4052

Bn T.

[redacted]

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Notebook No. ~~CL-1601~~

Issued To: E. J. Witkowski

Issued By: Jo Lovelace

DATE: 3-3-47

"Secret Stuff" (burn) p49

RUN 18; see pages 19-46
RUN 19; see pages 93-109
RUN 20; see pages 141-160.

[redacted]

p46. Thank God
p154. Stick case back into bag.

BNT-294

Whitney - 5-4021

CLASSIFICATION CANCELLED

Ted Davis 7-8-96

ADD signature Date

Single rereview of CCRP-declassified documents was authorized by DOE Office of Declassification memo of August 22, 1994.

This document has been approved for release to the public by:

David R Hamrin 7/8/96

Technical Information Officer Date
ORNL Site

6-2-47 Phosphorus
8-4. P-45B, P-3 going down to dryness.
H.T.R.

Miscellaneous

1) Assisted Blauer with installation of lines and glass ware in Cubicles.
2) Assisted S.J.R. with set up for Sb.
3) Decontaminated iodine equipment preparatory to general overhauling and repairs.
4) Began "Pre Run Check" to determine repairs necessary, barium equipment.

Please read the "Instruction to Shift" Log book.

Pressly

6/2/47 (1) Phosphorus
4-12 @ P-45-B-P3 - Still evaporating on steam
PMP @ P-46-F-2 ~~[illegible]~~ Sampled.
F-1 Sampled. Combined P45 R-1 with this soln. and precipitated Fe with NH4OH. Soln going through Slang reactor.

(2) Europium
@ Spent all shift filtering. See directions on table (3rd floor)

(3) Cell A
@ Replaced 8 valves and unplugged A-9-B-1DC, A-9-B1 D-D, and A9-B12.

2

(3) checked off jets for leaks on A-1, A5, & A-6. Marked leaks with tags and chalk. See pre run check sheet clip board.

(4) Iodine

@ Decontaminated I_2 setup.

(5) Cubicles -

@ Made some connections and wrapped some connections with tygon tape. There remains 5 or 6 connections to be wrapped.

(6) Misc.

@ Decontaminated 18 carriers. One box to 205 carrier is still hot.

(7) Note - A-4 differential pressure Manometer seems to be connected backwards. We get a small pressure (2") instead of vacuum. Manometer gives a G.

6-3-4
8-4
Russel

6/3/47
12-8
King

① Phosphorus:

1. Adjusted pH on P45B-P3 to 7.5.
2. P46-P1 going thru Nakite column.

② Europium - finished filtering solution & cleaned up equipment.

③ Cubicles -

Wrapped several connections with tape - used up all other exposure time in Cell A.

④ Cell A

1. Worked on equipment check - unable to complete because of no A-16 vacuum, bottom flange on A-9 still loose, etc.

2. Checked jet lines for leaks:
   a. A9-A8C - union of jet leaks (green tag & hole)
   b. A11-A9, A11-A5A, A11-A6D — these jets need new gaskets on each end of jet - ie, flange connection on each end of jet leak badly (these jets not marked with green tag because of high background - low time. They are the three big jets on top A-11.)
   c. A9-A8DB test (900# water) = 30 min. to a 0.3 inbal.
3. H.P.: check around A-9 gives following working time (at 7:30 AM): top of A-9 = 20 min; bottom of A-9 = N end = 15 min, S end = 11 min. (Radiation high around A-1).
5. Misc - cleaned up hot spots on 1st level floor & some in N. Hot lab.

6-3-47 Phosphorus
8-4
Russell
1) Discarded P-46, F-2 with 57 mo's.
2) P46, P-3 evaporating on steam bath.
3) Regenerated nitrite. R-1 sampled.

Iodine
Began making replacements and installation of new equipment.

Misc.
Continued Cell A repair.
Completed installation of glassware and tygon tubing in cubicles - amon!
Cleaned up around cubicles.

(over)

4 The following repairs were made today. They are to be rechecked for leaks:

A9 - A8C union at jet (N.R.)*
A11 - A9 flange at jet (N.R.)*
A11 - A5A " " " (N.R.)*
A11 - A6D " " " (N.R.)*
A5 - A6 at union & weld (OK)
A5 - W11 } steam pot (N.R.)*
A8 - A5DA } (OK) IN cell. leak at P.B.-1
A8 - A5B } (OK)
A1 - A11 weld top A11 (N.R.)*
A5 - A5B plugged at PB1 (N.R.)*
A6 - A6 " " " (OK)
A1 - A11 " " " (OK)

Please indicate if the above are ok or need repairing.

Phosphorus P45X has been precipitated with NH4OH and is now settling hot. Filter thru stang reactor and continue as per procedure, wash, nalcite, etc.

* See note on pre run check clip board [illegible].

6/3/[illegible]
4-1
[illegible]

6/3/47 (1) Phosphorus
4-12 @ P-46- P-2 On steam bath. Head p added.
JEP Removed 50 ml. & evaporated to dryness. Adjusted pH to 8.8. Dissolved in 20 ml. water. Labeled carrier free.
(b) P45X - W-1 - analyses 570 mc.
P-1 - ~~analyses~~ - Sampled
P-2 - going through column.
P.B.-1 (c) P-47- W-1- Sampled- Run progressed to this point. See run sheet-

(2) Decontaminated 4 carriers.
(3) Cubicles
@ Checked transfer vessels and lines for 3 hours with approx. 500 ml water and 12# pressure. Then blew to B-19. B-21 seems OK. but B-20 connection between 20R and 20T is bad and it will not hold pressure.
(4) Cell A.
@ See note on pre-run clip board for jet rechecks.
(b) B-26 is filtering to B-27 at shift change.
JEP. (c) Note - A9 - B12 jet takes solution to B-26. These lines must be crossed.
(d) Suggest that the jets be checked while welder is in cell.

6/4/47 12-8 King

① Micromax #12 on Panel Board #1 has bad "knock" in it — turned off until day instrument man can correct.

② Phosphorous:

1. P47 - P1 waiting on Nalcite column.
2. P46 - P2 on steam bath - 200 ml. flask
3. P45X - P2 on steam bath - no dead P added as no analysis.
4. Nalcite column regenerating.

③ Cleaned up around cubicles - decontaminated. Decontaminated cubicle plugs. Cleaned up around Cell A door - took smears - ok.

④ Decontaminated 6 carriers — they have not been ok'd by H.P.

⑤ Removed hose from M-1 (reads 0 to 12 mr/hr) and stored on platform.

⑥ Emptied tanks in Cell B. B25 crud filter filters very slowly. B-24 not emptied - were not sure you were thru with valves

⑦ H.P. survey in Cell A at 7 30 AM shows: working time at top = 20 min; bottom = 12 min.

this would contaminate again

6-4-47 8-4 Russell

Phosphorus

1) P-46 P-2 on steam bath, 200 ml. flask.
2) P-45X P-2 on steam bath. Dead P not to be added.
3) P47 P-1 ready for nalcite.

Miscellaneous

1) Continued work on C-11 duct.
2) Repaired W-11 automatic steam jet.
3) Continued dummy runs on Cubicles.
4) Continued installation of iodine equip.

Note: Glass equipment for transferring product from receiver to suction line will be ready to pick up at glass blowers shop Thursday the 6th. (See Ira)

6-4-47 – 4-12 WHP & WET

1. Made connections in Cubicles as per Blaine's Oral instructions.
2. Checked jets A9-A8DB & A9-A8DA. Status on Pressly's desk.
3. Jet A1-A11 is OK.
4. A-11 tank is minus a gasket on top. Was it installed with one? When jetting into A11 from A1 after all solution was in and only steam going in, it blew liquid out the flange at top of tank.
5. Checked cubicle instruments. Two pumps were reading 10 mr/hr. they are stored over hot labs. Remote control tongs seem to be OK. They are also over hot labs.
6. See Pre Run Check sheets for work yet to be done.

Phos:

Same status as 8-4. The Nalcite Column seems plugged.

Europium Oper:

Finish filtering material in D-8. Wash disc (with ppt.) with the soln. in the 2 gal jug between D-9 & D8. It is a 1:1 mixture of 70% HNO_3 + sat. NH_4NO_3 Soln. Do not use water except to wash filters when cleaning them.

Put ppt. in 4 l beaker provided and clean off disc with ca. 30% HNO_3 followed by hot water.

Use the wash soln to wash the ppt out of the tank.

Transfer all solution into D-9 when through filtering. Don't wash system after you're through.

6-5-47
8-4
SJR

6/5/47 ① Phosphorous:

1. Took up ppt. & adjusted pH to 7.4 on P46-P-3.

2. Trans. P45X-P2 to 500 ml flask - evaporating

3. Unplugged Nalcite column & started P47-P1 thru it.

② Cut gaskets & applied to two of cubicle SS plugs.

③ Dumped, dissolved, & jetted 3 drums of caustic to M-11.

④ Europium:

Followed instructions on filtering & washing material in D-8 & transfer to D-9. All material from D-8 was filtered - the wash is still going thru two filters with ppt left on them.

(Note - H. Penn. - a small amount of ppt. seemed to go thru at least two filters - don't know how imp. this is).

⑤ Cell A - marked welds on A-5-W11 still leak; gasket blown in A-11-A9 jet flange.

H. P. survey at 7 30 AM shows: 20 mr/hr on top A-9, approx 12 mr/hr at bottom (S-end).

6-5-47 8-4 5th

Phosphorous

1.) P45X - P2 - evap. on steam bath

2.) P47 - P2 - rinse going thru column.

Iodine - Almost finished assembling iodine apparatus.

Cell #4 - Glass joint on inlet side of filter disk is broken. Continue decontamination so that this joint can be replaced.

Strontium Carrier - There are two carrier in the Make-up Room and one on south platform. Store above hot labs when through decontaminating.

6-5-47 10 Phos:
4-12 P45X, P-2 Evap. on st. bath
WHP P47, P-2 " " " "
+ Column is being regenerated.
WET 3 sulfur cans are filled and ready for 105 bldg.
Cell IV
1. Cell is steaming. 6/6/47
2. Equip. in barrel was given more HNO_3 12-8
treatment, but it is still hot. King

Sr. Carriers:
The two in the decont. room have been given alternate citric acid and hot water treatments using the steam hose with the citric acid.

Pre Run Cell A Check.
We started on this, but were interrupted by the water failure from 4:30 to 9:30 PM. Then after turning the big fan on the A16 fan wouldn't start due to a broken wire at the junction box on the motor. It reads 71R there and will have to be shielded before any work is done on it. Our Maint. electrician used up his time on it. Therefore no jetting was done.
A-1 to W-11 jet seems plugged in the steam line at the panel board.
Started dumping HNO_3 but blew a gasket on M5. It and another one are replaced.

Europium operations are at stand still 11/2
Will the 8-4 please get some carboy wire.

6/6/47 ① Phosphorous:
12-8
King
1. P 47-P2 evaporating on steam bath
2. P 45X-P2 is dry on steam bath; all exposure time used; hence pH not adjusted.
3. Column is being washed with 150 ml water after regeneration.
4. Filled 2 sulfur cans — carried 5 to 105 bldg. The rest of the sulfur cans on 3rd level either buldge badly or have a hole in them — we need a gauge (size) for sulfur cans.

② Cell IV.
1. Steaming cell.
2. Crud Filter was given caustic & acid treatment - little help; it is now back in can of HNO_3.

③ Cell A:
Checked cell as far as possible on pre-run shot without A-16 off gas system. Found following:
A5-W11 - leaks at flange at jet.
A6-A5 - leaks at jet (union leaks).
A8-A8 - leaks at jet (union leaks).
A11-A9 - leaks at flange at jet.
A9-B26A - leaks at jet (union leaks).
A9 Jacket outlet line at top of jacket leaks.

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A 16 Off-Gas System:

Maintenance used all exposure time working on motor to A-16 fan. They report motor is burned up in stationary windings - rotor is ok.

Attempted to decontaminate A 16 motor & fan - however, still reads 400-500 mr/hr under shielding.

6-6-4-1 WHT & WET

④ Sr Carriers - treated with citric acid, steam, hot water.
⑤ Dumped two barrels caustic into M-1 & jetted to M-11. This has not been sampled (5 drums in total).

6/6/47 8-4 JEP

(1) Phosphorus -
(a) Run 48 - Started now going thru stang reactor
(b) Adjusted P-43X-P-3 to pH 7.5
(c) Transferred P-47-P-2 to 500 ml flask -

(2) Cell A
(a) Completed except for the A-16 fan motor which is to be replaced. Motor being stripped in decontam. room and to be rewound.

(3) Iodine
(a) Completed assembling equipment.
(b) Made up all solutions for Iodine.
(c) Got 3 Te slug from 205.
(d) Attempted to calibrate GM tube. 500 mr. at 2" from tube reads 10 on the 10" scale. 700 mr reads just slightly over it. Suggest that all cuts reading over 10 be saved. Do not attempt to zero for background as this does not work on this instrument

(4) Started installing crud filter.

6-6-47 Iodine:
4-12 Completed Run #201; adding oxalic
WHP in Run #202.
&
WET Phos:
P48 going through Nalute column.
P47 P2 - evap. on steam bath.

Misc:
1. A16 motor stationary winding shell is all set up on the work bench just E of low storage and is ready for the electrician to rewind.
2. W6 jet is only getting 6-7 gal/min.
W5 jet will not pick anything up.
W-11 automatic jet is not working.
3. The battery charger is running on bank B and will be through at 10 PM. A is next.
4. Cell A:
Connected conduit on AD → W11 discharge line and pulled elect. wires through. They are not fastened in the cell.
Cleaned off all slop etc. from tank tops and removed plugs. A skid is ready for Pb removal from floor. Suggest it be stored in Decont. Rm.
5. Finished decont. 2 Sr. carriers and stored over hot labs. The other one was

AD-W11 jet - check.

14

left out so we can put lead in room. 6/7/4.
Nothing was done on cleaning out the 8-4
H_2SO_4 system. There are a few items on JEP
the Pre-Run Check sheet.

6-7-47 P32 - P48 - Rinse going thru column.
12-8 P47-P2 - evap. on steam bath.
STR

Iodine - Completed 202. Started and completed 203.

Sulfuric Acid - Rinsed out T3 and M8 well with water and dumped 10 cases of C.P. Sulfuric in bottles into these tanks.

Cell A - Cleaned up Cell A. Also removed two loads of lead and stored in decontamination room. All manpower exposed. Residual water in Cell A sump is hot.

Battery Charger - On Bank B until 9:00 A.M.

Six Te samples obtained from 105.

Automactic jet on W-11 left off. W6 manhole is fairly full, but only a small stream is coming in from W6.

Nothing done on Prerun check sheet.

6/7/47 (1) Phosphorus –
8-4 @ P-47- P-3- adjusted pH to 7.5- No
JEP lead p added to this run-
(b) P-48- P-2 on steam bath- Acid
P. added- 865 mc- total-
R-1- Sampled-
(c) P-45A- Obtained by combining all
wastes in n hot lab- Includes
P-47 W-1, P-48- W-1, P-48-F-2, and
P-45 R-1. Neutralized with NH4OH
and sampled filtrate. Showed 15 mc
per 5 liters. Discarded filtrate and
acidified ppt. Now ready for caustic
strike- Should contain about 500 mc.
(2) Iodine.
@ Started and finished run- 204. Cut
off vacuum pump in Cell A near end of
shift to work in cell.
(3) Cell A-
@ Precipitation test during Iodine run
showed below tolerence-
(B). Unplugged A-8-A8 jet at PB.
(C). Replaced a plug and attempted to
get a vacuum N-G. Believe
A.D.-W-11 plugged
(d) Moved lead sheets from South end of
cell to the area around the thermo
couple that will be installed tomorrow.
Cut radiation from 3.6 R/hr to 470 mr/hr.
H.P. says a couple more sheets will bring

80" 4%

it to 250 mr/hr. We used all exposure. The floor around A 6 and the doorway reads about 500 mr/hr.

(4) Misc.

(a) Made up 4% caustic to 80" in M-10.

(Note on Iodine run - Holdup flask was very full, slumped this to steam bath and checked pH. It is about 5. Added NaOH but with no agitation actual pH is unknown. Suggest waiting awhile and checking pH again. Do not evaporate the acid solution.)

(b) A-16 fan motor is ready to install.

(c) completed pre-run check.

6-7-47 4-12 WHP + WET

1. Ed Witkowski requests that the 12-8 shift push the A-16 motor installation. It is supposed to be ready by then.

6-8-47 12-8 Russell

2. Changed jets on AD → W11. Used the one taken-off in the make up room. It has a leak at the steam inlet flange. The suction line is plugged tightening.

Pressley suggests making up a new suction line for the jet out of 1" 25-12 or 18-8 S.S. and sink it through the louver. Verbal line up on this WHP to HR.

3. Iodine
Completed 205 & started 206. Adjusted pH on 201 → 204 to 8.5 and started evap. down to 300 ml. It will have about 290 mc. S.T. (8:00 A. 6-10-47)

4. Sr. Carriers all decon. and over hot labs with cones and plugs.

5. M11 - 35.7% NaOH

6. Rhos. - nothing done.

7. Tested cwd filter as per Pressley's instr. and it would work for a minute or so and then plug up.

6-8-47
12-8
Russell

Used all electrical maintenance working time on the installation of the A-16 motor. Motor was set and some bolts started. C.P. reading was >1 r.

Removed louver slats Cell A preparatory installation of new suction line AD-W11 jet. Used all working time of pipefitters.

Phosphorus
1) Combined P-48, R-1 containing 149 mc's with P-48A and made NaOH strike.

(over)

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Phosphorus, cont'd

P-48A should now contain about 650 mcs.
Made NH_4OH precipitation. Filtering thru steam reactor at shift change.

W-1-

Iodine

1) Completed iodine run 207.
2) Started iodine run 208.
3) Evaporated product down to 300 ml.

Misc.

1) Operated W-11 jet manually. 6-8-47
2) Made up batch of 50% NaOH now agitating in M-1. 4-12 WHP
3) M-6 manhole still too high to sample. WET

6/8/47 (1) Cell A-
8-4 @ Removed all lead and swept the cell with aid of Inlet, Witkowski, and
JSP 105 personnel. The swept pile should be removed and the sump should be swept.
(b) Unplugged AD to W-11 and it is still jetting. Cell vacuum 1.1".
(c) Connected A-16 fan motor. Should be ready to check on 4-12 shift.
(d) Don't forget to connect handle to A-16 valve at cell door.
(e) Installed thermocouple in AD-W11 jet line. To 12-
(2) Iodine
@ Completed run #208

(b) Dated and finished Run 209.
(3) Phosphorus
@ all activity of Run P-48A was in F-2
P48A-P-1 going through columns with 5 m
W-1-20mc To be discarded, R-1 also to be discarded.
Made NaOH strike on F-2 called P-48B
(b) P48B- F-1 - Ready to be sampled.
F-2 Ready for NH_4OH strike.

6-8-47 1. Did not forget 1(d). The valve
4-12 operates better if the handle is pulled
WHP outward as it is turned.
2. A-16 motor run from 6:00 PM. Vacuum
WET is good with 50 ~~gpm~~ on scrubber. Ran A-4 → 705
with 200 on scrubber.
3. A1 → W11 jet is plugged at P.B.
4. A1 temp recorder needs chart 0° → 150°C discard.
Phos: P48A, P-1 H_2O going through col. A
P48B-F-1 to be sampled
F-2 Ready for NH_4OH strike.
No exposure time left for this.
Iodine:
All runs are composited and
evaporating down to 650 ml. pH was
adjusted to 8.5. Sample when down.
To 12-8 Shift:
1. Slug pushing will start at 12:01 AM.
Don't move carriers out of canal until
5:00 AM and possibly not until 7:00 AM if

They're too hot to handle.
2. Make up C. Removal solution.
3. Finish cleaning low end of sump. Cell is OK to go then.

Note Pressl

6-9-47 Phosphorus
12-8
SJR-HTR

1) Regenerated nalcite column.
2) P-48, P-3 evaporated to dryness and was taken up in 100 ml. water total volume, pH adjusted, etc.
3) Discarded P-48A, W-1 containing 16 mc's.
4) " P-48A, P-2 " 1.1 "
5) Regenerated nalcite again.
6) Discarded the R-1 containing .6 mc's.

Iodine

Evaporated iodine composite to 600 ml, and sampled. Product now in storage.

Miscellaneous

1) Made up $Pb(NO_3)_2$ solution in T-1. Sample in lab.
2) Made up K_2CO_3 solution in T-2. Sample in lab.
3) Used all available exposure time cleaning low end of Cell A sump.
4) Replaced louver Cell A
5) Removed hot can of waste from Cell A. C.P. reading 1.5 r @ 10"

6) Swept Cell A corridor & turned out all lights. Could not lock Cell A door.
7) Cleaned up contaminated gloves, shoes and paper at Cell A door.

Note Pressly — The three emergency lights in Cell A are connected with the regular building lights, the switch located at emergency lighting panel "H" on the 3φ 440 v. bus, ground floor.

8) Used hot water & nitric on all the contaminated lead shields in the decontamination room. C.P. reading dropped on the average from 300 mr-hr to 15-20 mr-hr. Stored decontaminated shields on east side Cell B.
9) First load of slugs added to A-1 @ 6:50 A.M. 6-9-97 Run 18 begins. Second load slugs added 7:05 A.M.
10) A "danger, do not open door" sign has been placed on Cell A door. Have lock repaired, please.
11) The attached sheet is a copy of completed survey made on floor south side of Cell A, the highest reading 1024 c/m.
12) Repaired A-1 to W-11 steam jet line at PB.
13) Slug carriers are being loaded at 105.
14) Suggest the maid clean and "deodorize" our refrigerator.

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6/9/47 8-4

(1) Phosphorus –
(a) What happened to P48B-F1 & F-2? 6-10-47
(b) P-49-C1 in N Hot lab – 12-8
(2) Run 18 SJR~HTR
(a) Loaded 304 slugs (total)
(b) Batch A dissolving in A-1.
(3) Misc –
(a) Floor smeared O.K. at Cell A door after mopping. Hot spots remain as marked in make up room –
(b) Unplugged crud filter and ran 2 liters Hot HNO_3 through. Several more liters of hot HNO_3 should be used to clean up the filter.
(c) Repaired Cell A door lock.

6/9/47 4-12 WHP & WET

Phos:
P49-P1 going through column.

Ba 140
Batch A – Settling hot until 12 40 AM – 306 C ST.
Batch B – Dissolving.

Misc:
1. Housekeeping inspection made. List of undone items is attached.
2. Carriers decontaminated. Need recheck by H.P.

6-10-47 Phosphorus

12-8

SJR~HTR

1) Made NaOH strike on P-49, F-2, 267 mc's. Dissolved the precipitate F-2 in HCl and made another NaOH strike in an attempt to recover the 137 mc's in F-2. The filtrate P-49B, F-1 ran 40 mc's leaving 97 mc's in P-49B, F-2 the ppt which was discarded. The A & B filtrates were combined with the W-1 containing 55.8 mc's and NH_4OH precipitation made. This solution is now filtering through the stang reactor, and should contain approximately 150 mc's.

2) Regenerated nalcite and sampled the R-1.

3) Transferred P-49, P-2 to a small flask.

Ba^{140} ~ Run Status

A-1 – Dissolving Batch C

A9 – Batch B digesting until 8^{13} A.M

A11 – Batch A settling until 12^{10} p.m.

A8 – MT

A6 – MT

A5 – MT (Liquid Level acting up)

Miscellaneous:

1.) Chamber on A5 Liquid Level needs replacing. Have instrument man check.

2.) Maintenance made up a wire basket to set in M1 coils. Decontaminating tools in this basket now. Check for activity later

3.) Completed housekeeping report. 6-10-4
4.) Replaced NH_3 cylinder. 4-12
WHP-W

6/10/47
5-4
JEP

(1) Phosphorus
@ P49-P3 adjusted off to 77.
(b) P-49-B P-1 going through Stang Reactor
(c) P-50 - C-1 blind barricade
(2) Ba 140 Run 18
@ A-1 contains "C" dissolving and 104 slugs.
A-11 - Mt
A-9 - Batch - B
A-6 - Batch - A 8 WmA - 62 C's.
(b) Slug loading in process.
(3) Misc.
@ B-6 and B-17 have had lead removal solu in them all shift. ~~Sample as soon as possible~~
Sampled A-6. Also add 1 bottle H_2O_2 to B-6 every 4 hrs. and 100 ml to B-17 every 4 hrs. Last addition at 1 15/p. Not
(b) Completed gasketing shields for cubicles and put in place.
(c) Checked flow on crud filter 1 liter/min.
(d) Did some housekeeping on platform.

6-10-47 Run Status:
4-12 Batch A - Sent to W-9
WHP+WET " B - In A6 Sample in Lab. 8WMB-70c ST
" C - Settling Cold until 3:02 AM.
" D - Dissolving
1 MC - 254c ST, 61.7 SLUGS AND 5.92 c/s
Loaded 304 slugs.

Phosphorus:
P49B - going through nalcite column - Rinse went thru SR very slowly.
P50-F-1 sitting behind barricade after NH_4OH strike produced white ppt. Only one strike was made. F-2 is sampled.
PhO_2 Clean out:- Finished. B-3 Samp. in lab.
B-12 has 3# water on jacket to test for leaks. Run until 7:10 AM. Started at 0.0".
A-5 has carbophosphate.

Note 12-8: Use A9-A8 DB jet for transfer on batch C at full steam pressure.
H_2SO_4 and water figures are changed for Batch D due to use of 95% H_2SO_4

H_2SO_4:
220# CP H_2SO_4 in T-8
T-3 has commercial 90% H_2SO_4 as does M8 if there is a heel in it.

6-11-47 Phosphorus
12-8
SJR ~ HTR

1) Discarded P-49B W-1 ~ 25 mc's.
2) " P-49, R-1 ~ 9 "
3) Regenerated nalate column.
4) P-50, P-1 going thru stang reactor very slowly at shift change.
5) P-49B-P2 on steam bath.

Note Air activity in north hot lab increased from 2.0×10^{-10} at beginning of shift to 3.2×10^{-10} toward end of shift. Cleaned up all contaminated glass ware and placed clean paper on the floor.

6/11/47
8-4
JEP

Ba^{140} Run status

A1 Batch E dissolving
A5 One batch carbophosphate
A6 Batch B neutralized waste.
A8 MT
A9 Batch D hot until 8:50AM
A11 Batch C settling until 9.45 AM

Miscellaneous

1) Decontaminated some more lead sheets and stored east side Cell B.
2) Emptied and cleaned T-3 and M-8. T-3 and M-8 filled with C.P. H_2SO_4.
3) Sampled B-6 for Pb.

4) Checked B-12. No gain in volume. Three pounds jacket water still on B-12.
5) Checked tools in M-1. Still slightly hot.

B-12 reading 0 at 8:00 AM 6-11-97.

6/11/47 8-4 JEP

(1) Phosphorus.
@ P-49-B- P-2 On steam bath.
(b) P-50- W-1 contained 135 mc.
P-1 Still going through Stang reactor
(c) P-51. C-1. 900 mc's
F-1 Solution behind barricade not sample
F-2 On filter disc.
(d) Discarded P-49-R-1.
(e) IBW. Wants phosphorus equipment cleaned up before tomorrow.
(2) Ba 140/ Run 18 A-5 Neutralized waste Batch L
A-1 - dissolving Batch F.
A-11 - Batch D settling 'til 9 00/p
A-8 - mt.
A-6 - mt.
A-9 - $AzSO_4$ addition Batch E
(3) Misc.
@ cleaned platform some. Washed 8 carboys that were not tagged and on platform. Riggers will move pump tomorrow
(b) Decontaminated N hot lab and colored girl washed some glassware.

28 (c) B-6 should be sampled as soon as possible.
(d) Changed Phenolthalein at A-16 off gas.
(e) Made up 40% Caustic and carbonate.

6-12-4
12-8
SJR-H7

6/11/47
Grossel & King
[4-12]

Phosphorous:
1. P49 B-P2 transf to 500 ml flask on steambath.
2. P50-P2 on steam bath
3. Column regenerating - P50-R-1.
4. P51-P1 still going thru Stang reactor - 500 ml water has been added (480 still to be added).
5. Cleaned part of equipment.

Ba^{140} Run 18:
A-1 - Batch F diluted & ready for A-9.
A-11 - Batch D settling to 1:23 AM.
A-8 - MT
A-6 - MT
A-9 - Batch E settling until 1:23 AM

Misc:
1. Sampled B-6 and added one bottle H_2O_2. Added 2 - 200 cc portions H_2O_2 to B 17.
2. Decontaminated some lead.
3. N. water still not working at start of shift - maintenance worked on it - seems to be okay.
4. Made up carbonate & caustic.
5. W-6 manhole plugged & overflowed - plugged tight. Maintenance started flushing with firehose.
Will continue on next shift. There is

a question as to whether we are flushing the right line to the man hole or not.

6-12-47 Phosphorus
12-8
SJR~HTR

1) P-49B, P-3 evaporating to dryness
2) P-50, P-3 " " "
3) Column regenerated. P-50, R-1 sampled.
4) P-51, P-1 still going thru stang reactor. All water (980 ml) has been added.
5) Made NaOH strike on P-51, F-2, 637 mc's. The ppt P-51A, F-2 is behind barricade dissolved in small amount HCl. The filtrate, P-51A, is ready for the stang reactor and is behind barricade.
6) The air activity was high again (N. Hot Lab.) tonight 2.4 $\times 10^{-10}$ After thoroughly hosing down and scrubbing the floor in N. Hot Lab. and cleaning all empty glassware, the count dropped somewhat, 1.1×10^{-10}.

Ba^{140} Run Status

A-1 Batch G - Diluted. To be sampled.
A-5 MT
A-6 Neutralized waste
A-8 MT
A-9 Batch F settling cold until 12:45 P.M.
A-11 Batch E settling until time for Batch F.

Miscellaneous

1) Made H_2O_2 additions to B-6 and B-17 as per "instructions to shifts," and sampled B-6. 6/12/4 Grissel & King

2) Decontaminated some more lead shields and stored on east side Cell B.

3) W6 manhole line to diversion box is plugged solid at a point about six feet south of the fence surrounding the W6 manhole. A 125 lbs water pressure from firehose with spinner on end could not unplug line. The line will have to be dug out.

6-12-47 Blauer (Part time) (8-4) Perry

① Status of Run.

A1 - Floating removal of Batch H

A5 - Neutralized Batch E

A11 - Batch F settling till 7 38 P.M

A9 - Batch G Digesting till 4 30 P.M

Samples in lab 8 WMF

2 samples 6 WME #1 at 85 gals #2 at 101 gals.

② Phosphorus

(a) P-49B - P3 - adjusted to pH 7.8

(b) P-50 - P3 adjusted to pH 7.5

(c) P-51A - W-1 not sampled P-1 ppt in Stang R.

(d) P-52 - Just made NaOH strike -

(3) Put 2 pumps in Jan house

(4) Loaded 304 slugs -

(5)

6/12/47
Gissel & King
4-12

Phosphorous:

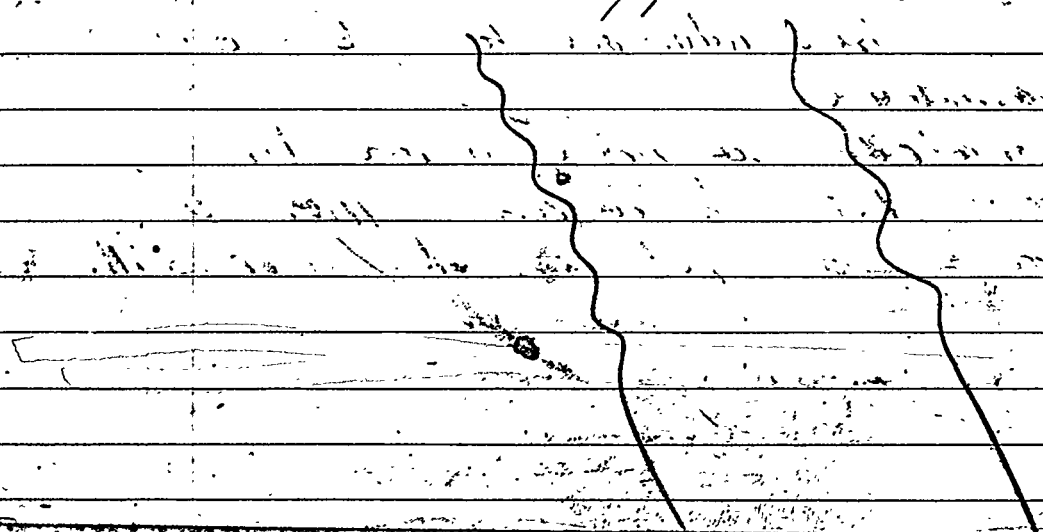
1. P51-P2 sampled & put on steam bath - no dead P added.
2. Column regenerating - P51-R1.
3. P51A-P1 awaiting Nalcite column.
4. Made NH_4OH strike on P52.
   P52-P1 now awaiting Nalcite column.

Status of Run:

A-1 - Batch H diluted & ready for A-9
A-9 - Batch G settling until 12 30 PM
A-11 - Batch F settling 'til 12 30 PM
A-5 - Carbonate batch.
A-6 - MT

Misc:

1. Made H_2O_2 additions to B-M & B-6.
   Sampled B-17 and B-6
2. Decontaminated slug carriers.
3. Decontaminated at lead.
4. Removed paper & washed floor of N. Hot lab.



6-13-47
S.J.R.-H.T.R.
12-8

6-13-47
8-4
WHP
+
WET

Phosphorus

1) P-51, P-3 evaporating to dryness
2) P-51A, P-2 " to 200 ml.
P-52, P-2 going through nalcite (#2) column. H_2O has been added.
3) Set up another Nalcite Column (#2) since there were two P-1's waiting on the column.
4) No 1 column has been regenerated.

Ba^{140} Run Status

A-1 Batch I waiting on A-9
A-5 MT
A-6 Neutralized waste
A-8 MT
A-9 Batch H settling cold until 11:50 A.M.
A-11 Batch G " until H is ready to go.

Miscellaneous

1) Made H_2O_2 additions to B-6 & B-17. Sampled B-6
2) Scrubbed and hosed down floor in north hot lab again. There are some hot spots on the floor still.

6/13/47
Grissel & King

6-13-47 Status of Run:
8-4 A-1 - T Dissolving
WHP A5 - MT
+ A6 - Neut. metal waste
WET A8 - MT
A9 - Batch I Settling hot until 6:43 PM.
A11 - Batch H " " 6:34 PM.

Rhos:
pH'd P51-P3 and sampled
P51A-P2 Evap. to dryness
P52-P2 " " 200 ml.

Misc -
B6 - 7:09 AM Sample ran 630 mg Pb. total
North hot lab floor is decontaminated to probe survey level. Upton sink lip cut from 4500 to 40 mr. It is ready for a recheck by HP. Iodine hood is still rather hot after 2 HNO_3 treatments.
Received about a dozen drums of 50% NaOH on E. platform.

6/13/47 Phosphorous:
Grissel & King
1. P52-P2 evaporating on steam bath; P51A-P2 (39 ml) was added to P52-P2.
2. Discarded P51A-W1 (13 ml), P52-W1 (13 ml), P51A-R1 (31 ml), P52-F2 (40 ml), and P50-F2 (130 ml).

Iodine:

1. Completed I-210; started I-211.

Run Status:

A-1 - Batch K diluted & sampled - waiting on A-9.
A-9 - Batch J ready for H_2SO_4 addition at 12 05 AM
A-11 - MT
A-5 - MT
A-6 - Batch H neutralized waste
A-8 - Batch I sampled & ready to jet to A-11.

Miscellaneous:

Added H_2O_2 to B-17 & B-6 as per instructions.
Sampled B-6.
Did further decontamination in N. Hot Lab; shielded iodine product receiver (beaker).

5/14/47
Blauer
12-8

① All periscopes are in place
② Sampled B6 + (B17 - B8) combination.
~~Replaced solution in B17 because tank was full~~ omit - Not done
Add H_2O_2 to B6 + B17
③ Added dead P to P52 P2 + P51A-P2 + transferred to 500 ml. flask
④ Combined P51 R1 + P50 W1 Called it P50-P51
Recovery. going through column #1
⑤ Regenerated column #2 - Not sampled.
⑥ Finished I-211 Started I-212
⑦ 8WMI - 596 C'S A.T
500 C'S S.T.
⑧ No analysis on 6WMH - Lab fouled up sample

6-14-
8-4
WP + WT

+ couldn't get analysis

(9) B6 for Pb - 798 mg. Total
B17 + B8 65 mg. total.

(10) A16 fan burned out. Cut off inlet valve + turned on emergency line to A4-205 system. Closed off all vents except to tanks we are now using.

(11) W6 Manhole ran 87,770 c/m/ml so was changed to go to W-8

(12) Make up room fan failed.

(13) Run Status
A1 - Batch K dissolved, diluted + sampled
A9 - Batch J settling cold till
A8 - MT
A11 - Heel of batch I
A6 - MT
A5 - Neutralized Metal waste

(14) Make up room fan kicked out - Blown fuse was replaced.

(15) Changed NH_3 cylinder.

6-14-47 Phosphorus:
8-4 P50-P51 Recovery - wash going through + column.
WP + WT
P52P2 + P51AP2 - Evap to Dryness.

Iodine:
Completed 212, 213 and started 214.

Status of Run:
A-1 Batch L Dissolving

A-5 Carbophosphate
A-6 MT
A-8 MT
A-11 Batch J settling until 5:05 PM
A-9 Batch K " " " 4:30 PM

Why did you change sch see other log???

PbO_2 Removal
Sampled B6 and B17 + B8 after one addition and then put in fresh solutions.
B6 - 1400 mg total
B17 - 140 mg total

6/14/47
Gissel & King
(4-12)

Phosphorous:
(1) Adjusted pH on P52 + 51A to 7.4
(2) P50-51 Recovery on Steam bath.

Run Status:
A-1 - MT
A-9 - Batch L - digesting Lvl 12:25
A-11 - Batch K - settling
A-8 - M-6
A-6 - Batch J - ready to be neutralized (already samp)
A-5 - Carbonate batch.

6/15/4
12-8
Pen

Misc:
1) Sampled B19 and B6 Twice during shift & added peroxide according to instructions.

8 WMR-112
GW MJ-6 LL.

2) Cleaned hot spots in N. Hot lab.
Note - A-4-205 valve off back of panel-board #1 until A-9 starts settling.
Iodine - Completed I-214 and I-215; started I-216.

A new sol was added to B6 by 8-4 shift. We sampled B6 twice taking particular precautions to keep sample free of lead (No top on carrier & sample covered with kleenex)
Results 1st sample 10 mg/L
2nd sample 8.5 mg/L.
12-8 sample sol & add H_2O_2
Do not change solution.

Iodine potentiometer was carried to 105 bldg. at 11 30 PM - it isn't working - he said check immed. after midnight & see if can fix ok quick.

6/15/47 12-8 Perry
(1) Added H_2O_2 to B-6 & B-17. Analysis from 9 00 P 6/14 sample - B-6 - 442 mg Pb. B-17 140 mg
Sampled again - B-6 - 820 mg B-17 70 mg.
(2) Made another dissolving per E.J.W.
(3) Completed I-216 & started I-217.
(4) Phosphorus.
(a) Discarded P-50 R-1. (24 ms)
(b) Sampled P-50-51 R-1.
(c) P-50-51 P-3 Evaporating to dryness 78 ms

(5) Status of run
(a) A-1 - Batch M dissolving
(b) A-9 - Batch L settling till 8 25/A
(c) A-11 - Batch K settling
(d) A-5 - Neutralized metal waste
(e) A-6 - MT.

6/15/
Gisse & Kin

Note A-4-205 is on A-1 now. When decantation starts valve behind PB-#1 will have to be closed for sufficient off gas.

6-15-47
8-4
WP + WT

Iodine
Finished 217, 218 and started 219

Phos:
P50-P51 P3 going to dryness on steam bath.

Status of Run:
A-1 - Batch M ready to go - 263 C S.T.
A-5 - —
A-6 - —
A-8 - H_2SO_4 and Water Washes.
A-11 - Batch L settling until 4 30 PM.
A-9 - 4th H_2O wash settling until 5 05 PM.

Misc:
Governor pulley assembly on steam engine at 205 ~~[illegible]~~ in shop being repaired. Blower was off. It is running OK now

B6 - (B17 + B8) were sampled - samples in lab.

6/15/47 Iodine -
Gisse & Kim
Completed run #219. Started evaporation of composite I-219-2AG. pH before evap adj to 7.1 to 7.5. Telephone inst from Wilkins they are to evap to approx 300 ml.

Phosphorous - P50-51-P3 pH adjusted to 7.4

Status of Run -
A-1 - MT
A-9 - Batch M settling cold till 3:45 AM.
A-8 - 8 WW (5 in. only - rest returned to A-9)
A-11 - MT
A-6 - Batch L - metal waste ready to be neutralized
A-5 - MT
Batch M + losses from K and L were returned to A-9 and another extraction made - as it looked as if we were going to run a little short (by inst. E. Wilkowski).

Misc: 1. Covered carrier (Ba) with absorbent paper.
2. Cleaned seven isotope carriers - have not been okd by H.P.

Below are the results of Pb samples from B6 over the last two days. This was the same solution.

(over)

6104

#1 — 10 mg/L.
#2 — 8.5 mg/L
#3 — 20 mg/L
#4 — 10 mg/L
#5 — 10 mg/L.

Conclusion: B6 hasn't any lead in it!

B17 needs another sample or two before a conclusion can be made
Results on same sol.
#1 23 mg/L
#2 30 mg/L
#3 24 mg/L.
#4 SNAFU (chemist is again!)

→ 12-8: Push anagalsis of 8WMM through the Lab when you take it to them (about 4:00). Suggest that two of them gang up on it and get the right answer the first time and in as short a time as possible — by 6:30 for E.J.W. anyway as he will call about that time for it,

6/16
12-8
Blaue
Perry

6-
8-
WP+U

6/16/47 (1) Iodine:
12-8 (a) Evaporated to 300 ml and sampled composit
Blauer (2) Cleaned up numerous hot spots in N hot lab.
Perry (3) Cleaned some Pb sheets and stored behind Cell B.
(4) Sampled B-17 for lead.
(5) Cleaned platinum line cone and plug and installed in carrier.
(6) Make up room fan kicked out at overload. Cause not determined.
(7) Run status
A-1 mt
A-11 Batch in settling
A-9 Heel from all extractions (30H 25% H_2SO_4)
A-8 mt
A-6 mt
A-5 mt.
8Wmm analysis gave poor check. Lab reports 119 C's on one check and 869 C's on another check. 25% H_2SO_4 rinse was held up for 2 hours for this result.
(8) Decontaminated 3 carriers and ready for H.P. [illegible]
(9) Cleaned up hot spots on floor in front of Cell A. Not down enough.
(10) 8WWA - 40 curies.

6-16 B-17 rinse - 153 mg Pb
8-4 100 ml H_2O transferred through
WP+WT glassware to B19 — final volume - 81 ml.
Cleaned B21R, put in spare crud filter

Status of Run

A-1 - heel of slugs.
A-5 - MT.
A-6 - 8WMM to be neutralized
A-8 - 8WWD - Sample in lab.
A-11 - 8WMM heel
A-9 - First K_2CO_3 solution settling until 6 15 PM
8WWC - 45c A.T.
8WWD - 299c S.T.

Phosphorus:
P53 Cl in N Hot Lab.
Fill all sulfur cans on 3rd level. There are two at entrance to decontamination Room which Ira would like to have delivered again.

The instrument dept has been asked to fix GM tube on Iodine set up. 6/17/4; 12-8 Blauer Perry

6/16/47 Status of Run
4-12 Grisse & King
A-1 - heel of slugs
A-5 - MT.
A-6 - 8WMM to be neutralized.
A-8 - 1st K_2CO_3 wash
2nd
A-9 - Settling after (K_2CO_3) metathesis.
A-11 - heel of Batch M & 8 W wash.
Note - lost approx. three runs because temp. recorder #7 (for tank A-9) was out of order.

Miscellaneous -

1.) Replaired low hoist (by maintenance).

2) Instrument man from 105 repaired (replaced battery) #7 temp recorder on Panel Board #2.

3) H_2SO_4 line from 1st floor to 3rd floor has a (tagged) leak just outside make-up room; please have it rep'd when a welder is on.

4). Filled 5 sulfur cans and carried them + two in decontamination room to 105 bldg; the two from decontamination room were returned because of buldging sides.

5) Decontaminated 7 isotope carriers.

Processed P53: P53-P1 is now going through column.
P53B (W1 reprocessed) is now ready for the Stang reactor.

6/17/47 12-8 Blauer Perry

(1) Status of run.
@ A-1 - heel of slugs
(b) A-5 : 33" carbo phosphate batch.
(c) A-6 - 28" batch m to be neutralized
(d) A-8 - 8" 8 w c w.
(e) A-9 - 4 liters - rinse to be sampled.
(f) A-11 - Heel of batch m + 8 w w.
(g) B-12 - 4350 ml. electrolysing til 10 25/A
Solution transfer to Cell B started at 5 45/A.
Cond filter plugged and finished transfer from B-26 to B-27 via by pass.

(2) Phosphorus:
(a) P-53-P2 on steam bath
(b) P-53-B P-2 on steam bath.
Neither column has been regenerated.
P-53 went thru. column #1 & P-53B column 2.
(3) Decontaminated 5 205 carriers,
(4) Some lead sheets left in decontaminating barrel in dec. room.

6/17/4
4-12
Gissel & King

6-17-47 Phosphorus:
8-4
WP+RP
P53-P2 } Evaporating on steam bath
P53B-P2 } Carrier added to both.
#1-P53-R1 } Columns being regenerated.
#2-P53B-R1 }

Status of Run:
8WC-104c and 8WCW-446c
A9 Rinse ran 9c

contents of B-1, B-3, B-6, B-10 was neutralized in A-5 & sent to W-11
553 gal of Neutralized waste in A-6. Hold for hot wastes from B-cell.

6/18/4
12-8
Blower & Kemp

6/17/47 Iodine - Started & completed I-220. Two more runs are to be made.

4-12 Gissel & King

Phosphorous -

P53-P2 } Evaporating on steam bath.
P53B-P2 } Both have carrier added.

Columns #1 & #2 regenerated.

P54 - All over N-Hot Lab. Flask blew up on high barricade & hit roof.

Status of run -

1) Run now evaporating to dryness in B-6.
2) B-12 - now contains 2nd nitric & peroxide rinse to remove lead; cannot be taken out until after run evaporated - no vacuum on pipettes.
3) B-3 contains 1st lead removal solution from B-12 (nitric & peroxide).

Spots are reading over 10 R. See if you can give the whole place a good cleaning while you are at it."

6/18/47 12-8 Blaner & Perry

(1) Phosphorus
@ P53 - P-2 transferred to 500 ml flask
@ P-53B P-2 transferred to 500 ml flask

(2) N hot lab is still very hot. Cleaned up broken glassware and moved some phos. equipment and glassware to decontam room. Cut radiation from 6R/hr to about 500 mr/hr. All exposure time used ∴ no iodine was run

(3) Product soln of Ba^{140} is in B-19 ready for product evaporation. Run went through glassware this shift.

(4) Cleaned more lead sheets in decontam. room and stored.

(5) Changed oil in the steam engine. 6-18-

(6) Air counts in N hot lab above tolerance 4-12

to 2:30 A.M. S.J.R.-H.

Note: Precipitron above N hot lab gives higher reading than in N hot lab. Please investigate to see if hood has leak on exit side of fan.

Thank God this run is over

6-18-47 Iodine:

8-4 Started Run # 221. Oxalic is added.

WHP First heel dissolving, full batch.

Run:

Loaded and out at 4:00 PM

Skyshine:

22R - 50 Scales

20R - 25 " @ 9 hr.

21.5R - 100 "

Misc:

N. hot lab is about all decontaminated. A few hot spots are left. 6-19-

The two P53 runs are still on steam bath. 12-8

H. Blan

J. Pe

There were no 3:00 PM tank farm

samples taken and no 3 OPM inventory.

6-18-47 Iodine
4-12 1) Completed iodine run 221.
S.J.R.-H.T.R. 2) Started run 222.

Phosphorus
1) Continued decontamination process.
2) Began setting up new equipment.
3) Run 55 in N. hot lab.

Miscellaneous
1) Transferred HCl-Ether waste to B-17 and sampled. Carrier at south entrance.
2) Rinsed all tanks in Cell B and transferred HCl-Ether waste into carrier.
3) B-24 should be rinsed again. Start
4) rinsing out Cell B tanks and glassware.
4) A8, A9 and A11 were rinsed and combined with neutralized waste in A5 and A6.
5) Lines at Jet A-11 ~ A6D reading 50 mr-hr.

6-19-47 ① All glassware + B 2 + rinsed.
12-8 ② All periscopes except the scope near the cubicles removed.
H. Blaum
J. Perry ③ While rinsing glassware we noticed oily globules on 20 T. Could this material have

been what was plugging the disks?

(4) All Cell A + Cell B vessels rinsed completely. 6-19-

(5) Decontaminated some lead sheets + brick. S.J.R.-1

(6) A1 - 2nd heel dissolving 4-12

A5 - Neutralized metal waste + Cell B washings.

(7) Iodine - completed run 222. Evaporated to approx. 200 ml. PH-7.3 Solu. addition funnel fell into cubicle.

(8) Cleaned more hot spots in N. hot lab.

(9) - Replaced chimney blocks + moved sky shine plate above hot lab.

(10) Phosphorous:

(a) P-53 - P-3 - Dissolved in H_2O & adjusted pH to 7.5

(b) P-53B - P-3 " " " " " " 7.6

(11) Tried to get hot jet line A11-A6D down by blowing jet 4 hours. Not much luck.

(c) P-55 - W-1 - sampled. Product ppt. is on the stang reactor.

(d) Completed setting up equipment for run

6-19-47 Phos: 6/20/

8-4 P55 - P-1 going through column: #1 H.B.

WHP + J. Per

WET Run: 12-8

Moved HCl - ether waste to garden Lab could not find sample - so no analysis.

Second heel dissolving still going on.

Iodine:

Runs 221 + 222 composite evaporated to Ca 125 ml and sampled.

6-19-47 Phosphorus

S.J.R.-H.T.R. 1) P-55, P-2 evaporating on steam bath. 437 mc

4-12 2) Regenerated nalcite column.

3) Discarded P-55, R-1 + F-2 with a total of 40 mc's.

Miscellaneous

1) A-1 contains H_2O rinse.

2) neutralized waste from 2nd heel dissolving jetting to A-6 to W-9.

3) Weighed up 55 50 gram samples of boron. (CaF_2BF_3). The total number of boron samples to be weighed are as follows:

137	50	gram	samples
400	10	"	"
100	5	"	"
50	1	"	"

shhhh!! Secret Stuff

6/20/47 ① Washed All remaining cell A vessels i.e. A1, A5, A6

H. Blauer + ② Started water through A16 fan, still going through

③ Replaced paper + cleaned all known hot spots in N hot lab.

J. Perry 12-8 ④ Steam fan was oiled this shift. Fan was shut down until next run.

⑤ Washed 8 isotope carriers. H.P. took smears.

⑥ Made up I run solutions. 18N H_2SO_4 in N. Hot lab to be poured into jug

⑦ Transferred P55 to 500 ml. flask. Going to dryness. Added dead P31

(8) Housekept 2nd + 3rd levels + part of 1st
(9) Weighed up 46-50 gm bottles of "Vitamin B"
There now remains
36-50 gm Samples
400-10 gm Samples
100-5 gm samples
50-1 gm samples to be done.

6-20-4
4-12
SJR-H

6/20/47
8-4
DAY & King

(1) Phosphorous - P55-P2 going to dryness.
(2) Maintenance removed fan house duct; we started decontaminating by spraying with hot water and jetting to W-11.
(3) Decontaminated tools in decontamination room.
(4) Continued running water thru A-16 fan to decontaminate. Washed down outside of fan with water & citric acid.
(5) Removed B20 and B21 drying tubes and sent to burial ground.
(6) Jet A-11 A5DB line reads 5R at strainer at SW corner of Cell A on 2nd level. Started steam thru the line slowly to try to decontaminate (still going thru).
(7) Iodine - brought down 4 Te samples at 3 30/R - are in carrier in Hot lab. Took rest of I-222 Composite A from evap equip & stored in isotope room lead safe.
(8) Please continue evaporation of special Phos sample in tube in N. Hot lab according to instructions

passed on to H.R. verbally.

6-20-47
4-12 Phosphorus
SJR-HTR 1) P-55, P-3 was taken up in 110 ml. H_2O and pH adjusted to 8.0.
2) Continued evaporation of special phosphorus sample (20 mc's) in tube in N. hot lab. Placed tube under partial vacuum and used heat lamp. Evaporation very slow.

Iodine
1) Completed run 223 and began run 224.
2) Repaired broken glass line at bottom of iodine storage flask & reassembled.

Miscellaneous
1) Continued running water through the A-16 fan to decontaminate.
2) Began decontaminating A duct using hot water & directing it into duct from window second level. Jetted AD-W-11. Could not run hot water continuously because of increased air activity and also temperature of solution for jetting. Air count at 9 P.M. 3rd level was 5.2×10^{10}.
3) Note: Valve at bottom of iodine storage flask is open when red marks line up. Wheel was not replaced on valve stem because

this would increase chances of another breakage.

4) Obtained six more P-3 samples for checks. Weighed up 39 samples 10 grams each of "that secret stuff."
Those remaining to be done are:

36	50 gram	samples
361	10 "	"
100	5 "	"
50	1 "	"

5) Steam is still going through jet A11-A5DB to decontaminate. Reading dropped from 5 R. to 2.7 R. at strainer during shift. S.W. corner Cell A, 2nd level.

6) Cell A duct was reading 16 R. over center at 7:30 P.M. and is now reading 14 R. Sprayed almost continuously entire shift. Alternate hot and cold water.

6-21-47 1 Turned off A11-A5DB Jet.
12-8 2 Hosed down A Duct with cold water.
3 The precipitron test that was run in the M. Hot Lab was 1.0×10^{-10}.
4 The micronax on third floor that is connected with the fan house is going up. Look readings in fan house and it ran as high as 2500 mr/hr.
Thompson

5 We throttled the W8 to Settling Basin Jet back 3 turns.

6- Continued evaporation of special phosphorus sample (20 mc's) in tube in N. Hot lab. Refilled tube twice.

7. Washed A-16 fan motor twice with citric acid. Survey at 7[30] showed- motor - 1200 mr/hr
tray - 2200 mr/hr

8 Water was run through Cell A duct all shift. Duct opening survey at 7[30] showed - 10.0 r/hr

9. Put citric acid on hot spot under lead shielding by cubicles and left it to soak. Reading 150 mr/hr through lead

10- Weighed up 3 10.000 gm samples of "stuff."

Iodine
Completed run 224 and started run 225
Phosphorus
Continued evaporation of special sample.

11. DB at 1[00] 6/20 read 4524 c/m/ml, hence the throttling back of the W8-SB jet. The jet is now throttled back as far as possible without stopping completely. Increased raw water supply at 205 1/4 turn.

9/21/47 8-4 King

① All-A5DB jet line still hot (approx 2.5R) – turned on steam again. 4-12 6-21-

② Iodine –
Completed I-225, I-226; started I-227.

③ Phosphorous – special 20 mc tube in N. Hot Lab still evaporating.

④ Hosed down "A Duct" with carbonate & hot water alternately; hot water now on. Duct reads approx 10 R in center level with top.

⑤ A-16 fan & pan washed down – pan with HNO_3. Unstopped pan to W-11 drain & started water thru fan again.

⑥ Decontaminated hot spot on S-side of cubicles on lead floor; also lead sheets decontaminated & stacked behind Cell A.

⑦ Weighed up 25 - 10 gm. samples of "stuff".
There remains: 36 - 50 gm samples
333 - 10 " "
100 - 5 " "
50 - 1 " "

6/22/ Thompson

6-21-47 S.J.R.-H.T.R 4-12

Iodine
1) Completed run #227
2) Started & finished run 228.
3) Began Run #229.

Phosphorus
Special 20 mc tube in N. hot lab. still evap.

Miscellaneous
1) Hosed down A Duct with carbonate from M-1 and followed with two carboys 60%.

4-12 Cont'd

6-21-47 HNO_3; more carbonate; and water.
Reading dropped from 10 R. to 3.4 R
2) Lemons' wife called in. He is sick.
3) Samples of "stuff" to be done:
333 - 10 gram samples
100 - 5 " "
50 - 1 " "
4) Transferred 490 ml. iodine from storage flask to evaporator. Continue evaporation to 245 ml.
5) Turned off steam on jet All-ASDB because of high air activity, since Cell A has no vacuum. Trap reading 2.3 R. @ 1".
6) All P^{32} solution, special 20 mc tube, was added and evaporated to dryness. The flask was rinsed twice and added to tube - now evaporating.

6/22/47 Iodine
Completed run # 229
Thompson Started run # 230
Phosphorus
Special 20 mc tube now dry, left under lights to discourage absorption of H_2O.
1. Decontaminated isotope carriers and got HP to smear them.
2. Decontaminated sample carriers and put them away.
3. Ran carbonate solution through Cell A Duct followed by water (Ran all shift)

Reading on A duct at 7^{30}A was 2.2 R.

6/22/47
8-4
King

① Iodine - Completed I-230 and I-231.
Transferred approx 450 ml. iodine from storage flask to evaporator. Continued evaporation; volume now approx 500 ml.

② Phosphorous - special 20 mc. tube still in N. Hot Lab under heat lights.

③ Hosed down A Duct with 60% HNO_3 (3 carboys) and carbonate and water alternately. Radiation approx. 800-900 mr/hr at center at 3^{30} PM.

④ Washed A-16 down & ran more water thru fan. HP reads 1 to 3 R at various points, yet

⑤ Removed paper & washed floor of N. Hot Lab.

6/23
12-8
Thomps

6/23
8-4
King & DAY

6-22-47
4-12
SJR~HTR

Iodine - evaporated to 350 ml. and sampled. pH was 8.5

Phosphorus - the 20 mc tube under heat lamp. Reading > 10 R.

Miscellaneous -

1) Hosed down A duct with water, nitric and caustic alternately. Now reading 400 mr/hr. Do not use any more nitric in A duct. Water going now.

4-12 shift, Cont'd.

2) Steamed trap in jet line A11-A5DB several five minute periods during shift. CP reading dropped from 2.4 R to 2.15 R.

3) Weighed up 60 - 10 gram samples of "stuff". There remains:

273 - 10 gram samples
100 - 5 " "
50 - 1 " "

6/23
12-8
Thompson

General cleanup and decontamination.

① Maintenance removed rest of duct (cell) and started cutting away concrete.

6/23/17
8-4
King & DAY

② Shielded A-16 fan so that field coils of motor could be removed with least radiation.

③ Decontaminated iodine cock on bottom of draw-off flask and two stopcocks below. Reattached tygon extension to draw-off valve.

④ Set-up sulfur can apparatus (for filling cans) in S. Hot Lab hood for photographer come tomorrow.

⑤ Decontaminated valve handles to B26-B25 and B25-B27.

⑥ Europium Filtration - please turn off vacuum when all the solution in funnels is filtered. Pour filtrate into large tank on table with solution in it. Discard ppt. and wash funnels. Thanks.

⑦ P32 tubes - Continue evaporating solution in tubes as lined up with H.R.

6-23-47 Europium - turned off vacuum, discarded 6/24
4-12 precipitate, and poured filtrate into 12-8
S.I.R.-H.T.R. large tank on table. Washed funnels. Thomps
Turned off vacuum on filtrate tank
and opened vent valve.

Polished one sulfur can and placed
in hood south hot lab for photographer.

Continued decontamination of A11-A5DB jet
line with steam on approx five
minutes several times during shift.
C.P. reading ~ 2.0 R. at contact.

Weighed up 50 - 10 gram samples of
boron. There remains to be done:
233 - 10 gram samples 6/24/47
100 - 5 " " 8-4
50 - 1 " " DAY & EX

Evaporated the first 20 mc tube of P^{32} to
dryness after having been washed with
HCl. The second 20 mc tube is now
evaporating under heat lamps N. hot lab.

Decontaminated hot spots on floor, first level.

Cleaned up shipping room.

6/24 1. Washed down sides of opening in duct
12-8 with 2 carboys HNO_3 and then hosed
Thompson it down. Radiation level did not de-
crease appreciably. 3R on lower right quadrant.
2. Decontaminated 7 carriers.
3. Jetted A11-A5DB 5 minutes at a time
several times during shift to decominate
filter -- H.P. reports 4.0 R at contact (1").
4. Continued evaporation of 20mc tube of P^{32}
5. Weighed 30 10 gm samples, leaving
193 10 gm samples
100 5 " "
50 1 " " yet to be done-

6/24/47 1. Started & completed I-232.
8-4 2. Continued evaporation of 20 mc tube of P^{32}
DAY 3. Shielded opening of A Duct with lead so
that form for concrete could be set.
Ex. 4. Received Ba carrier & started decontamination.
5. Removed old & put down new paper in N.Hot lab.
6. "Posed" for photographer.
7. Please continue evaporating the 20mc P^{32} in
the 2nd tube. ~~after all the solution from the~~
~~10 ml Erlenmeyer is evaporated~~ wash down sides
~~of tube with a small amount of HCl rinse flask~~
8. Europium Filtration: Allow solution in D-8
to settle until midnight. Will the 12-8
shift please filter according to instructions.

"A" Shift mail box

6/25
12-8
Thompson

6-24-47
A-12
S.J.R.-HTR

Iodine - made one iodine run #233. Product now evaporating. Continue evaporation to 50 ml.

Weighed up 30 10-gram samples of boron.
163 10-gram samples,
100 5 " ", and
50 1 " " yet to go.

All rinse solution has been added to the 20 mc. tube of P^{32}. Evaporate to dryness.

Continued decontamination process of Ba carrier. (Hot water)

6/25
8-4

Results of first & second floor smear survey attached hereto.

6/25/47
4-12
Perry

6/25 Iodine:
12-8 Evaporated solution to ca 50ml – left it
Thompson in beaker on the steam bath (Steam off)
Phosphorus: 20mc tube drying under light
Miscellaneous:
1- Decontaminated isotope carriers
2- Water still running through Ba carrier.
3. Air activity in No hot Lab just below mask level after iodine evaporation – came down when steam was turned off.

Europium: Filtered (very slowly, with no decanting possible) most of the sol'n in D-8. Filtrate blown up to D-9. Ppt. in stainless beaker wet down with wash sol'n.

6/25 ① Removed + discarded to burial ground the
8-4 crud filter + reactors from cells I, ~~III~~ + IV
② Water still running thru Ba carrier
③ Observed C^{14} operations in Cell 5, 205.
~~④ 14.~~
④ Recd phosphorous run #56.

6/25/47 (1) Europium Completed filtration & cleaned
4-12 up area some
Perry (2) Phosphorus – ⓐ Started Run 56. added P-55 W-1 to P-56-F-1.
ⓑ P-56. F-2 – first rinse going through crud filter
ⓒ P-56-F-1 – Sampled – now going through Stony reactor

(3) Washed cell I with water for a couple of hours.
(4) Made 2 HNO_3 rinses from B-26 to B-27 etc. as per # II in instruction log.

6/26/47 Phosphorus
12-8 P56 going thru nalcite column
Thompson P56-F-2 has been sampled
P56-W1 " " "

A16 fan motor is in the decontamination room.
Bench outside instrument room has been prepared for electricians to work on motor.

Washed Cell I with water all shift.
Water ran through Ba carrier all shift.

The 20mc P^{32} tube has been lowered on the stand and moved back against the barricade.

6/26/47 ① Put in new crud filter. Flow checked at
8-4 1 liter per minute.
Blauer ② Phosphorous -
ⓐ P56-P2 evaporating on steam bath; this run is to be made "carrier free" (inst. I. Whitney).
ⓑ Col #1 regenerating - P56-R1.
ⓒ P56B-F-1 heating to boiling on hot plate before NH_4OH ppt. 200 mg of La was added to this run instead of iron - Special Run.

6/26/4
4-12
Perm

6/27/
12-8
Thomp

(d) P56B-F2 ppt still on glass filter.
(3) Completed C^{14} run #BTE #2.

6/26/47 (1) Phosphorus —
4-12 (a) P-56 - P-2 Evaporating on Steam Bath.
Perry R-1 - Sampled.
(b) P-56B - Special run contains 200 mg La and a sample of La^{140} and Ba^{140} mixture. Analysis at each new step should be run for Ba^{140} and La^{140}. W-1 filtered through stang reactor clear and fast. P-1 now going through very slowly.
(c) Filled 2 Sulphur cans. Remaining can seems to be almost full. ??
(2) Spent most of shift working on Europium. Completed instructions for this shift.
(3) Replaced valve at M-11.
(4) Installed drying tubes at cubicles and installed liner for Cell IV.

6/27/47 Miscellaneous
12-8 1. Made up caustic, transferred to M-11.
Thompson 2. Washed down Cell I with 1 carboy 5% HNO_3 followed by water rinse. Radiation level still 4R 2" inside door, > 10R at ball joint.
3. Completed Europium La oxalate ppt. Cleaned out D-8 + funnels, threw away filtrate. PPt is in large battery

jar.

Phosphorus
1. P56-P2 going to dryness on steam bath.
2. P56B-P1 filtering very slowly through Stang reactor - about 400 ml has gone through in the last 8 hours (see 4-12 note (b) under phosphorus.)

6340

M-11 has not been sampled yet.

6-27-47 ① Replaced Reactors in Cells I + III.
8-4 Cell I reactor filters 1 liter in 3 min 45 sec
Cell III reactor filters 1 liter in 2 min 15 sec.
② Replaced Cell IV + Cell III liners
③ Sampled M11 - 44.5%
④. Replaced liners on Cell 3 and 4.
5.) Assisted on glass cubicles.
P^{32}: P56B-P2 - going through columns.
P56-P2 - going down on steam bath.

6/28/47
12-8
King

6/27/47 (1) Iodine
4-12 @ Made all pre-run preparations including
Perry all solution make-up: Procured 4 Te cans.
(b) Completed Run # 234 Took 5-20 ml cuts. No Iodine.
(2) Changed P-V gages at glassware control board.
(3) Left 500 ml water in B-20T & B-21T for 3 hours under 12# pressure. No noticeable change in volume.
(4) Electric fan motor at 205 stack burned out.

Betty were loosened and running O.K. now.
(5) Smeared lead apron in front of cubicles. Results attached.
(6) Run books for I^{131} are in DBW's office to be assembled if you have time
(7) Phosphorus R-1 discarded - 4.4 mc.
(a) P-56 - P-2 - Almost dry.
(b) P-56 -B- R-1 sampled
W-1 discarded
P-2 On steam bath.
(c) P-56 C - Contains P-56 B-F2 & P-56-W-1. going through Stang reactor
F-2 sampled.

6/28/47
8
12
King

(1) Phosphorous -
1. Adjusted pH to 1.6 on P56-P3.
2. P56B-P2 evaporating on steam bath.
3. P56C-P1 going thru Nalcite column.

(2) Iodine - started & completed I-235.
- assembled I^{131} run books left by DBW.

(3) Washed floor of N. Hot lab. H.P. checked with probe & smeared - is ok.
(4) Cleaned 3 isotope carriers.
(5) Cleaned up decontamination room; decontaminated tools there.
(6) Cleaned lead apron in front of cubicles - hasn't been rechecked by H.P.

(7) Added peroxide to B-6 and B-17 as per inst.

6/28/47
8-4
King

(1) Iodine – started & completed I-236
(2) Phosphorous –
1) P56B-P2 evaporating on steam bath.
2) P56C-P2 " " " "
3) Col. #1 regenerating - P56C-R1.

(3) H.P. smeared lead apron in front of cubicles – all smears low.
(4) Run books for the next run were put together; no corrections or additions have been made in them.
(5) Added peroxide to B-6 and to B-17 as per inst.
(6) Notified maintenance dept. of leaking propane valve (supply to 706 C&D) in front of C bldg.

6/29/
12-
W.Y.

6-29-4
8-4
SJR-HT

6/28/47 (1) Iodine
4-12
Perry
(a) Completed Run # 237 - Practically no Iodine. Te sample very light colored and was not very hot.
(b) Submitted sample sheets on the four-1 samples to lab. per DBW.
(2) Phosphorus –
(a) Combined P-56B (110 ml) with P-56C - 119 ml. Total 229 ml on steam bath.
(b) P-56C - R-1 sampled.
(3) Made up rest of caustic & submitted sample to lab.

(4) Elect. fan at 205 stack kicked out again. Maintenance replaced belt and lubricated. Running fine now

6/29/47 12-8. W.Y.G. ① Iodine no change from 4-12 as no chemist on & no results known.

② Phos. P56 B & C combined steel on steam bath.

③ Cleaned all carriers.

④ Replaced lamp near W-7.

⑤ Worked on P^{32} equipment in cell 5.

6-29-47 8-4 SJR-HTR

Iodine ~ 400 ml. with a pH of 7.3 was evaporated to 200 ml & sampled.

Phosphorus - transferred P-56B+C to 500 ml flask now evaporating on hot plate. (229 mc's)

Miscellaneous

1) Gathered up all tools and placed in desk, first floor.
2) Added H_2O_2 to B-6 & B-17 as per inst.
3) Decontaminated glass ware in north hot lab and brought reading down below tolerance in iodine hood and drain and sink. Replaced contaminated paper.

6/29/47 4-12 Perry

(1) Housekept 3rd floor especially around Europium equipment.
(2) Added H_2O_2 to B-6 & B-17
(3) Cleaned decontamination room.
(4) Weighed 51 - 10g samples of Boron
Leaves 112 10 gram samples
100 5 gram samples
50 1 gram samples to go.
(5) Iodine composite analyzed 365 mc.
(6) Phosphorus 56 B&C - On steam bath.
(7) Cleaned out glass equipment cabinet 1st floor

6/30/47 - 12-8 King

① Phosphorous -
Adjusted pH on P56 B+C to 7.4.
② Added peroxide to B-17 and to B-6.
③ Weighed 5 - 10 gm and 17 5 gm. samples of Boron.
Leaves 107 10 gm samples
~~183~~ 83 5 " "
50 1 " " to go.
④ Cleaned up (gathered) rubber overshoes and gloves around A dust & A-16 fan house and on tank farm at W-6 manhole and W-8.
⑤ Maintenance repaired leak in cold water valve of N. Hot Lab sink. Maintenance also started repairing valve, union leaks, etc., at panel boards - did not finish.
⑥ Replaced paper on floor of N. Hot Lab.

6/30/4; 8-4 Blaner

6/30 4-12 Perry

6/30/47 ① Took Pb samples of B6 + B17. B6 was 885
8-4 mg Tot. B17 - 275 mg total. Discarded B17
Blaser solution + replaced with new solution pulling
it from B17 to B8 to B17 etc. 4-12 Please sample both tanks
② Decontaminated outside of B-1 blister.
③ Decontaminated lead floor on 3rd level
and moved warm sulphur cans to decont.
room. Has not been resmeared yet.
④ Several remote control tongs have been
placed in the decont. room to be brought to a
sup. level for removal from the area if possible
Please try to clean them. A repair order has
been issued.
⑤ Started to decontaminate section of duct in
decontamination. Treat it gently + try to get
it to a working level so it can be used on
this new duct.

6/30/47 (1) Added H_2O_2 to B-6 & B-17 & Sampled.
4-12 (2) Weighed 50 - 1 gm samples of Boron
Perry Leaves 107 10 gm. samples
82 5 gm samples → Per I.B.W.
(3) Decontaminated section of duct to below 100 m/h
(4) I.B.W. called and requested that the steam
engine room at 205 stack be cleaned as soon as
it gets light in the morning.
(5) There are 2 full sulphur cans dated 6/26/47
Just outside decontamination room. Are these
defective?

7/1/47 12-8 King

① H.P. smeared lead on 3rd level - all smears were low.
② Weighed 22 - 5 gm samples of boron.
Leaves 107 10 gm samples
60 5 gm. " to go.
③ Pb samples taken on 4-12 shift show
B-6 = 7 mg/liter or 97 mg total
B-17 = 17 mg/liter or 93 mg total
Added peroxide to B-6 & B-17 as per inst.
④ Tongs in decontamination room were cleaned and then ok'd by H.P. to go to shop for repair.
⑤ Cleaned steam engine room at 205 Stack.
⑥ Repaired external leaks at panel boards 1&2 (valves, unions, pipples, etc.); repaired distilled water leak on 3rd level.

7/1/47 Blauer 8-4

① Checked all lines in cubicles for leaks.
② Changed solutions in B17 + B8. Sample B17 + B8 to 4-12
③ Cleaned hot spots in N. hot lab.
④ Started decontaminating hot strontium carrier brought in from garden. Please continue treating this. It is "HOT".
⑤ Delivered 2 sulphur cans to 105 bldg.
⑥ Made up solutions for run.
⑦ Changed main valve on 125# line to PB#2

7/1/47 Perry 4-12

(1) Weighed 59 5 gm. samples of Boron.
Leaves 107 10 gm samples to go. per I.B.a.
(2) Spent exposure time decontaminating Sr carrier.
(3) Sampled B-6 & B-17 & added H_2O_2.

7/2/ 12- King

7/2/ 8- BLAU

7/2/47 12-8 King

① Weighed 50 - 10 gm samples of boron.
Leaves 57 - 10 gm samples to go.
② Added peroxide to B-17 and B-6.
③ Continued treating Sr carrier with citric acid, hot and cold water.
④ Cleaned tongs in decontamination room; H.P. checked and ok'd tongs to go to shop.

7/2/47 8-4 BLAUER

① P57 - Filtering F1 in N hot lab behind high barricade. Note that the F-1 is milky + should be refiltered through another disc before going on with process so that stang reactor won't be plugged. This is a sulphur precipitate
② Keep working on Strontium carrier in decont. room. The bottom still reads 7400 mr/hr.

7/2/47 (4-12)

Switches to flood lights in cell-B were found on about 4 ~~40~~ 47. One bulb was already burned out and the other one probably is now. Didn't check to see. No shift check had been made since 4-12 shift 7-1-47.

7/2/47 1. Sr carrier has one spot marked with red chalk which reads 750 mr/hr otherwise it seems to be okay.
4-1V
Thompson 2. Decontaminated all isotope carriers on hand.
4. Weighed 7 10-gm samples – leaves 50.

Phosphorus.
P57 going through column #1.
P57-W1 + P57-P1 sampled.

Europium – settling overnight.

7/8.
4-1
Thom

7-3-47 ① Phosphorous –
12-8 P57-P2 evaporating on steam bath.
King Column #1 regenerating – P57-R-1
② Weighed 22-10 gm samples of boron – leaves 28-10gm samples.
③ Continued decontamination of Sr carrier. Hot spot at bottom now less than 100 mr/hr.
④ Washed floor of N. Hot lab and put down clean paper.
⑤ Activity on 2nd level in supv. office went up about 3 o'clock AM. Unable to determine cause. Activity down again at 6 AM.

July 4,
12-8
King

7-3-47 ① a) Discarded P57 W-1 70 mr/hr
8-4 b) Added dead P to P57-P-V 10,7 mg.
c) 150 ml rinse going through column for P57-R-1

7-4-
8-4
BLAU

② Set up Strontium equipment in hood on third floor. Be careful of this.
③ Bottom of strontium carrier read 10R. We dipped it in acid and brought it down to 3R. It is now steaming in the decontamination room.
④ Assisted in rearranging and storing the Europium equipment.

7/8. Phosphorus
4-12 P58 going through nalcite column.
Thompson P57 on steam bath.
Europium
Settling overnight
Sr carrier — still decontaminating bottom.
Filled 3 sulfur cans.

July 4, 47 ① Weighed 28-10 gm samples of boron.
12-8 King ② Phosphorus.
a) P57-P2 on steam bath.
b) P58-P2 on " ".
c) Column #1 regenerating - P58-R1
③ Continued decontamination of Sr carrier.
④ Maintenance spent radiation time working on A-16 motor.

7-4-47 ① Sent 3 sulphur cans to 105 BLDG.
8-4 ② Repaired leak on S. still & also mercoid switch on steam
BLAUER ③ Repaired leaks on T-7 values.
④ Made up Iodine solutions, checked equipment

cleaned some hot spots in N. hot lab. Te samples are under vault, run shuts are in Hot lab & there are 6 runs to make.

(5) St. carrier still hot in one area of bottom. We treated it roughly with acid & knocked it down somewhat.

(6) Adjusted PH on P57-P3 to 7.6. There was 1.7 mg P31 added to this run. Sample is in West hot lab in clean bottle. No chemist on this shift note the spot in bottom of the storage bottle. Looks like lots of silica. The rem is in the shipping room vault.

P58-P3 on steam bath. No carrier added as there was no analysis of P.2 available.

Discarded P56 BR-1 + P57-R-1

(7) Moved the "vitamin B" from shipping room to above the N hot lab.

(8) Just received info from 105 bldg that they had 1 sample of Te in vault up there which was removed from pile as of 5/30/47 — their number on can is 304-245. I suggest we run the sample + make 7 runs this week instead of 6. It must be fairly cool by now.

(9) Relamped 706-B bldg.

(10) Maintenance used all of their exposure time on A-116 fan. All that it lacks now is to have the bell housing tightened.

7-4-
4-1
Thom

1-4-47 Phosphorus:
4-12 P-58 on steam bath - evap to dryness.
Thompson Iodine:
After taking 12 cuts without getting any iodine from the distillate of run # 238, we cooled down the flask and added 25 g more oxalic acid. The next 6 cuts never got above 250 mr/hr (cutie pie); so we dumped run 238 down the sewer. Equipment ready for next run.
Europium:
Still settling. (Heated soln to boiling to coagulate) Sr carrier reading ca 1.5 R on hot spot after hot caustic treatment, scrubbing, and steaming. Carrier now soaking in HNO_3
Decontaminated 3 isotope carriers
General housekeeping work.

A-16 fan seems to be binding — the impeller scrapes when the motor is turned. 4-12 shift maintenance used their exposure time loosening stud bolts holding the motor down. They hope to release the binding on the impeller by shifting the motor to give more play. Instructions to 12-8 shift maintenance passed on by 4-12 shift foreman.

7-5-47 Phosphorus
12-8 P-58, P-3 evaporating to dryness on steam
Russell bath. No carrier added. Analysis of P-2
not available. No chemists.

Europium
Continued filtration.

Iodine
Started and completed run 239
Started run 240.

Strontium Carrier
Continued decontamination process. Reading
dropped from 1.5 R. to <70 mr/hr.

F16 fan is binding. The load is too much
for the motor. Electrical supply to motor
checked OK. Maintenance used their
exposure time locating and attempting
to correct the trouble. Maintenance foreman
Lewis is to contact Liggett, the millright who
installed the motor and who works 8-4 today.

Miscellaneous- defrosted and cleaned refrigerator.

7/5
4!
Thom

7-5-47 Iodine Completed run 240. Started run 241
8-4 Had to start concentrating the Iodine. No more room left in receiver
BLAUER Phosphorus. Added 15.9 mg. P to P5-8-P3 on steam
bath. Discarded P5-8-F2

Curvpuim Continued filtration

Replaced water valve to A10 jacket.

S. Still giving us trouble again. Watch it. Called Pressley on the A-16 fan. It has to be pulled out. Go ahead with it & decont. it when they remove it. Maint and all their apparatus cleaned up decont. room.

7/5/47 A-16 fan motor, shaft, impeller,
4-12 and housing completely disconnected
Thompson except for 62 stud bolts on the base. Have maintenance break the bolts with a hammer & chisel. Then lift the whole works out, bring it into the decontamination room for decontamination prior to replacing bearing. Electrician requests that during decontamination the motor be kept shielded to keep it from getting wet.

South still still not working. Steam reduction valve is on the blink. Steam cut down to a mere trickle to keep from building up too much pressure. Small (north) still was started up and seems to be working fine. Maintenance suggests that south still & steam reduction box be dismantled and taken to the shop on Monday for a general overhauling.

Phosphorus:

P58-P3 pH adjusted to 7.6 and stored in shipping room safe. 7-6-4 12-8 Russell

Iodine:

Completed run 241, started and completed run 242, started run 242. No more Te samples available from 105-

Europium: please continue the filtration in this manner: fill the funnel full to the lip, let it suck dry; stir the ppt in the funnel and fill half full of distilled H_2O, suck dry — then dump the ppt into the 4-liter beaker, scraping the glass disc clean, and start another funnel-full filtering.

Misc: 7/6/4 8-4 Perry

Cleaned up around Europium set-up (actually!), dismanteled tank D-9 and set it out on the east platform W5-W6. Jet turned on at 10:15 PM.

7-6-47 12-8 Russell

Iodine ~ Completed run 243 and began evaporating product. Evaporate product to 250 ml.

Europium ~ Continued filtration. Save ppt.

Phosphorus ~ Discarded P-58, R-1 containing 8 mc's. Discarded P-58, W-1 containing 20 mc's.

Miscellaneous ~ Cleaned up hot spots in north hot lab. and replaced paper on floor.

A16 fan ~ motor, shaft, impeller and housing disconnected. Maintenance used all their time (3 minutes). Suggest you have crane lift this equipment out and place on truck. Our overhead lift could be used to transfer from truck to decont. room thus reducing exposure of personnel.

7/6/47 8-4 Perry

(1) Europium ~ Didn't quite finish ~~Completed~~ filtration. Tank has considerable amount of ppt. left dried on the sides. Did not attempt to clean because we weren't sure if it is to be saved or not.

(2) Decontaminated carrier plugs and cones. Also sink in Isotope room. Plugs & cones still slightly hot.

(3) Iodine ~ Evaporated to approx 225 ml. and sampled. pH ~ 3.5.

(4) A-16 fan awaiting Riggers tomorrow morning.

6365

7/6 1. Completed Europium work; disassembled
4-12 apparatus, storing pipe fittings in fiberboard
Thompson container, and putting the three
tanks on the east platform.
2. Cleaned up the whole 3rd level. 7-7-47
4-12
Thompson

7-7-47 1) Cleaned up first level and north hot lab.
12-8 2) Gathered up all gloves and overshoes in and
Russell around building and placed in decont. room.
3) W-11 jet is not working properly
4) Stored away carrier plugs and cones.

Note to Rimshaw: Sr^{90} is on disc ready for removal with HCl-ether.

7/7/47 (1) Removed A-16 can to decontamination room.
8-4 Decontaminated and disassembled. Small parts
Blauer are in dilute HNO_3 in first barrel in decontam.
Perry room and large parts are in caustic make up
tank. Hull still needs some decontamination
(2) Removed lead sheets and brick from
A-16 duct and decontaminated.
(3) Cleaned out Europium tanks and stored
Europium glassware etc. in low storage.

Strontium

Start Run Sr #3. Use approximately 400
ml of solution from Vault #3 and evaporate down
in two shots on first evaporation. When removing

(6365)

Sr from Ba, use two shots of cold HCl-ether which will be found in chemists' ice-box. Follow hand-written procedure on third floor. Typewritten procedures will be ready tomorrow.

7-7-47 1) Decontaminated A-16 fan parts - readings
4-12 as follows: shaft hole - 750 mr/hr, surrounding
Thompson area all < 90 mr/hr -, impellers 750-1000 mr/hr
2) Tested #1 heater. With both rheostats set on 0 and using only the 4 switches on the top row, the heater went over 200° C. The thermostat was not kicking the heaters off as it should. The air was on - 25 cfm, and we noticed that the temperature started rising immediately when the heaters were turned on and rose rapidly, failing to kick off as it should have. This caused us to be afraid of burning out the heating elements; so we didn't leave the heaters on long.
3) Started Sr^{90} run and completed evaporation of 1 HCl-ether batch — started 2nd evaporation
4) To call maintenance, dial 6365 — (6142 is out of order.)

7-8-47: 1) Continued decontamination of A-16 fan and
12-8 parts using acid, steam and hot water.
Russell Reading now low enough for maintenance to make repairs. Shaft opening dropped to 70 mr/hr. Iron flange reading 350 mr-hr can be shielded. One impeller still reading 700 mr-hr is being steamed now.
2) Cleaned up decontamination room, hosed down loading platform and make up room. 7-8-4,
3) Strontium 90 ~ third HNO_3 wash filtering now. 4-12
The second wash required 2½ hrs. to filter thru. Thompso
The heavy ppt. read >10 R. thru flask.

7-8-47 (1) A16 fan decontaminated further, reassembled,
8-4 tested & moved back to A16 barricade. Please
Blaver have maintenance finish the job on shift. Don't
Perry forget gaskets.
(2) Slack jet is in barrel in decont. room. Please continue to decontaminate.
(3) Had to start up S. still to increase our water supply. Steam shut down tomorrow 6AM – 12 Noon. Watch the North still as it is not operating properly. It cuts off & won't start up.
(4) Electricians have wired in Thermostat on our air heaters to B19.
(5) Phosphorus – Observed extraction of P-59 on the hill. Ran P-59 through to sampling W-1. Ppt on stang filter.

Strontium

Re-lubricated Valve # 1 and put on a tighter spring. Unplugged dish by using 3-5 percent of ammonium bifluoride and filtering immediately. Run Sr # 3 is about to dryness on the final evaporation. Final product solutions on Run # 2, 3 and 4 are to be combined. Run sheets are on third floor.

→ Phosphorus – Run P-59 is to be carrier free.

7-8-47 PHOSPHORUS: P-59 going thru column.

4-12

Thompson STRONTIUM: Second HCl-ether distillation going to dryness, now baking for ½ hour.

MISCELLANEOUS: A16 fan motor installed – still needs to have bolts put in the flanges and tightened. Motor has been checked for direction of rotation – OK. Thermostat on # 1 heater is not working properly – it cut off the heaters at 65°C and we could not turn them back on even after several hours cooling. Decontaminated 205 jet – one spot still reads 1R on end of jet – the outside of the pipe flanges reads > 200mr. Maintenance replaced steam reduction valve on stills & now both of them are working.

7-9-47 Phosphorus ~ P-59, P-2 on steam bath.
12-8 Column now regenerating.
Russell Strontium ~ Completed Run 3 and combined final product with run 2.
Obtained 200 ml. HCl-ether waste from Ba run 11 for Sr run 4.
The second fuming nitric wash Strontium Run #4 is now filtering through.
A-16 fan ~ connected top flange. There remains three more bolts to be installed in back flange. Maintenance used all their working time.
205 Jet ~ underwent decontamination treatment, hot HNO_3 and steam all shift. The hottest spot reads 120 mr, a flange on T. This flange is now steaming, decont. room.

7-9-47 ① A16 FAN IS IN AND TESTED. VOLTAGE ON 440
8-4 LINE FROM TRANSFORMER IS TOO high + WILL be
Blauer CHANGED SLIGHTLY. A16 IS ON NOW
Perry ② STEAM OFF 8 AM ON AT 1:35 P.M
③ PLATE STUDS + PLATE INSTALLED ON FAN DUCT.
④ P32 -
Run 59 P2 on bath.
P59 - R-1 Sampled.
P59A P-1 going through column #2 (Rinse)
P60 - P-1 going through column #1.

7-9-47
4-12
King

(5) Check still operation once more.

Strontium

Replaced a heating lamp with a cone type electric heater. Distillations are much faster now, particularly near the end. Occasionally Valve #1 will stick on account of the strong spring on this valve. Just pull out a little on the valve to operate it.

Completed Run Sr #4 and continued with Runs Sr #2 and 3. Sample FP, Runs Sr #2, 3 and 4 is in the lab.

Still have to get a better carrier for the starting solution. Start Run #5, if possible.

Note: Please take all fuming nitric samples in glass-stoppered bottles. The nitric eats right through the plastic cap and ruins the sample for analysis purposes. You will have to get glass-stoppered bottles from the storeroom.

7-9-47 (1) Campbell & King made C^{14} run #BTE# 6.

4-12 King (2) Phosphorous -

1) P59-P2 and P59A-P2 on steam bath.

2) Col #2 regenerating - P59A-R1.

3) P60-P1 going thru column #1.

(3) Started pre-run check sheet on Ba equipment - see clipboard on supv. desk.

(4) Started boiling out A-9 with fuming HNO_3 - see clipboard on supv. desk.

(5) Changed NH_3 cylinder.

⑥ Distilled water stills above 3rd level seem to be working ok at 11 PM. 7-10-4

⑦ Maintenance started installing A-4-205 jet but did not complete. 8-4 Blaner Perry

7-10-47 1) Lemons and Russell made C^{14} run
12-8 BTE #7.
Russell 2) Continued pre run check sheet on Ba equipment ~ see check sheet on clip board
3) Completed boiling out A9 with fuming HNO_3 according to special instructions.
4) Obtained 200 ml. HCl-ether waste from Ba run #11 for strontium run #5
Solution evaporated ~~from flask 3, condensate passing to flask 1 at shift change~~ Product on dise.
5) Phosphorus -1) P-59, P-2 & P-59A, P-2 on steam bath were combined to make room for P-60, P-2 now on steam bath.
2) Regenerated #1 Column.
6) Completed the installation of jet A4-205 off gass system. Installed new valve on steam header to jet also.
7) All Cell A equipment has been checked and repairs needed noted on check sheet. All instruments should be checked.
8) Maintenance worked on automatic cut off valve south still, did not do any good.

7-10-47 ① Perry + Winn at Cell 5 on Phos. See below
8-4 ② Repaired S. still + set controls
Blauer + Perry ③ Repaired A1 - A9B jet.
A11 - L.L mano.
B1 - sparger bubblers
B6 - sparger bubblers
Air leak at PB #2
④ A9-B26 A+B were plugged. Unplugged A9-B2 B jet but not much luck on A9-B26 A.
⑤ Repaired + replaced valves + switches at W-H tank. Works O.K. Please observe carefully to detect any trouble before the run.
⑥ Phosphorous.
P60 - On steam bath
P59+59A on bath combined. This is a carrier free run.

⑦ Sent Pennington's pump back to 706-A
⑧ Phosphorus Run-61 Extracted and ran in cell 5. Now going thru column & evaporat Samples taken
⑨ Repaired T-6 NaOH tank manometer

Strontium

Completed Run Sr #5. Stored in calibrated bottle behind Lucite shield under hood on third floor.
Started Run Sr #1A using hot solution from Run 15 A. Ready for final evaporation of HCl-ether product solution from Flash #3. This run should

have a high percentage of Sr^{89} (55 day), and will be shipped at beginning of next week. Continue with it if you have time. 7-11-47 12-8 Russell

7/10/47 4-12 King

① Campbell & King made C^{14} run at cell #5.

② Phosphorous

1) P60-P2 on steam bath (500 ml flask)

2) P59+59A on " " (2 liter flask)

③ Panel board #6, heater #1 thermostat cuts out at 148°. Unable to "set" #1 Heater so that it will hold const. temperature of 142° — 4 heaters (bank) + variac at 100 is too low, but 5 heaters + variac at 0 is too high. #2 Heater adjusts to 142° by using 4 heaters (bank) + variac at 95, or by using 4 heaters (bank) + 1 heater + variac at 50 - 55. Not

④ Probed B 12 at 6 $\frac{30}{PM}$ = 8.8 inches on probe; turned water pressure (jacket) to 3 # at 6 $\frac{30}{PM}$.

⑤ Filled 3 sulfur cans and carried 6 full cans to ~~[illegible]~~ 105 bldg.

⑥ Drained A4-205 system and only got about 4 in. vacuum on empty A-1. Further system draining probably necessary.

C^{14} ~ Lemons and Russell made another
7-11-47 run carbon 14

12-8 Phosphorus
Russell P60, P-2 on steam bath 500 ml flask.
P59, 59A " " " 2 liter "

Strontium
Completed Sr^{90} Run 1A and stored final product in calibrated shipping bottle behind Lucite shield under hood, third level.

Note: The 11:00 P.M. (7-10-47) sample from the retention pond ran 1382 c/m/ml. A check sample 1:30 AM (7-11-47) ran 1251 c/m/ml. No increase in flow of solution into R.P. could be noted.

Ba Equipment
1) Began charging A set of batteries at 12:30 AM.
2) Probed B-12 after having three pounds water pressure on jacket for ~~eight~~ 12 hours. No change in liquid level.
3) Transfers into and out of B-8 movable pipette is very slow. Should be ~~[illegible]~~ Reed.
4) Pre run check has been completed except for ① B-9, B-11 pipettes; ② current flow to B-12; ~~& B-8 upper discharge to B-14.~~

7/11/47 Phosphorus: Completed run P60, pH
8-4 8.7 (a mistake). Combined P59-W1,
Thompson P60-W1, P59A-R1, + P60-R1 to make
P60A — now settling prior to filtration
of first product ppt.
Iodine: Made up solutions.

Miscellaneous: Al vacuum 9"
1) B-9-B-11 pipettes checked — okay.
2) B batteries started charging at
8 30 AM
3) B-12 current checked — okay.
4) Oiled slug carriers.
5) Maintenance inflated hoist tires
on both hoists to 60 #
6) Sampled $Pb(NO_3)_2$ + K_2CO_3 Resampled
analysis $Pb(NO_3)_2$ 21.7% K_2CO_3 30.4%
7) All-A5-DB jet is on (for decontamination)

7/12/
12-8
BLA

7/12
8-4
THOMPS

1/11/47
1-12
King

① Iodine -
Made run #244; started run #245
② Phosphorous -
P59+59A-P2 on steam bath.
P60A-P1 going thru column #1.
③ Lab reports K_2CO_3 solution conc = 41.02%.
④ Completed charging B batteries.

⑤ Removed strainer from A11-A5DB line. Dropped radiation from 1700 to 700 mr/hr. Strainer was torn & hot - put in hot can; it has not been replaced.

7/12/47 ① Relamped building
12-8 ② Completed run # 245 Started I # 246
BLAUER ③ P.H'd Run 59+59A carrier free. P.H 7.8 PPT. present: colorless solution
④ Maintenance installed strainer on A11-A5DB jt. Steam going through now
⑤ Maintenance finished bolting manhole cover + metal duct on cell vent system.
⑥ P60A on steam bath
⑦ Column is being regenerated

7/12 1.) Power off at 8:10 AM
8-4 2.) Turned on steam fan at 8:15 AM
THOMPSON 3.) Discontinued P^{32} + I^{131} runs.
4.) Power on at 11:55 AM
5.) Turned off steam fan + turned on electric fan
6.) Resumed operations on P^{32} ~~11XH~~
7.) Large fan left off — no water for bearings — maintenance has had filtered water off in 706D all shift.
8.) I^{131} stopped prior to oxalic addition because of the lack of cooling water for the condenser.
9.) Water on at 3:30 PM
10.) Duct fan on at 3:35 PM (over)

Phosphorus:
P60A evaporating to 200 ml
P60A-R1 sampled.

Iodine:
Oxalic acid being added. run I 247

Retention pond — 1100 c/min/ml at 11⁰⁰ AM
W-1 + W-2 drained to 1' each to make room for water seals from 105 at 2³⁰ PM.

7/12/77
4-12
King

① Phosphorous
P60A-P2 evaporating to 200 ml.
② Steaming line A11-A50B - very little help this shift - still reads approx 500 mr/hr.
③ Iodine -
Completed I-247 and 248.
Started evaporation of composite. 600 ml. of solution was let down into steam bath beaker; pH of solution at beginning of evaporation was 7.6.

7/13
8-4
WHP
Thomp

7/13/47 (1) Iodine -
12-8 (a) Started and completed I-249
Perry (b) Started I 250
(c) Started to run slug # 307-35 and solution addition funnel became tightly plugged as soon as can was emptied. Was necessary to take funnel out and turn upside down to unplug. Found a small glass capsule tightly wedged in. Called 105 and found it contained 1 mg Element 43 packed in graphite. Radiation was very low.

(2) Phosphorus -
Added carrier to P-60A-P-2 & transferred solution to 500 ml flask. On steam bath.

(3) Steamed A-11-A5DB all shift. H.P. read 850 mr/hr at beginning of shift and 420 mr/hr at end of shift.

7/13 1) Loaded 325 slugs. Please add 11# additional
8-4 60% HNO_3, 25# 35% NaOH, 5# additional H_2O.
WHP 2.) No 3rd samples were taken on
Thompson the tank farm.
3) Run books changed to take care of additions in 1).

(over)

Iodine: Completed 250 + 251, started ~~256~~ 252. Prepared H_2SO_4 + chromic acid solutions.

Phosphorus: P60A-P2 going to dryness. P60A-R1 has 260mc but with no time was available to process it.

4-12
7/13/47
Gissel & King

① Iodine – Completed 252; started 253.

② Phosphorous – took up P60A P-2 final ppt in P60-P3, which contained only 76 mc. Adjusted pH of P60 + P60A-P3 to 7.4.

③ Ba run #19
A-1 – Batch A diluted and sample circulating.
A-9 – MT

HP checked Ba slug carriers and they were returned to storage above Hot Labs.

④ Iodine evaporation – added 550 ml more solution to evaporation beaker (makes total of 1150 ml. unevaporated) and turned on steam to bath. pH was 7.6 after 550 ml. addition.

7/14/4
8-L
PENNINGTO
THOMPS

7/14/47 ① Maintenance repaired safety shower valve
BLAUER ② Iodine run # 253 COMPLETED + composite
PERRY evaporated to 433.2 ml.
③ Phosphorus — P61A-R-1 Completed & sampled
[12-8] ④ STATUS OF Ba RUN
1MA — Ag settling cold to 10:15 A.M.
1MB — Al — DILUTED + SAMPLED
⑤ ANALYSIS OF 1MA
385 c's A.T (646 slugs) dissolved
6 C's/slug
⑥ What is L.S.T. to be?
⑦ Washed down N hot lab & changed paper.

7/14/47 BA run:
8-4 Batch A settling till 4^30 p in A-11
PENNINGTON Batch B settling hot in A-9 till 4^00 p
THOMPSON Batch C diluted but not sampled.

Phosphorus:
P60B-F2 filtering — not sampled
P60B-P1 filtering in Stang reactor.
Iodine:
Filtered composite + stored in isotope room safe. EQUIPMENT WASHED 2 TIMES WITH H_2O.
8WMA — 56 curies @ LST
1MB — 244 c/ST, 62.9 SLUGS, 5.7 c/SLUG.

LST — 0800 7-21-47

7-14-47 ① Bar No Run:
4-12
Gissel & King

A-1 - 1st water wash sparging after coating removal.
A-9 - Batch C settling hot 'til 2 10 AM; then cold 'til 7 10 AM.
A-8 - MT
A-11 - Batch B settling 'til 3 45 AM
A-6 - 43" neutralized waste, ready for W-9.
A-5 - MT.

② Loaded 309 slugs.
③ Slug carriers were checked by H.P. and returned to storage above Hot Labs.
④ See Pressley's note in "Instructions to shifts" about Rupps iodine set-up on east side of cell A. 7/15 B-4
⑤ IMC = 261 ~~slugs~~ ej's S.T., 65 slugs.
⑥ Phosphorous - P60B-P1 going thru column #1.

7-15-47 ① Fan motor for make up room fan was
12-8 removed. It wouldn't pull the fan. Maintenance
BLAUER is looking for a replacement motor.
PERRY ② RUPP'S IODINE was run on Batch D dissolving. The valves are still open.
③ Due to a slight miscue we did not supply the lab with sufficient sample for a proper dilution on 6 WMB. So if the results are a little "screwy" the reason will be obvious. 7/15/
④ 8WMB + 246 C's at A.T. 4-12 Gissel & King
⑤ Cleaned N. hot lab.
⑥ Phosphorus -
P-60B-P2 on steam bath
P-60B-R1 Going thru columns.

Dissolved 19 D

(6). Did not start Batch F because we didn't know whether Rupp wanted more I on 8-4 shift. Schedule says start at 9 A.M.

(7) Batch C decant from A9 went very poorly with a lot of surging in A8. All instruments were bouncing up & down including A8 vacuum A8 L.L, A8 Sp Gr. & A9-A8 DA steam gauge. All lines were properly bled before decant started. We expect a high loss.

7/15 8-4 Phosphorus: P60-B going to 200 ml on steam bath. P60B-R1 going through column.

Ba run:

A5- batch C neutralized
A9- batch D settling cold until 5 P
A1- batch E diluted & sampled
BWMC - 49.8 at LST
IME - 236 c at ST 64.2 slugs 5.05 c/slug
Make up room fan motor replaced.

7/15/47 4-12 Gissel & King

Phosphorous - P60B-P2 going to dryness.
Col. #1 regenerated; P60B-R1 sampled.

Ba Run:

A-1 - Batch F dissolved, diluted, & sampled.
A-9 - Batch E settling.
A-11 - Batch D (plus) settling.
A-5 - Carbonate batch
A-6 - MT

Batch D decant from A-9 went very bad. All A-8 instruments were surging during entire decant; also A9-A8DA steam gage surged entire time. Decant was done in normal manner, i.e. header blown down, etc. Unable to explain steam surges - header pressure normal.

Iodine collection equipment was turned on during dissolving of Batch F; equipment was turned off at end of dissolving Batch F.

Adjusted A-6 sampler to take larger sample.

8WMD - 571 c's A.T.

7-16-47 12-8 Blauer + Perry

(1) We experienced the usual difficulty on our decant of Batch E. I am convinced that the A16 system has nothing to do with it because we got a surge in our A8 vacuum line from vacuum to pressure. This indicates a partially plugged line someplace throwing slugs of steam through. We had the A9-A8DA strainer removed + cleaned. It was very dirty. This may have contributed to the trouble. We couldn't check it since we took the strainer out after the decant was done.

(2) Cleaned hot spots in N. hot lab. + replaced paper

(3) 1 MF - 261 ~~[illegible]~~ c's S.T.
6 c's ~~[illegible]~~ /slug
45 c's ~~[illegible]~~ slug.

8 WME 328.6 A.T
249.4 S.T.

Did they dissolve 196 or wait until day shift?

7/16
8-
WH
Thomp

TC

7-16-4
4-12
Ramsh
Russel

(4) Phosphorus (At cell 5)
P-62A-P-1 going thru Nalcite column and into
P-62-P2 on steam bath. No dead P adde

7/16 Phosphorus (at cell 5)
8-4 Same as above.
WHP
Thompson Ba run.
1MG - @ ST 221, 59.3 slugs, 4.8 curies/slug
6WME - 9 curies @ ST
A9 - batch G digesting till 4:35 P
A 11 - settling until 8:30 P
A 1 - coating removal in process.

The caustic in M-11 is 44% - has not been diluted yet.

To: 12-8 shift on the dissolving of batch 1 turn on iodine setup for 2 hours after the dissolving temp. has been reached.

7-16-47
4-12 Phosphorus - Cell V
Rimshaw 1) P-62, 62A on steam bath.
Russell 2) Regenerated nalcite column.
Rinse now going through.

(over)

~~Cont'd~~

Ba Run

A1 Batch H diluted and sampled
A5 Carbonate
A6 Batch F waste sampled
A8 Batch G jetting into A-8
A9 Batch G jetting into A-8
A11 Batch F heel

7-17-47 12-8 Blauer Perry

(1) A9 Agitator sounds as though it has a bad bearing. It chatters occasionally - the Amperage has gone up slightly.

(2) 1MH 267.8 C'S
4.9 C'S/slug.
6WMF = 22.3 C'S S.T.
8WMG = 433.9 C'S S.T.
1MI = 227 C'S
4.4 C'S/slug

(3) Phosphorus (Cell 5) Dead Phosphorous added.
P-62-62A - P-2 Evaporating on steam bath
P-62-62A - P-1 analyses - 241 mc.
P-62A F-2 analyses - 187 mc.

(4) Sampled all dry wells in tank farm to find out where the high retention pond results are coming from.

(5) A1 — 1MI sampled
A5 - CO_3 PO_4
A6 - Batch G sampled & waiting for anal
A8 - MT
A11 - Batch G Heel
A9 - Batch H Settling cold till 10 1/2 A.M.

7/1
8-
Thomp

7-17-
4-12
Rimsh
&
Russe

7/17/47 Thosphorus: P62-P62A-P3 adjusted to
8-4 pH 7.5 (vol. 215ml) + stored in isotope safe.
Thompson P62-P62A-R-1 waiting to be reprocessed.
P62A-F2 discarded.
Barium run:
A1 - batch J diluted, not sampled.
A9 - settling hot until 4^00 PM
A11 - settling until 4^25 PM

8WMH analysis time 1218 c, 946 c @ ST
6WMG " " 36.7 c

7-17-47 Strontium
4-12 1) Obtained HCl-ether samples from
Rimshaw carriers, runs # 9, 10, 11, 12, 13, 14,
& Russell 15A, 16 and 17.
2) Began strontium run #6 using
700 ml. HCl-ether waste from Ba run 9.
Note: Do not disturb strontium run, hold
for 4-12 shift tomorrow.

Barium
A1 Batch K dissolving
A5 Carbo phosphate
A6 Batch H sampled.
A8 MT
A9 Batch J settling hot until 2:33 P.M.
A11 Batch I began settling at 10:25 A.M.

7-18-47 (1) We shielded the pit outside of 706-C with some
12-8 lead sheet. The radiation in the pit is 8 mr/hr after
Blauer dissolving was finished. If another dissolving is
Perry made please have H.P. recheck to see if sufficient
shielding was placed.

(2) Several jet lines have become exceedingly hot
Notice the roped off areas + tagged jets.

(3) 8WMI - 1174 C'S A.T. - 990 C'S - S.T.

(4) Repacked H.P. filter on P.B. #2
with glass wool.

(5) 6WMI - 18.5 C'S - S.T.

(6) Did not start Batch L dissolving. It
was not scheduled.

(7) Filled 2 Sulphur can & delivered to 105.

(8) Retention pond not drained. Check with
ACV as to disposition.

7-18-4
4-12
Rimsh
Russe

7/18/47 Ba^{140} Run
8-4
DAY & King

A-1 - Batch M dissolving
A-9 - Batch K settling 'til 5 50 PM.
A-11 - Batch L - waiting to go to A-9
A-5 - Carbo-phosphate batch.
A-6 - Batch J - to be neutralized.

Shut off steam engine at 205 stack
at 9 AM because of knock in bearing. See note
in "Instructions to Shifts" log.

Started cleaning up N. Hot Lab.

7-18-47 Strontium

4-12 Fuming nitric solution consisting of
Rimshaw strontium run #6 is in 4 liter bottle
Russell under hood on third level. Hold
for I.W.

Iodine

Began and completed iodine run 254.
~~Began iodine run 255.~~
Started run 255.

Barium

Note~ Do not jet batch M now in A-1 into A-9 until batch L has been decanted from A-11. Sweep A-11 with batch M.

Use one half batch of acid for dissolving in A1, batch N. Batch N, the stand-by, is to be decanted to a 2 inch heel using A9-A8DB.

Use A9-A8DB jet for batch M and decant to a 2" level.

E.J.W.~R

A-1 Batch M diluted and sampled
A5 MT
A6 Neut. waste, batch J
A9 Batch L settling cold until 4:00 Am
A 11 Batch K settling

7-19-47 Iodine -
12-8 COMPLETED 255 - STARTED 256
WHP. STATUS OF RUN -
A-1 : BATCH "M", DILUTED AND SAMPLED
A-5 : MT
A-6 : MT
A-8 : MT
A-9 : POT. FROM BATCHES "A - L".
A-11: BATCH "L" SETTLING UNTIL 10^{55} AM.

8WMJ - 1541 ST. 6WMJ - 13.5 ST.
8WMK - 208 ST. 6WMK - 15.4 ST.
1ML 221 ST 66.8 SLUGS 3.73 /SLUG
1MM 137 ST 59.2 SLUGS 2.62/SLUG
8WML - 174 + 149 (2 ANALYSES ST.)

7-19-4
4-12
Rimsh
Russe

Iodine - completed 256 and 257; started 258.

7/19/47
8-4
Gissel
&
King

Ba^140 Run:
A-1 - Batch N dissolving
A-9 - Batch M settling hot until 4^{10} PM; then sett. cold.
A-11 - MT
A-5 - MT
A-6 - Batch L ready to be neutralized.

Changed B-25 Crud filter; put in ~~glass~~ coarse filter from glass shop. WOVEN ETC.
The draw-off (or by-pass) from B-26 to B-27

is plugged; unable to break loose with pressure or vacuum. 1000 ml. hot HNO_3 added to B-26 with draw-off open and vacuum on B-27 in an attempt to unplug line. Vacuum left on B-27 at shift change.

7-19-47 Iodine

4-12 Rimshaw + Russell

1) Transferred 550 ml. iodine product solution to evaporating beaker and began evaporating. Steam now off.
2) Completed run 258
3) Started run 259

Strontium

Obtained 850 ml. HCl-ether waste from Ba Run 11 and began Strontium run 7. Do not operate.

Ba^{140} Run Status

A1 Batch N dissolving
A5 A8 Rinse
A6 MT
A8 First cake wash
A9 Second " " settling
A11 Batch M waste settling

7/20 I^{131} - Last run completed-
12-8 Composite evaporating to 375ml on
WHP steam bath — pH 7.5
WET

Ba run:
A-1 Batch N dissolving
A-6 Batch M waiting for analysis
A-8 Water washes — 28C — ST
A-9 1st carbonate wash
A-11 Batch M heel
A-5 CO_3PO_4

A9 settling til 8:55

Ba^{140} Run
7-20-47 A-1 - Batch N dissolving
8-4 A-9 - 1st water wash after metathesis.
Gissel & King A-8 - Metathesis waste
A-11 - Batch M heel.
A-5 - Carbophosphate batch.
A-6 - Batch M to be neutralized.

B-26 to B-27 bypass (draw-off) still plugged.
Emptied & washed B-26 & 27. Emptied B-12.
New filter (B-25) filters one liter in less than one minute.

Iodine - evaporated composite to 375 ml; pH = 9.1. Took 3 ml. sample and also special 20 ml. sample.

Cleaned N. Hot Lab.

7-20-47 Strontium

4-12 Completed strontium run #7 and stored
Rimshaw product in graduated shipping bottle in
Russell isotope shipping room.

Ba^{140} Run Status

1) Rinsed B26, B25, B27, B12 with HNO_3, followed with one liter distilled H_2O.
2) The A9-B26DB jet failed to pick up the solution. The A9-B26DA jet would not jet, so ~ blew down A9-B26DB jet with compressed air, and ~ she jetted. During this time 2200 ml. solution, mostly steam condensate, collected in B26, the analysis of which ran 161 curies. This solution was evaporated in B1 to a volume of 470 ml. The B1-B26 jet then failed to transfer the solution, so ~ later ~ it went over.
3) Electrolysis at 15 amps began at 11:40 P.M. Volume in B-12, 5300 ml.
4) The small amount of solution (500 ml) in B-27 is part of the final A-9 rinse.
5) Tanks A1, A5, A6, A8 and A11 are same as noted at end of 8-4 shift.

∴ A1 dissolving N

b) Lemon's wife called in ~ He is sick.

7-21-47 RUN STATUS
12-8 NO GAIN IN VOLUME
WHP B-12 - ELECTROLYZING UNTIL 9:40 AM - 25 AMPS.
B-27 - 500 ML OF A9 RINSE
B-1 - 4 LITER H_2O RINSE - 3.0 C/ST
A9 - 4 LITER H_2O RINSE - 33.3 C/ST
B8 - CLEANED WITH 3-6.5 L SHOTS OF 25% HNO_3 - 30% H_2O_2. WASHED WITH 7.0 L H_2O. #1 - 214 mg Pb. #2 - 314 mg Pb.
B6 - CLEANED WITH 2 4.2 L SHOTS OF 25% HNO_3 - 30% H_2O_2 - SECOND IS READY TO BE SAMPLED. #1 - 1800 MG. PB.
A5 - HAS BATCH OF CO_3-PO_4 TO RECEIVE WASHES FROM CELL B AND BATCH N, NOW IN A-1.

7-2
12
WH

8-4
7/21/47
D AY
Run Status -
Run is in B21 R; filtering after 1st fuming nitric addition.
Carrier on 3rd level covered with paper.
Cone in carrier & gasket on plug in carrier.
6 P samples show 1822 c's.

7-2
8
D

7-21-47 Ba^{140} Run Status
4-12 Product solution is in B-19. Heaters were turned on at 11:35 P.M.
Rimshaw & Russell

Phosphorus
150 ml. H_2O passed thru nalcite.

sick.

VOLUME
-25 AMPS.

T

T

OF
214 mg Pb.
314 mg Pb.

OF

o Be

ECEIVE
A-1.

1

er.

rs

B6 2 liters B6 rinse 6.8 109
B3 3 WFN 6.33 C.
B24 HCl-ether waste. Not sampled.

7-22-47 RUN STATUS:

12-8 WHP

1. FINISHED EVAPORATION @ 5:00 AM. TOOK 2 HOURS TO LOWER CONE INTO CARRIER. FINALLY HAD TO REMOVE CARRIER FROM CELL BECAUSE ONE SIDE WAS SITTING ON THE DOLLY GUIDES.

2. DID NOT TAKE SKYSHINE. 105 INSTRUMENT MAN COULDN'T GET INSTRUMENT TO FUNCTION, NO POWER ON IT. CARRIER IS UNDER THE PLUG.

3. ADDED THE OTHER HALF OF THE HNO_3 TO BATCH "N" IN A1 AND FINISHED DISSOLVING. IT IS DILUTED AND NOT SAMPLED. A5 HAS A BATCH OF CO_3-PO_4 READY FOR IT. WE FINISHED DISSOLVING IT BECAUSE THE UNH FROZE IN THE INSTRUMENT LINES ON THE 4-12 SHIFT.

7-22-47 8-4 DAY

① Bi Run has went.
② Sampled HCl-Ether waste & put in carrier. Carrier transferred to storage.
③ Shielded line at end of 706-C with more lead (W-11 line). Tried steaming W-11 line with A cell sump jet; also ran 1 carboy HNO_3 thru line to try decontaminating.
④ Washed out B-24.
⑤ Sampled HCl-ether waste.

7-22-47 Ba^{140} for I.B.W.
4-12
Rimshaw
Russell

The 50 ml. of H_2O rinse from B21R is now in carrier on third level. A 1 ml. sample of this rinse was obtained reading 78R through glass at 8" and placed behind lead shield in shipping room. This is very hot stuff.

Ba^{140} Clean up

1) Lead has been removed from B-12 and solution sampled.
2) All vessels in Cell A and Cell B have been rinsed with at least three water rinses except A-5 which has had two.
3) All lines and vessels in cubicles have been rinsed with three water rinses.
4) Hot solution was sent to W-9. Final rinses were sent to W-11.

7-23 General clean-up work, straightened up
12-8 acid storage area + stored empties from run.
Thompson

7-23-47 8-4 DAY & E.K.

① Reshielded (so could get to valve) W-11 line at end of C bldg. Reads 5R unshielded.
② General clean-up - inc. tool desk.
③ Started decontaminating periscopes so that repair work could be done on them.

7-23-47 4-12 BLAUER + PERRY

① Shut down A-16 fan + left all drains open on system.
② Cleaned up periscopes some more. Still working on the small scopes.
③ Made up housekeeping report. Please continue until it is finished + then pass on to higher supervision for necessary repair orders.
④ Repaired steam leak in low storage.
⑤ Continued Tank farm work as per A.C.V.'s instructions.
⑥ Steam engine at stack has been repaired. It had loose bushings around the wrist pin or sump'n like that. (Could it have been built by Mercedes Corp.?)
⑦ Relamped building.
⑧ Added 150 ml. rinse to P-64-P-1 going through column at Cell 5. No analysis on P-63-R-1 yet so column regeneration may have to wait for disposal of this solution when analysis comes through.

7/24/47 1) Completed shift items on HB's housekeeping
12-8 report. Pass report on to day supervision.
Thompson 2) Continued decontamination of periscopes.
Those in the instrument room & those
behind ACV's new isotope carrier table read
< 12 mr/hr & < 150 c/m on smears.
3) P64-P8 going to dryness
P63-R1 — 307 mc } left for W4G.
P64-W1 — 50.7 mc }

7-25-
12-
Thomp

7/24/47 1) Cleaned up phos. set-up in N. Hot Lab.
8-4 2) Campbell on phos. in Cell 5.
OAY 3) Put more shielding on W-11 line at east end
& of 706-C.
E.R. 4) WILL THE 4-12 AND 12-8 SHIFTS PLS. HAVE THE SHIFT
ELECTRICIANS REPLACE THE 2 WIRE CORDS WITH 3 WIRE CORDS ON
THE TWO LAB STIRRERS. THANKS - WHP.

7-25-
8-4
SJR & H

7/24/47 ① Fixed up H. Pennington's electric stirrers. They
4-12 are on top of filing cabinet.
BLAUER ② Finished Sr. Run #8. Product is in 200 ml
& PERRY bottle behind lucite in 3rd level hood. I hope!!!
③ Loaded 11 sulphur cans. One more to go & then send them to 105
④ Replaced water value in wash rooms
⑤ Phos. Cell 5 — Added 100 ml. H_3PO_4 Solution to
the P-3 flask. P-1 now going through column.
When finished add 150 ml H_2O rinse and lead
the rest for W4G.

⑥ Cleaned + stored Phosphorous vacuum pump in low storage. It is tagged as being slightly warm to the probe - not much reading on Geiger Pie

7-25-47 1. Added 150ml distilled H_2O to column
12-8 in cells.
Thompson 2. Filled 1 sulfur can.
3. Took 12 S cans to 105.
3. Set up equipment for processing Cb-Zr. in N hot lab.
4. Continued clean-up.
7-25-47 1.) B26 is unplugged. It is doubtful
8-4 whether this line was ever plugged. Both top
STR & HTR valves (drawoff at B26 to disk) should be open, and B26 disk to B27 valve should be closed when testing the drawoff. Area in front of cell of cubicle is hot. It is being scrubbed.
2.) Nitric acid storage tank in the make-up room has been emptied, rinsed and cleaned in preparation for Maintenance work. Do not use.
3.) Moved isotope shipping boxes from low storage Area and stored on north side of low storage Area.
4.) There will be ten iodine runs this week-end
Four samples obtained from 105.

7-25-47 (1) Iodine - threw away old samples.
4-12 Started and completed Run # 261 7-26
Blauer Started Run # 262 8-4
Perry (2) Steamed down B-11 pipette all shift. Foot valve is open. Russe
(3) Made up 20% carbonate solution in A-5 & A-6. Jetted out W-11 and added 300 # carbonate to W-11 tank. See note in tank farm log.
(4) Turned on A-16 fan and steamed A-11 - A9 all shift.
(5) Cleaned up hot spots on third floor and 2 carriers.
(6) Received isotope carrier that was refused for shipment in Knoxville because it reads 30 mr/hr thru the sides. On big table on first floor. Hold for I.B.W. Monday.
(7) Attempted to remove strainer on A-11-A-1 Jet line but used up exposure time before getting line open.
(8) Only 5 months until Christmas!! 7/26/
Kilroy was here!! 4-1
Blaue
Perry

7-26-47 ① Iodine - Completed 262 and 263; started 264.
12-8
King ② Steamed down B-11 pipette all shift - still hot.
③ Steamed jet A-11 to A-9 - little help.
④ Maintenance & oprs. spent exposure time removing strainers A-11-A-1, A11-A5A, and A11-A5DB. Parts for A11-A1 are decontaminated and placed on paper on 2nd level; parts for other two

are in citric acid in decontamination room.

7-26-47 Iodine

8-4 Completed Run 264. Started Run 265.
Russell Began the evaporation of 600 ml. I^{131} solution.

Strontium

Began strontium run #9 using 850 ml. HCl-ether waste from Ba run #11

Miscellaneous

1) Continued decontamination of B-11 pipette. Reading still high.
2) Parts for A11-ASA and A11-ASDB are now reading 25 R after citric acid treatment all shift. These parts are broken and damaged by decontaminating acids. Requested maintenance fabricate new parts for installation on day shift tomorrow.

7/26/47 (1) Iodine -
4-12 @ Completed 265 and 266, Began 267
Blauer ⓑ Continued evaporation of solution on steam bath
Perry (2) Phosphorus - Cells -
P-65 - P3 going thru column. Dead P (50 ml) added.

(3). Strontium Run #9 under 3rd level hood is stopped at point where the 2nd HCl-ether distillation is to begin. If you think you know how to run this equipment go ahead, if not let it go till 8-4 shift + H. Russell.

1/27/47 116 ① Sr - completed Sr #9.
12-8
King

② Iodine - completed 267 and 268.

③ Maintenance replaced strainers (three) that were removed from jet lines last night - spent all exposure time.

④ Phosphorous (Cell 5) - added 150 ml. wash to column behind P-3. Started regeneration of column - added 300 ml. 1:1 HCl.

7-27-47 Phosphorus - added 100 ml. H_2O rinse to column
8-4 completing P-65, R-1 and sampled.
Russell Transferred product solution in P-1 to column and ran into evaporator. H_2O rinse now going through column.

Iodine - began and completed iodine runs #269 Began 270, now ~~distilling~~ ready for distillation.

Miscellaneous

A11-ASDB jet is reading 25 mr-hr at P.B.
A11-A9 " " " 100 " e3" at P.B.
A11-A6D " " " 100 " e3" " P.B.
B11 reading 1250 mr-hr at strainer.
These lines have one pound of steam each for decontamination. The steam traps and lines on east wall second level read as much as 360 mr-hr.

7/28/
12-
Ki

7/27/47 (1) Iodine -
4-12 @ Completed 270
Perry @ Adjusted pH of composite to 7.6 and started evaporation at 1000 ml.
(c) Cleaned out equipment with acid and removed Te ladened Tygon. Cut background at the top from >400 mr/hr to <150 mr/hr. The tygon line between the trap and the manometer was not replaced. All exposure time had been used. Tygon cut. On table.

(2) Sr -
(a) Started Sr #10. Got last 50 ml from Ba #11 and rest of the bottle from Ba #12. Processed just over 500 mc. for the run and excess solution is in bottle behind Pb brick in the right hood. The second fuming nitric ppt. is dry on the filter disc at end of shift.

(3) Phosphorus
(a) P-3 is evaporating on steam bath. Almost dry.

(4) B-11 strainer now reading 1100 mr/hr

7/28/47 Iodine - composite evaporated to approx 500 ml, pH = 9.0, 5 ml sample taken. No 20 ml sample was taken - lab (and we) unable to find special bottle.
12-8 King
Sr - completed Sr #10.
Phosphorous - same as above; no change this shift.
Iodine - lab reported sample had ppt. in it. Filtered composite; submitted another sample.

7/28/47 BLAUER + RUSSELL

① Has ANYONE SEEN the SPARE IODINE SET-UP? There were 2 spares + we could only locate one.

② Decontaminated iodine distillation equipment and refilled traps, replaced all new tygon lines and installed ball-joint condenser and receiver.

③ Dunlap made extraction P^{32} Cell 5.

Cell 5 P^{32}. P66 now going through column. Check to see that evaporator doesn't over flow as there was a recovery run ahead of P66. (The volume may be to great).

Add 150 ml H_2O wash to column when dry.

Regenerate Column with 250 ml 1:1 HCl & 100 ml H_2O rinse. Hold other solutions for W.Y.G.

(*) Will 4-12 please continue the IODINE SET UP REPLACEMENT? Shield the new chamber in such manner as to prevent radiation from bottom collector stopcocks + cup from hitting the chamber.

4/ 7/28 Perry

7/29/ 12-2 King

7-29- 8-4 Russ

4-12

7/28/47 (1) Completed rework of iodine equipment.
Perry (2) Phosphorus - Added 150 ml. wash to the column. Column to be regenerated per note from last shift.
(3) Started Sr run # 11. Cleaned up the 3 mt HCl-ether waste bottles in the "garden".
(4) Filled 2 sulphur cans & delivered to 105.
(5) Decontaminated spot on floor behind PB # 3 reading 3000 mr/hr. Small spot still reads 250 mr/hr. Has a lead strip over it. Also cleaned up hot spots on third floor.

7/29/47 ① Completed Sr # 11; sampled also # 9 & # 10.
12-8 ② Phosphorous - added 250 ml. 1:1 HCl to column and followed with 100 ml. of water; the water is not going thru column - seems to be an air-pocket block.
King ③ Cleaned N. Hot Lab.

7-29-47 ?
8-4 Strontium - Began strontium run number 12 using 850 ml. HCl-ether waste from Ba^{140}, run number 12. → 1.77 mc/ml.
Russell

Received barium carrier from Y and began decontamination. Conc <200 mr-hr.
Blauer & Dunlap made P^{32} extraction in Cell 5.

(over)

Iodine - obtained three Te samples from 105 for three iodine runs to be run tonight.

Cleaned out weir boxes at settling basin.

Continue with the strontium run if you have time. The ppt. is exceptionally large, however carry it on thru and request spec. analysis. 7/30/47 12-8 King

7/29/47 4-12 Perry (1) Strontium - Completed and sampled run #12. Did not start another because the equipment was so crapped up.

(2) Iodine - (Run 271 took 5 cuts, Total volume 270 ml.) 7-30-4

(a) Completed run # 271 & started # 272. 8-4

(b) Notice changes in procedure Namely: Russe

(1) All rinses of addition funnel to be with 18 N H_2SO_4 instead of dist. water.

(2) Use 2 ml of NaOH in receiver instead of 1 ml.

(c) New G.M. tube works fine. Largest distillation took place at 134° C. otherwise nothing unusual. Range 108°-152°

(3) Continued decontamination of Ba carrier.

(d) Rinsed out funnel used to filter Iodine product solution with 50 ml. hot water & submitted sample to lab. Sample has No radiation reading. Rev. IBW

(e) Will day shift please procure a mirror for seeing what's going on in the iodine receiver? The one we swiped tonight belongs in 3 hot lab.

(4) Phosphorus - Run 67 going thru column.

Follow with 150 ml water rinse and regenerate according to Note 8-4 7/28/47.

7/30/47 Iodine — finished 272, started 273.

12-8 King Phosphorous — followed R-1 with 150 ml water rinse. Regenerated column with 250 ml. 1:1 HCl; followed by 100 ml. water R-1 not sampled.

Filled two sulfur cans with sulfur.

Decontaminated Ba carrier; surveyed by H.P. and stored carrier above N. Hot Lab.

7-30-47 Dunlap made another P^{32} extraction Cell 5.

8-4

Russell Iodine — Completed run 273. Total volume of product solution was 900 ml. The pH was 2.3. Adjusted pH to 7.7 with dilute NaOH. Did not air agitate. Took 3 ml. sample to determine total mc's. Began evaporation.

Note to Perry — mirrors have been requisitioned. First cut, Run 273, 70 ml. between 121° + 123°C read 80 mr-hr thru beaker + gave 2.5 division rise on G.M. Tube on the 10" scale. G.M. tube indication dropped back when iodine solution was removed. However, when the second cut came over, 123-128°C, 70 ml. 730 mr-hr. C.P. the G.M. rose 4.5 div.

Cont'd. 8-4 shift

122 but did not drop when the product solution was removed. And the GM tube indicator did not drop when the third cut 128-134°C, 70 ml. 700 mr-hr C.P. was removed from the receiver. The fourth 70 ml. cut 134-147°C. did likewise, 400 mr-hr. C.P. Fifth cut 35 ml. 146-151°C read 85 mr-hr. all at ½" vac. 7-30 4-12 Thomp

The entire equipment was thoroughly rinsed with water and the background on the G.M. remained at 13.5. The receiver was then rinsed with 1.5 N. HCl. The reading dropped to 10.5 div. The rinse was sampled for active Te and I. A second HCl rinse through the receiver dropped the reading to 8.5. Next, the dissolver, the condenser and the receiver was filled completely with HCl and allowed to stand one hour. The rinse was drained out sampled for Te & I and discarded. GM. Tube now reads 4.0 on 10" scale. 7-3 12-8 Kin

Analysis HCl Rinse 2.3 mcs

Strontium - cleaned the equipment for run 13. Use HCl-ether waste from Pa^{140} Run 12. Use 850 ml. HCl-e. waste if that amount is available. Analysis is 1.77 mc/ml.

7-30 1) In taking the HCl-ether sample for
4-12 Sr run # 13, we found only 200 ml
Thompson of HCl-ether waste left from Ba run
12. The other 3 HCl-ether waste bottles
had been cleaned by Perry on 7-28. We
left the 200 ml in the suction
flask behind the lead bricks in the
corner of the hood. (did not start run)

2) Put 150ml H_2O rinse through column in
cell 5. WYC requests that 12-8 shift
regenerate column + sample R-1

3) Cleaned up hot spots in front of hood
on 3rd level.

4) The RP is to be left draining (per ACV)

7-31 47 Iodine - evaporated #273 to approx 85 ml.,
12-8 pH = 9.4. Sample submitted to lab.
King Phosphorous - regenerated column with 250 ml.
1:1 HCl and 100 ml water. Sampled R-1
Cleaned N. Hot Lab & decontamination room.
Cleaned tool desk and oiled all tools.
Iodine - ppt. appeared in sample. Filtered composite
with filtered glass filter and submitted another
sample. Filter behind barricade in N. Hot Lab;
composite is in isotope room on desk.
On iodine equipment, cock between burette
flask and burette leaks thru handle end. Started
decontaminating equipment so could repair.

7-31-47 Strontium- cleaned the fourth HCl-ether waste
8-4 storage bottle in lead vault in garden.
Russell

Iodine - Removed all glass ware in lead cell and replaced with new ball joint glass ware. All four valves line up with present holes in lead vault except the valve between storage flask and burette. A new hole will be needed for this valve.
Note: Check with Ira in regard to the installation of (1) Evaporator beaker cover, (2) air motor for agitation.
Also run tygon water addition line from steam bath thru hole to distilled water line at hood.
Installation of valves has not been made.
An automatic jet type beaker will be ready tomorrow at glass shop for use in buffering our pH meter and is to be installed in vault, with proper addition line.

8/1/
12-
wy

8/1/
8-
Blan
Perry

7-31 1. Washed down + drained 205 stack.
4-12 2. Filtered + resampled Sr. run #12
Thompson 3. Decontaminated 10 isotope carriers.
4. Start using new tank farm forms on 12-8 shift (per ACV)
5. Maintenance worked on water fountain on 1st level — Don't think they helped it

much — it still leaks; but at least the leakage goes down the drain instead of onto the floor.
6. No work done on I^{131} equipment this shift.

8/1/47 12-8 wyS. ① Devoted the entire night cleaning up & removing glassware from P^{32} setup in cell 5. Ready for maint. To go to work installing new drains and a lining in cabinet.
② Maint has foot pedal on lower head drink fountain. Will return when completed.

8/1/47 8-4 Blaver Perry ① Signed for W. Y. Gissel's glassware. It is in the box in this office.
② Note that there is a quantity of Chromic acid + oxalic acid in the cupboard near the Iodine set up.
(3) Worked on Iodine lead cell. Connection of valves necessary before it is used.
(4) Prepared for Iodine runs for weekend. 4 Samples of Te are in the carrier. Caution = HP reading 600 mr/hr outside carrier
(5) Started inventory of secret documents.
(6) Blaver & Perry took tests at hospital.
(7) Iodine duplicate equipment is in bottom middle drawer of the big cabinet in SS. office

P^{32} Tube Filling.

Please continue filling the P^{32} Tube in Low Barricade N Hot Lab with the

solution in the 10 ml. ehrlenmeyer on the ledge barricade. Use the air sword to hasten evaporation and watch that too much heat isn't applied to bump the solution out. This isn't a priority job.

W.H.P.

8-1-47 1. Completed work on I^{131} equipment.

4-12 2. Decontaminated carriers

Thompson 3. Repacked valve + installed new valve flange gaskets on HNO_3 line in make-up room.

4. Completed I^{131} run 274, ~~started 275~~

5. HP checked all strainers prior to replacing them — see inclosed sheet.

6. RP outlet valve is to be left OPEN (per ACV)

8-2-47 Began and completed iodine run 275

12-8 Began iodine run 276.

Ira - Russell Lemons Ferguson Continued filling the P^{32} tube in north hot lab for evaporation.

Note on iodine procedure:

1) Add 4 ml. of .3 N. NaOH and 1 ml. of $NaHSO_3$ to the receiver before each 70 ml cut of product solution.

2) Take a 2 ml. sample of each cut and using indicator paper, check pH of each cut (touch sampling pipette to paper) and adjust to basic side before pulling up if necessary.

3) Take a 2 ml. sample each of #1 & #3.

8/2/
8-4
Perr

8-2-
4-1
Thomp

8-3-
12-8
Russe

8/2/47 (1) Iodine -
8-4 Completed Run # 276 & started Run 277
Perry There is one more Te slug at 105.
(2) Evaporated P^{32} soln per W.H.P. note 8/1/47 8-4.
Found it extremely difficult to get soln. to run to the bottom of the capillary tube.
(3) Tested B-20T with 1L. water and 15# pressure per H B - Installed new control valve on B-20T & this is ready to check now.
(4) Completed inventory of Secret documents in E.J.W's file. Will other shifts please list all secret documents available.
(5) Assembled run books for run #20. Page 14 sheets were insufficient. Need 3 more.
(6) Maintenance men busy all shift. Could not get to changing Jet line strainers.

8-2-47 1. Either cleaned or replaced strainers on all
4-12 jets except those listed on attached sheet.
Thompson Maintenance says they are out (now) of new strainers — who orders them?
2. Cleaned up around the building.
Iodine: completed run 277, started #278

8-3-47 Completed iodine run 278. Started 279
12-8 now distilling.
Russell Continued the evaporation of P^{32} in tube north hot lab.

8/3/47 (1) Iodine — Started evaporating composite pH-11.
8-4 Completed Run 279
Perry Started & completed Run 280
(2) Continued evaporation of P^{32} soln.
(3) Rebuilt valve to sump from HNO_3 tank in make up room. Replaced sump jet. 8-4-
Did not get to remove any strainers. 12-8
Thompson's list is still good. Russe
(4) Valve at 205 stack jet leaks badly & needs repair for safety.
(5) checked B20T for leaks per H.B. Seems O.K.
(6) Inventoried secret documents in IBW's file

8-3-47 1.) Maintenance completed checking of the
4-12 strainers EXCEPT THE FOLLOWING:
Thompson A9- B26A - 0mr/hr A9- B-12 - 0mr/hr
A9- B26B - 0mr/hr A9- B-1DD - 0mr/hr
All strainers at PB-5 (0mr/hr)
(?HR) Plug B-14 and plug B-11 (HP?)

Iodine: Completed run 281, started run 282

Special instructions from IBW: if the first cut on the distillate is ~~not~~ "hot", add 250 gm oxalic acid + 10 ml H_2SO_4 to the dissolver. If the first cut is okay, add the oxalic + H_2SO_4 after the second cut. There is one more Te sample to be brought down from 105. Be sure to record the Beckman

radiation reading. Use hole #4 on the Beckman. It will probably register on scale # 2. Okay?

8-4-47 1) Inventoried secret documents assigned H.T.R. and
12-8 S.J.R. and turned in list to Mr. Seals.
Russell 2) 105 did not have the tenth Te sample.
3) Completed iodine run 282.
4) Removed and cleaned all strainers at PB5, A9-B26A, A9-B12, A9-B10D, and the one at plug B14 in water line. A9-B26B does not have a strainer.
5) Cleaned up the north hot lab.
6) Continued evaporation of P32 north hot lab.
7) Iodine product solution now evaporating.
8) Began making preparations for the transfer of 1st-other waste from carrier to lead vaults in garden.

Note: Discontinue taking samples on all Strontium wastes in the future. The analyses on all Sr. wastes have been running consistently low and take up too much of the chemists' time. Please take entire Pie readings at the top of the heater before discarding Sr wastes.

SJR.

8/4/47 (1) Iodine - ~~Com~~ Started and completed Run 283.
8-4 Evaporation of composite continuing
Blauer (2) Started pre-run check sheet for Ba run 20.
Perry (3) Replaced strainer in A9-B26-B.
(4) Made up lead removal solution in B-6 and B-17. To be sampled on next several shifts and discarded if lead analysis become constant.
Do Not discard H.B.
(5) Painted Caustic tanks.
(6) Push Iodine evaporation as fast as possible. Volume reduction to 300 ml. Try to turn in sample in 4-12 shift today. Sample from evaporator. Do not drop the solution in the 1st flask to the evaporator!!!

Plugged Sets at P.B.

A-1-A 9 A	Repaired
A-1 A 11	Plugged at P.B.
A 9 A 8 DA	" " " 60# Pressure
A 9 A 8 DB	" " " Pressure comes up slow.

Please let the P^{32} tube continue to evaporate to dryness. Don't add anything else to it. The soln in the flask is wash water. Thanks - WHP

B-4
4-1
thom,

B-A-47 1) Made up 40% caustic soln & sampled.
4-12 2) Sampled $Pb(NO_3)_2$ + K_2CO_3.
thompson 3) Sampled B6 + B21 at 500 and 900 added ½ H_2O_2 each time.
4) Worked on pre-run check.
5) Poured up HNO_3 into M-4 + pumped some up to T-5
6) Bank A batteries charging until 12³⁰ AM
7) Cleaned out steam lines on the following: B3-B10A, B10-A5B, A9-ABDA, A9-ABDB
8) Pressure gauges on A9-ABDA and C20-B22 are not working properly.

Iodine: Evaporating to 300 ml. Please get the sample on this to the lab as soon as possible. The I^{131} solution now in the hold up flask is to be evaporated to 50 ml or less after this first part is out of the way. Do not combine. If necessary, filter the sample on the first composite. Day shift tomorrow will take care of filtering the composite.

Checked current flow to B-12

Batteries A	15-25 amps	2.6 -	3.05 volts
B	15-25 "	2.7	3.0 "

Suggest resampling $Pb(NO_3)_2$ because analysis showed 23.65%, which is 2% higher than

the same stuff was when sampled for the last run.

8-5-47 Iodine.

12-8 Russell

Evaporated product solution to 300 ml. and sampled. Was necessary to filter off green precipitate. Made two filtrations.

Ba Equipment

1) Began charging B set of batteries at 12:30 Pm.
2) Completed the pre run check and did the following maintenance:
   Unplugged steam jet A1-A11
   " " " B3-B10A
   " " " B10-A5B
3) Added H_2O_2 to B6 and B17 as per instructions to all shifts, & sampled.
4) Note some instruments are not working. See pre run check sheets.
5) New nuts are needed on worm threads on carrier slides, carrier A ~~and B.~~

Miscellaneous

1) Set up new equipment for transferring the next four Hcl-Ether wastes to lead vaults in garden.
2) Evaporated balance of iodine to 50 ml as per instructions.
3) Cleaned up, hosed down floor south side cell A, & make up room.

8-5-
Blau
Perr

8-5-47 ① Repaired leak in condenser of S. Still.
Blauer + ② Pb. results
Perry

B6 – .047 mg/ml 2190 mg total
– .073 mg/ml
– .01 mg/ml

B17 – .040 mg/ml 63 mg total
.030 mg/ml
.000

③ NaOH – 53.3% – butted down to 41.9% (Good enough)
(4) Replaced lead removal solution in B-6 & B-17.
(5) Replaced A-1 ~~A1-A~~ Jet line.
⑥ Repaired nut on slug carrier A.
⑦ Replaced glass wool in strainers to B-11 + B-9 pipettes.
⑧ Chafer aided Rimslavin transferring 4 Sr. samples in Sr. Cabin.
⑨ K_2CO_3 butted to 40.9%.
(10) Filtered I^{131} solution. Green color due to Cr. Started redistillation of composite in N hot lab. See I.B.W. for instructions for proceeding.
(11) The secret inventory has to be re-checked. The last one didn't include who the document is checked out to.
(12) Sample of $Pb(NO_3)_2$ in Lab.

Runs 13, 14, 15A and 16 were transferred from carrier to the lead vault in the garden on east side of 706 D. The carrier will be moved into the building tomorrow on day shift. Start processing Run 13, if you can.

SOR.

8-5-47 1. Assisted Whitney in redistilling the iodi-
4-12 2. Began security inventory on E.J.W's
Thompson file — started from scratch since Julia had locked up the old list in her desk.
3. Started Sr run #13 on 400 ml HCl-filter waste from Ba run #13. — Second 200 ml batch almost evaporated down.
4. General cleanup on tank farm.
5. Jet W6-5B off — not working. ACV notified.

8-6-47 1) Continued security inventory on E.J.W.'s
12-8 file. Just about completed top drawer.
Russell 2) Continued strontium run #13. Hot plate provided too much heat. Installed one heat lamp and found this was too much continuous heat with system under full vacuum. Re-evaporated 200 ml. HCl distillate because foaming in flask 3 ran product solution thru condenser, flask 2 to flask 1. HCl almost evaporated off.
3) During the electrical storm tonight, it was noted the emergency lights came on each time our lights were knocked, in about 15-20 seconds. That seems like a long time when you're expecting a Sr to go over any second! Will day shift see if this time can be shortened?

Note → 135

→ off at 9:30 PM

8-6-47 ① $Pb(NO_3)_2$ - 21.8%

3# water pressure

8:4 ② B-12 LL At start of 12 hr Jacket Test → .05

Blauer ③ Completed once more secret inventory

Perry ④ Vacuum pump oil leak repaired

⑤ All instruments repaired or checked

⑥ Replaced value on air-header blowdown PB.2

⑦ Repaired gauges on C-20-B-22, A9-A8DA jets

⑧ Work order issued to shorten time lapse on emergency light alternator. The reason for its apparant slowness is that it takes time to get gas through fuel pump to carburetor.

⑨ Cleaned up N. hot lab. Iodine storage cupboard.

⑩. Made up 4% Caustic

⑪. Discarded Iodine 1 and 3 samples. → Saved 2 samples for recovery

(12) Removed B-21 Reactor & prepared another.

(13) The Iodine - 2 sample composite was combined with I-283-C and rinse water. Solution is now on the steam bath in the Iodine cell. Evaporate to 50 ml. Transfer this solution to the distillation apparatus behind lead barricade.

⑭ - Counted Whiskey barrels behind tank farm. There are 169.

Finish up Run Sr #14 and discontinue making Strontium. Flash #3 has a crack in it. This equipment is to be decontaminated, taken down and brought over to the glass shop.

Note: On evaporations of starting solutions of Sr crack vent on Flash #3 if foaming is bad.

SJR

8-6-47
4-12
King

① Iodine evaporated to approx. 50 ml. and transferred to flask behind low barricade.
② B-12 L.L. checked at 9 30 PM = .05. OK.
③ Cleaned up Cell 5; decontaminated floor - checked ok. by H.P.
④ Completed Sr run #14. Washed equipment with several acid & water washes - still not clean. Removed cracked flask - still unable to clean.
⑤ Maintenance changed two steam valves on 205 stack steam engine. They report fan is ready to run, but should be checked hourly the first few hours to be sure okay.

8-7-47
12-8
Russell

1) Decontaminated strontium equipment. Suggest the #3 flask be replaced with a one liter flask. Glass ware behind glass is still reading high.
2) Defrosted and cleaned refrigerator.
3) Decontaminated ten carriers.
4) Removed hot can from 3rd level reading 1500 mr hr.
5) W-6 to W-8 jet is jetting very slowly!! Vallado, suggest you tag all new valves in tank farm area since frequent changes are made in valve arrangements.

8/7/47
4-12
King

8-7-47
8-4
Blauer
+
Perry

① Moved in 4 empty St. carriers. Please decontaminate. We need at least one sked for the run.
(2) Completed wall around duct [illegible] duct, wall, and steps to be painted.

(3) We washed cubicle 1 with water. Please continue if possible. Be careful not to break transfer vessel. Radiation brought down from 760R to 28R. A reactor will be replaced as soon as level gets low enough.

(4) Cleaned up the Iodine set up somewhat.

(5) Distilled several Iodine cuts. Composites are evaporating on steam bath behind low barricade. Evaporate to 60 ml. (marked) and submit sample to lab for complete analysis. Store in Isotope room.

Note on Strontium equipment:

Take down the Lucite shield. Remove and decontaminate the glass equipment so that the glass blower can take his measurements. Clean up and decontaminate the hood and s.s. pan. Store Strontium product runs in lead vault in shipping room. Put 10% NaO in traps.

8/7/47 4-12 King

(1) Evaporated I-283-2AC to approx 60 ml. & submitted sample to lab.

(2) Pumped water out of W-6 jet box so day shift could work on jets. Pump still set-up at W-6 in case it fills with water again.

(3) Cleaned up & decontaminated Sr hood & equipment (except for part of glassware) on 3rd level.

(4) Two Sr carriers were decontaminated, checked

by H.P. and stored above Hot Labs.

(5) Carried two filled sulfur cans to 105 Bldg.

8-8-47 1) Continued decontamination of strontium carriers
12-8 in decontamination room.
Russell 2) Decontaminated Cell I using spray of water 7 hours during shift. The reading dropped to 23.4 R.
3) Completed the decontamination of strontium glass ware.
4) Pumped water out of W6 jet box so maintenance could work on day shift.
5) Cleaned out floor drains around Cells third level. Two drains on south side are plugged, partially.
6) Readings in Cell I before spraying were
27.4 R at inner face in door.
48.0 R under hood.
Reading after 7 hrs. spraying are
17.4 R at inner face.
23.4 R under hood.

8-8-4
4-12
Kirk
1

8-8-47 1) H. BLAUER: W. STANLEY INFORMS US THAT THE LOW STEAM
8-4 LINE OVER THE DUCT STILE WILL BE MOVED MON. 8-11-47.
Thanks N.B. 2. Sp.G. manometer on M-11 plugged — EJW says to let it go — we did.
3. Disconnected L.L. manometer on T-6, removed flange & pipes to low storage, and supplied a calibrated dip stick for measuring L.L.

8-9-
12-
BLA

4. Sent two men to take the "intelligence test"
5. EJW gave instructions that Cell I decontamination is to be discontinued — the reactor will be replaced by remote control later.
6 Removed W-9 - W-10 jet and installed it in place of the W6-SB jet. W6-SB jet is in decontamination room.
7. Drying tubes will not be ready until Monday — crud filter is in the cabinet.
8 Brought back page 14 of the run sheet from the "ditto" office.

8-8-47 4-12 King

① Raymond Newton called in - wont be in tonight. His wife is sick.
② Completed I-284; started I-285.
③ Reconnected extension on solution addition value on iodine receiving flask.

8-9-47 12-8 BLAUER

① Completed I-285 ~~Started I~~ - 286
② Repaired leak in steam radiator condensate line N side of Cell B.
③ I believe that there is a power shutdown at 8 A.M. It may or may not affect the Iodine runs I don't know. Don't forget to start the steam fan.
④ Evaporating down the cuts of the 1st two runs.
⑤ The 2 St. carriers are clean but there is no storage space for them.

8/9/47 1) The mercoid switch on the building vacuum pumps needs to be replaced. Day shift electrician did not have time to do the job, Be sure to check about this, because those motors are quite hot. 8/10/4
8-4
Thompson
2) Removed carbay from 3rd level.

Iodine:
Completed run 286, started run 287 - now adding oxalic.

8-9-47 1) Maintenance repaired mercoid switch on vacuum pumps.
4-12
King
2) Iodine - completed I-287; started 288 - completed oxalic addition.
3) I. Whitney says lab will run all -1 and -3 iodine samples over week-end; also will run all -2 samples which read 30 mr/hr or more on 2 ml. sample. Other -2 samples will be checked on ionization chamber Monday. 8-10.
8-4
Thomp

8/10/47 (1) Iodine -

(a) - Completed I-288

(b) - Started I-289 Distilling at shift change

(2) Pre-run

(a) - Made up coating removal solution and put 1st half in A-1. max Vacuum A-1 is 10".

(b) Took ~~up~~ slug carriers to 105 at 6 %/H.

(c) Ammonia cylinder still has pressure, so did not change.

(d) Started steam engine and A-14 fan.

(e) Started automatic jet at W-11 but it doesn't work properly. It fails to cut off properly. Maintenance working on valve.

(f) The A11 manometer is broken. Instrument man on this shift cannot find a replacement. Requested that they borrow one from Cell 5 for the run.

8-10-47 Iodine: Completed run 289, started run
8-4 290.
Thompson

Barium:

1. Loaded 297 slugs
2. Drained A4-205 line + jetted pot at 3rd
3. Started 1st dissolving.
4. W-11 automatic jet working now.

Miscellaneous: Instrument man replaced A-11 Sp.G. manometer with one from cell 5. Also repaired stripped gear on monitron micromax.

8-10-47 4-12 King

Iodine – completed I-290 & 291. ~~started 292.~~
Checked pH of solution in evaporation = approx 9.5.

Phosphorous – P66, P67, and P68 are evaporating to dryness behind low barricade in N. Hot Lab.
1. Whitney instructs to leave phosphorous in dry state – he will process furthur tomorrow.

Barium –
A-1 – Batch B dissolving
A-9 – Batch A settling hot 'til 1:00 AM

8-11-47 12-8 Blauer Perry

(1). 1MA – 63 slugs 364 c's A.T.
5.78 c's/slug.
1MB – 61 slugs 336.7 c's AT.
5.5 c's/slug

(2) Iodine – Started & completed 292 – Started 293 – Composite evaporating. Looks very crappy.

(3) Phosphorus – Evaporated to dryness behind low barricade.

(4) Barium – (a) Don't forget to use A9–A8DB jet for decants.

(b) A1 — 1MC DISSOLVING
A9 — 1MB Digesting after H_2SO_4 addition. 8:30 A.M
A11 – 1MA SETTLING TILL 12:30 P.M

(c) The A11 manometer is not working.

(d) W-11 automatic jet does not work every time.

8-11- 8- Thom

8-11- 4-1 Kin

8-11-47 Ba run:
8-4
Thompson

1. Slug loading incomplete (9 loads in).
2. A-9 Batch B settling cold till 4 32 PM
3. A-11 " C ready for A9
4. No coating removal soln in A1 yet
   8WMA - 44.2 C

Iodine:

1. Completed run # 293, made up chromic acid + 18N H_2SO_4 - put new paper on floor.
2. Composite to be evaporated down to 500 ml — soln in hold-up flask to be added when evaporator capacity permits.

Misc:

1. A1-W11 jet seems partially plugged.
2. Blow down valve on pit jet leaks.
3. H_2SO_4 valve on the T3-T8 line leaks.
4. W6-5B jet okay now.
5. Automatic jet seems to be okay, too.

8-11-47
4-12
King

Ba Run:

Completed loading slugs (total of 295)
Status at end of shift:

A-1 - Batch D dissolving
A-9 - Batch C settling 'til 2 45 AM
A-11 - Batch B settling
A-5 - Carbophosphate batch
A-6 - MT

SWMB = 1.9 c's S.T.
1 MC = 214 c's S.T. ; 57.9 slugs
Slug carriers were checked by H.P. and returned to above N. Hot lab.

Batch D

Ran iodine equipment on Cell A1 for Rupp. Valves were closed 2 hrs ~~past~~ after peak of reaction.

Iodine - evaporated composite to 500 ml., pH = 9.5. Composite was filtered & sample submitted to lab. Composite (I-289-2AC) is still in suction flask behind low barricade in N. Hot Lab.

Phosphorous - P-67 going thru Hakite column behind high barricade in N. Hot Lab. When thru column 1) put effluent on steam bath, 2) add 500 ml. water to column; 3) when water is thru column add it to effluent previously put on steam bath. 4) Evaporate to dryness, 5) take up in water. (Instructions given verbally by I. Whitney).

Resampled Sr #10, Sr #11, Sr #12 for lab.
Moved caustic on platform to shelter.

8/12/47 (1) Phosphorus – P-67 Effluent on steam bath.
12-8 500 ml going through column.
Blavier (2) Barium
Perry A-1 – Batch E dissolved
A-9 – Batch D settling hot til 8 20 AM.
A-11 – Batch C settling.
(3) Sample of 40% NaOH in lab.
(4) Adjusted sample on A6 to deliver a larger sample
(5) 8 WMC 159.1 c's at S.T.

8/12/47 Ba run:
8-4 1. Batch F dissolving.
Thompson 2. Batch E digesting until 4 15
3. Batch D settling in All until 7 37
4. Made up 40% caustic & jetted to M-11. Analysis 43.5% (not adjusted)
5. Flushed 205 stack:

IME	203 c @ ST	4.5 c/slug	62.6 slug
IMD	243 c @ ST	5.1 c/slug	68.2 slug

8-12-47 (1) Phosphorous – evaporated P67X to dryness, took
4-12 up in water, adjusted pH to 7.3, & sampled for lab
King (2) Turned off Rupp's iodine equipment at 5 30 PM.
(3) Barium Run:
A-1 – Batch G dissolving
A-9 – Batch E settling til 12 15 AM.
A-11 – Batch F ready for A-9
A-5 – MT
A-6 – MT

④ M-11 caustic adjusted & analyzed 35.1%

⑤ 8WMD = 81 c's S.T.

6WMD = 11.2 c's S.T.

8/13/47 12-8 Blauer Perry

(1) Ba run -

A-1 - Batch G - Waiting for All - See (3) below -

A-9 - Batch F settling "til 11 07/Am

A-11 - Batch E

A-6 - MT

A-5 - Carbo phosphate

Loaded 76 slugs we think. 105 personnel think it was 78. 105 still has the transfer sheets on these slugs.

(2) Cleaned bricks and lead sheets from decontamination and housekept some.

(3) All-A6D wouldn't jet at 6 45/A. Batch should settle again for a couple of hours before trying to jet again. Might have been too hot (47°) Cooling water is on A-11. Slight amount went to A-4 before jet plugged.

Note: Please turn on I^{131} scrubber system as soon as dissolving get to peak reaction. Let run for one (1) and a half hours then turn off.

8-
8-
Thor

8-13-
4-1
Rims
Russo

8-13-47 1- Loaded 222 slugs — total 300 — and
8-4 stored carriers on balcony over hot labs.
Thompson

Ba run:
A1- coating removal batch H
A9- batch G settling hot until 5^00 PM
A11- batch F settling until 5^25 PM
Maintenance now working on A1-W11 jet which was plugged at PB
A6-A5 jet not working, so we are neutralizing in A6

8WMF 67 c @ ST (being rechecked)
6WMG 6.8 c @ ST

8-13-47 Ba Run
4-12 A-1 MT Acid weighed up in T-9
Rimshaw A-9 Batch H digesting
Russell A-11 " G settling until 4^22 PM
A-6 MT
A-5 MT

Phosphorus
Product solution going through column.
Follow with 150 ml. H_2O.

Miscellaneous
1) Repaired A1-W11 jet
2) A6-A5 jet is now OK

(over)

Cont'd:

3) Decontaminated carriers 8-14
4) Suggest day shift have mechanical check made on pick-up truck. Suspect bad clutch. 8-4 Thomp
5) ~~Continue evaporation of solution on steam bath to dryness.~~
5) Solution for I.B.W. in 250 ml. flask behind high barricade near column reading 275 mr/hr.
6) Air count going up somewhat at end of shift.
7) Watch the still. It kicks off.

8-14-47 12-8 Blauer Perry

(1) Had to close off gas to 706-C in order to get sufficient vacuum on A-1 8-14-
(2) Status ..... Iodine apparatus run on Batch I 4-12 Rimsh & Russel
A-1 - Batch J Dissolving
A-9 - Batch H settling cold 'til 8:35 A.M.
A-11 - Batch I ready for A-9
A-5 - Neutralized Batch G
A-6 - MT.
(3) Cleaned up N hot lab.
(4) Troubled with high air counts all night.
(5) IMI 67.3 slugs 5.5 c/o/slug
370 C's A.T. 286.8 C's S.T.
6WMG 75.5 C's A.T. 12 C's S.T.
8WMG 402 C's A.T. 308.2 C's S.T.
1MH 67.1 slugs 5.5 C's/slug
369.6 C's A.T. 283.0 C's S.T.
(6) Phosphorus - Added 150 ml. rinse to column. Did not regenerate.

8-14 Ba run:
8-4 A-1 batch K dissolving.
Thompson A-9 batch I settling until 7:10 PM
A-11 batch J waiting on A9
A-5 CO_3PO_4 A6 MW (sampled)
8WMH 196 C @ ST

* Turn on I^{131} scrubber system when dissolving gets to peak reaction. Let run from then on. Thanks.

8-14-47 1) Turned I^{131} scrubber on at 4:10 P.M.
4-12 2) Sent two carriers to 105 at 4:30 P.M.
Rimshaw 3) 1 MJ 350 curies A.T.
Russell 276 " S.T.
5.1 C/slug
4) Submitted special P^{32} sample to lab. for I.B.W.
5) 6 WMH 31 C/S.T.
6) Constant air monitor off scale at 8:30 P.M. N. hot lab and on 3rd level.
Precipitron check indicated 1/2 mask tolerance in N. hot lab. and about 1/5 mask " on 3rd level.
7) Loaded 155 slugs. into batch K.
8) 8WMI 48 C's S.T.
9) I^{131} scrubber was turned off at 6:10 P.M. pH soln in A-1 was 1.77
10) Automatic jet on W-11 is not working. We jetted manually. (over)

Continued

11) 255# NaOH weighed up in T-9 and
113# HNO_3 " " " T-8 for coating removal.

12) Loaned 105 a man for slug loading.

Run Status - Ba^{140}

A1 - Batch K diluted and sampled.
155 slugs has been added to this batch.

A9 - Batch J settling until 5:50 AM.

A11 - " I " " 1:50 A.M.

A8 - MT

A6 - MT

A5 - MT

8-15
8-
Kin

8/15/47 (1) 1MK - AT-397 C's ST-318 C's 62 slugs 6.4 C's/slug
12-8 (2) To Howard Russell and all others
Blauer interested. Attached is the result of investigation
Perry of our emergency lighting system operation. A 3 second lag is not sufficient to worry about particularly since we now have lots gooey lanterns in the building.

(3) To whom it concerns. The B21 reactor is not in yet. Don't forget it glassware should start monday.

(4) W-11 Jet control goes on + off intermittently. The trouble is electrical either in the switch or the value control.

8-15-
4-12
Rimsh
Russe

(5) Relamped the building.

(6) A-9 Agitator shaft is bad again. The noise is awful + amperage is up to 1.5.

(7) Cleaned carriers. They are ready to be smeared.

(8) A-1 - Batch L dissolving
A-9 - Batch K digesting
A-11 - Batch J Settling 'til 12:10 P.M. (SAMPLE IN LAB.)
A-5 - Carbo-phosphate
A-6 - MT. to be turned
Iodine apparatus off at 8 A.M. Started at 6:30 A.M.

(9) Phosphorus - Still going through column. Needs 150 ml. rinse when through.

8-15-47
8-4
King

① Turned off Rupp's iodine equipment at 8 A.M.
② Phosphorous - added 150 ml water wash to column.
③ Prepared Ba carrier & cone for cell.
④ Instrument man inspected G.E. tube.
⑤ Run Status:
A-1 - Batch M dissolving
A-9 - Batch J settling
A-11 - Batch L ready for A-9
A-5 - Carbophosphate batch.
A-6 - MT
⑥ Obtained #4Te samples from 105 bldg.
6 WMJ = 7.3 c's S.T.

8-15-47 1) Te sample Beckman reading, 4th hole,
4-12 4:04 P.M. 351-9 1.05 X1, 357-40 1.00X1,
Rimshaw 357-39 1.00 X1, 357-10 1.23X1
Russell 2) 1MM 67.3 slug 4 C/slug
267.5 S.T.

(over)

3) 8 WMK 117 C. 98.9 S.T.

Ba Run Status -
A1 Batch N dissolving
A9 " L settling cold until 3 AM.
A11 " M
A8 MT
A6 Batch K
A5 Carbo phosphate.

Made one iodine run #294
Analysis first cut, 40 mc's at time.

8/16/47
12-8 (1) There is a leak in the 3" line at the NW corner of
GISSEL the cell. The leak is right at the junction of the line & the steam blowdown line from the third level. PB # 4A. Maybe a welder can fix it on Day shift Saturday.

8-16
8-
Kir

(2) Changed NH_3 cylinder.

(3) Run Status.
A9 Batch M settling Hot
Fill 8.45

A11 — Batch L settle to 9.25
A1 Batch N Diluted & sampled.
M-1 Calco phosphate sol.
J. completed I - 294
Phos: P-71 going through column. Please add 150 ml H_2O wash. Then regenerate the column with 250 ml 1:1 HCl, follow with 150 ml H_2O. Sample & submit to lab. Turn off steam to bath when P-3 is at degrees & hold for wys.

8-16-47
8-4
King

① Iodine - completed run #295. Checked pH of solution in evaporation beaker = 9.0.
② Continued running hexone still (see tank farm log).
③ Phosphorous - P 71 is still going thru the column.
④ Maintenance repaired leak in 3" line at NW corner of cell - 2nd level.
⑤ Bd. Run Status:
A-1 - Batch N diluted & sampled.
A-9 - 10" heel after Batch M decant.
A-11 - Batch M settling til 5.50 PM
A-5 - MT
A-6 - MT
8WMM = 194 c's S.T.

8-16-47 1) Continued running hexone still.
4-12 2) Added 100 ml. rinse to nalcite column.
Rimshaw 3) Made one iodine run #296.
& Russell 4) Air count was high again tonight. Had to wear mask while making iodine run at times. Suspect stack gases falling back into building:

Ba Run Status
A-1 Heel dissolving
A-9 Batch N Settling Cold until 4:10AM
A-11 MT
A-8 MT
A-6 MT
A-5 Batch M waste neutralized

8-17 Phosphorus (cell 5)
12-8 1. P-3 is down to dryness — turned off steam.
Thompson 2. Added 250 ml 1:1 HCl to column (draining into R-1)

Iodine:
1. Completed run 296
2. Started evaporation

Ba^{140} run status:
A-1 heels IMO 206c @ST 4c/slug 57.3 slugs.
A5 CO_3PO_4
A6 MT
A8 25% H_2SO_4 & water washes from A9
A9 2nd water wash settling.
A11 Batch N settling until 10^{30}

8-17
8-
K.

The battery on truck # 83 is quite low (we had to push it off).
Hexone still is in operation.
By closing all north and east windows, we avoided EXCESSIVE air activity, although it is still somewhat high.
BWMN 307.6 c @ 5T

8-17-47
8-4
King

Phosphorous - added 150 ml. water to column; R-1 not sampled - not thru yet.
Iodine - made run I-297
Composite is evaporating; evaporate to approx 150 ml - inst. by I. Whitney.
Barium -
A-1 - 1MO - heels
A-9 - First K_2CO_3 treatment settling till 4 PM.
A-8 - H_2O & HNO_3 for K_2CO_3 waste.
A-11 - 3" heel of batch N.
A-5 - Neutralized waste
A-6 - MT
Iodine - redistilling iodine solution behind low barricade (Run # I-RED-2). 1st cut made. 2nd cut (I-RED-2B) to be made: 100 ml, take 3 ml sample, analyze for 2 Tc, 2 I^{131}, 2 T.S. Leave waste in flask.

8-17-47 Phosphorus - 150 ml. rinse going thru nalcite.
156
4-12 Iodine - Completed redistillation of iodine.
Rimshaw + Russell Product solution is evaporating
Barium -
A1 1MO Heels
A9 Settling after second water wash until 1:55 AM.
A11 3" heel of batch N
A8 8WC
A6 MT
A5 Neutralized waste

Hold neutralized waste in A5 for other waste solutions coming up.
Made a three liter transfer H_2O from B-26 to B-25, to B-27, to B-12, to B-3, to B-10, to A-5. The transfer was complete.

8-18-47 1. Jets A9 B26 A & B are both
12-8 plugged. We blew both down
Thompson with air two time and
Gissel removed the strainers. No soap
no matter how we held our left
nuts etc. Finally transferred
all condensate from B26 to
B1 via B12 etc. Boiling
down in B-1 to follow the
product through B26 as a
rinse. Product finally

8-18
8-1
Kir

Transfered from A9 to B12
then via B7 to B26 &
back again to B12 — I am
dizzy too !!!

A8 — math works. Sampled but
no lab results.
A9 - 4 liters of H2O to be
filled to A8 & sampled
for material balance.
A-1 Heat is diluted & sampled.
B-1 condensate going down to
.5" for a since through
B26 - 27 & B12
Iodine: Evaporated composite to 150ml & sampled.

8-18-97
8-4
King

① Iodine - filtered composite & submitted sample to lab.
② Barium - run in B-12 electrolying 'til 6 10 PM.
③ Washed B-6, B-17, B-7, B-8.
④ Installed B21R. Filtered 500 ml water in 60 sec.
⑤ Put 500 ml water in B21T and turned pressure to 10# with all valves closed - checking for leaking valves. Press on at 1 50 PM. Still on at 4 00 PM.

8-18-47 Sr - Started setting up Sr glassware on 3rd floor. Please do not disturb this glassware. 8/1/2

4-12 Rimshaw & Russell

The Run

Transferred Run from B12 to B6. Immediately air count rose close to evacuation level (9.1×10^{-9} μCu/c.c). We cut off vacuum to all Cell A and Cell B tanks except B6, and stepped up WH_3 to A16 scrubber. Inside of an hour air count dropped to normal (7.0×10^{-11} μC/c.c). We added 500 ml fuming nitric at 10^40 P.M to B6 after the first evaporation. Average B6 analysis on two samples showed 2950 C's in B6 (2850 and 3050 averaged to 2950 C's). Air count has been normal the rest of the shift. The Run in B6 went to dryness at 11^45 P.M. Ready to add 2.0 liters water ~~at~~ to B6 at 12^15 ~~midnight~~ P.M. and start last evap. in B6. 8-1 8- N.

B12 - PbO_2 to be removed. 8-19-

Settling Basin - Activity rose from 532 at 3^00 P.M to 966 at 7^00 P.M. W6 and W8 jets are off. Flow at diversion box was increased from 10.5 to 11.0 at 7^00 P.M. Valve at W6 manhole is cut off. 4-12 Rims. & Russ

N.

6496

8/19/47 1. Product now in B-19
12 8. coup stated at -0740-.
2. See shift inventory for
other solution.

8-19-47 ① Got Jr glassware equipment from glass shop.
8-4 It is on 3rd level - N.E. corner.
King ② Sampled B-6 rinse & jetted waste to A-5.
③ Product is setting on truck at door to
be anchored, yet.
④ 3rd level is very hot; cone adapter &
hot can containing paper off carrier are
very hot. Spent exposure time removing carrier
from cell and paper from carrier.

8-19-47 ① Removed hot can from 3rd level and sent
9-12 to burial ground. Reading 10 R. (Dunlap)
Rimshaw ② Decontaminated cone adaptor, and stored.
+ Russell ③ Replaced concrete blocks in B Cell chimney.
④ Anchored product carrier on truck.
⑤ HCl-ether sampled by Ferguson reading 2R @ 6".
⑥ Decontaminated hot spots on third level.
⑦ Transferred HCl-ether waste to carrier and set
carrier ~~outside building~~ in door-way south side bldg, ~~east platform~~.
Note: Day shift have riggers move HCl-ether carrier
to "garden".

(over)

Continued

8-21
4-1
Per

⑧ Do not move any solutions in A cell. Hold for E.J.W. However, continue dissolving.

⑨ Stored steel shield used for skyshine reading.

⑩ The spg reached 1.78 during the heel dissolving. This metal solution was jetted to A-9 (hold for E.J.W.) and another dissolving started. Continue dissolving heels. = P

⑪ All glass ware has been rinsed and the rinse solutions jetted into A cell.

⑫ All Cell B tanks have been rinsed

⑬ All-A5 BB jet line was reading 710 R. Steaming dropped reading to 1.0 R.

8-21-
12-
Thomp

8-20-47
72-8
Thompson

1) Replaced burned out light bulbs in bldg.
2) General housecleaning
3) Continued dissolving heels.
IMO 229 c @ A.T.
4) Diluted Al soln. Spg. before dilution 467, not sampled.

8-21
8-

8-20-47
8-4
Blaser

① moved Hcl-Ether Waste + Ba glassware washings in carrier on 3rd level to St. storage garden east of bldg

② Batch O in A9
Batch P in A11
Batch Q dissolving heels in A-1

Q starts

③ Waste from A5 + part of A6 were sent to W-9

1,357

8-20-47 (1) Took D.B. samples for 3 hours after shift
4-12 change per H.B. Results as follows:
Perry 4°/p - 2027 c/m, 5°/p 11 c/m, 6°/p 668 c/m
(2) Made rinses of the cubicles with fuming HNO_3, weak HNO_3, and rinses. Plug removed from Cell III and Cell I.
Reading inside door Cell III - 750 mr/hr.
" " " Cell I - >10 R/hr.

8-21-47 1) Rinsed glassware as per instructions with
12-8 fuming HNO_3, dilute HNO_3, & H_2O
Thompson 2) Reading 3½ r at door now. (Cell I)
3) A1 steam jacket was turned off by mistake at 12:15 AM. Turned back on at 6:00 AM. A1 still dissolving batch Q.

8-21-47 ① Sampled 1M Q hels.
8-4 ② Removed B21 Reactor.
③ Started washing cubicle cells.
④ P72-P-2 going thru column. Add 150 ml H_2O wash & add P31 at a concentration of .025 mg/mC for 1/2 the total mC present in
⑤ P72-P-1 which is now in the hot box. Regenerate column with 250 ml 1:1 HCl & follow with 150 ml H_2O. Agitate & sample.
⑥ See other log for C^{14}. Sent

8/21/47 (1) 706 D

4-12 (a) Removed all periscopes. Two are still slightly hot, at corner of Cell B. 8-

J.E. Perry (b) Cleaned all sample tubes from blisters. 12-

(c) Cleaned up around glass P.B. Thon

(d) Cleaned up P.B. desks.

(e) Cleaned out decontamination room.

(f) Shut of A-16 fan after neutralizing and disposing of batch Q. Wastes from B-10 and B-3 are in A-6.

(g) Cut all tygon lines from Cell I. Removed reactor and transfer vessel. Hot can reading 1.5 R/hr. has been roped off. We couldn't find the burial ground key.

(2) Cell 5 -

(a) Phosphorus - Added 150 ml. rinse to P-3 and added dead P per WYG. Started regenerating column.

(b) C^{14} — Was necessary to start run from scratch so was unable to get any farther than the dissolving.

(c) Cell 5 needs: 8-22

(1) A telephone order in, 8-4

(2) Ventilation why. Russe

(3) A C^{14} instrument check. (Micromax #3 & #4)

(d) 50 slugs of $Ca(NO_3)_2$ read >600 mr/hr. which is unusual and means the slugs should always be checked for radiation. Also we picked up an extremely high foot count at Cell 5 so the floor was covered with paper. why not

8-22 1) No work done on C^{14} on this shift.
12-8 We did not feel capable of handling it,
Thompson having had no training at all.

2) Put in 150ml H_2O rinse after column regeneration solution. Also killed a hot mouse in cell 5 (he rang the frisker).

3) Removed B20T from Cell III

4) Made up new batch of cleaning solution for N hot lab. Discarded 1 cracked crock.

5) Oiled skid wagon & paper rollers, put on one new roll of paper.

6) Removed empties from east side of cell and brought in acid off platform. Cleaned up platform. Stacked H_2SO_4 in shed. We need a light in the shed on these dark nights.

7) Changed paper in front of cubicles and in N hot lab.

8) We will need oxalic acid + chromic acid if we run iodine this weekend.

8-22-47 ① Made up sulfuric and chromic solutions
8-4 and obtained oxalic for iodine runs.
Russell ② Cut some lines in Cell 2 + Cell 3

③ Blauer, Dunlop, Ferguson + Simons used exposure time in cubicles.

④ Completed C^{14} run. Waste solutions have been disposed of, however Al cans have not been "fished" out. Did not have time

(over)

Continued-

⑤ Dunlap, Lemons and Winn completed drives tests, etc. 8/23

⑥ Continue the evaporation of two samples (Ni & Zn) on steam bath north hot lab. These samples are not radioactive. 12 Ki

⑦ Obtained four Te samples from 105 and began run 298. Now ready for oxalic.

⑧ Worked on Strontium glass ware- 8-23

⑨ Added NaOH to A-5 for W-11 adjustments. 8-

⑩ The remote control tongs are back. Sg

8/22/47 4-12 Perry

(1) Cubicles-

(a) Removed recycle-draw-off bank of valves. In barrel in decon. room.

(b) Loosened. B24-J1, B24-B-17, and B20-B24 valves. B21-B24 still tight.

(c) Picked up high foot counts at cubicles. Changed paper.

(d) Steamed Cell I and Cell III. Cell I - 3850 mr/hr, Cell II - 1100 mr/hr, Cell III - 100 mr/hr.

(2) Samples on steam bath in N hot lab. still evaporating. When dry these are to be capped & held for Rimshaw.

(3) Iodine - Completed Run 298. 1st cut read 4 R/hr. Started Run 299 - Completed Oxalic addition. Note written instructions from W.Y.G. in Instructions to Shifts log. Check pH before evaporating. 8/23/4 4-1 Per

(4) Cleaned up Cell 5 - Fished out Al slugs - (124). Straightened up benches and cabinets. Took out paper but didn't have time to wash the floor down. This should be done before any time is spent in the Cell.

8/23/47 12-8 King

① Alternately steamed and washed down with water cubicles I & III. Washed cubicle II with water most of shift.

② Rimshaw's samples in N. Hot Lab are still evaporating.

③ Scrubbed floor in Cell 5.

④ Iodine — finished #299 & #300.

Started evaporation of composite; pH at start = approx. 9.

8-23-47 8-4 SJR

1.) Due to power shutdown, stopped evap. of iodine composite and did not start run 301 until 1:00 P.M. Oxalic being added at shift change.

2.) Removed and decontaminated upper bank of valves. Everybody got hot hands, even though rubber gloves were worn throughout. Decontaminated racks and rings in Decon. Room. Replaced Tygon.

3.) Washed down floor in front of Cells 1, 2 and 3.

4.) Made up chemicals for iodine runs and got four more Te samples from 105.

5.) 600 ml of Iodine composite evap. down in North hot lab to 300 ml.

6.) Decont. Cells 1, 2 & 3 with alternate shots of water and steam. Reading of 3600 mr/hr for hood in Cell 1; lower bank in Cell 2 is 1800 mr/hr. Cell 3 is 100 mr/hr.

8/8/47 4-12 Perry

(1) Cubicles

(a) Removed last bank of valves. Decontaminating in barrel. Read 1.1 R/hr.

(b) Steamed Cell I and washed Cell II. Removed all old tygon from Cell III. Readings inside doors are: Cell I - 3850 mr/hr (11000 mr/hr on hood)

Cell II - 4400 mr/hr

Cell III - 100 mr/hr. (150 mr/hr at hood)

(C) Calibrated and mounted a new reactor. Two reactors ready to install on ~~table~~ floor Next to glass cabinet.

(d) Mounted two transfer vessels and attached 4" of tygon on the four outlet tips.

(e) Two banks of valves are on decon. room floor. One reads 15 mr/hr in spots and the other reads 55 mr/hr in spots.

(2) Iodine

(a) Completed Run 301 & started Run 302 (Oxatic ~~finished~~)

(b) Evaporated composite all shift.

(3) Cell A.

(a) Made up batch of carbo phosphate for neutralizing the metal waste.

(b) Transferred batch P from A11-A6. Split caustic in A5 between A8 & A11. A5-A8 not yet finished. Batch P may be Neutralized in A5 as soon as caustic is out.

8/24/47 R-8 King

① Iodine - completed run # 302 and # 303. Composite evaporated all shift; pH of composite at end of shift = 8.

② Removed hot tygon from valves in decontamination room. Dropped radiation from 1.3 R to 300 mr. Valves are sponging in decontamination soln.

③ Neutralized waste in Cell A & sent to W-9. Caustic for W-11 is now in A-1 & A-11.

8-24-47 Two valves in Cell II cubicle, B24-B17 and B24 to
8-4 J1 blister read greater than 10 R at 6". We opened these
SJR. valves and sent water through them via B24. Reading
dropped to 700 mr/hr. These two valves are now closed. Rest of Tygon in Cell II cubicle
was removed. Hosed and steamed all cubicles. Scrubbed
floor in front of cubicles because of high hand and foot counts.
Cell I steaming at shift change:

I^{131} a.) Completed Run 304 (reactor draining at shift change). Te can for Run 305 is in lead carrier. There are two more Te samples to be run at 105 bldg.

b.) Evaporated I^{131} composite to 250 ml.

8/24/47 (1) Iodine (a) Completed RUN 305 & started 306.
4-12 (b) Composite evaporating.
Perry (c) As soon as this series is finished sample composite for I^{131} analysis. Then evaporate to 300 ml. volume and sample as product solution - per W.Y.G.

(d) One more Te slug in carrier.

(2) Cubicles

(a) Removed hood from Cell I. Reading >10 R/hr in spots. Decontaminating in barrel now.

(b) Steamed cell I and washed thoroughly with 30% HNO_3. Background dropped to approx. 340 mr/hr.

Cell II 200 mr/hr. Cell III 100 mr/hr.

(3) Housekept.

8/25/47 168 ① Iodine – completed #306; started #307.
8-8 – composite evaporated all shift; pH approx. 8 to 9.
12-8
Kim
② Cubicles – hosed 1 & 3 alternately with weak HNO_3, water, steam; hosed 2 with water intermittently.
③ Decontaminated tongs, cutter, & carriers in decontamination room. Boiled hood in barrel in mild nitric and citric alternately.
④ Filled one sulfur can with sulfur; discarded two empty cans (to hot can) with stripped threads.
⑤ House kept – cleaned floor N. Hot lab – etc.

8/25.
4-
Pe
/

8-25-47 ① Surveyed cubicles: I 100 mr-hr., II 450 mr-hr., III 100 mr-hr. at hottest spots.
8-4
Russell ② Decontaminated hot spots (IR) around base of Cubicles.
③ A16 motor single phasing. Found two loose connections in switch box, and repaired.
④ Installed "tube" in C^{14} set-up.
⑤ Continued setting up strontium glass ware.
⑥ Completed iodine run #307. Evaporated product solution to 300 ml. ~~and sampled~~.
PH of solution before evaporation was ± 10.
⑦ Decontaminated periscopes for inspection and repair by instrument shop. (see note ⑬)
⑧ Installed extension handle on separation valve to A16, and removed extension handle at door way to A16 to prevent further "knots" on the head.
⑨ Continued lead removal from high barricade in north hot lab.

Continued:

(10) Began reassembly of parts for installation in cubicles.

(11) Completed blood checks at hospital on all men.

(12) Drained 105's hot waste tank.

(13) Periscopes are reading too high for removal from bldg. Note: Respect plastic lense inside tube.

8/25/47 (1) Cells

4-12 (a) Removed and regenerated dryerite etc. Left

Perry Traps mt. To be filled just before 8-4 shift tomorrow.

(b) Procured 100 slugs from 105. Not cleaned.

(c) Replaced cutter.

(2) Cubicles

(a) Removed lights. to be replaced.

(b) Cell I hood read 800 mr/hr at start of shift. Decontam'd all night. Now reads 400 mr/hr.

(c) Connected Tygon for reactor and transfer vessel solution addition at second floor for B20 & B21.

(d) Connected adapters to transfer vessels.

(3) Iodine.

(a) Sampled 290 ml. composite. 1st analysis gave - 794 mc Total S.T. T.S. = 9.6 mg/ml. W.Y.G. wants analysis complete by 8⁰⁰/A.

(4) Periscopes washed with soap and water & smeared. None are low enough to leave restricted area.

170

8/26/47
12-8
King

① Rewashed periscopes with soap & water - have not been checked by H.P.
② Cell 5 - washed slugs with caustic & acid. Put dririte & caroxite in all traps except air line to instruments (not in use).
③ Replaced lights in cubicles. Continued decontamination of B21 hood.
④ 2nd iodine composite analysis shows 826 mc.
⑤ Set up carboy of water on 3rd level for valve testing.

8-26-47
8-4
Russell

① Scrubbed periscopes again and took smears.
② Cleaned out all three cubicles.
③ Washed down stack.
④ Opened 3 drain lines at S. Basin. Repaired handrailing.
⑤ Emptied 4 hexone drums at burial ground.
⑥ Continued running pipe for decontamination of Cells 6 East side of Cell B.
⑦ Poured grouting around ~~[illegible]~~ outside building
⑧ Sent 5 scopes to 101 shops optics dept. 2 more to be cleaned + O.K'ed.
⑨ Insulated line over the stile outside building
⑩ Began C^{14} run 76. Now under pressure in aerator.

SJR - Special Samples.

done JJP

On third floor under the hood there are two samples on the hot plate, Zn and cobaltic oxide. When Zn goes almost to dryness, take off the hot plate. Turn heater down to medium or low, and let cobaltic oxide boil until morning.

8/26/47 (1) Completed Iodine run # 308-309 using 1740 Te
H-12 slugs. Run 310 is to be done tonight. Before
Perry evaporating check the pH and adjust to pH 2.0 or
just a shade over. per IBW.

(2) Completed 1-6 steps in H.B.'s instructions.
Note - Guide for the off gas for hood cell III seems to
OK H.B. be bent slightly.

(3) Tagged ss. lines entering Cell II per H.B.
Note - to H.B. - the top diagram of the cell II
in ~~Running~~ Page 184 Log Book #8 doesn't look like the
cell. Please check & see if they're tagged O.K.

(4). Hood for Cell I still reads 240 mr/hr.
Still decontaminating.

(5) Completed C^{14} run # 26.

H.B. (6) Washed the 2 remaining periscopes again. Not
smeared tonight as H.P. man spent a lot of
time at 105.

(7) Maintenance ~~fixed fan switch on 3rd floor~~
~~and~~ re-installed ~~[illegible]~~ lead shielding on
the lights for the cubicles.

8-27-47 ① Iodine - made run # 310.
12-8 King - composite pH checked just over 7. Evaporating
last half of shift.

② Ba carrier was washed, ok'd by H.P., and
stored above Hot Labs. Cone & plug are still high -
H.B. boiling in citric acid.

③ Set up carboy of water for valve testing.

④ Checked B21 hood at start of shift = 450 mr/hr.

Tried further decontamination with alternate shots of HNO_3 & NaOH. Still above 300 mr/hr. At shift change left hood boiling in citric acid. 8-2

⑤ Cleaned floor of N. Hot Lab & put down new paper.

8-27-47 ① Made sulfur extraction in Cell V (Dunlap Lemons)
8-4 This run is now in glass ware filtering from
Russell SR-1 to TV-2. Run 73.

② Assisted Blauer with installation of new lines, etc. in cubicles. (Winn + Ferguson)

③ Sent two scopes to instrument shop.

④ Checked and repaired cubicle valves.

⑤

SJR - Special Sample.

Sample of Ru_2O_3 on hot plate under hood on third floor. Check water on condenser occasionally and let run until morning. 8/28 12- Kin

8-27-47 Phosphorus - cell 5.
P 73 W-1 sampled
P 73 P-1 sampled
Run now going through column (started 10:02 pm)

1) Put hood in cell 1 after connecting tygon lines. We could not find two taps and washers for the hood guide rod; so it is still hanging loose.
2) Connected tygon lines to transfer vessel. No more working time left.
3) Changed valve on A-9 jacket water.
4) Rimshaw's sample okay.

8/28/47
12-8
King

① Cleaned plug & cone in decontamination room. Stored on 3rd level.
② Steamed hot jet lines at R.B. 2 for 5 hours; little help.
③ Completed work per instructions ~~of~~ on cell 1, i.e., transfer vessel in place, adapter ring & reactor support in place, etc.
④ Cleaned lead in front of cubicles with citric acid & water.
⑤ Reconnected extension handle to addition valve of receiving flask of iodine set-up.
⑥ Cleaned floor of N. Hot lab.
⑦ Rimshaw's sample okay.
⑧ Added 150 ml. water to P-73 column; but turned

off feed valve to column until level is lower in evaporator.
Turned on steam to evaporator.

8-28-47 ① Made sulfur extraction of P-74 Cell V.
8-4 ② Took up P-73, F-2 in HCl, etc. and sampled F-2.
Russell ③ Completed nalcite rinse and regenerated column. Sampled R-1.
④ Ordered and received three drums of NaOH for use A-5 to W-11.
⑤ Continued work in Cubicles.
⑥ Run P-74 is now in TV-2.
⑦ Run P-73 is evaporating to dryness.
⑧ Heat is on P-5 and drain valve is open. The can under P-5 contains very hot S. One more 1000 ml. rinse is due to go thru P-3, through P-5.
⑨ Added three drums NaOH to A-5 and diluted to 25% for use at W-11.
⑩ Drilled hole in east wall Cell A. for water line installation for decontamination purpose.

8/28/47 1) Attached Y to B-24 tygon line, put in
4-12 upper valve rack per H. Blauer's instructions.
Thompson 2. Removed I^{131} receiver and started decontaminating surrounding area.
3. Decontaminated high + low barricades, removed lead brick, cleaned up floor. Glassware (removed to low storage and miscellaneous equipment) is in the west lab awaiting further decontamination and removal to storage.

4. The old I^{131} receiver was reading ca 1R. It is now soaking in acid in the decontamination room. Save for W.Y.G.
5. Cleaned up Cell 5 and hosed down floor.
6. Filled 2 sulfur cans & delivered to 105
7. Checked monitron buzzers & lights — two were not working properly 1) 2nd floor east side cell B 2) A-9 agitator monitron Shift instrument man repaired both by replacing fuses, however, the one by A-9 needs further adjustment. It kicks on okay, but doesn't kick off until the reading drops below .2.
8. A third sulfur can was filled but not delivered to 105 because we could find no suitable top for it (the one it had was shot — threads stripped).
9. HOW ABOUT HAVING A LIGHT PUT IN THE NEW SHED ON THE EAST PLATFORM?
10. Monitron light in S hot lab still not working — have day instrument man check.
11. Sled loaded with brick from N hot lab is in decontamination room until we can get behind cell B to store them.
12. Could not work on blister samplers — used all exposure time on other jobs.
13. Removed carboy from 3rd level to E. platform.

14 HP took smears on cell 5 walls, floor, + equipment. 2 were above tolerence, # 3 + # 13 as marked with chalk.

15. HP took smears in N hot lab — no results yet.

8/29/47
12-8
King

① Processed P-74 up to column; P-2 is in hold-up vessel above column.
Put 1000 ml rinse thru P3 & P5.

② Scrubbed low barricade & floor under high & low barricade H.P. smeared — all smears below 200.
Radiation level = less than 5 mr/hr.

H.B

③ Decontaminated two valves in decontamination room.
Readings 8 mr & 20 mr.

④ Spent all exposure time calibrating samplers.
All were set to give designated amount. Note - size of sample will vary with speed ~~with speed~~ of removing tube. All are set to remove tube fast while jet still on.

N.B. all shift

⑤ Unable to find cap for sulfur can on 3rd level. We also need lead plugs for caps.

⑥ P74 - P1 = 622 mc. W-1 = 9 mc.

⑦ After decontamination iodine flask still reads 2 R; returned to acid bath in decontamination room.

⑧ P-73 to dryness in evaporator.

8/2
8-
Pe

8/2
4-
Thom

H.B

8/29/47 (1) Cells
8-4 (a) Completed P-73 - P74 (rinse) now going through
Perry the column N.
(2) Iodine - Broke funnel while installing the receiver, however got 4 Te slugs from 105. Installation ~~nearly~~ complete Ready for run.
(3) Cubicles - Continued connecting lines. Everyone got very hot hands.
(4) Cleaned up sink on 3rd floor. Took hot burlap bag out of glass waste can & replaced with a cool one. Began decontamination of valves in decon. room.
(5) Drilled hole in Cell A for decontamination line.

8/29/47 1. Disassembled 3 large valves after de-
4-12 contamination. HP checked with the
Thompson probe (no smears made) and separated the hot parts from the ones that are ok.
2. Cleaned up 3rd level, removing unused equipment to low storage. Put down clean paper on lab desk by hood & scrubbed down lead floor.
3. Cleaned up decontamination room. Put lead brick behind cell B.
4. Removed workers scaffold from behind cell B.
5. Replaced H_2O line valve under hood on 3rd level.
6. Repaired W-11 manual jet valve (the stem had been twisted off).

7. No work done on cubicles.

P^{32}

1) Added 75-ml .1mg/ml P^{31} soln to evaporator. 8/30
2) Put through 250-ml 1:1 HCl followed by 150 ml H_2O. R-1 has not been sampled. 8-
Pe

I^{131}

Completed run # 311, started run # 312. We broke the drain line from the receiver to the beaker (hit it with the mirror), consequently it is necessary to transfer the cuts to the beaker by drawing them out into a beaker and pouring.

8-30-47 ① Removed hot iodine glassware from north hot lab and decontaminated in dec. room. 8/30
12-8. ② Cleaned up hot spots in north hot lab. 4-
Russell ③ Replaced light bulbs in fan house. Thom
④ Continued decontamination of three valves. HP made smears and those parts OK have been separated from hot ones.
⑤ Sampled P-74, R-1, containing 150 ml.
⑥ Removed hot paper and scrubbed s.s. pan underneath glassware and replaced fresh paper.
⑦ Completed iodine run #312 and started run # 313.
⑧ Transferred 500 ml. product iodine to the

Continued:

evaporator and began evaporation.
@ P-74 is evaporating to dryness

8/30/47 (1) Iodine - completed # 313 # 314 1st distillate
8-4 finished.
PERRY (2) Phos - P-74 Rec. going through column. Add dead P to this in evaporator at the rate of 0.025 mg per $\frac{mc \text{ in } P\text{-}1}{2}$.
(3) Cell 5 - Housekept. Moved distilled water from 2nd floor to ledge next to entrance.
(4) Cubicles - Replaced lines as exposure would allow.
(5) Globe valves decontaminated waiting for results from smears.
(6) Cleaned up N hot lab. Removed bottle of water from 3rd floor. Bottle in Low Storage.

8/30/47 1) Iodine: completed run # 314, run # 315
4-12 almost completed.
Thompson 2) Phosphorus: added 6.5ml P^{31} solution to evaporator. No rinse added.
3) Put in 3 tygon lines but used exposure time before they could be wired & taped.
4) Swept out fan house and stacked rubbers in front.
5) Removed valve parts from drum - now drying to be checked by HP. Put 2 parts that had high smears in a can of HNO_3 in the decontamination room.
6) To JEP: Gissel phoned the other day and

suggested that you prepare on Sunday to start a C^{14} run Monday morning.

8-31-47 ① Completed iodine run # 315
12-8 ② Added H_2O rinse to column.
Russell ③ Used all available exposure time installing tygon lines in Cubicles.
④ Continued decontamination of globe valves. Clean parts have been set aside. Those having high smears are in dec. room.
⑤ Regenerated nalcite column. Rinse has not gone through.
⑥ Sampled I^{131} product solution after fifth run at 320 ml.
⑦ Defrosted and cleaned refrigerator.
⑧ Decontaminated hot spots on floor first level.
⑨ P^{32} product solution going down to dryness.
⑩ Started iodine run #316, Completed except for sampling I-3 and emptying dissolver.

8/31/47 (1) Iodine - Completed run # 316. Started & completed
8-4 run # 317. except for ~~I-3 sample~~ emptying dissolver.
Perry (2) Used exposure time wiring & taping ~~connecting~~ lines in cubicles.
Note - The Y connecting valves: B-24 J-1 & B24-13-17 has a couple of bad crimps.
(3) Prepared cell 5 for C^{14} run tomorrow except for filling Traps.
(4) Phos - Rinsed column. Sampled P74 Rec (R-1, E-2)
Adjusted pH and sampled P74-P-3.

8/
4-
Tho

HB,

9-1-
12-
Rus

8/31/47 Iodine: Completed run 317, started and completed
4-12 run # 318. Analysis of composite
Thompson. of 1st 7 runs – 295 mc @ AT

1) Cleaned up new glass storage cabinet behind cell B.
2) Cleaned up hot spots in front of + around decontamination room.
3) Worked on valve parts (decontamination)
4) Russell, howabout getting maintenance on your shift to replace valve on the drain from the second drum in the decontamination room? Also repair that leaky union in the drain line.
Done HR
HB, NOTE: 5) We need (and have needed for some time) new hinges on the tool desk.
6) No work done on cubicles.

9-1-47 ① Decontaminated s.s. pan under P-4 and P-5
12-8 and carried out hot sulfur cans.
Russell ② Scrubbed floor in Cell V.
③ Removed cans of waste from third level.
④ Decontaminated all glass ware in north hot lab. to level for colored maid to clean. Day shift please have this done.
⑤ Replaced drain valve from second drum in decontamination room and repaired leak at union.
⑥ Reassembled one globe valve and continued decontaminating the other two.

Continued

⑦ Cleaned up around cubicles and put down fresh paper.
⑧ Started and completed iodine run # 319.
Started iodine run # 320.
⑨ Filled C^{14} traps with Drierite, Ascorite and Barium Hydroxide as required.

9/1/47 (1) Iodine - Completed run # 320. Found 500 ml
8-4 solution in 2nd holdup vessel reading approx 10R/hr
Perry and added this to evaporator. Volume now is
nearly 700 ml. Evaporate as fast as possible
and sample.
(2) C^{14} Run # 27 aerating at shift change.
(3) Cubicles - Completed connections of lines.
Some yet to be wired and taped.
(4) Took 50 Pb bricks to 3rd floor
for IBW.
(5)

9/1/47 1) Completed C^{14} run # 27
4-12 2) Evaporated iodine composite to 350 ml
Thompson and sampled evaporator. Transferred soln. to
hold up flask and sampled again
through burette.
Sample A (evaporator) 838 mc @ 5T.
Sample B (burette) 851 mc @ 5T.
3) Completed wiring of connections in
cubicles. Wired 8 connections.
4) Cleaned up all the overshoes we could
find, surveyed them with probe and

9-2
12-
Ru.

9.2
8.
Blu

9/2
4-
Thom

threw out the hot ones and the torn ones.
5) Checked valve again, still too high, so it's back in the acid drum again.
6) Put gaskets on cubicle door plugs.
7) Decontaminated Iodine hood.
8) Cleaned up first level.

9-2-47 ① House Kept in Cell V
12-8 ② Decontaminated globe valve and smeared. Hot
Russell ③ Drained and rolled up fire hose at W-6 manhole. Stored in ~~tow storage~~ hose house, tank farm.
④ Everyone used full exposure ~~time~~ in Cubicles. wrapping tygon lines with tape.
⑤ Cleaned up N. hot lab and around cubicles.

9-2-47 ① Helped ship Iodine
8-4 ② Helped filter Iodine
Blaner ③ Helped in Cubicles
④ There are 4 scopes back from optics shop.
⑤ Electric pump mounted on skid
⑥ Cleaned Iodine evaporation barricade
⑦ Removed about 75 cans from C14 set-up
There are still more to be removed.

9/2/45 1) Removed cans from C^{14} tank. There are
4-12 still a few (less than 10, I'd say) still in there
Thompson that we couldn't reach with the tongs.
The full cans are in the smallest of the three buckets.

2.) Cleaned up cell 5
3.) Connected the 2 lines in cell II as per HB's instructions (not to be taped)
4) Cleaned up cubicle area.
5) Decontaminated I^{131} setup per WYC. 9/
6) Valve now okay. Assembled, ready to go back to stores. K
7) Cleaned up decontamination room.

9-3-47 ① Removed remaining aluminum cans from
12-8 C^{14} dissolver. The 21 cans containing
Russell some $Ca(NO_3)_2$ and C^{14} were dropped back into the dissolver for dissolving with next run. Installed slug cutter.
② Cleaned up north hot lab.
③ Decontaminated s.s. pan under P-4 and P-5.
④ ~~Replaced hinges on tool desk.~~
⑤ Repaired leaky valve on BS-W11 jet.
⑥ Routine housekeeping.
⑦ Decontaminated carriers.

9/3/47 (1) Removed crud filter in cell 5 phos. setup &
8-4 replaced. Cleaned out P-3 vessel. (B20T & B21T)
PERRY (2) Tested glassware. 15# pressure is still on 9-4-
at shift change. Notice if there is a volume 12-8
deduction during your shift. Remove pressure Russ.
at 3:00 Am 9/4/47.
(3) Moved shed from W-5 to W-2 along with the sacks of chemicals. Sacks are still loaded on truck

at W-2. These can be unloaded into the shed.
(4) Replaced pressure vacuum gauge on B-20.

9/3/47 4-12 King

(1) Unloaded chemicals from truck into shed at W-1 & W-2.
(2) Moved H_2SO_4 on back platform to shed.
(3) Removed trash can from N. Hot lab & replaced with a red can.
(4) H.P. smeared floor on 1st level. Hot spots cleaned up.
(5) Cleaned up iodine evaporation equipment & cell. H.P. smeared - all smears below 100. Background 10 mr. Evaporation beaker 40 mr.
(6) Added rinses to Pressley's column on 3rd level as per instructions. Broken ~~going thru~~ at end of shift
(7) Started P75 extraction at cell 5. Finally unstopped P-4 off gas valve about 2 PM. Ran extraction to point of transferring sulfur from P3 to P4 — unable to transfer. Left steam off of P3 as pressure was up to 30#.
(8) Checked B20T & B21T - seem to be holding water ok.

9-4-47 12-8 Russell

(1) Unable to transfer sulfur from P-3 to P-4. This line is still plugged. Everyone used their full exposure time in Cell V.
(2) The equipment has been rinsed except P-3 to P-4, and the sulfur has been disposed of. The product solution is

now in TV-1, the volume is less than a normal run should be, so could not sample. The floor has been scrubbed to below tolerance and decontamination was made on pan below P-4 and P-5. The reading is still high around P-5 drain valve. 9/4 4- K

③ Picked up resin from Presley's broken column on third level and placed in beaker near column.

④ Removed pressure from B-20T and B-21T e 4Am.

⑤ Decontaminated two carriers.

9/4/47 8-4 Perry

(1) Ran phos #75 through glassware. Now going through column. This run to be carrier-free.

(2) Unplugged off gas valve on sulphur extraction equipment over P-4. Broke the s.s. line Next to the valve. To be welded.

(3) There are 3 drums of 50% NaOH on the east platform which can made to 25% in A-5.

④ Painted new positions of glass ware valves. 9-5-

⑤ Cleaned up Cell 5. Cmted waste cans, put carboys of distilled water where they belong, cleaned up hot containers etc. 12-1 Rus

⑥ Millwright lined up valves in cubicles

(7) Checked and adjusted 4 periscopes.

9/4/47 ① Made up 25% caustic in R-5. Emptied 3 drums of 50% caustic.

4-12 King ② On iodine set-up, replaced line and beaker under iodine distillation receiving flask. Ground cock with 600 mesh carborundum; attached extension to cock.

③ Phosphorous - added 150 ml wash to column after P-2. Dissolved & sampled F-2.

④ Reduced steam pressure on line in cell 5 to 50#

⑤ Telephone instructions of Gissed: leave word for Russel to make a carbon run tonight.

⑥ Carbon:

a) Made up & filled absorption traps with 75% saturated $Ba(OH)_2$ sol'n.

b) Changed Drierite & Carbosite in all traps except one on top (not needed)

c) Obtained 100 slugs from pile bldg and cleaned same.

⑦ Added solutions to Pressley's columns as per oral instructions. Continue adding water to one (word given Dunlap).

9-5-47 Phosphorus - Regenerated nalcite column. Rinse going through at shift change

12-8 Russell C^{14} - Made C^{14} run and cleaned up Cell.

Misc 1) Kept Pressley's columns going.

2) Smeared third level and decontaminated eleven hot spots.

3) Routine clean up in (out) hot lab.

Maintenance needed - ① Repair leaky steam valves to 205 stack jet.

6243 Nichols

② Replace hinges on tool cabinet, first level.

Flashlights

③ Provide adequate lighting for reading rate of flow at diversion box to settling basin.

Order in

④ Fabricate and install removable trap strainers in floor drains on third level.

⑤ Recalibrate liquid level indicators on A-5 and A-11, or repair.

9/5/47 8-4 Thompson

1) Repaired 2 leaky steam valves at 205 stack
2) Replaced hinges on tool cabinet, bolted new glass cabinet to wall, put hose rack in NE corner 1st level.
3) Requisitioned 8 new flashlights - 2 per shift.
4) Removed pump, duct sections from around fan house to burial ground.
5) Sent 1 barrowscope to optics shop in bldg 101.
6) Dissolved P75-P3 + sampled. Sampled P75-R1. P75-F2 - 77.6 mc R-1 - 19.6 mc
7) ~~Rec~~ Put in a work order for 4 new strainers for 3rd level duct.
8) Instrument man checked A5 + A11 LL manometers.
9) Maintenance installing new off gas line on P4.

10) General building cleanup started.

9/5/47 4-12 King

① Kept ~~&~~ Pressley's column on 3rd level going according to instructions.

② Finished Zn run for Rimshaw & cleaned equipment.

③ Reinstalled valves & lead sheets on iodine distillation equipment.

good job Thanks Eng

④ Had holes drilled for valves & installed all glass equipment in iodine evaporation setup. Ran water thru all equipment - ok.

⑤ Per instructions of H. Blower: prepared a housekeeping inspection. Instructions are to pass it along from shift to shift until it is done. Same is stuck in back of this book. Please add any additional noted items to sheet (list).

9/6/47 12-8 Perry

(1) Note on decontamination of hands: Newton brought Iodine spot on arm from >19000 c/m to 3000 c/m by washing once with solution of KI.

(2) Note to Gissel: Made up 4 bottles of Ba(OH)₂ solution (75% saturated). Why should this solution ever be discarded? If one liter of saturated $BaCO_3$ soln is discarded approx. 24 mg $BaCO_3$ is lost.

~~[illegible]~~

(3) Maintenance men do not clean up their trash after finishing a job which makes our housekeeping look bad sometimes. Eg (a) Welding rods and insulation on the floor at Cell 5. (b) Lumber and steel rods at East side of 706D. (c) Scrap

left at W-5 when shack was moved.
(4) HouseKept as marked on King's Inspection.
(5) Kept Pressley's column on 3rd floor going.
(6) Key to stockroom is missing. 9/7
(7) Started and completed Iodine run 321. 8
(8) Removed most of the $Ca(NO_3)_2$ slugs at Cell 5. Tho

9/6/47 1) Made iodine run # 322
8-4 2) Removed all but 2 $Ca(NO_3)_2$ cans from C^{14}
Thompson dissolver. Couldn't get those two.
3) Continued housekeeping as indicated on check sheet. Also cleaned up East platform. 9/
4) Continued operation of Pressley's column. 4
M

9/6/47 ① Made iodine run # 323. Started evaporation of
4-12 composite; pH at start of evaporation = approx 8.
King ② Straightened up low storage.
③ Kept Pressley's column on 3rd level going. 9/8
④ Tried decontaminating lines A11-A5DB and 12-
A11 steam sparger by running water & steam Per
thru them — no luck. Asked maint to replace
hot portions of these lines outside of cell — not
started, maint. busy in C bldg.

9/7/47 (1) Ministered To the Pressley Column.
12-8 (2) Made Iodine run #324.
Perry (3) Maintenance still busy. Nothing done on the hot
Jet lines. Unable to find any strainers. 9/8
(4) Sampled I 324 c. pH-10. 8-
Note - Volume in ~~flask~~ beaker was 200 ml. Volume Bla

in the hold up flask was 150 ml. Used beaker volume on sample sheet.

9/7/47 8-4 Thompson
1) Continued operation of Pressley's column.
2) Rewired tags on P^{32} equipment.
3) Maintenance not available to work on jet lines.

9/7/47 4-12 King
1) Continued operation of Pressley's column.
2) Maintenance spent exposure time - replaced jet line All-A5DB from panel & board to cell wall.
3) Sgee-gees (?spelling) were repaired by maint.
4) Straightened tool cabinet & washed floor in cell 5.
5) Cleaned up & H.P. smeared tongs (carbon slug removal) to go to shop.

9/8/47 12-8 PERRY
(1) Continued the Pressley Column. 6th cycle rinse nearly through.
(2) Held safety and information meeting.
(3) Made up bottle of $Ba(OH)_2$ soln. in cell 5.
(4) Removed strainer in All sparger line reading 800 mr. In barrel in decontamination 100 m. Installed new strainer holder. Note - NO strainer was found. Day shift please procure some S.S. strainers. H.P. reading at this line dropped to <50mr/hr.

9/8/47 8-4 Blauer
① Issued necessary repairorders per E. Kings housekeeping check.
② Sent one scope to optics shop. Also brought one back.

(3) King took his tests
(4) 2 valves sent to stores
(5) Painted motor, pump + skid
(6) The C-14 tongs are repaired + on this desk
(7) The old make up room jet was sent down to the shops for reworking
(8) Cleaned up Iodine set up. Replaced broken condenser + some Tygon lines. Do not replace the shielding until the new 5 liter dissolver is installed.

9/8/47 4-12 King

(1) Checked P^{32} extraction equipment at cell 5. Seems to be ok except temp indication instrument needs checking. Instrument man contacted - says it will be done on 12-8 shift. All transfer lines + drains lines work ok.
(2) Obtained + placed in cell 5 twenty-eight no. 10 cans.
(3) Stored "hot" bottles marked traps #1, #2, #3, #4, which were in N. Hot lab, in lead vault in hot lab antechamber.
(4) S.S. strainer for A-11 not yet available from maint.
(5) Elect. replaced several signal lights on PB #6; he was unable to get ~~[illegible]~~ 3 to work. He reports sockets are poor (damn) material. Could we get these replaced?

Order in J.B.

9/9/47 (1) Loaded 2 Sulphur cans and delivered to 105.
12.8 One is loaded on 3rd floor but the threads on the
PeRRY cap are stripped. Can reads 350 mr/hr.
(2) Instrument man checked the Temp. recorder on the Sulphur extraction panel board. Replaced a battery & checked temp. to $\pm\frac{1}{2}°$.

9/9/47 1) Made up 3 drums of caustic & jetted to A-5.
8-4
Thompson 2) Flushed 205 stack - steam engine is on the blink again.
3) Worked on iodine setup.
4) Washed down hot section of AW wall & replaced hot packing with new packing.
5) Maintenance putting new trap in vacuum pump drain line. House vacuum now off.
6) Flushed out lines in P^{32} extraction setup. Loaded sulfur can, ready to be extracted tomorrow on 8-4.
7) Helped Pressley on column.
8) Put in window pane on East side
9) Cleaned up instrument room.
10) Maintenance installing new safe in fan house.

9/9/47
4-12
King

① Calibrated 5L flask for I setup.
② Cleaned P^{32} glassware evaporator with HNO_3, HCl, water; still doesn't look too clean.
③ Washed empty HNO_3 bottles outside cell 5.
④ Maint. completed installing vacuum pump trap & started vacuum pumps.
⑤ Maint. worked on governor on steam fan — job not complete — governor still doesn't work.
⑥ Electrician replaced part of lights.
⑦ Continued operation of Pressley's columns. He wants water thru one on 3rd level until effluent neutral. Acid to be washed out of one on 1st level.

9/10/47
12-8
PERRY

(1) Maintenance completed work on steam engine
(2) Vacuum pumps refused to cut off. Reset mercoid switch for cut off at 25#.
(3) Water run through Pressley's column until effluent had same pH as inlet water.
(4) Worked on B cell Tank charts.
(5) Relamped building as much as electrician had time for.

9-10-47
8-4
Thompson

1) Cleaned up cell 5 + hosed it down. Also cleaned up outside entrance to the cell.
2) Attempted to make P^{32} run 76, P4 + P5 outlet valve heaters both short-lines frozen — progress halted while electricians sweat a little.

3) Ran A16 fan for C bldg. Please turn it off at approx 6:30 p.
4) Cleaned up glassware + replaced cleaning soln. in N hot lab.
5). Dave Ring worked with some boys from hot pilot plant tracing tank farm lines.
6) Painted labels on emergency lantern boxes.
7) Ba carrier in decontamination room see H.B. for instructions.
8) Continued work on fan house safe.

9-10-47 1) Calibrated and installed 5L. flask for I^{131}
4-12 twice and found the white, and black
Russell ink will not stand up under water and temperature. We did not bake ink on.
2) Hosed down north hot lab and gave away all surplus equipment possible.
3) Day shift, please have glass blower saw slits in glass stop cock valve for I^{131} set up, for wire-spring connection.
4) Installed s.s. strainer in A-11 sparger line.
5) Completed sulfur extraction process after thawing P-4 and P-5 drain values with a torch.
6) Removed Ba Carier cover in decont. room and began decontamination of same. Reading over top of carier is greater than 10 R.

Continued-

7) P-76 is filtering thru stang reactor after first ppt.

8) Conducted safety meeting.

9/11/47
12-8
PERRY

(1) Calibrated Iodine dissolver. Assembled equipment and Tested. Note - Not able to wash condenser all the way back. Note Jr - Thermocouple wires should be protected from acids. A little parrifin should do the trick.

(2) Completed renovating charts.

(3) Made up Iodine run solutions.

(4) Continued Phos. run 76. At midway point in filtering the NH_4OH strike the Stang Reactor cracked over and ~~over~~ under disc. Used decant line and acidified residue transferring solution to W-1 flask. Replaced ~~the~~ Stang reactor with duplicate which was approx 3" too long to fit. Was necessary to remove TV-2 in order to install Stang reactor and continue with the run. Now going through column N. Note to W.K.G. - Have a shorter SiO_2 made today and we'll be glad to install tonight.

(5) Conducted Safety meeting.

OK
H.B.

(6) We need scrub brushes in the rest room.

9-11-47 1) Set up display for visitors
8-4 2) Set up + checked iodine equipment.
Thompson 3) Started decontamination of Ba carrier
4) P76 going thru column.
5) Maintenance worked on fan house safe.
6) Housekeeping

9-11-47 1) Day shift please obtain a duplicate Key
4-12 to the 706-A store room for our use.
Russell 2) Completed I^{131} set up and tested equipment.
a) Drilled new holes in lead shielding for valve stems and plugged old ones.
b) Timed new valves. Note open positions of valve on funnel below receiver ←↓→.
3) Obtained 100 $Ca(NO_3)_2$ slugs from bucket #1 at 105 building. Prepared C^{14} equipment for Perry's run tonight, cleaned slugs, filled dierite traps $Ba(OH)_2$ traps, installed slug cutter, etc.
4) Continued decontamination of Ba carrier. Now reading about 2 R over top.
5) Cleaned up Cell V with water, NaOH and Old Dutch and elbow grease.
6) Decontaminated drain valves P-4 and P-5
OK → 7) Day shift obtain few cans Old Dutch for scrubbing floors.
8) Added rinse following product thru nalcite.
9) Regenerated column and sampled R-1.
10) Kept Ira's column going. The fourth
(over)

15-58 N.W.S.B.
W-11

Continued. 198

100 ml. cut is now going thru column.

11) P-4 and P-5 drain values are now in 706-D decontamination room in bucket.

9/12/47 12-8 PERRY

(1) With reference to "Things wrong in Cell 5" pp 162-163 Instructions. We made a couple of c.s. mistakes at 7:45 Am (Items 3 & 4) and we are humbled. However if the list was meant that part of the shift was spent on the fanny I'll gladly submit a list of the 8 hrs. work of each man.

(2) C 14

Cut 100 slugs... Was unable to pull any Vacuum at all due to a very large leak in the gas monitor tube. Instrument man took it apart but it was not helped any. With such a leak it would be impossible to get a decent % isotope. This was reported during run 27 and was probably the reason for Low % isotope on run 28. Spent 4 hours trying to get some results & finally gave up hope. Instrument man says tube can be fixed at shop.

Spoken to H.B.

(3) Housekeeping on 3rd floor behind PB5 stinks. At ruthenium set up acids were sitting on the wooden table near the edge. Very unsafe. Put these in a lead tray.

(4) Due to a variation in voltage the friskers at Cell 5 either ring intermittently or not at all even with high radiation. Can't these be fixed

Note - wires hanging from P4 & P-5 are very hot.

(5) ~~Note - H.B.~~ Cleaned up under P-4 & P-5. Cleaned insulation and crap off the 2 valves in dec. room. Reading on one dropped from 1800 mr/hr to <400 mr/hr. Rest of the parts read <100 mr/hr.

(6) Solutions finished running through IBW's column.

(7) Carrier in dec. room knocks 10 R cutie pie off scale. Also cover.

(8) Housekept. Cleaned up N hot lab. Dec. room, etc.

(9) Cleaned old I^{131} ionization chamber with dil. acid. Still hot in the corners.

9/12/47
8-4
King

① C^{14}

1. Changed gas monitor tube - however still doesn't seem to work right (could be higher sensitivity).

2. Made run to point of filtering off $Ba(OH)_2$ from precipitators - now filtering.

3. Left waste in ~~[illegible]~~ C_3 - Whitney wants 10 gal. in N. Hot Lab.

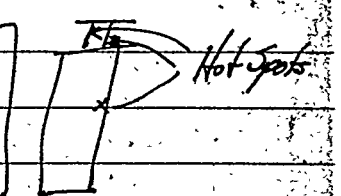
② Iodine:

Started run # I-325.

③ Pulled A-9 agitator plug & decontaminated plug.

④ Cleaned on I^{131} ionization chamber - still smears 250.

⑤ Reid 1 tree pruner



⑥ Got another key for 706-A store room.

⑦ P4 and P5 drain valves & heaters replaced at cell 5. Inst. man checking thermocouples.

⑧ Nothing done to carrier in decontam room this shift.

9-12-47 1) Completed C^{14} Run #29
4-12 2) Made sulfur extraction #77 and
Russell carried through glassware to SR2.
3) Obtained one carboy of I.B.W.'s waste solution from C^{14} Run 29 and stored in north hot lab.
4) Kept S.J.R. filtration going.
5) Completed decontamination of ionization chamber for returning to instrument shop.
6) Continued decontamination of Ba Carrier.
7) Completed iodine run 325 and started run 326 now distilling.
8) Misc - the guards picked up all log books tonight because they were marked "secret." If your logs gets away, call the guards.

Log #11 begins with 12-8 shift
9-13-47