DEPARTMENT OF NATURAL RESOURCES

RECORD OF DECISION

In the Matter of the Determination of Need for an Environmental Impact Statement for the Milestone Materials, Rochester Sand and Gravel North Quarry Project In Cascade Township in Olmsted County, Minnesota and in the City of Rochester in Olmsted County, Minnesota

FINDINGS OF FACT, CONCLUSIONS, AND ORDER

FINDINGS OF FACT

1. Milestone Materials, a Division of Mathy Construction Company, proposes the expansion of an existing sand and gravel mining and limestone quarry project within the Rochester Sand and Gravel, North Quarry. The company proposes to shift aggregate mining operations from an existing operation called the South Quarry to the proposed operations in the North Quarry. The North Quarry operation proposes to extract limestone aggregate from 60 feet to 120 feet below grade; access limestone deposits by dewatering (i.e., water removal) operations which are planned to appropriate up to approximately 4 billion gallons of water annually or 333.3 million gallons of water per month; have on-site aggregate washing; and haul sand and gravel to, within, and from the quarrying operations. The project is located in Cascade Township in Olmsted County, Minnesota and in the City of Rochester, Olmsted County, Minnesota. The total project area is approximately 135 acres, of which 70 acres is the area proposed to be mined for aggregate extraction. Proposed project construction would occur in four construction phases or stages over a 50 year to 100 year period of time; however, the duration of the operations will depend on the demand for aggregate.

   The Rochester Sand and Gravel Quarry currently supplies aggregate products to the City of Rochester, Minnesota; to Olmsted County, Minnesota; and to other areas in southeast Minnesota. The aggregate products produced by this site are mostly used in road and building construction for base coarse, hot mix asphalt production, and ready mix concrete. Additional quarry products include rip rap and erosion control stone.

   Currently, the active portion of the company's operation is at the nearby Rochester Sand and Gravel – South Quarry, and there is limited aggregate extraction occurring at the Rochester Sand and Gravel – North Quarry. The limestone aggregate supply of the South Quarry is approaching the end of its life and the major sand and gravel extraction and limestone quarry operations are proposed to move to the adjacent North Quarry of Rochester Sand and Gravel.

The North Quarry up to this time has only been mined to a limited extent. The present quarry area is approximately one acre in size, with other areas of approximately nine to ten acres that have been stripped of overburden in partial preparation for the proposed expansion of the North Quarry. The current depth of aggregate extraction is at an elevation of approximately 960 feet (') mean sea level (msl). The proposed expansion is for the aggregate to be mined to an anticipated minimum elevation of approximately 900' msl in order to access aggregate that meets State of Minnesota quality specifications. Dewatering of the North Quarry is needed to reach this depth of mining.

The operations are proposed to operate on a year-round basis approximately Monday through Friday. Operating hours are likely to occur during daylight hours which generally may be from 5:00 a.m. to 8:00 p.m. from April through September, and from 7:00 a.m. to 5:00 p.m. from October through March. Occasional operations requiring extended hours may occur due to the needs of particular projects or due to the need for specific aggregate materials at particular times. Access to and from the site and to the operation areas will be along the access roads and haul roads, with ingress and egress generally using East River Road to 37th Street NW and 55th Street NE.

For the proposed dewatering for the North Quarry, Milestone Materials has submitted an application for a Water Appropriation Permit to the Minnesota Department of Natural Resources (MDNR) requesting an annual appropriation up to 4,000 million gallons (four billion gallons) of water (333.3 million gallons per month). This requested volume is based on the proposer's industry experience in similar geologic, hydrologic, and hydrogeologic settings. As operations continue, the mining will extend to greater depths within the limestone formation and will extend below the water table. The water appropriated would be discharged to the South Fork of the Zumbro River after treatment within a series of settling ponds which will be constructed on site. The settling pond system will be designed according to permit requirements to be specified in the Minnesota Pollution Control Agency's (MPCA's) National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit to ensure that the water discharged from the site will comply with the MPCA's NPDES/SDS permit requirements and provisions. The North Quarry site has not in the past, and is not currently discharging water into the South Fork of the Zumbro River.

Proposed operations to occur at the North Quarry site include, but are not limited to, removing the topsoil and overburden and stockpiling it for future reclamation of the site. Some of the overburden is a sand product which may be commercially used. Removal of overburden will be typically done using excavators, haul trucks, dozers, and/or scrapers. Once the overburden is removed and the aggregate is exposed, holes will be drilled into the aggregate rock for blasting. Shot rock, created by blasting, will then be fed by a front end loader into an aggregate crusher for size reduction of the product into marketable crushed stone products.

As the quarry operations expand in the North Quarry, the existing aggregate washing at the South Quarry will move to operations at the North Quarry. To wash aggregate on site, multi-staged settling ponds are proposed to be constructed as a system separate from

the dewatering settling ponds. The source of the aggregate wash water is groundwater from dewatering the mine site, which is then recycled and reused within the aggregate washing operations. The process water from the aggregate washing is recycled within the settling ponds and does not discharge to surface water. Water losses from evaporation and loss of water into the aggregate product are replenished with groundwater to be pumped from the quarry sump to the wash ponds, as needed.

Berms are planned along the south, west, and northwest portion of the site; around the existing quarry and the stripped areas; and between the haul road and the east boundary of the property in the southeast portion of the site. Berms will be constructed around the perimeter of disturbed areas as necessary to control storm water runoff. The berms will be constructed of topsoil and subsoil removed from future areas proposed to be mined, and then seeded with grass. Some of the primary purposes of the berms are to contain and divert storm water, to control noise, to control dust, and to limit visual effects from project operations. The berms will be designed and constructed to limit interference with surface water drainage and to not result in surface water impoundments beyond the boundaries of the mining site. Berm heights and widths have been generally identified and will vary in different areas of the property depending on the need to contain and divert storm water, control noise, control dust, and limit visual effects.

Erosion control nets or mats, mulching, filter fabric barriers, straw bale barriers, and other erosion control measures will be used as needed to limit or minimize soil loss during berm construction and during other soil disturbance activities. These erosion control measures will be installed based on generally used methods and procedures. These erosion control measures will also be maintained and inspected monthly (or at other identified periods) as may be required by applicable permit and approval provisions by various permitting or regulatory authorities. Disturbed areas are planned to be seeded with Seed Mixture No. 250. Oats or rye may also be used as a cover crop if seeding occurs in the spring or early summer.

Progressive reclamation of the site will occur as extraction of aggregate resources is completed. Reclamation will be completed concurrently with quarrying activities. In areas of the quarry where the aggregate resources have been depleted, in the event that unstable slopes are found during reclamation, the slopes will be stabilized by the use of heavy equipment. Reclaimed slopes that will be underwater at the site will be left as sheer faces and will not be sloped. The proposed final reclamation of the site will include stabilization of slopes by spreading stockpiled site soils, by seeding, and by allowing the resulting basin to fill with water, thus creating a water basin. Ongoing reclamation will also occur to incorporate erosion control measures and to ensure soil erosion is limited in areas outside of the active quarrying area.

When possible and in areas with active and ongoing reclamation, the topsoil and subsoil stripped and removed will be placed directly into these areas. This will reduce soil handling and also preserve the soil viability for final reclamation and vegetation.

After mining has been completed and reclamation has occurred, the reclaimed site area will include a water basin, however the size, dimensions, and future land uses have not been determined. Opportunities exist for this water basin to be operated and managed for limited recreational uses such as wildlife observation, hiking, fishing, boating, hunting, and other recreational uses. Post-reclamation, the site is currently anticipated to remain in private ownership. Specific plans or proposals for the long-term use of the constructed water basin or for the area adjacent to the constructed water basin have not been identified.

2. The proposed project requires preparation of a State Environmental Assessment Worksheet (EAW) according to the rules of the Minnesota Environmental Quality Board (EQB) and the Minnesota Environmental Review Program. Specifically, the proposed project meets two mandatory EAW requirements: 1) the extraction or mining of sand, gravel, stone, or other nonmetallic minerals which will excavate 40 or more acres of land to a mean depth of ten feet or more; and 2) a new appropriation for commercial or industrial purposes of either surface water or ground water averaging 30 million gallons per month (Minnesota Rules, part 4410.4300, subpart 12.B. and subpart 24.A.).

3. The Minnesota Environmental Review Program rules designate the Department of Natural Resources (MDNR) as the Responsible Governmental Unit (RGU) for conducting environmental review for the proposed project (Minnesota Rules, part 4410.4300, subpart 24.A.).

4. The Minnesota Department of Natural Resources prepared an Environmental Assessment Worksheet (EAW) for the proposed Milestone Materials Rochester Sand and Gravel – North Quarry project, pursuant to Minnesota Rules, part 4410.4300, subpart 12.B. and subpart 24.A.

5. The EAW is incorporated by reference into this Record of Decision on the Determination of Need for an Environmental Impact Statement (EIS).

6. The EAW was filed with the EQB and a notice of its availability was published in the EQB *Monitor* on April 4, 2011. A copy of the EAW was sent to all persons on the EQB Distribution List, to those persons known by the Department to be interested in the proposed project, and to those persons requesting a copy. A press release announcing the availability of the EAW was sent to newspapers, and radio and television stations, statewide. The press release distribution included, but was not limited to, newspapers in the vicinity of the project. Copies of the EAW were also available for public review and inspection at four MDNR offices. The EAW was also made available to the public via a posting on the MDNR's website.

7. The 30-day EAW public review and comment period began April 4, 2011 and ended May 4, 2011, pursuant to Minnesota Rules, part 4410.1600. The opportunity was provided to submit written comments on the EAW to the MDNR by U.S. Mail, by facsimile, or electronically.

8. During the 30-day EAW public review and comment period, ten written comment letters were submitted to the MDNR electronically, by U.S. Mail, or by facsimile. Written comment letters received or with a postmark on or before the end of the EAW public review and comment period were accepted as timely comment letters.

9. During the 30-day EAW public review and comment period, any verbal or written requests for copies of the EAW were responded to by a copy of the complete EAW being sent to these individuals. The MDNR will also provide a copy of the Record of Decision to these individuals.

10. After the conclusion of the EAW review and comment period, the MDNR did not receive any written comment letters or verbal comments on the proposed project or on the EAW. The rules of the Minnesota EQB and the Minnesota Environmental Review Program identify the MDNR's responsibility as the RGU is to provide a response to timely and substantive written comments. The public notices included as part of the EAW contained information about the deadlines for comments and information regarding procedures for responding to comments.

11. After the conclusion of the EAW public review and comment period, following initial review of the majority of the comments submitted on the EAW, and resulting from further evaluation of some of the proposed project features, the MDNR postponed the decision on the need for an EIS in order to collect additional information for determining whether an EIS should be prepared for this project (Minnesota Rules, part 4410.1700, subpart 2a.B.). The MDNR obtained additional information to more thoroughly respond to comments submitted on the EAW, and to evaluate and assess information on the potential for environmental effects associated with the proposed project. A letter describing the MDNR's determination to postpone the decision on the need for an EIS was sent on June 23, 2011 to the EQB official EAW distribution list, to all individuals sent a copy of the EAW, and to any person or group who submitted written comments on the EAW.

12. After the conclusion of the EAW public review and comment period the project proposer made a number of changes and provided additional information to the nature and specifications of the proposed project plans. This was done partially in response to questions and comments requested by the MDNR; partially in response to discussions with or presentations to local units of government, the public, and citizens; and partially in response to re-examining or re-evaluating elements of the proposed project plans. These changes and additional information included, but were not limited to, groundwater modeling; groundwater monitoring; water quantity and water quality monitoring; water appropriations and dewatering and treatment plans involving the dewatering sump and sediment ponds; areas of appropriations and dewatering; berm construction and high walls; blasting and noise considerations; cutting and removal of mature trees; the potential water basin as part of reclamation; limiting effects on private domestic wells; procedures in the event of well interference issues; and transportation and road movement and effects. The project proposer included these changes and additional information in requested draft responses to the MDNR. The project proposer also initiated and

contracted preparation of a groundwater modeling report. The MDNR reviewed this report and generally concurs with the results of the report for the purpose of this Record of Decision. This report evaluated a planned water appropriation of approximately 1,840 million gallons per year at full mine development, and the environmental effects assessed in the report were based primarily on an evaluation of that appropriation. More specific analysis may occur as part of permit application processing by the MDNR. These changes and additional information were not part of the EAW, were provided by the project proposer both after the EAW was issued and after the end of the EAW public review and comment period, and were not part of information reviewed or for which comments were able to be submitted during the public review and comment period. These changes and additional information occurred to respond to lacking information, and because plans and specifications subsequently became more established.

13. Regarding these changes and revisions, in particular those made and proposed by the project proposer, to the nature and specifications and details of the proposed project plans, the MDNR determines that they serve to clarify the information in the EAW about the project, to respond to concerns raised relating to the EAW, and to identify and to elaborate upon the project proposer's specific plans and proposals. Moreover, the changes do not represent or constitute a substantial change to the project from the information in the EAW, which the reviewers had the opportunity to review. The MDNR also determines that these changes improve the knowledge about the effects of the proposed project, and provide decision makers with additional details, specifications, and information by which to make reasoned decisions about the proposed project.

14. The written comments received during the EAW Public Review and Comment period are listed below. A set of all of the timely written comment letters is provided as an attachment (**Attachment No. 1**) to this Record of Decision.

    a. Written comments were received from the following individuals and/or representatives of groups. The date the written comment was received (and/or postmarked) is also indicated:

        1.) Wayne H. Laursen and Earlene M. Laursen for Hallmark Terrace, Inc. (April 20, 2011)
        2.) Barbara J. Huberty for the City of Rochester, Department of Public Works (April 22, 2011)
        3.) Todd Osweiler and Bill Cook for the City of Rochester, Department of Public Utilities (April 25, 2011)
        4.) James R. Lundy for the Minnesota Department of Health (May 3, 2011)
        5.) Michael Brown for the Cascade Township Planning Commission (May 3, 2011)
        6.) Terry Lee for the Olmsted County Department of Environmental Services (May 3, 2011)
        7.) John Harford for the Rochester-Olmsted Planning Department (May 3, 2011)
        8.) Mark Schoenfelder for the Minnesota Department of Transportation (May 4, 2011)
        9.) Karen Kromar for the Minnesota Pollution Control Agency (May 4, 2011); and

10.) Roger Ihrke for the Township Cooperative Planning Association (May 5, 2011).

15. The written comments received on the EAW during the public review and comment period are listed below, compiled and summarized from the comment letters and organized generally by natural resource or environmental issue. Where multiple comments on a specific issue were received, those comments are presented in summary form representing the essence of the comments submitted. The MDNR response follows each comment area.

a. Several written comments were submitted expressing concerns regarding the potential for domestic well interference, water quality, reductions in water quantity, monitoring of water quality and water quantity, and the response to and resolution of potential identified problems particularly with water quality and water quantity. The Hallmark Terrace mobile home park well that is near the proposed mine was specifically identified.

MDNR RESPONSE: In the existing situation, groundwater intercepted by the Hallmark Terrace mobile home park well is flowing to the well from the south-southeast, and groundwater elevations in the Prairie du Chien-Jordan aquifer are predicted to be generally 960 feet msl. This compares closely with the static water level which has been reported on the Hallmark Terrace mobile home park well log (Minnesota Department of Health, Unique Well No. 00220810). The well log also indicates that this well is installed to a depth of 413 feet from the ground surface with a standing column of water of 360 feet. Based upon test pumping of the installed pump, the drawdown is approximately 61 feet. With the northern portion of the Rochester Sand and Gravel – North Quarry operations at their planned complete extent, the groundwater model anticipates groundwater intercepted by the Hallmark Terrace mobile home park well to be generally at an elevation of 930 feet msl with a general drawdown of 30 feet from mining operations. Added to the drawdown from the operation of the Hallmark Terrace well, the total future drawdown is anticipated to be approximately 91 feet, with approximately 269 feet of standing water column remaining in the well. Assuming the pump intake setting is proper and accurate, this is not expected to cause decline in the Hallmark Terrace mobile home park water supply. As part of the MDNR's water appropriation permitting process, Milestone Materials will be required to identify the pump elevation. If necessary, the proposer will be required to have a qualified well driller or pump service company lower the pump to maintain an adequate head.

Groundwater quality effects on the Hallmark Terrace mobile home park wells are not anticipated at this time. Groundwater quality in the Prairie du Chien-Jordan aquifer southeast of the Hallmark Terrace mobile home park is estimated to continue to be similar to that currently intercepted at the well. The project proposer has identified that they will assess water quality at the Hallmark Terrace mobile home park well. The supply well at the mobile home park will be sampled prior to beginning the proposed larger scale operations at the Rochester Sand and Gravel – North Quarry site. This sampling will include the following analytes: nitrate, pH, calcium,

magnesium, iron, and fecal coliform. In addition, water quality and water quantity monitoring will likely be required under the water appropriation permit that Milestone Minerals will need from the MDNR.

Regarding the potential or concern for interference with domestic wells and/or the plans or procedures to resolve interference complaints, any interference to the Hallmark Terrace mobile home park well or wells that are determined to be attributable to the operations from the Rochester Sand and Gravel – North Quarry site, will be addressed according to the MDNR rules regarding well interference policies and procedures (i.e., Minn. Rules part 6115.0730 relating to well interference and problems involving water appropriation). This rule, which water appropriators must follow as part of any issued water appropriation permit in Minnesota, describes the process by which a cause of reported well interference is evaluated, and also describes the procedures and responses required should a complaint regarding well interference be identified, established, and validated. As part of the MDNR's water appropriation permitting process, Milestone Materials will be required to collect domestic well information from a one-and-a-half mile radius from the perimeter of the North Quarry expansion. The MDNR will complete a risk analysis using the domestic well information to identify any domestic wells that could be at risk due to quarry dewatering. Any identified potential risks to domestic wells will be addressed prior to issuance of an appropriation permit. If an appropriation permit is issued, it will contain monitoring requirements to identify potential effects to domestic wells so that protective measures can be implemented.

b. Several written comments were submitted expressing concerns regarding the amount of water being requested for the proposed project and the probable effect of the proposed project on the Prairie du Chien-Jordan Aquifer and the City of Rochester's water supply, including the estimate of long-term effects on water resources.

MDNR RESPONSE: The annual volume of water requested, which was identified in the EAW as 4.0 billion gallons per year, was based on the project proposer's experiences involving the dewatering of other quarries in the southeastern Minnesota area in or based on similar hydrogeologic settings (i.e., including but not limited to a project known as the Golberg Quarry north of Rochester, Minnesota). At the time, the project proposer estimated that this maximum amount of water withdrawal for dewatering would be an adequate volume needed in a maximum future scenario. Additional and subsequent hydrologic modeling of the dewatering operation has been completed for the project proposer by its consultant (Braun Intertec). This modeling suggests that during initial periods and during much of the year, a smaller volume of water will likely need to be pumped on an annual basis to maintain a dry site floor. The steady-state or long-term dewatering rate to maintain a groundwater elevation of 900 feet over the entire site floor could result in the pumping of between 1.84 billion and 4.0 gallons of water per year.

Milestone Materials estimates they would need to pump 1.8 billion gallons of water to dewater the pit in the long term However, based on their past dewatering needs at

their nearby Golberg Quarry, Milestone Materials estimates that there may be short periods of time that they will need to pump up to approximately 4.0 billion gallons of water per year. The amount of water proposed to be appropriated over 1.8 billion gallons per year is primarily water coming out of storage from within the aquifer. During this initial dewatering period, the cone of depression is expected to be smaller in diameter and shallower than that calculated by the Steady State Model. The Steady State Model results represent the maximum depth and diameter for the cone of depression.

Regarding the direction of the local groundwater flow, the groundwater potentiometric contours in the vicinity of the northern portion of the Rochester Sand and Gravel – North Quarry are generally from south/southeast to north/northwest. Based on existing conditions, groundwater flow in the Prairie du Chien-Jordan aquifer in the Rochester vicinity is generally to the South Fork of the Zumbro River with maximum pumping at the northern portion of the Rochester Sand and Gravel – North Quarry. The hydrogeologic modeling results indicate that flow directions are very similar with groundwater flow generally to the South Fork of the Zumbro River, however groundwater flow within one and a half miles south of the Rochester Sand and Gravel – North Quarry shifts more northerly to the quarry instead of to the river.

The dewatering of the Prairie du Chien aquifer in the vicinity of the northern portion of the Rochester Sand and Gravel – North Quarry will expose a portion of the effective porosity of the dolomitic strata predominantly comprising the Prairie du Chien aquifer to air and to oxidation processes. This may accelerate the development of a weathering surface as well as of clayey residential layers on these surfaces. It is probable that without ongoing groundwater flow past these surfaces, the rate of dissolution of the carbonate matrix may somewhat diminish. Within the Prairie du Chien aquifer remaining saturated at 185 feet, the increased flow through its permeability features will likely increase the rates of dissolution of the carbonate matrix. The actual rates of dissolution may be quite variable due to differing clastic mineralogical content of the Prairie du Chien strata and have not been estimated.

Based on applying hydrogeologic principles within the cone of depression from the northern portion of the Rochester Sand and Gravel – North Quarry dewatering, there should be no decreased recharge of the Prairie du Chien-Jordan aquifer; the lower potentiometric heads may instead result in less evapotranspiration from the overlying units and inter-aquifer flow from the lower aquifers. The project proposer's modeled scenario's predicted drawdown averages approximately 45 feet in the potentiometric surface of the Prairie du Chien-Jordan aquifer for the Rochester vicinity and for the northern portion of the Rochester Sand and Gravel – North Quarry vicinity.

Beyond one and a half miles, the predicted modeled scenario drawdown is less than ten feet, which corresponds to a decrease of less than three percent of the potentiometric head above the base of the Prairie du Chien-Jordan aquifer. The comparison of modeling results for the existing conditions and conditions with the proposed modeled site pumping estimates that the cone of depression in the Prairie du

Chien-Jordan aquifer's potentiometric surface will decrease the ambient water elevations at Municipal Well No. 28 by 12.6 feet, which is less than four percent of the potentiometric head above the base of the Prairie du Chien-Jordan aquifer.

The changes over time are anticipated to be somewhat minor because the only change in the dewatering will be the expansion of the dewatered quarry floor over time. Changes to the cone of depression are anticipated to occur only in the immediate vicinity due to expansion of the dewatered quarry flow over time.

The Prairie du Chien-Jordan aquifer extends over thousands of square miles in Minnesota and is used by thousands of domestic wells and many municipalities for water; it is a major aquifer in Minnesota. In the vicinity of the North Quarry expansion (a few square miles), the Prairie du Chien aquifer will be physically removed and partially dewatered. With the removal of rock and water over the life of the quarry operations, the aquifer would have less water available for water users and water dependent resources in the geographic area affected. Once mining has been completed, the aquifer will likely be available again except in the area that had been mined. There may also be minor changes in static water levels and gradients post mining. Relative to the entire aquifer, the negative effects are very limited in geographic and temporal scales.

The proposed monitoring well network for the site includes four monitoring wells that would be screened at intervals sufficient to account for potential drawdown of the static water levels. The planned locations of the wells are one in the north portion, one in the west portion, and two on the eastern side of the site. These wells are all proposed to have dedicated automated water level monitoring equipment. These monitors will be programmed to collect water level measurements on an hourly basis. This data will be downloaded from the data loggers periodically and submitted to the MDNR in a comprehensive report on an annual basis or as required by regulatory and/or permit requirements. The MDNR as part of the water appropriation permitting process will further review the adequacy of the proposed monitoring plan. MDNR permit conditions will require an appropriate level of groundwater and surface water monitoring.

c. Several written comments were submitted expressing concerns regarding the potential or possible effect of the proposed project on the City of Rochester, Minnesota's Municipal Well No. 28.

MDNR RESPONSE: The project proposer has compared the results for the existing conditions and conditions with the proposed modeled site pumping rate. The groundwater model developed for the project proposer predicts or anticipates that the cone of depression in the Prairie du Chien-Jordan aquifer's potentiometric surface will decrease the ambient water elevation at the City of Rochester's Municipal Well No. 28 by 12.6 feet. This well depth is approximately 400 feet, and the anticipated decrease in the standing water column in Municipal Well No. 28 will be approximately less than four percent**.** The pump is set at an approximate elevation of

830 feet. Static water levels in the well are at an elevation of approximately 967 feet. Under existing conditions, there is approximately 137 feet of water over the pump. Under the proposer's modeled drawdown conditions, the static water level would be lowered 12.6 feet leaving 124.4 feet of water above the pump elevation. This amount of water above the pump elevations appears adequate to sustain continued use of the well for municipal water.

Regarding the potential for unanticipated interference with nearby water supplies that are determined to be attributable to the operations from the Rochester Sand and Gravel – North Quarry site, the project proposer will follow the guidelines outlined or described in the MDNR well interference resolution process and will follow the MDNR rules regarding well interference policies and procedures (i.e., Minn. Rules part 6115.0730 relating to well interference and problems involving water appropriation). This rule, which water appropriators must follow as part of any issued water appropriation permit in Minnesota, describes the process by which a cause of reported well interference is evaluated, and also describes the procedures and responses required should a complaint regarding well interference be identified, established, and validated. All well interference complaints received by the MDNR will be addressed according to Minnesota Rules, part 6115.0730.

d. Several written comments were submitted expressing concerns regarding the Rochester North Drinking Water Supply Management Area (DWSMA) and how the proposed project will reduce, limit, or avoid potential or possible contamination of the drinking water supply in the Rochester North DWSMA, and other Department of Health water issues. The Minnesota Department of Health comment letter included a general guidance document for local government plans, rules or regulations as they apply to aggregate mining in DWSMAs. Topic areas in the guidance document include movement of disease organisms, fuel related contamination, storage/waste contamination, bituminous batch plant, groundwater withdrawal, wells in mining areas, illegal dumping, and site reclamation.

MDNR RESPONSE: The proposed northern portion of the Rochester Sand and Gravel – North Quarry overlies highly vulnerable portions of the Rochester North Water Supply Management Area (DWSMA). Milestone Materials will be incorporating safeguards required by the MPCA tank regulations, such as secondary containment of petroleum product storage, at the site as part of an effort to ensure potential effects are limited and reduced and to avoid any possible contamination from fuel or storage facilities. All Milestone Materials mining operations will be required to follow all requirements of the company's Spill Policy.

The proposed project does not include sewage disposal, a bituminous batch plant or wells in the mining area. Storm water will be managed as required under the MPCA general storm water permit. Groundwater withdrawals are regulated under the MDNR and this topic is also addressed elsewhere in the Record of Decision. Illegal dumping and site reclamation are typically regulated by local government units. Olmstead County and Cascade Township are currently having discussions with the Mathy

Construction Company about local government requirements for the North Quarry project. The Minnesota Department of Health general guidance document will be provided to the project proposer and MDNR water appropriation permitting staff for consideration of the proposed water appropriation.

e. Specific written comments were submitted regarding the potential effects of the proposed dewatering operations and pumping on river levels in the South Fork of the Zumbro River during low and high flow conditions.

MDNR RESPONSE: Using the groundwater Steady State Model developed and analyzed by the consultants to the project proposer, Milestone Materials estimates they would need to pump 1.8 billion gallons of water to dewater the pit in the long term. However, based on their past dewatering needs at their nearby Golberg Quarry, Milestone Materials estimates that in the short term they will need to pump approximately four billion gallons of water per year. The amount of water proposed to be appropriated over 1.8 billion gallons per year is primarily water coming out of storage from within the aquifer. During this initial dewatering period, the cone of depression is expected to be smaller in diameter and shallower than that calculated by the Steady State Model. The Steady State Model results represent the maximum depth and diameter for the cone of depression and the potential maximum loss of water from the South Fork of the Zumbro River. As a condition of the MDNR's water appropriation permit, additional stream discharge and stage monitoring will likely be required.

The hydrologic modeling conducted by the project proposer predicts that the cone of depression created by mine dewatering will reduce flows in a 9,000 foot reach of the South Fork of the Zumbro River by approximately 4 cubic feet per second (cfs). The proposed dewatering discharge of approximately 7 cfs at the end of this river reach will offset the reduction and result in an approximate 3 cfs increase in river flows downstream of the discharge location.

The largest environmental effect from these changes is the 4 cfs reduction in flows during low flow periods. The low flow for the South Fork of the Zumbro River in this area is represented by a Q90 flow of 48 cfs. The Q90 low flow is the statistical probability that 90% of time the river flow will be above 48 cfs. The 4 cfs reduction represents an approximate 8% decrease in the Q90 low flow.

The project proposer has indicated that to reduce the potential loss of water from the South Fork of the Zumbro River, they are possibly amenable to relocating the discharge outlet approximately 3,000 feet upstream. This alteration, if incorporated, does not constitute a substantial change and represents a strategy to address comments received on the EAW, to reduce or limit the loss to the South Fork of the Zumbro River otherwise resulting from appropriation, dewatering, and discharge.

The additional 3 cfs downstream of the proposed discharge would have a relatively small effect on river flows that maintain the river channel. Channel maintenance

flows are typically 1.5 to 2 year flood events. These common flood levels establish bank stability and sediment transport rates. The additional 3 cfs from the proposed project is very small compared to these flood events.

f. Specific written comments were submitted on the proposed dewatering effects to the South Fork of the Zumbro River as they apply to the effluent discharge point or points for the City of Rochester's Water Reclamation Plant.

MDNR RESPONSE: Based on this hydrologic modeling, comparing the results for the existing conditions and conditions with the proposed modeled site pumping rate, the hydrologic model predicts that the cone of depression on the Prairie du Chien-Jordan aquifer's potentiometric surface will decrease groundwater discharge to the South Fork of the Zumbro River upstream of the City of Rochester's Water Reclamation Plant by approximately one cfs, which is a relatively small amount. This change is not expected to affect water quality concentrations below the discharge and is expected to have a minimal effect on the discharge location. The MDNR will likely require stream discharge monitoring to further evaluate and quantify the model's predicted reduction in discharge in this reach of the South Fork of the Zumbro River.

g. Specific written comments were submitted regarding the potential effects of the proposed dewatering operations on the now closed City of Rochester Sanitary Landfill. These comments addressed groundwater flow changes and leachate migration beyond the landfill boundaries and the anticipated effects of the pumping and dewatering on the monitoring wells for the closed landfill.

MDNR RESPONSE: The City of Rochester participated in MPCA's Volunteer Investigation and Cleanup program for the former Rochester Sanitary Landfill. A response action plan was completed in 2001 to close the landfill and install monitoring systems. The city monitored groundwater from monitoring wells for some time after 2001, but groundwater monitoring is not occurring now. At the time of closure, the risk of leachate migration to a receptor was very low because there were no wells or groundwater receptors in the area of groundwater flow from the landfill. The closure cover also reduces the potential for leachate by limiting water infiltration into the landfill.

Comparing the results for the existing conditions and conditions with the proposed modeled site pumping rate, the model predicts that the cone of depression in the Prairie du Chien-Jordan aquifer's potentiometric surface will decrease the potentiometric head at the former Rochester Sanitary Landfill by 7.4 feet at the southwest corner of the landfill and by 8.1 feet at the northeastern portion of the landfill near the river. Using the prepared hydrologic model to determine flow lines from the southwestern corner of the landfill, the flow line is predicted to shift downstream, resulting in a minor decrease in residence time from the southwest corner of the landfill to the South Fork of the Zumbro River. The South Fork Zumbro River is the groundwater discharge point for shallow groundwater beneath the

landfill. There are no additional groundwater receptors in the area of this small shift in groundwater flow. The proposed shift in groundwater would not affect the low risk determination for leachate migration that was made after implementation of the response action plan in 2001.

To determine if the monitoring wells will be affected during operations of the Rochester Sand and Gravel – North Quarry, the elevations and submergence depths of their well screens will need to be determined. Presumably these monitoring wells were installed at groundwater elevations that would account for groundwater fluctuations within the range of the predicted changes by the proposed project. This concern will be provided to MDNR water appropriation permitting staff for consideration as part of the water appropriation permit application.

h. Specific written comments were submitted regarding the information in the EAW relating to proximity to areas of Karst topography and to potential effects from blasting in areas or in proximity to areas with Karst topography**.**

MDNR RESPONSE: Within the Prairie du Chien layer that is remaining saturated, the increased flow through its permeability features will likely increase the rates of dissolution of the carbonate matrix; however the rates of dissolution may be quite variable because of a differing clastic mineralogical content of the Prairie du Chien strata. Karst topography has been developing in the Prairie du Chien aquifer area for millions of years. Some karst conduits are likely occluded with weathered rock, residual soils, colluvium, or pre-Wisconsin glacial deposits. Lowering the water table may induce the collapse or removal of these materials, opening up the conduit; and new sinkholes may be expressed at the surface.

Energy released from an explosive charge will only deform or displace the rock formation within the immediate blast zone, approximately up to a few dozen blast hole diameters out from the center of the explosive charge. Previous studies and reports prepared by others (not the project proposer) have suggested or contended that permanent displacement of the rock formation from blasting generally occurs within feet of the blast hole. The proposed monitoring of the site will allow for variations, such as an unexpected increase of water flow to the proposed site or changes in hydraulic gradients, to be recognized and addressed. Monitoring quantities of water appropriated will be completed according to or consistent with requirements specified in MDNR permits.

i. Specific written comments were submitted expressing concerns with the operation of the settling ponds for washing and dewatering, the effects associated with the proposed dewatering and groundwater use for the washing of materials mined from the site.

MDNR RESPONSE: There are two separate water systems proposed at the site. These systems consist of a dewatering system and an aggregate wash water system. These systems are entirely separate from one another, and the waters from each

system will not be interrelated, with the exception that the dewatering system will provide make up water for the aggregate wash water system if needed.

The dewatering system will consist of a sump located at the northern edge of the site. This is the proposed location of the pump(s) that will draw down the water level within the site. The main dewatering sump will be located in the northern portion of the proposed site, while the dewatering system will function to dewater the entire floor of the quarry. The water removed from this sump will consist of groundwater and a small but undetermined amount of storm water which will have originated from within the high walls. This water will be pumped to a series of settling basins estimated to consist of a string of two to three linear ponds running parallel to the South Fork of the Zumbro River. This series of settling ponds will be sized to ensure that all dewatering water discharged from the site into the South Fork of the Zumbro River will meet any and all requirements of the MPCA's NPDES permit for the site.

The second system is the aggregate wash water system, which is proposed to consist of two ponds; one to collect the discharged wash water and one for the intake to the aggregate washing operations. The aggregate washing operation, and its related ponds, will be located within the quarry site and to the south of the dewatering sump. This aggregate wash water system is proposed as a closed loop system. Water is proposed to be pumped from the clean water pond into the aggregate wash plant, where it will be used for washing aggregate, and then discharged to the settling pond, after which it will flow back to the clean water pond to be reused in the aggregate wash plant after allowing for the settling of sediments. Discharge of wash water to surface waters (including to the South Fork of the Zumbro River) is not proposed or anticipated.

The closed nature of this system and the reuse of the wash water reduces the potential for effects resulting from this process. In addition, over a short amount of time, the bottoms of these wash ponds have the potential to become entirely silted in by the settled sediments. This functions also to create an impervious bottom to the ponds that allows very little to limited infiltration or loss from these ponds so the system becomes a process of recycling water through the wash plant.

j. Specific written comments were submitted expressing concerns regarding the proposed creation of a 70-acre lake as a result of site reclamation including the size of lake basin, its location, public or private uses proposed or intended, soils and slopes, vegetative cover, signage, and safety considerations and specifications.

MDNR RESPONSE: When the Environmental Assessment Worksheet (EAW) was prepared, the project proposer identified and was proposing the construction and development of an approximately 70-acre water basin as part of reclamation and completed reclamation. The project proposer now anticipates, in response to geologic data collected at the site, that the water basin following project operations and reclamation, will be 70 acres or less; though its precise size and dimensions have not been determined. Specific information about the water basin will depend on a

variety of factors associated with mining operations and reclamation of post-quarrying activities. The proposer indicated that the grades surrounding the water basin will be safely sloped.

Reclamation is meant to account for the land use of the property after final stabilization occurs. End use activities may include, but are not limited to, activities such as general recreation, on-site fishing, hiking, residential property construction/development or other recreational activities.

Progressive reclamation of the site will be completed as mining operations continue. When all desired aggregate has been removed from an area and it no longer serves a purpose for site operations, the area will be reclaimed. The slopes in these areas will be reclaimed once mining of the areas is complete. These reclamation activities will be done progressively and will be completed once the entire property has been quarried.

In the past, Milestone Materials has worked with various governmental units regarding the end use of former mining properties. Examples of these types of projects include:

- In the City of Hudson, Wisconsin, expansion of the quarry footprint to create a large industrial park is proposed, once the reserves are extracted.
- In LaCrosse, Wisconsin, the former Medary Quarry was donated to the Mississippi Valley Conservancy.
- In the City of Dover, Minnesota, a municipal storm water pond was created in the location of a former sand and gravel pit or quarry.
- In the City of Rochester, Minnesota, there is ongoing final stabilization of a sand and gravel pit where the City of Rochester is the project proposer and Milestone Materials is the constructor of the project. This will create an additional public recreation area within the City of Rochester.

k. Specific written comments were submitted expressing concerns regarding the location and use of roads, haul roads, traffic flow, traffic patterns, traffic movement and access to and from the property, including where trucks will be entering and exiting existing roads and highways. The Minnesota Department of Transportation expressed concern for trucks using 55th Street to access Highway 63.

MDNR RESPONSE: The proposed haul route for the northern portion of the Rochester Sand and Gravel – North Quarry is to exit the site on the southern end and turn east onto 55th Street. Trucks will continue east on 55th Street to the intersection of 55th Street and East River Road. From there, the primary haul route will be to the right, or south, onto East River Road to the asphalt plant located in the South Quarry. All company haul trucks will use this haul route. A lesser amount of truck traffic, mostly for aggregate sold to the general public, will use other routes such as continuing to 37th Street instead of going to the asphalt plant. Some of this traffic

may use 55th Street to access Highway 63, but company haul trucks will not use this route.

Material haul activities generally occur seasonally from April to December. It is not anticipated or expected that the haul routes will change during different times of the year.

To assist in noise mitigation, the use of truck Jake brakes will be discouraged. If appropriate, Milestone Materials will work with the local municipality for placement of signage along the haul route prohibiting Jake brake use. Additionally, all trucks and operators will be required to abide by the federal Department of Transportation and state MNDOT rules and regulations.

The northern portion of the Rochester Sand and Gravel – North Quarry entrance will be gated to prevent unauthorized persons from accidentally or inadvertently entering or accessing the site. In addition, Milestone Materials will work with Cascade Township to provide directional signage to assist the public in traveling near the site.

The intersection of East River Road and 55th Street is a three-way stop intersection. Milestone Materials anticipates little traffic from the west since this is a dead end street in this direction. Traffic from the south and east is primarily from residents of the Hallmark Terrace Mobile Home Park neighborhood. With coordination between Milestone Materials and Cascade Township, Milestone Materials can post additional signage along East River Road and 55th Street to notify users of truck traffic and of the location of the site entrance to the aggregate and quarrying operations.

Milestone Materials will be responsible for maintenance and any repair of road damage created by the Milestone Materials haul trucks on haul routes being used for the Rochester Sand and Gravel – North Quarry. Milestone Materials will work in cooperation with the local township, cities, and/or county to repair and maintain the haul roads, if damaged.

l. Several written comments were submitted expressing concerns regarding the proposed berms around quarrying areas and the other vegetative berms being proposed. These concerns included the height, length, and cover types; the appearance; and short-term and long-term maintenance of the berms.

MDNR RESPONSE: The project proposer, Milestone Materials, is proposing construction of large vegetated buffer berms along the west, south, and southeast sides of the project site. The essential purposes of the berms are to provide visual screening and noise buffering of the activities occurring within the site, such as aggregate crushing, truck hauling, and blasting operations. Additional noise mitigation methods or techniques are planned to reduce noise emitted from site activities, such as working mufflers on stationary and mobile engines, high walls, aggregate stockpiles, providing a large distance between the noise source and the

nearest neighbors, and maintaining natural screening to the extent possible through screening trees, scrub, other vegetation, and topography.

The three large vegetated buffer berms will be constructed along the west, south, and southeast sides of the site. The approximate sizes of the berms are planned to be: (1) approximately 1.4 acres for the west berm (30 feet wide by 1,700 feet long by ten feet high); (2) approximately 4.0 acres for the south berm (120 feet wide by 1,400 feet long by 30 feet high); and (3) approximately 9.0 acres for the southeast berm (210 feet wide by 1,200 feet long by 30 feet high). A three to one slope will be maintained on the exterior side of the berms. The berms are planned to be vegetated with a standard MNDOT mix recommended for rural design grading and/or reconstruction (i.e., MNDOT Type 250 or similar mix). Such berms are typically not mowed, but are allowed to grow as a natural grassland cover.

Some clearing and tree removal will be necessary in order to construct the three perimeter berms. Most of the tree removal is planned to occur in the area of the southeast berm. Approximately two-and-a-half acres of 20 to 40 year old trees and scrub and six-and-a-half acres of 40 to 50 year old mature trees and scrub will be removed to construct the southeast berm. The remaining acres of the nine-acre southeast berm site, the entire west berm site, and the entire south berm site are mostly in a crop land cover type.

The cover types of the berms (as opposed to the berms themselves) will not substantially alter noise and dust exposures. For example, according to the U.S. Department of Transportation, the presence of trees does not physically lessen noise levels. In the case of this proposed project, the proposed berms are intended to be vegetated with grass seed. Dust exposures can be reduced by the introduction of a wind barrier, such as an earth berm, a high wall, or a tree line. The project proposer, Milestone Materials, intends to use vegetated earthen berms and high walls to provide natural dust mitigation, noise reduction, and visual site screening.

m. Several written comments were submitted expressing concerns regarding noise issues, noise buffers, and noise limitations to be incorporated into the project plans**.**

MDNR RESPONSE: The development and operation of the site must comply with MPCA regulations for Noise Pollution Control (Minnesota Rules Chapter 7030). The MPCA has developed standards for residential locations: the limits are L10 = 65 dBA (the level exceeded 10 percent of the time) and L50 = 60 dBA (the level exceeded 50 percent of the time) during the daytime and L10 = 55 dBA and L50 = 50 dBA during the nighttime. The noise level of diesel truck from 50 feet away is approximately 80 dBA. When the distance is doubled from a *point* source, the sound level decreases six decibels. The nearest household receptor to the North Quarry operations is approximately 400 feet away, which would result in approximately 62 dBA at the nearest receptor. This amount of noise will not occur at all times, and the most frequent activity that will occur within this proximity to the receptor is truck

hauling to and from the site. The noise level at the receptor will be further reduced by additional measures proposed and described below.

Milestone Materials will be constructing large vegetated buffer berms along the west, south, and southeast sides of the site as stripping operations progress. The purpose of the berms is to provide both visual screening and noise buffering of the activities occurring within the site. Other noise mitigation techniques are also planned, such as working mufflers on stationary and mobile engines, high walls, aggregate stockpiles, maximizing the distance of the noise source from the nearest neighbors, and maintaining as much natural screening as practicable (i.e., natural topography).

During the early years of the planned operations, berm building will progress as site stripping occurs and the high wall is developed. The intent is to access the 900 feet (msl) floor and then expand the operations horizontally at 900 feet (msl) as needed. A more direct vertical approach to the operations rather than a layered horizontal approach is anticipated to more effectively mitigate the noise levels particularly in the early stages of site development.

To further assist in noise mitigation associated with truck hauling operations, the use of truck engine/compression brakes (Jake brakes) will be discouraged. Milestone Materials intends to work with local governmental units regarding placing signage along the haul routes to discourage or prohibit Jake brake use. In addition, all trucks and operators will be required to follow relevant federal Department of Transportation and/or Minnesota Department of Transportation (MNDOT) rules and regulations regarding Jake brake use.

n. Several written comments were submitted expressing concerns regarding dust suppression and methods to be incorporated into the project plans to mitigate dust effects**.**

MDNR RESPONSE: The compliance measurement of dust suppression is based on a New Source Performance Standard (NSPS) that has been established by the U.S. Environmental Protection Agency. The MPCA has adopted the federal NSPS standard and regulates compliance with this standard through permitting of stationary sources. Consistent with Minnesota Rules, part 7011.0150, Milestone Materials is planning to apply for an MPCA air quality permit. The permit requires compliance with fugitive emission limits consistent with applicable Minnesota and federal regulations for this type of activity. Specifically, dust control can be achieved by the passive use of atmospheric conditions (e.g., rain, snow, and relative humidity); water suppression; shrouding; wind screens (e.g., high walls and vegetated berms); material properties (e.g., material size, residual moisture, and cohesion properties); and operational controls. For the proposed site, dust will mostly be controlled by topography (i.e., the proposed high wall and berms), material properties, and water suppression. Generally in an MPCA permit, fugitive dust emissions from activities (such as material storage), are regulated at the property line.

To mitigate the tracking of dust from the proposed Rochester Sand and Gravel – North Quarry site onto public roadways, the proposal is to pave the entrance haul road with asphaltic pavement. A combination of either watering and/or calcium chloride may be used, when warranted or necessary, to control dust emissions from internal haul roads.

The project proposer indicates that in the event the operations are permitted but cannot meet or comply with the regulated dust emission limits, then the permitted operations will cease activity until compliance with the standards can be achieved.

o. Several written comments were submitted regarding the potential need for local permits and approvals from the Rochester-Olmsted County Planning Department and/or from other local regulatory agencies or entities**.**

MDNR RESPONSE: Milestone Materials, the project proposer, has discussed this issue with staff of the Rochester-Olmstead Planning Department. Milestone Materials has provided statements and/or documentation about the history of continued use of the site for mining since 2000, for consideration of whether or not they need to have local permits, rezoning, conditional use permits, and/or other permitting processes.

The Milestone Materials, Rochester Sand and Gravel – North Quarry Project has not received any final determination (different from that described or identified in the EAW) from the Rochester-Olmsted County Planning Department regarding the need for any local permits or approvals.

If it is necessary to rezone the property, then a conditional use permit and an erosion control and runoff control plan are required from Cascade Township. Review by the City of Rochester Public Works Department would also be required.

p. Several written comments were submitted expressing concerns regarding plans or proposals for on-site wetland delineation to assure a complete evaluation of potential effects on adjacent wetlands.

MDNR RESPONSE: The adjacent wetlands, located along the Zumbro River north of the proposed project site, appear to have a direct connection to the river. It is likely that any water lost from the wetlands to groundwater due to the proposed site dewatering will be replaced by inflow from the Zumbro River. The proposed site dewatering will only have a very small effect on larger river flows that will be providing the water to saturate the wetland soils during the growing season. Potential adverse effects to occur to the water levels of these wetlands are not expected or anticipated. There are no plans to conduct wetland delineations of these wetlands.

q. Several written comments were submitted expressing concerns regarding erosion and sedimentation, including stream bank stability, in and downstream of the proposed project site resulting from the discharge of appropriated water.

MDNR RESPONSE: Dewatering operations will pump water from the mine site to a series of settling ponds that will gravity flow back to the South Fork of the Zumbro River. These settling ponds will dissipate energy from the pumped water to help avoid scour or erosion of the river bank and river.

The additional flow of approximately 3 cfs from the mining operations to the existing river flow represents a very small change in river flow. This amount of change in river flow is not anticipated to cause measurable bank erosion downstream of the proposed discharge location.

MDNR and MPCA regulatory authority over the water appropriation and water discharge, respectively, can assure that the proposed settling ponds and proposed discharge point are designed and constructed to minimize stream bank erosion.

r. Several written comments were submitted expressing concern regarding the potential cumulative effects on the local aquifer from the combined water withdrawals for the proposed North Quarry operations, the continuing South Quarry operations, the Golberg Quarry operations, and the City of Rochester's Public Utility's Municipal Well #28.

MDNR RESPONSE: The predicted drawdown effects on the Prairie du Chien-Jordan aquifer from the northern portion of the Rochester Sand and Gravel and Gravel – North Quarry have been modeled by the proposer's groundwater and surface water modeling study. The modeling indicates a new drawdown of the potentiometric surface radiating from and centered within the Rochester sand and Gravel – North Quarry. There is very little predicted cumulative effect on the Prairie du Chien-Jordan aquifer potentiometric surface from groundwater withdrawals by the northern portion of the Rochester Sand and Gravel – North Quarry, the Rochester Sand and Gravel South Quarry operations, the Golberg Quarry, the City of Rochester public utility Municipal Well No. 28, and other City of Rochester Public Utility wells. The main reason for this prediction is that pumping of the South Quarry is not proposed to be occurring simultaneously with pumping of the North Quarry. It is the company's intent to move mining operations to the North Quarry. The water appropriation from the South Quarry and the Goldberg Quarry are occurring under a permit from MDNR. If for some reason the company changes plans or any unanticipated impacts to Municipal Well No. 28 are identified, the MDNR can restrict pumping or take additional measures to protect the municipal well.

s. Several written comments were submitted expressing concerns regarding the water quality of the South Fork of the Zumbro River and the need to evaluate or explain the similarities or differences between current water quality conditions in the South Fork of the Zumbro River and the anticipated quality of the discharge water from the proposed project.

MDNR RESPONSE: The South Fork of the Zumbro River over the past several years has been undergoing a Total Maximum Daily Load (TMDL) study due to high levels of turbidity and phosphorus found in the river. Total Suspended Solids (TSS) is one measure of turbidity. Estimates made during the South Fork of the Zumbro River TMDL study found flow-weighted means of 50 milligrams per liter (mg/L) of TSS from 1990 to 2008.

Correspondence between the project proposer and the MPCA regarding the pending NPDES permit for the proposed site generally indicates that, due to the impairment of the South Fork of the Zumbro River for turbidity, the TSS load discharged from the site will need to be reduced, limited, or minimized. Existing Milestone Materials quarry dewatering discharges in Minnesota are permitted for a maximum monthly average of 30 mg/l TSS. The MPCA has informed the project proposer that the permitted maximum monthly average TSS concentration for the Rochester Sand and Gravel – North Quarry discharge would likely be set at approximately 20 mg/l. In the past, according to the project proposer, discharges from quarry dewatering operations have been below the maximum monthly average TSS concentration of 30 mg/l and have been generally not greater than the 10 mg/l laboratory detection limit. The proposed discharge will need to comply with the MPCA's ongoing public regulatory authorities and requirements under the NPDES to prevent a further water quality impairment to the South Fork of the Zumbro River.

The MPCA's process for monitoring the discharges of pollutants into waters of the state is the NPDES/ SDS permitting program. The MPCA has two types of NPDES/SDS water permits (General and Individual) that identify requirements and standards with which a permittee needs to comply. The proposer would be required to obtain both of these permits. The MDNR notes that Milestone Materials has already submitted an Individual NPDES permit application to the MPCA covering the proposed project. As part of considering this application the MPCA has conducted a non-degradation analysis that has identified both TSS and temperature as applicable standards that need to addressed in the NPDES permit.

t. Several written comments were submitted expressing concerns regarding the expected or anticipated effects of blasting residues on ground water quality and on surface water quality, as well as on the anticipated effects of airborne releases and ground vibrations from blasting operations.

MDNR RESPONSE: A potential effect on groundwater quality or surface water quality may occur due to blasting residue from undetonated explosives. Because the site will be dewatered, the potential for effects to groundwater is decreased due to reduced presence of water within the blast holes. There are a variety of issues that need to be considered when creating a blast design. The project proposer's plan is that the company and third party licensed blasting contractors will decide on the location and size of each potential blast. A number of factors will be taken into account, such as aggregate type, dry versus wet blast holes, type of blast product, size of blast, and proximity to neighboring property for each blast design in an effort to

ensure complete detonation of all explosives used in each proposed blast. The most currently available technology and products are used in each blast. However, there are no guarantees that all explosives in the blast will detonate. These undetonated explosives, which consist partially of ammonium nitrate, are anticipated to dissolve if introduced to water and may have limited effects on background levels of nitrate in both surface and groundwater.

Due to the proximity of the proposed site to the South Fork of the Zumbro River, every effort will be made to ensure all explosives used during blasting at the site are effectively detonated. Following a blast event, the project proposer will examine each blast area for the presence of undetonated explosives. Undetonated shots may be rare but if they are found, all activities in the area of the blast area will cease until the explosives are detonated or dissolved (in water); or if possible, explosives may be recovered and disposed of off-site by the licensed blasting contractor consistent with state and federal regulations.

In addition, all blasting events will be monitored using an array of seismographs that will be placed in locations to most effectively measure the vibrations at representative directions and distances from each blasting location. In order to reduce or eliminate potential nuisance from noise, dust or vibration, an atypical blasting schedule is planned at the site that is intended to incorporate a series of small scale blasts in contrast to only a few large scale blasting events. This will help prevent air borne releases from blasting operations.

Based on information from the project proposer, any complaints from neighboring properties regarding the proposed blasting events will be thoroughly investigated by Milestone Materials regarding the cause of the complaint. For complaints regarding suspected damage due to blasting, Milestone Materials, along with the blasting contractor and the third party consultant will investigate the complaint and determine the cause of any damage. Milestone Materials will follow the guidelines of the National Fire Protection Association (NFPA 495) explosive material code regulations for blasting criteria and monitoring, as well as the Minnesota Rules chapter 6131 and Minnesota Rules chapter 6132 as they are related to blasting and blast monitoring.

u. Several written comments were submitted expressing concerns regarding potential personal injury risks both during quarrying operations and after site reclamation, including the potential for falls along the quarry-created cliffs or walls and falls or drowning potential if the water basin is established as part of reclamation.

MDNR RESPONSE: When the Environmental Assessment Worksheet (EAW) was prepared, the project proposer identified and was proposing the construction and development of an approximately 70-acre water basin as part of the completed reclamation of the site. Since the time of the public review and comment on the EAW, in response to further geologic data collected at the site, Milestone Materials adjusted its estimate slightly to include a water basin of 70 acres or less, with the precise size and dimensions to be determined. Specific characteristics of the water

basin will depend on a variety of factors associated with mining operations, activities, and reclamation of post-quarrying activities. The volume of overburden that would be removed from the site in order to reach the desired aggregate is anticipated to be sufficient to complete reclamation of all slopes on the site to a safe grade. In response to this comment, the project proposer has indicated that they will provide a safe slope as part of final reclamation. Any regulatory oversight for final reclamation would be from the local government, either Olmsted County or Cascade Township. As mentioned earlier, there is uncertainty about the types of permits, if any, that would be required by the local government units.

Progressive reclamation of the site will be completed as mining operations continue. When all desired aggregate has been removed from an area and it no longer serves a purpose for site operations, the area will be fully reclaimed. The slopes in these areas will be reclaimed once mining of the areas is complete. These reclamation activities will be done progressively and will be completed once the entire property has been quarried.

Progressive reclamation increases site safety. Large site berms and, if necessary, strategic fencing will be constructed as part of the operation to serve as a barrier to any potential unauthorized individuals. The berms and fencing will also provide additional visual screening of the property. The proposed site lies entirely within private property and will remain so after mining operations are complete. "No trespassing" signs will be posted, strategic fencing (if necessary), and locking gates on all ingress and egress points on the property will provide additional safeguards against potential unauthorized entry.

v. Several written comments were submitted expressing concerns regarding the relationship between Milestone Materials' South Quarry and North Quarry operations, including when the South Quarry aggregate extraction is anticipated to conclude, the schedule for the timing and phasing out of aggregate extraction at the South Quarry, the extent of operations that have occurred at the North Quarry, when the dewatering at the North Quarry is anticipated to begin, and whether dewatering operations at the South Quarry will be continuing while there are dewatering operations at the North Quarry.

MDNR RESPONSE: According to the project proposer, all aggregate excavation of the limestone was suspended at the Rochester Sand and Gravel South Quarry area in spring of 2011. The dewatering pumps were turned off and the site was allowed to recharge to static groundwater levels. Sales of previously inventoried material and loading and processing of aggregate, including but not limited to aggregate washing and dredging, in this area of the site have been ongoing; but active mining and extraction of limestone resources have been suspended while further project specifications and plans are developed. At this time, the project proposer does not anticipate dewatering both the North and South Quarry at the same time.

Water appropriation from the South Quarry are authorized by a MDNR water appropriation permit. If for some reason the project proposer decides to re-establish operations in the South Quarry, the MDNR can determine if the combined appropriations from the North Quarry and the South Quarry could have any negative environmental effect. If any negative effect is anticipated, additional monitoring or pumping level restrictions can be required to address potential effects.

w. Several written comments were submitted about the specific plans for the proposed dewatering sump and sediment ponds including the treatment and discharge plans; how they will operate; and whether alternative pond locations further from the South Fork of the Zumbro River can or are being evaluated.

MDNR RESPONSE: The project proposer has completed and refined a proposed location and design of the dewatering sump and sediment ponds. The proposer is planning a series of three linear sedimentation basins. Engineering and design for these ponds have not yet been completed. The project proposer indicates they have used a series of linear ponds in other dewatering operations, and that this has been an effective system for removing sediments from dewatering discharge. While sizing has not been determined, the series of ponds will allow for retention of the dewatered groundwater for a period of time adequate to settle out suspended solids in compliance with MPCA permit requirements. These basins will require maintenance as sediment fills the ponds over time. This maintenance is typically completed during the winter months, when operations have slowed and the dewatering pumps can be shut off to eliminate discharge during the maintenance activities.

The planned design is that once the dewatered groundwater has flowed through this series of basins, it will then be discharged to the South Fork of the Zumbro River. This discharge point will be riprapped with rock in order to dissipate and slow the rate of flow to the river to prevent scouring and erosion of soils.

According to the project proposer, while alternative locations for the discharge of the groundwater have been evaluated, these alternative locations provide no benefit in terms of reducing the potential suspended solids load of the discharged groundwater. The size and management of the ponds, not location, are more directly related to minimizing release of suspended solids. However, as identified earlier in Finding of Fact #15.e, relocation of the discharge point may help reduce dewatering effects to the South Fork of the Zumbro River. The location, design, maintenance, and operation of this dewatering basin system will be subject to ongoing public regulatory authorities and requirements of the MPCA's NPDES program and regulatory permits.

x. Several written comments were submitted with concerns regarding the storage and crushing of concrete and asphalt including where storage and crushing will occur, how the material will be stored, and any limits to the storage of the material on-site.

MDNR RESPONSE: Milestone Materials does not intend to store and process recycled concrete and asphaltic pavement in the northern portion of the Rochester

Sand and Gravel – North Quarry for the foreseeable future. At the present time, these activities will remain in the southern portion of the Rochester Sand and Gravel property.

According to the project proposer, in the unlikely event that recycled concrete and asphaltic pavement storage moves towards the northern portion of the site because storage on the southern portion of the site is no longer feasible or practicable, then the storage and processing of recycled concrete and asphaltic pavement can be managed in the same manner as traditional aggregate. The only regulated portion of recycling and storing concrete or asphaltic pavement is the crushing process, which will be included as part of the MPCA's air quality permit. In the unlikely event that the crushing of recycled concreted and asphaltic pavement occurs on the northern portion of the property, then the crushing of recycled concrete and/or asphaltic pavement will operate in compliance with the MPCA's air permit requirements and/or federal air permit requirements or standards.

At the present time, there are apparently no specifically identified regulatory limits to the amount of on-site storage of recycled concrete and asphaltic materials.

Recycled concrete and asphaltic pavement is used as a substitute for traditional aggregate; and the use of these recycled products is encouraged by potential users of the products and sometimes serves to provide benefits by conserving aggregate resources.

y. Several written comments were submitted with concerns regarding the plans for progressive reclamation at the Rochester Sand and Gravel – North Quarry including which berms are located in designated flood plain areas and the extent to which reclamation plans can or may meet county, city, or township standards for reclamation.

MDNR RESPONSE: All reclamation construction will meet current industry standards for reclamation of the site. Progressive reclamation of the site will be completed as mining operations continue. When all desired aggregate has been removed from an area and it no longer serves a purpose for site operations, the area will be reclaimed. The slopes in these areas will be reclaimed once mining of the areas is complete. These reclamation activities will be done progressively and will be completed once the entire property has been quarried.

Milestone Materials has not, and does not propose construction of berms within floodplain areas on the Rochester Sand and Gravel – North Quarry project property.

Milestone Materials has indicated that they will comply with all applicable local (county, city, and/or township) reclamation regulations and/or standards.

z. Several written comments were submitted with concerns regarding the plans for grading the site including information about potential off-site runoff issues that may

occur as a result of construction and placement of vegetative berms, the potential effects to existing shore land areas, plans to remove or not remove vegetation on slopes greater than three percent, and knowledge of whether such removal is permissible according to local shoreland management standards.

MDNR RESPONSE: According to the project proposer, the grading of the site will occur in phases or stages. The site will be stripped, overburden removed, and bedrock quarried during four phases. Phase 1 will involve approximately ten acres in size on the northern end of the property. During this first phase, site operations areas including crushing and stockpiling areas, sedimentation ponds, berm construction, and haul roads will be constructed, in addition to the mining of bedrock. The grading will continue to a quarry floor elevation of approximately 900 feet msl over the Phase 1 mining area. Once Phase 1 is complete, the stripping of overburden and mining of bedrock will be repeated through three additional phases as mining progresses toward the southern boundary of the site.

Throughout the grading at the site, the site operations will be governed by the Minnesota Pollution Control Agency's storm water management permit, which requires installation and maintenance of best management practices to ensure erosion is minimized both on and off the site and sediment levels are reduced in storm water leaving property boundaries. Compliance with the requirements in this permit will ensure that potential adverse water quality effects to shoreland areas in the vicinity of the site are minimized.

Within an area of previous mining, in the northeast portion of the site, the project proposer has plans to remove vegetation from shoreland areas. Clearing these areas will be completed in order to construct the sedimentation basins for the site. The areas in which vegetation is planned to be removed are limited in extent and are within a former sand and gravel quarry that includes stockpiled aggregate and limited vegetative cover. All clearing of vegetation at the site will be completed according to applicable shoreland management standards.

16. Comments expressing an opinion in support of or in opposition to the proposed project relate to the merits of the proposed project, and/or future determinations to implement the proposed project. These comments do not address the completeness and accuracy of the EAW, specific impacts that require further investigation, the potential for significant environmental effects, or the need for an EIS. These comments will be provided to the project proposer and to permitting and/or approval entities and/or authorities for their consideration as part of further decisions about whether to permit, approve, and implement the project. Those individuals submitting such comments will find their comments regarding the merits of the proposed project or their support for or opposition to the proposed project are not addressed in this Record of Decision.

17. The MDNR determined some information was missing from the EAW, and subsequently received additional, revised and more specific information from the project proposer. The MDNR evaluated this information including, but not limited to, groundwater

modeling; groundwater monitoring; water quantity and water quality monitoring; water appropriations and dewatering and treatment plans; specific information about the dewatering sump and sediment ponds; information about planned water appropriation and dewatering; berm construction and high walls; erosion and sedimentation; blasting and noise considerations; cutting and removal of mature trees; the potential water basin as part of reclamation; physical details about the project and changes to the land; limiting effects on private domestic wells; procedures in the event of well interference issues; and transportation and road movement and associated effects.

The MDNR determines that this additional information and project details serve to clarify the information in the EAW and about the project, to respond to concerns raised relating to the EAW, and to identify and elaborate upon the project proposer's specific plans and proposals. These changes do not represent or constitute a substantial change from the project information in the EAW that the reviewers of the EAW had the opportunity to review. The MDNR also determines that additional information was collected to address those areas for which the EAW was not sufficiently specific and for which information that was lacking was needed to make a reasoned decision about the potential effects of the proposed project. The MDNR also determines that these changes and additional information improve the knowledge about the effects of the proposed project.

18. Written comments were submitted suggesting or contending that elements of information should have been included in the EAW and/or suggesting the EAW was incomplete because it did not contain specific information. The information requested in some of these written comments was included and discussed in the EAW. Since this information was included and evaluated in the EAW, these comments do not accurately contest or challenge the completeness and accuracy of the Environmental Assessment Worksheet (EAW), specific impacts that require further investigation, the potential for significant environmental effects, or the need for an EIS.

19. As noted in the EAW, in this Record of Decision, and in a number of the responses to the comments submitted on the EAW, elements or aspects of the proposed project depend upon construction plans and specifications that may not yet be determined or for which engineering may not have as yet been completed. Many of the project plans (including project engineering) are not finalized and detailed design or construction plans have not yet been determined. Construction plans and specifications, construction schedules, and cost estimates are being determined and developed, and will be completed in the future.

20. The Minnesota Department of Resources has identified the following potential environmental effects associated with the proposed project. These are based upon the information contained and addressed in the EAW; the written comments and concerns received and described in the Finding of Facts in this Record of Decision; and the subsequent information provided by the project proposer to the MDNR and assessed by the MDNR:

a. Project construction and design elements are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

b. Land use compatibility associated with the project is described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

c. Noise, dust, and traffic effects are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

d. Physical impacts on water resources and particularly appropriation effects, dewatering effects, groundwater and surface water effects and relevant mitigation measures or measures to minimize effects are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

e. Effects on water use including domestic water supplies and on water surface use and relevant mitigation measures or measures to minimize effects are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

f. Erosion and sedimentation and relevant mitigation measures or measures to minimize effects are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

g. Water quality, surface water runoff, and groundwater and relevant mitigation measures or measures to minimize effects are described and addressed in the EAW and through additional information that was determined to be needed and was collected after the EAW comment period.

21. The project will comply with any and all permit and approval and regulatory requirements, particularly with those of the MDNR, the MPCA the U.S. Army Corps of Engineers, and applicable local government units.

22. The following permits and approvals will be required for the project:

Unit of government	Type of Application	Status
Minnesota Department of Natural Resources	Water Appropriation Permit	Pending
Minnesota Department of Natural Resources	Installation of Four Monitoring Wells	To be Submitted and Applied For
Minnesota Pollution Control	General NPDES Storm Water	Existing and

Agency	Permit	Ongoing
Minnesota Pollution Control Agency	Individual NPDES Storm Water Permit	Pending
Minnesota Pollution Control Agency	Tank Registration	To Be Applied For
Minnesota Pollution Control Agency	Air Emissions Permit	To Be Applied For
Olmsted County / Cascade Township	Conditional Use Approval	If Needed
Olmsted County /Cascade Township	Land Use Permit or Approval	If Needed

23. Expected or anticipated cumulative effects from projects proposed in the vicinity by the same proposer or by others are limited in nature. There may be limited effects on the local aquifer and on the South Fork of the Zumbro River from the combined or cumulative water withdrawals for the proposed North Quarry operations, for the continuing South Quarry operations, for the Golberg Quarry operations, and for water supply in or serving the City of Rochester. Water quality from site stormwater and dewatering discharge could result in potential cumulative effects to existing conditions in the south Fork of the Zumbro River. These effects are limited and subject to MPCA ongoing public regulatory authority. There may also be limited effects resulting from traffic use in the area combined with North Quarry operation traffic, such as material hauling. No future projects for which a basis of expectation had been laid were identified that could have potential cumulative effects with the proposed project.

24. The Minnesota Environmental Quality Board rules require that if, after a negative declaration has been issued but before the proposed project has received all approvals or been implemented, the RGU determines that a substantial change has been made in the proposed project or has occurred in the project's circumstances, which change may affect the potential for significant adverse environmental effects that were not addressed in the existing EAW, a new EAW is required (Minnesota Rules, part 4410.1000, subpart 5). These rules further require that if the proposed project is an expansion or additional stage of an existing project, the cumulative total of the proposed project and any existing stages or components of the existing project must be included when determining if a threshold is met or exceeded if construction was begun within three years before the date of application for a permit or approval from a governmental unit for the expansion or additional stage but after April 21, 1997, except that any existing stage or component that was reviewed under a previously completed EAW or EIS need not be included (Minnesota Rules, part 4410.4300, subpart 1). Since it is possible that major or significant changes could be made to the project, at variation from or different from the proposed project described in the EAW and in this Record of Decision, the project proposer and MDNR Division of Ecological and Water Resources staff and managers will consult with Environmental Review Program staff in the MDNR's Division of Ecological and Water Resources before implementing changes that vary from the project described in the EAW or in this Record of Decision for a determination from the

MDNR's Division of Ecological and Water Resources regarding the possible or potential need for further environmental review.

25. A substantial number of written comments did not address the Environmental Assessment Worksheet, the accuracy or completeness of the EAW, specific impacts warranting further study, the potential for significant environmental effects, or the need for an Environmental Impact Statement. However, the MDNR as the RGU responded to those comments to provide substantive information and as a courtesy to those who reviewed the EAW and submitted written comments to the MDNR.

CONCLUSIONS

1. The Minnesota Environmental Review Program Rules, Minnesota Rules, part 4410.1700, subparts 6 and 7 set forth the following standards and criteria, to which the effects of a project are to be compared, to determine whether it has the potential for significant environmental effects:

   In deciding whether a project has the potential for significant environmental effects, the following factors shall be considered:

   a. type, extent, and reversibility of environmental effects;
   b. cumulative potential effects of related or anticipated future projects;
   c. extent to which the environmental effects are subject to mitigation by on-going regulatory authority; and
   d. the extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, including other EISs.

2. *Type, extent, and reversibility of environmental effects.*

   Based on the Findings of Fact above, the MDNR concludes the following potential environmental impacts, as described and discussed throughout these Findings of Fact will be limited in extent, temporary, or reversible:

   Construction-related disturbance in and adjacent to the project site;
   Construction-related disturbance of wildlife species;
   Construction-related disturbance of aquatic species;
   Construction-related flow, velocity, and temperature alterations;
   Construction-related erosion, sedimentation, siltation, noise, dust, odors, and traffic; and
   Water-related land use districts by virtue of the site being within the shore land district.

3. *Cumulative potential effects of related or anticipated future projects.*

There are no related or anticipated future projects known to the MDNR recently completed or specifically planned in the foreseeable future that may act in combination to cumulatively adversely affect groundwater and surface water quantity and quality; water appropriations and dewatering; and traffic use, traffic patterns, traffic flow, and road movement in this geographic location.

4. *Extent to which the environmental effects are subject to mitigation by on-going regulatory authority.*

   Based on the information in the EAW and the Findings of Fact above, the MDNR has determined that the following environmental effects, as described and discussed throughout these Findings of Fact, are subject to mitigation by ongoing public regulatory authority, including permits, approvals, enforcement of regulations, or other programs:

   Physical impacts on water resources, construction-related effects, reclamation and restoration, construction-related disturbance, appropriation and dewatering, potential effects to groundwater and/or surface water, vegetative berms, noise and blasting effects.

   Erosion, sedimentation, siltation, sediment transport, water quality, temperature, and construction-related erosion, noise, dust, and odors.

   Post-construction monitoring (the MDNR will continue to review and evaluate the site and monitor the effects of the project on water resources and groundwater and surface water quality in the project area, the overall biological/ecological response, effects on domestic wells, effects of erosion and sedimentation control practices, and monitoring of newly established vegetation to prevent the establishment of invasive plant species).

   The MDNR will also confirm and assure that any and all requirements between the MDNR and other entities are complied with assuring appropriate use and access to public and/or private lands associated with project construction and/or operation.

5. *Extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, including other EISs.*

   The MDNR previously prepared an EAW for a project in northwest Minnesota known as the Wilton Gravel Mine. The MDNR has prepared and/or participated in the preparation of other EAWs or Environmental Impact Statements for other sand and gravel mining operations in Minnesota.

6. The Minnesota Department of Natural Resources has fulfilled all the procedural requirements of law and rule applicable to determining the need for an EIS on the Milestone Materials, Rochester Sand and Gravel – North Quarry Project in Cascade Township in Olmsted County, Minnesota and in the City of Rochester, Minnesota in Olmsted County.

7. Based on consideration of the criteria and factors specified in the Minnesota Environmental Review Program Rules (Minnesota Rules, part 4410.1700, subparts 6 and 7) to determine whether a project has the potential for significant environmental effects, and on the Findings of Fact and Record of Decision in this matter, the MDNR determines that the proposed Milestone Materials, Rochester Sand and Gravel – North Quarry Project does not have the potential for significant environmental effects.

ORDER

Based on the above Findings of Fact and Conclusions:

The Minnesota Department of Natural Resources determines that an Environmental Impact Statement is not required for the Milestone Materials, Rochester Sand and Gravel – North Quarry Project in Cascade Township in Olmsted County, Minnesota and in the City of Rochester, in Olmsted County, Minnesota.

Any Findings that might properly be termed Conclusions and any Conclusions that might properly be termed Findings are hereby adopted as such.

Dated this 2nd day of April 2014.

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Barb Naramore

BARB NARAMORE
Assistant Commissioner