

PITTSBURGH CITY POTENTIAL MINE SUBSIDENCE STUDY

Contract No. ASP 17

Flush Quantities by Borehole and Vein

Quantities are in tons.
 Quantity noted when the borehole achieved 50 psi or as noted otherwise.
 The letter C denotes that this borehole was drilled to the Checker Vein.
 The letter P denotes that this borehole was drilled to the Pitston Vein.
 The letter M denotes that this borehole was drilled to the Marcy Vein.
 Material used for injection was minus one-half inch (1/2") in size unless noted otherwise.

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
11M	---	---	---	---	---	---	---
21M	---	---	---	---	---	---	---
31M	---	---	---	---	---	---	---
41M	---	---	---	---	---	---	---
51M	---	---	---	---	---	---	---
61M	---	---	---	---	---	---	---
71M	---	---	---	---	---	---	---
81M	---	---	---	---	---	---	---
91M	---	---	---	---	---	---	---
10M	---	---	---	---	---	---	---
100P	4' open	1798	---	2' open, 10' broken	---	---	---
110P	---	---	---	12' coal	---	5' coal	---
120P	---	---	---	6' coal, 4' open	5658	6' broken	---
120P	7' open	264	---	6' open, 6' soft	10061	---	---
130P	7' coal	---	---	12' cave	---	---	---
130P	---	---	---	7' broken	---	5' coal	---
130P	---	---	---	8' broken	---	5' coal	---
150P	7' open	2087	---	2' open, 18' broken	---	---	---
154M	---	---	---	---	---	5' coal	---
160P	4' open	10490	---	1' open, 16' broken	1371	---	---
160P	---	---	---	---	---	---	---
18M	6' open, 1' soft	1019	---	---	---	5' coal	---
180P	3' coal	---	---	8' broken	---	---	---
180P	---	---	---	3' open, 3' soft	---	---	---
200P	5' open, 3' broken	300	---	---	---	---	---

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
21C	6' open	1857	---	---	---	---	---
220P	6' open, 2' broken	2474	---	6' open, 6' broken	779	---	---
230P	4' open, 7' broken	1493	---	5' open	---	---	---
240P	8' coal	---	---	---	---	---	---
250P	2' coal	---	---	---	---	---	---
250P	1' open, 5' broken	6992	Barrier, 2" Material	---	---	---	---
260P	---	---	---	---	---	---	---
280P	2' open, 20' broken	---	---	---	---	---	---
290P	3' broken coal	---	---	---	---	---	---
300P	2' open, 3' broken	---	Barrier, 2" Material	---	---	---	---
310P	3' broken coal	---	---	---	---	---	---
320P	4' open, 1' broken	---	---	---	---	---	---
330P	26' broken rock	---	---	---	---	---	---
340P	5' open	---	---	---	---	---	---
350P	1' open, 10' broken	---	Barrier, 2" Material	---	---	---	---
360P	4' open, 3' broken	---	---	---	---	---	---
370P	13' broken rock	---	---	---	---	---	---
380B	1' open, 15' broken	---	Barrier, 2" Material	---	---	---	---
390P	4' open	18881	---	3' open, 2' broken	---	---	---
400P	18' broken rock	---	---	---	---	---	---
410P	1' open, 9' broken	03	Barrier, 2" Material	---	---	---	---
420P	13' broken rock	---	Barrier, 2" Material	---	---	---	---
440P	4' open	---	Barrier, 2" Material	---	---	---	---
450P	5' coal	---	---	---	---	---	---
460P	12' broken rock	---	---	---	---	---	---
470P	2' broken, 1' broken	---	---	---	---	---	---
480P	1' open, 1' broken	---	Barrier, 2" Material	---	---	---	---
500P	1' open	4.5	---	1' open, 10' broken coal	700	---	---
510P	---	---	---	12' coal	---	---	---
520P	6' open, 2' broken	4104	---	7' broken coal	---	---	---
530P	3' coal	---	---	8' coal	---	---	---
540P	7' coal	---	---	3' open, 6' broken	5735	---	---
570P	5' coal	---	---	1' open, 12' broken	3202	---	---
580P	5' coal	---	---	4' open, 7' broken	1919	---	---
590P	1' open, 8' broken	4.5	Barrier, 2" Material	---	---	---	---
600P	---	---	---	---	---	---	---

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
61P	3' open, 2' broken	---	---	---	---	---	---
62P	2' coal	---	---	---	---	---	---
630P	1' open, 6' broken	3.5	Barrier, 2" Material	10' open, 1' soft	---	---	---
640P	2' coal	---	---	13' coal	---	---	---
650P	---	---	---	12' broken	---	---	---
670P	1' coal	---	---	13' coal	---	---	---
680P	---	---	---	10' open, 2' broken	2343	---	---
690P	1' coal	---	---	5' open, 8' soft	12027	---	---
700P	1' coal	---	---	9' open	25897	---	---
710P	5' coal	---	---	1' open, 11' broken	---	---	---
720P	1' coal	---	---	19' coal	---	---	---
730P	1' coal	---	---	13' coal	---	---	---
740P	---	---	---	8' open	8957	---	---
750P	---	---	---	8' open, 2' broken	11536	---	---
760P	---	---	---	10' coal	---	---	---
770P	---	---	---	14' broken rock	---	---	---
780P	---	---	---	20' broken rock	---	---	---
810P	---	---	---	6' open, 6' broken	8755	---	---
820P	1' coal	---	---	10' open, 2' broken	---	---	---
830P	---	---	---	1' open, 11' broken	---	---	---
840P	---	---	---	11' broken	---	---	---
850P	---	---	---	illite	---	---	---
860P	---	---	---	22' broken	---	---	---
870P	---	---	---	11' solid cave	23162	---	---
880P	---	---	---	7' open, 2' soft	---	---	---
890P	---	---	---	3' open, 11' broken	20875	---	---
910P	---	---	---	6' open, 2' broken	---	---	---
920P	---	---	---	8' open, 4' soft	12395	---	---
930P	---	---	---	10' open, 2' soft	---	---	---
940P	---	---	---	5' open, 1' broken	---	---	---
950P	---	---	---	10' broken	---	---	---
960P	---	---	---	9' open, 5' broken	---	---	---
970P	---	---	---	7' open, 2' broken	---	---	---
980P	4' open, 6' broken	---	Barrier, 2" Material	33' broken rock	---	---	---
990P	2' coal	---	---	---	---	---	---
100C	1' open	7	---	---	---	5' coal	---

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
101P	4' coal	---	---	1' open, 13' broken	5514	---	---
102P	3' coal	---	---	5' open, 2' broken	6167	---	---
103P	6' open, 2' soft	28	Barrier, 2" Material	12' broken	---	---	---
105P	3' coal	---	---	5' open, 7' broken	693	---	---
106P	---	---	---	13' coal	---	---	---
1070M	---	---	---	9' open	32394	---	---
108P	1' coal	---	---	7' open, 6' broken	---	5' open, 1' broken	---
109P	1' coal	---	---	5' open	---	---	---
110P	1' coal	---	---	4' open, 11' broken	69	---	---
111P	1' coal	---	---	1' open, 10' broken	---	---	---
112P	1' coal	---	---	9' open, 6' broken	22039	---	---
113P	1' coal	---	---	no vein	---	---	---
114P	1' coal	---	---	7' open, 6' broken	---	---	---
115P	---	---	---	4' open, 1' broken	---	---	---
116P	3' coal	---	---	---	---	---	---
1170M	---	---	---	---	---	---	---
118P	---	---	---	---	---	---	---
119M	---	---	---	---	---	---	---
120P	no vein	10447	Note 1	4' broken	1514	5' open, 1' broken	Blocked
121C	5' open	10	Barrier, 2" Material	---	---	---	---
122C	5' open	10	Barrier, 2" Material	---	---	---	---
124C	3' open	10	Barrier, 2" Material	---	---	---	---
125C	6' coal	---	---	---	---	---	---
126C	6' coal	---	---	---	---	---	---
127C	4' coal	---	---	---	---	---	---
128C	1' open, 6' soft	3	Barrier, 2" Material	---	---	---	---
129C	2' open	5	Barrier, 2" Material	---	---	---	---
130C	1' open, 10' broken	1	Barrier, 2" Material	---	---	---	---
131C	7' broken	5	Barrier, 2" Material	---	---	---	---
132C	---	---	---	---	---	---	---
133C	---	---	---	---	---	---	---
1340P	5' open	---	---	5' open	10992	---	---
1340P	14' coal	---	---	14' coal	---	---	---
135P	7' coal	---	---	8' open, 1' soft	1680	---	---
136P	8' coal	---	---	1' open, 6' broken	---	---	---
1380M	1' coal	---	---	no vein	---	---	---
1390M	1' coal	---	---	8' coal	---	4' open, 1' soft	---
140P	---	---	---	8' coal	---	---	---

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
141P	---	---	---	9' open, 7' broken	---	---	---
1420M	---	---	---	14' coal	10058	5' coal	---
1430M	8' open	---	---	7' open	---	---	---
1450P	5' open	7298	---	14' coal	---	---	---
1460P	7' open	---	---	2' open, 9' broken	---	---	---
147P	---	---	---	2' open, 14' broken	2007	---	---
148P	1' coal	---	---	28' broken	---	---	---
150P	4' coal	---	---	8' coal	---	---	---
151P	5' coal	---	---	8' coal	---	---	---
152P	4' coal	---	---	10' coal	---	---	---
153P	3' coal	---	---	3' broken, 1' soft	7311	---	---
155P	2' coal	---	---	10' coal	---	---	---
156P	1' coal	---	---	2' open	52597	---	---
1570M	10' coal	---	---	10' coal	---	---	---
1580M	10' coal	---	---	10' coal	---	---	---
1600M	1' coal	---	---	10' coal	---	---	---
1610M	---	---	---	7' open, 8' broken	49718	---	---
162P	1' coal	---	---	6' open, 8' broken	21898	---	---
163P	---	---	---	15' coal	---	---	---
165P	---	---	---	12' coal	---	---	---
166P	---	---	---	10' coal	---	---	---
167P	---	---	---	10' coal	---	---	---
168P	---	---	---	10' coal	---	---	---
170P	---	---	---	12' coal	---	---	---
1710M	---	---	---	10' coal	---	---	---
172M	---	---	---	---	---	---	---
173P	---	---	---	11' light cave	---	---	---
174P	---	---	---	1' open, 15' broken	23459	---	---
175P	1' coal	---	---	15' coal	---	---	---
1760P	8' open, 3' rock	4313	---	1' open, 8' broken	---	---	---
1770P	---	---	---	---	---	---	---
178C	2' open, 2' broken	2	Barrier, 2" Material	---	---	---	---

Borehole Number	Drill Results	Checker Vein Flushing Results	Notes	Pitston Vein Flushing Results	Notes	Marcy Vein Flushing Results	Notes
181C	14' broken	---	---	---	---	---	---
182C	1' open, 12' broken	---	---	9' coal	---	3' coal	---
1830M	2' coal	---	---	16' coal	---	5' flash	---
184M	1' coal	---	---	8' flash	---	10'16	---
185M	---	---	---	7' flash	---	---	---
187M	1' coal	---	---	13' coal	---	5' coal	---
188M	1' coal	---	---	11' coal	---	5' coal	---
189M	1' coal	---	---	---	---	---	---
191C	4' open	4621	---	---	---	---	---
192C	1' coal	---	---	10' coal	---	---	---
193M	1' coal	---	---	14' coal	---	---	---
194M	6' coal	---	---	14' open	27791	---	---
195M	---	---	---	8' coal	---	---	---
196M	---	---	---	8' broken coal	4105	---	Blocked
198M	---	---	---	7' coal	---	---	---
199M	---	---	---	14' coal	---	---	---

Note 1: Possible error in original entry for borehole number on daily report form.

General Notes:
 There is data available indicating that boreholes were monitored to track the flow of the flash material. However, the data is not sufficient to determine exactly when openings in what veins may have been filled from an adjacent injection borehole. While the project records indicate that the work was concluded in the Checker vein, it was actually in the Bottom Checker vein.

COMMONWEALTH OF PENNSYLVANIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION

**ABANDONED MINE RECLAMATION
 CITY OF PITTSBURGH
 CITY OF PITTSBURGH
 LUTZERNE COUNTY, PENNSYLVANIA**

**ASP 17 LIST OF BOREHOLES
 AND INJECTION QUANTITIES**

DRAWN BY: J.G.B. DATE: AUGUST 1, 2008
 CHECKED BY: J.P.P. SCALE: 1" = 400'

FIGURE NO. 9A