

Hawaiian Volcano Observatory Record Book 1927

This volume is one of a series of record books compiled by the Hawaiian Volcano Observatory (HVO) from 1912 through early 1966. The pages for this volume were transferred by HVO to the Bishop Museum, in Honolulu, Hawai'i, in 1972 and are held at that institution (accession number 1972.265). In 2010, HVO entered a cooperative agreement with Bishop Museum to scan many of the record books in their repository. The scanning was done by HVO volunteer Frances Wong using a flat-bed scanner at a resolution equivalent to 600 dpi. The raw scans were then delivered to HVO volunteer Ben Gaddis, who processed each of the scanned pages by cropping and by adjusting the exposure and contrast using a photo editing program. The scanned and photographed pages for this volume were then combined to form this digital version of the record book. Quality control and posting was done by Tim Orr of the U.S. Geological Survey Alaska Volcano Observatory.

1927

Jan. 1

July 7

Eruption

1172

Jan. 11 1928

R.I.B. ? R.I. Baldwin, Park
Faltz eruption

Dec. 19 1928

E.M.B. REports

July 8 1929

Howard A. Powers

July 25

Eruption

Mrs. Young

1930

January 7

L.W. Nryan

JOURNAL

Day	Wednesday	Date	January 5, 1927
	Thursday		" 13, "
	Saturday		" 15, "

January 5
2:30 p.m.

After several days of NE. storm and rain. Pit shows fixed bright yellow sulphur at S. talus. This does not make the SO₂ blue fume that was so noticeable here formerly, mixed with the white vapor. It now makes only the white steam.

NE. corner at rim has caved away profoundly, and the talus below has fresh rocks on it. The wind has knocked over signs and flags. Steam volume is not unusual. There are large areas of white stain on N. and NE. walls.

T.A.J.

January 13
1:40 p.m.

Dust from a small slide seen from H.V.O.

R.B.H.

January 15
11 a.m.

Much dust from slides seen from H.V.O. Continued for an hour or more.

R.B.H.

11:43 a.m.

A noisy slide in pit heard at H.V.O. All about noon dust was hanging over pit. This dwindled in the afternoon. There were slides yesterday also.

4 to 4:30 p.m.

Now the N. and NNE. taluses are seen to be topped with fresh debris, and there is a fresh conchoidal break in the N. wall. The most sliding appears to have been at W. contact of the big sill.

While observing, the places that slid were NE., NNE., N., NW., and SW. Evidently the walls are uneasy. Why?

S. talus at two places very bright yellow with sulphur.

The upper part of SW. talus has the densest steam. Steam at usual places is thin. Biggest patch of white stain on walls is under NE. station. The walls and taluses are dry, and the weather clear.

There is no response of the seismographs to today's avalanching, but there were earthquakes yesterday. Can it be that the earthquakes start the sliding, and that the undermining so started continues?

T.A.J.

January 16
2:58:30 p.m.

A big avalanche roar, and gray dust rose first at the NE. corner of Halemaumau. Other mild dust displays before this. Hardly any red color in the dust. This was the noisiest slide and biggest dust cloud seen for many weeks. There was a noisy one with hardly any dust yesterday about 11:43 a.m.

4:30 p.m.

The avalanches have quieted down, but the pit walls are unsteady. Trickling slides seen and heard repeatedly NE., NNE., NNW., NW., and SW. near the rift cavern.

There has been a big slide at the north corner since the one of yesterday morning, and not the one of this afternoon, because the latter made gray dust. The north talus is covered with fresh red debris not there yesterday. This was probably the slide that accompanied the earthquake of yesterday afternoon. Today's slide was apparently NNE., where there is a fresh wall scar high up.

At S. station the smell of spicy sulphur is strong. This rises from the yellow steaming patch at S. talus. The walls today are wet and dark red, although rains last night were light at H.V.O. The salts on rock bank at base of SE. wall are entirely washed away, and the white area of NE. wall is smaller. There are many salts on the ground outside of pit S. Found 100 yards S. of pit a boulder of agglomerate 3 feet in diameter showing flaky gray ash layers and other pebbly layers, the whole decomposed in place with flakes piled around the rotten heap; this is the largest sample of acid degeneration among the 1924 ejecta yet seen.

There are green moss patches and blue green algae on walls of pit half way down S. and W. There is much moss and grass and other plants about the steam cracks east of the pit.

January 18
4 p.m.

There was dust over the pit yesterday occasionally. Now there is rock trickle SW., NW., and NE.

The area of the yellow solfataras at S. talus is growing larger. The little area of sulphur at E. margin of S. talus is bright with sulphur crystals. There is much sulphur at two other places along E. edge of bottom. There is faint yellow stain SW. of center about where the July, 1924, cone was. All of this development of sulphur is very new, and may portend the return of lava.

The hot line of steam jets up the middle of SW. talus, with a dry patch in the talus, may turn sulphurous just as the S. talus has done, and as the bottom of the NW. talus is doing.

The working of the wall today seemed to be near the SW.-NE. rift, both on SW. and NE. walls.

JOURNAL

Day		Date	
	Thursday	January	20, 1927
	Saturday	"	22, "
	Sunday	"	23, "
	Monday	"	24, "

January 20
6 p.m.

No change in Halemaumau. Calm weather, but no blowing. Falls of stones noted first NE., then W. Fresh debris on northern taluses. Some dust seen over pit today.

9 p.m.

Heard rocks fall at pit.

January 22
2 to 6 p.m.

Walked around pit by E. and N. A few isolated rocks were falling. Dense flocculent steam from dry patch at middle of SW. talus.

Notice that the W. end of sill is against rocks that are very red. New talus very red below.

The E. sulphur spot is at least 100 feet above lava floor, and the S. sulphur spots are at least 200 feet above floor. No new cracking of ash observed anywhere around the pit.

Examined the Postal Cavern, and found that a chamber might be fashioned in it of rocks and mortar and a roadway lead to it by S. side of pit.

January 23
10:30 a.m.

With Wallace W. Atwood of Clark University.

No change in pit. Saw one slide on SE. side of pit started by boys throwing stones. A little rock sliding occurred NE.

January 24
Noon

Visited Mauna Iki.

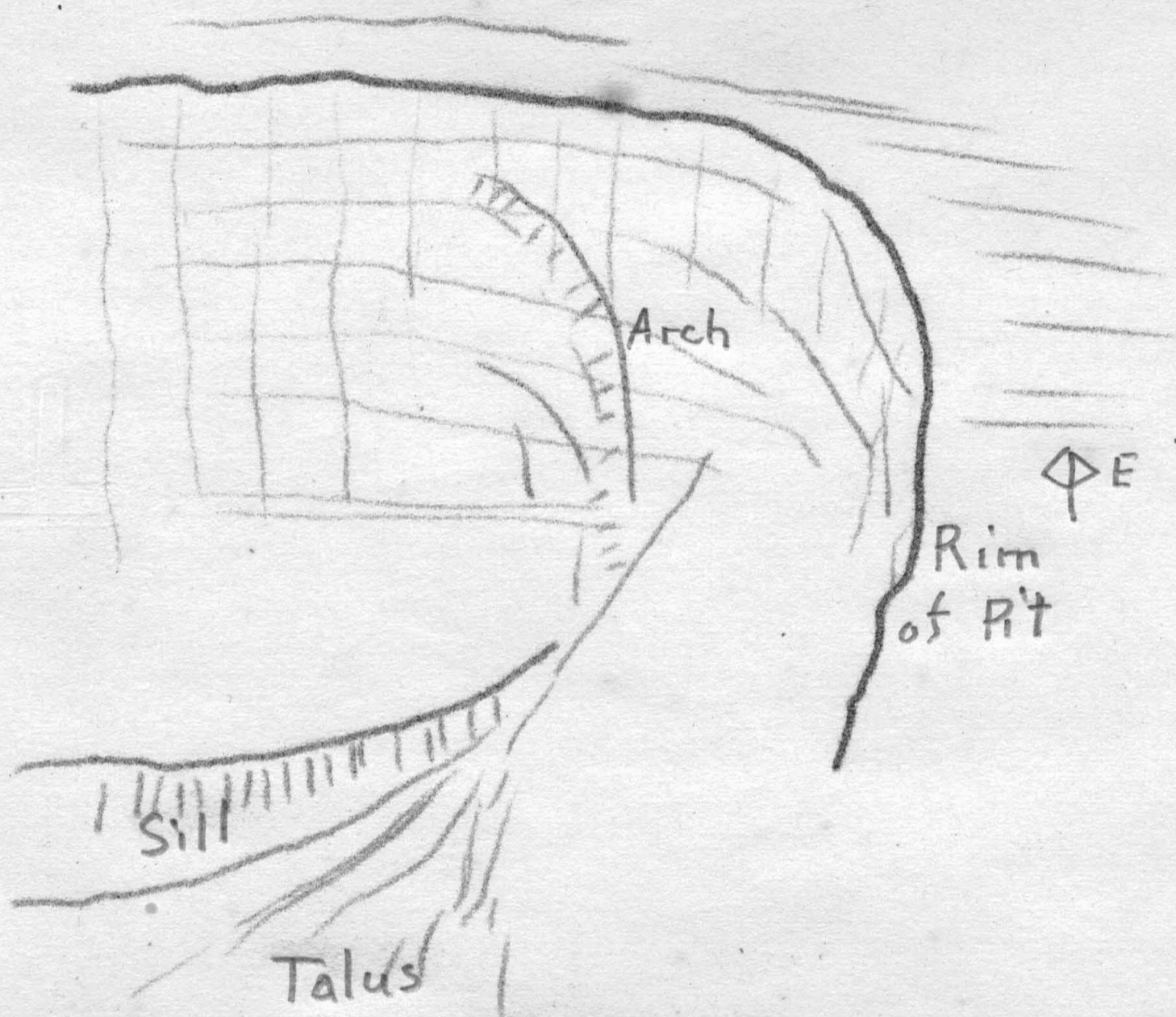
The upper hot spot not so hot as when visited a few weeks ago. Notice some hot places E. of summit crater that may be excessively hot. Ought to take temperatures.

T.A.J.

Day **Wednesday** Date **January 26, 1927**
Friday " **28, "**

January 26
2 p.m.

One fall of rocks at NE. wall. This wall in upper part shows a large arch of jointing across all the beds thus:



Heavy rain the last 2 days has wet the walls and made them dark red. The steam of bottom has not increased. The smaller sulphur patches are washed and paler than before. Not so the bright yellow solfatara of S. talus. The rain has not washed that away at all.

The pit today is very still. NE. wind. Clearing after rain.

January 28
3 to 4 p.m.

Nothing new at the pit. A jet of steam arising from a boulder in midst of dry hot patch at center of SW. talus. No slides of any size.

Boring. The men were working at a hole near Volcano House trail, No. 70. About 8 feet down pulled up and drill stuck 3 feet above the bottom. Compressor kept about 40-45 lbs. when hammer drill was working. We must get something made to rotate the drill while pulling up.

T.A.J.

JOURNAL

Day		Date	
Tuesday		February	1, 1927
Wednesday		"	2, "
Thursday		"	3, "
Saturday		"	5, "
Sunday		"	6, "

February 1
5:45 p.m.

Some slides about 4 p.m.

White dust rose in a thin cloud from the whole pit gradually, beginning at NE. corner. Left the air at orifice of pit suffused with dust for 30 minutes or more.

February 2
7:30 a.m.

Dust over N. corner at 7:30 a.m.

February 3

Small avalanches at pit several times during the day indicated by dust.

February 5
4 p.m.

Several slides at NE. corner the last few days. Saw one of them started by soldiers. Fresh material on NE. talus.

Sulphur patch on S. talus growing much larger. Yellow-green sulphur stain spreading over the talus.

265 feet N. of W. station make stone pile for pacing to conical talus of W. wall of Kilauea to find distance for pipe line. This point just S. of Postal tunnel cavern.

Wall SSE. blackened by sulphur over the sulphur steam.

Distance edge of pit to base of W. talus of Kilauea is 1,500 feet.

5:10 p.m.
5:20 p.m.

At 5:10 and 5:20 p.m., the second noisy, there were slides from the NE. corner. Alec reports that a large slice NE. has fallen from edge of pit.

The steam cracks SW. and W. of pit are purring strongly as though water were boiling below. This purring is very strong, a real steam pressure, in the hot vents of the sulphur bank flat south of main road, N. of Kilauea Crater. Does this mean that after the winter rainy season there is liquid water boiling underground, and may it be that the ash seepage and wash of 1924 has made subterranean water reservoirs by sealing the rock, just as ice on top of Mauna Loa and Mauna Kea makes a seal to hold water?

February 6

Some slides at pit.

T.A.J.

JOURNAL

Day		Date	
Tuesday		February	8, 1927
Wednesday		"	9, "
Saturday		"	12, "
Monday		"	14, "

February 8
3-3:30 p.m.

Light S. wind. Pit still. Yellow stain continues to grow in area on S. talus. A few rocks falling on NW. and NE. talus at long intervals. Slight smell of spicy sulphur at S. station. Much steam about remaining pinnacle high on S. wall

February 9
6 p.m.

Visited pit after hearing rumor (newspaper) that fire had been seen. Nothing new. Rainy and foggy.

February 12
6 p.m.

Clear. Black crater-like area in sulphur patch of S. talus appears a little larger. New scar middle of wall over NE. sill, and new debris on middle talus under sill.

February 14
3 p.m.

About 3 p.m. a strong red dust cloud rose from Halemaumau, and there was dust there at other times.

Visited pit at 6 p.m., and at N. corner, W. of end of big sill; there was a prolonged small avalanche falling, making red dust, and making a roar with numerous fresh starts from about midway up the wall.

The north and northwest taluses were covered with fresh red debris, and the red dust extended across the bottom of pit. There had evidently been some big slides.

On this day with R. J. Evans and Fred Waltjen went in Ford car, with Ruckstell axle, up to 1920 chasm, crossed it on crater side, stopped and visited 4-mile outflow, went on to N. end of Mauna Iki in car, went up on Mauna Iki in car. Stopped and visited hot patch, which instantly lighted stick, then visited footprints and aa trail. Returned to car, and in it traveled off Mauna Iki flows on E. side rift, then went north on W. side of Puu Koa, then E. on N. side of Puu Koa and visited Con Crater and pits. Then went N. by the big washes and to the koa grove. Then returned to S. bay of Kilauea and visited Halemaumau. Did this in 10½ hours. No misadventures.

T.A.J.

JOURNAL

Day	Date
Wednesday	February 16, 1927
Sunday	" 20, "
Wednesday	" 23, "

February 16
10 a.m.

Strong S. wind. Pit very dry. Pink dust blowing from the desert over the whole of Kilauea. Rocks sliding a little N. Yellow solfatara dusty. Vapor volume very thin at all the steam patches.

February 20
3 p.m.

Sulphur spots again increasing. A few rocks falling W. and N. Pit very dry and free from steam.

February 23
9 p.m.

In afternoon some noisy avalanches. One heard from H.V.O. at 9 p.m.

JOURNAL

Day	Date
Tuesday	March 1, 1927
Sunday	" 6, "
Wednesday	" 9, "
Saturday	" 19, "
Sunday	" 20, "
Tuesday	" 22, "

March 1
4 p.m.

Halemaumau shows new reddening of whole NW. wall where a large shell of wall has fallen, carrying away the bench, (or part of it), that extends the top of NE. sill westward. New red debris below. Also whole wall is red west of this point, showing that small falls have stripped it, revealing intense oxidation beneath, where the blue fume was in 1923.

There had been one or more big falls, for the whole floor across to S. wall was red with dust. Also middle talus of NE. wall has fresh debris.

Yellowing of the S. solfataras continues.

March 6
11 a.m.

Rainy. Halemaumau has dense purling steam jets from SW. talus and elsewhere; yellow sulphur persists at the sulphur spots, and one considerable avalanche fell from the middle of NW. wall. Other small falls.

March 9
1:50 p.m.

Slide noisy NW. side of pit. Some dust. Heard and observed from Uwekahuna.

March 19

Numerous dusty slides in afternoon.

March 20
10 a.m.

Earthquake in morning.

Evidences of large slides at NE. corner. Big boulders on bottom added to former ones. White deposits on NW. debris; fresh slides there.

March 22
4 p.m.

Slides falling at middle of NE. sill. Nothing else changed.

T.A.J.

JOURNAL

Day	Saturday	Date	March 26, 1927
	Sunday		" 27, "
	Wednesday		" 30, "

March 26
10 a.m.

The NE. talus is elongated downward out onto the floor, new big boulders lie beside the big one that made a track down the NNE. talus some months ago, and N. of the east station there is a big notch in the upper rim that appears fresh.

This break in the upper rim is where a lot of tangential cracks, extending southward, emerge into the pit. The points of the slabs have been caving.

March 27
10 a.m.

Conditions were much as before, but observed that the cracks at SE. tourist stand, edge of pit, are so cool that no steam shows and one can hold a hand in them. Wind SE. This development is not sudden; it has been growing doubtless. Perhaps cracks are hotter on NE. wind?

March 30
11 a.m.

Cracks at SE. trail still the same, nowhere near what they were in January, 1925 (169° F.). Seem about 105° F. No visible vapor at trail crossing.

Some slides NE. and at N. corner. New red debris under N. corner.

The three sulphur spots, 200 feet up center of S. talus, 200 feet up E. side of S. talus, and near bottom of E. side of S. talus, are becoming alike in size, all big and yellow in spite of much recent rain. The lower one makes blue fume with the abundant steam rising from it. The other 2 soft white steam. No blue fume now at the center one, though a year ago, before the yellow sulphur appeared there, much blue fume was there. Apparently blue fume is not the sulphur maker.

T.A.J.

JOURNAL

Day	Date
Sunday	April 3, 1927
Wednesday	" 6, "
Saturday	" 9, "
(1) Sunday	" 10, "
Wednesday	" 20, "

April 3

Pit is the same.

April 6

Pit the same; a few rocks sliding.

April 9
11 a.m.

Nothing new except increased red dust on N. talus.

April 10
10:30 a.m.

With Representative Anthony J. Griffin of N. Y., and Mrs. Griffin.

Some slight slide at NE. wall. Heavy rain last night has washed away part of the sulphur S. and E.

5:15 p.m.

A considerable slide sent up a distinct dust cloud above the pit.

April 20
11:07 a.m.

Taluses show fresh debris at the N. WNW., and SSW. Sulphur patches have been washed by rain recently, and walls of pit show this in their wetness and dark red color. Large sulphur patch at S. talus is still bright color, with dark area in its center. Small slides observed twice at N. side of W. boss. The lump of red rock which formerly protruded from top of W. boss has fallen, and the first slide seen today was from that place. NE. talus has light colored gray debris, but not fallen since the rain.

11:13 a.m.

A third slide from W. boss. All of these slides very small, so that dust on the wall can be detected with difficulty. Just north of peak of NW. talus there is an upright buff colored streaking from either wash or dust slides.

11:16 a.m.

One small fall heard NNE.

Steam at E. sulphur patch, at the usual places in S., SW., and NW. taluses, a little between N. and NNE. taluses, a little from top of big sill near its E. end, and there are the usual small steam jets at the edges of the debris on the floor of pit.

Salt coatings on the pit wall are conspicuous north of the SW. talus, on the wall between the S. and SSW. taluses, in small amount with streaks on the SE. rock bank, and along the top of the NE. sill. As a whole the salt staining is not very strong.

Day	Date
Wednesday	April 20, 1927
Saturday	" 23, "
Monday	" 25, "
Wednesday	" 27, "
Thursday	" 28, "

April 20
(Cont'd)

Cracks where trail crosses them back of SE. rim are even cooler than 2 weeks ago, although wind is now NE. Evidently the cooling was not due to direction of wind. They are only faintly warm, and are without visible vapor except at places 50 or 60 yards south of trail.

T.A.J.

April 23
8:45 a.m.

Rocks heard falling S. Also E. at 9:09. No new cracks noted back of N. rim. Several patches of green moss noted on SE. wall, showing very little avalanching takes place there. This is where the tourists view the pit. Sulphur patches remain on SW. talus. Note large area of steaming back of N. rim.

9:50 a.m.

Rocks heard falling E., probably caused by men seen standing on rim above. More rock falls at 9:55. Steam noted at usual places in taluses and walls and on floor. A pinnacle looks ready to fall in at SW. rim station.

April 25
8:55 a.m.

Little change at pit. Cracks back from rim near tourist trail, which have been closely watched, are now steaming a little. Intrusive mass at W. boss has avalanched more.

8:58 a.m.

A rock fell NW. 9:07 another. A few rocks fell also at other places. Sulphur patches appear to have washed away a little. Pit is very quiet. Salts noticed on S. wall.

April 27
8:35 a.m.
8:48

Cracks at tourist trail crossing are still steaming a little. Pit is quiet. A few rocks fell at NE. wall at 8:44 a.m.

More rocks fell, some echoing. White salts noticed at a few places on the walls.

Steam is coming from wall near N. talus not noticed before. Also from a vertical crack in NNE. talus. Sulphur patches are washed more.

9 a.m.

Several rocks fell at NW.

April 28
12:30 p.m.

Dust clouds seen in desert.

R.B.H.

JOURNAL

Day **Friday**
.SaturdayDate **April 29, 1927**
" 30, "

April 29
8:35 a.m.
8:50 a.m.

One or two rocks fell NW. At 8:38 several more heard.
Much salts on S. wall. Some have fallen on taluses below.
Rocks fell SW. Also N. 8:55.
As a whole pit is very quiet. E. horn of big sill looks
wet. Crack at trail has again ceased steaming.

R.B.H.

April 30
10 a.m.

Dust from an avalanche seen. Hangs over N. wall. Same
at noon, and in desert in addition.

R.B.H.

JOURNAL

Day	Monday	Date	May 2, 1927
	Tuesday		" 3, "
	Wednesday		" 4, "
	Thursday		" 5, "

(1)

May 2, 1927

9:06 a.m.

At pit. Large scar at N. corner of pit beginning just above W. horn of N. sill. Fresh debris on talus below. NE. wall also scarred. Thus both ends of big sill appear to have been in motion.

9:09 a.m.

There is a new boulder at foot of NNE. talus. Rocks fell NW. and SW.

May 3

8:20 a.m.

Cracks back from tourist trail are steaming a little. Salts have increased on lower S. wall.

8:25 a.m.

A trickle of stones heard NE.

8:27 a.m.

Rock falls continue, and wall is scarred to top NE. and N. Several rocks just under NE. rim of pit lie ready to fall. The rim itself overhangs.

9:12 a.m.

Notice odor of sulphur NNE. with wind SE. A large crack back of N. rim steams moderately, and there is a patch of yellow moss (?) at the E. end. Heat waves strongly seen here, with a little steaming. Faint odor of chlorine noticed here. This is above the recent avalanching.

9:46 a.m.

Rocks fall E.

9:57 a.m.

Rocks heard N.

10:05 a.m.

More rocks fell N.

4:50 p.m.

Rocks fell SW. and N.

Dust overhangs the pit.

May 4

2:53 p.m.

Dust from slides hangs over the pit N.

4:15 p.m.

Peculiar haze hangs over pit. Probably from continuous small slides.

May 5

8:53 a.m.

A little steam still comes from trail crack.

8:55 a.m.

Rocks are idly falling N. without letup. NNE. wall has joined. Thin clouds of dust resembling steam rise N., explaining the haze of yesterday. New debris covers N. talus and the slope joining N. and NW. taluses. With field glasses dribbling stones can be seen on NW. talus. Rocks still falling. 9:14 Continue louder. More large boulders seen on NNE. talus. Much new black dirt on E. wall and slope below. Rocks fell continuously N. during this visit.

9:07 a.m.

9:09 a.m.

9:20 a.m.

11:30 a.m.

From Uwekahuna dust clouds give evidence to further continuous small slides N.

R.B.H.

JOURNAL

Day	Date
Saturday	May 7, 1927
Monday	" 9, "
Wednesday	" 11, "
Wednesday	" 18, "

May 7

8:30 a.m.

At pit. Rocks fell N. with dribbling. N. and E. taluses have more new debris. Soldiers just over N. wall are dropping rocks over, starting more falls.

8:34 a.m.

Big continuous fall N., probably artificially caused. Rock falls increasingly continuous N., and though they may be accentuated by men dropping stones, the sounds indicate that the wall material is very loose.

Light rain is falling, and dry spots on SW. talus indicate they are very hot.

8:45 a.m.

Tourist trail crack steams more in the rain.

Rocks still falling N. Occasionally spots of dust on talus below, where rocks hit, can be seen.

8:47 a.m.

Rocks have ceased falling. Men have left.

May 9

9:30 a.m.

High wind. Much dust in desert.

11:07 a.m.

At pit, can hear rocks dribbles N. and S. during lulls in the wind. N. wall is very dusty.

May 11

8:30 a.m.

At pit with Mr. Wilson and plane table outfit. Pit is very quiet. Not a rock falling. Steam comes up SSE. edge. Other steaming places appear as usual. Sulphur patches show little change. New debris on the taluses is well defined. A rock or two fell N. The white salts on the S. and SW. walls are very conspicuous.

8:45 a.m.

A few more rocks fell N.

8:55 a.m.

One rock fell NW.

9:35 a.m.

A rock trickle occurred lasting 45 seconds.

9:55 a.m.

One big slide ESE. from high up the wall. This is the first time I have seen a slide here.

10:28 a.m.

A small slide E. of tunnel.

12:13 p.m.

Dust whirlwind in desert.

May 18

9:20 a.m.

At pit. No sounds. After four minutes a rock fell NW. A niche has formed at upper part of N. sill near its W. end. Usual places are steaming quietly.

9:33 a.m.

A rock was heard N.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Monday	Date	May 23, 1927
	Tuesday		" 24, "
	Friday		" 27, "
	Tuesday		" 31, "

May 239:30 a.m.
10:05 a.m.

Large slide at SW. rift tunnel.

At pit. N. wall is dusty from slides. Sulphur spots seem more noticeable on floor and near foot of SW. talus. No sounds heard except one rock N. at 10:25 a.m.

Mr. Wilson established a bench-mark at pit where tourists usually stand. Computations on June 9 determined it to be 3,651 feet above sea level 1920 datum from Volcano House bench-mark.

May 24

9 a.m.

Halemaumau steam more than usual because of rain falling.

May 27

3:25 p.m.

Visited pit. Very quiet; no changes noted.

May 31

11:30 a.m.

No steam issuing from cracks at tourist trail crossing. Little heat there. Warm NE. wind.

Pit is very quiet. W. wall is reddish from slides breaking away. 11:48 A rock or two fell N. 11:49 A small slide on that side. 11:53 Slides are falling S. and NW; much dust from the latter, and new debris from that place nearly reaches to the lava floor.

R.B.H.

JOURNAL

Day	Date
Wednesday	June 1, 1927
Thursday	" 2, "
Saturday	" 4, "
Monday	" 6, "
Wednesday	" 8, "

June 1
10:45 a.m.

Fog and rain at pit. Pretty rainbow on the floor.
A rock fell N. New debris lies E., N., and SSW. Wall under W. boss looks more broken. A streak of dark gray dirt runs from niche above N. end of sill, crossing the sill.

June 2
8:30 a.m.

Steam dense over N. and NE. walls of pit, from falling moisture.

June 4
8:30 a.m.

Pit walls are dark colored from recent rains. Pit is very quiet.

June 6
10:15 a.m.

Sulphur patch at SE. bank seems larger. A rock fell NW. at 10:30 a.m.

June 8
1:30 a.m.

Earthquake felt at Volcano House and 29 Miles about 1:30 a.m. Several people heard an explosion at the same time, and hotel watchman saw a blue light cross the sky to the east, bright enough to illuminate the flower gardens distinctly. Seismograph registered a shock of very feeble intensity, with indicated distance to origin of 14 miles. Solution to the problem may be the fall of a meteor.

10:45 a.m.

Rocks fell N., and dust rises there. Where the N. wall has broken away, the round end of an old pahoehoe flow protrudes about 600 feet below the rim. Dustiness of the S. walls indicates recent slides there. The usual steaming places are less active. The dry spots on SW. talus are conspicuous.

10:53 a.m.

A trickle of stones N. making dust. The N. wall has some very bright red places.

R.B.H.

JOURNAL

Day	Date
Friday	June 10, 1927
Monday	" 13, "
Wednesday	" 15, "
Friday	" 17, "

June 10
10 a.m.

Pit is very quiet. Not a sound except the light wind. Small stones stirred NE. at 10:04 a.m.

10:07 a.m.

Pit appears very dry, and the usual steaming places are just a little active. A rock fell N., starting others. The SW. and largest talus is the only one with white patches. One of them, a vertical streak about midway, steams, but those near the foot are quiet and evidently are very hot. On the wall east of the lower SW. rift tunnel the coating of white salts has increased.

10:14 a.m.

A few rocks slid NW. Can hear birds in the pit. They must have nests in the walls.

10:23 a.m.

A rattling fall of stones SW.

1 p.m.

Dust from a slide NE. seen from H.V.O.

June 13
9:55 a.m.

All quiet at pit. The rains of yesterday have made wet spots, most noticeable around NW. talus. They are steaming. The puca (hole) formerly at the top of this talus has broken away so that now, in early morning light, no hole shows. But the dirt at the back side of where it was is gray; the rest of the wall, red.

10:12 a.m.

The wall at the W. end of N. sill has a greenish tint. N. talus is well sprinkled with red debris. Wall above is very red. Slide NE. lasting 30 seconds. Salts have formed on wall N. of SW. talus and defining its edge.

June 15
8:45 a.m.
8:48 a.m.

Strong NE. wind. Pit seems quiet. All steaming is very moderate. Largest jet is on NW. talus.

Slides have occurred at N. corner. Some stones stirred NW.

Peculiar dark streaks lie at top of N. talus. Must be from wetness. Little steam there.

June 17
9:55 a.m.
10 a.m.

Pit is quiet. No change in steaming. Solfataras are the same. The puca at top of NW. talus shows again. Must be that dirt there is softer than the walls around it. Some stones moved at the N.

12 noon

Dust clouds high and thick all over desert, due to high winds, giving the appearance of smoke.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Date	June 19, 1927
Sunday		
Tuesday	" 21,	"
Wednesday	" 22,	"
Thursday	" 23,	"
Friday	" 24,	"
Saturday	" 25,	"

June 19
3:25 p.m.

Pit quiet. Solfataras are brighter. Slides have recently occurred N. as evidenced by dimness of wet streaks.

June 21
9:25 a.m.

Thin dust from slide hangs over NE. pit wall. Heavier dust all over NE. and N. walls 10 minutes later.

June 22
8:50 a.m.

New gray debris lies between NNE. and NE. taluses. White salts are forming on N. wall where the great scar is. NNE. and N. taluses have new dust.

8:57 a.m.

Stones slide at SW. tunnels.

8:59 a.m.

A larger and visible slide at the same place.

A new scar shows high up on S. wall. NE. wall is newly scaled from talus to rim. The cracks at E. rim have moved, as evidenced by disturbance of the surface dirt. (Note: This is the first observance of movement which later appeared to prove significant, following studies of conditions preceding the lava eruption occurring on July 7.)

9:09 a.m.

Stones moved N. and W.

June 23

High wind. Dust clouds over the desert all day.

June 24
10 a.m.

Stones fall and dust rises N. Strong NE. wind. Steaming is only very slight at all vents. Only one steaming place on floor--in center. NNE. wall is very dusty.

June 25
9:30 a.m.

Strong NE. wind. Only 7 sizable vapor jets in pit: Center NW. talus, top NNE. talus, 3 on SSE. talus (one of which has large sulphur patch), small one at SE. bank with sulphur, and at sulphur patch of SE. talus. None of these is vigorous. S. talus has peculiar, wide, dark band where it joins wall. There are several new fractures in ground back of NE. rim. Much heat in them. There are new cracks back of N. rim. Made circuit of pit.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Monday	Date	June 27, 1927
	Tuesday		" 28, "
	Wednesday		" 29, "
	Thursday		" 30, "

June 26
3 p.m.

Large slide SW.

June 27
11:25 a.m.

Some stones fell N. Very few noticeable changes. Dark wet streaks are around the NW. talus and are steaming.

June 28
3:05 p.m.

Dust arose N. corner.

R.B.H.

4:50 p.m.

Small avalanche on NE.

R.I.B.

June 29
1:47 p.m.

SW. talus steams more. New red dirt on SSW. talus. Red sand covers N. talus thickly, and more or less along edges of other taluses.

Pit very quiet. Only two falls of stones heard.

R.B.H.

6:15

Smoke noted rising WNW. of crater (SSW?). Probably cane fire. Steam noted on E. wall by sign.

10:40

Sulphur fumes noted at "Halemaumau" sign. The 6:15 note probably sulphur smoke.

R.I.B.

June 30
9:45 a.m.

Large dust cloud NE.

R.B.H.

5:55 a.m.

Sulphur smoke and steam rising from bottom of pit on ESE, near and to the south of sign. (Observed from hotel)

R.I.B.

JOURNAL

Day	Friday	Date	July 1, 1927
	Sunday		" 3, "
	Tuesday		" 5, "

July 1

8:44 a.m.

9 a.m.

Avalanche NE. observed from museum.

At pit. Sulphur fumes very noticeable from ENE. side of Halemaumau. Cracks along E. ledge have fresh widening. Signs to the 14-ton boulder taken down and trails to this section of rim were blocked and considered dangerous.

R.I.B.

11:50 a.m.

There is a vertical light streak at W. edge of N. scar; not a dyke, but resembling one. A stone moved there. Steaming is very slight.

11:55 a.m.

Heard some stones NE. There is much new gray debris on NE. talus. Some stones heard there. Much dust in that corner of pit. Signs marking 14-ton boulder have been removed. Recent ground movement, and opening of cracks, makes this section too dangerous for tourists.

R.B.H.

July 3

Almost continuous dust in pit in late afternoon.

R.B.H.

2 p.m.

Avalanche NE. observed from road near crater.

R.I.B.

July 5

9:15 a.m.

There are evidences of several slides at SW. rift tunnels-- rocks trickling there now. Some gray streaks on SSW. talus, three of them reaching to the foot, indicate the trails of falling boulders. Surface cracks at the SE. have moved slightly. N. wall has fresh scars.

Rocks have either dislodged or covered Captain Greco's hat, which was on a ledge, out of air currents, about 15 feet below ESE. rim. NE. wall is stripped considerably.

Crack at 14-ton boulder has certainly widened 8-10 inches since July 1. Small fresh cracks near. Many new cracks NE. They separate overhanging blocks. The badly shattered ground at NNE. has developed movement to make it doubly dangerous. The big pinnacle there may go any time.

11:20 a.m.

There is a small new crack S.

R.B.H.

Day **Wednesday**
Thursday

Date **July 6, 1927**
" 7, "

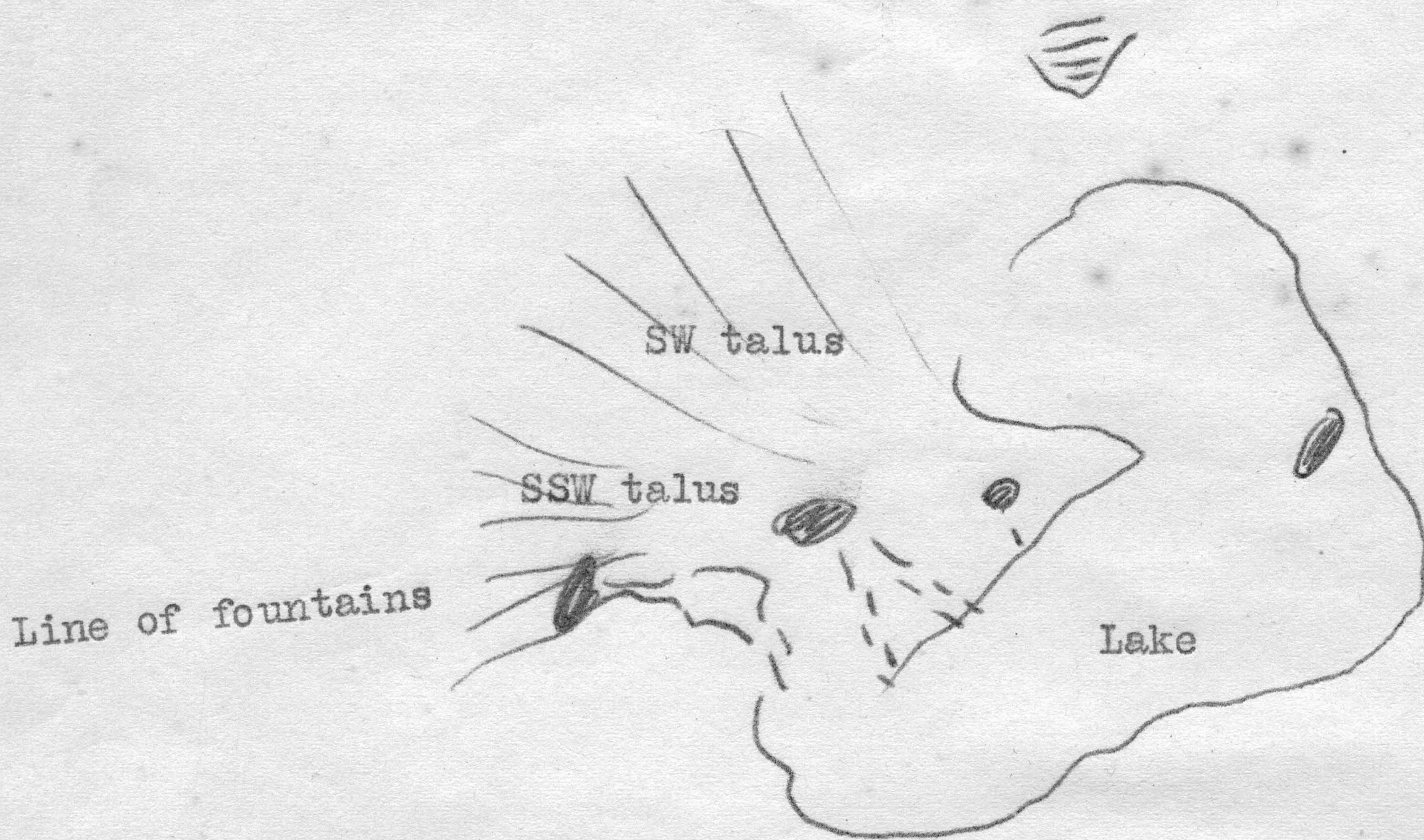
July 6
8:40 a.m.

Pit seems quiet. Steaming has increased slightly, especially at vents on floor. Picked 15 points with R.M.W. for routine measurement of opening cracks at E. and NE.

R.B.H.

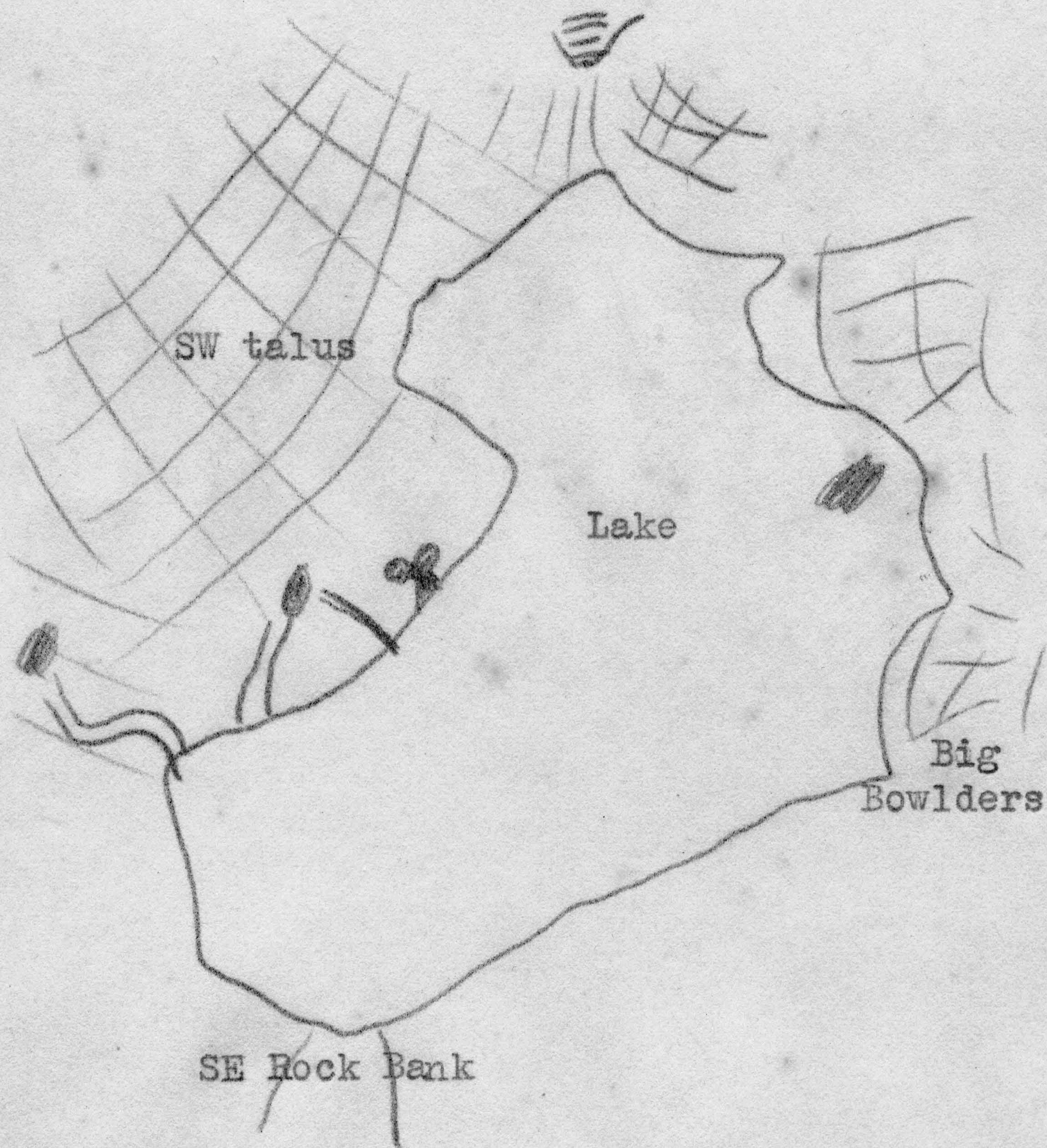
July 7

Sketches by R.M.W. at 2:30 a.m. and at 6 a.m.



2:30 a.m.

Sketch of lake at 3 a.m.:



July 7

12:50 a.m.

Awakened by James Tsuchiya, reached pit about 1:45 a.m. Were then about 60 or 80 people there. Tried photos but without luck. Returned to Observatory, and when found by developing that the pictures were no good, returned to pit with big camera (Korona 11 by 14). Took one at 5 a.m., another 5:30 from S. end of pit, and a third from the tourist place at 6 a.m. Returned and wired T.A.J. and Mendenhall. Got out Kilauea Report and Volcano Letter, and interviewed press representatives. After lunch, went to pit and measured depth to surface of lava. Computed results--went to pit again after supper. (Pit depth computed as 1,172 feet.) Believe there were fully 1,000 people looking in--estimated 250 cars--thought certainly some accident would happen--so much carelessness.

3:15 p.m.

8 p.m.

Wind strong all day, and dust blowing very badly. The heat from the pit seems to make convection currents, and dust and cinders blow very badly. During the day activity diminished, and the small fountain ceased playing. Fred Waltjen reported that shortly after midnight some of the other fountains seemed to diminish in activity, though the three were going strong during the evening.

12 p.m.

R.M.W.

1:10 a.m.

Awakened by Mrs. Tsuchiya and Lovejoy children at 1:10 a.m. Found on looking that NE. corner of pit, where cracks were developing, aglow. Fume now mostly N.

1:40 a.m.

2 a.m.

Reached pit. Glow and fume fills pit, and loud roar of fountaining heard at the parking place. Note cars all (about 5) carefully parked for a quick getaway.

2:10 a.m.

Four fountains in line trending almost NE-SW. Convection makes whirlpools of heavy dust along SE. rim. All fountains are on floor except one part way up SSW. talus. Large lake in bottom now. Crowd continues to gather. A change in wind direction drives suffocating fume onto the crowd, which flees, only to return again to the brink. Note that most active fountain is opposite foot of NNE. talus.

4 a.m.

Returned to Observatory in rain. At 4:40 left again for pit with R.M.W. and camera. Returned to headquarters at 6:45, after taking pictures.

R.B.H.

JOURNAL

Day Thursday Date July 7, 1927
 Friday " 8, "

(1)

July 7

1:06 p.m.

On Ranger duty at Halemaumau from 12:45 p.m.

1:30 p.m.

Avalanche on N. wall

2 p.m.

Avalanchess on N. wall almost constant since 1 p.m.

3:50 p.m.

Avalanche N.

4:40 p.m.

do

5 p.m.

do

Spatter cone to right of center cone dead.

5:30 p.m.

Avalanche NE. Lava overflowing on outer rim causing beautiful cascades.

Off duty 6 p.m.

R.I.B.

July 8

10 a.m.

Went down to pit and made another determination of depth of lava. Also cut in main points around lake of new lava to control the photos. Came back, and after lunch, developed and printed pictures.

At 10 a.m. found only one fountain active. Reports that the other two ceased operations during early morning hours.

The whole lava lake has subsided, allowing the crust to slump down about 15 feet, leaving a bench around the edges of the lake at yesterday's level. The remaining fountain is pouring its stream down to the lake, the stream apparently running under the crust. A few small red spots visible in the crust even as far over as the north edge, away from the only present supply.

Baldwin reports this p.m.--2 or 2:30--that the first fountain, which had by now built up a spatter cone, had at this time increased its flow and broken down one side of its cone, and another river started down.

R.M.W.

8:45 a.m.

One fountain playing on W. Others quiet. At 1:30 a.m. they were becoming weaker.

1 p.m.

Condition same.

2 p.m.

Same except cascade on S. edge.

2:10 p.m.

Lava near stream and in that area settled two or three feet. Probably adjustment as the result of lava from one side only.

2:15 p.m.

Lava pressure increasing so that lava flows two streams over cone in addition to constant one.

3 p.m.

Same.

4 p.m.

Two streams running strong from fountain. Cone broken down.

R.I.B.

JOURNAL
(2)

Day	Friday	Date	July 8, 1927
	Saturday		" 9, "

July 8
8 p.m.

One fountain now, the one on SSW. talus. It has built up a hood-shaped cone, and is very active, throwing out great gobs of hot lava to the north, which fall with roaring crashes to flow in long rivers down the talus and disappear under the crust of the lake. The lake is black except for the glowing cracks. The longest and brightest cracks extend in angular lines away from the part where the flowing streams reach the lake.

July 9
9:15 a.m.

The S. fountain still going strong. Appearance is essentially the same as last night. Pit full of fume.

R.B.H.

Baldwin reported in morning that the one fountain was still flowing. Send Hodges down, and when he came back sent my pictures down to the papers. After lunch printed more pictures, and went again to the pit after supper. The remaining cone is still going strong, but has roofed itself in, as well as making sides for itself. The flow is out of the side and down the slope, where it is building a dome or cone. The crust of the lake shows fewer red spots, but directly over where the fourth fountain was, there is a cluster of red spots. Probably the lava is deeper there and holds its heat better. Waltjen reports no avalanching. The cracks have not noticeably widened.

7 p.m.

The top of the cupola over the flowing fountain caved in, and a large block of the roof stuck in the opening. Pale blue flame was visible coming out of one side of the cone. The last two days have been rainy, and conditions for observation have been bad at the edge of the pit, due to rain and wind.

R.M.W.

JOURNAL

(1)

Day Sunday
 MondayDate July 10, 1927
 " 11, "July 10
4:30 a.m.

Went to pit with Tai Sing Loo, tried to take pictures, but rain and wind were bad. Back, and met General Lewis and showed him the shop.

Hodges went to pit in afternoon, and also Yasunaka, saying that the one cone is still active--even shows increased activity. From the Observatory at dark there was a slight glow visible.

All the days since the outbreak have been rainy, and with strong wind. Some say a correlation exists--rain and eruption.

R.M.W.

2:30 p.m.

Fountain is spouting with more or less regular gushings. A delta from it has spread out over the new floor, covering more than half of it. Watched it nearly an hour, and saw another delta formation rapidly covering the first. Rivers from the fountain area bright red, even in daylight, and flow like water, carrying rafts of hard lava.

Walked to 14-ton boulder. The cracks have not moved perceptibly, but their edges have freshly caved in in places.

Fume is moderate, obstructing details of the walls.

8:30 p.m.

Action of S. cone has diminished so no matter is being thrown out, but is tossing inside the cone. No flowing matter visible tonight, but lake has big glowing cracks.

Slide reported to have occurred between 10 and 11 p.m.

R.B.H.

July 11

To pit, after getting camera fixed up, wide angle photo and $6\frac{1}{2}$ by $8\frac{1}{2}$.

The cone is still active, and seems to be pouring out as much lava as always, which pours out of a vent at the side--shows in photos. There must have been quite a flow last night, as the old lake is two-thirds covered. Also, today fresh lava is pushing out almost to the same two-thirds line again.

4:30 p.m.

To pit again. Took camera intending to get a view if there was anything to warrant it. The cone is still higher, with only a small vent in the top. The river running out from its side is also crusted over, so there is no display of light red lava. But the flow seems to be coming from that one cone with unabated vigor, even if it is less spectacular. It is feeding the flow in the bottom of the pit so that the lake of July 7 is about two-thirds covered, and the depth near the cone is considerable.

JOURNAL

(2)

(1)

Day Monday

Date

July 11, 1927

Tuesday

" 12, "

July 11
(Cont'd)

Avalanches have been remarkably few, the edges of the lake are still nearly free of debris, even though the talus slopes directly confine the lakes. There is one large boulder on the surface of the NW. cove of the new floor, which bears witness to one avalanche on that side.

7:15 p.m.

Stated at the pit till this time.

Notes: Baldwin reported that about the 3d or 4th of July some rocks had fallen in "Pele's Bath" near Little Beggar, indicating a disturbance of some sort, perhaps the same that made the cracks along the E. rim. Also he reported that on Friday the 8th, rocks fell from the roof of Thurston Tube in two places.

Paul Loomis, Honolulu, who was staying at the auto camp, said that the evening before the eruption (July 6) at 8 p.m. there were peculiar noises, not avalanching, that sounded like a deep rumbling, and it was so pronounced that he went back to the pit with more witnesses about 10 p.m. But there was then no sound.

R.M.W.

9:50 a.m.

Cone activity is the same as last night. Some flowing visible, but a few glowing holes and cracks. Cone fumes steadily.

Sulphur crystals line the edge of the new floor from twin cones to corner at W. center. All steam vents are quite active.

11:45 a.m.

Can hear loud purring sound. Cone has a cap over it. Two rivers are cascading to the lake, which is building up all the time.

July 12

9:15 a.m.

Cone is fuming steadily; is capped over again (cap fell in yesterday noon). Lake is still progressing and building up layers.

9:25 a.m.

Rocks fell at W. boss. N. wall has peeled considerably. Many new small cracks NE. Steaming more voluminous at SW. rim. Sulphur patches are on rim of floor N., E., and SW.

10:48 a.m.

Cap side fell off. Made circuit of pit.

R.B.H.

JOURNAL

(2)

Day	Date
Tuesday	July 12, 1927
Wednesday	" 13, "
Thursday	" 14, "

July 12

3:10 p.m.

N. Fountain. Lava flowing ten feet from floor. No smoke.
Probably forced up.

7:10 p.m.

Avalanche E. wall.

7:15 p.m.

Small avalanche E. wall.

7:30 p.m.

N. Fountain floor distinctly outlined with deep ruddy glow.
Probably forced thru from other fountain.

7:30-11 p.m.

This continued, but faded at 11 p.m. The whole floor
seemed to fade somewhat at this time.

Cascading occurred along edge on NNW. floor during evening.

R.I.B.

July 13

Cone completely hooded and smoking through top, but evidently lava is still flowing at same rate, as the lake is still increasing in size. New lava has reached the place of the NE. fountain, and only the NW. bay of the original lake remains uncovered.

Sulphur has formed just NW. of the small twin cones, one of which is partly covered with new lava. Sulphur and steaming on the SSE. talus has increased since the coming of lava. The old spot is larger and brighter, and there are other spots newly forming. Sulphur is forming also just back of the now dead NE. vent, on the talus.

Not much glow over the pit tonight. Hodges went down.

R.M.W.

3 p.m.

Slight stream of smoke rising from center of N. cone vent.
Smoke seen on NE. and center in two places.

Almost continuous very slight avalanching noted during
afternoon on the E. wall.

R.I.B.

July 14

10:15 a.m.

Pit and activity about the same. Some stones feel NW.
Cone all capped over, has red oxidized matter on south side.
Small cone on side of S. cone smokes steadily. Action of
lake is steady. Debris at foot of NE. talus has overlapped
edge of lake. Patterns of flows in lake are striking.
Pieces broken from S. cone lie on its side.

10:35 a.m.

Rocks fell W.

R.B.H.

Day Thursday Date July 14, 1927
 Friday " 15, "

July 14
8:30 p.m.

Lava activity seems neither to increase nor decrease. Cone occasionally tosses out incandescent particles, which fall to its side and roll downward until stopped. Fuming is steady, and blows across the pit to the northeast.

No lava channel from cone to lake is visible, but lake continues its building-up process of cracking, glowing, surging, and crusting when cooled. It is constantly changing, though very deliberate in movement, except perhaps the edge nearest the hidden flow channels. The far edges (W.) of the lake glow brightly, but no surface movement of lava is visible on that side. This shows that all the matter under the crust is molten, and seeps through any porous places left when the lake first formed from all the fountains on July 7.

R.B.H.

July 15
2:30 p.m.

Fumes noted rising on ESE. center floor. This continued all afternoon without variation. (Very slight.)

Lava flowing on top of floor breaking out a little below cone, which is still sealed during afternoon. Little spatter cone to right of center cone nearly surrounded during afternoon.

4:50 p.m.

Two avalanches (slight) caused by throwing of rocks where tourists stand. Avalanching (very slight) on E. wall most of afternoon.

7-11 p.m.

Lava flowing on surface of floor and floor beyond. This much duller than previous nights, altho there was glow on NW. floor.

R.I.B.

8:30 p.m.

At pit with Mr. Wilson taking pictures. Cone fumes moderately steady. Lake is pretty, several bright cracks, one new glowing area W. Supply channel is on surface now halfway from cone to lake.

R.B.H.

8-9:30 p.m.

At the pit. Interesting, but no apparent increase or diminution in action.

R.M.W.

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JOURNAL

Day		Date	July 16, 1927
	Saturday		
	Sunday		" 17, "
	Monday		" 18, "
	Tuesday		" 19, "
	Wednesday		" 20, "

July 16
8:45 a.m.

Reached pit, took pictures, and read elevations. Kirkpatrick and Baldwin investigating an appearance of fume over the postal rift caverns, about 200 feet back from rim on N. side. Met man (Walter Vaughan) from hotel who has been taking close interest, spending six or eight hours a day at the pit. He says there is a flush period of lava about three times during the day, and that the lava in the cone has periodic maximum boilings every five minutes. Came back and developed.

R.M.W.

3:15 p.m.

Big slide NE.

R.B.H.

July 17
10:30 a.m.

Strong NE. wind. S. crater floor and desert full of dust clouds. Little visible activity in pit.

July 18
8:45 a.m.

Immense slide E. New debris on E. talus.
Sulphur gone from edges. Cone fumes, lake has little action.
All steam vents working vigorously.
Top of cone blew off in evening.

R.B.H.

July 19
11 a.m.

Cone is recapped and stained yellow. Fumes steadily. Lake has risen considerably, and has connected foot of channel with bay W. Sulphur spots which were around W. edge of Lake now gone, probably inundated.

July 20
3 p.m.

R.M.W. reports diminished activity at pit. No glow visible.
R.I.B. reports collapse of S. side of S. cone, no glow, but some fume.

R.B.H.

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JOURNAL
(2)

Day		Date	
	Wednesday	July 20,	1927
	Friday	" 22,	"
	Saturday	" 23,	"

July 20

8 a.m.

2 p.m.

(Reported by soldiers) Floor sunken E. of center, and cone dead except for smoke.

Cone dead except for slight fumes. Cone collapsed from SW. view. Most of cone intact. Fumes rising from NE. floor near talus (slight).

Center of depression E. of center cone has slight trace of fumes. The depression today is where it was brightest last night at 10:45 p.m. Probably shrunken from cooling. The cone was seemingly as active as usual last evening.

2-2:15 p.m.

Almost constant avalanching on N. wall and E. wall.

July 21(?)

9:10 a.m.

7 p.m.

Large avalanche NNE. observed from E. Kilauea Iki.

Crater floor quiet. No fumes at cone or elsewhere, but floor shows light at cracks.

R.I.B.

July 22

1:45 p.m.

1:51 p.m.

Rocks fell N. Could smell sulphur dioxide as I approached pit, none visible. A large section of new lava floor has collapsed SE. New debris on S., N., and NE. taluses.

Rocks fell at W. boss. Talus steam vents about the same as before July 7. Three new ones on floor: Central cone, foot of NW. talus, and foot of N. talus. Latter has a sulphur patch, and must be one of the fountain vents of July 7.

2 p.m.

Dirt at SE. rim shows recent motion.

Considerable dust from slides at W. boss. Sounds of stones falling there.

2:03 p.m.

Stones fell NE.

R.B.H.

3:47 p.m.

Avalanche NNW. Observed from H.V.O.

R.I.B.

July 23

2 p.m.

3 p.m.

3:44 p.m.

5:34 p.m.

Avalanche NE. wall (medium). Observed from hotel.

do (heavy) do

do (slight) do

Avalanche ENE. wall. Observed from hotel.

R.I.B.

3 p.m.

Dust from slide NNE.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day		Date	
Sunday		July 24,	1927
Monday		" 25,	"
Tuesday		" 26,	"
Wednesday		" 27,	"

July 24

6 p.m.

6:30 p.m.

Constant avalanching in forenoon.

Avalanche NE. observed from hotel.

Avalanche NE. wall (heavy), observed from hotel.

R.I.B.

2 p.m.

Pit full of dust. Slides all day, mostly NNE. Depression between NNE. and NE. taluses has built up so as to extend a talus out over the new floor. Sulphur patch foot of E. talus covered by debris. Rocks fall NNE. all the time.

R.B.H.

July 25

10:30 a.m.

Few slides. Occasional rock slides. All steam vents very active. Many small new cracks back of NNE. rim, and widening of old ones. Northern taluses and depressions between are building up. The two boulders which were landmarks at foot of NNE. talus have been covered up.

R.B.H.

July 26

1:45 a.m.

Fumes rising from NE. talus on floor that has slid over recent lava. (Just steam--RBH.)

R.I.B.

July 27

3:10 p.m.

3:15 p.m.

N. wall has been avalanching. There is more new debris NNE. Yellow stain on SE. rock bank has gone.

Rocks fell NE. New sulphur foot of NE. talus, edge of floor.

R.B.H.

8:35 p.m.

8:45 p.m.

9 p.m.

9-11 p.m.

Light avalanche NE. wall.

Heavy avalanche NE. wall.

Very heavy avalanche NE. wall.

No heavy avalanching.

(Observations made from rim.)

R.I.B.

JOURNAL

Day	Monday	Date	August 1, 1927
	Tuesday	"	2, "
	Wednesday	"	3, "
	Friday	"	5, "
	Sunday	"	7, "

August 1
1 p.m.

Dust from slide NE.

R.B.H.

August 2
3:59 p.m.

Avalanche NE. Observed from hotel.

R.I.B.

August 3
8:45 a.m.

Circuit of pit. Heard stones fall NE. Steaming is moderate. Most flocculent on NW. talus. S. talus has several streaks made by rolling stones.

8:49 a.m.

Several stones rolling N. SE. talus has new gray and white debris.

8:53 a.m.

Several more stones falling N.

9:04 a.m.

Another rock slide N. I see men at the rim--they must be causing the falls by dropping stones.

9:45 a.m.

Area NNE. is certainly more broken up than other rim sections. Big slide N., much dust. (Later: An earthquake occurred at this time, perceptible to many.)

10:03 a.m.

Slides N. and NE.

10:08 a.m.

Stones fell at W. boss.

12:45 p.m.

Dust from avalanche NE.

2:10 p.m.

do

2:15 p.m.

do

2:19 p.m.

At pit. Rather continuous sliding of stones NE. Lots of dust. Find group of men dropping stones from rim above. Unusual that big slides should be caused so easily. It seems evident that when lava recedes, walls are particularly unstable.

August 5
10:20 a.m.

Large avalanche dust cloud on NE. side.

11:16 a.m.

At pit. Stones fell SW. N. wall is dusty. Steaming is slight. E. talus has new gray debris. Many new red scars on NE. wall, and some gray ones.

11:28 a.m.

Rocks falling N. and NE.

August 7
8 a.m.

Dust NE.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Tuesday	Date	August	9,	1927
	Wednesday		"	10,	"
	Friday		"	12,	"
	Monday		"	15,	"
	Wednesday		"	17,	"
	Thursday		"	18,	"

August 9
10:25 a.m.

Very quiet. Steaming is slight. Several fresh scars on N. and NE. walls. White stains on lava floor at foot of SW. talus. (Circuit of pit.)

SE. wall has fresh peeling. E. wall has scaled considerably. Sulphur dioxide odor quite strong at N. rim. N. sta. has fallen in.

August 10
9:40 a.m.

Strong wind. Pit quiet. Heard a few stones NE., and saw a little dust. Center of NE. wall is black, probably from moisture.

2 p.m.

Dust from slides NE.

August 12
10:20 a.m.
10:32-35

Rocks fell NW. and E. New dirt NNE. New scars N. and NE. Stones fell N.; rocks NW.

August 15
10:10 a.m.

Strong NE. wind. White salts forming on N. and NE. walls. White stain has increased on lava floor at SW. talus. Steaming unchanged.

10:25 a.m.

Rocks fell W.

August 17
10:20 a.m.
10:47 a.m.

Pit quiet. Little change. NE. talus has overlapped new floor considerably.

Stones fell NNE.

Very little steam.

August 18
10:15 a.m.
11 a.m.

Pit quiet. Making circuit. Odor S.D. at 14-ton boulder. Rocks fell NNE. at 10:24. New scars S., SE., and E.

Slide S.

Odor S.D. on N. side.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Date
Tuesday	August 23, 1927
Wednesday	" 24, "
Saturday	" 27, "
Sunday	" 28, "

August 23
10:08 a.m.

Pit seems quiet. The only perceptible changes are an increase of salt coatings on N. and NE. walls, which indicate little sliding there; and more yellow and white stains on floor.

10:15 a.m.

Stones fell NW.
Steaming is very slight. Cracks are widening SE. E. wall has peeled.

August 24
9 a.m.

Pit quiet. No change except increase of steaming due to wet weather. One rock fell N.

August 27
10:55 a.m.

Strong NE. wind. A few new scars N. and NE. White stains on floor are increasing and seem to be following E. edge. Steaming is very moderate.

August 28
9:10 a.m.
2:30 p.m.
3:10 p.m.

An earthquake about this time shook windows at the Observatory.

Pit is quiet. White rocks on northern taluses.
Large avalanche dust cloud NE. Two just previous reported by observers on Uwekahuna Pali.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day		Date	
Monday		August 29,	1927
Tuesday		" 30,	"
Wednesday		" 31,	"

August 29
11:40 a.m.

All of N., NE., and E. pit is overhung with dust, and pit seems full of dust.

August 30
9:35 a.m.
9:40 a.m.
9:45 a.m.

Big white streak from a slide from W. rim. Northern walls quite scarred.

Slides NE. heard--some dust. This wall has many new surfaces. A large section of the ledge SE. has fallen.

More dust seen NE. from E.W.O.

August 31
8:40 a.m.

At pit. Rocks falling N. No dust but continuous noise. After two minutes some dust arose from W. horn of sill. A soldier is dropping rocks.

At NNE. rim, dirt is very loose, and cracks have widened.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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JOURNAL

Day	Thursday	Date	September 1, 1927
	Friday		" 2, "
	Saturday		" 3, "
	Sunday		" 4, "
	Monday		" 5, "
	Wednesday		" 7, "
	Friday		" 9, "

September 1
2:20 p.m.

Very large avalanche cloud NE.

September 2
11:30 a.m.

Pit is quiet. A rock fell N., also a few W. The long gray streak W. is partly defaced. Very slight steaming. NE. talus is surely building up noticeably. SE. crack has widened. The small "Danger" sign has so settled within it as to turn perceptibly.

11:41 a.m.

Small slide N.

Small new cracks SE. Dirt is loose. Wall has peeled below rim, near NE. dyke, also another place NE.

12:07 p.m.

Five Army bombers passed over, flying in a northeasterly direction. Before sighting them, thought the roar was from the volcano.

3:45 p.m.

Pit full of dust (from H.V.O.).

September 3
9:30 a.m.

Several slides NE. heard in about a half-hour, while measuring cracks.

September 4
6:45 a.m.

Large avalanche cloud N. seen about this time (Elden English).

September 5
10 a.m.
10:05 a.m.

New black debris on NNE. and NE. taluses; gray on S.; red on N. Scars show points where walls have peeled above.

Rocks falling NE. New small cracks are more pronounced.

September 7
3:10 p.m.

Avalanche roar heard from Uwekahuna by H. Yasunaka. Fog too thick to see anything.

September 9
11 a.m.

Large dust cloud N. at 9 a.m. (from H.V.O.).

Slide loud NNE.

Slide of 9 a.m. came from W. of SW. tunnels, and the scar is a big one. Very many scars on northern walls, but mostly NE. (Note: The 9 a.m. slide was filmed by Dr. S. A. Barrett, Director of Milwaukee Public Museum, who presented a print of it to the Uwekahuna Museum.)

10:45 a.m.

Stones fell W. and S; 11:17 and 11:25, slides NW.

R.B.H.

CRACK MEASUREMENTS

Crack No.	July 6	September 3	Difference
1	0.345 ft.	0.375 ft.	0.03 ft.
2	0.83	1.405	0.575
3	2.14	Gone	
4	1.175	1.655	0.48
5	0.425	0.443	0.018
6	1.125	1.505	0.38
7	0.44	0.45	0.01
8	1.43	1.45	0.02
9	1.465	1.47	0.005
10	0.775	0.79	0.015
11	2.30	2.37	0.07
12	2.50	2.60	0.10
13	1.54	1.61	0.07

JOURNAL

Day	Saturday	Date	September 10, 1927
	Monday		" 12, "
	Tuesday		" 13, "
	Wednesday		" 14, "
	Thursday		" 15, "
	Friday		" 16, "

September 10
10:40 a.m.

Stones stirred NE. and SW. Gray debris has partly buried SW. cone.

September 12
10:30 a.m.

Loud avalanche reported N. 9:30 a.m., also continuous slides. Some rock trickles NW. and N. White salts coat SW. wall near tunnels.

10:43 a.m.

Avalanche NW. Tip of W. horn of sill has been avalanching. A big boulder that was under NE. rim has gone. Beyond its site is a slim pinnacle ready to topple.

11:16 a.m.

Stones sliding S. Crack at NNE. fault has moved.

11:47 a.m.

Slide NW. Made circuit of pit.

September 13
3:20 p.m.

Large dust cloud N. Three others occurring previously reported by visitors at museum.

3:55 p.m.

Large dust cloud N.

September 14
8:40 a.m.

One rock sounded N. At same time a rock settled in SE. rim crack with a sharp click.

There are new scars on N. Wall and above NW. talus. No change in steaming.

8:46 a.m.

Stones falling NW.

1:45 p.m.

Avalanche cloud N.

September 15
10:22 a.m.

Dust cloud N. at 7:35 a.m.

Stones stirring NW.--talus has new dark debris at top. Two notches are in NE. rim, one new. Steam vents are less active than ever.

10:31 a.m.

Stones NW. now making dust.

10:36 a.m.

Stones moved N.--still rolling NW.

September 16
5 p.m.

Avalanches N. heard from U. O. One about 3 p.m. reported.

R.B.H.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day		Date	September 17, 1927
	Saturday		
	Monday	"	19, "
	Tuesday	"	20, "
	Wednesday	"	21, "

September 17

10:35 a.m.

10:40 a.m.

11:03 a.m.

11:21 a.m.

Big avalanche N. at 10 a.m. reported.

Debris has increased on NW. talus; also NE. talus.

Rocks moving at the N.

Slide NW.

Another.

New debris SE.--crack here has widened half a foot in a week.

September 19

1:20 p.m.

Dust NE. Loud avalanche about this time reported by H. Yasunaka at Uwekahuna Observatory. Noise said to resemble an explosion.

September 20

9:20 a.m.

SE. ledge has gone in, taking a great strip of the rim. Seismogram of yesterday has a tremor about 1:30 p.m. which may have been made when ledge fell. Day was cloudy--poor visibility. S. wind. Walls are quite red and wet. All taluses show new debris.

9:38 a.m.

Stones NE.

9:41 a.m.

Slide NW.

9:43 a.m.

Stones SW. and S.--men SW. probably dropping rocks. From E. station, scar where SE. ledge was shows dry and gray. N. wall is very red. A large new scar E.

9:55 a.m.

Men have made loud slide SW.

10:17 a.m.

Rim NE. has changed with slides. Cracks widening here. Rocks fall NW.; trickle S. and SW.

September 21

9 a.m.

Pit is quiet. Some rocks fell NW. Walls quite wet, but steaming is slight.

5 p.m.

Very long roar of av. heard from H.V.O.

R.B.H.

JOURNAL

Day	Thursday	Date	September 22, 1927
	Saturday	"	24, "
	Monday	"	26, "
	Wednesday	"	28, "
	Thursday	"	29, "

September 22

9:20 a.m.

New scars S., E., NE., N., NW. New debris on NNE. talus. E. rim has collapsed. Most slides have come from face of NE. wall, as shown by scars. So much sliding has occurred since July eruption that new lava floor is now well overlapped on all sides.

Pit is very quiet--a few stones have moved NW. and S. in $\frac{1}{2}$ hour.

9:53 a.m.

Small slide NW.

10:10 a.m.

Small slide SW.

September 24

8:50 a.m.

Rocks fell NW. Walls have lost the deep red color with dry weather. Very little steaming. Can see overlapping of new debris on NNE., N., and NW. taluses.

9:08 a.m.

Rocks fell NW.

Made crack measurements.

September 26

9:10 a.m.

Pit seems quiet, but NE. wind is strong. Steam only on NW. talus and other usual places--NNE. talus and S. sulphur patch. E. wall has fresh scars. Three large notches show in NNE. rim.

9:17 a.m.

Slide NW. made a little dust. A fourth notch in NNE. rim looks new.

9:22 a.m.

Stones rolled NE. and NW. Black dirt on NE. talus. Considerable material appears to have fallen at foot of NE. dyke. S. wall has also had slides.

1:10 p.m.

Av. dust cloud No.

September 28

8:30 a.m.

Upper N. wall has been sliding. N. talus very red. Walls full of colorings. Large scar upper and center NE. wall. SW. wall also scarred. NNE. talus streaked with red and black debris. Wet weather making steam vents more active.

10:20 a.m.

Dust from slide NE. seen from H.V.O.

September 29

3 p.m.

Thin dust NE., from H.V.O.

R.B.H.

JOURNAL

Day	Date
Saturday	October 1, 1927
Monday	" 3, "
Wednesday	" 5, "

October 1
9:50 a.m.

Rocks fell SW.--men on rim above.

There is a faint, yet steady, sound of slides under SE. rim--is now louder and rocks can be heard. This seems indicative of uneasy walls. Over one hour of steady tremor last night.

10:02 a.m.

Rocks fell N. New scars NW., N., NNE., and several NE. N. talus sprinkled with white rocks, and there is a large area of white salts on N. wall; also NE. wall and on NNE. talus.

10:35 a.m.

Rocks fell SW. Many mowlders on floor.

Measured cracks.

Lava floor near S. cone is well stained yellow and white. Very little steaming anywhere; cloudy weather.

October 3
2:45 p.m.

Pit is quiet. Only change noticed are dirt slides NE. and NW. The latter has made a wide streak of fine material the full length of NW. talus. SE. wall has had the same fine slides at its foot.

2:55 p.m.

Much dust from dirt slides SE.

3:03 p.m.

Rock slide N. wall. Slim pinnacle NE. still in place.

3:16 p.m.

Sluggish slides W. From NNE. side can see the slides SE. making hole at top of talus.

3:23 p.m.

Small slide E.

3:27 p.m.

Another small slide SE. Apparently wall is restless.

October 5

8:30 a.m.

SE. wall still working, with light falls or trickles. Bluish steam comes from the smaller cone in irregular puffs.

8:36 a.m.

Small slide NE.

8:44 a.m.

Some light rock trickles NE. and NW. Just previously one SW. A faint scar is over W. boss.

8:51 a.m.

Heard Stones W. and N.

10:27 a.m.

Large dust cloud N., and there is a tremor on seismographs. Dust in air for 10 or more minutes; spreading all over NE. of orifice.

R.B.H.

JOURNAL

Day	Monday	Date	October 10, 1927
	Wednesday	"	12, "
	Monday	"	17, "
	Wednesday	"	19, "
	Monday	"	24, "

October 10
9:25 a.m.

Rock trickle NW.; NE., E., and S. talus slopes quite black and wet from several days of rain. There is a very bright yellow sulphur spot at N. edge of S. talus. Not much steam.

9:32 a.m.

NW. wall still uneasy. Bright red scar near top of S. wall. A streak almost full height of NW. wall may be where the rocks are falling. Yellow stains on floor are quite pronounced.

October 12
9:35 a.m.

Pit seems quiet, but wind would drown any noise. Much fine material deposited foot of SE. wall.

9:40 a.m.-

S. talus streaked with wet steaming spots.

Rocks fell W. Much fine matter lies at foot.

Yellow staining is quite pronounced on smallest cone active July 7, but no steam. Not much steaming anywhere. Yellow solfataras foot E. talus. Many light rock falls W. E. wall streaked from slides.

October 17
10 a.m.

Pit is extraordinarily quiet. N. wall has scattered coatings of new white salts; some also on NE. wall. No rain for a few days, but wet streaks are conspicuous around NW. talus and on SE. talus.

10:22 a.m.

A slide at N. corner made dust. Other small slides heard W. and SW.

10:47 a.m.

Slide S.

Measured cracks.

R.B.H.

October 19
3-4:30 p.m.

Pit mostly quiet. One slide at S. corner heard. Slide reported in that corner as making a new red scar and showing dust.

Yellow sulphur, fresh, at base of talus SE., next S. of where ledge touches floor. Small recent cracks in dirt near S. station back from rim.

About noon saw two dust whirls on central floor of Kilauea.

October 24
11 a.m.

Pit quiet and dry. Fresh avalanche streak on W. wall. A little steam at middle cone of floor. Steam now feeble at wet places in S. talus, where before the July eruption there was very dense steam.

T.A.J.

JOURNAL

Day		Date	
	Wednesday	October 26,	1927
	Saturday	" 29,	"
	Monday	" 31,	"

October 26
10:10 a.m.

The pit in bright dry weather shows very little steam. Densest steam jet is on N. side of NW. talus. A little steam and sulphur stain at N. cone vent of floor. Fresh avalanche streak from top to bottom of wall over SW. talus. Fresh wall surface from recent falls above NW. talus. Sulphur stain is increasing at bottom of SE. wall. Fresh fragments lie on top of SSW. talus.

10:20 a.m.

One small trickle of rocks heard.

October 29
2 p.m.

NE. wind, dry, and sunny. Last night much rain, but it has not increased steam in the pit.

Slight steam jets in upper parts of taluses N., W., and S. Increase of yellow stain at N. cone vent on floor, which steams. Only one jet of steam for an instant seen at middle cone.

Slight rock trickles N.

October 31

Dust from numerous northern avalanches was observed morning and afternoon.

T.A.J.

JOURNAL

Day	Wednesday	Date	November 2, 1927
	Friday		" 4, "
	Saturday		" 5, "
	Monday		" 7, "
	Tuesday		" 8, "

November 2
2 p.m.

Rainy and misty. Pit very brilliant red with iron oxides, and the new lava floor is blue black with the central and northern cones giving off vapor. Vapor on the taluses increased by virtue of the damp weather. A trickle of rock heard at the SW.

The west wall and talus slopes show much more red oxide color toward the bottom than toward the top of the wall. This is true all around, but the west wall is the reddest.

T.A.J.

November 4
9:25 a.m.

Slide at S. corner with echo. N. wall has also had slides, and rocks trickle there. A considerable dusty streak marks the course of NW. slides.

9:35 a.m.

Another tiny slide S. Almost continuous minute rock movement NW.

9:45 a.m.

Sizable slide S. corner.

10:10 a.m.

Slides S. Trickles N.

Measured cracks.

R.B.H.

November 5
3-3:30 p.m.

Pit quiet. Weather clear and dry. Extraordinarily little steam. Only small patches of visible vapor NW., SW., and S. taluses, and N. cone. Hole in central cone. White stain at hole NE. of it. Slight sulphur stain at wet steam vent in S. talus 200 feet above floor. Slight rock trickles S. and N.

November 7
1:15 p.m.

Considerable avalanche in NE. corner of pit shown by dust.

T.A.J.

November 8
8:30 a.m.

Dust from slides N. and NE. Hung in air 15+ minutes.

R.B.H.

JOURNAL

Day	Date
Wednesday	November 9, 1927
Friday	" 11, "
Sunday	" 13, "
Wednesday	" 16, "

November 9
Noon

Pit quiet; vapping slight. New talus material NE., N., and SSW. A considerable notch in NE. wall has developed during past summer.

T.A.J.

November 11
2:40 p.m.

Rocks sliding S. That wall is streaked from slides. NE. corner scarred, one place just below rim.

All walls dry and dusty, and floor thickly coated.

A crack has widened at E. rim.

2:50 p.m.

Rather continuous rock trickles S.

Trail crossing crack at 14-ton boulder has dangerously sunk, but crack has not widened.

3:10 p.m.

Slide at S. corner; boulders tumbled full length of S. talus.

3:20 p.m.

Fine slides at S. corner. Now rocks. This place is rather active. Much gray dust.

Middle cone and N. cone vent steam. SW. cone steams in puffs now. Perhaps accentuated by the dust, now past.

R.B.H.

November 13
11 a.m.

With Prof. Charles Cotton, mother, and wife, from Wellington.

Pit quiet, but floor covered with tan colored dust thickest at base of SSW. talus under the two tunnels. Nine tropic birds flying around lower of the two tunnels as tho nesting there.

A few stones falling S. Hard to see what has been the scar left by the recent avalanches. Appears to be either under S. station or a widening of the Barrett avalanche scar of last summer. The sulphur patches SE. and E. are both still yellow, unmasked by dust.

9:40 p.m.

Head noisy avalanche. Another a few minutes later.

November 16
2 p.m.

Pit the same. Bottom dusty. Very dry. Small trickle of rocks on S. wall. Upper S. wall W. of S. station is freshly cracked back for 50 feet, and edge rock ready to fall between S. station and SW. tunnels. Very fresh cracks in dirt. Some slides NW.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Date
Saturday	November 19, 1927
Wednesday	" 23, "
Sunday	" 27, "
Wednesday	" 30, "

November 19
4:15 p.m.

Clear afternoon. Light NE. wind. Recent rains have washed away most of the floor dust of Halemaumau.

Fresh brown debris lies on the NE. talus. Rocks heard falling once or twice at the north. Pit dry. A little steam at the usual places.

This forenoon much dust blowing at SW. rim of Kilauea.

November 23
11:20 a.m.

No changes that are marked. A little steam rises next the hole in the middle floor cone. The NE. talus has fresh dark red debris from a wall scar of same color above.

The cracks formerly steaming around the automobile terminus seem to steam much less at present.

The recent floor dust still shows in sunlight, but it has clustered in puddles of dried mud.

November 27
11 a.m.

No marked change. Pit steaming from walls in places owing to rain falling, as well as many places in bottom and on taluses. There are small falls of rock making dust visible from a distance these days occasionally. Most of these are slowly stripping the N. and NE. walls.

T.A.J.

November 29

Tall cumulus cloud over Mokuaweoweo a large part of the day, and later a persistent possible fume cloud.

R.B.H.

November 30
9 a.m.

No change in Halemaumau. There is still avalanche dust on south side of floor. Avalanches at the north make dust occasionally, but no falls were heard at time of visit.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

Hawaiian Volcano Observatory

JOURNAL

Day	Tuesday	Date	December	6,	1927
	Wednesday		"	7,	"
	Saturday		"	10,	"
	Wednesday		"	14,	"

December 6
11:27 a.m.

Rocks fell N.; again 11:35 a.m. Vertical cleft noticed in wall at W. end of N. sill. N. wall has had slides, as shown by fresh red scars. Pit is extremely quiet and dry.

11:41 a.m.

A small slide NE. made a little dust.

December 7
10 a.m.

Pit is quiet, wet, and full of color. Center cone steams profusely. Other steam vents have also increased their activity.

R.B.H.

December 10
2 p.m.

Nothing noticeable new at Halemaumau. One small slide of rock heard at the north. The three places that have fresh broken surfaces all the way to the top of walls are NW., NE., and over SW. rift. The northwest niche is broken away by this stripping of the wall above the NW. talus. The place is under the NW. station next to the Postal Rift cavern. At the NE. stripped wall there is a curved red fill in cross-section against a dyke of cracked rock east of it. ("XX"--cracked?)

December 13

Slide heard at 3:55 p.m.

December 14
11:40 a.m.

Pit quiet. Air calm. Walls brilliant red after rain. Note 5 dykes up NE. wall and 4 SW. Also a net of reticulate intrusions in NE. wall over E. end of N. sill. The sill, which formerly would remain hot and dry after rain, is now dark with moisture, but there is a large dry patch at the top of its E. end and another in the wall above. Also there is a dry patch on the N. side of the west boss. The extremely brilliant brick red of the walls, marking intense oxidation of the lava flows of the last century, is very striking. The wall steams around the edge cracks on top, S., SW., W., NW., and NE., and the lower wall NE., E., S., SW., and NW. The taluses S., SW., and NW. steam the most. The lava floor shows dry places about the edge of the eastern collapsed area. It steams at the three cone vents.

Rock falls were heard every 5 or 10 minutes NE., N., and S. No other noise was heard in perfectly still air.

T.A.J.

DEPARTMENT OF THE INTERIOR, U. S. GEOLOGICAL SURVEY

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Day	Date
Saturday	December 17, 1927
Wednesday	" 28, "
Thursday	" 29, "

December 17
2 p.m.

Nothing new at pit. No slides heard. Slopes appear undisturbed after much recent rain. Nothing appears freshly fallen or freshly broken.

December 28

First visit for a week owing to heavy Kona rain and wind storm. Pit nearly full of steam, but glimpse had of bottom, with undreds of steam tails blowing from the west.

Almost incessant slides from all sides, some roaring avalanches NE. and SW. At first attributed this to washing out of talus and undermining by the storm; but as Wilson reports an excessive tilt to S. and SE. has begun, it looks as though lowering of the lava column under Halemaumau might be beginning. This must be watched.

Roars from pit reported.

December 29
10 a.m.

Prolonged roar of avalanche at 8:15 a.m.

Numerous avalanche roars have been heard lately. Now, just as yesterday, the rocks are falling. Pit is clear, walls wet and red except one place above W. end of N. sill. This place appears to be dry because avalanches have stripped it. This is proved by the talus below being topped by a large patch of dry fragments.

While here there were big slides NW. and N. Small ones NE., W., and S. Material so wet it makes no considerable dust clouds.

The Uwekahuna seismogram shows many tremors last night, larger proportionately to its magnification than the same (avalanche) tremors registered at H.V.O.

3 p.m.

Went with Hodges to pit, and he measured with large wooden calipers 15 places across cracks back from edge of pit, east and southeast. The southeast cracks showed a little change; east the big cracks near the 14-ton boulder of 1924 had increasingly widened as one proceeded north. Widening was 2 to 3 inches in December. Crack walls marked with white paint spots at places measured, and places numbered in white paint.

At this time rain drizzle from SW., and pit with more vapor than forenoon. Avalanche roars continue from time to time. Bottom appears unchanged.

T.A.J.

December 31
10:02 a.m.

Two large avalanches at same time--one on each side of pit, N. and SE., and a simultaneous earthquake on seismograph.

R.M.W.

3 p.m.

With Dr. Skinner of Dunedin.

The avalanches have become less continuous and less strong, but more or less sliding still takes place.

Avalanche roaring and the appearance of dust at the pit are much commented on by visitors.

Uwekahuna seismograph records many avalanche tremors.

The weather is improving while still remaining southerly.

T.A.J.