

**FINAL ENVIRONMENTAL ASSESSMENT**

**COMPANY NAME:** Maronick Construction LLC

**PROJECT:** Foster Site

**LOCATION:** Sec. 17, T10N R2W

**COUNTY:** Lewis & Clark

**PROPERTY OWNERSHIP:**  Federal  State  Private

**TYPE AND PURPOSE OF ACTION:** The proponent has applied for a Mined Land Reclamation Contract that if approved would result in a total of 304 acres being contracted of which 218 would be mined. Gravel, sand and small sized mineral fractions would be mined, washed, crushed, and processed into concrete, various sized aggregate products, and batch asphalt as needed. Total production would be 8,800,000 cubic yards through 2020, the life of the mine. The operation would supply sand, gravel, concrete and asphalt mix products to the local area. **The proposed operation would begin operating when the existing operation to the west is depleted. However, there will be a short period of time when both sites are operated simultaneously. Annual production levels are not proposed to increase at the new site. If the two sites were operated simultaneously, truck traffic and production would not exceed what is currently projected for the proposed operation.** The mine would operate year round, as needed, Monday through Friday between **7:00 a.m. and 6:00 p.m.** There would be times when the hours of operation may be extended beyond normal hours or on the weekend if a contract deadline must be met or other extenuating circumstances occur. Upon completion of mining, the site would be reclaimed to **three** ponds for wildlife and recreation.

**Changes from the Draft Environmental Assessment are in bold.**

N = Not present or No Impact will occur.  
 Y = Impacts may occur (explain under Potential Impacts).

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>[Y/N] POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
1. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:	<p>[Y] The proposed gravel pit is located in the Helena Valley on valley fill estimated to be 6,000 feet thick. This valley fill is composed primarily of fine and coarse grained Tertiary sediments unconformably overlain by about 100 feet of Quaternary alluvium. The upper few hundred feet of valley fill is composed of complexly stratified lenses of cobbles, gravel sand, silt and clay. The Quaternary valley fill forms a gently sloping alluvial plain in the Helena Valley that measures about 8 miles square. The alluvial plain is bounded by pediments and alluvial fans that descend from the Elkhorn Mountains and Boulder batholith to the south, the Scratchgravel Hills to the west, and the Big Belt Mountains to the North. A line of low, rolling hills composed of poorly consolidated fine-grained Tertiary sediments form the Spokane Bench on the east.</p> <p>Results from 15 test holes on the property show an average of 8 to 9 inches of soil on the site, however there may be areas where the soil is more or less. If greater depths of soil are encountered, all that are available will be salvaged. All topsoil material would be salvaged and stockpiled away from the mined land. Overburden would be sold as product. The site would be mined and reclaimed in seven phases with reclamation being concurrent with mining. Following mining, grading and ripping, the soils would be replaced in all disturbed areas (including down to the high water mark of the shores), disced and seeded to prevent erosion. Microbes would re-colonize the soil.</p>

## IMPACTS ON THE PHYSICAL ENVIRONMENT

### 2. WATER QUALITY, QUANTITY AND DISTRIBUTION:

[Y] The site is located along the eastern margin of the valley-fill aquifer system of the Helena Valley. The upper few-hundred feet of the valley-fill aquifer is described by Briar and Madison (Hydrogeology of the Helena Valley-Fill Aquifer System, West-Central Montana, U.S. Geological Survey, Water-Resources Investigation Report 92-4023, 1992) as a sequence of complexly stratified lenses of cobbles, gravel and sand with 30-70 percent of the section composed of intercalated silt and clay. This portion of the aquifer likely functions as one complex unconfined system because the lateral discontinuity of the many fine-grained layers allows hydraulic interconnection of the coarse-grained water-yielding zones. Briar and Madison (1992) estimate the effective hydraulic conductivity of the water-yielding zones to be between 100 and 200 feet per day (ft/d), and the effective vertical hydraulic conductivity of the aquifer system as 1-3 orders of magnitude less. The potentiometric surface in the upper 25 ft of saturated valley fill depicts horizontal ground-water flow from the south, west and north margins of the valley toward Lake Helena.

In the site vicinity, ground-water flows north, sub-parallel to the fine-grained Tertiary sediments of the Spokane Bench which lines the east side of the Helena Valley. The depth to ground water ranges from 20 to 40+ feet from north to south across the site. Water table fluctuations between 8.39 and 13.42 feet have been recorded by Briar and Madison, (1992) down and up-gradient of the site, respectively. High ground-water measurements recorded in the site vicinity correlate roughly with or follow the peak irrigation season in late summer while low ground-water table conditions occur in the early to mid-spring before irrigation commences. Analysis of water samples collected in the Briar and Madison (1992) study indicate that water in the valley-fill aquifer in the site vicinity is a calcium-bicarbonate type. Water samples collected from wells completed within the valley-fill aquifer in the site vicinity exhibit good water quality with approximately 250 milligrams per liter total dissolved solids. Other constituent concentrations from valley-fill aquifer wells in the site vicinity are below the EPA maximum contaminant levels established for drinking water.

Several domestic wells are located within 1/4 mile of the proposed site boundary. Department of Natural Resources and Conservation and United States Geological Survey records identify the following: The Foster well located on site and completed within the valley-fill aquifer will be mined through; two wells to the north of the site are completed in the valley-fill aquifer to 52 and 53 feet and are owned by Chrest and Burnham, respectively; three wells to the east of the site are completed in Tertiary deposits of the Spokane Bench to 100, 119 and 235 feet and are owned by Sheppard, Hazlewood and Mitchell, respectively; two wells to the south are completed in the valley-fill aquifer to 69+ and 100 feet and are owned by Garber, and; two wells to the west, one of unknown depth owned by Siewert, and another completed in the valley-fill aquifer to 58 feet and owned by Armagost. Also, noteworthy are several additional wells associated with a subdivision ~1/2 mile west of the site.

#### Permanent Diversion Ditch/relocated Channel

The unnamed ephemeral channel that intersects the proposed permit area in the south would be relocated directly west of the proposed mine area, and placed between the temporary soil stockpiles and Lake Helena drive. The relocated, meandering channel would be grass lined and designed to pass the 100-yr, 24-hr precipitation event with a minimum of one foot of freeboard. It is expected that a smaller channel would develop within the larger channel over time, which should enhance vegetative diversity.

The applicant plans to dredge or excavate to 10 feet below the anticipated low water table to remove the gravel resource. **Following mining, the site would be reclaimed to three interconnected ponds. The pond system will create a flat area in the water table at an average elevation approximately equivalent to that of the pre-mine ground-water system at the midpoint of the excavated area. The pond system is anticipated to draw the water table down (~5 feet) on the up-gradient (south) end of the mined area, and create a ground-water mound (~5 feet) on the down-gradient (north) end. Impacts to adjacent landowners should be negligible.**

## IMPACTS ON THE PHYSICAL ENVIRONMENT

3. AIR QUALITY:

[Y] Equipment operation would emit exhaust emissions. The haul and access road would be paved. Pit dust (materials transfer, pile forming, bulk loading) would be controlled by spraying with water from the settling ponds or the water well. The water would be used, as necessary, to maintain compliance with opacity requirements.

**The department requires ambient air quality monitoring to be conducted if the source that is applying for a permit is subject to review under the Prevention of Significant Deterioration (PSD) permitting program or if the department believes that the operation would violate an applicable ambient air quality standard. Neither of these instances should be the case for the proposed operation.**

The PSD program would apply to the operation if potential emissions exceed 250 tons/year of a regulated pollutant. All of the portable operations in Montana have emissions that are typically far below this level. The PSD program contains the baseline monitoring provisions. However, the PSD program doesn't require that the operation stay below the baseline concentration established from the monitoring. Rather, the PSD program allows an increase in the baseline concentration as long as the increase does not exceed the increment levels defined in the Administrative Rules of Montana 17.8.804. Once again, in all likelihood the PSD program would not apply to the proposed operation because the potential emissions should be well below 250 tons/year. If the PSD program does apply to the proposed operation, the department will require the appropriate monitoring to be conducted.

The other instance where the department requires ambient air quality monitoring to be conducted is when the department is concerned that an ambient air quality standard may be violated. The pit itself should not have emissions close to levels the department would be concerned with. In addition, before any equipment (crushers, screens, conveyors, etc.) was able to be operated in the pit, the owner/operator would have to apply for an receive an air quality permit. In reviewing any permit application, the department ensures that compliance with all applicable rules and standards is demonstrated before an air quality permit is issued. To date, ambient air quality monitoring has not been required for these types of operations.

4. VEGETATION COVER, QUANTITY AND QUALITY:

[Y] Vegetation on the mine site is hay field and tame pasture consisting primarily of introduced species including barley (harvested as hay) and alfalfa. The unnamed ephemeral drainage has been heavily impacted and the vegetation consists mainly of ragweed and smooth brome. Small patches of willow are also present along the drainage. Marginal stands of cottonwoods and willows are present along the irrigation canal on the east side of the site and along a fence line in the middle of the site. There is no record of rare plants or cover types being present. Because of previous disturbance associated with establishing and using the hay field and tame pasture, it is unlikely that there are any rare plant species on the site. Stripping of soil would destroy the existing vegetation. After mining ceases, the disturbed area in each phase would be recontoured, topsoiled, and replanted with introduced and native grass and legume species. **The slopes would be seeded down to the highwater mark.** Trees and shrubs would be planted around the proposed ponds, along with cattails. **Section I(7) of the attached Plan of Operation discusses the premine vegetation and Section II(10f) discusses the postmine vegetation. The Plan of Operation would acheive the desired wildlife habitat.**

## IMPACTS ON THE PHYSICAL ENVIRONMENT

5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

[Y] The area is used primarily for farming, grazing and rural residential sites. Limited use of the site by deer, pronghorn, game and non-game birds, raptors, coyotes, foxes, raccoons, small mammals, and waterfowl occur throughout the year. The site is used primarily for foraging; however, some landbird and upland game bird nesting is expected on the site, particularly in the areas of tree and shrub cover. Waterfowl may also nest in the undisturbed areas along the irrigation ditch. The open agricultural fields, which make up the majority of the area to be disturbed, provide marginal habitat for nesting; therefore, the impacts to nesting birds will also be marginal. Bald eagles, as well as other raptors, may occasionally roost/perch in the trees scattered throughout the site; however, this use is very transitory and the site is not considered to be habitat that is important to these species.

Bats probably forage along the open water of the irrigation ditch during the summer. Some roosting in the cottonwoods may also occur. A limited number of small mammals are expected within the habitats found on the site. Coyotes, fox and raccoons use the area for hunting.

Human use of the area has intensified in the past decades with the increase in residential activity. The increase in human activity in the area of the mine has already substantially impacted the wildlife community inhabiting the site. The presence of agricultural fields has also reduced the value of the area to the wildlife community. While the site of the proposed expansion is used by a number of wildlife species, the proposed mine is not expected to further degrade the wildlife community significantly. As the mining operation is initiated and progresses through the area, displacement of the wildlife community will occur. As the area is reclaimed, the use by these species should return.

Several mitigating circumstances have the potential to reduce the impacts of the mining operation to the wildlife community. The peripheral areas of the site currently contain the most diverse habitats. To a large extent, these areas will not be disturbed by the operation. Thus the better wildlife habitats will continue to be used, probably at a reduced level, during the life of the mine. The company has also indicated that tree and shrub plantings are planned for the undisturbed areas, as well as the reclaimed areas. This habitat improvement will increase the value of the area to the wildlife community. Reclamation of the area to **three** permanent ponds surrounded by a variety of diverse wildlife habitat will also provide for long-term wildlife habitat enhancement. The proposed mining operation includes maintaining reclamation concurrent with the disturbance. This will also decrease the long-term impacts by providing wildlife habitat throughout the disturbance period.

**Section II(1) (Post Mining Land Use) of the Plan of Operation states that Ducks Unlimited would be contacted and their suggestions regarding wetland species of vegetation would be utilized where possible. The proponent has committed under Section II Grading to fashioning the ponds using the open cut guidelines and committing to irregular shaped shorelines. Under Section II(10b) (Permanent Vegetation Seeding or Planting) of the Plan of Operation the operator has committed to seeding and planting vegetative species including cattails which are compatible with the post mining landuse.**

6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

[N] No unique, endangered, fragile, or limited environmental resources were identified as present.

7. HISTORICAL AND ARCHAEOLOGICAL SITES:

[N] A cultural resource survey has been done and no resources were found. If any archaeological or historic resources are encountered during mining, operations would be routed around the site of discovery and the Department and the State Historic Preservation Office promptly notified.

## IMPACTS ON THE PHYSICAL ENVIRONMENT

<p>8. AESTHETICS:</p>	<p>[Y] The proposed mine site is just north of the Canyon Ferry Road and just east of Lake Helena Drive. Land uses in the surrounding area are rural residential, ranching and farming. There are six houses within 1,000 feet of the site, and numerous other homes within 2,000 feet including a subdivision to the west. The proposed operation would be visible to people living in or traveling through the area. Topsoil would be stockpiled in berms, which would be rounded and seeded with the approved seed mixture, and positioned to reduce views of the pit from the surrounding areas as much as possible. The proponent would also plant trees and shrubs prior to operating the site and since no mining would occur for a period of between five and ten years the trees and shrubs should be sufficiently established to reduce noise and visual impacts. Noise levels would increase over the present condition. Topsoil berms and vegetation would help reduce noise generated by equipment.</p> <p>The topsoil berm on the north edge of the proposed operation would be of a lesser height to allow the landowner to the north an unobstructed view of the Elkhorn Mountains.</p> <p>Those residents located on the Spokane Bench would be able to see and hear the operation. The hours of operation and the distance from the proposed operation would lessen the noise impact. With mining and reclamation occurring in phases, the visual impacts would be less than if the entire area of the proposed operation were to be opened up and mined. The facility area would be mined to a depth of 10 feet prior to placement of the equipment i.e. crushers, asphalt batch plant, and concrete plant. This plus the 15 foot high topsoil berms would also reduce the noise and visual impacts relating to the facility area.</p>
<p>9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:</p>	<p>[Y] No limited resources would be expected to be used. The operator proposes to pump water from the proposed pit for supplying various aspects of the operation with water. Water rights for that water supply would be regulated by the Department of Natural Resources and Conservation. The operator anticipates pumping and recycling 500 g.p.m. from the proposed gravel pit and settling ponds during operational hours (11 hours daily April through November).</p>
<p>10. IMPACTS ON OTHER ENVIRONMENTAL RESOURCES:</p>	<p>[N]</p>

## IMPACTS ON THE HUMAN POPULATION

<p>11. HUMAN HEALTH AND SAFETY: Will this project add to health and safety risks in the area?</p>	<p>[N] It is anticipated that trucks would complete approximately 90 round trips per day during the peak of the construction season, not significantly different from the present situation at the current operation on Canyon Ferry Road. The number of trucks per day could change depending on the economy of the area at the time the proposed operation would begin. Access would be onto Canyon Ferry Road. The <b>approach</b> would be constructed to give good site distance for traffic entering the road from the pit and from vehicles traveling Canyon Ferry Road. <b>The proponent must obtain a permit for the approach from Lewis and Clark County. In its permit review the county would look at and address safety issues.</b> Air pollutants would be kept to a minimum through limitations on the duration of activity and the use of best available control technology as described in part 3 above.</p>
<p>12. INDUSTRIAL, COMMERCIAL AND AGRICULTURAL ACTIVITIES AND PRODUCTION:</p>	<p>[Y] 304 acres would be taken out of agriculture and replaced with ponds which would be used for wildlife and recreation.</p>
<p>13. QUANTITY AND DISTRIBUTION OF EMPLOYMENT: Will the project create, move or eliminate jobs? If so, estimated number.</p>	<p>[N]</p>
<p>14. LOCAL AND STATE TAX BASE AND TAX REVENUES: Will the project create or eliminate tax revenue?</p>	<p>[N] To this date it has not been shown that this type of operation has resulted in a reduction in taxable value of property and it is not anticipated that this project would alter past assessments. The presence of an industrial site in the midst of an agricultural/rural residential area has the potential to temporarily reduce the desirability of surrounding land as a location to live a rural lifestyle until reclamation is completed, and therefore the marketability of improved and unimproved real estate may be temporarily diminished as some prospective buyers would not purchase these properties. However, presence of water front property may increase the desirability after reclamation.</p>

IMPACTS ON THE HUMAN POPULATION	
15. DEMAND FOR GOVERNMENT SERVICES: Will substantial traffic be added to existing roads? Will other services (fire protection, police, schools, etc.) be needed?	[N] Traffic associated with the proponent's current operation to the west, just south of Canyon Ferry Road, would be shifted to the east to the proponent's proposed operation. Truck traffic from the proposed operation would use various county roads to deliver the products, just as the current operation does. <b>The maximum of approximately 90 round trips per day during the peak of the construction season would not add substantial traffic to the existing roads as this is the amount of truck traffic already using Canyon Ferry Road during the height of the construction season. The highest projected growth for the Helena Valley is in the area east of the City of Helena, south of York Road and north of East Helena. The location of the proposed operation could decrease the amount of miles driven by trucks in getting to various projects, thus decreasing the likelihood of accidents. The overall wear and tear on roads within the Helena Valley could be less with a centrally located operation near the projected area of high growth.</b>
16. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS: Are there State, County, City, USFS, BLM, Tribal, etc. zoning or management plans in effect?	[N] There is no zoning in the area of the proposal.
17. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES: Are wilderness or recreational areas nearby or accessed through this tract? Is there recreational potential within the tract?	[N]
18. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING: Will the project add to the population and require additional housing?	[N]
19. SOCIAL STRUCTURES AND MORES: Is some disruption of native or traditional lifestyles or communities possible?	[N]
20. CULTURAL UNIQUENESS AND DIVERSITY: Will the action cause a shift in some unique quality of the area?	[N]
21. REGULATORY RESTRICTIONS ANALYSIS: Are we regulating the use of private property under a regulatory statute adopted pursuant to the police power of the state? (Property management, grants of financial assistance, and the exercise of the power of eminent domain are not within this category.) If so, no further analysis is required.	[Y] The proposed gravel mine would be regulated under the Opencut Mining Act (Title 82, Chapter 4, Part 4, MCA).
22. REGULATORY RESTRICTIONS ANALYSIS: Does the proposed regulatory action restrict the use of the regulated person's private property? If not, no further analysis is required.	[N] There are no conditions imposed that are not required by the act or agreed to by the applicant. Therefore, no further analysis is required.
23. PRIVATE PROPERTY IMPACTS: Does the agency have legal discretion to impose or not impose the proposed restriction or discretion as to how the restriction will be imposed? If not, no further analysis is required. If so, the agency must determine if there are alternatives that would reduce, minimize or eliminate the restriction on the use of private property, and analyze such alternatives.	[N/A]
24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:	[N] Sections 11 through 23 above, address the social economic issues raised relative to this project.

25. ALTERNATIVES CONSIDERED:

No Action: The proposed mine would not be permitted.

Approval: The gravel mine operation would be permitted, however, the Plan of Operation would be reviewed and modified, if necessary, upon the department receiving two years of data from the groundwater monitoring wells. See Section 28.

26. PUBLIC INVOLVEMENT: The availability of this EA was advertised in the Helena Independent Record newspaper. Copies were sent to interested parties for public review and comment. Seven completed Resident Notification forms were received and any comments noted by the department.

27. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION: Montana Department of Environmental Quality for Air Quality Permits; Mine Safety and Health Administration for safety permit; Montana Department of Labor & Industry, Bureau of Safety for safety permit; Montana Department of Natural Resources and Conservation for the water right for the water well. The State Fire Marshal's Office was consulted regarding proper fuel storage and handling.

28. MAGNITUDE AND SIGNIFICANCE OF POTENTIAL IMPACTS: No significant impacts associated with the proposed operation are anticipated. Impacts are unlikely to be significant because of the site being operated and reclaimed in phases. Foreseeable impacts and mitigation associated with groundwater quantity, quality and distribution reclamation to a final pit ponds are as follows: (1) The maximum depth of mining is uncertain at this time because department review has shown that the watertable can fluctuate 10 feet or more. Therefore, the proponent has committed to installing monitoring wells near the four corners of the site and monitor water-levels and quality for a period of two years. After that two-year period the Department will reevaluate the original plan, and if necessary, require that the applicant amend the permit to state projected mining depths that relate to the actual water table elevation measurements recorded during monitoring at the site. (2) The relatively permeable and unconfined nature of the valley fill aquifer system leaves it susceptible to potential contamination from surface or near-surface sources. In order for the permit to be approved, the proposed fuel storage area must comply with applicable state and federal regulations. Annual groundwater samples would be taken and analyzed for gasoline and diesel range organics. (3) Water table drawdowns associated with the proposed post-mine pit ponds may have a slight effect on water levels for existing domestic wells at the south end of the site. In order for the permit to be approved, the operator must commit to measuring ground-water levels at site monitoring wells for the duration of the project to identify local drawdown effects relative to regional conditions. The operator's monitoring plan must be approved by the Department, and any changes in monitoring frequency must be approved by the Department.

29. CUMULATIVE EFFECTS: The proponent, Maronick Construction, and Big Sky Ready Mix both presently operate gravel mines near each other two miles or so west of this proposed mine site along Canyon Ferry Road. Big Sky Ready Mix has also applied to open a new mine (east of Valley Drive), approximately one mile northwest of Maronick Construction's proposed mine, and they propose to begin to operate it at about the same time as Maronick Construction has proposed. Both of the present mines would be closing when the two new mines are being opened. The new mines would have employment levels, mining rates, and truck traffic similar to the present mines. The effect of the two proposals would be to move existing mining impacts to a different location in the same general area of the Helena Valley with little or no net change in impacts

The proposed operation would be mined and reclaimed in phases. There would be a total of seven phases and the proponent would mine and reclaim one phase and then move to another phase. Reclamation would be concurrent with mining. The proposed operation would locally add to the existing disturbance of wildlife, wildlife habitat, and aesthetics caused by rural residential development, roads and traffic, and other human activities. However, the total mining impact for this part of the Helena Valley would not change appreciably. Up to 304 acres used for farming and livestock grazing would be eliminated, and in its place would be ponds for wildlife and recreation. The other forms of human disturbance will remain and are likely to increase in the future as the land is further subdivided and more people move into the area.

Recommendation for Further Environmental Analysis:

EIS     More Detailed EA     No Further Analysis

EA Checklist Prepared By: Greg Hallsten and Sandi Olsen Permitting and Compliance Division, Chris Yde, Dan Erbes, Herb Rolfes, and Jerry Burke, Industrial & Energy Minerals Bureau

Approved By: Steve Welch, Chief, Industrial & Energy Minerals Bureau

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Signature

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Date