



Social Services

Scott M. Matheson, Governor, State of Utah
Anthony W. Mitcheli, Ph.D., Executive Director

533-6108
July 12, 1979

Alfred J. Nowowiejski
Deputy Civil Engineer
Civil Engineering Division
Department of the Air Force
Headquarters 2849th Air Base Group (AFLC)
Hill Air Force Base, Utah 84406

Re: Air Quality Approval Order
for Remodeling Base Exchange
BX Service Station

Dear Mr. Nowowiejski:

The thirty-day comment period ended on July 7, 1979 and no comments were received. Installation of the three new 10,000 gallon underground storage tanks which are to be equipped with submerged-fill equipment and a vapor return line is approved under the following conditions:

1. The proposed installation be as described in the May 15, 1979 Notice of Intent to Construct and as approved by the Executive Secretary.
2. The equipment be maintained and operated according to accepted operational and engineering practices.

Because we must both schedule and perform an initial compliance inspection, please give us an estimate of the date when the new equipment will be placed in service, followed by notice of the actual date.

Sincerely,

Alvin E. Rickers
Executive Director
Utah Air Conservation Committee

CAN:jo *tm*

cc: Weber-Morgan District Health Dept.

Division of Health
Lyman J. Olsen, M.D., M.P.H.
Director of Health

150
P.O. Box 25C

4.2.4-1035

MT OK

120

TO FILE
FROM REB

DATE 5-23-79

EVALUATION

PUB JUN 8, 79

HILL AIR FORCE BASE

Approved July 16, 79

BASE EXCHANGE SERVICE STATION REMODEL

HAFB proposes to remodel the existing Base Exchange BX service station. This will involve relocating the existing pumps on the same grounds and replacing the existing storage tanks with 3 new 10,000 gal capacity each, under ground storage tanks. The old storage tanks will be filled with sand. New equipment, including vapor recovery equipment will be added also.

EMISSION FACTORS

PROCEDURE	FACTOR lb/10 ³ gal
Submerged Filling	7.3
Splash Filling	11.5
Daily Breathing Loss	1.0
Motor Vehicle Refueling	9.0
Spillage Loss	0.7
Submerged Filling - HC vapor balance system	0.3

EXISTING EMISSIONS

In 1978 the BX sold approximately 1,954,000 gallons of gas and it is assumed that each of three existing 10,000 gallon underground storage tanks had an average stored quantity of 5,000 gallons.

Operation	Emission Factor	HC Emissions
1. Splash Filling	11.5 lb/10 ³ gal	22,471 lb/yr
2. Daily Breathing Loss	1.0 " "	1,954 "
3. Auto Refueling	9.0 " "	17,586 "
4. Spillage Loss	0.7 " "	1,367 "
TOTAL =		43,378 lb/yr
		= 21.69 tons/yr

RESULTING EMISSIONS

The proposed project will install new underground storage tanks which will have submerged fill equipment and a vapor return line such that vapors displaced during their filling will be returned to the delivery truck.

Operation	Emission Factor	HC Emissions
Submerged Filling - HC 1. Vapor Recovery System	0.3 lb/10 ³ gal	582 Vol/yr
2. Daily Breathing Loss	1.0 "	1,954 "
3. Auto Refueling	9.0 "	17,586 "
4. Spillage Loss	0.7 "	1,367 "

New TOTAL = 21,493 Vol/yr
= 10.75 tons/yr.

SUMMARY

HAFB has complied with Sec. 3.1.1 of the RRCR. Installation of the new underground storage tanks represents BACT and a reduction the existing HC emissions by 10.99 tons/yr.

I recommend approval.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 2849TH AIR BASE GROUP (AFLC)
HILL AIR FORCE BASE, UTAH 84056



REPLY TO
ATTN OF: DE

RECEIVED
MAY 16 1979

15 MAY 1979

SUBJECT: Relocation of Service Station Pump Islands, Hill Air Force Base - Notice
of Intent to Construct

TO: Utah Air Conservation Committee
ATTN: Al Rickers, Executive Secretary
Bureau of Air Quality
P.O. Box 2500
Salt Lake City, Utah 84110

1. In compliance with section 3.1 of the State Air Conservation Regulations, the attached "Notice of Intent to Construct" is submitted by Hill AFB, U.S. Air Force.
2. If this office can provide additional information, please feel free to contact Keith Davis at 777-2065.

A handwritten signature in cursive script, appearing to read "Alfred J. Nowinski".

1. Atch
Notice of Intent to Construct

ALFRED J. NOWINSKI
Deputy Civil Engineer
Civil Engineering Division

NOTICE OF INTENT TO CONSTRUCT
RELOCATION OF SERVICE STATION PUMP ISLANDS
HILL AIR FORCE BASE, UTAH

1. Project Description:

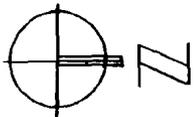
a. The proposed action provides for the remodeling of the existing Base Exchange (BX) service station at Hill AFB within Davis County. The BX service station presently has 3 pump islands; two on the south side and one on the east side. The proposal is to relocate these islands, with new equipment, to the north side of the service station as shown in Figure 1. Also included in the project will be 18,000 SF of paving, three new 10,000 gallon underground storage tanks, utilities and adjacent landscaping. The pump islands will be removed and the existing underground storage tanks will be filled with sand.

b. The relocation of the pumps is required to eliminate the existing hazardous traffic conditions and to replace antiquated equipment. The new pump islands will be adjacent to the existing service station to provide garage and gas pumping services at the same general location plus allow adequate backup space for waiting cars. Currently, during heavy use hours, vehicles will back up restricting flow through the intersection adjacent to the service station.

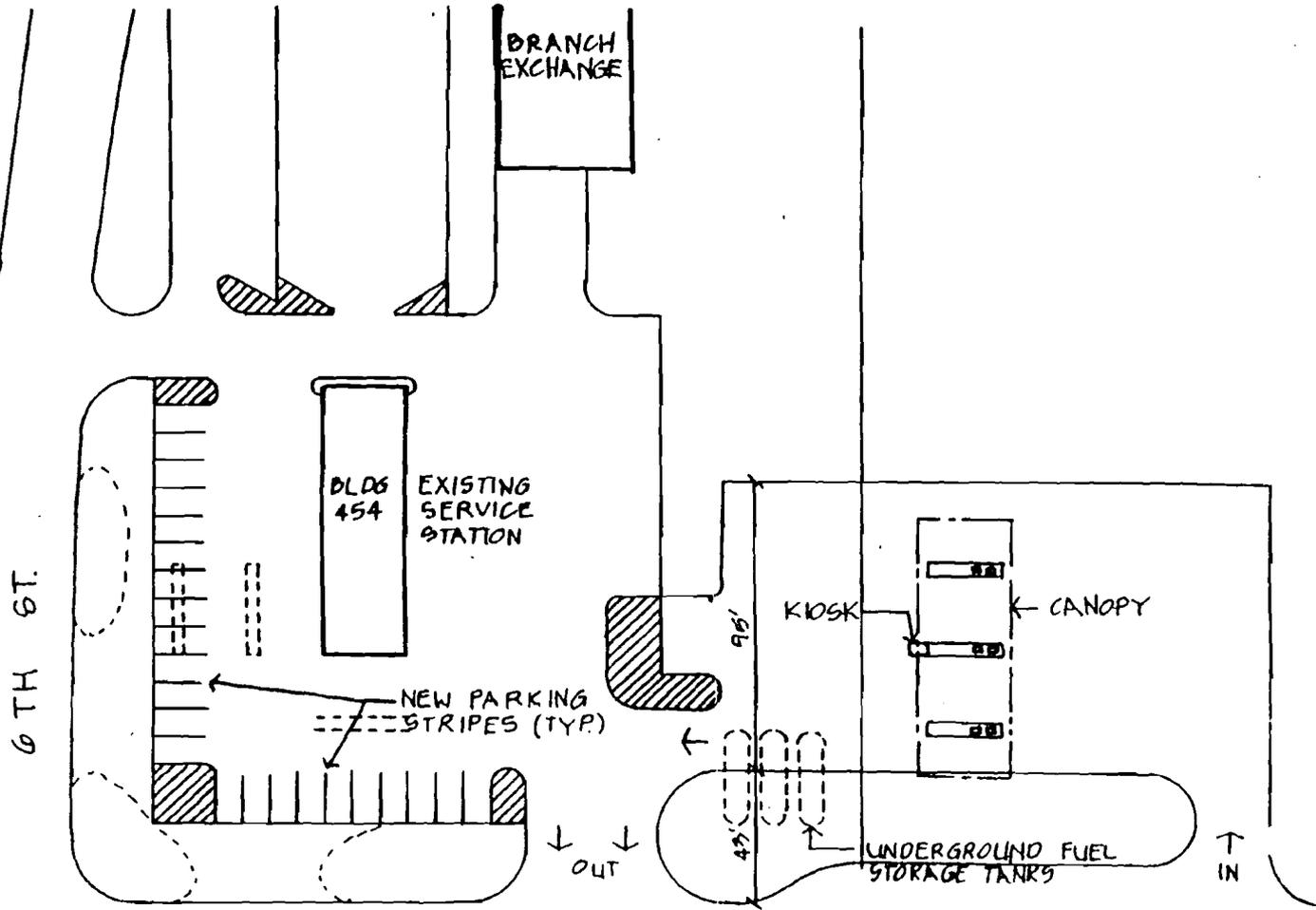
2. Pollutant Emissions:

a. The primary source of air pollutants from the BX service station is the emission of volatile organic compounds from the evaporation associated with gasoline transfer, storage and occasional spillage. In 1978, the BX service station sold approximately 1,954,000 gallons of gasoline and it is assumed that each of the three 10,000 gallon underground storage tanks had an average stored quantity of 5,000 gallons. Utilizing emission factors found in sections 4.3 and 4.4 of the EPA publication AP-42, "Compilation of Air Pollutant Emission Factors", the hydrocarbon (HC) emissions for the existing service station are calculated as outlined below:

<u>Operation</u>	<u>Emission Factor</u>	<u>Quantity (KGal)</u>	<u>HC Emissions (lb/yr)</u>
1. Storage	0.25 lb/day Kgal	15(x365days)	1,369
2. Splash Loading of Underground Tanks	11.5 lb/Kgal	1,954	22,471
3. Unloading Delivery Trucks	2.1 lb/Kgal	1,954	4,103
4. Dispensing to Vehicles	11.0 lb/Kgal	1,954	21,494
5. Liquid Spillage Loss	0.67 lb/Kgal	1,954	1,309
		TOTAL	= 50,746 = 25.4 tons/yr

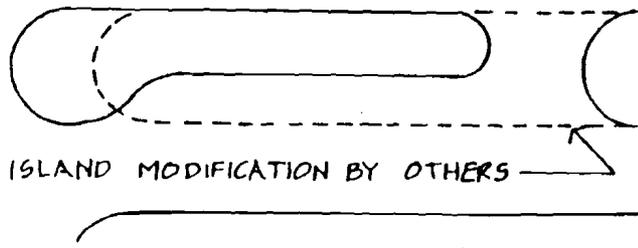
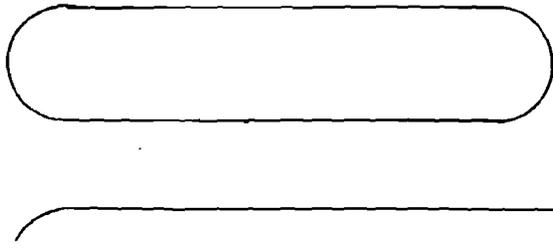
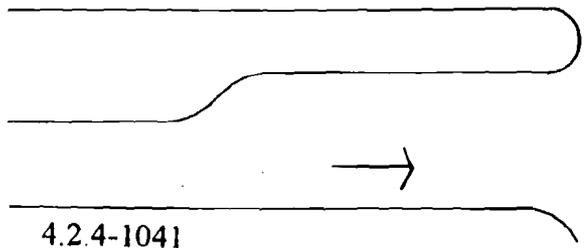


SITE PLAN
SCALE 1"=60'



6TH ST.

"E" ST.



FUTURE ISLAND MODIFICATION BY OTHERS

b. The proposed project will install new underground storage tanks which will have submerged fill equipment and a vapor return line such that vapors displaced during their filling will be returned to the delivery truck. In calculating the reduction in emissions this equipment will make, it is assumed that the commercial trucks delivering fuel will be equipped with a return vapor collection system. Again utilizing emission factors from AP-42, emissions for the altered BX service station are calculated as outlined below:

<u>Operation</u>	<u>Emission Factor</u>	<u>Quantity (KGal)</u>	<u>HC Emissions (Lb/Yr)</u>
1. Storage	0.22 lb/day Kgal	15(x365 days)	1,205
2. Submerged Loading with Open Return Vapor System	0.80 lb/Kgal	1,954	1,563
3. Unloading Delivery Trucks	2.1 lb/Kgal	1,954	4,103
4. Dispensing to Vehicles	11.0 lb/Kgal	1,954	21,494
5. Liquid Spillage Loss	0.67 lb/Kgal	1,954	1,309
		TOTAL	= 29,674
			= 14.8 tons/yr

c. As indicated in the preceding paragraphs, under ideal situations, the proposed project will reduce HC emissions from the BX service station by about 10.6 tons per year. There will also be some dust and heavy equipment exhaust created during the construction phase but these quantities will be small and created on a short-term basis only.

3. Air Cleaning Devices: The three new gasoline tanks will have control equipment such that they will be submerged filled and have a vapor return line to return back to the delivery truck those vapors displaced during filling. No additional air cleaning devices are proposed.

4. Emission Point: All the HC emissions will be due to gasoline evaporation and are emitted at ground level from various locations around the pump islands and storage tanks. The nearest adjacent facility is a small branch exchange (quick-stop type store) located about 150 feet southwest of the pump islands.

5. Sampling Points: No sampling points are anticipated.