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# FINAL ENVIRONMENTAL ASSESSMENT

## APPLICATION FOR OPEN CUT PERMIT

## SITE E

## LEWIS AND CLARK COUNTY, MONTANA

Prepared by

Montana Department of State Lands

September 23, 1992

## PROPOSED ACTION

Lewis and Clark County proposes to mine 40,000 cubic yards of clay borrow material from a site about 7 miles northeast of Helena and 2 miles southeast of Lake Helena. The mine site would be on county-owned land in NE¼NE¼ Section 32, T11N, R2W, at the location of the Site E alternative of the proposed new county landfill (Figure 1). The clay would be used to cap the existing county and Helena city landfills.

The proposed clay mine would be located in a rolling dry upland situation currently used as agricultural land for wheat production. The mine would occupy about 8.5 acres, including the pit, access road, and topsoil stockpile. Access would be from Deal Lane to the north.

## ALTERNATIVES

Two alternatives are considered: the proposed action and no action.

A. Proposed Action

About 24 inches of topsoil, totalling 17,400 cubic yards, would be stripped from the pit area of about 5.4 acres and stockpiled on a 2-acre area immediately to the south of the pit (Figure 2). About 40,000 cubic yards of clay in a 10-foot layer would be removed from the pit using a scraper or bulldozer, and hauled away in over-the-highway trucks (Lewis and Clark County 1992).

A 2,300-foot-long access road would connect the pit with Deal Lane. The road would have a 12-foot-wide running surface, and the alignment would be 20 feet wide. About 1.05 acres would be stripped of 24 inches of topsoil for the roadway, totalling 3,400 cubic yards, and the topsoil would be stockpiled at the pit.

Precipitation and run-on water would be allowed to infiltrate in the pit. Excess water would drain to the southwest corner where any sediment would be contained by straw bales. Drainage ditches along the access road would control water along the roadway.

Dust from the operation would be controlled using a water truck. Inert refuse would be buried in the pit. Any toxic or petroleum refuse would be hauled to an appropriate off-site disposal area.

Operation of the pit and hauling of the clay would occur intermittently for about 14 months. Trucks would turn west on Deal Lane, then south on Lake Helena Drive, west on York Road,

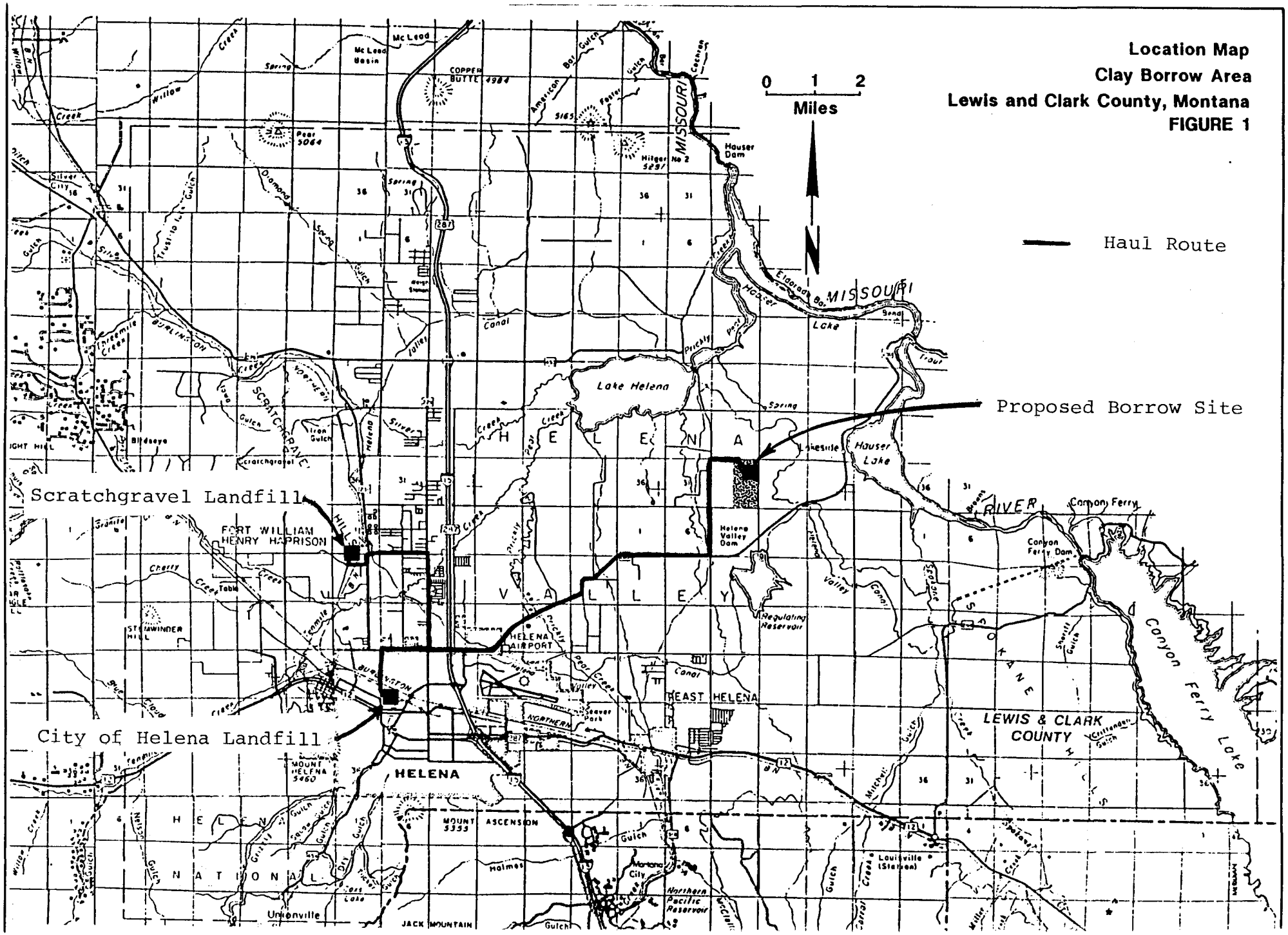
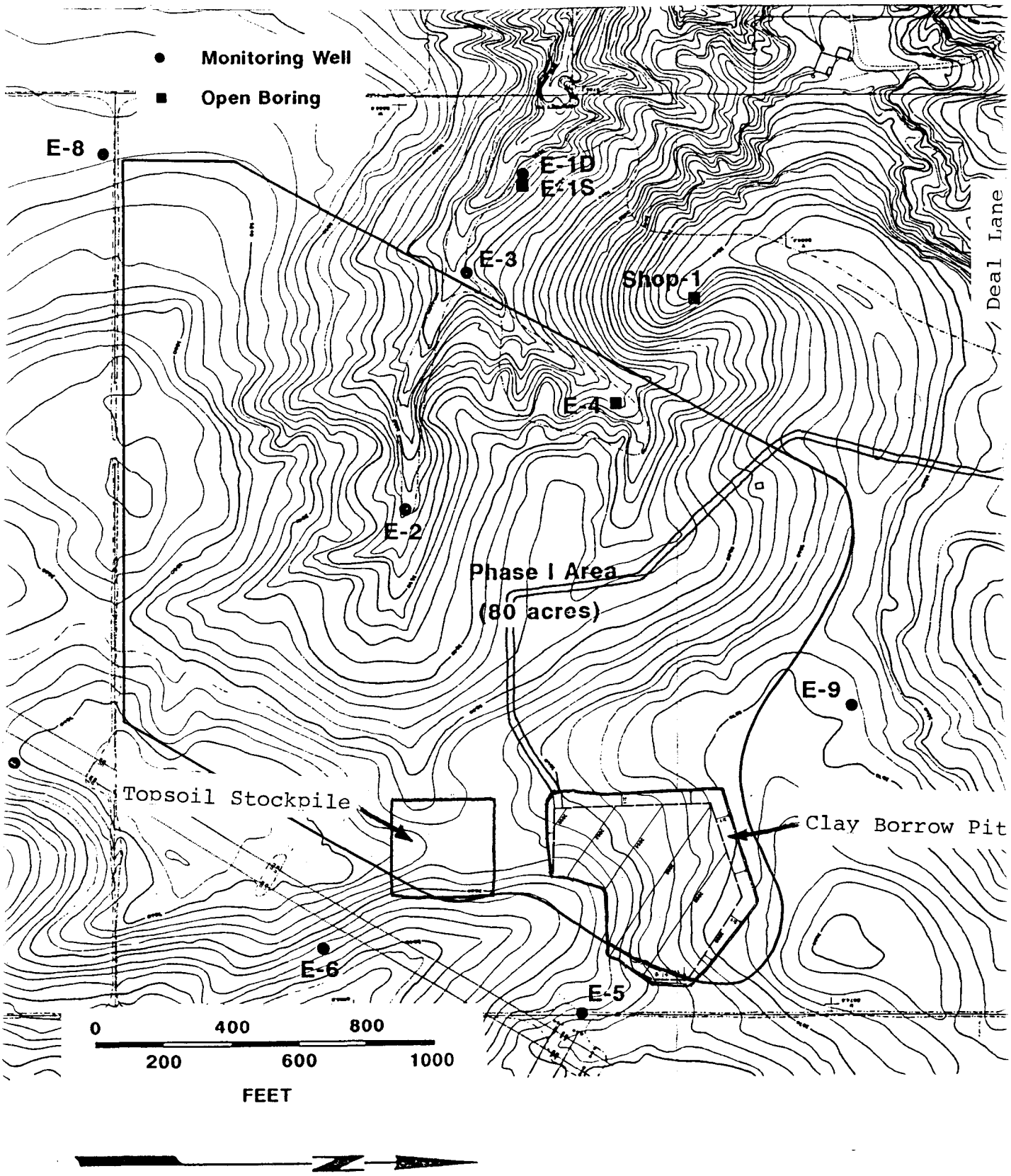

Location Map
Clay Borrow Area
Lewis and Clark County, Montana
FIGURE 1
0 1 2
Miles
N
Haul Route
Proposed Borrow Site
Scratchgravel Landfill
City of Helena Landfill
Lake Helena
Hauser Lake
Canyon Ferry Lake
MISSOURI
RIVER
HELENA
VALLEY
FORT WILLIAM HENRY HARRISON
HELENA AIRPORT
EAST HELENA
HELENA
LEWIS & CLARK COUNTY
MOUNT ASCENSION
MOUNT HELENA
Helena Valley Dam
Canyon Ferry Dam
Regulating Reservoir
Northern Pacific Reservoir
Montana City
Unionville
JACK MOUNTAIN
HELENA NATIONAL
Louisville (Stemen)
McLeod
McLeod Basin
COPPER BUTTE 4984
Hauser Dam
Silver City
Bledsoe
Scratchgravel
STEAMWINDER HILL
Table
Canal
Lakesite
Spring
Willow
Diamond
Silver
Iron Gulch
Cherry
Creek
Gulch
Holmes
Mitchell
Sheriff Gulch
Cruttenden Gulch
Northern
Beaver Park
Trout
Sand
Eldorado Bar
Pickle
Pear
Helena Valley
Sphinx
Sand Stemen
Trust to Luck Gulch
Threemile Creek
Nelson
Willow
Granite
Tenmile
Silver
Cloud
Nelson
Willow
Gulch
Dry
Tiger
Lost Lake
Carroll
Miller
Walker
McBride
Sheep
Ridge
Grizzly
Ten Mile
Prickly
Pear
Lake
Helena
Valley
Canal
Sphinx
Sand
Stemen
Trout
Hauser
Eldorado Bar
Missouri
Canyon Ferry
Canyon Ferry Dam
Brown
Spring
Willow
Diamond
Silver
Iron Gulch
Cherry
Table

Figure 2. Proposed Clay Borrow Site and Proposed Phase I Landfill Area, Site E.



and west on Custer Avenue. Trucks bound for the city landfill would follow Custer, then turn south on Benton Avenue to the landfill. Trucks bound for the county's Scratchgravel landfill would turn north on Montana Avenue, west on Mill Road, south on Green Meadow Drive, then west on Franklin Mine Road to the landfill (Figure 1). Hauling would be scheduled to avoid periods of heavy traffic on roads and streets, and activity at Warren and Four Georgians schools.

Within 1 month of cessation of operations, the site would be recontoured to blend into the surrounding topography and the topsoil would be respread on the pit and access road. Seeding of the disturbed areas with range grasses and forbs and mulching with straw would be completed within 1 week of topsoil respreading.

B. No Action

Under the no action alternative, the clay mine would not be permitted. The proposed mine site would not be disturbed, and the current land use of wheat farming would probably continue. Clay to cap the county and city landfills would have to be obtained elsewhere.

## AFFECTED ENVIRONMENT

The proposed mine site is on a terrace of gently rolling hills above the Helena Valley. The nearest residence is about a half mile away. The site is a dry upland with no surface water.

The area containing the mine site is owned by Lewis and Clark County. The area is fenced and is used for wheat production. The mine site is within the Site E alternative for a proposed new county landfill.

The soils are clay loams and sandy loams, and on this spot are about 24 inches deep. Since the site is used as a wheat field there are no sensitive, threatened, or endangered plants. Annual weeds do not appear to be a problem.

The water table, as indicated by the static water level in an adjacent monitoring well, is about 129 feet below the ground's surface (Chen-Northern 1990). There are several monitoring wells in the area. The nearest domestic well is about a half mile away. The nearest permanent surface water is Lake Helena about 2 miles to the northwest.

Since the area is cultivated, it is not considered to be of special importance to any wildlife species. Small mammals and songbirds may occur, especially when the wheat provides cover. Some waterfowl from Lake Helena may feed on young wheat plants or waste grain.

## ENVIRONMENTAL CONSEQUENCES

A. Proposed Action

Under the proposed action, the soil would be removed from the pit area and access roadway and stockpiled until the close of operations. After the clay has been removed, the site would be regraded to contour before respreading of soil. After the soil is respread, the site would be seeded with range grasses and forbs. Soil texture may be slightly altered from handling, but productivity is not likely to be affected.

About 40,000 cubic yards of clay would be removed, lowering the level of the 5.4-acre pit area by about 10 feet. Pit edges would be sloped at 3:1 to smooth the contour and reduce erosion. The bottom of the pit would be over 100 feet above the water table, so it is not likely to intercept groundwater. Any precipitation or run-on water would infiltrate and is not expected to pond on the surface. Straw bales placed along the low southwest corner of the pit would contain any sediment and prevent it from flowing onto nearby ground surfaces.

Dust would be controlled by sprinkling with water and by temporarily seeding the topsoil stockpile. Dust and gaseous emissions, such as diesel exhaust, are limited by standards enforced by the Montana Department of Health and Environmental Sciences. Because of the intermittent nature of the operation, dust and emissions are not expected to be problems.

Noise levels in the vicinity would increase during intermittent periods of activity. Work would occur during normal working hours with no night-time activity. Because of the intermittent nature of the operation, noise is not expected to be a problem.

Some small mammals and songbirds may be displaced during the life of the operation from a small area. Because the site is cultivated, wildlife use is likely to be low at the present time. An adjacent Conservation Reserve Program field would provide escape for some animals. Reclamation of the site to grassland would probably increase the area's value as wildlife habitat.

The haul routes from the mine site to the existing landfills pass through areas that experience periodic heavy traffic. Trucks bound for both landfills would pass Warren School. Trucks bound for the city landfill off Benton Avenue would pass Four Georgians School. Hauling would be intermittent during the life of the project and would be scheduled to avoid periods of high traffic and school activity. The impact of truck traffic would likely be minimal.

B. No Action

Under the no action alternative, soils would not be disturbed, and no clay would be removed so the terrain would remain as it is at present. The present land use of farming would probably continue. Current wildlife use would continue. Dust, noise, and traffic generated by the proposed clay mine would not occur. The existing city and county landfills would still need clay for capping material, but this would have to be obtained elsewhere. No alternative sources of clay have been proposed.

C. Cumulative Effects

Lewis and Clark County has applied to the Montana Department of Health and Environmental Sciences (DHES) for a permit to build a landfill at the location of the proposed clay mine. DHES has contracted the preparation of an environmental impact statement (EIS) to analyze the impacts of a landfill at this location (Site E) and alternative locations. Administrative rules implementing the Montana Environmental Policy Act (MEPA) require that the cumulative effects of a proposed action be analyzed when a future action related by type or location is being considered by any state agency.

About 80 acres within Site E, known as the Phase I Area (Figure 2), would be used as a landfill if DHES permits Site E. Parcels within the Phase I Area would be excavated to an average depth of 41 feet and lined with compacted clay and a leachate collection system. Refuse would be hauled from a transfer station near the present city landfill off Benton Avenue, deposited, and promptly buried. As each parcel became filled, it would be covered with soil and seeded with grass (DHES 1991).

The proposed clay mine would be largely within the proposed Phase I Area (Figure 2). The mine would be reclaimed following closure in compliance with the reclamation plan submitted with the mine permit application. If Site E were permitted for the landfill prior to reclamation of this site, the county would have to request an amendment to the permit for a change in post-mine land use, and the site of the clay mine would eventually be obliterated.

The proposed clay mine would cause a minimal amount of surface disturbance outside of the area proposed for the landfill. This small area would be reclaimed to range grasses. The small amount of surface disturbance would not contribute significantly to the impacts of a landfill.

Excavation for the proposed landfill would obliterate the excavation of the proposed clay mine in terms of both area and depth. Neither would approach the water table at this particular

location. The clay mine would not contribute significantly to the impacts of a landfill on surface water or groundwater.

The proposed clay mine would probably have ceased operations by the time the proposed landfill started operations if both were permitted. There would likely be no cumulative effects from dust and gaseous emissions, noise, or traffic. In the event that the timing of operations did overlap, the intermittent nature of the activity at the clay mine would add minimally to the effects of the landfill activity.

The site of the proposed clay mine is within a cultivated wheat field, as is much of the rest of the Phase I Area. There are no unique plant species present and this wheat field is not of high importance as wildlife habitat. If both projects were permitted at the same time, cumulative effects on plants and wildlife would be minimal or nonexistent.

## CONCLUSIONS

In view of the preceding analysis, the proposed clay mine is unlikely to have significant environmental effects. If this project and the proposed Site E alternative for the new county landfill were to be permitted at the same time, the clay mine would not contribute significantly to the impacts of the landfill. Since significant impacts are not likely to occur, this environmental assessment is the appropriate level of analysis under MEPA, and an environmental impact statement is not necessary.

## REFERENCES

Chen-Northern, Inc. 1990. Phase II hydrogeological investigation report proposed Lewis & Clark County landfill site Helena, Montana. October 1990. 27pp.

Lewis and Clark County. 1992. Application for open cut permit site E Lewis and Clark County, Montana.

Montana Department of Health and Environmental Sciences. 1991. Environmental Assessment. September 23, 1991. 29pp.

## LIST OF PREPARERS

This environmental assessment was prepared by the following employees of the Montana Department of State Lands:

Greg Hallsten
Steve Welch
Jerry Burke

Personnel from Lewis and Clark County and the Montana Department of Health and Environmental Sciences, Solid and Hazardous Waste Bureau, were contacted for additional information.

## RESPONSES TO PUBLIC COMMENTS

**1. COMMENT:** Clay can become cohesive (sticky) when it's wet. If this operation is performed during wet weather, mud may be tracked onto county roads. It is mentioned in the EA that the operation will be intermittent. Perhaps it should specifically exclude operation during wet weather.

**RESPONSE:** The permit would stipulate that no hauling would occur under wet conditions.

**2. COMMENT:** The EA gives no indication that the Department of Fish, Wildlife & Parks (FWP) was contacted. In fact, under the state surface mine reclamation plan guidelines, notification isn't required. However, because of the sensitivity of the area it may be prudent to contact FWP for their comments.

**RESPONSE:** The Department of Fish, Wildlife and Parks was not contacted because the site is cultivated and unlikely to be important wildlife habitat.

**3. COMMENT:** The State Historical Preservation Office was not contacted either. Again, under the state surface mine reclamation plan guidelines, notification isn't required, but because of the sensitivity and visibility of this project, it would appear to be a good idea.

**RESPONSE:** The State Historic Preservation Office has been contacted. A Department employee qualified to make visual surveys for historical and cultural evidence has visited the site. Cultivation of the site for grain production has likely destroyed the integrity of any historical or cultural properties that may have been present. The operator would be required to stop operations and contact the Department if any historical or cultural properties were encountered.

**4. COMMENT:** Please clarify "inert refuse" as presented on page 1, paragraph 7.

**RESPONSE:** Inert refuse is any waste material not considered to be toxic or hazardous. The permit would stipulate that all waste be disposed of in accordance with state and federal regulations.

**5. COMMENT:** The statement on page 5, paragraph 3, "If both projects" (landfill and clay mining) "were permitted at the same time, cumulative effects on plants and wildlife would be minimal or nonexistent" is inappropriate here. This EA is only for the clay mining operation.

**RESPONSE:** While this EA deals specifically with a clay mine application, administrative rules implementing MEPA require that

the cumulative effects of the proposed action be analyzed when a future action related by type or location is being considered by any state agency. The proposed clay mine would not contribute significantly to the effects of a landfill on this site.

**6. COMMENT:** The same concerns which have been voiced over the proposed site E landfill - county road deterioration, traffic safety, adjacent land values, etc. - are relevant with this project, but apparently haven't been addressed.

**RESPONSE:** Intermittent short-term hauling of clay would not be expected to affect roads appreciably. Trucks hauling from this clay mine would be required to abide by all load limits imposed by the county or state. Hauling would be timed to avoid periods of high traffic activity reducing safety problems. Please see the response to Comment 10.

**7. COMMENT:** Any conclusions reached on Site E impacts, such as "cumulative effects on surface water" should not be made in this EA. DHES is preparing an EIS on Site E and will analyze those effects and others. EA conclusions on this and other Site E issues are unsubstantiated and premature.

**RESPONSE:** Please see the response to Comment 5.

**8. COMMENT:** The cost of transporting clay to Scratchgravel alone should prohibit serious consideration of the site. A resource for this material is surely available nearer to the present landfill.

**RESPONSE:** The economic feasibility of hauling clay from this site is the applicant's consideration. The Department cannot use it as a criterion for making a decision regarding the permit application.

**9. COMMENT:** However, a wide discrepancy in your discussion of water level exists between facts presented in your environmental assessment and Woodward-Clyde Consultants initial analysis for an EIS for Site E landfill. Page 2, paragraph 4, Affected Environment, of your EA claims static water level is 129 feet below the surface. This statement is diametrically opposed to Woodward-Clyde information. On page 7, paragraph 2 of their analysis, the groundwater is as shallow as 28 feet below ground, with static water level even closer.

**RESPONSE:** Static water levels are more shallow west of the proposed mine site. However, the three wells nearest the site all have static water levels at more than 100 feet. The figure of 129 feet for the static water level at the proposed mine site is not at variance with Woodward-Clyde's findings (K. Wallace, Woodward-Clyde, personal communication).

**10. COMMENT:** The EA ignores the fact that the site is located in an area currently experiencing residential development and use. This is evidenced by the four 20 acre parcels directly northeast of the site - 3 of which have residential buildings, wells, etc. And by two residences directly west of the site. Residential use is the most likely future use of this site and area. Allowing an industrial use, such as this open pit mine, will certainly impact the established residential, agricultural, and recreational uses with dust, noise, more traffic danger and congestion, and visual degradation.

**RESPONSE:** The EA notes that the nearest residence is about a half mile away from the proposed mine site. The site is not zoned residential. State zoning laws may not restrict full use and recovery of natural resources unless the area is zoned residential. The proposed clay mine is short term in duration and, when reclaimed, would not alter land values or uses. The impacts of the proposed mine are disclosed in the EA.

**11. COMMENT:** Allowing burial of refuse will preclude potential future uses such as residential. This will impact all L & C County taxpayers if we attempt to sell the site for another use. Also there are no safeguards to insure that only inert material is buried and no quantities are specified. The applicants are supposedly strapped for landfill space so limits and monitoring should be specific and strict.

**RESPONSE:** The amount of refuse that might be buried at the site is not expected to be large. It is unlikely that future land uses would be precluded by such refuse burial. The permit would stipulate that all waste be disposed of in accordance with state and federal regulations.

**12. COMMENT:** Infiltration may be "allowed" by you but if the 5 acre site is all "clay" there will be insignificant infiltration and excess runoff will occur easily. Straw bales, which of course float, may not make an adequate dam to contain runoff in even a moderate precipitation event. No consideration has been made of the threat to downstream structures in the event of a high precipitation storm. And the entire site runoff will be concentrated into one channel and the soils downstream have low infiltration rates. An irrigation canal which typically flows April 1st through September 15th lies less than ½ mile downstream to the east.

**RESPONSE:** The permit would stipulate that an earthen berm be built at the lower edge of the mine to contain excess runoff. The water would then either infiltrate or evaporate. Straw bales would be staked below the berm to catch any soil that might wash from the face of the berm.

**13. COMMENT:** In addition to altering soil texture, the soil structure will be destroyed and stockpiling the topsoil will likely kill a majority of its living components. This could impact future productivity and the ability to establish a grass stand as the site is "dry" and therefore fragile anyway.

**RESPONSE:** Stockpiling soil often destroys soil structure, but past cultivation of this site has probably already had that effect. Stockpiling soil also tends to reduce soil microorganism populations below the surface few inches of the pile, but microorganisms typically increase again after the soil is respread and will recolonize from surrounding land. Productivity may decline for awhile but should recover. The grass species selected for the seed mix grow naturally on similar sites in the vicinity, increasing the likelihood of revegetation success.

**14. COMMENT:** No plan is included for the possibility of encountering a water bearing zone in this geologically complex area.

**RESPONSE:** Test wells in the vicinity of the proposed mine site do not suggest the presence of confined water-bearing zones in this upland situation. If one were encountered, outflow would be caught in the pit and the operator would deal with it as necessary.