SAMPLING PROGRAM AND SOURCES OF POLLUTION

A general statement concerning Chalfant Run (see Plate No. 500) would indicate that it is acid in character from its inception in the Eastwood section of the northwesterly portion of Penn Hills Township, to its point of confluence with Thompson Run in the Oak Hill section of Wilkins Township.

A review of Chalfant Run from its confluence with Thompson Run indicates that from Station 1S to Station 5S it is acid in character. It has a pH range of 7.5 to 4.3. The acidity ranges from 111 mg/l to 7 mg/l; the alkalinity ranges from 59 mg/l to 0; the iron content ranges from 3.60 mg/l to 0.02 mg/l; the sulphates range from 650 mg/l to 132 mg/l and the aluminum ranges from 7.7 mg/l to 5.5 mg/l. Samples collected in 1970 show the stream to be alkaline. These results may well be affected by the Scarlift Operation Project which was put into effect near Station 38S in August, September and October of 1969. From data submitted by Division of Mine Area Restoration concerning the. results of the lime addition at Station 38S on Blackridge Civic Association property, neutralization of the stream below this point is possible. This stream at the present time is acid in character.

The first tributary upstream from the mouth enters Chalfant Run at McCully Drive and Rodi Road (Station 4S). It shows alkalinity present and is in essence the only tributary stream sampled that is not affected by acid mine drainage. Its small volume has little effect in Chalfant Run and yet may be responsible for what appeared to be high alkalinity conditions at sampling station 1S on Chalfant Run, July 14, 1971.

Chalfant Run, from Station 5S to Station 9S, is acid in character, having pH values from 7.4 to 4.5, acidity ranging from 130 mg/l to 7 mg/l, alkalinity ranging from 29 mg/l to 0, iron content ranging from 2.80 mg/l to ..20 mg/l, sulphates from 650 mg/l to 225 mg/l and aluminum in the stream ranging from 6.9 mg/l to 7.1 mg/l.

At Lougeay Road and Old William Penn Highway an unnamed tributary discharges the first acid mine drainage (D-l) into Chalfant Run. This tributary at Station 6SF has a high pH of 8.0 and a low pH of 6.0. The acidity ranges from 14 mg/l to 0, the alkalinity from 108 mg/l to 14 mg/l, the iron content from l.0 mg/l to 0.10 mg/l, sulphates range from 570 mg/l to 186 mg/l and aluminum content is 0.5 mg/l. The mine drainage monitored at Station 7S on this unnamed tributary,

occurs at Old William Penn Highway and Lougeay Road. At this station the pH ranged from 8.l to 5.2; acidity range is 55 mg/l to 1 mg/l; alkalinity 75 mg/l to 9 mg/l; iron content ranges from l.60 mg/l to .02 mg/l, with sulphates $80 mg/l to 255 mg/l and aluminum at 2.8 mg/l. The results indicate that the upper reaches of this stream are intermittently acid and alkaline; however, at the mouth, the stream is consistently alkaline.

Chalfant Run from Station 9S to Station 10S is acid in character and passes through a portion of the Merrie Woode Section of Churchill Borough. At this point, mine drainage, off the Edgewood Country Club, discharges as a waterfall in the Merrie Woode area. This waterfall, Discharge D-2, (Station 11S) is the most extreme acid mine water discharging to Chalfant Run. The discharge has pH values ranging from 3.7 to 2.8 and acidity ranging from 558 mg/l to 320 mg/l; alkalinity is zero; iron content ranges from 109 mg/l to 16.9 mg/l; sulphates range from $_{1550}$ mg/l to 425 mg/l and aluminum is 20.9 mg/l. The Merrie Woode section (approx. 10 homes) of Churchill Borough presently is unsewered. It is located on a rock ledge at the foot of a steep embankment (Station 12S). The homes in this area have their own septic tanks. The homes abut Chalfant Run from Station 12S to

Station 9S. The residents of the Merrie Woode area have been in favor of establishing this study on Chalfant Run.

Chalfant Run from Station 10S to Station 22SF is highly acid in character with pH ranges from 6.6 to 2.8. Acidity ranges from 568 mg/l to 10 mg/l, alkalinity ranges
from 72 mg/l to zero; iron content ranges from 113 mg/l to .3 mg/l withsulphates ranging from 1850 mg/l to 100 mg/l; aluminum is 20.6 mg/l to 3.6 mg/l.

Duff's Run is acid in character and has 5 points of.
acid mine discharge along its water course Station 18S (D-3), (D-4), Station 20S (D-5), (D-6) and (D-7), Duff's Run, monitored at Stations 16SF, 17S and 19SF, shows pH values to be 6.6 to 3.8, acidity 325 mg/l to 9 mg/l, alkalinity 50 mg/l to zero, iron content ranges from 9.4 mg/l to l.15 mg/l, sulphate 960 mg/l to 235 mg/l, aluminum is 16.l mg/l to 15.9 mg/l.

Chalfant Run, from Station 22SF to Station 35S, traverses through Churchill Valley Country Club with two points of acid mine discharge, Station 27S (D-$) and (D-9). The pH values of the stream range from 7.3 to 5.l; the acidity ranges from 125 mg/l to 4.0 mg/l and the alkalinity ranges from 39 mg/l to 1 mg/l; iron content is l.8 mg/l to .12 mg/l, sulphate 580 mg/l to 225 mg/l.

Long Run tributary includes two points of acid mine discharge (D-10) and Station 33S (D-11). The pH value of this tributary, monitored at Stations 28S, 29SF and 3lSF, ranges from 6.8 to 4.5; acidity from 160 mg/l to zero; alkalinity from 83 mg/l to zero; iron content from l.84 mg/l to 0.2 mg/l; sulphates from 700 mg/l to 150 mg/l and aluminum from l.7 mg/l to 1.50 mg/l. The Long Road Sewage. Treatment Plant of Penn Hills Township discharges to this tributary with complete treatment, activated sludge treatment plant type and performs on an average of 85% to 90% removal of B.O.D. and suspended solids. The discharge from the treatment plant is responsible for usually maintaining the alkalinity of this stream. A tributary, monitored at Station 30S, to Long Run just below the Long Road Sewage Treatment Plant-, is acid mine drainage (D-10) and has a pH from 6.3 to 4.2, acidity ranges from 136 mg/l to 9 mg/l; alkalinity ranges from 19 mg/l to zero; iron content is l.3 mg/l to .27 mg/l, sulphate 670 mg/l to 425 mg/l and aluminum 14.6 mg/l.

From Station 35S to Station 4lSF, Chalfant Run passes through Churchill Valley Country Club property, adjacent to the 18th Fairway, and is acid in character. It has a pH value of 5.5 to 4.l. Acidity ranges from 217 mg/l to zero;

alkalinity 32 mg/l to zero, iron content ranges from 4.7 mg/l to 0.29 mg/l; sulphates from 800 mg/l to 150 mg/l and aluminum is 8.9 mg/l.

The Blackridge tributary to Chalfant Run is highly acid in character with two acid mine discharges Station 40S, .(D-12) and (D-13). The pH value in the stream, monitored at Stations 37S and 39S, ranges from 7.2 to 3.3 acidity ranges from 245 mg/l to 7 mg/l, alkalinity from 27 mg/l to zero; iron content ranges from 9.l mg/l to 0.6 mg/l, sulphates from $10 mg/l to 176 mg/l and aluminum 9.0 mg/l to 7.6 mg/l. The alkalinity present in the samples may generally be due to the overflow of two sewage pump stations; one of which belongs to Churchill Borough and the other to Wilkinsburg Borough. Intermittent failure of pumping results in raw sewage discharges.

Chalfant Run from Station 4lSF to Station 44S, along .Churchill Valley Country Club Fairway No. l, has. pH values ranging from 6.8 to 3.6; acidity from 2$$ mg/l to zero; alkalinity from 32 mg/l to zero, iron content is 8.95 mg/l to .22 mg/l, sulphates range from 875 mg/l to 150 mg/l and aluminum ranges from 5.9 mg/l to 4.8 mg/l.

The tributary adjacent to Beulah Road at Churchill

Valley Country Club Green No. 1 has four points of acid mine drainage, discharges (D-14), (D-15) Station 42S (D-16) and (D-17). The tributary, monitored at Station 42S, has a pH range from 7.4 to 5.l; acidity from 124 mg/l to zero, alkalinity range from 51 mg/l to 1 mg/l; iron content range from 5.05 mg/l to .10 mg/l, sulphates from 825 mg/l to 14 mg/l and aluminum is 3.9 mg/l.

Chalfant Run from Station 44S to Station 50S passes through a built-up portion of Penn Hills Township along Southern Avenue and Orin Street. Acid mine drainage discharge Station 45SF (D-19) off Park. Avenue is highly acid in character. At 45SF the pH values are ranged from 4.0 to 3.1; acidity ranges from 377 mg/l to 111 mg/l, alkalinity is zero; iron content is 21.9 mg/l to 2.6 mg/l, sulphates range from 725 mg/l to 235 mg/l and aluminum is 14.3 mg/l. Two acid mine discharges (D-20) and (D-21) at Station 46SF in the upper tributary of Chalfant Run have pH values of 5.1 to 4.0, acidity ranging from 228 mg/l to 21 mg/l; alkalinity is 8 mg/l to zero, iron content is $_{5.9}$ mg/l to .67 mg/l sulphate ranges from 765 mg/l to 130 mg/l, and aluminum is 11.4 mg/l. From the discharge of (D-22) the uppermost acid mine discharge in Chalfant Run from a corrugated pipe at Vantine Street at Station 49SF, the pH ranges from 4.3 to

2.8; acidity ranges from 4$$ mg/l to 29 mg/l, zero alkalinity, iron content ranges from 100 mg/l to l.78 mg/l, sulphates range from 740 mg/l to 193 mg/l and aluminum is 23.2 mg/l.

Chalfant Run is generally acid in character from its headwaters to its point of confluence with Thompson Run. The headwaters of Chalfant Run originate near Van Tine Street, at Discharge D-22 (49SF), having an average pH of 3.4. The headwaters of Chalfant Run is the most acid part of Chalfant Run, since the stream at this point is composed almost 100% of acid mine water. Dilution by its tributaries gradually reduces the acid content as the stream progresses downstream, holding an average pH of 4.5. Near its point of confluence with Thompson Run (2SF), the stream has a pH value of approximately 5.5.

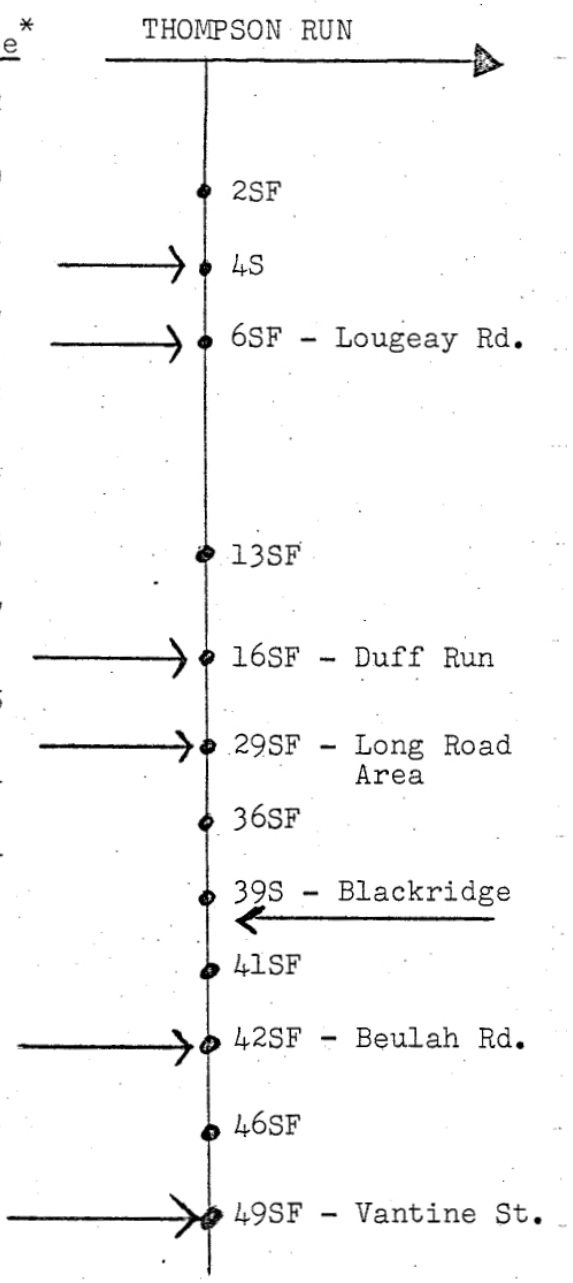
The clarity of the stream is irregular throughout its length. Certain sections are crystal clear even with a low pH value, while other sections are quite turbid, resulting from the mixture of aluminum salts with acid mine water. In other instances the stream, on intermittent occasions, is discolored by overflows from pump stations, from the natural run-off during rains and by the resulting admixture of the treated effluent from Long Road Sewage Treatment Plant and the acid mine water. The stream appears murky

from the point of confluence of the Sewage Treatment Plant effluent (29SF) and the main Chalfant stream (35S) and remains murky for its entire length to Thompson Run.

WATERSHED FLOW CHART

CHALFANT RUN

Sta. No.	Flow MGD	pH	Net Acid*	Iron*	Sulfate*
2SF	5.2	5.5	130 (3)	48 (1.1)	12,732 (294)
6SF	0.54	7.0	-270 (-60)	1.8 (0.4)	1480 (329)
13SF	2.0	4.5	2049 (123)	50 (3)	7928 (476)
16SF	0.74	4.5	1300 (211)	39 (6.3)	4807 (780)
29SF	0.81	6.2	-121 (-18)	5.4 (0.8)	1498 (222)
36SF	0.79	4.5	816 (124)	13.2 (2)	2691 (409)
39S	0.35	3.9	519 (178)	11.7 (4)	1213 (416)
41SF	0.48	4.7	356 (89)	5.6 (1.4)	1567 (392)
42SF	0.31	6.0	62 (24)	3.4 (1.3)	875 (339)
46SF	0.2	4.5	193 (116)	3.0 (1.8)	621 (373)
49SF	0.06	3.4	179 (358)	13.0 (26)	261 (522)



*Figures in ( ) are concentration in mg/l and figures not in ( ) are load in lbs/day.

The stream and discharge monitoring program in Chalfant Run and its tributaries will be outlined as shown on Plate No. 500, which is a portion of the U. S. G. S. Braddock Quadrangle, enlarged to a scale l" = 1000 ft. Description of stations along Chalfant Run and its tributaries, from its upper extremity at Station 50S southeasterly for approximately 19,000 ft to its intersection with Thompson Run near Station lS at Linhart are as follows:

Station I-S

Located at Pennsylvania Department of Highways Bridge approximately 500 ft. upstream from the junction of Chalfant Run with Thompson Run. This station was used for stream characteristics which had a variable result, as shown on the tabulated results.

Station 2-SF

Station 2-SF is a weir and sampling station located on Chalfant Run approximately 1500 ft. upstream from its intersection with Thompson Run.

Station 3-S'

Located along Rodi Road approximately upstream 2300 ft. from the intersection of Chalfant Run with Thompson Run. Weir lost in storm, Station No. 2SF used instead.

This weir was installed for stream measurements and stream characteristics. The stream at this point was highly acid.

Station 4-S

Located on a small tributary opposite Station No. 5-S which is located on the main branch of Chalfant Run. This small stream is slightly alkaline in character at the mouth.

Station 5-S

Located along Chalfant Run to further determine stream characteristics. Chalfant Run in this area is a well-flowing stream throughout the year. The stream is quite acid at this point. (Rodi Road)

Station 6-SF

Located along an unnamed stream parallel to Lougeay Road and being approximately 15 ft. upstream from the intersection of Lougeay Road with old Rodi Road. This tributary is alkaline in nature.

Station 7-S

Located on a tributary along Lougeay Road and being upstream 2500 ft. from the intersection of Lougeay

Road and the old Rodi Road. This stream is variably acid-alkaline. Discharge D-l is located just upstream of this station.

Station 8-S

Lougeay Road upstream from Old William Penn Highway on an existing lane. pH. measurements only; stream has a pH of 6.0.

Station 9-S

Located along Chalfant Run to further determine stream characteristics. Chalfant Run in this area is a well-flowing stream throughout the year. The stream is quite acid at this point. (Rodi Road)

Station 10-S

This station was used to observe stream characteristics, being located in a vicinity to ascertain a relationship with Station 11-S, top of the waterfall (D-2) which is located southwesterly from the stream.

Station 11-S

Located southwesterly 300 ft. of Merrie Woode Drive and Wm. Penn Highway, consists of a discharge (D-2) from a small pipe and thence becomes a waterfall

plunging approximately 120 ft to discharge into Chalfant Run. This discharge is extremely acid in characteristic.

Station 12S

This was used to observe stream characteristics, being located in a vicinity to ascertain a relationship with Station 11S, top of the waterfall, which is located southwesterly from the stream.

Station 13SF

This was used to weir. and observe stream characteristics, also being located in a vicinity to ascertain a relationship with Station S, top of the waterfall, which is located southwesterly from the stream.

Station 14S

This station is a sampling station located on Chalfant Run vicinity of Merrie Woode Drive.

Station 15SF

This is a weir and sampling station located on Chalfant Run, being slightly downstream from the intersection of Chalfant Run with Duff's Run.

Station 16SF

This is a weir and sampling station on Rodi Road measuring the flow and quality of Duff's Run, located adjacent to the Parkway Ramp heading west toward Pittsburgh.

Station 17S

Located on Duff Run downstream 400 ft. from the intersection of Rodi Road and Maple Lane, and also being slightly upstream from a main box culvert constructed under the Cloverleaf intersection of Parkway East. This stream is highly acid at this point.

Station 18S

Continuous mine drainage discharge vic. Homewood drive; pH 4.l. (Discharge D-3)

Station 19SF

Located on Duff Run above the intersection of Rodi Road and Duff Road for flow measurements and stream quality. The stream at this point is quite acid, having an average pH of approximately 4.5.

Station 20S

A small discharge of mine drainage (D-5) located along the hillside abutting Duff Run and being approximately 600 ft. upstream from the intersection of Rodi Road and Duff Road. This is a constant flow of water from the outcrop and is highly acid in nature. (Discharge D-5).

Station 21S

Used for pH measurement only; Duff Run vicinity of Morrow Drive and Tavern of Joe & Jennie - stream has a pH of 7.5.

Station 22SF

This is a weir and sampling station on Chalfant Run in the vicinity of a large culvert under the Parkway ramps and slightly upstream from its intersection with Duff's Run.

Station 23S

Located in Bullock Pens Park, Churchill Borough, for stream characteristic observation only. We noted a decrease in the acidity of the stream which was probably due to the mixing of treated effluent from the Long Road Sewage Plant.

Station 24S

Small stream discharging to Chalfant Run from Briarwood Drive; pH measurements only; discharges with a pH of 7.5.

Station 25S

Used for pH measurements only; stream at rear of House No. 819 Norvell Drive near Lennox Drive has a pH of 6.6. This is unusual since this stream undoubtedly outcrops from former coal mines in this area.

Station 26S

Used for pH measurements only; discharge from Briarwood Drive- pH 7.0.

Station 27S

pH measurements only; discharge of 15" storm sewer from Chapel Hill, which also receives mine drainage from hillside - pH 5.0. Chalfant Run above this 15" pipe has a pH of 7.0. (Discharge D-$).

Station 28S

Near the mouth of Long Run Tributary; pH 7.5.

Station 29SF

This is a weir and sampling station located on Long Run, being approximately 500 ft, downstream from the Long Road Sewage Treatment Plant. This station is further identified, being at a culvert in the stream between Fairways 15 and 17 of the Churchill Valley Country Club.

Station 30S

Located on the tributary to Long Run which carries the effluent from the Long Road Sewage Treatment Plant and Discharge D-10. The flow characteristics of the treated effluent from the Long Road plant, in combination with the acid discharge above the treatment plant, results in an alkaline water in this tributary before it joins Chalfant Run.

Station 3lSF

This station is located immediately above the Long Road Sewage Treatment Plant effluent discharge pipe. The flow is from mine discharges into-the tributary upstream of this station.

Station 32S

Used for pH measurements only; Long Run vicinity of Long Road and Rose Drive has a pH of 7.5.

Station 333

pH measurements only; intersection of Pentland and Pennwood Drives; continuous flow rear of houses to storm inlet; pH is 4.0 (Discharge D-11).

Station 34S

pH measurements only; Long Road stream vicinity of Paris Road and Joan Drive has a pH of 7.5. This is unusual since this stream undoubtedly contains drainage from former coal mines in this area.

Station 35S

pH measurements only; upstream on Chalfant Run from Long Run - pH 5.0.

Station 36SF

Located on Chalfant Run at the bridge on Long Road near No. l$ Fairway, Churchill Country Club, used for flow measurement and stream characteristics. The creek is extremely acid at this point.

Station 37S

Located at the mouth of the tributary from the Blackridge Civic Association. This stream receives all of the drainage on the westerly side of Beulah Road from

the Churchill Country Club and the Blackridge area.

Both flow measurements and samples were taken to determine stream characteristics before it joins with Chalfant Run.

Station 38S

Station 38S is a pH measurement station only on this tributary to Chalfant Run approximately 300 ft. downstream from the Blackridge Civic Club Association building. This stream is highly acid.

Station 39S

Located on. the main tributary from the Blackridge Civic Association below the Churchill Borough Sewage Pump Station. Various pipe lines have been installed in Blackridge collecting the flow of mine acid water from discharges throughout the Blackridge area; all of these having an extremely high acid concentration. (It was at this point where the Scarlift Operation Project was put into service in 1969 in order to neutralize the acid mine discharge from this area above the Churchill Country Club.) The flow at this station besides being highly acid, results in a minimum continuous discharge of approximately 300 g.p.m.

Station 40S

Results from an acid mine drainage discharge (D-I2) from an abandoned mine opening. The sample station was located approximately 100 ft. north of the main tributary carrying the discharge of acid mine water from the Blackridge Civic Association property. The flow is rather small but has a high acid concentration.

Station 4ISF

Located opposite No. 1 Tee, Churchill Country Club, on Chalfant Run, for stream characteristic at this point. There is always a constant flow at this weir with a highly acidic stream condition. Also noted on occasions are a white foam substance on the surface.

Station 42SF

Located near the mouth of the tributary entering Chalfant Run just downstream from Station 44S; used for flow measurement and stream characteristics. Stream at this point is highly acid. Previous investigation showed that discharge at various points upstream on this tributary were small but extremely acid. This tributary is flowing southwesterly with its headwaters near Ritzland Drive.

Station 43S

pH measurements only; discharge from 2 ft. pipe upstream from. Mulberry Lane; discharge has a good flow and a pH of 4.5 to 5.0 (Discharge D-15).

Station 44S

Located on Chalfant Run at the rear of Green No. 1, Churchill Country Club and only used for samples to obtain stream characteristics.

Station 45SF

Located on Park Avenue at house No. 720. This is an extremely. heavy discharge of mine drainage (Discharge D-19) flowing in a northeasterly direction from the Blackridge Subdivision, being a portion of Penn Hills Township, Wilkinsburg and Churchill Boroughs. The flow is quite acid and is one of the main contributors to mine water pollution in Chalfant Run.

Station 46SF

This is a weir and sampling station located at the culvert which runs under Laketon Road, near the headwaters of Chalfant Run.

Station 47S

pH measurements only; the Crab Hollow Road discharge into Chalfant Run is a 2 ft. pipe from Lindberg Avenue with a steady flow and a pH of 4.3.

Station 48S

pH measurements only; the Crab Hollow Road discharge into Chalfant Run is a small pipe discharge (D-2l) from Orin Street, which has a pH of 4.8.

Station 49SF

A small rectangular weir located in the upper extremities of Chalfant Run consisting of a discharge (D-22)

from a corrugated pipe at the rear of No. 9244 Vantine St. The flow is quite steady and consistent at this point and has a very low pH.

Station 50S

pH measurements only; stream at Station 50S above the mine acid discharge D-22 has a pH of 7.2. Little or no flow was observed at the end of a 30" concrete pipe discharging from Sampson Street.

Also shown on Plate No. 500 is information concerning discharges in the study area. Deep mine information has been indicated as well as mine acid discharges from outcrops.

(D-l) is in an area located at the vicinity of Old William Penn Highway and the Lougeay Road intersection. It contributes continuous mine drainage to the tributary running south parallel to Lougeay Road to its intersection with Chalfant Run. (Monitored at Station 7S).

(D-2) is a continuous mine discharge (Station 11S) from a small pipe; thence becoming a waterfall plunging into Chalfant Run.

.(D-3) is a continuous discharge from a pipe in the vicinity of Homewood Drive near Tulip Drive, located in Duff's Run watershed, being highly acid in nature. This is also Station l8S.

(D-4) is a discharge westerly of Tulip Drive, located in the Duff's Run watershed, highly acid in nature. This is a main contributor in volume, similar to the aforementioned Discharge (D-3),. This discharge is from the coal seam outcrop..

(D-5) is a small continuous mine drainage discharge located

on the hillside abutting Duff's Run, approximately 600 ft. upstream from the intersection of Rodi Road and Duff Road.
It is highly acid in nature and was monitored at Station 20S.

(D-6) is a continuous mine acid discharge in the vicinity of Penn Hills Township pump station, located opposite the Tavern of Joe & Jennie on Rodi Road, which discharges into Duff's Run. The discharge is highly acid in nature.

(D-7) is a continuous deep mine acid discharge located in the upper reaches of Duff's Run, just off Rodi Road near the Penn Hills Shopping Center.

(D-8) is a continuous acid mine discharge from a 15" storm sewer serving the Chapel Hill Plan of Lots, Churchill Borough and is acid in nature. This was monitored at Station 27S.

(D-9) is located on Briarwood Drive in Penn Hills Township.
It was reported by the Department of Environmental Resources in their May 1974 Exploratory Drilling Program Report. Some corrections were made on the acid mine drainage in this area at the rear of properties 170 through 209 Briarwood Drive, Project No. BD-329. However, field tests indicate a pH of 4.5.

(D-10) is located at properties of Catalano and Dalo on Rosewood Drive, Penn Hills Township and field tests of water

standing in the area had a pH of 4.5; however, no coal seam is exposed. Monitored at stream Station 20S.

(D-11) is a continuous mine acid discharge at 600 - 613 Pennwood Drive, where properties are subjected to a constant flow of water. No evidence of deep mine openings, however, it is felt that surface water is flowing through the ground, coming in contact with the top of the coal seam. Some corrections have been made, however, acid mine drainage conditions still exist. Monitored at Station 335.

(D-12). is continuous mine acid drainage from an abandoned mine opening located in the vicinity of the Blackridge Civic Association property. Monitored by Station 40S.

(D-13) is continuous mine acid drainage into the storm sewer system of Churchill Borough, located on Forest Drive. Discharge through the storm system is highly acid and a continual steady flow.

(D-14) is continuous acid mine drainage from a deep mine
(on information furnished by Department of Environmental Resources report, May 1974) at McFarland Drive, approximately 500 ft. northerly of intersection with Penny Drive.

(D-l5) is mine acid discharge from property of Conturo,

Steckel, Andrews and Siviy, where corrections were made during 1973 under Project No. BD-7400 Monitored by Station 435.

(D-16) is deep mine acid discharge, vicinity of Blueberry Drive. Flow is continuous.

(D-17) is continuous mine acid drainage vicinity of 219 Pennoak Drive. The discharge of water, in the Pennoak DriveRitzland Road area, is from an old abandoned mine working which has been covered by the development of the properties in this section.

(D-l8) is a discharge from a deep. mine area, vicinity of Churchill Avenue.

(D-19) is a large continuous mine discharge in an open creek at 720 Park Avenue, being highly acid in nature and a main contributor to mine water pollution of Chalfant Run. This was monitored at Station 45SF.

(D-20) is a continuous mine acid discharge from a storm sewer system of Penn Hills Township in the vicinity of the intersection of Laketon Road and Southern Avenue. Storm sewer is within the right-of-way of Laketon Road and traverses from approximately the top of the watershed easterly to Chalfant

Run. This discharge is highly acid in nature.

(D-2l) is a continuous mine acid discharge to several storm sewers which were constructed parallel in the right-of-way of Crab Hollow Road. The drainage is highly acid and it is suspected that mining occurred on the properties just northeasterly of the intersection of Crab Hollow Road and Lindberg Avenue. Monitored at Station 48S.

(D-22) is the mine acid discharge at the rear of 9244 Vantine Street. The flow is consistent throughout the year and has a very low pH. This also is Station 49SF.