00004610

000024301

May - 1987 EAC-420110-153

# Rocky Flats Plant

# Monthly Environmental Monitoring Report


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RR-RP-00235


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A Prime Contractor to
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Reviewed for Classification/UCNI/OUO
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Date: 11/17/08 KG
Confirmed Unclassified, Not UCNI/Not OUO

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ADMIN RECORD
SW-A-003632


129

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3/29

MAY 1987 ENVIRONMENTAL MONITORING REPORT
ROCKY FLATS PLANT

This report summarizes the effluent and environmental monitoring programs at the Rocky Flats Plant for the month of May, 1987.

Included in the report are monitoring results for radioactive and nonradioactive airborne effluents continuously sampled from Plant buildings, Tables I and II. Tables III through VI summarize environmental monitoring data from the Rocky Flats Plant ambient air sampling network. This network is comprised of continuously operating air samplers located on plantsite, around the Plant boundary, and in neighboring communities.

Water sampling results for radioactive constituents are given in Tables VII through IX. Results are summarized for Plant surface water control ponds, for nearby drinking water reservoirs, and for tap water for neighboring communities. Nitrate monitoring for Great Western Reservoir and Standley Lake, the two drinking water reservoirs which can receive surface water discharges from the Plant, are summarized in Table X.

The Environmental Protection Agency (EPA) has issued to the Plant a National Pollutant Discharge Elimination System (NPDES) permit for control of surface water discharges. Water sampling results associated with the NPDES permit, as well as applicable discharge limitations imposed by that permit, are reported in Table XI. Daily flow data for surface water from the two Plant drainage systems are given in Tables XII and XIII.

The Rocky Flats Plant Environmental Monitoring Program includes evaluating plant compliance with all relevant guides, limits, and standards. All average results of monitoring effluent and ambient samples complied with the applicable standards as specified in Executive Order 12088 (rules, regulations, and requirements of the Department of Energy).

The data provided in this report are provided as a matter of comity and should not be construed as an application for a permit or license, or in support of such an application Approval of the Department of Energy should be obtained prior to publication of any data contained within this report.

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Directed by: J.A. Nesheim DOE M4713-1

1/29

Table I. 1987 Plutonium and Uranium Airborne Effluent Data

| Month | Plutonium Release (uCi) | Plutonium CMax (pCi/m3) | Uranium Release (uCi) | Uranium CMax (pCi/m3) |
|---|---|---|---|---|
| CY 1986 | 14.33 | 0.047 ± 0.0082 | 21.24 | 0.133 ± 0.0152 |
| January | 1.39 | 0.095 ± 0.0155 | 2.15 | 0.017 ± 0.0013 |
| February | 0.89 | 0.071 ± 0.0081 | 1.99 | 0.095 ± 0.0091 |
| March | 1.84 | 0.229 ± 0.0278 | 1.12 | 0.005 ± 0.0004 |
| April | 2.02* | 0.016 ± 0.0013* | 0.87* | 0.004 ± 0.0005* |
| May | 1.28 | 0.104 ± 0.0175 | 0.94 | 0.003 ± 0.0004 |
| June | | | | |
| July | | | | |
| August | | | | |
| September | | | | |
| October | | | | |
| November | | | | |
| December | | | | |
| Year to Date | 7.42 | 0.229 ± 0.0278 | 7.07 | 0.095 ± 0.0091 |

* Data previously unreported.

NOTE: Beginning in January 1981, the plutonium, uranium, americium, and beryllium measured concentrations have been reported. These reported concentrations include values that are less than the corresponding calculated MDC's and in some cases, values less than zero. These negative values result when the measured value for the laboratory reagent blank is subtracted from an analytical result which was measured as a smaller value than the reagent blank. This may happen when measuring concentrations which are very close to zero.



7/29

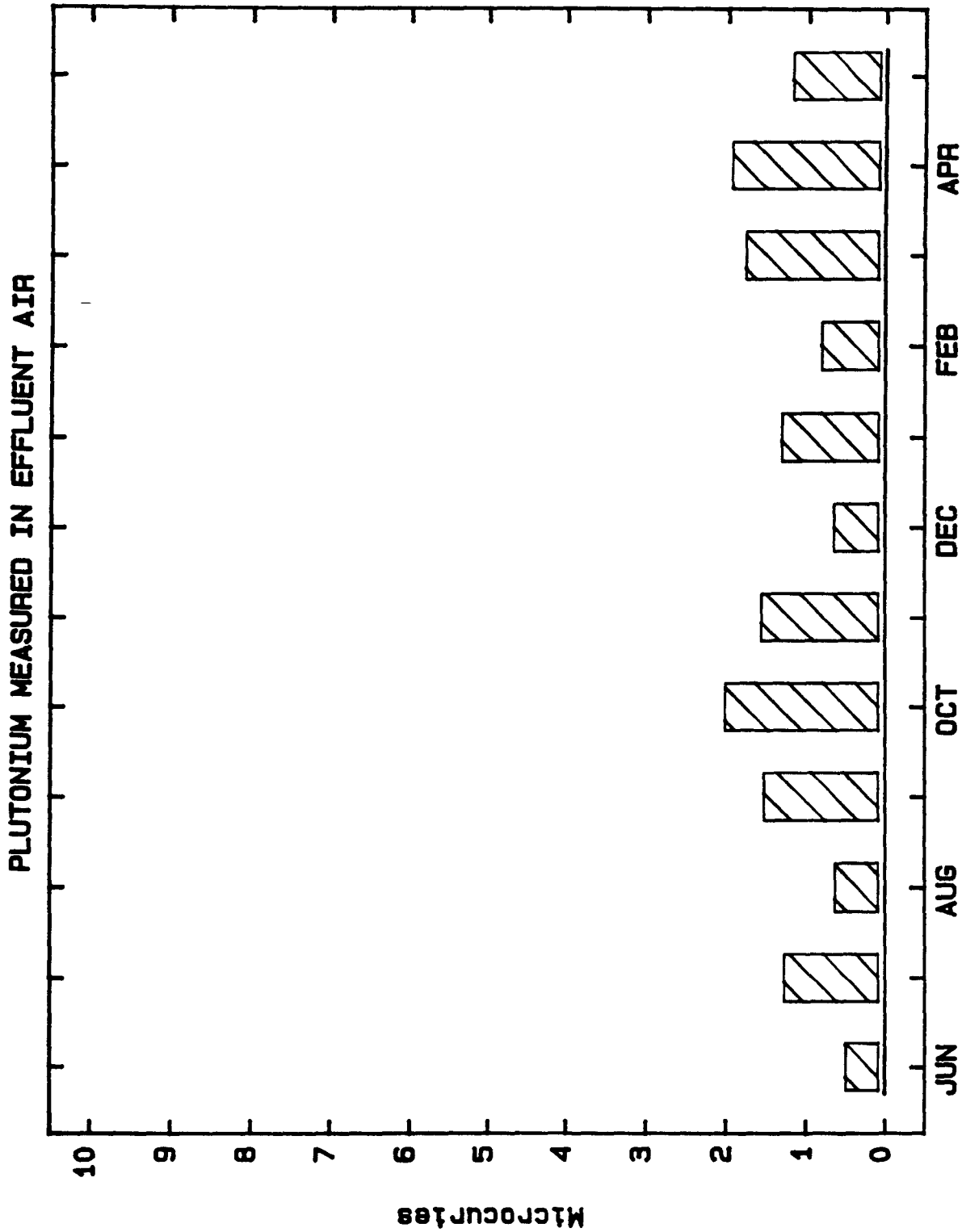
Table II. 1987 Tritium and Beryllium Airborne Effluent Data

| Month | Tritium Release (Ci) | Tritium CMax (pCi/m3) | Beryllium Release (gms) | Beryllium CMax (ug/m3) |
|---|---|---|---|---|
| CY 1986 | 0.218 | 36700 ± 950 | 0.1299 | 0.00053 |
| January | 0.005 | 410 ± 180 | 0.0276 | 0.00042 |
| February | 0.008 | 250 ± 80 | 0.0085 | 0.00006 |
| March | 0.004 | 470 ± 180 | 0.0091 | 0.00014 |
| April | 0.007 | 270 ± 60 | 0.0130 | 0.00010 |
| May | 0.013 | 560 ± 210 | 0.0143 | 0.00011 |
| June | | | | |
| July | | | | |
| August | | | | |
| September | | | | |
| October | | | | |
| November | | | | |
| December | | | | |
| Year to Date | 0.037 | 560 ± 210 | 0.0725 | 0.00042 |

NOTE· Beryllium measured at the remaining 36 locations was below the screening level of 0.1 gram per month.

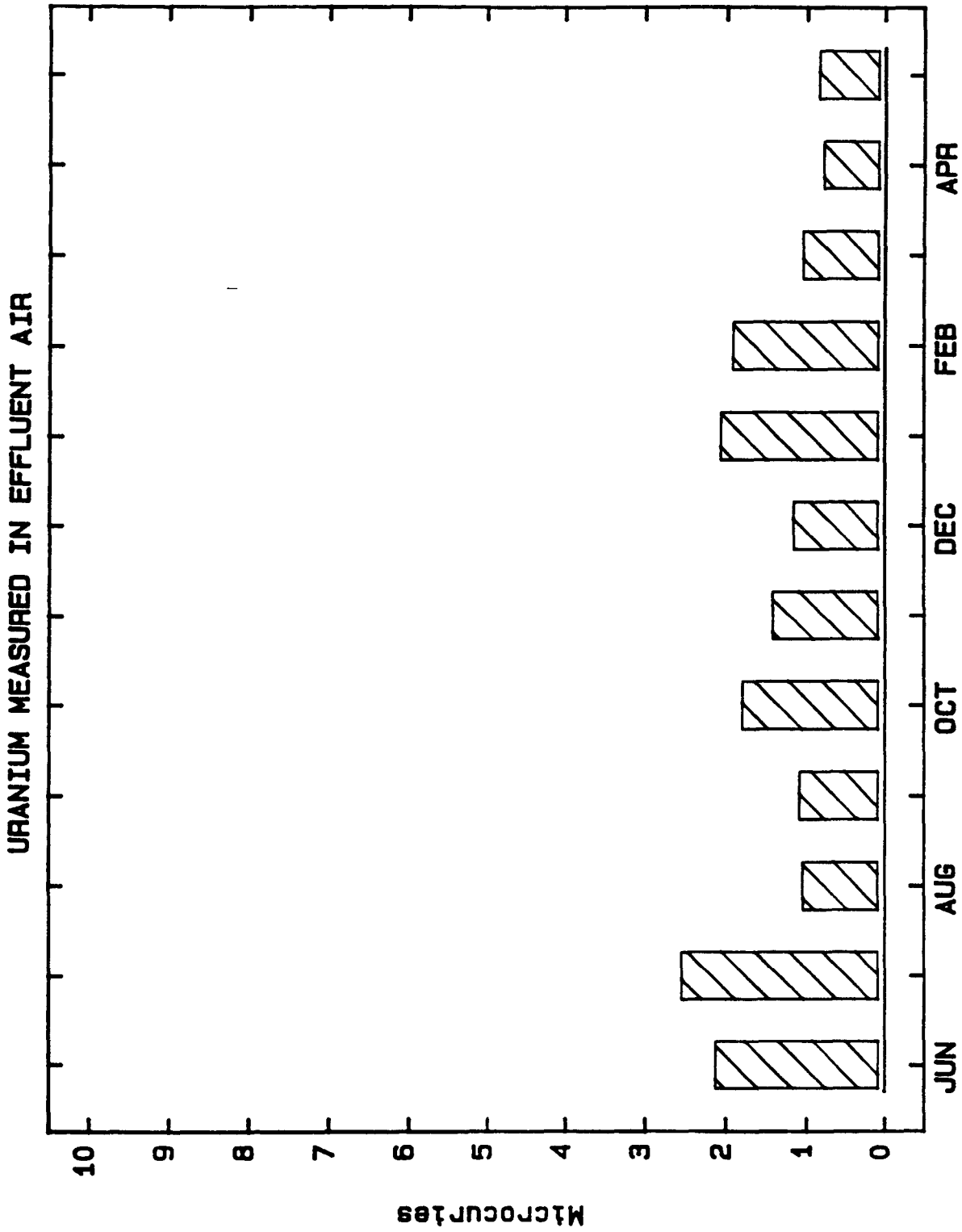


1/29


PLUTONIUM MEASURED IN EFFLUENT AIR
MICROCURIES
10
9
8
7
6
5
4
3
2
1
0
JUN
AUG
OCT
DEC
FEB
APR

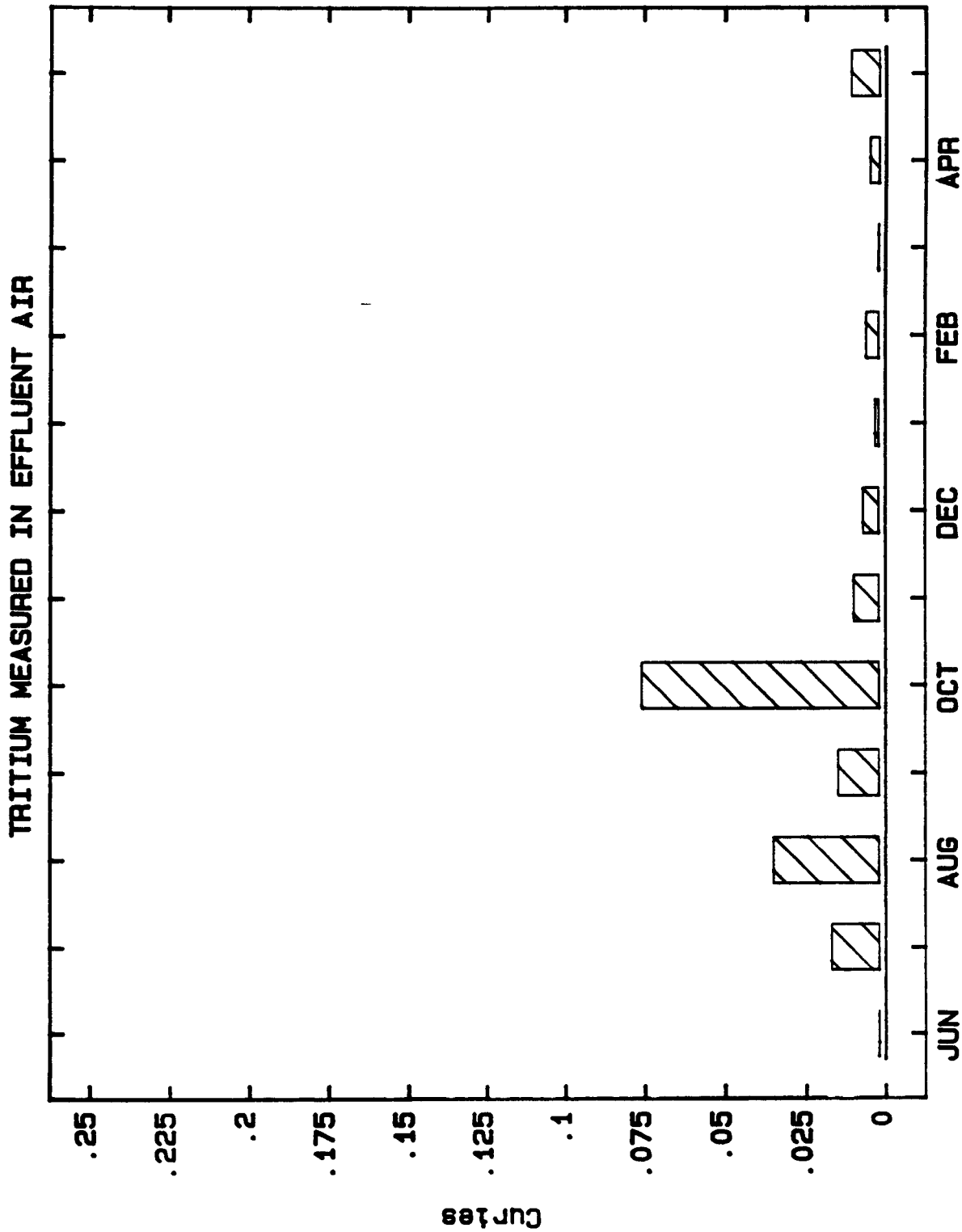


7/29


URANIUM MEASURED IN EFFLUENT AIR
MICROCURIES
10
9
8
7
6
5
4
3
2
1
0
JUN
AUG
OCT
DEC
FEB
APR

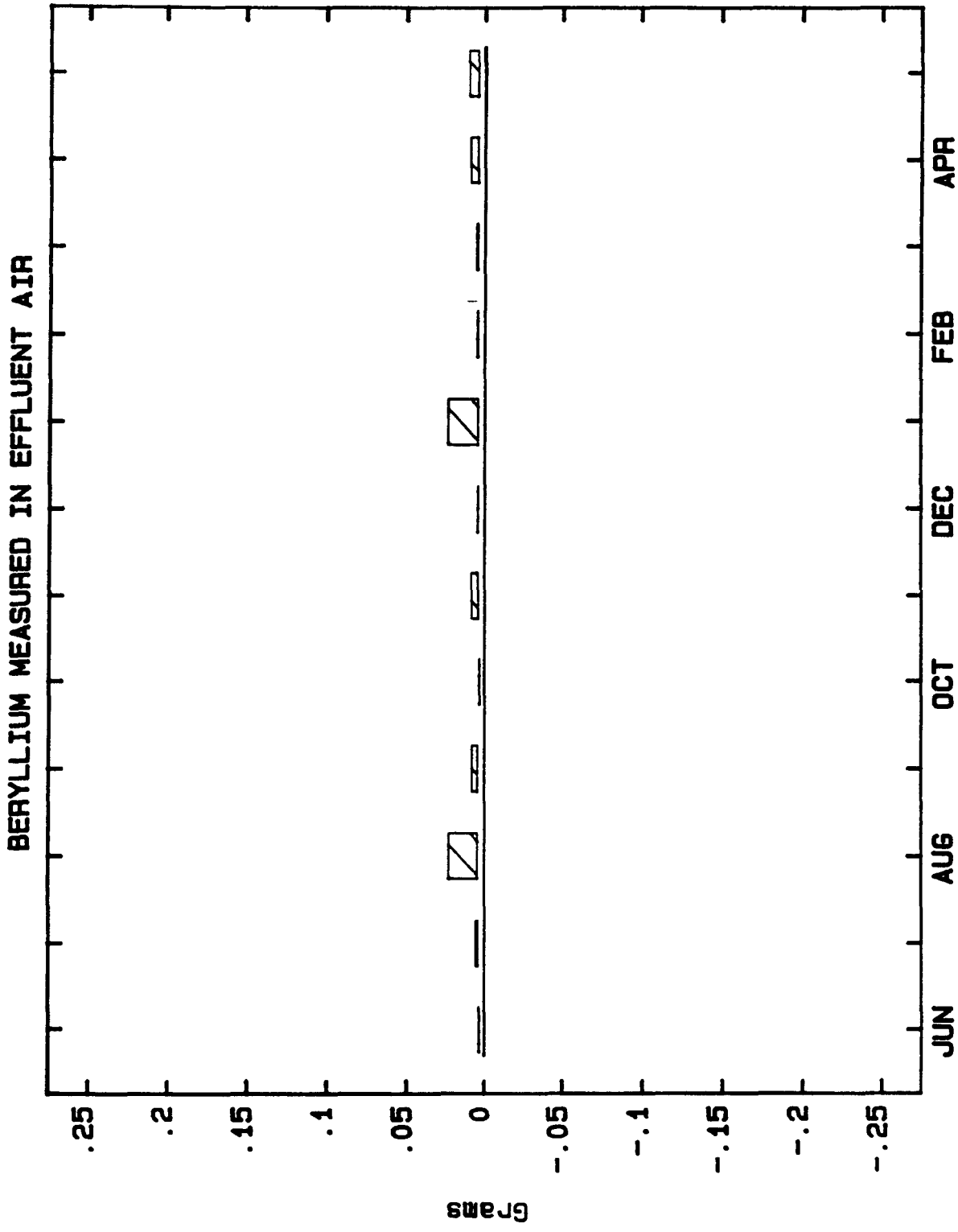


3/29


TRITIUM MEASURED IN EFFLUENT AIR
Curies
.25
.225
.2
.175
.15
.125
.1
.075
.05
.025
0
JUN
AUG
OCT
DEC
FEB
APR



1/29


BERYLLIUM MEASURED IN EFFLUENT AIR
Grams
.25
.2
.15
.1
.05
0
-.05
-.1
-.15
-.2
-.25
JUN
AUG
OCT
DEC
FEB
APR



1/29

Table III. Plutonium at Selected Onsite Ambient Air Locations
(04/21/87-05/19/87)

| Location | n | Volume($m^3$) | Concentration ($pCi/m^3$) Lower Confidence Limit | Point Estimate | Upper Confidence Limit |
|---|---|---|---|---|---|
| S-05 | 2 | 19,000 | 0.000040 | 0.000049 | 0.000058 |
| S-06 | 2 | 29,000 | 0.000029 | 0.000035 | 0.000041 |
| S-07 | 2 | 30,000 | 0.000514 | 0.000575 | 0.000636 |
| S-08 | 2 | 27,000 | 0.000802 | 0.000895 | 0.000988 |
| S-09 | 2 | 34,000 | 0.001153 | 0.001290 | 0.001427 |

NOTE· Total long-lived alpha at the remaining 18 onsite ambient air samplers was below the screening level of 0.01 pCi/m3.

Table IV. Tritium in Ambient Air
(04/28/87 to 06/02/87)

| Location | n | Air Volume($m^3$) | Point Estimate ($pCi/m^3$) | +/- Error ($pCi/m^3$) | Condensed Water Vapor (mls) |
|---|---|---|---|---|---|
| S-4 | 5 | 44 | 1.03 | 1.57 | 174 |
| S-5 | 4 | 25 | 1.22 | 1.52 | 97 |
| S-16 | 5 | 84 | 0.56 | 1.32 | 260 |



/29

APRIL 1987

Table III. Plutonium at Selected Onsite Ambient Air Locations
(03/24/87-04/21/87)

| Location | n | Volume($m^3$) | Concentration ($pCi/m^3$) Lower Confidence Limit | Point Estimate | Upper Confidence Limit |
|---|---|---|---|---|---|
| S-05 | 2 | 26,000 | 0.000068 | 0.000083 | 0.000098 |
| S-06 | 2 | 27,000 | 0.000035 | 0.000044 | 0.000053 |
| S-07 | 2 | 29,000 | 0.000305 | 0.000344 | 0.000383 |
| S-08 | 2* | 29,000 | 0.000330 | 0.000376 | 0.000422 |
| S-09 | 2 | 33,000 | 0.000515 | 0.000508 | 0.000645 |

* S-08· Not reported last month.

NOTE. Total long-lived alpha at the remaining 18 onsite ambient air samplers was below the screening level of 0.01 pCi/m3.

Table IV. Tritium in Ambient Air
(03/31/87 to 04/28/87)

| Location | n | Air Volume($m^3$) | Point Estimate ($pCi/m^3$) | +/- Error ($pCi/m^3$) | Condensed Water Vapor (mls) |
|---|---|---|---|---|---|
| S-4 | 4 | 26 | 0.87 | 1.44 | 97 |
| S-5 | 3 | 22 | 0.20 | 0.69 | 39 |
| S-16 | 4 | 75 | 0.40 | 0.69 | 133 |



129

Table V. Plutonium in Perimeter Ambient Air
(04/28/87-05/26/87)

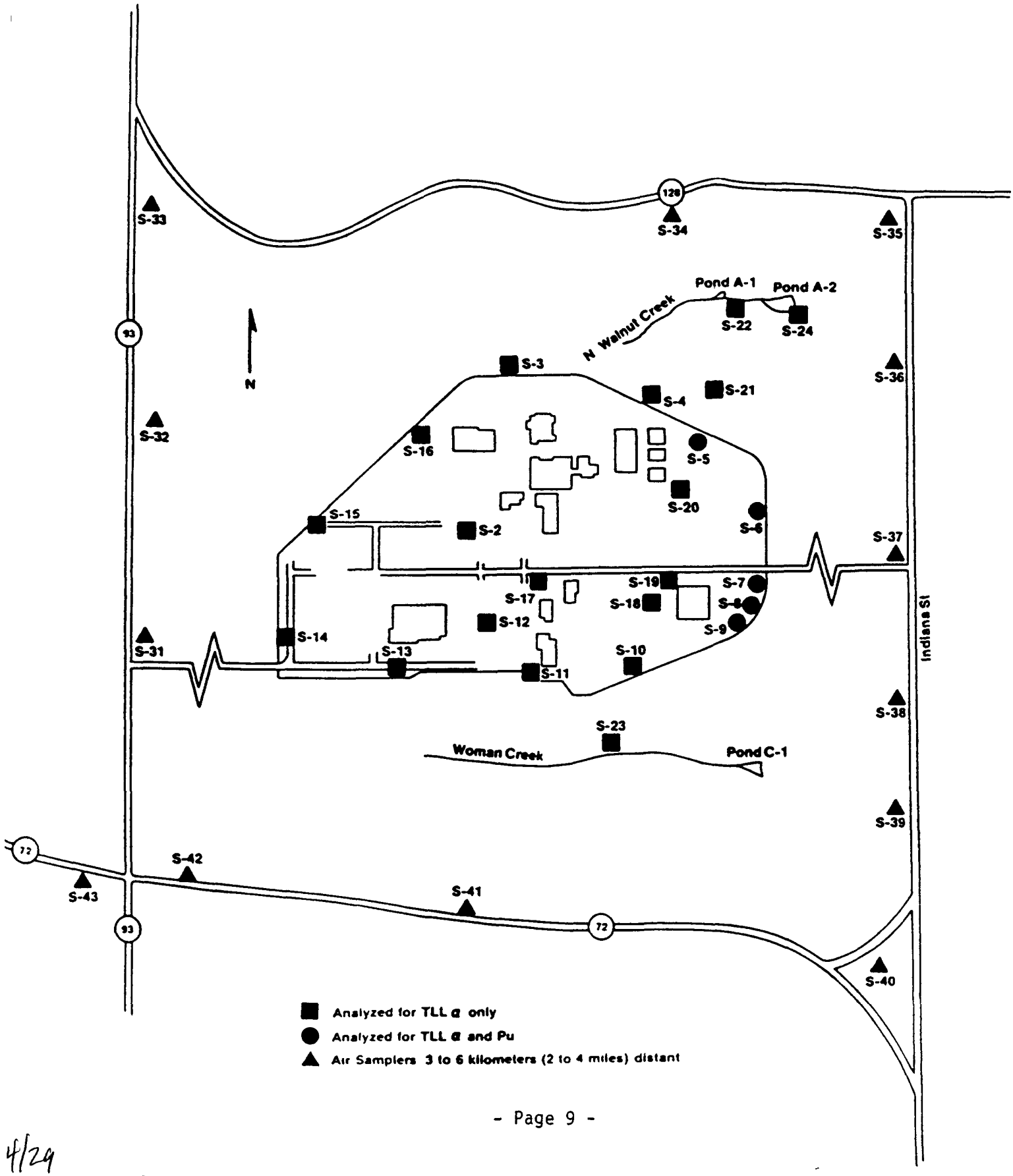
| Location | n | Volume($m^3$) | Concentration($pCi/m^3$) Lower Confidence Limit | Point Estimate | Upper Confidence Limit |
|---|---|---|---|---|---|
| S-31 | 1 | 28,000 | -0.000001 | 0.000001 | 0.000003 |
| S-32 | 1 | 22,000 | -0.000003 | 0.000000 | 0.000003 |
| S-33 | 1 | 26,000 | -0.000002 | 0.000000 | 0.000002 |
| S-34 | 1 | 24,000 | -0.000001 | 0.000002 | 0.000005 |
| S-35 | 1 | 20,000 | -0.000001 | 0.000002 | 0.000005 |
| S-36 | 1 | 27,000 | 0.000002 | 0.000004 | 0.000006 |
| S-37 | 1 | 13,000 | -0.000002 | 0.000002 | 0.000006 |
| S-38 | 1 | 27,000 | -0.000002 | 0.000000 | 0.000002 |
| S-39 | 1 | 28,000 | 0.000002 | 0.000004 | 0.000006 |
| S-40 | 1 | 20,000 | -0.000001 | 0.000002 | 0.000005 |
| S-41 | 1 | 17,000 | -0.000001 | 0.000003 | 0.000007 |
| S-42 | 1 | 29,000 | -0.000003 | -0.000001 | 0.000001 |
| S-43 | 1 | 30,000 | 0.000000 | 0.000002 | 0.000004 |
| S-44 | 1 | 27,000 | -0.000003 | -0.000001 | 0.000001 |

Mean Point Estimate = 0.000001



3/29

Location of Onsite and Plant Perimeter Ambient Air Samplers
(Portions of figure are not to scale.)





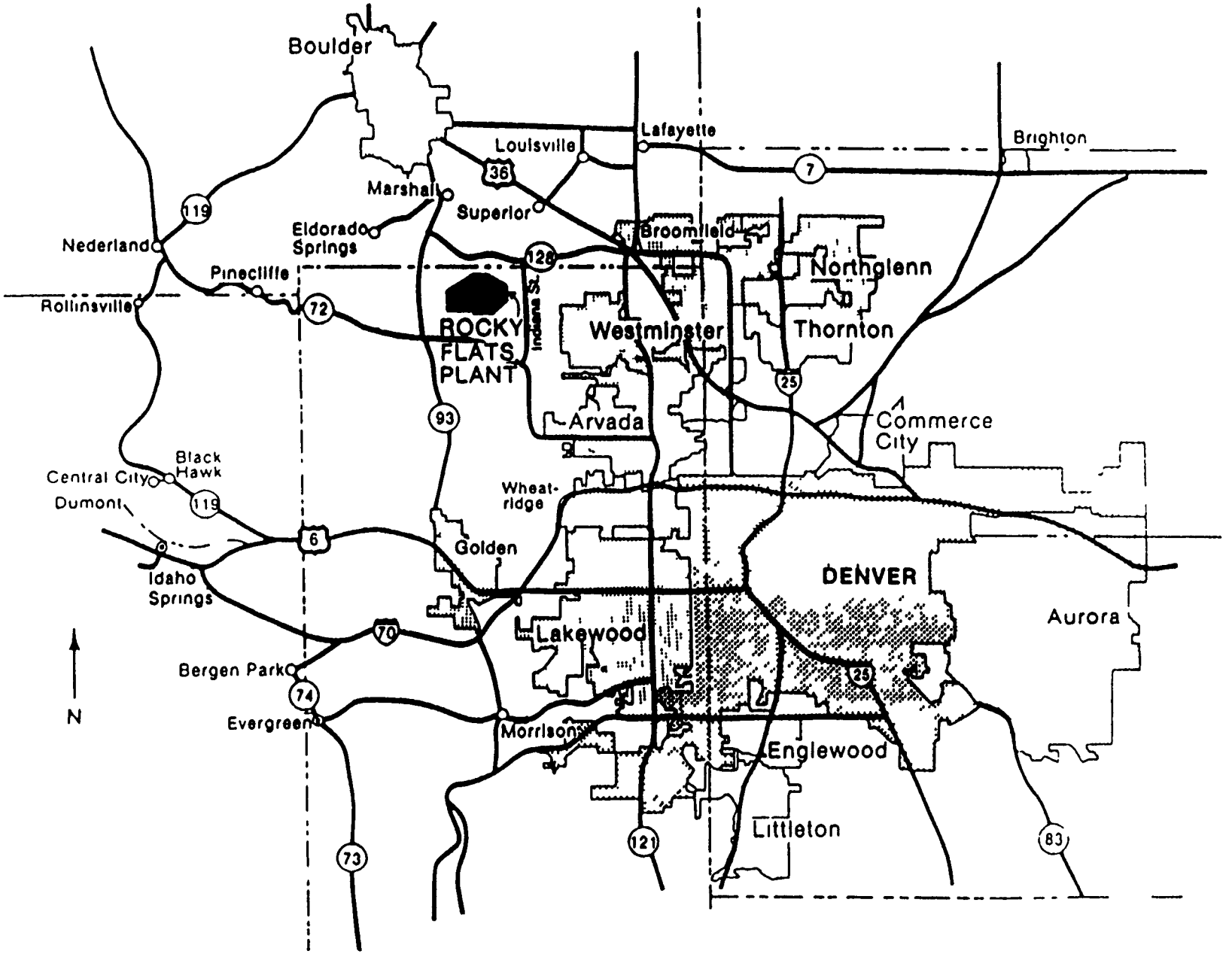

4/29

Table VI. Plutonium in Community Ambient Air
(04/29/87-05/27/87)

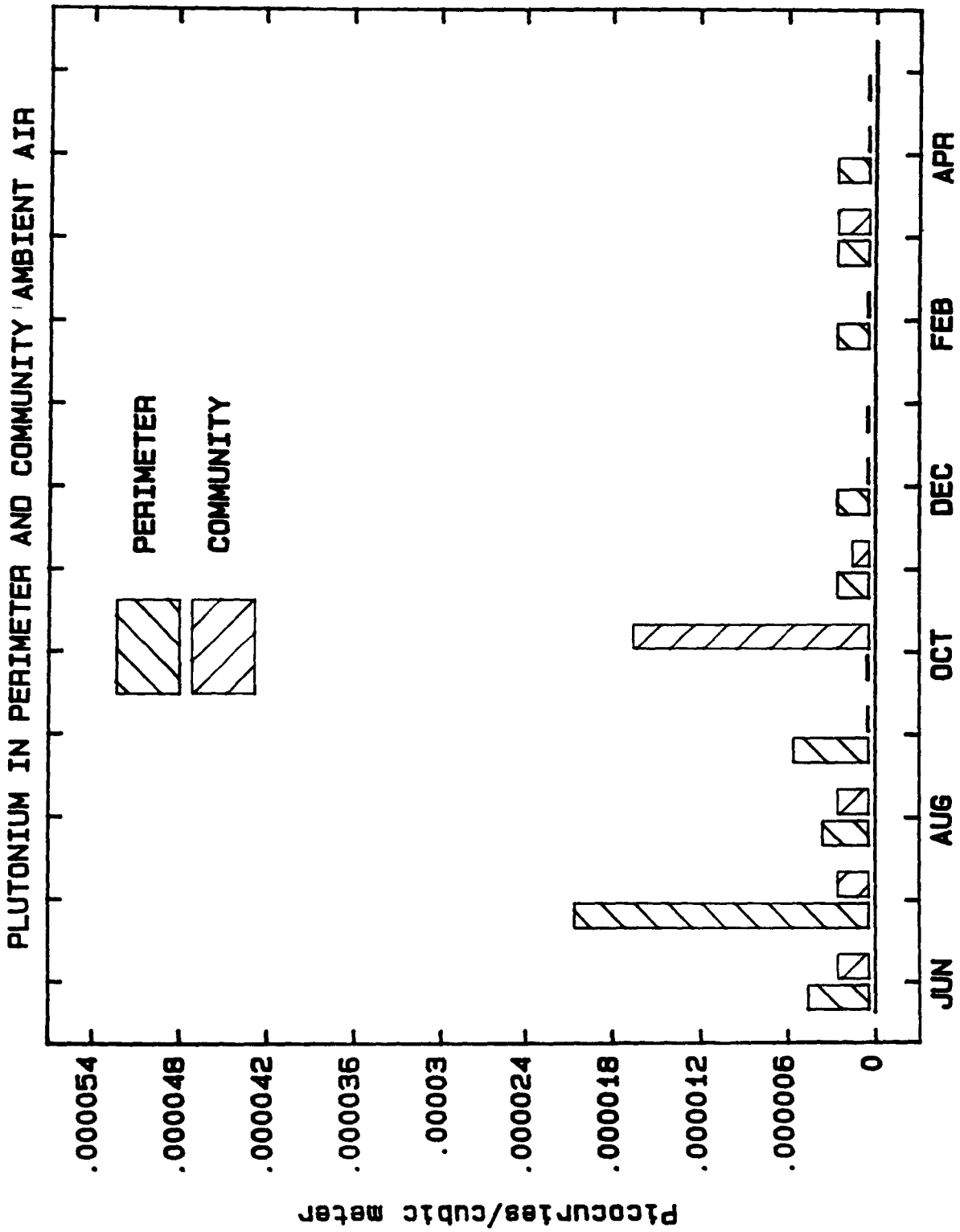
| Location | n | Volume($m^3$) | Concentration($pCi/m^3$) Lower Confidence Limit | Point Estimate | Upper Confidence Limit |
|---|---|---|---|---|---|
| Marshall | 1 | 26,000 | -0.000001 | 0.000001 | 0.000003 |
| Jeffco Airport | 1 | 25,000 | -0.000001 | 0.000001 | 0.000003 |
| Superior | 1 | 26,000 | -0.000003 | -0.000001 | 0.000001 |
| Boulder | 1 | 26,000 | -0.000001 | 0.000001 | 0.000003 |
| Lafayette | 1 | 25,000 | 0.000001 | 0.000003 | 0.000005 |
| Broomfield | 1 | 25,000 | -0.000003 | -0.000001 | 0.000001 |
| Walnut Creek | 1 | 28,000 | -0.000002 | 0.000000 | 0.000002 |
| Wagner | 1 | 28,000 | -0.000002 | 0.000000 | 0.000002 |
| Leyden | 1 | 24,000 | -0.000003 | -0.000001 | 0.000001 |
| Westminster | 1 | 20,000 | -0.000004 | -0.000001 | 0.000002 |
| Denver | 1 | 30,000 | -0.000002 | 0.000000 | 0.000002 |
| Golden | 1 | 29,000 | -0.000002 | 0.000000 | 0.000002 |
| Lakeview Pointe | 1 | 22,000 | -0.000003 | 0.000000 | 0.000003 |
| Cotton Creek | 1 | 25,000 | -0.000002 | 0.000000 | 0.000002 |
| Mean Point Estimate | | | | 0.000000 | |



5/29




**Area Map of Rocky Flats Plant and Surrounding Communities**


PLUTONIUM IN PERIMETER AND COMMUNITY AMBIENT AIR
PERIMETER
COMMUNITY
.000054
.000048
.000042
.000036
.00003
.000024
.000018
.000012
.000006
0
JUN
AUG
OCT
DEC
FEB
APR
picocuries/cubic meter



1/29

MAY 1987

Table VII. Water Sample Results, Radioactive Parameters

Holding Pond Outfall (pCi/l)

| Location | Plutonium | Uranium | Americium |
|---|---|---|---|
| **Pond A-4** | | | |
| 04/30/87 - 05/01/87 | 0.03 ± 0.03 | 5.4 ± 0.6 | 0.02 ± 0.02 |
| 05/04/87 - 05/07/87 | 0.00 ± 0.02 | 5.2 ± 0.5 | 0.02 ± 0.02 |
| Average Concentration | 0.02 ± 0.02 | 5.3 ± 0.4 | 0.02 ± 0.01 |
| **Pond B-5** | | | |
| 04/30/87 - 05/01/87 | 0.04 ± 0.03 | 4.6 ± 0.5 | 0.02 ± 0.02 |
| 05/04/87 - 05/07/87 | 0.01 ± 0.02 | 4.4 ± 0.6 | 0.00 ± 0.01 |
| Average Concentration | 0.02 ± 0.02 | 4.5 ± 0.4 | 0.01 ± 0.01 |
| **Pond C-1** | | | |
| 05/01/87 - 05/08/87 | 0.02 ± 0.01 | 1.3 ± 0.2 | 0.02 ± 0.02 |
| 05/08/87 - 05/15/87 | 0.000 ± 0.004 | 2.5 ± 0.3 | 0.007 ± 0.003 |
| 05/15/87 - 05/22/87 | 0.05 ± 0.01 | 2.8 ± 0.3 | 0.02 ± 0.02 |
| 05/22/87 - 05/29/87 | 0.01 ± 0.01 | 2.2 ± 0.3 | 0.01 ± 0.01 |
| Average Concentration | 0.020 ± 0.004 | 2.2 ± 0.1 | 0.01 ± 0.01 |
| **Pond C-2** | | | |
| | NO DISCHARGE | | |
| **Walnut Creek at Indiana** | | | |
| 05/01/87 - 05/08/87 | 0.02 ± 0.01 | 5.2 ± 0.5 | 0.03 ± 0.01 |
| 05/08/87 - 05/15/87 | 0.01 ± 0.01 | 5.1 ± 0.5 | 0.002 ± 0.003 |
| 05/15/87 - 05/22/87 | 0.001 ± 0.005 | 4.0 ± 0.5 | 0.06 ± 0.03 |
| 05/22/87 - 05/29/87 | 0.04 ± 0.01 | 1.2 ± 0.2 | 0.01 ± 0.01 |
| Average Concentration | 0.018 ± 0.004 | 3.9 ± 0.2 | 0.03 ± 0.01 |



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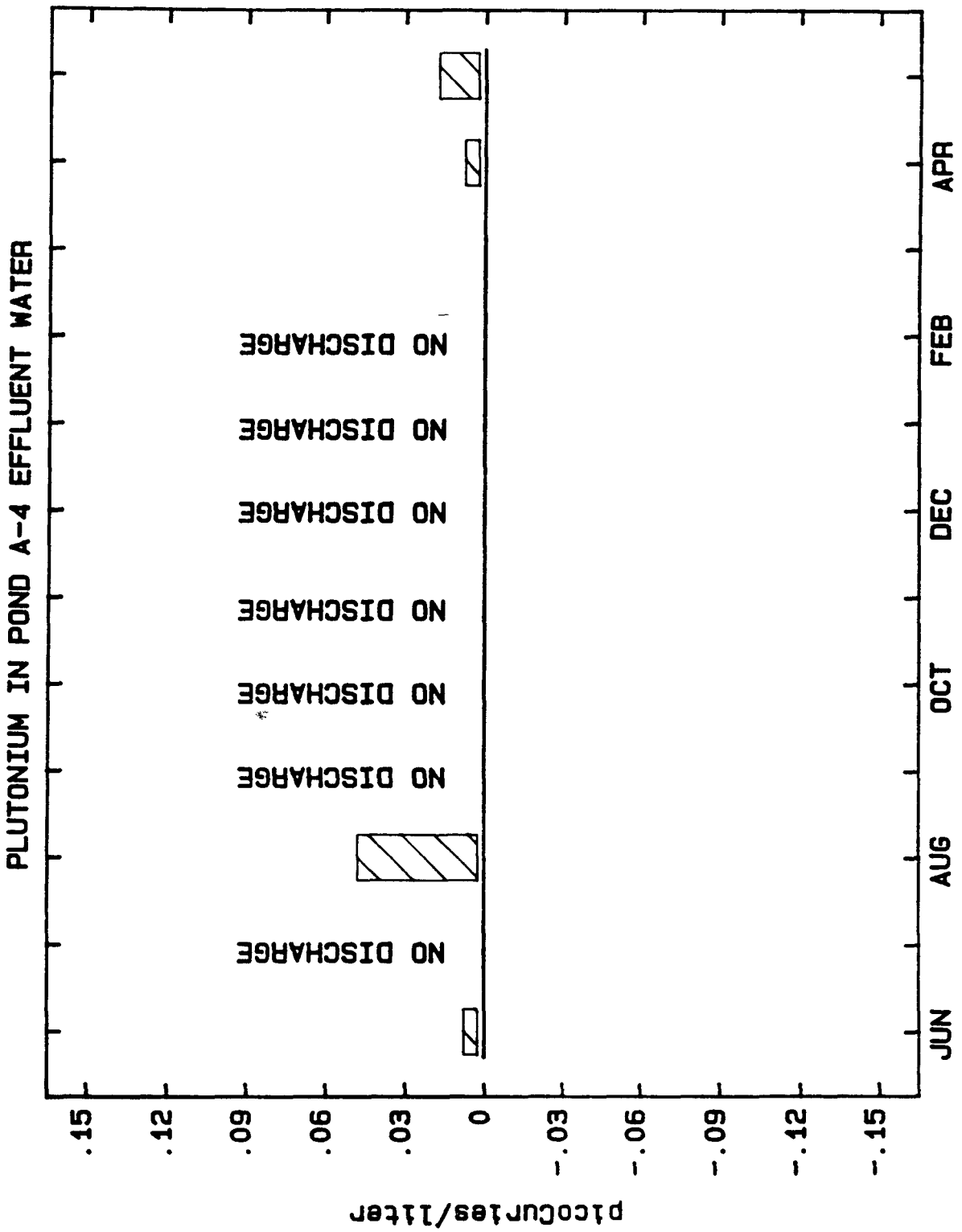
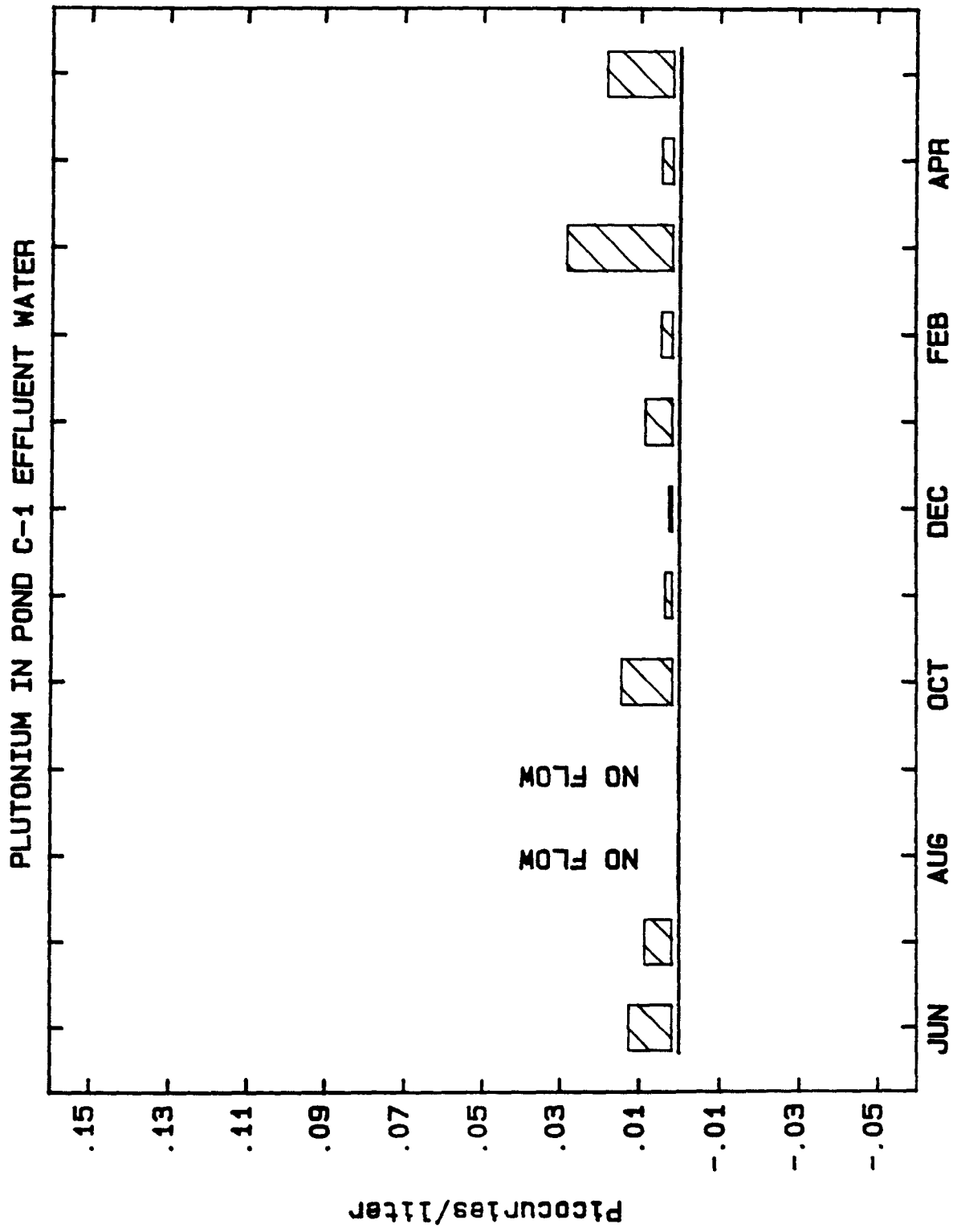

PLUTONIUM IN POND A-4 EFFLUENT WATER
picocuries/liter
.15
.12
.09
.06
.03
0
-.03
-.06
-.09
-.12
-.15
JUN
AUG
OCT
DEC
FEB
APR
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE

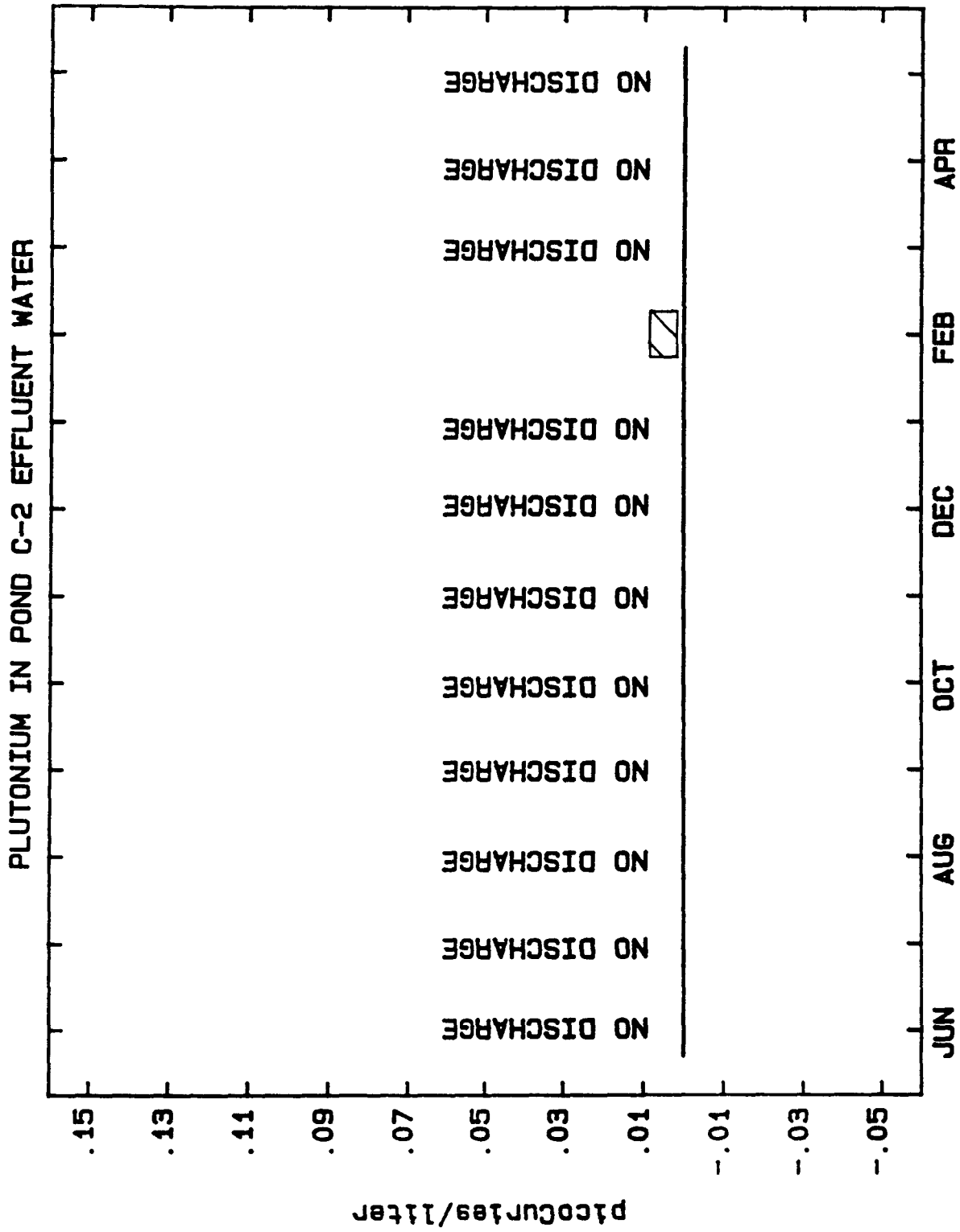


1/29


PLUTONIUM IN POND C-1 EFFLUENT WATER
NO FLOW
NO FLOW
JUN
AUG
OCT
DEC
FEB
APR
.15
.13
.11
.09
.07
.05
.03
.01
-.01
-.03
-.05
picocuries/liter

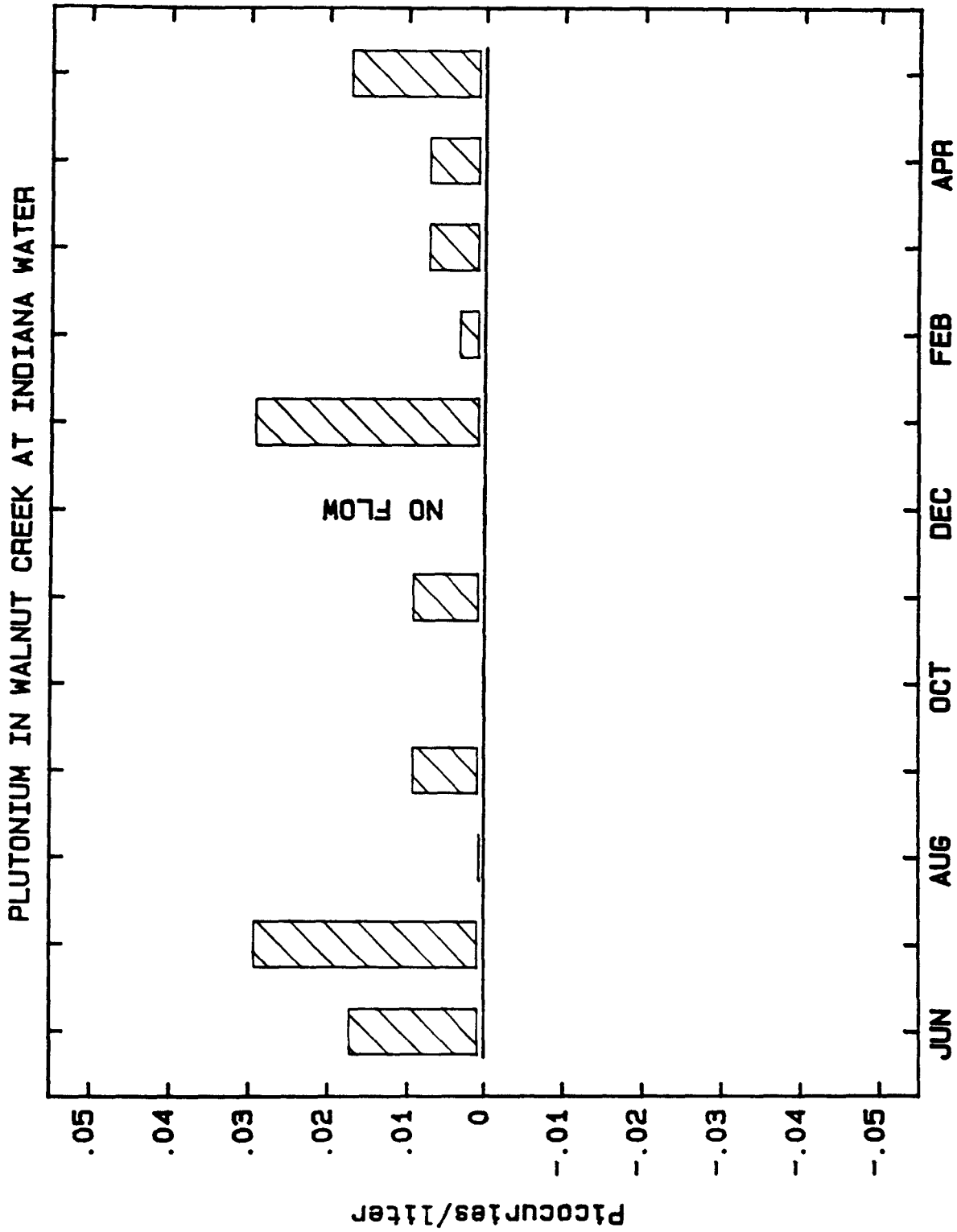


0/29


PLUTONIUM IN POND C-2 EFFLUENT WATER
picocuries/liter
.15
.13
.11
.09
.07
.05
.03
.01
-.01
-.03
-.05
JUN
AUG
OCT
DEC
FEB
APR
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE
NO DISCHARGE



4/29


PLUTONIUM IN WALNUT CREEK AT INDIANA WATER
NO FLOW
.05
.04
.03
.02
.01
0
-.01
-.02
-.03
-.04
-.05
Picocuries/liter
JUN
AUG
OCT
DEC
FEB
APR



2/29

Table VIII. Water Sample Results, Radioactive Parameters

Reservoirs (pCi/l)

| Location | n | Plutonium | Uranium | Americium |
|---|---|---|---|---|
| Great Western | 1* | 0.001 ± 0.006 | 2.9 ± 0.3 | 0.009 ± 0.006 |
| Standley | 1* | 0.002 ± 0.006 | 2.1 ± 0.2 | 0.000 ± 0.005 |

Community Tap Water (pCi/l)

| Location | n | Plutonium | Uranium | Americium |
|---|---|---|---|---|
| Arvada | 1* | -0.002 ± 0.006 | 0.3 ± 0.1 | 0.004 ± 0.005 |
| Boulder | 1* | 0.03 ± 0.01 | 0.0 ± 0.1 | 0.005 ± 0.005 |
| Broomfield | 1* | 0.005 ± 0.006 | 1.2 ± 0.2 | 0.007 ± 0.005 |
| Westminster | 1* | 0.001 ± 0.006 | 0.3 ± 0.1 | 0.008 ± 0.006 |

* Plutonium, uranium and americium analyses were performed on one sample composited from four weekly grab samples.



3/29

Table IX. Water Sample Results, Radioactive Parameters

Tritium (pCi/l)

| Location | n | $C_{Minimum}$ | $C_{Maximum}$ | $C_{Average}$ |
|---|---|---|---|---|
| Pond A-4 | 5 | 0 ± 400 | 500 ± 400 | 200 ± 200 |
| Pond B-5 | 5 | 200 ± 400 | 400 ± 400 | 300 ± 200 |
| Pond C-1 | 3 | 0 ± 400 | 300 ± 400 | 200 ± 200 |
| Pond C-2 | 0 | No Discharge | | |
| Walnut Creek at Indiana | 3 | 0 ± 400 | 700 ± 400 | 300 ± 200 |
| Boulder | 4 | -600 ± 200 | 600 ± 400 | 100 ± 200 |
| Broomfield | 4 | 0 ± 400 | 300 ± 400 | 200 ± 200 |
| Great Western | 4 | 0 ± 400 | 600 ± 400 | 200 ± 200 |
| Standley | 4 | 200 ± 400 | 300 ± 400 | 300 ± 200 |
| Westminster | 4 | 0 ± 400 | 700 ± 400 | 300 ± 200 |



4/29

MAY 1987

Table X. Water Sample Results, Nonradioactive Parameters

Nitrate (as N) at Great Western Reservoir

| Sample Date | Nitrate (as N) (mg/l) |
|---|---|
| 05/07/87 | 0.3 |
| 05/14/87 | 0.3 |
| 05/21/87 | 0.4 |
| 05/28/87 | 0.3 |

Nitrate (as N) at Standley Lake

| Sample Date | Nitrate (as N) (mg/l) |
|---|---|
| 05/07/87 | <0.2 |
| 05/14/87 | <0.2 |
| 05/21/87 | <0.2 |
| 05/28/87 | <0.2 |

NOTE. For some parameters, the concentrations that are measured at or below the minimum detectable concentration (MDC) are assigned to MDC. The less than symbol (<) indicated MDC values and calculated values that include one or more MDC's.



5/29

MAY 1987

Table XI. NPDES Permit Water Sample Results

Discharge 001 (Pond B-3)
Discharged nine times

| Parameter | | 30-Day Average | Limits 30-Day* Average | Daily Maximum | Limits Daily Maximum |
|---|---|---|---|---|---|
| Biochem. Oxygen Demand,5 Day | mg/l | 15 | 10 | 20 | 25 |
| Total Suspended Soilds | mg/l | 6.4 | 30 | 12 | NA |
| Nitrates as N | mg/l | <0.3 | 10 | 0.6 | NA |
| Total Chromium | mg/l | <0.05 | <0.05 | <0.05 | 0.1 |
| Total Phosphorus | mg/l | 1.6 | 8 | 6.0 | NA |
| Oil and Grease, Visual | | none | NA | none | NA |
| Total Residual Chlorine | mg/l | 0.06 | NA | 0.2 | 0.5 |
| Fecal Coliforms | #/100 ml | 2.2 | 200 | 3.5 | NA |
| | | Minimum | Minimum | Maximum | Maximum |
| pH | S.U. | 6.6 | 6.0 | 7.4 | 9.0 |

Discharge 002 (Pond A-3)
Discharged two times

| Parameters | | 30-Day Average | Limits 30-Day* Average | Daily Maximum | Limits Daily Maximum |
|---|---|---|---|---|---|
| Nitrates as N | mg/l | 2.0 | 10 | 2.5 | 20 |
| | | Minimum | Maximum | Minimum | Maximum |
| pH | S.U. | 7.6 | 6.0 | 7.5 | 9.0 |

Discharge 003 (RO Pilot Plant)
No Discharge

| | | Minimum | Limits Minimum | Maximum | Limits Maximum |
|---|---|---|---|---|---|
| pH | S.U. | | 6.0 | | 9.0 |

Discharge 004 (RO Plant)
No Discharge

| | | 30-Day Average | Limits 30-Day* Average | Daily Maximum | Limits Daily Maximum |
|---|---|---|---|---|---|
| Total Suspended Solids | mg/l | | 15 | | 25 |
| Total Organic Compounds | mg/l | | 22 | | 30 |
| Total Phosphorus | mg/l | | 8 | | 12 |
| Nitrates as N | mg/l | | 10 | | 20 |
| Total Chromium | mg/l | | 0.05 | | 0.1 |
| Total Residual Chlorine | mg/l | | NA | | 0.5 |
| | | 7-Day Average | 7-Day Average | 30-Day Average | 30-Day Average |
| Fecal Coliform | #/100 ml | | 400 | | 200 |
| | | Minimum | Minimum | Maximum | Maximum |
| pH | S.U. | | 6.0 | | 9.0 |

* This limitation applies when a minimum of 3 consecutive samples are taken during separate weeks.



26/29

Tables XI. NPDES Permit Water Sample Results (Continued)

Discharge 005 (Pond A-4)

| Parameter | | n | $C_{Minimum}$ | $C_{Maximum}$ | $C_{Average}$ |
|---|---|---|---|---|---|
| pH | S.U. | 5 | 7.4 | 7.6 | - |
| Nitrates as N | mg/l | 5 | 1.0 | 1.4 | 1.2 |
| Nonvolatile Suspended Solids | mg/l | 5 | 2.0 | 10. | 4.8 |

Discharge 006 (Pond B-5)

| Parameter | | n | $C_{Minimum}$ | $C_{Maximum}$ | $C_{Average}$ |
|---|---|---|---|---|---|
| pH | S.U. | 5 | 7.7 | 7.8 | - |
| Nitrates as N | mg/l | 5 | 1.2 | 1.6 | 1.4 |
| Nonvolatile Suspended Solids | mg/l | 5 | 3.0 | 14. | 6.8 |

Discharge 007 (Pond C-2)
No Discharge

| Parameter | | n | $C_{Minimum}$ | $C_{Maximum}$ | $C_{Average}$ |
|---|---|---|---|---|---|
| pH | S.U. | | No Discharge | | |
| Nitrates as N | mg/l | | | | |
| Nonvolatile Suspended solids | mg/l | | | | |

Table XII. Water Sample Results, Nonradioactive Parameters

Walnut Creek at Indiana Street

| Parameter | | n | $C_{Minimum}$ | $C_{Maximum}$ | $C_{Average}$ |
|---|---|---|---|---|---|
| pH | S.U. | 20 | 6.8 | 8.0 | - |
| Nitrates as N | mg/l | 20 | <0.2 | 2.5 | <0.7 |

Total Volume (gallons) = 80,884,000



27/29

Table XII.

Daily Flow Data Recorded at the
Walnut Creek at Indiana Gauging Station,
Ponds A-4 and B-5 during May, 1987

| Date | Walnut Creek at Indiana (gallons) | Pond A-4 (gallons) | Pond B-5 (gallons) |
|---|---|---|---|
| 5/01/87 | 10,128,000 | 5,173,000 | 1,576,000 |
| 5/02/87 | 6,096,000 | - | - |
| 5/05/87 | 12,911,000 | 5,171,000 | 1,841,000 |
| 5/06/87 | 11,668,000 | 5,043,000 | 1,574,000 |
| 5/07/87 | 12,191,000 | 7,476,000 | 2,520,000 |
| 5/08/87 | 4,128,000 | - | - |
| 5/11/87 | 1,163,000 | - | - |
| 5/12/87 | 372,000 | - | - |
| 5/13/87 | 232,000 | - | - |
| 5/14/87 | 167,000 | - | - |
| 5/15/87 | 108,000 | - | - |
| 5/18/87 | 293,000 | - | - |
| 5/19/87 | 87,000 | - | - |
| 5/20/87 | 164,000 | - | - |
| 5/21/87 | 1,463,000 | - | - |
| 5/22/87 | 3,840,000 | - | - |
| 5/26/87 | 13,085,000 | - | - |
| 5/27/87 | 2,174,000 | - | - |
| 5/28/87 | 459,000 | - | - |
| 5/29/87 | 155,000 | - | - |
| Total Volume | 80,884,000 | 22,863,000 | 7,511,000 |



28/29

Table XIII.

Daily Flow Data Recorded at
Ponds C-1 and C-2 during May, 1987
(Woman Creek)

| Date | Pond C-1 (gallons) | Pond C-2 (gallons) |
|---|---|---|
| 5/01/87 | 730,000 | - |
| 5/04/87 | - | - |
| 5/05/87 | 2,796,000 | - |
| 5/06/87 | 724,000 | - |
| 5/07/87 | 626,000 | - |
| 5/08/87 | 686,000 | - |
| 5/11/87 | 1,718,000 | - |
| 5/12/87 | 466,000 | - |
| 5/13/87 | 448,000 | - |
| 5/14/87 | 436,000 | - |
| 5/15/87 | 326,000 | - |
| 5/18/87 | 932,000 | - |
| 5/19/87 | 396,000 | - |
| 5/20/87 | 429,000 | - |
| 5/21/87 | 631,000 | - |
| 5/22/87 | 700,000 | - |
| 5/26/87 | 2,546,000 | - |
| 5/27/87 | 458,000 | - |
| 5/28/87 | 350,000 | - |
| 5/29/87 | 248,000 | - |
| Total Volume | 15,646,000 | - |