0004

C/041/002 Incoming

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
P.O. Box 45155
Salt Lake City, UT 84145-0155
http://www.blm.gov

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
3410
UTU-82202
(UT-923)

MAR 06 2009

CERTIFIED MAIL-Return Receipt Requested

John Baza, Director
Utah Division of Oil, Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Dear Mr. Baza:

An application for a coal exploration license, assigned serial number UTU-87061, was filed in this office on December 5, 2008, by Ark Land Company, for lands in Sevier County.

The lands being considered in coal exploration license application UTU-87061 are described as follows:

T. 20 S., R. 5 E., SLM, Utah
Sec. 31, SE¼;

T. 21 S., R. 4 E., SLM, Utah
Sec. 1, all;

T. 21 S., R. 5 E., SLM, Utah
Sec. 6, all.

Containing 888.62 acres.

Any comments or questions concerning the application should be addressed to Stan Perkes, of my staff, at 539-4036.

Sincerely,

J.D. McKenzie
Chief, Branch of
Solid Minerals

Enclosure
Exploration License Application

RECEIVED
MAR 10 2009
DIV. OF OIL, GAS & MINING

U87061

BLM - UT - 950
2008 NOV 17 AM 11: 15

EXPLORATION PLAN

2009

TO ACCOMPANY AN APPLICATION FOR A FEDERAL MINOR COAL EXPLORATION LICENSE

RECEIVED
DEC - 5 2008
BUREAU OF LAND MANAGEMENT

Green's Hollow Tract Area
Sevier County, Utah
Manti-La Sal and Fishlake National Forests

Exploration Plan
11/6/08

ARKLAND COMPANY
A Subsidiary of Arch Coal Inc.

Introduction

Ark Land Company (a subsidiary of Arch Coal Inc.) is submitting this Application for Federal Minor Coal Exploration License on behalf of Canyon Fuel Company, LLC, Sufco Mine to the United States Bureau of Land Management (BLM) as required in 43 CFR 3482, in order to obtain approval to conduct minor coal exploration and reclamation activities during the summer of 2008. The type of exploration proposed will be helicopter supported, wireline core drilling. Three drill holes are proposed for drilling in coal managed by the BLM with surface management by the U.S. Department of Agriculture Forest Service. This plan is formatted to address the specific requirements of 43 CFR 3482.

43 CFR 3482 (3) (i)

Applicant

Ark Land Company
c/o Sufco Mine
397 S 800 W
Salina, Utah 84654
Attn: Mark Bunnell 435-448-2633

The applicant is the same as the operator of the proposed exploration plan. Correspondence regarding this exploration license should be addressed to:

Mark Bunnell
Ark Land Company
c/o Skyline Mine
HC 35 Box 380
Helper, UT 84526
(work) 435-448-2633 (home) 435-637-6690

At times a consulting geologist may act as a representative of the applicant. The BLM and USFS will be notified of the consulting geologist's name and address if one is used.

43 CFR 3482 (3) (iii)

Description

The exploration plan involves Federal Surface and coal rights in the Quitchupah Canyon area approx. 10 mi west of Emery, Utah. The required license area encompasses 2,095.80 acres, more or less. The coal is managed by the U.S. Department of the Interior, Bureau of Land Management and the surface is managed by the U.S. Department of Agriculture Forest Service. Map 1 depicts the boundary of the proposed exploration license area. The area included within the license application is tabulated as follows:

T. 21 S., R. 4 E., Salt Lake Meridian, Sevier County, Utah

Section 1:	All	552.00 acres

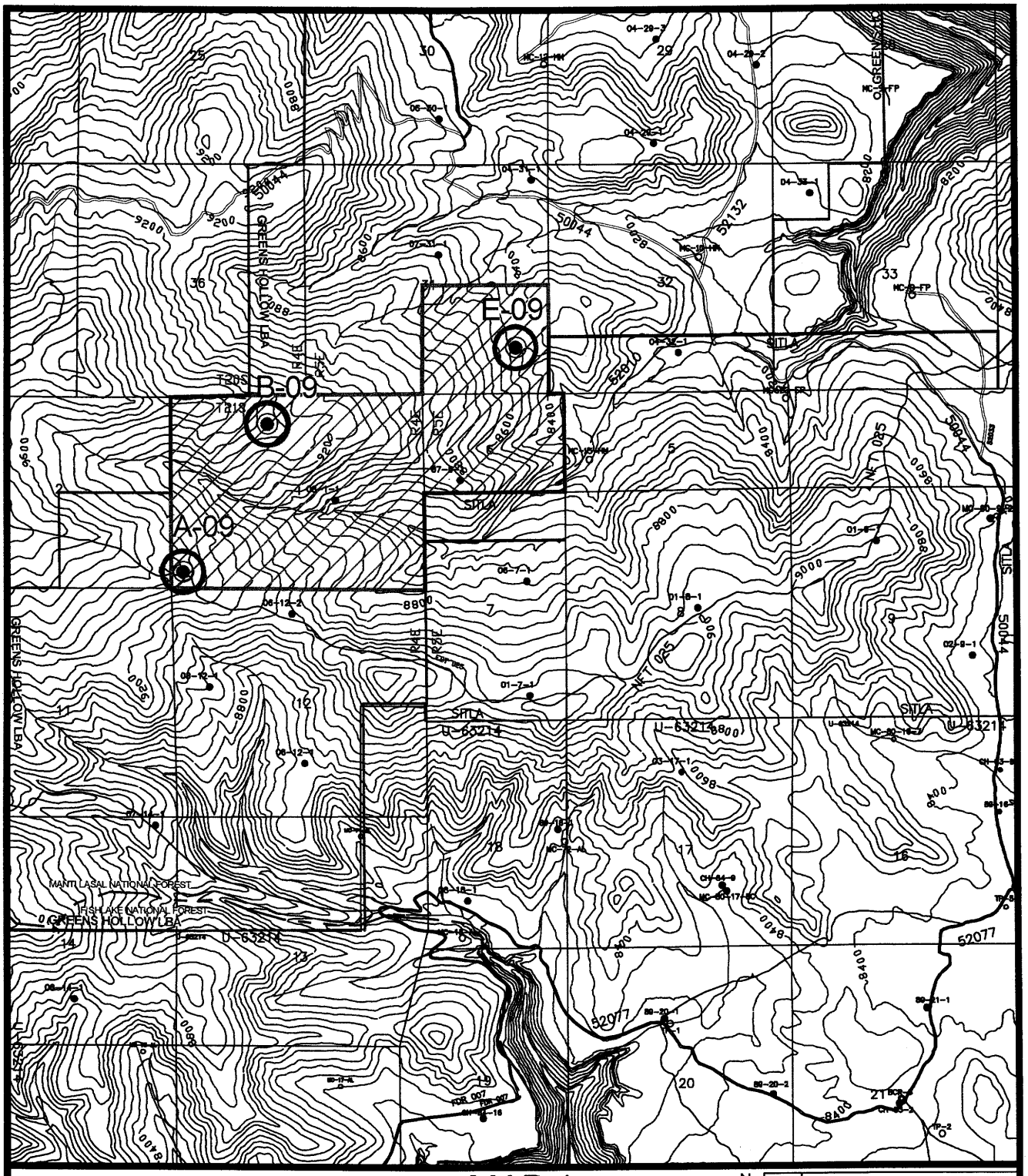
T. 21 S., R. 5 E., Salt Lake Meridian, Sevier County, Utah

Section 6:	All	174.22 acres

T. 20 S., R. 5 E., Salt Lake Meridian, Sevier County, Utah

Section 31:	SE1/4	160.00 acres

Total: 886.22 acres



Exploration License Area

Green's Hollow LBA Boundary

A-09 Proposed 2009 Drillsite

MAP 1

FEET
0' 3000' 6000'
SCALE

N

ARK LAND COMPANY

PROPOSED DRILLHOLE LOCATIONS
GREEN'S HOLLOW TRACT
2009

1"=3000'

Geology and Topography

The proposed exploration license area is located on the north side of Big Ridge and south of Green's Hollow. The area lies within the Wasatch Plateau physiographic province. The South Fork and North Fork of Quitchupah Creek drain southeast, while Cowboy Creek drains northeast into Muddy Creek. Elevation ranges from approximately 8400 ft. to 9400 ft. in the proposed license area.

The exploration area is underlain by sedimentary rocks of the late Cretaceous age. Three formations crop out in the area including the coal-bearing Blackhawk Formation as well as the overlying Price River and North Horn Formations. At least three potentially mineable coal zones occur near the area including the Muddy, Upper Hiawatha and Lower Hiawatha coal zones.

Strata in the area dip uniformly from 2 to 3 degrees northwest. Mining in the Quitchupah and Pines areas to the south and east have encountered minor faulting and fracturing, and similar minor faulting is expected in the Muddy area.

Ark Land plans to wireline core drill through all major coal seams including at least 10 feet of floor rock beneath the deepest seam.

No valuable minerals other than coal are known to occur within the boundary of the proposed exploration license area.

Surface Water

Quitchupah Creek and Cowboy Creek belong to the Muddy Creek watershed which is part of the West Colorado River Basin. The exploration area is drained by both the Quitchupah Canyon and Muddy Canyon.

Ground Water

Groundwater is found in large areas of the West Colorado River Basin, but only a few areas are suitable for irrigation or municipal uses. Previous drilling in the areas has not encountered significant amounts of water.

Groundwater occurs in perched zones of limited aerial extent in lenticular sandstones. None of the formations down through the Blackhawk support a continuous aquifer. Mining in Sufco Mine to the south occasionally encounters minor inflows of groundwater which drip from fractures and minor fault zones in the mine roof.

Soils

Soils in the area are generally sandy loams. Surface horizons are commonly dark and organic rich. Subsoil's are mainly loam with a high rock content. Soils within Quitchupah Creek are easily erodable, but the proposed drill sites are west of the creek. Care will be taken in locating the drill site to ensure soil conditions will not be a limiting factor for site reclamation potential. Minimal disturbance to soil will occur.

Erosion and Sedimentation

The proposed drill sites do not occur in any slump areas, and the proposed program will not adversely affect erosion and sedimentation in the area.

Biology

Vegetation in the exploration area is comprised mostly of conifer timber and sage communities. Quitchupah Creek is considered to be a class 2B or 3A stream. A class 2B stream has secondary human contact such as boating or wading. A class 3A stream is a habitat for cold water game fish, water-related wildlife and food chain organisms. Cowboy Creek is part of the Muddy Creek drainage which is considered class 1B, 2B, 3A, and 4. Class 1C is protected for domestic purposes prior to treatment and Class 4 is protected for agricultural uses. The exploration area is an important habitat for raptors, elk, mule, deer, cougar, bobcat, black bear and small mammals.

Threatened and endangered species in the exploration area include sage grouse, bald eagle and peregrine falcon. Exploration and reclamation activities will not occur within one half mile of known breeding and nesting areas. Site specific raptor surveys will be conducted in the late spring/early summer to verify site locations meeting this criterion.

Ark Land Company plans to contract any required site-specific biologic surveys such as raptor and/or threatened and endangered species prior to commencement of exploration activities. This work would be accomplished in late spring/early summer 2009 upon approval of the USFS.

Historic Places

There are no known districts, sites, buildings, structures, or objects listed on, or eligible for listing on the National Register of Historic Places in the proposed exploration area.

Cultural or Archeological

There are archaeological resources in the proposed exploration license area and in the vicinity of the support areas. A good listing of cultural resource inventories conducted to the east of the proposed exploration area is included in the Pines Tract Project, Final Environmental Impact Statement, section 3.8, pages 3-152. Ark Land Company has conducted site-specific archeological surveys in the area relative to its 2004 through 2007

Muddy drilling projects. The results of these surveys are given in report U-04-EP-0650f, U-06-EP-0317f, and U-08-EP-0058f, which are on file with the BLM, USFS and the Utah Division of Oil, Gas and Mining (UDOGM). A site specific cultural resources survey for the proposed 2009 drillsites was conducted in late Fall 2008. The final report will be forwarded to the BLM upon completion. No cultural resources were encountered during the survey.

Exploration

The drill site location and projected depth is tabulated as follows:

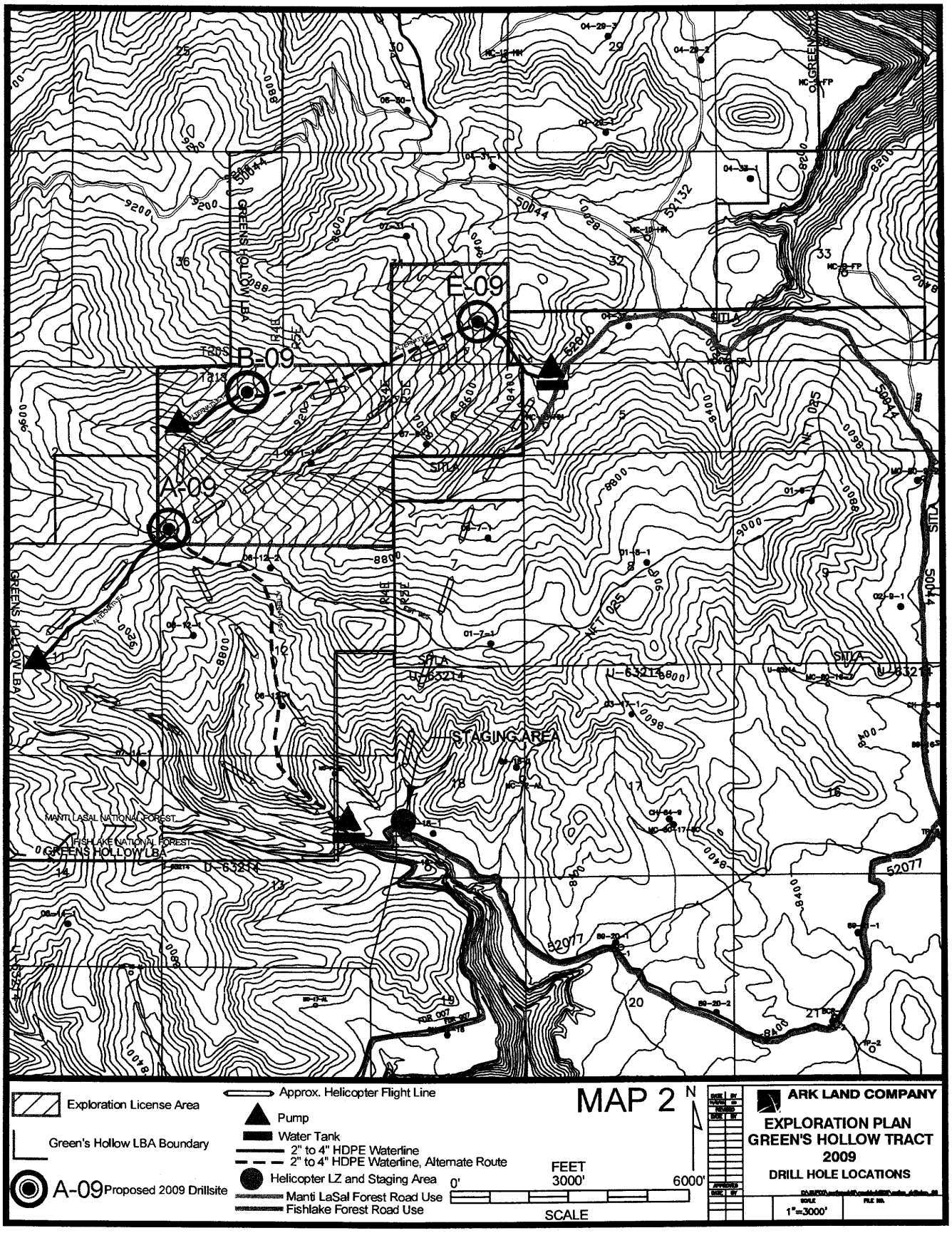
SITE	LOCATION	PROJECTED TD
A-09	SW, SW, 1, 21S, 4E	2500'
B-09	NE, NW, 1, 21S, 4E	2450'
E-09	SE, SE, 31, 20S, 5E	1700'

Drilling

The planned drilling method is plug drilling with spot continuous wireline core drilling. Coring will begin at 50 to 100 ft. from the projected top of the coal seam to 10 ft. below the coal seam. Exploration equipment for the drilling phase will include two helicopter-supported, core drilling rigs together with necessary equipment such as drill rod trucks, mud tanks, water tanks, etc.

Core drilling will involve two helicopter-supported core drills each capable of drilling 2,000 ft. Two 4,000 gallon water trucks will be used to supply up to three 18,000 gallon frac tanks. Other necessary equipment includes one or two 1,000 gallon poly. water tanks at each drill rig and at least 4 to 6 drill rod trays. Support equipment will include a supply trailer, 5-6 pickup trucks, a geophysical logging truck and two covered trailers. The water lines will be distributed along the water line routes by horseback and helicopter.

The drilling procedure for the exploration holes will be to set casing in each hole, then begin core drilling at 50 to 100 ft. from the projected top of the coal seam to 10 ft. below the coal seam. Water will be pumped from Quitchupah Creek and Cowboy Creek as shown on Map 2. If necessary, water will also be hauled from the North Fork of Quitchupah Creek to an 18,000 gallon storage (frac) tank in Cowboy Creek and then pumped up to the drillsites (Map 2). Supply trailers will carry the heli-portable equipment which includes drills, drill steels, coring equipment, drilling additives, cutting and welding equipment and other supplies. One pick-up truck will be used for each drill rig by the drillers to carry personnel, fuel and supplies. Two additional pick-up trucks will be used by the dirt contractors and a pickup truck for both the company representative and geologic consultant.


E-09
B-09
A-09
STAGING AREA
GREENS HOLLOW LBA
MANTI LASAL NATIONAL FOREST
FISHLAKE NATIONAL FOREST
GREENS HOLLOW LBA
U-63214
SITLA
Exploration License Area
Green's Hollow LBA Boundary
A-09 Proposed 2009 Drillsite
Approx. Helicopter Flight Line
Pump
Water Tank
2" to 4" HDPE Waterline
2" to 4" HDPE Waterline, Alternate Route
Helicopter LZ and Staging Area
Manti LaSal Forest Road Use
Fishlake Forest Road Use
FEET
0'
3000'
6000'
SCALE
MAP 2
N
ARK LAND COMPANY
EXPLORATION PLAN
GREEN'S HOLLOW TRACT
2009
DRILL HOLE LOCATIONS
1"=3000'

Backup and auxiliary equipment will be located at the staging areas or on the skid-mounted rigs. This equipment will include, but not be limited to a 18,000 gallon frac tank, supply trailer, drilling fluid containers, pallets of cement and drilling mud, two 4,000 gallon water trucks, and geophysical logging truck.

Access to the drill sites will be obtained using U.S. Forest Roads 52007, 50044 and 52010 as well as by helicopter. This eliminates the need for constructing new access routes in the proposed area (Map 2).

The general method to be followed during drill hole exploration, reclamation and abandonment is: 1) fly drilling equipment to drill site, 2) prepare drill site as shown on Figure 1, 3) set temporary water tanks, pumps, and water lines, 4) drill, core and log hole and 5) reclaim drill site and remove waterline, tank and pump. No blasting will be done for road building and repair. Forest roads may be repaired by hauling gravel to fill rough areas and to cover sandy areas, as well as grading rutted areas with a grader. Operators using this equipment will be transported to the proposed area using pick up trucks.

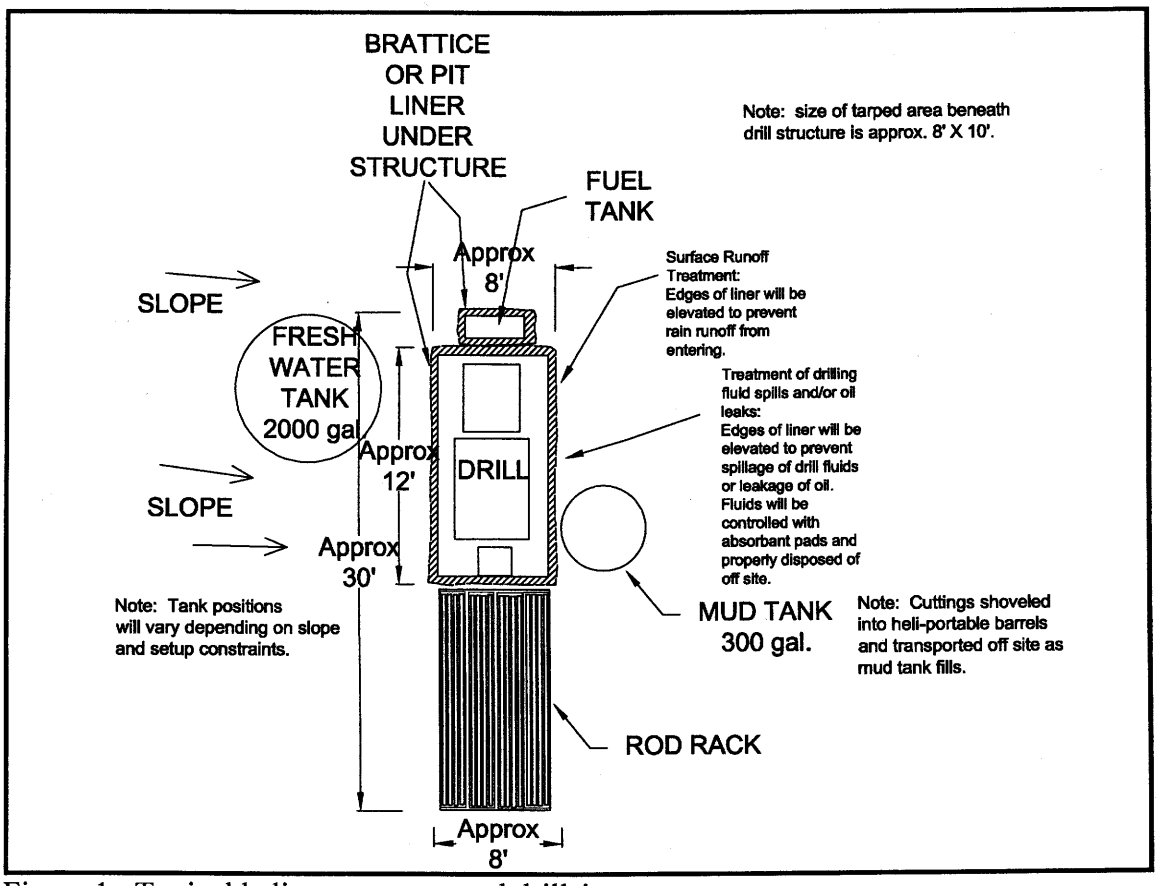


Figure 1. Typical helicopter-supported drillsite setup.

Site preparation will include removal of dead-fall and brush as necessary. Minor digging, using hand tools, may be necessary at some locations to achieve effective placement of leveling support materials (wood blocks, etc). The drilling rig will be transported to the site by helicopter in several "picks". The drill rig components will then be assembled at

the drill site, the drill rig leveled and other necessary materials will be flown to the site. Drilling will be conducted by a contractor experienced in helicopter supported drilling. The drill is a diesel powered core rig mounted on skids. Brattice or pit liner will be placed on the ground beneath the rig with the edges elevated to protect the ground from leaks and spills. Small leaks will be cleaned up with absorbent pads and hauled off site for appropriate disposal. No hazardous material or trash will be disposed of at the drill sites.

The finished size of the drill hole will be nominally 2.4 inches in diameter. Approximately 100 to 200 feet of 3 inch surface casing will be set. The suite of geophysical logs planned for the hole includes natural gamma, gamma-gamma density and resistivity.

Total disturbed area acreage is estimated at 0.002 acres (8' X 12', hand excavation only):

AREA	LOCATION	TOTAL DEPTH	DRILL SITE ACREAGE
A-09	SW, SW, 1, 21S, 4E	2500 feet	0.002
B-09	NE, NW, 1, 21S, 4E	2450 feet	0.002
E-09	SE, SE, 31, 20S, 5E	1700 feet	0.002
		TOTAL:	0.006 acres

Reclamation of the drill sites will include removal of all trash and debris to an off-site approved sanitary landfill. Excess drill cuttings will be transported by helicopter to a truck at the staging area, and then by truck to the Canyon Fuel Company's approved waste rock site along the Sufco mine haul road. Any small disturbed areas will be recontoured with hand tools and reseeded utilizing the approved USFS seed mix. The planned method to prevent possible future soil erosion is pocking and re-establishment of vegetation on the reclaimed area after exploration activities are concluded.

Drilling Equipment

Equipment expected to be utilized during various phases of the exploration process is summarized below:

EXPLORATION PHASE	EQUIPMENT TYPE	SIZE OR CAPACITY	QUANTITY
Drilling	Wireline Core Rig	LS 244 or similar	2
	Water Truck	4,000 gal	2
	Supply Trailer	Semi, 40 ft flatbed	2
	Tool Trailer	Dual Axle	2
	Pick up Trucks	4WD	5-6
Support	Jet fuel trailer/tank	Dual Axle	1
	Helicopter	Lama or similar	1
	Grader	D14 CAT or similar	1
	Frac Tank	18,000 gallon	3

	Fuel Truck	2,000 gallon	1
	Triplex Pump	Skid Mounted	3
	Boom Truck	Rear crane mount.	1
	Geophy. Log Truck	4WD	1
	Transport	Semi w/flatbed trlr.	2

Note: Some support equipment is only temporary on-site equipment for delivery and retrieval.

Transportation and Equipment:

Equipment to be transported over USFS roads will include:

PHASE	EQUIPMENT TYPE	QUANTITY	Number of TRIPS per week
Preparation	Equipment transport	2	1
	Pick up trucks	4	28
	Grader	1	1
Drilling	Tool Trailer	2	1
	Core Trailer	1	1
	Water Trucks	2	21
	Pickup trucks	4	28
	ATV	3	28
	Geophys. Log Truck	1	1
Support	Equip. Transport	1	1
	Jet Fuel trailer and tank	1	2
	Pickup trucks	4	28
	Pickup and trailer combination	2	4
	Boom Truck	1	1
	Frac tanks	5-6	1

Access and Road Construction

No road construction is needed for the proposed area. Access to the staging areas and drill sites will be via USFS roads 52007, 50044 and 52010 (Map 2).

Drill Hole Plugging

The exploration drill holes will be plugged with a cement, cement/bentonite slurry or Abandonite (or equivalent) to their full depth. The completion method includes pulling surface casing when possible; but when not possible, cutting it flush with the ground, and then pumping the cement/bentonite slurry through the drill pipe starting at the bottom of the hole. Plugging will then be done in stages by tripping-out of the hole 8-10 joints

(160-200 ft) and pumping again. This process will be repeated to the surface. A brass identification tag will be placed in the concrete at the top of the drill hole stating the operator's name, drill hole number and legal description. The plugged hole will be flush with the ground surface.

Water Rights

Water for drilling and road maintenance will be obtained from Cowboy Creek and Quitchupah Creek. Canyon Fuel Company has sufficient primary water rights in both drainages for the project. An approved Temporary Change permit will be obtained prior to withdrawing water.

Site Preparation

Earth excavation for the drill sites will be minimal using hand tools only. Some minor leveling for placement of wood crib blocking for leveling of the drill may be required. Minor amounts of topsoil that may be removed will be stored and replaced upon completion of drilling. No mud pits will be excavated. Portable mudtanks will be utilized. Cuttings will be stored and hauled away by helicopter to a truck at the staging area and hauled to the Sufco Mine waste rock site upon completion of drilling. Figure 1 shows the typical drillsite setup.

Logging

Geophysical logs will be run in accordance with 10 CFR part 39.

Surveying

The drill hole will be surveyed to a 0.01 foot horizontal location and a 0.1 ft vertical elevation. Locations will be expressed in NAD 83 state plane coordinates adjusted to sea level datum.

43 CFR 3482.1 (3)(v) Estimated Timetable

The proposed drilling project is scheduled to begin in early to mid June. The following table shows the projected timetable for each phase of the program.

EVENT	WEEK					
	1	2	3	4	5	6
Set pumps, frac tanks and water lines						
Drilling						
Reclaim drill sites and remove water lines						

The total plan including reseeding should be completed in 5 to 6 weeks depending on weather or other delays.

Reclamation

Reclamation work will begin as soon as possible after drilling is completed. The site will be returned to approximate original contour, scarified and reseeded with USFS approved seed mixture. Repairing any USFS roads will include grading the rutted areas and adding gravel if needed. The planned seed mix is tabulated as follows (same mix as approved for both the 2008 Green's Hollow drilling project):

SEED MIX		
NAME		**Pounds/Ac PLS**
Western Wheat grass	Elymus smithii	2.00
Basin Wild Rye	Elymus cinereus	1.00
Intermediate Wheat grass	Elymus hispidus	2.00
Yellow Sweet Clover	Melilotus officinalis	1.00
Blue Leaf Aster	Aster glaucodes	0.25
Lewis Flax	Linum lewisii	0.50
Small Burnet	Sanguisorbia minor	1.00
Silvery Lupine	Lipinus argentis	1.00
True Mahogany	Cercocarpus argentius	1.00
Bitterbrush	Purshia tridentate	1.00
	TOTAL	**10.75 PLS**

Prior to any seeding, the USFS will be consulted to ensure the proper seed mixture is used. The vegetative cover resulting from this seed mix is considered to be capable of stabilizing the soil surface from erosion.

Safety

Drilling and construction contractors as well as Ark Land/Canyon Fuel employees will be required to wear hard hats, steel toed boots, and safety glasses when working at drill sites or handling equipment at the staging area/landing zone.

Appropriate fire fighting equipment and adequate water supply will be maintained at the drill sites and the staging area as well as any water pumping locations. USFS fire stipulations will be followed.

Internal combustion engines will be equipped with appropriate mufflers and/or spark arrestors. All vehicles will carry a readily available and fully charged fire extinguisher, a first aid kit and fire fighting tools.

Large equipment will not be moved when the roads are excessively muddy. Personnel will not be allowed to drive onto the area when excessively muddy roads occur, but may leave the area at the end of the work day or drill period. Any rutting that occurs will be repaired by the dirt contractor when conditions permit.

43 CFR 3482.1 (3) (vi) Amount of Coal Removed

The only coal to be removed during exploration activities will be cores. Cores will nominally be 1.4 inches (BQ) in diameter. Given an approximated projected thickness of 7 feet for the Upper Hiawatha seam and 12 feet for the Lower Hiawatha seam, approximately 30 to 60 pounds of coal will be removed.

Other Permits

Other permits such as road use and special use will be obtained from the USFS as required.

Reclamation Bonds

Bonding will be secured by both the USFS and BLM.

Data Use

Data will be transferred to the BLM within a reasonable time period after exploration. Ark Land Company requests that all data be kept confidential.