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June 7, 1983

NOV N83-5-2-2 Abatement action and/or plans submitted for approval.

RECEIVED

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DIVISION OF
OIL, GAS & MINING

SEWAGE WASTE DISPOSAL AND HANDLING FACILITY
BEAR CANYON SCLAE HOUSE - BEAR CANYON MINE

The following plan is designed to handle sewage waste generated at the Bear Canyon Scale facility in a manner which will comply with all state, and federal regulations. The methodology will insure the integrity of both surface and ground waters, while at the same time minimize environmental impacts by decreasing the amount of surface area which will be disturbed.

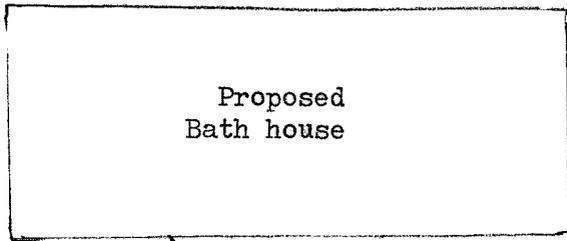
A diagram of the proposed lay-out is attached (see fig. 1). In essence, the plan will utilize the same drain field which will service the scale house, proposed shop, bath house, and offices. By the following application, the necessity for two separate drain fields will be eliminated, thus minimizing surface disturbance.

Approximately 12 feet south of the existing scale house, a 2,500 gallon septic tank was set in the ground. This tank will be covered with 30" of fill material. A 10' length of solid ABS schedule forty pipe will be sealed and fitted to the normal drainfield orifice. This pipe will then be inserted into a 300 gallon clear water sump (tank). This tank will act as a reservoir for the non-affluent material to be pumped from. (See fig. 2 for design criteria). A 200 gallon per minute trash pump will be utilized to pump this material approximately 260 feet to the proposed drain field for the bath house facility.

A 3" line will be burried at a depth of 4 feet to insure against freezing. The affluent line where it intersects the creek will be encased in an 8" PVC line for a minumum of 10 feet on either side of the creek channel. Thus insuring against accidental contamination of this watershed through breakage. The clear water sump will be fitted with an automatic poop valve which will activate the pump when the tank reaches 60% capacity. In the event of a pump failure due to any cause, the tank will also have a battery operated warning light activator if the tank were to reach 70% capacity. This battery operated light system would be checked bi-weekly to insure the batteries are kept fully charged and operational.

The pipeline, sump tank, and septic tank for the large part will be on previously disturbed ground, thus minimizing additional disturbance. The relative short distance (app. 60') of ground which is undisturbed, will be stripped of top-soil, prior to trench excavation. The top-soil will be placed on one side of the trench. The balance of the unconsolidated material will be placed on the opposing side. The line will be installed pressure tested, and when is approved, will be backfilled, whereupon top-soil will be redistributed. The next available planting season, the area will be seeded with the approved seed mix and mulched to insure germination and rapid establishment.

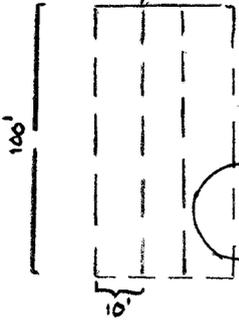
This plan, as well as detailed engineering diagrams will be delivered to the Utah State Dept. of Health for their approval prior to implementation. However, the above mentioned plan was conceived to be better than a holding tank, or chemical toilet, and has already been recommended by the Utah Dept. of Health over either of the above.



← 2,500 gal. septic tanks →

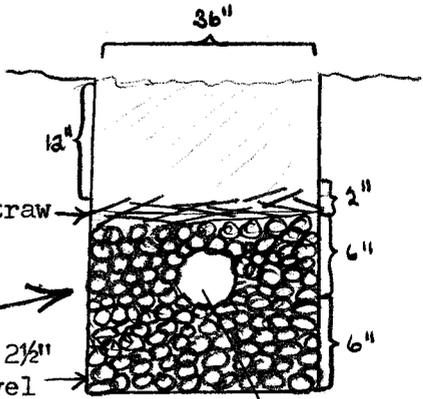


clear water sump



Drain field

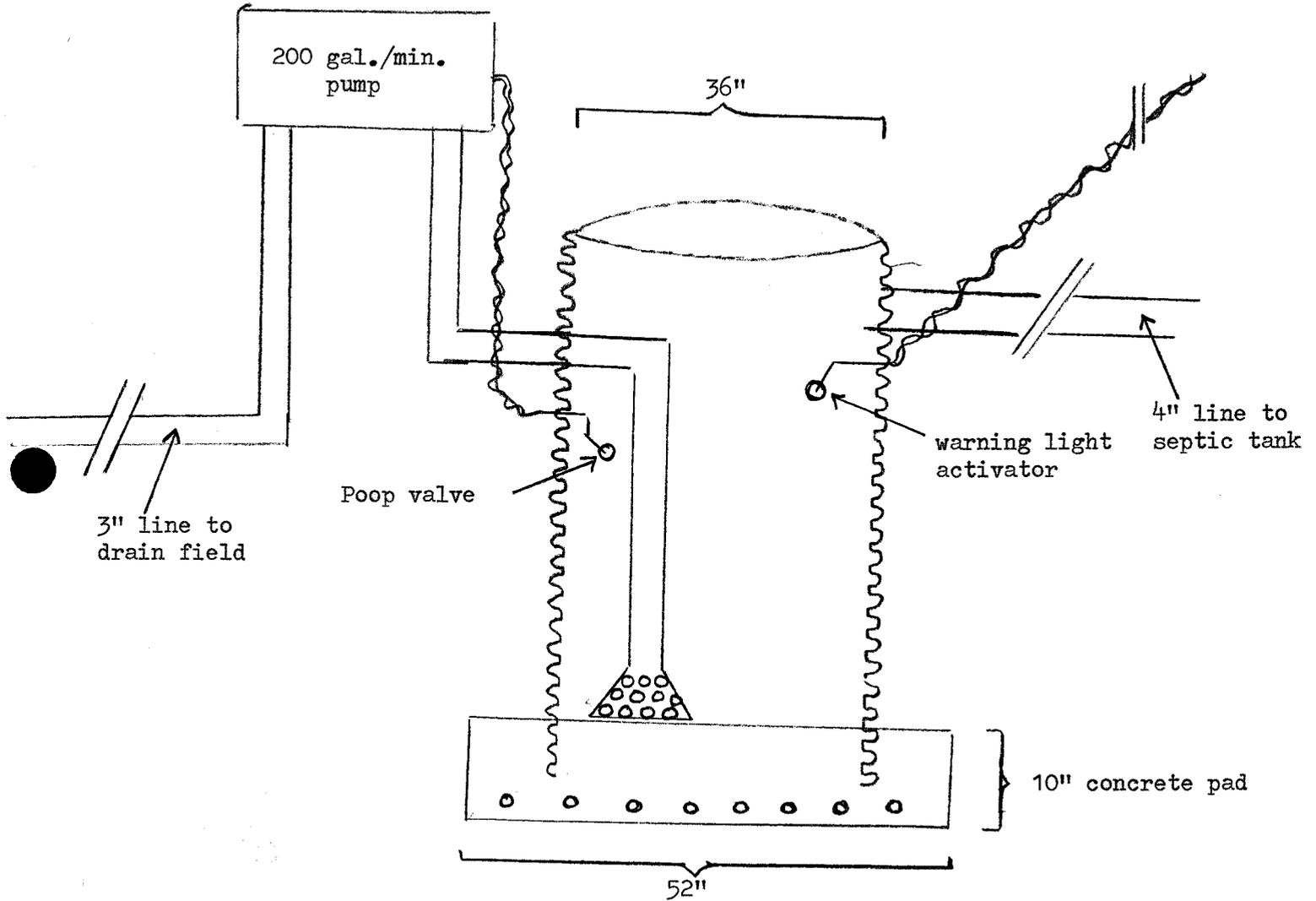
140'



Bear Creek

Figure 1

300 GALLON CLEAR WATER SUMP



Perculation tests indicate a 6" drop in 30 min./10' test hole.

Estimated daily input: 40 men per day at a consumption of 35 gal. per man=
1,400 gal. per day.

$$\frac{1,400}{1.2} = 1,166 \text{ sq. ft. of drain field.}$$

(Data supplied by Dept. of Health)

Figure 2

Part 2 of 2: this area of the violation concerns itself with a diversion that had existed to convey undisturbed drainage. The area and diversion are located adjacent to the screening plant. This area has been completely reclassified as disturbed drainage. To protect the stability of the slope, and to prevent continued drainage through the old undisturbed drainage, it will be back graded and stabilized. As indicated on the map, a 15inch metal culvert will be installed on the steep slope associated with the screening plant and lump coal bin. The culvert then becomes a diversion, and falls under the requirements of UMC 817.43. The culvert with its inlet and outlet must be able to handle a two year precipitation events.

Sizing Calculations for Disturbed Drainage Culvert

$$Q = ACi$$

Q = Design flow in cubic feet/ second

A = Drainage area

A = .9 Acres

C = Run off coefficient

C = .78

i = Rainfall intensity

i = .28 inch

$$Q = .9 \text{ Acres} \times .78 \times .28 \text{ inch} = .19656 \text{ cfs}$$

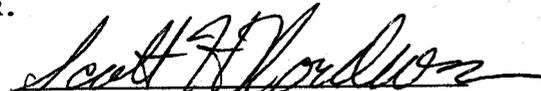
Culvert Size for a 2to1 plus slope is a 12inch culvert with a .5 headwall.

Co-Op Mining has purchased a 15inch culvert for installation.

To prevent erosion around the inlet sections of mine belt will be placed. To prevent trash build up around the inlet, roof bolts will be placed in a three foot radius in front of the inlet. The roof bolts will be spaced six inches apart.

Mine belting will be placed at the outlet to prevent erosion. Rip-rap may be add around both the inlet and outlet for larger flows (those flows larger than the design flows indicated in UNC 817.43)

The map and calculations prepared for Co-Op Mining for the abatement of violation NOV N83-5-2-2 are hereby certified by Mr. Scott H. Nordness, a QUALIFIED PROFESSIONAL ENGINEER.



Scott Harold Nordness

July 6, 1983

Qualifications that illustrates my profession statis, will be my four yours of active engineering work for U.S. Steel, Soldier Creek Coal, and Viking Engineering.