

## ENVIRONMENTAL ASSESSMENT

### On an Application for an OPENCUT MINING PERMIT

The Montana Department of Environmental Quality (DEQ) prepared this Environmental Assessment (EA) in accordance with requirements of the Montana Environmental Policy Act (MEPA). An EA functions to identify, disclose, and analyze the impacts of a proposed action. This document may disclose impacts that have no legislatively required mitigation measures, or over which there is no regulatory authority.

The state law that regulates gravel mining operations in Montana is the Opencut Mining Act. This law and the rules adopted thereunder place operational guidance and limitations on a project during its lifetime, and provide for the reclamation of land affected by opencut mining operations.

Local governments and other state agencies may have authority over different resources and activities under their regulations. Approval or denial of this Opencut Application will be based on a determination of whether or not the proposed operation complies with the Opencut Mining Act and the rules adopted thereunder. The DEQ approval of this application would not relieve the operator from the obligation to comply with any other applicable federal, state, or county statutes, regulations, or ordinances. The operator is responsible for obtaining any other permits, licenses, approvals, etc. that are required for any part of the proposed operation.

**APPLICANT:** Granite County

**COUNTY:** Granite

**SITE NAME:** Middle Fork Gravel Pit

**DATE:** April 2016

**LOCATION:** Section 16, T5N, R15W

**PROPOSAL:** The applicant proposes to permit a new, long-term gravel pit to mine, screen, crush, stockpile, and transport 63,250 cubic yards of gravel from a 9.2-acre site located 16 miles southwest of Phillipsburg, MT off Moose Lake Road. The site is situated on Department of Natural Resources land and contains an area that was historically mined. Reclamation of the proposed permit would include reclamation of the historically mined and abandoned area.

The Granite County Road Department would be liable to reclaim the site to rangeland/pasture by October 2035. This application contains all items required by the Opencut Mining Act and its implementing rules. Proponent commits to properly conducting opencut operations and would be legally bound by the permit.

IMPACTS ON THE PHYSICAL ENVIRONMENT	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
<b>1. TOPOGRAPHY, GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:</b>	<p>The site is situated on a relatively planar to somewhat convex alluvial terrace that is slightly undulating and sloping gently to the northeast. A portion of the topography is modified into a depression by historic mining.</p> <p>The onsite soils consist primarily of Lone Rock-Sarbo complex, 2 to 4 percent slopes. Approximately four acres were historically mined and are void of soil. The operator would replace 9 inches of soil and 0 inches of overburden. Fourteen (14) inches of soil would be salvaged from the portions of the site that remain undisturbed and 9 inches would be uniformly reapplied.</p> <p>The site receives approximately 15 to 19 inches of precipitation per year.</p> <p><i>Impacts:</i> An irreversible and irretrievable removal of gravel from the site would occur. A small impact to the quantity and quality of soils from salvaging, stockpiling, and resoiling activities also would occur, but this would not impair</p>

<b>IMPACTS ON THE PHYSICAL ENVIRONMENT</b>	
<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
	the capacity of the soils to support full reclamation. There are no unusual topographic, geologic, soil, or special reclamation considerations that would prevent reclamation success.
<b>2. WATER QUALITY, QUANTITY AND DISTRIBUTION</b>	<p>The Middle Fork of Rock Creek is located approximately 1,500 feet to the west and the East Fork of Rock Creek is located approximately 1,100 feet to the east. An irrigation ditch flows from east to west at least 50 feet outside of the proposed northern boundary. There is evidence that water is occasionally present within the lowest point of the previously mined portion of the site. Water would be used onsite for dust control and would be obtained from a source located greater than 300 feet from the proposed permit boundary.</p> <p><i>Impacts:</i> The proposed activities would have a minimal effect on the quantity and quality of the surface and groundwater resources.</p> <p><i>Cumulative:</i> The proposed action in conjunction with surrounding land uses will likely have negligible impacts on resources and may ultimately be a net improvement given the present unreclaimed state of the land.</p>
<b>3. AIR QUALITY</b>	<p>Air quality standards are based upon the Clean Air Act of Montana and pursuant rules and are administered by the DEQ Air Resources Management Bureau (ARMB). Its program is approved by the Environmental Protection Agency (EPA). These rules and standards are designed to be protective of human health and the environment.</p> <p>Air quality permits would be required on the processing equipment before installment. Machinery, such as generators, crushers and asphalt plants, are individually permitted for allowable emissions. Best Available Control Technology (BACT) is the usual standard applied.</p> <p>Fugitive dust is that which blows off the pit floor, stockpiles, gravel roads, farm fields, etc. It is considered to be a nuisance but not harmful to health.</p> <p><i>Impacts:</i> Air quality standards as set by the federal government and enforced by the ARMB would allow minimal detrimental air impacts.</p>
<b>4. VEGETATION COVER, QUANTITY AND QUALITY</b>	<p>There are no known rare or sensitive plants or cover types present in the site area. Onsite vegetation consists of wheatgrasses, smooth brome, sagebrush, along with willow and sedges in the low point created by previous mining; and provides approximately 70-80% cover. The vegetation would be removed as soil is stripped and the site would be replanted with plant species compatible with the proposed reclaimed use.</p> <p><i>Impacts:</i> No long term detrimental impacts to the vegetation would occur.</p>
<b>5. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:</b>	<p>Although the area is used primarily for rangeland/pasture, it also supports populations of deer, rodents, song birds, coyotes, raptors, insects and various other animal species. Population numbers for these species are not known.</p> <p><i>Impacts:</i> The proposed mine is expected to temporarily displace some species but the site will likely be re-inhabited following reclamation to similar habitat.</p>
<b>6. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:</b>	<p>The Montana Natural Heritage Program (MNHP) lists the following 8 species of concern in the vicinity of the site:</p> <p><b>Western Toad</b> (<i>Bufo boreas</i>) is a toad covered with small round oval warts on a background color that is usually green or brown; the warts may be a reddish-</p>

**IMPACTS ON THE PHYSICAL ENVIRONMENT**

<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
	<p>brown and encircled by dark pigment. The toads habitat consists of low elevation beaver ponds, reservoirs, streams marshes, lake shores, potholes, wet meadows, and marshes, to higher elevation ponds, and fens at or near treeline.</p> <p><b>Great Blue Heron</b> (<i>Ardea herodias</i>) is the largest heron in North America, 60 cm tall and 97 to 135 cm long. Its upper parts are gray, and the fore-neck is streaked with white, black, and rust-brown. Great Blue Herons breed from southern Alaska southeast across central Canada to Nova Scotia and south to Guatemala, Belize, and the Galapagos Islands. Most Montana nesting colonies are in cottonwoods along major rivers and lakes; a smaller number occur in riparian ponderosa pines and on islands in prairie wetlands. Great Blue Herons eat mostly fish but also amphibians, invertebrates, reptiles, mammals, and birds. Disturbance by humans and loss of protected colony sites are major threats.</p> <p><b>Harlequin Duck</b> (<i>Histrionicus histrionicus</i>) is a duck whose males sport slate blue body plumage with white bands and collars, bordered with black lines on the chest and neck with a black streak bordered by white and amber lines on top of the head. The ducks are migratory birds and arrive in Montana in late April to early May. They prefer low gradient, clear mountain streams and primarily eat stoneflies, mayflies and caddis flies.</p> <p><b>Golden Eagle</b> (<i>Aquila chrysaetos</i>) is very large raptor with mostly brown plumage, a golden wash on the back of the head and neck, and a mostly horn-colored bill. Golden Eagles breed throughout western North America from the Arctic to central Mexico. Permanent resident, but migratory movements documented. Some Golden Eagles remain year-round, but vertical migration seen in spring and fall. Golden Eagles nest on cliffs and in large trees (occasionally on power poles), and hunt over prairie and open woodlands.</p> <p><b>Westslope Cutthroat Trout</b> (<i>Oncorhynchus clarkii lewisi</i>) is one of two subspecies of native cutthroat found in the state. It has been designated as Montana’s state fish. Westslope cutthroat trout require cold water and seek out gravel substrates in riffles and pool crests for spawning habitat.</p> <p><b>Bull trout</b> (<i>Salvelinus confluentus</i>) is a threatened species of fish that can be found in the Clark Fork and Flathead drainages of western Montana. Sub-adult and adult fluvial bull trout reside in larger streams and rivers and spawn in smaller tributary streams, whereas adfluvial bull trout reside in lakes and spawn in tributaries. Bull trout can grow to lengths of 37 inches and weights of 20+ pounds.</p> <p><b>Fisher</b> (<i>Martes pennanti</i>) is a medium-sized mammal with a long, low stocky body and relatively long and heavily furred tail. The fisher occupies dense coniferous or mixed forests and tends to reside in tree hollows, under logs, in ground or rocky crevices or in the branches of conifers. The fisher’s diet consists of small mammals, birds and fruit.</p> <p><b>Wolverine</b> (<i>Gulo gulo</i>) is a bear-like mustelid with massive limbs and long, dense, dark brown pelage, paler on the head, with two broad yellowish stripes extending from the shoulders and joining on the rump. Wolverines are limited to alpine tundra, and boreal and mountain forests in the western mountains. They feed on a variety of roots, berries, small mammals, birds’ eggs and young, fledglings, and fish. They may attack moose, caribou, and deer hampered by deep snow.</p>

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<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
	<i>Impacts:</i> None of the listed species have been found on this site. Even if suitable habitat did exist on this site, the disturbance area would be small and large areas of similar or identical habitat surrounds the site. The possible impact to these species would be minimal.
<b>7. HISTORICAL AND ARCHAEOLOGICAL SITES</b>	<p>The Montana State Historic Preservation Office (SHPO) was notified of the application. It reported that two sites have been discovered previously within the designated search locale. A pedestrian survey of the area by DEQ personnel did not reveal any artifacts or signs of occupation. No signs were evident at depth in the previously disturbed area. SHPO recommends that the Department of Natural Resources determine if a cultural resource inventory should be conducted at this site in order to determine whether or not sites exist and if they would be impacted.</p> <p><i>Impacts:</i> If during operations resources were to be discovered, activities would be temporarily moved to another area or halted until SHPO was contacted and the importance of the resources was determined.</p>
<b>8. SAGE GROUSE EXECUTIVE ORDER</b>	<p>The project would not be in core, general or connectivity sage grouse habitat, as designated by the Sage Grouse Habitat Conservation Program (Program) at: <a href="http://sagegrouse.mt.gov">http://sagegrouse.mt.gov</a>.</p>
<b>9. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY</b>	<p>There are no unusual demands on land, water, air or energy anticipated as a result of this project.</p> <p><i>Impacts:</i> Negligible impacts to land, water, air, or energy would occur.</p>

<b>IMPACTS ON THE HUMAN POPULATION</b>	
<b>RESOURCE</b>	<b>POTENTIAL IMPACTS AND MITIGATION MEASURES</b>
<b>10. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS</b>	<p>Granite County zoning clearance has been obtained.</p> <p>The site is not zoned.</p>
<b>11. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING</b>	<p>As seen on the aerial photo of the surrounding area, there are a few nearby residences, the closest of which is approximately 1,000 feet to the northwest.</p> <p><i>Impact:</i> This county pit is being sited in this area because of the location of the resource, and to maintain local county roads.</p>
<b>12. AESTHETICS</b>	<p>The site is located in a common pastureland area. There would be a temporary alteration of aesthetics while mining is under way. However, reclamation would return the area to a visually acceptable landscape. This project is considered to be long-term, i.e., planned to take 19 years to complete.</p>
<b>13. QUANTITY/ DISTRIBUTION OF EMPLOYMENT</b>	<p>Existing employees would mainly be utilized for this operation. There is low potential that this project would create a significant number of new jobs.</p> <p><i>Impacts:</i> New employment opportunities would be limited.</p>
<b>14. INDUSTRIAL, COMMERCIAL, AGRICULTURAL ACTIVITIES AND PRODUCTION</b>	<p>The acreage listed in the proposal would be taken out of rangeland/pasture use. Upon completion of mining, the land would be reclaimed to rangeland/pasture.</p> <p><i>Impacts:</i> Rangeland/pasture production would be reduced as soil stripping and operations progress across the site. When the entire site is opened up for mining and mine-related activities, all rangeland/pasture activities would cease, but would be restored as the site is reclaimed.</p>

IMPACTS ON THE HUMAN POPULATION	
RESOURCE	POTENTIAL IMPACTS AND MITIGATION MEASURES
<b>15. LOCAL, STATE TAX BASE AND TAX REVENUES, PERSONAL AND COMMUNITY INCOME</b>	Local, state and federal governments would be responsible for appraising the property, setting tax rates, collecting taxes, etc., from the companies, employees, or landowners benefitting from this operation. Following reclamation, it is assumed the tax base would revert to pre-mine levels.
<b>16. DEMAND FOR GOVERNMENT SERVICES</b>	Limited oversight by DEQ Opencut Program personnel would be conducted in concert with other area activity when in the vicinity.
<b>17. HUMAN HEALTH AND SAFETY</b>	Any industrial activity would increase the opportunities for accidental injury. There are agencies that require the Operator to implement specific safety measures. If followed there is no reason to believe that significant safety issues would be present.
<b>18. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES</b>	This activity would not inhibit the use of the identified resources.
<b>19. NATIVE CULTURAL CONCERNS</b>	<i>Impacts:</i> None identified.

**20. Alternatives Considered:**

- A. Denial Alternative: The Department would deny an application that does not comply with the Act and Rules. No impacts to the natural or human environment would occur.
- B. Approval Alternative: The Department would approve an application that complies with the Act and Rules. Impacts of this application are addressed in the body of the EA.

**21. Public Involvement, Agencies, Groups or Individuals contacted:** Montana State Historic Preservation Office, Montana Natural Heritage Program, Granite County Planning.

**22. Other Governmental Agencies which May Have Overlapping or Sole Jurisdiction include, but may not be limited to:** Granite County Commission or County Planning Department (zoning), Granite County Weed Control Board, MSHA and OSHA (worker safety), DEQ ARMB (air quality) and Water Protection Bureau (groundwater and surface water discharge; stormwater), DNRC (water rights), and MDT (road access).

**23. Regulatory Impact on Private Property:** The analysis done in response to the Private Property Assessment Act indicates no impact. The Department does not plan to deny the application or impose conditions that would restrict the use of private property so as to constitute a taking.

**24. Magnitude and Significance of Potential Impacts:** This proposal is not likely to create impacts of significance due to mitigation, restrictions, and oversight mandated by the Opencut Mining Act and pursuant rules and the Montana Clean Air Act.

**25. Recommendation for Further Environmental Analysis:** [ ] EIS [ X ] No Further Analysis

EA Prepared By: Bryan Allison Opencut Mining Program Environmental Specialist  
Name Title

EA Reviewed By: Chris Cronin Opencut Mining Program Supervisor  
Name Title

## PRIVATE PROPERTY ASSESSMENT ACT (PPAA) CHECKLIST

DOES THE PROPOSED AGENCY ACTION HAVE TAKINGS IMPLICATIONS UNDER THE PPAA?

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deprive the owner of all economically viable uses of the property?
	X	4. Does the action deny a fundamental attribute of ownership?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? (If answer is NO, skip questions 5a and 5b and continue with question 6.)
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property?
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally? (If the answer is NO, skip questions 7a-7c)
		7a. Is the impact of government action direct, peculiar, and significant?
		7b. Has the government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?
		7c. Has the government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b.

If taking or damaging implications exist, the agency must comply with § 5 of the Private Property Assessment Act, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.

MIDDLE FORK GRAVEL PIT  
 SITE MAP  
 LOCATED IN N.W. 1/4 SEC. 16, T. 5 N., R. 15 W., P.M.M., GRANITE COUNTY, MONTANA  
 BOUNDARIES, EXISTING TOPOGRAPHY, AREAS

SCALE: 1" = 100'  
 0 50 100



LEGEND

- - IDENTIFIED SOIL TEST PIT PERFORMED BY M.L.C.A. (AUGUST 2015)
- ⊙ - IDENTIFIED EXCAVATION PITS DUG BY GRANITE COUNTY IN SPRING OF 2015. NOTE: NO USABLE WATER WAS PRESENT AT AN EXCAVATION DEPTH OF APPROXIMATELY 10 FT. AND THE EXISTING EPOCH WAS REMOVED AT THE TIME OF EXCAVATION.
- C<sub>1</sub> - IDENTIFIED CORNER OF PIT BOUNDARY INSTALLED. STEEL T POST (GREEN W/ WHITE TOP) SEE GPS COORDS TABLE BELOW.
- 1' CENTER INTERVAL. DATUM TOWN FROM HANSHOLD GPS.

NOTES:  
 1) IDENTIFIED SLOPESIDE AREA A COLLECTION AREA FOR RUNOFF TO INFILTRATE OR EVAPORATE. TOTAL AREA OF NON-DISTURBANCE: 0.67 ACRES.

2) EXISTING SOIL WILL BE STOCKPILED AROUND PERIMETER AS TO BE A MINIMUM DISTANCE OF 10' FROM PIT EDGE OR TEMPORARY BERM. EXCAVATION BOUNDARIES MAY HAVE TO BE ADJUSTED TO MEET THIS REQUIREMENT.

- PERMIT BOUNDARY
- EXISTING FENCE LINES

PERMIT BENCH POINT NO.	G.P.S. COORDINATES (NAD83 DATUM, SEC. DECIMALS)		TOPSOIL STORAGE 30'(TYPICAL)
	LATITUDE	LONGITUDE	
1	46.19863	-112.48277	
2	46.19201	-112.48374	
3	46.19197	-112.48339	
4	46.19252	-112.48262	
5	46.19120	-112.48284	
6	46.18664	-112.48217	

- ⋯ - IDENTIFIED TOPSOIL REMOVAL AREA (0.285 ACRES @ 14 IN. DEPTH = 2044 C.Y.). TOPSOIL WILL BE STOCKPILED IN STORAGE AREAS FOR FUTURE RECLAMATION.
- ▨ - IDENTIFIED AREA WITH NO EXISTING TOPSOIL (2.620 ACRES). NOTE: TOPSOIL WILL BE APPLIED IN THIS AREA AT RECLAMATION.



ACREAGE BREAKDOWN

MINE AREA	
TOPSOIL REMOVAL AREA:	4.30 ACRES
AREA WITH NO EXISTING TOPSOIL:	2.02 ACRES
TOTAL AREA OF MINING DISTURBANCE:	6.32 ACRES
AREA OF SOIL STOCKPILES:	1.05 ACRES
SACRIFICE AREA:	0.67 ACRES
OTHER AREAS OF NON-DISTURBANCE:	1.14 ACRES
TOTAL PERMIT AREA:	9.197 ACRES



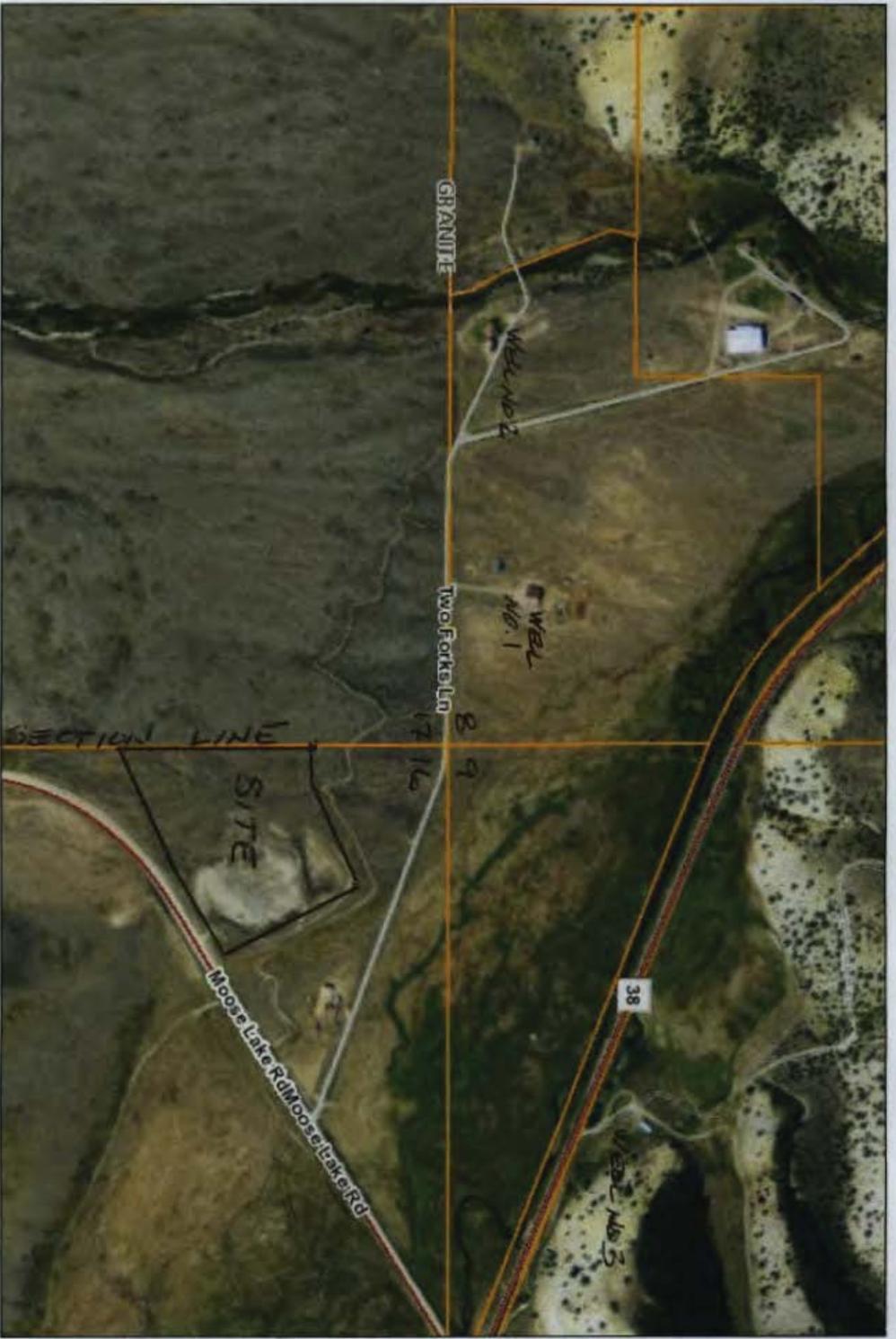
*Hans Bohm* 3/10/2016

PREPARED BY:  
 HILTONFOOT, NC  
 331 MELLOW CREEK ROAD  
 PHOENIX, AZ 85008  
 480-889-3482  
 HANS BOHM, L.S.  
 MONTANA REGISTERED LAND SURVEYOR  
 LICENSE NO. 12243 LS  
 DATE OF DRAFTING: JUNE 20, 2015  
 REVISION: MARCH 10, 2016

SHEET 1 OF 2

ENTRUST

RECEIVED BY OPENCUT 03/15/2016



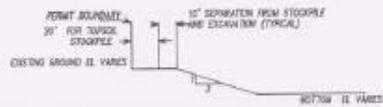
9/16/15 N.W. 1/4 SEC. 16 T.5N. R.15W,  
 OPERATOR: GRANITE COUNTY

SCALE  
 0 300 600  
 1" = 600'

MIDDLE FORK GRAVEL PIT  
 RECLAMATION MAP  
 LOCATED IN N.W. 1/4 SEC. 16, T. 5 N., R. 15 W., P.M.M., GRANITE COUNTY, MONTANA  
 PROPOSED FINAL TOPOGRAPHY, DETAILS, AND PROJECTED VOLUMES

SECTION DETAILS

NO SCALE



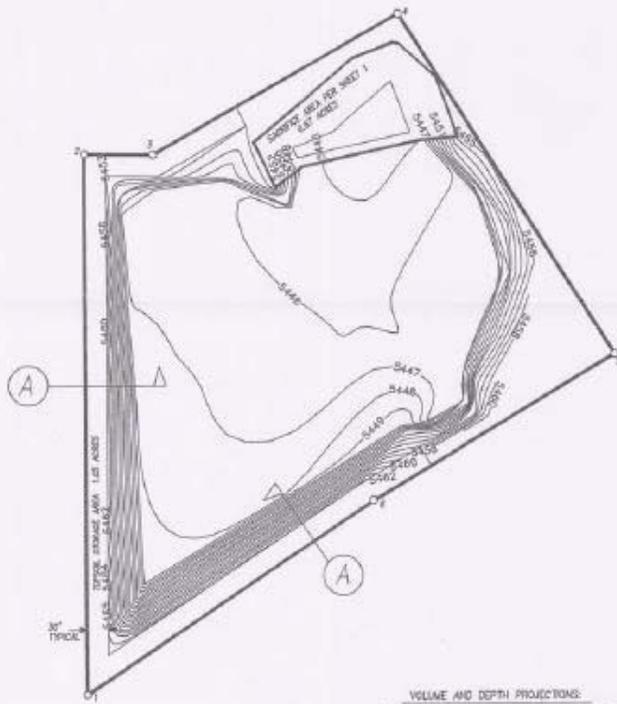
A SECTION A TYPICAL PERIMETER BOUNDARIES



SCALE 1" = 100'  
 0 50 100

CONTOUR INTERVAL 1 FT.

NOTE: CONTOURS BASED ON FINAL FT. SURFACE BEFORE TOPSOIL RECLAMATION.



VOLUME AND DEPTH PROJECTIONS

TOPSOIL TO BE REMOVED AND STOCKPILED FOR FUTURE RECLAMATION:	8084 C.Y.
TOTAL PIT RUN VOLUME:	63250 C.Y.
TOPSOIL DEPTH AT RECLAMATION:	9.5 IN.
AVERAGE CUT DEPTH OF PIT:	7.0 FT.

NOTE: THESE PROJECTIONS ARE DERIVED USING COMPUTER SURVEYING SOFTWARE BASING VOLUMES ON COMPARING TRIANGULATED IRREGULAR NETWORK SURFACES.

NOTES

EXCAVATION BOUNDARY (TOP OF SLOPE) MAY BE ADJUSTED TO PROVIDE ADEQUATE SEPARATION (10') BETWEEN SOIL STOCKPILE EDGE AND TOP OF SLOPE.



*Charles Bohagen* 3/10/2016

PREPARED BY:  
 WILLOWCREEK, INC.  
 237 BELLEVUE DRIVE ROAD  
 PHILIPSBURG, MT 59868  
 402-859-7482  
 MONTANA REGISTERED LAND SURVEYOR  
 LICENSE NO. 12284 IS  
 DRAFTING DATE: JUNE 20, 2015  
 REVISED: MARCH 14, 2016

SHEET 2 OF 2  
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