United States Department of the Interior

FISH AND WILDLIFE SERVICE

Iroquois National Wildlife Refuge
1101 Casey Road
Basom, NY 14013

March 1, 2012

David L. Bimber
Deputy Regional Permit Administrator
NYSDEC – Region 8
6274 East Avon-Lima Road
Avon, New York 14414 - 9519

RE: dEIS Review and Comments
DEC 8-3436-00033/00001 MLR 80823
Frontier Stone, LLC, Proposed Shelby Quarry

Dear Mr. Bimber;

The Iroquois National Wildlife Refuge is in receipt of Draft Environmental Impact Statement (EIS) and Mined Land Use Plan for Frontier Stone's proposed Shelby Quarry, Town of Shelby. You have requested that we review to determine whether or not the concerns of the Iroquois NWR have been addressed in the dEIS. We offer the following for your consideration.

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Page 14. 1.3.2.2: In this section as well as others throughout the dEIS and related documents the applicant states that the quarry will pump 251 gpm of water into the agriculture ditch that flows onto the Refuge. This appears to be an average gpm measured over a year or many years. In order to properly review the proposal it is necessary that the applicant provide additional data on the maximum and minimum estimated gpm of water that will be pumped onto the Refuge and the duration that these pumping rates may be maintained. Additionally, any expected change in the maximum or minimum pumping rate during the life of the quarry should be identified.

Page 16. 1.3.2.7: The applicant acknowledges a potential annoyance to wildlife watchers at Schoolhouse Marsh overlook, but then states that "...truck traffic volumes will be minimal when compared to nearby traffic on Route 63...". While this may be true, the Refuge does not have any overlooks on Route 63, so this information is irrelevant to a discussion of potential traffic effects on Refuge visitors at overlooks.

Page 16. 1.3.3.2: The applicant references the map outlining an Area of Influence (AOI) around the quarry for noise and vibration. This map appears to include a noise area for regular quarry sounds excluding blasting. We would like to see the noise AOI include blasting. Additionally, this map and associated analysis and discussion should include an AOI along Sour Springs and Oak Orchard Ridge Roads to identify potential disturbance from the increased truck traffic, which the applicant says could be as high as 30 trucks per hour. Also, we it should be clarified if this is 30 trucks driving down the road per hour or if it is 30 trucks driving in and out of the quarry per hour, effectively resulting in 60 truck trips down the road per hour.

Page 17. 1.3.3.2. In the hiking section, the applicant states that there are no hiking trails within the AOI. While this statement is true, during periods of time when the Refuge is open to off-trail hiking, visitors are allowed to hike in areas without designated trails.

In the bird watching section, the applicant states that bird watching activity focuses on migratory waterfowl at the two refuge overlooks on Oak Orchard Ridge Road and then concludes that even though there will be an increase in truck traffic by these two overlooks, "...the potential for disturbance to bird watchers is minimal." Given the fact that two of the four overlooks on the Refuge are located on this truck route and also that the applicant has not evaluated the potential noise and disturbance associated with this increase in truck traffic, it is unclear to us how their conclusion of minimal disturbance can be drawn.

In the hunting section, the applicant states that "deer hunting season does not coincide with the quarry's normal operations season". According to the applicant on page 6, the quarry's normal operations season will be from April to November. It is unclear if this means November 1 or November 30. Regardless, the archery deer season on the Refuge currently begins on or about October 15 and the Deer Management Plan recently adopted by NYSDEC proposes moving opening day of the deer season to October 1, beginning in 2012. There will be overlap between the quarry operation season and the deer hunting season.

Additionally, the applicant only mentions deer and upland game bird hunting in the hunting section. Other types of hunting occur on the Refuge in the area adjacent to the quarry.

The applicant states that "hunting has not been impacted by numerous quarry settings elsewhere in the region", but offers no basis for this statement. Many hunters, particularly bow hunters, prefer to hunt in a setting with minimal noise and disturbance. It seems unlikely that an area near an active quarry would provide the kind of solitude required for this kind of hunting experience.

Page 36. 3.1. Nearly all of this text appears to be copied from the Refuge's Draft Comprehensive Conservation Plan (CCP). We request this section be changed in the following ways. First, the applicant should put quotation marks around text that has been copied verbatim from another document and provide a citation for these quotes and also for information paraphrased from another document. Secondly, the Refuge CCP states that there are 19 managed freshwater impoundments, not 10.

Page 50. 3.1.2.2. Table 4 should include the overall depth of the wells.

Page 53. 3.1.2.2. The water quality assessment seems to be based on two water samples taken from unknown depths. A more thorough water sampling study should be conducted.

Page 63. 3.1.4.1. The applicant states "no state-regulated wetlands are mapped on or near the site" While it may be accurate that there are no state-regulated wetlands on the site, there are state-regulated wetlands on the Refuge within a few hundred feet of the site and potential secondary impacts to these wetlands should be evaluated.

Page 65. 3.1.4.2. The applicant suggests that Center Marsh being periodically dewatered somehow makes it less attractive to bald eagles. All four eagle nests that are currently located within the wetland complex are located on impoundments that are periodically dewatered and they continue to nest successfully nearly every year. Dewatering an impoundment helps to regenerate the marsh and it in fact concentrates fish making it easier for eagles to catch prey. In impoundments where there is no active nest, many eagles (10+) have been seen foraging at one time. Additionally, Center Marsh contains a large and deep borrow ditch adjacent to the dike that nearly always contains open water, even when the rest of the pool is dewatered.

Page 66. 3.1.4.2. We were unable to find a Holt and Leasure (2008) reference in the Birds of North America (BNA). However, the Short-eared Owl section of the Birds of North America (No. 62) (2006) is available online and it appears that this is the reference that the applicant used. The applicant suggests that based on BNA No. 62 "short-eared owls are also known to frequent mines and quarries." In fact, BNA 62 states that short-eared owls "may use" gravel pits and rock quarries. This information is cited from an earlier paper written by R.J. Clark (1975) in which he lists "abandoned limestone quarry partially filled with stumps" and "abandoned gravel pit" as places where he found short-eared owl winter assemblages. Both of these areas are far different than the active stone quarry being proposed and to suggest that this area will somehow be attractive to short-eared owls once quarrying operations commence is misleading.

Page 96. 3.2.6. The applicant states that "sound levels at the overlooks will be mainly generated by traffic on Oak Orchard Ridge Road and background sounds from Route 63...sound levels are anticipated to be similar to...S-1...located on Sour Springs Road." Both overlooks are located much farther away from farm machinery than is site S-1 and we believe they may have significantly lower ambient noise levels. We suggest additional ambient noise readings be collected at both Schoolhouse and Ringneck Overlooks.

Page 126. 4.1.2.2.4. The analysis in item 2 assumes that the water level in Schoolhouse Marsh is 6 inches below the top of the "weir", allowing 6 inches of storage capacity in the marsh during a storm event. This is inaccurate since the water level in the marsh is often at or above the "weir" level. Ultimately, there is no way to know what the water level will be prior to a storm event. This analysis should be recalculated with the assumption that there is no water storage capacity available in the marsh at the start of a storm event.

Page 128. 4.1.2.2.4. The applicant states that "calculations indicate that the existing system has sufficient design capacity to transmit drainage, including storm events, without adverse structural issues." This statement seems to be based solely on analysis from Schoolhouse Marsh.

However, the flow of water from the quarry site travels through Schoolhouse Marsh, immediately to another, smaller wetland, then through a series of ditches within a managed grassland, then under State Route 77, then either into another managed wetland or through a 24" culvert, then into a large managed impoundment where it mixes with water from Oak Orchard Creek and eventually passes through a large water control structure and off the north boundary of the Refuge. We suggest the applicant provide detailed analysis of the potential hydrological impact to this entire wetland system, as it will all be affected by any change in water quantity or quality.

Page 129. 4.1.2.2.4. We find the applicants statement that " ...the quarry's impact beyond natural seasonal variations and storm events is insignificant" to be misleading. We feel that the continuous pumping of 251 gpm (or other volumes) of water into Refuge wetlands could be very significant. Natural seasonal variations in water levels will certainly be altered as will the ability of the wetlands to absorb storm events. Additionally, we are unable to fully understand the maximum amount of water that may be pumped onto the Refuge from the quarry as the applicant has not thus far provided those data.

Pages 185-186. 4.2.7.1 The applicant states that "impacts to hunting on the nearby Refuge are projected to be non-significant", that "the AOI extends into only a small fraction of the adjoining environment", and that "neither the woods, marshes or fields *(on the Refuge in the AOI)* are conducive to hikers." We do not concur. First, the applicant has not included blasting or truck traffic as part of their AOI noise zone determination and disturbance analysis. Second, the applicant has provided no data to quantify the level of recreational activity occurring in the area near the quarry site. Lastly, the statement that an area is not conducive to hikers is a values judgment. Different people have different perceptions regarding what is a quality recreation area.

Page 189. 4.2.7.1. The applicant states that "the Refuge receives nearly half its annual visitation during the months of March and April, which *(is)* outside the normal operating season of the project area." However on page 6 the applicant states that "mining and processing will normally occur from April to November...", showing that in fact the month of April is within the normal operating season.

Page 210. 5.2.7.1. We feel that the impacts to recreation on the Refuge have not been adequately addressed. The applicant has not included blasting and increased truck traffic noise in its analysis of disturbance to recreational users of the Refuge.

Page 212. 6.0 The applicant states that impacts of increased traffic on Sour Springs Road and Oak Orchard Ridge Road "will be satisfactorily mitigated." We are unclear how this is possible since the applicant has not provided a thorough analysis of the actual impacts.

Mined Land Use Plan

Page 13. 2.4.2. In this section and other areas throughout their documentation, the applicant states that the existing agricultural ditch on the site "is not a flowing feature" and that most of the time the ditch does not drain to the Refuge. They also often state that water will be pumped into

this ditch from the active quarry "to resume the pre-existing condition drainage pattern." We can find no data to support the first statement or any data that identifies the "pre-existing condition drainage pattern." We feel the applicant should provide daily water flow data for at least one full year for this ditch to allow a thorough analysis of the proposed quarry's impact to the hydrology of the Refuge. Additionally, we are unclear how the continuous pumping of 251 gpm of water through the ditch and onto the Refuge can be considered resuming the "pre-existing condition drainage pattern" of a ditch that is currently "not a flowing feature."

Vegetation and Wildlife Study and Ecological Resources Impacts Analysis

Page 4. 1.2.3. The applicant conducted two breeding bird surveys on the Refuge. While the timing of the June survey was appropriate, the July survey was too late to adequately assess use by breeding birds.

Page 9. 1.3.4.3. While the applicant conducted bird surveys adjacent to the quarry site, they did not conduct surveys adjacent to Sour Springs and Oak Orchard Ridge Roads. These areas will be affected by the quarry generated truck traffic and need to be surveyed to properly assess the potential impacts of this traffic.

Some of the species identified during the applicant's bird surveys (e.g., wood thrush, blue-winged warbler, hooded warbler) are on the Partners in Flight (PIF) Species of Continental Importance list. This list includes species that the PIF identified as having "the greatest range-wide concern, and which are in most need of conservation attention."

Additionally, the area of the Refuge adjacent to the quarry contains habitat types in which other species of concern (e.g. cerulean warbler, golden-winged warbler) breed, on other parts of the Refuge. These habitats may support these species adjacent to the quarry, even if they were not detected on the applicant's surveys.

Page 11. 1.3.5.2. The applicant states that "there is little mature forest habitat in the immediate vicinity of the site" as support for their suggestion that bald eagles are likely to not use the area of the Refuge adjacent to the quarry. However, their own bird surveys detected both scarlet tanager and ovenbird, two forest interior species known to prefer mature forests. Additionally, while eagles prefer to nest in large super canopy trees they are known to also nest in smaller trees, some as small as 18 inches in diameter. This area of the Refuge contains open water foraging areas and forested habitat, making it suitable for bald eagle nesting and foraging. While it may not be optimum habitat, it is certainly adequate. Also, over the life of the quarry (75+ years), the forest in this area will continue to mature, making it even more attractive eagle nesting habitat.

We were unable to find a Holt and Leasure (2008) reference in the Birds of North America (BNA). However, the Short-eared Owl section of the Birds of North America (No. 62) (2006) is available online and it appears that this is the reference that the applicant used. The applicant suggests that based on BNA No. 62 "short-eared owls are also known to frequent mines and quarries." In fact, BNA 62 states that short-eared owls "may use" gravel pits and rock quarries. This information is in fact attributed to an earlier paper written by R.J. Clark (1975) in which he

lists "abandoned limestone quarry partially filled with stumps" and "abandoned gravel pit" as places where he found short-eared owl winter assemblages. Both of these areas are far different than the active stone quarry being proposed and to suggest that this area will somehow be attractive to short-eared owls after quarrying operations commence is very misleading. If this is not the correct reference the applicant needs to provide us with additional reference information.

Page 12. 1.3.5.2. The applicant states that "the closest nesting area for *(Henslow's sparrow)* is ¾ mile west from the site", suggesting that these birds are nesting too far away from the site to be affected by quarry operations. However, this nesting area is bisected by a small ditch that will transfer any water pumped from the quarry onto the Refuge, making it vulnerable to any water quantity or quality impacts that may occur.

Page 19. 2.3.4. The statement that "no adverse modification of bald eagle habitat will occur from the quarry development" is misleading in that the applicant has not adequately addressed the potential disturbance to adjacent Refuge areas.

Pages 22-23. 2.7.2 There are several literature citations that we draw a different interpretation from the authors information. We provide the following analysis for your consideration.

Schueck *et al.* (2001) provides inconclusive information at best. The authors clearly state "during one period of intensive military training in one breeding season, raptor counts were lower during training than on non-training days." Also, "we observed fewer prey capture attempts on ranges on days with training than on days without training." While some response may vary based on species, training activity type and prey abundance, it is clear that, based on the results of this study, there is a level of bird disturbance associated with military training activities.

The statement that "northern harriers are thought to benefit from military training" based on Jackson et al. (1977) is not appropriate. This "study" was simply the observations of two people visiting a bombing range for one hour on one day and observing one bird.

Similar to Schueck *et al.* (2001), the results from Holthuijzen *et al.* (1990) are at best inconclusive. The applicant states that "behavior of incubating and brood rearing prairie falcons was not significantly altered." However, the paper's authors state "the overall response rate (i.e., the number of instances in which a change of behavior was observed)..." to blasting "was 54%." It is believed that incubating and brood rearing birds are much less likely to abandon a nesting area than a bird that has not yet laid eggs. The area of the Refuge adjacent to the quarry provides habitat for breeding as well as foraging migratory birds and resident wildlife. A disturbance during any time of year could have a significant negative effect on Refuge wildlife.

The study of red-cockaded woodpeckers by Doresky *et al.* (2001) is inappropriate for this evaluation because the authors admit that there was no difference in noise levels between their treatment and control areas. Therefore, they were measuring effects of noise disturbance in an area where there was no increased noise disturbance.

The applicant states that "Stalmaster and Kaiser (1997) showed that wintering bald eagles became habituated to helicopters..." However, the last sentence of these author's abstract states "our data suggest that ordinance explosions, low-level helicopter overflights, and boating should be restricted near eagle foraging areas."

The scientific literature contains many references supporting the notion that loud noises and human disturbance have a negative effect on wildlife. A balanced review of the literature in this area is necessary for a proper review of this proposal.

Page 24. 2.7.3. The applicant cites Allaire (1978) regarding minimum mining buffer distances. This citation is not listed in the References section and therefore can not be evaluated.

The statement that "mining operations will not occur closer than 600 feet from the INWR" is misleading. According to the Mining Plan Map, the constructed overburden berm on the south of the quarry will be less than 400' from the Refuge boundary. Since this berm will be constructed as part of the mining activities, we consider it to be part of the "mining operations."

The applicant provides no basis for the statement that blasting vibrations will be "an insignificant impact" to the Refuge.

Page 25. 2.7.3. The truck traffic volumes that TES is basing its analysis on (65 trips per day) does not match the 30 trucks per hour figure elsewhere in the documentation.

The Reijnen *et al.* (1995) study that the applicant uses to base their assertion that "there should be no effect on wildlife" is not supported by the reference. This study was conducted in deciduous and coniferous forests only. More than half of the area immediately adjacent to Sour Springs and Oak Orchard Ridge Roads is shrubland and grassland, with the remainder in forest cover, so the habitat types are not necessarily comparable. The cited study only looked at roads with between 10,000 and 60,000 vehicles per day. The applicant states that "based on this study, the proposed increase in traffic volumes would not cause significant noise disturbance to breeding birds." However, the authors of the cited study make no inferences about the affects of traffic on breeding birds along roads with lower traffic volumes. The applicant simply makes this assumption. In fact, based on the information in the applicant's documentation, they are unclear as to how much traffic might increase on this road (see Page 25. 2.7.3 comment above). It seems to us that the overall traffic volume is less relevant than what the increase in volume and noise level will be. The applicant has stated that these roads currently receive very low traffic volume. An increase in volume, especially by large trucks, may very well have a significant effect on area wildlife.

The applicant provides a comparison in the traffic volume on Sour Springs and Oak Orchard Ridge Roads to the volume on Route 63, to suggest that effects of traffic on wildlife will be minimal. However, the level of traffic on Route 63 is irrelevant to this analysis except to note that the Refuge is already negatively impacted by traffic and any increase in traffic, no matter how small, will likely compound the problem.

The applicants statement that "it appears that traffic has had no notable impact despite the fact that Route 63 bisects the Refuge" has no basis in fact. To our knowledge, there have been no studies to determine this impact.

Wetland Impact Assessment

The flow analysis conducted by the applicant seems to assume no obstruction to the flow of water through the wetland areas. In fact most of the flow areas are vegetated and this vegetation is dependent on historical flow regimes. Any change to these regimes may have negative impacts to the vegetative community. Additionally, flow analysis that doesn't take into consideration the existing vegetative obstructions will likely overestimate the ability of the system to pass increased water flows.

We can find no discussion regarding the water temperature of water pumped from the quarry onto the Refuge and how that temperature may affect Refuge vegetation, fish, wildlife, invertebrates, etc.

Groundwater Assessment

The applicant's analysis shows that in Phase 1 the water flow onto the Refuge will increase from 185 to 445 gpm or 241%. For phase 4 the increase is from 185 to 1084 gpm or 482%. This is a significant increase in flow, but the applicant insists throughout the document that there will be no effect on Refuge habitats and original drainage patterns will be maintained. The presented data do not seem to support these statements.

The applicant only provides average flow rates and no maximum or minimum flow rates.

Many references are made to the idea that previously mined areas (e.g., Phase 1) "can" be used to store water before discharging onto the Refuge, but there is no plan outlined for this strategy. Additionally, the water stored in these area will eventually have to be discharged, which will eventually result in an increased average flow (>251 gpm) during later phases of the mining operation. Also, the notion of pumping 251 gpm continuously is also just a statement that is not part of any outlined plan.

Thanks for the opportunity to review the document. As you are aware, we have been working with U.S. Geological Survey to conduct a water resources study in and around the Refuge. We have not received a final report on this study yet, but it will help enhance our knowledge of ground and surface water actions in this area.

Sincerely,

Thomas P. Roster
Refuge Manager