibrated before and after the investigation. The instrument was set to respond every 0.1 secs for a predetermined period of time. When sound levels for individual vehicles were determined, the instrument, for uncoming vehicles, was started when the truck entered the access road from the highway and was stopped when the vehicles reached the loading site; for trucks leaving, the sound level monitor was started when the vehicles left the weigh station and was halted when the vehicles were approximately 200 feet along the highway.

Except for the measurements conducted during lunch, the following equipment was operating:

1. D-8 Cat. - pushing rock over face
2. 988 Loader - dump rock over side
3. 966 Loader - feed crusher, load trucks
4. P & H Grapple - breaking rockery rock, load trucks
5. Crusher - making rock
6. Misc. dump trucks

Three locations were selected to make the measurements. (Figure 1):

1. Fifty feet from the centerline of the access road and at the right-of-way marker.
2. Fifty feet from the centerline of the river directly opposite the Gunther home.
3. Two hundred feet from the highway and 50 feet from the center of the access road. Note at this location the microphone was placed 10 feet above the ground since the sample site was lower than the surface of the road.

Raging River Mining Company

Results:Location 1

A series of 3 samples were collected from 10:20 am to 11:00 am. During the initial measurement (Table 1) three trucks passed the sample site and one aircraft overhead was noted. Sound levels ranged from 58 dBA to 74 dBA with 87% of the time sound levels being 60 dBA and less.

From 10:30 to 10:46 (Table 2) the sound levels ranged from 46 dBA to 84 dBA. During this sample period a lowboy truck entered the property to remove a piece of heavy equipment. The horn from this vehicle reached 84 dBA. Three other trucks and one aircraft were noted.

A third sample from 10:50 to 11:00 am was determined (Table 3). During this period sound levels ranged from 56 dBA to 74 dBA.

Location 2

At 11:15 a ten minute sample indicated a range of sound levels from 54 dBA to 62 dBA. Two trucks left the site during this period. During the lunch period with all of the equipment idle two five minute samples were collected. For the first 5 minute sample noise levels from 46 dBA to 58 dBA were determined. During the second sample period sound levels were a steady 56 dBA. These lunch time measurements were indicative of background sound levels resulting from the river.

Location 3

Tables 5 and 6 are results associated with the operation of the various trucks. For incoming vehicles from the time they either stopped or slowed down to enter the access road until they reached the loading site took on the average one minute (two vehicles A and E), Vehicle C was not included in this determination.

Raging River Mining Company

The average time of traverse from the weigh station to 200 feet along the highway for four vehicles (B, D, F, G) was also one minute.

The highest sound level measured resulted from truck C, a county truck, and was 80 dBA.

The average L_{10} for the two incoming trucks was 69.5 dBA and the average L_{10} for the vehicles leaving the site was 69.4 dBA. The L_N signifies that N% of the time the sound levels will be greater than the N value.

During the sampling period at location 3 the D-8 was operating at the face approximately 1/2 the way up. Sound levels (Table 7) during this period ranged from under 46 dBA to 70 dBA. With the D-8 operating back from the face the sound levels ranged from 52 to 58 dBA.

In order to obtain a background sound level at this location all of the operating equipment was halted for 10 minutes. During this period sound levels ranged from 46 dBA to 62 dBA. Unfortunately a motorcycle was operating on a lot directly across the highway from the access road when these measurements were obtained.

Discussion:

Sound levels determined at location 3 best represents the potential sound impact on the adjacent properties. The major source of sound at this location is the various vehicles utilizing the access road. The maximum noise levels from the seven vehicles passing station 3 was 80 dBA with the highest L_{10} being 75.8 dBA.

Once again reviewing past reports along with the results from this investigation it can be concluded that all of the quarry operations are within the present State and County noise standards.

If the access road is considered public then the only regulation that must be followed deals with noise levels emitted from the vehicles measured at 50 feet

Raging River Mining Company

from the center of the lane of travel according to the following criteria:

	<u>Under 35 MPH</u>	<u>Over 35 MPH</u>
Vehicles over 10,000 #	87 dBA	90 dBA
All others	77 dBA	

No difficulty in meeting the above regulation should be encountered.

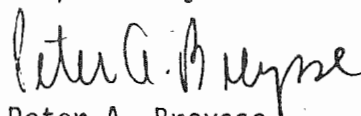
If the access road is considered a private road then the following standard is appropriate:

	<u>Nearest Property Line</u>
Rural to rural	49 dBA
15 min/hr.	54 dBA
5 min/hr.	59 dBA
1.5 min/hr.	64 dBA

As a private road controls would be necessary and would include:

1. Instruct drivers on procedures for minimizing noise levels while operating on the quarry access road.
2. Improve access road to minimize vehicle bouncing noise.
3. Construct a noise barrier or berm alongside the access road facing the residences (from Fall City Highway to river).

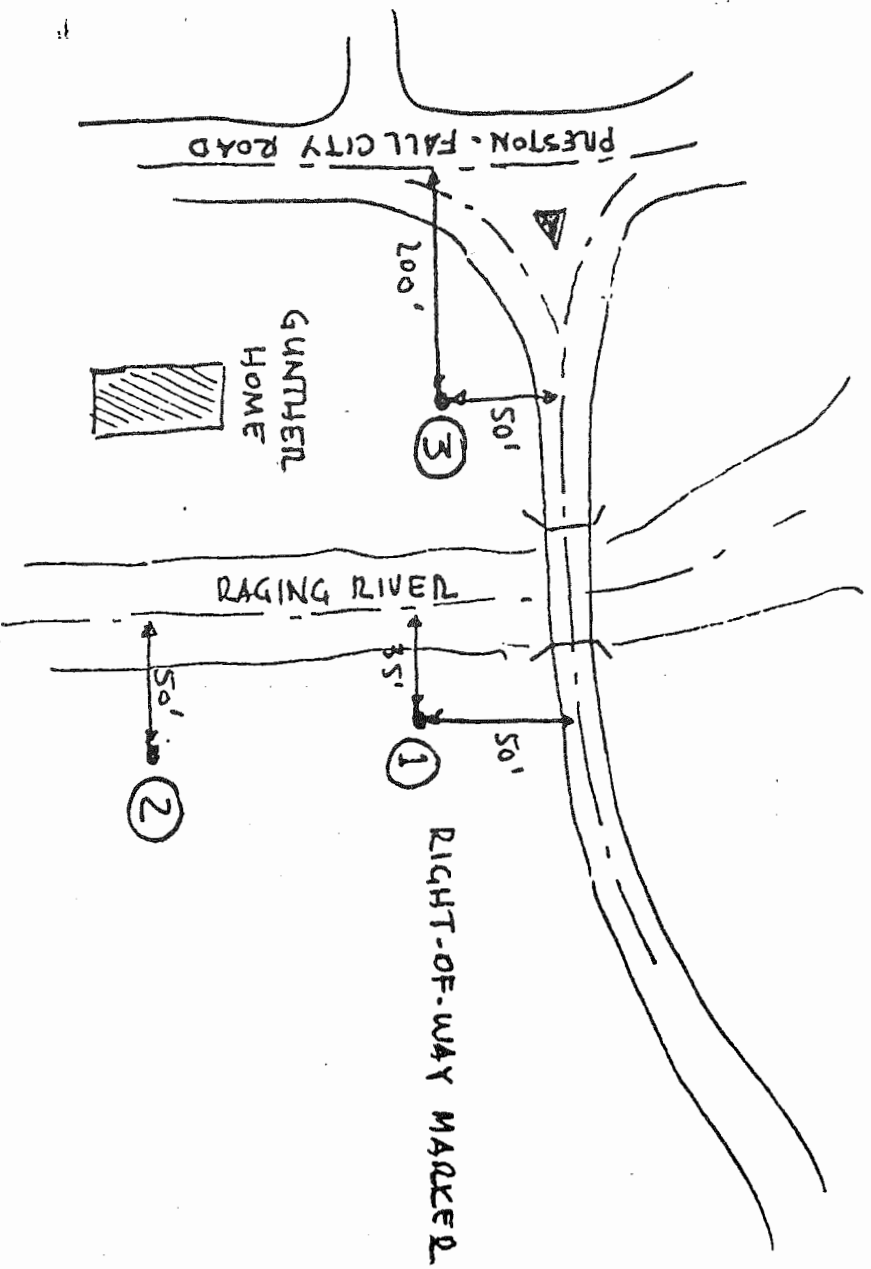
Respectfully submitted,



Peter A. Breysse
Associate Professor
(October 10, 1977)

PAB:rl

FIGURE 1 SOUND LEVEL MEASUREMENT
SAMPLE LOCATIONS
RAGING RIVER MINING COMPANY



AUG 31, 1977 10:15 AM TO 2:30 PM
STREAM FLOW - MODERATE

WEATHER - WARM - SUNNY - HIGH CLOUDS - LIGHT WINDS
EQUIPMENT OPERATING

D-8 CAT. PUSHING ROCK OVER FACE

988 LOADER - DUMP ROCK OVER SIDE

966 LOADER - FEED CRUSHER - LOAD TRUCKS

P AND H GRAPPLE - BLEAKING ROCKERY ROCK - LOAD TRUCKS

CRUSHER - MAKING ROCK

MISC DUMP TRUCKS.

TABLE 1

SOUND LEVEL MEASUREMENTS.

LOCATION 1

RAGING RIVER MINING COMPANY

10:20 AM	10 MIN. SAMPLE	dba.	TIME (0.1 SEC.)	TIME (%)
		58	4418	73.6
	dba	60	809	13.4
L ₁₀	63	62	467	7.7
L ₅₀	59.5	64	126	2.0
L ₉₀	59.0	66	35	0.5
		68	24	0.4
		70	35	0.5
		72	33	0.5
		74	53	0.8
		76	0	0

NO. TRUCKS.	SINGLE	DOUBLE
ENTERING	1	-
LEAVING	2 (GRAVEL)	-
AIRCRAFT	1 (65 dba)	

TABLE 2

SOUND LEVEL MEASUREMENTS

LOCATION 1

RAGING RIVER MINING COMPANY

10:40 AM	6 MIN. SAMPLE	dBA	TIME (0.1 SEC)	TIME (%)
		46	3	-
dBA				
L ₁₀	69.3	48	3	-
L ₅₀	60.8	50	2	-
L ₉₀	58.5	52	4	0.1
		54	7	0.1
TRUCKS	SINGLE	56	44	1.2
	DOUBLE			
ENTERING.	1	58	1420	40.1
LEAVING	2 (GRAVEL)	60	708	20.0
AIRCRAFT	1	62	559	15.7
LOW BOY ENTERED TO REMOVE		64	163	4.5
PIECE OF HEAVY EQUIPMENT		66	141	3.9
HORN - 84 dBA.		68	150	4.1
		70	82	2.2
		72	74	2.0
		74	65	1.8
		76	36	1.0
		78	5	0.1
		80	9	0.2
		82	13	0.3
		84	14	0.3
		86	0	0
		88	0	0

TABLE 3

SOUND LEVEL MEASUREMENTS

LOCATION 1

RAGING RIVER MINING COMPANY

10:50 AM			10 MIN. SAMPLE			dba	TIME (0.1 SEC)	TIME (%)
						56	369	6.1
	dba.					58	4080	68.0
L ₁₀	62.3					60	919	15.2
L ₅₀	59.0					62	281	4.6
L ₉₀	58.3					64	94	1.4
						66	100	1.6
						68	77	1.2
TRUCKS	SINGLE	DOUBLE				70	20	0.2
ENTERING	1					72	21	0.2
LEAVING	1	1				74	38	0.5
AIRCRAFT	1					76	0	0

TABLE 4

SOUND LEVEL MEASUREMENTS
LOCATION 2
RAGING RIVER MINING COMPANY

11:15	10 MIN. SAMPLE	dba	TIME (0.1 SEC.)	TIME (%)
		54	23	0.2
	dba	56	1658	27.6
L ₁₀	59.3	58	4179	69.6
L ₅₀	58.5	60	126	2.0
L ₉₀	57.8	62	15	0.1
		64	0	0
TRUCKS	SINGLE			
LEAVING	2			

11:38 TWO 5 MIN. SAMPLES.	1ST SAMPLE		2ND. SAMPLE	
(LUNCH TIME)	dBA	TIME (0.1 SEC)	TIME (%)	TIME (0.1 SEC) TIME (%)
	46	2	-	
	48	3	-	
	50	4	0.1	
	52	13	0.4	
	54	383	12.6	1 -
	56	2423	80.6	2999 100
	58	91	2.9	0 0
	L ₁₀	57		57.3
	L ₅₀	56.5		57.0
	L ₉₀	55.8		56.5
	AIRCRAFT - 60 dBA.		NO AIRCRAFT	

TABLE 5

SOUND LEVELS - TRUCKS

LOCATION - 3

RAGING RIVER MINING COMPANY

UND LEVEL BA	INCOMING TRUCK SINGLE (A)		TRUCK LEAVING SINGLE (GRAVEL) (B)		INCOMING TRUCK SINGLE (COUNTY) (C)		TRUCK LEAVING SINGLE (ROCKERY ROCK) (D)	
	TIME 0.1 SEC	TIME %	TIME 0.1 SEC	TIME %	TIME 0.1 SEC	TIME %	TIME 0.1 SEC	TIME %
6	13	2.0					1	0.1
18	36	5.6					2	0.3
50	41	6.4					3	0.5
52	206	32.2					2	0.3
54	61	9.5	59	8.7			81	15.0
56	29	4.5	139	20.5	19	13.1	75	13.9
58	22	3.4	151	22.2	33	22.9	135	25.1
60	47	7.3	101	14.8	18	12.5	73	13.5
62	41	6.4	67	9.8	12	8.3	35	6.5
64	40	6.2	70	10.3	10	6.9	35	6.5
66	17	2.6	65	9.5	8	5.5	21	3.9
68	5	0.7	5	0.7	8	5.5	22	4.0
70	5	0.7	5	0.7	8	5.5	52	9.6
72	1	0.1	5	0.7	8	5.5		
74			5	0.7	6	4.1		
76			5	0.7	6	4.1		
78			1	0.2	6	4.1		
80					2	1.3		
TOTAL	639		678		144		537	
L10		64.3		66.5		75.8		70.0
L50		53.5		60.0		62.5		59.5
L90		48.3		56.3		57.8		55.8

TABLE 6

SOUND LEVELS - TRUCKS
LOCATION - 3

RAGING RIVER MINING COMPANY

SOUND LEVEL 1BA	INCOMING TRUCK DOUBLE (E)		TRUCK LEAVING (F) SINGLE (ROCKERY ROCK)		TRUCK LEAVING (G) DOUBLE (ROCKERY ROCK)			
	TIME 0.1 SEC.	TIME %	TIME 0.1 SEC.	TIME %	TIME 0.1 SEC.	TIME %		
46								
48								
50								
52								
54								
56	16	2.9	75	13.2	93	15.6		
58	74	13.5	197	34.8	87	14.6		
60	105	19.1	54	9.5	118	19.8		
62	43	7.8	47	8.3	121	20.3		
64	51	9.3	37	6.5	39	6.5		
66	50	9.1	34	6.0	49	8.2		
68	62	11.3	36	6.3	30	5.0		
70	43	7.8	64	11.3	58	9.7		
72	29	5.3	20	3.5				
74	49	8.9	2	0.3				
76	25	4.5						
78								
80								
TOTAL	547		566		595			
L ₁₀	74.8		71.3		70.0			
L ₅₀	65.5		60.5		62.0			
L ₉₀	59.0		58.0		57.3			

LOCATION 3
RAGING RIVER MINING COMPANY

SOUND LEVEL dBA	ALL EQUIPMENT OPERATING D-B. ON FACE ~ 1/2 WAY UP		ALL EQUIPMENT OPERATING D-B. BACK FROM FACE ~ 1/2 WAY UP		NO EQUIPMENT OPERATING [MOTORCYCLE ON LOT ACROSS HIGHWAY]	
	TIME 0.1 SEC	TIME %	TIME 0.1 SEC	TIME %	TIME 0.1 SEC	TIME %
46	156	15.6				
48	6	0.6			1	
50	8	0.8			0	
52	8	0.8			725	12.0
54	253	25.3	12	1.2	1382	22.9
56	282	28.2	611	61.1	2161	36.0
58	169	16.9	311	31.1	1385	23.0
60	89	8.9	66	6.6	292	4.8
62	5	0.5			36	0.5
64	5	0.5			18	0.2
66	5	0.5				
68	4	0.4				
70	5	0.5				
TOTAL	1000		1000		6000	
L10	58.8		57.5		57.5	
L50	54.5		55.8		55.0	
L90	46.3		54.8		52.0	

HUGH J. PARRY NOISE CONSULTING

August 8, 1976

3060 NE 97TH STREET • SEATTLE, WASHINGTON 98115 • (206) 525-6828

RAGING RIVER QUARRY NOISE MEASUREMENTS

Measurements of acoustic noises were made at two sites on properties adjoining the quarry between 8/5/76 and 8/31/76. The measurements were made with calibrated sound level meters and tape recorders and the resulting recordings were processed with a digital sound level converter and digital computer. The instrumentation described in Appendix A (attached) conforms to the present and proposed requirements for environmental noise measurements as specified by Federal, State and Local agencies.

The two sites used in the measurements were:

- (1) 50 feet north of the Carmichael Road and 50 feet east of the Raging River (northeast of the present quarry bridge).
- (2) the porch deck at the rear of the Guenther residence (west side of the residence facing the quarry).

The resulting data are shown in Table 1 in terms of the current State of Washington environmental noise code (WAC) the proposed King County noise ordinance (August 4, 1976 revision) (KC) and the U. S. Environmental Protection Agency recommended criterion energy average level (LEQ). Table 1 is organized in the following way:

<u>PAGE</u>	<u>COLUMN</u>	<u>ITEM</u>
1	0	Data Reference Number (Rec. No.)
1	1	Date of Measurement (Date)
1	2	Time of Measurement (Time)
1	3	Length of Measurement in Seconds (Samples)
1	4	Energy Average Sound Level (LEQ)
1	5	No. of Minutes Maximum Allowable (Base + 15 dBA) was exceeded (Time Over)
1	6	WAC 173-60 Base Noise Level Limit (WAC)
1	7	Number of Decibels the Noise Must Be Reduced to Comply with WAC for the Given Base Level (NR)
1	8,9,10	(Same as 5,6,7 for nighttime hours)

<u>PAGE</u>	<u>COLUMN</u>	<u>ITEM</u>
2	0	Data Reference Number (Rec. No.)
2	1,2,3	(Same as Page 1 - 5,6,7 for WAC in Terms of KC (Time Over) (KC) (NR)
2	4,5,6	(Nighttime KC) (Time Over) (KC) (NR)
2	7	Measurement Locations
2	8	Quarry Activities

The WAC and KC values were calculated from the equation:

$$WAC (KC) = \frac{T_1}{15} + \frac{T_2}{5} + \frac{T_3}{1.5}$$

where:

T_1 = Number of minutes in a one-hour interval that sound levels exceed the base level by not more than 5 dB

T_2 = Number of minutes in a one-hour interval that sound levels exceed the base level by more than 5 dB but not more than 10 dB

T_3 = Number of minutes in a one-hour interval that sound levels exceed the base level by more than 10 dB but not more than 15 dB

A code violation occurs when WAC (or KC) exceeds a value of unity (one).

Two WAC base levels were used in the calculations: 60 dBA for daytime (0700 - 2200 hours) and 50 dBA for nighttime (2200 - 0700 hours). The KC bases are 3 dB lower since that ordinance provides for one more sensitive land use than does the State Code including suburban and forest-recreational zonings. These base values all assume that the quarry property is zoned industrial. If this is not the case and the property is technically forest-recreational then the resulting indices would be higher by factors as large as 3 to 5 times those shown in the table.

Table 1 shows that seventeen measurements were made. Of these fifteen were made on weekdays when there were various quarry activities in progress. Two were made on weekend days with no quarry activity: Saturday, August 28 and Sunday, August 29.

Of the fifteen measurements made during quarry operations, eleven indicate violations of the State code for the daytime limit (60 dBA) since the WAC index value exceeds unity (1). Of these, six were also in violation due to levels in excess of the maximum limit (Base Level + 15 dB). Of these six, two were measurements taken at the near-road side and the high levels are due to trucks on the quarry road. One early morning measurement (1112.03) violates to an even greater extent because of the nighttime base limit (50 dBA) for activity before 0700 hours.

All sixteen of the measurements show violations using the proposed King County standards that are 3 dB more restrictive. Sources of noise contributing primarily to these results include various quarry activities, trucks on the quarry road, the river, and possibly highway vehicles. For the two locations used there was virtually no highway traffic at Site 1 and virtually no audible highway noise at Site 2. Site 2 is completely shielded acoustically from the highway by the Guenther house for all practical purposes. The following paragraph discusses the river noise factor and shows that there is no influence from that source in these measurements.

Note that the two sets of data (1008.10 and 1008.12) with no quarry activity show average noise (LEQ) levels about 10 dB lower and insignificant WAC or KC indices. The 10 dB factor indicates that the noise level is about twice as loud when the quarry is operating as compared to non-operating. Also, local EPA guidelines state that any increase exceeding 5 dBA is considered a significant noise impact. These lower levels are due to the river at Site 2. Being 10 dB lower indicates the river contributes less than 1 dB to the data during quarry operations.

Some measurements were also made by the residents at Site 2 (above) on previous occasions using a manual recording technique recommended by the Washington Department of Ecology. These were made in accordance with my instructions regarding instrument calibration, operation and record keeping using a General Radio Model 1565-B Sound Level Meter and Model 1562 Calibrator. These were provided to you by my letter of July 22, 1976 and also show violations of WAC 173-60. the results of those measurements are again summarized in Table 2 attached.

From all of these data it is clear to me that the quarry operations are in violation of the Washington environmental noise code, the U. S. EPA environmental noise impact guidelines and the proposed King County noise ordinance. Further, it is my personal and professional opinion that the noise condition created by the quarry is detrimental to the health and welfare of the residents at the Guenther and Andrew properties.

SIGNED


Hugh J. Parry

September 10, 1976

TABLE 1 - RAGING RIVER QUARRY NOISE

<u>Rec. No.</u>	<u>Date</u>	<u>Time</u>	<u>Samples</u>	<u>LEQ</u>	<u>BASE 60</u>			<u>BASE 50</u>		
					<u>Time Over*</u>	<u>WAC</u>	<u>NR</u>	<u>Time Over*</u>	<u>WAC</u>	<u>NR</u>
11111.01	8/5/76	0920	3555	59	0.01	0.58	0			
11111.02	8/5/76	1020	3600	60	0.01	0.85	0			
11111.03	8/5/76	1120	2593	59	0.04	0.26	0			
11112.03	8/5/76	0600	3648	61	0.19	1.44	2	3.51	3.22	12
11112.04	8/6/76	0700	3600	63	0.41	2.16	4			
1008.02	8/6/76	1000	3600	62	0	2.85	3			
1008.03	8/6/76	1100	1800	62	0	2.77	4			
1008.04	8/6/76	1230	3600	63	0.03	3.98	5			
1008.05	8/7/76	0815	2808	63	0	3.51	4			
1008.06	8/19/76	0800	5000	64	0	5.42	5			
1008.08	8/26/76	1315	4998	68	0	13.55	9			
1008.09	8/27/76	1600	900	62	0	2.57	3			
1008.10	8/28/76	0600	3600	54	0	0	0			
1008.11	8/28/76	1600	1500	60	0	0.94	0			
1008.12	8/29/76	0630	3600	54	0	0	0			
1008.13	8/30/76	1400	5000	64	0	5.12	5			
1008.14	8/31/76	1135	5000	64	0	5.25	5			

NOTES: * - Time in minutes that maximum limit (Base Level + 15 dB) exceeded.

LEQ is equivalent energy averaged sound level.

WAC refers to Washington Administrative Code 173-60, "Environmental Noise Limits."

NR values are the number of dB reduction required to meet WAC.

TABLE 1 - RAGING RIVER QUARRY NOISE (Cont'd)

Rec. No.	BASE 57			BASE 47			Location	Quarry Activity
	Time Over*	KC	NR	Time Over*	KC	NR		
11111.01	0.01	2.98	3				Site 2	Quarry Trucks and Machinery
11111.02	0.01	3.44	3				Site 2	" " " "
11111.03	0.04	2.42	2				Site 2	" " " "
11112.03	0.87	1.64	5	4.07	5.66	15	Site 1	Quarry Trucks
11112.04	1.21	4.20	7				Site 1	Quarry Trucks
1008.02	0	6.36	6				Site 2	Quarry Trucks and Machinery
1008.03	0	6.28	7				Site 2	" " " "
1008.04	0.06	8.70	8				Site 2	" " " "
1008.05	0	7.12	7				Site 2	" " " "
1008.06	0	10.39	8				Site 2	Caterpillar and Drilling
1008.08	0.42	26.54	12				Site 2	Quarry Trucks and Machinery
1008.09	0	5.94	6				Site 2	" " " "
1008.10	0	0.02	0				Site 2	None
1008.11	0	3.59	3				Site 2	Caterpillar
1008.12	0	0.02	0				Site 2	None
1008.13	0	9.99	8				Site 2	Drilling
1008.14	0.02	10.84	8				Site 2	Drilling

Notes: * - Time in minutes that maximum limit (Base Level + 15 dB) exceeded.

KC refers to proposed King County Noise Ordinance version dated 4 August 1976.

TABLE 2 - SUMMARY OF MANUAL NOISE DATA

<u>DATE</u>	<u>TIME</u>	<u>LOCATION</u>	<u>AMBIENT LEVEL</u> <u>(dBA)</u>	<u>WAC INDEX</u> <u>(Base 60)</u>
3/4/76	0910	Site 2	55-56	2.86
3/4/76	1230	Site 2	55-56	2.85
3/4/76	1450	Site 2	55-56	2.18
3/5/76	0955	Site 2	55-56	3.93
3/5/76	1400	Site 2	55-56	2.91
3/8/76	1320	Site 2	55-56	1.90
3/9/76	1305	Site 2	55-56	2.20
3/12/76	0920	Site 2	60-61	6.51

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APPENDIX A

INSTRUMENTATION

The basic acoustical measurement system used for acquiring the noise data is shown in Figures A1 through A4. That part of the system used for acquiring source noise recordings in the field is shown in Figures A1 and A2, while the laboratory processing of those recordings is done with the systems shown in Figures A3 and A4. The basic system shown in the figures include the following instruments:

- WANG 600-14-TP Computer
- General Radio Type 1933 Sound Level Meter
- Digital Acoustics DA 100 Sound Level Meter
- Digital Acoustics DA 600 Magnetic Tape Interface
- Digital Acoustics DA 126 Magnetic Tape Interface
- Digital Acoustics DA Direct Interface
- Sony TC-126 Cassette Magnetic Tape Recorder
- Sony 800-B Reel-to-Reel Magnetic Tape Recorder
- B & K Microphone Type 4133 or Type 4145 and Windscreen
- B & K Sound Calibrator Type 4230
- General Radio Type 1562 Sound Level Calibrator
- Wind Velocity Meter
- Sling Psychrometer
- Rolatape Measure Master
- Tripod

A microphone and windscreen are fitted to the sound level meter during measurements and the entire system is electrically and acoustically calibrated end-to-end with a sound level calibrator that produces a known acoustic signal at 1000 Hz.

During all recordings the sound level meter is used in the A-weighted, "SLOW" mode corresponding to the Type 1 standards of ANSI S1.4 (1971) and current and pending Federal, State and Local Regulations. The digital and analog output signals from the DA 100 digital sound level meter are either recorded on magnetic tape via the DA 126 Tape Interface and the Sony TC 126 and the DA 600 Tape-Computer interface in the laboratory, or the DA 100 is directly connected via the DA 601

interface. All actual calculation of sound levels are performed with the WANG laboratories Model 600-14-TP Computer from the digitized values produced by the DA 100 Sound Level Meter.

Precision Digital Sound Level Meter

Tape Formatter/Controller

Tape Drive

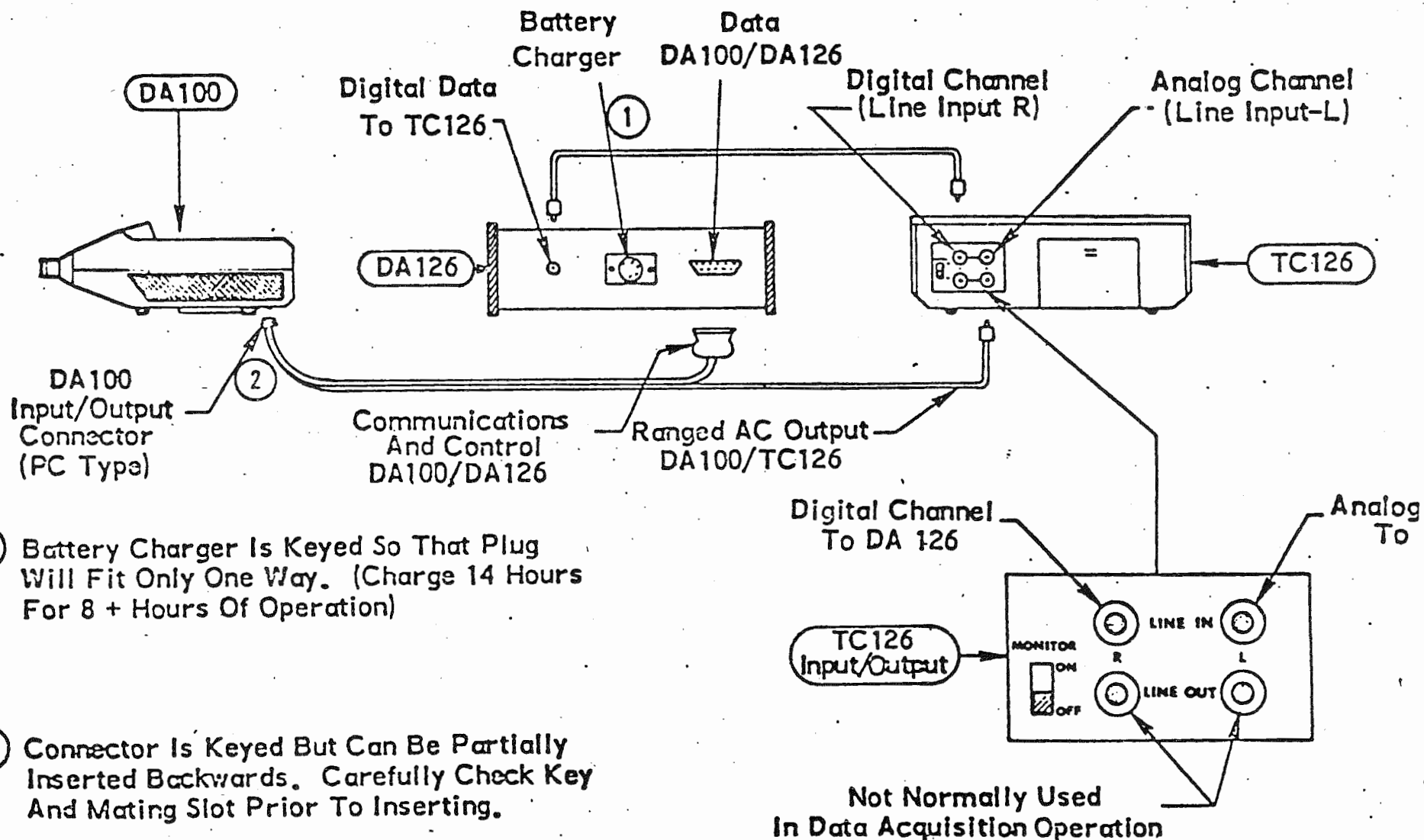


FIGURE A1 DIGITAL ACOUSTICS GENERAL DATA ACQUISITION SUBSYSTEM

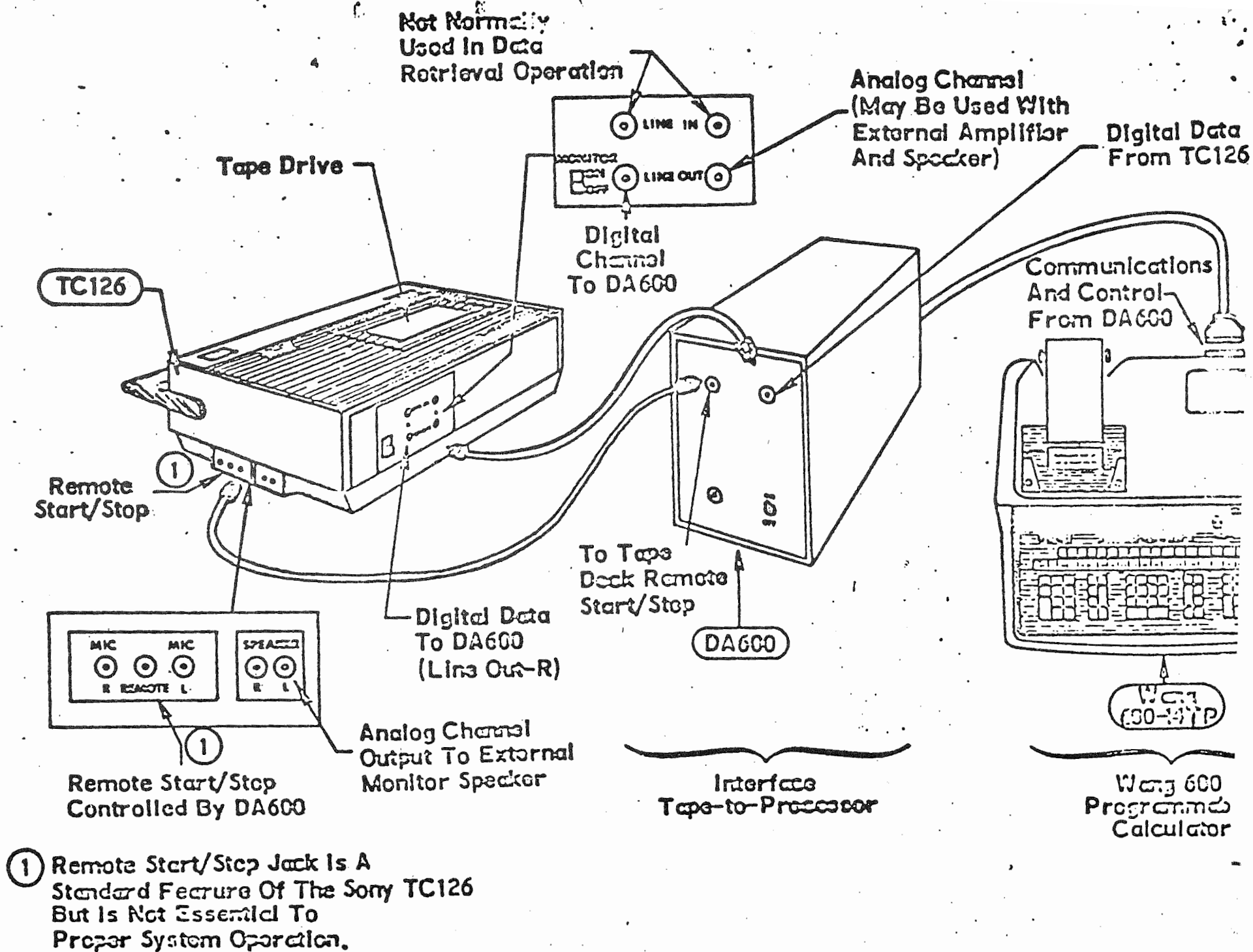


FIGURE 1 - DIGITAL ACOUSTICS/WANG 600 DATA RETRIEVAL AND PROCESSING SYSTEM

HUGH J. PARRY NOISE CONSULTING

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October 8, 1976

RACING RIVER QUARRY NOISE MEASUREMENTS

(Supplement)

Further calculations have been made on the basic data given in our report of the same title dated September 8, 1976 (Exhibit 67). The purpose of these calculations was to determine the Washington environmental noise limit code (WAC 173-60) values for quarry source property zoning of F-R. The WAC base level for these calculations is 55 dBA or 5 dB less than used for most of the index values reported in Exhibit 67. The results of these new calculations are shown in Table A-1.

As in Exhibit 67, WAC is the State code index value, NR is the number of dB noise reduction needed to comply with the code (for WAC to be equal to or less than unity), and the number of minutes that the limit value (Base + 15 dB) is exceeded for a normalized one-hour period is referred to as Time Over. Notice that the index value (WAC Base 55) is increased considerably in almost all cases. In all cases the amount of noise reduction required is essentially 5 dB greater than for the Base 60 data.

All of these data indicate that for the present actual zoning (F-R) there is no doubt the code is being exceeded by very large values.

TABLE A-1
BASE 55

REC. NO.	LOCATION	TIME OVER	WAC	NR	QUARRY ACTIVITY
11111.01	Site 2	0.01	5.00	5	Quarry Trucks and Machinery
11111.02	Site 2	0.01	5.66	5	" " " "
11111.03	Site 2	0	4.55	4	" " " "
11112.03	Site 1	1.74	1.49	7	Quarry Trucks
11111.04	Site 1	2.06	5.80	9	" "
1008.02	Site 2	0	10.22	8	Quarry Trucks and Machinery
1008.03	Site 2	0	9.34	9	" " " "
1008.04	Site 2	0.18	13.68	10	" " " "
1008.05	Site 2	0.21	12.02	9	" " " "
1008.06	Site 2	0.04	17.61	10	Caterpillar and Drilling
1008.08	Site 2	5.84	32.01	14	Quarry Trucks and Machinery
1008.09	Site 2	0	9.35	8	" " " "
1008.10	Site 2	0	0.55	0	None
1008.11	Site 2	0	5.71	5	Caterpillar
1008.12	Site 2	0	0.72	0	None
1008.13	Site 2	0.12	16.53	10	Drilling
1008.14	Site 2	0.14	16.35	10	Drilling

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September 21, 1976

RAGING RIVER QUARRY NOISE MEASUREMENTS

(Supplement)

Further calculations have been made on the basic data given in our report of the same title dated September 8, 1976 (Exhibit 67). The purpose of these calculations was to determine the Washington environmental noise limit code (WAC 173-50) values for quarry source property zoning of F-R. The WAC base level for these calculations is 50 dBA, or 10 dB less than used for most of the index values reported in Exhibit 67. The results of these new calculations are shown in Table A-1.

As in Exhibit 67, WAC is the State code index value, NR is the number of dB noise reduction needed to comply with the code (for WAC to be equal to or less than unity), and the number of minutes that the limit value (Base + 15 dB) is exceeded for a normalized one-hour period is referred to as Time Over. Notice that the index value (WAC Base 50) is increased considerably in almost all cases. In one case (1008.08) the index decreased because most of the noise levels in that case exceed the maximum limit as can be seen from the fact that the time over the maximum limit is 51.26 minutes. In all cases the amount of noise reduction required is essentially 10 dB greater than for the Base 60 data.

All of these data indicate that for the present actual zoning (F-R) there is no doubt the code is being exceeded by very large values.

TABLE A-1

Rec. No.	Time Over	BASE 50	
		WAC	NR
11111.01	0.06	15.66	10
11111.02	0.38	17.15	10
11111.03	0.23	13.55	9
11112.03	3.51	3.22	12
11112.04	4.68	13.42	14
1008.02	2.66	27.67	13
1008.03	3.03	24.18	14
1008.04	10.38	22.61	15
1008.05	7.58	23.40	14
1008.06	14.24	26.99	15
1008.08	51.26	5.80	19
1008.09	1.59	27.25	13
1008.11	0.11	18.03	10
1008.13	12.44	25.45	15
1008.14	10.48	31.46	15

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COMMENTS ON "NOISE INVESTIGATION QUARRY OPERATION RAGING RIVER MINING COMPANY," by Peter A. Breysse, Associate Professor (undated)

(INTRODUCTION)

Measurement site was south of quarry road. There is no data to relate sound levels from quarry on south side of road with north side at or near residences. Acoustical conditions could be quite different due to equipment siting, shielding by cliff and trees. Also, river conditions may be significantly different. The text refers to continuous noise monitoring from 1200 on October 17, 1975 to 1000 on October 19, 1975; whereas the tables show 9/17/75 - 9/19/75.

RESULTS

Page 1, Par. 2: A comparison is made between "average" hourly noise level and the "maximum" noise levels due to vehicles on the Preston-Fall City Highway.

There is no technical definition given for "average" or "maximum" noise levels. In the literature on acoustics these are used in a variety of different special ways all giving different resulting numerical values.

It is difficult to understand why these so-called "average" quarry noise levels are compared to "maximum" highway noise levels.

States that truck noise level maximums were 72-82 dBA but Table 1 states 74-82 dBA. Does not give noise levels for trucks noted as on highway.

Page 2, Par. 1: How was "minimum noise level of river" established separate from quarry noise with quarry operating?

Page 2, Par. 2: The statistical analysis was performed only on the data of November 3, 1975 (Table 2) when the "maximum" noise level was noted as 71 dBA. Why wasn't a similar analysis performed on the data from October 18 when the maxima ranged from 72 to 82 dBA, almost 10 dBA higher?

Also, how were the truck noise levels of November 3 (Table 2) processed? Are they included on Table 3? Truck noises on 9/18/75 (Table 1 - Cont'd) were 12 - 16 dB higher than the "maximum" levels reported for 11/3/75 (Table 2).

CONCLUSIONS

Page 2, Par. 3: Given the previous comments, I cannot agree with the unqualified and unexplained statement that "there is no doubt that the quarry can operate within . . . (WAC)."

Again:

- (a) The measurements were south of the quarry road,
- (b) Only the lesser of two sets of noise data were used to calculate State code indices,
- (c) The method for processing truck noise is not explained. Some procedure is implied because of the low "maximum levels" shown in Table 2 compared to Table 1.

Page 2, Par. 4: The State code applies to land use zoning not to nearest residence!

Page 2, Last Paragraphs: What are the procedures for drivers to minimize noise levels? How many dBA reduction would be expected? How can these "instructions" be enforced or guaranteed?

The use of a "barrier berm" along the side of the quarry road has been considered previously. It cannot span the bridge; it must be over 10 feet high because of truck engine exhaust pipes and is purely speculative because of the implied overflow of berm material on the suburban property immediately adjacent to the road!

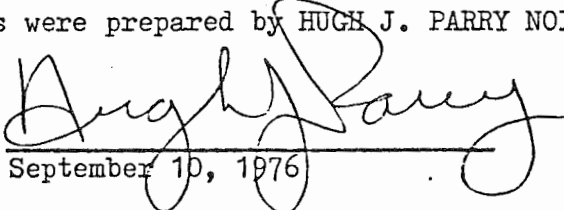
All of the controls recommended in the report relate to truck noises that were apparently eliminated from the WAC

estimates of Table 3! This seems inconsistent at least.

Finally, no information is given about the types of quarry activity occurring on the test days, except to note a large number of trucks on one day. There is no way to know if drilling, crushing, rock piling, or loading or any of these were practiced those days. Since the tests were done for the quarry operator this data could have been logged at the site for correlation with the noise data. This raises the serious question of whether the tests were made on days with typical or limited operations. What would a typical day be like? What would a maximum day be like?

The above comments were prepared by HUGH J. PARRY NOISE CONSULTING.

SIGNED


September 10, 1976