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THE PRODUCTION OF RADIOISOTOPES BY SPALLATION

L.G. STANG, JR., M. HILLMAN, AND E. LEBOWITZ

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BROOKHAVEN NATIONAL LABORATORY
UPTON, NEW YORK 11973

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Abstract

This report is intended to provide a practical basis for planning to produce radioisotopes by spallation. For this purpose it includes extensive tabulations of calculated yields of products from virtually every possible target element bombarded by 200-MeV protons. In addition, the effects of bombarding energy and choice of target on product yield are examined. Several advantages of the spallation process relative to fission are enumerated.

The work reported utilizes the thin-target spallation cross-section formula that was derived empirically by Rudstam. Examination of this formula shows that, for a given nuclide ${}_{Z}L^{A}$ (where Z = atomic number and A = mass number) produced from a given target of mass A_t, the spallation cross section goes through a maximum when the bombarding particle energy, E, is around 100 MeV. However, when thick targets are considered and the accompanying attenuation of beam intensity is taken into account, an incident particle energy of 200 MeV is shown to be a good practical compromise between the unmanageably thick targets that would be required for efficient use of much higher energy particles and the decreased product activity that would be encountered at lower bombarding energies. In this connection, the axial distributions of a typical product activity along the beam path in a thick target are shown graphically for 800- and 200-MeV incident protons. In addition, the yields of unwanted by-products are shown to be many times as great at 800 MeV as at 200 MeV. For a given E, the yield of ${}_{Z}L^{A}$ increases as A_t approaches A.

The yield in millicuries of ${}_{Z}L^{A}$ from a thick target is described by an equation that contains a suitable correction for the variation of spallation cross section with (decreasing) energy as the bombarding particle traverses the thick target. The equation applies to bombardments by protons, neutrons, deuterons, or alpha particles, provided that the appropriate ranges of the respective particles are used. The accuracy of the results are commensurate with that of the Rudstam formulation (i. e. within a factor of three of experimentally determined values, where such a comparison could be made). This equation was programmed for computer solution, and tabulated results show the independent yields produced by a 200-microampere beam of 200-MeV incident protons bombarding for 24 hours targets ranging from lithium to uranium. One table arranges the data by product desired, the other by target used. The latter table gives the activities of the radioactive products (with half-lives greater than one minute) as well as the production cross sections of both radioactive and stable products.

Introduction

The term spallation, meaning a process involving chipping something away, refers to a nuclear reaction in which the bombarding projectile has sufficient energy to cause the struck nucleus to eject several nucleons. Such reactions make a wide variety of products, many of which can be made in no other way, but until recently this type of reaction was not a source of significant quantities of radioactive material. However, the increasing availability of accelerators that produce high-current beams of high-energy particles is making spallation a practical route to useful quantities of otherwise unavailable nuclides. The purpose of this report is to provide a practical basis for future planning in the use of spallation to produce radioisotopes.

Advantages of the Spallation Process

The spallation reaction resembles the fission process in that a given target isotope produces many nuclides of various masses and atomic numbers in yields that are a smooth function of the mass number. Therefore, the separation of one spallation product from another or from the target material is understandably similar to the separation of one fission product from another or from the fissile material, and the same technology and even the same equipment can be used for both kinds of work. Both fission and spallation provide products of very high specific activity.

However, there are important differences that, in some respects, make the spallation reaction even more attractive than the fission process, which has already been proven highly useful for producing copious quantities of radioactive products.

1. Fission products are limited to the region between mass 72 and mass 161, and nuclides producible in good yields are confined to the mass regions 81-108 and 126-154. (The use of plutonium, rather than uranium, as the fissile material and/or of fast, rather than thermal, neutrons to cause fission can increase the yields outside these limits, but practical considerations have prevented these measures from being used by isotope producers.) On the other hand, spallation can produce almost any nuclide of mass number lower than the mass number of the target nuclide.

2. Fission products are not only confined to the above mass regions, but they are also further limited to neutron-rich nuclides. However, spallation can produce both neutron-deficient and neutron-rich nuclides. For example, an antimony target would easily produce nuclides such as $In^{116\text{-}121}$, which can be produced in fission, in addition to nuclides such as $In^{<115}$, which can not be produced in fission.

3. The yield of any given fission product, as noted above, is determined by the mass number of the fission product, the nature of the fissile nuclide that produced it, and the neutron energy involved, and hence for practical purposes virtually nothing can be done to change the values. With spallation, the yield of a particular nuclide of interest can be maximized by proper choice of the target nuclide and of the energy used. These effects are discussed in detail below.

4. Spallation is induced by >50-MeV particles. Machine acceleration of such particles requires that they be charged. This charge allows beams of the particles to be steered, focused, and switched from one target to another using appropriate electromagnets. This kind of flexibility is not found in reactor neutron irradiations and implies that selected areas of specially shaped targets can be irradiated. This could be of importance in maximizing the heat dissipation from the target without losing part of the beam; (i. e. one could irradiate a long flat target placed edgewise to a beam that has a long narrow transverse shape and use the high surface-to-volume ratio of the target to help dissipate the heat without wasting any of the beam by allowing it to miss the target).

5. By choosing the proper energy for the bombarding particle in the spallation process, one can not only maximize the yield of a particular nuclide from a given target but one can also minimize the relative amounts of by-products that are formed. Therefore, the separation process can be simplified, at least in principle. For example, data from Fig. 10-8 of Ref. (1) indicate that in the spallation yield-vs.-mass-number curve when Bi^{209} is used as a target the full-width-at-half-maximum (FWHM) is as shown in Table I.

Table I

Characteristics of Dependence of Production Cross Section on Product Mass for a Bismuth-209 Target

Proton Energy (MeV)	40	400	4000
Maximum Cross Section ($\sigma_{max.}$, mb)	950	108	18
Location of $\sigma_{max.}$ (mass number)	206	196	~180
FWHM (mass numbers)	3	11	68

It is interesting to contrast this dependence on energy with the invariable situation that obtains in the thermal neutron fission of U^{235}, in which the maximum yields occur at fixed masses and the FWHM is approximately 17 mass numbers for each of the two peaks in the fission yield curve. It must be acknowledged that this apparent advantage of spallation over fission is not as great as it might seem at first, for two reasons: (1) As long as any by-products at all are produced, which is the case in both processes, some separation scheme is necessary, and often the important consideration is not the number of impurities present but rather whether there are impurities present with chemical properties similar to those of the product. (2) If one has available an existing accelerator, the particle energy may not be variable, and if the energy is so high as to give an objectionably flat yield-vs.-mass curve there may be little that one can do about it except to try to degrade the energy with absorbers placed ahead of the target -- a procedure that has the two-fold disadvantage of reducing the total intensity of the beam and of spreading it out over a larger area.

Cross Sections of Spallation Reactions

The systematics of spallation have been well worked out by Rudstam[2]. Although Rudstam's original paper should be consulted for the derivation of his cross section formulation and his discussion of the fit of the data, it will be useful at this point to examine his formulation in order to note the effect of certain variables on the cross section and to obtain a clearer picture regarding what can and can not be done to change product yields.

Rudstam gives the following expression for the cross section (in millibarns) for the production of a nuclide with atomic number Z and mass number A from a target of mass number A_t using either protons or neutrons of energy E (MeV):

$$\sigma(Z,A) \approx [F(A_t)][f_2(E)][P]\{1 - [0.3/(P\,A_t)]\}^{-1} \exp\{-P(A_t - A) - 11.8\,A^{-0.45}\,|\,Z - 0.486\,A + 0.00038\,A^2\,|^{3/2}\} \quad . \quad . \quad . \quad (1)$$

for $(P\,A_t) \geq 1$,

where $P = 20\,E^{-0.77}$ for $E < 2100$ MeV, ... (2)

and $F(A_t)$ and $f_2(E)$ are given by graphs from which the following values were read:

A_t	0	40	80	120	160	200
$F(A_t)$, millibarns	200	600	1050	1650	2350	3200

(For interpolation, we assume a strictly linear relationship between pairs of values of $F(A_t)$; from the nearly linear relationship of the entire set of values, it can be seen that this assumption introduces no significant error.)

E MeV	$f_2(E)$	E MeV	$f_2(E)$	E MeV	$f_2(E)$	E MeV	$f_2(E)$
50	4.1	90	3.0	130	2.3	170	1.7
60	3.8	100	2.8	140	2.1	180	1.6
70	3.3	110	2.6	150	2.0	190	1.5
80	3.1	120	2.4	160	1.9	200	1.4

For E≥240 MeV, $f_2(E) = 1.$

Effect of Varying Energy. Rudstam[2] states that an inspection of the cross-section formula indicates that for a given combination of target and spallation product, the maximum yield is obtained for

$$P \approx 1/(A_t - A) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

He also notes that the corresponding irradiation energy is obtained from Equation (2) above and that substituting these values in Equation (1) above gives the maximum independent yield of the nuclide with atomic and mass numbers Z and A. For example, if A_t and A are kept constant (e. g. at 100 and 97, respectively) and E is varied (e. g. from 298 to 235 to 121 MeV), the cross section indeed goes through a maximum -- in this case the relative values being 0.119, 0.124, and 0.112, respectively. Thus, if one considers only one particular target for producing a given product, there is an optimum energy given by the relationship

$$1/(A_t - A) \approx 20\ E^{-0.77} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

for E<2100 MeV.

However, in practice, before choosing an irradiation energy, three factors in addition to this apparent optimum energy must be considered:

1. Unless a variable energy machine is available, reduction of beam energy requires the use of absorbers, which also results in attenuation of the beam intensity, in beam spreading, and in the production of secondary bombarding particles which produce contamination in the target. This effect becomes more pronounced as initial beam energy increases.

2. Using a higher energy of the bombarding particle requires a correspondingly thicker target to stop the entire beam or to slow the bombarding particles down to a particular energy. The effect of beam energy on target thickness and the effect of target thickness on beam attenuation via nuclear interaction are discussed more fully below. At this point it is sufficient to note that excessively high energies require awkwardly thick targets if the beam is not to be wasted and the process allowed to become inefficient.

3. One should also not overlook the fact, brought out in Table I above, that, as the bombarding energy goes up, the selectivity of product goes down and one produces considerably more contaminating by-products that have to be removed.

Effect of Varying Target. Inasmuch as it may be either impossible or undesirable to vary the bombarding energy and since the spallation process is not restricted to a particular target, a more practical question may be: "In general, what is the best target to use to produce a given nuclide with a fixed bombarding energy?" If Z, A, and E are kept constant and A_t is varied, one sees that the maximum yield of $(Z,A)_E$ is obtained when A_t is close to A. For example, if E is 800 MeV (corresponding to P = 0.116) and A_t is taken successively as 105, 107, 109, and 111, the relative cross sections of (Z,A) are 92.8, 75.1, 60.8, and 49.2.

[Note that there is no discrepancy between this statement and Equation (3), which predicts a maximum yield, since in Equation (3) P, rather than A_t, is being varied].

Calculation of Product Activity

Before deriving an equation by which the spallation product activity can be calculated, it should be noted that the Rudstam formula is for a "thin" target, i. e. one in which the beam intensity and the particle energy are not significantly reduced as the beam traverses the target. The attenuation in beam intensity can be taken into account in a straightforward manner by multiplying the initial intensity, I_o, by $\exp(-n\sigma_s x)$, where n is the number of atoms per cubic centimeter of target, σ_s is the total nuclear cross section of the target (in square centimeters per atom), and x is the target thickness (in centimeters).

However, if the target is thick enough to degrade the energy of the unattenuated part of the beam, one has to be concerned about the effect of energy on the cross section. The targets of interest to the isotope producer are those that are thick enough to stop all or a large fraction of the beam. For example, the tabulations that comprise the bulk of this report are based on initial proton energies of 200 MeV, and the target thicknesses are taken to be whatever is necessary to slow the protons to 50 MeV. Clearly in this case the effect of the changing energy during traversal of the target must be considered. It turns out that in the region of $A_t - A = 3$, which, according to the discussion in the preceding section, is the region of high yield (for a given A) and hence the region of greatest practical importance and interest, the cross section for the production of a particular product from a given target is the same for a 200-MeV particle as for one of 50 MeV (the approximate energy below which reactions other than spallation predominate), and the corresponding yield from a 100-MeV particle is only 43% higher than these values. Thus, for values of A close to A_t the cross section is sufficiently constant as not to require a correction for variation with energy as the projectile is slowed down while traversing the target.

Unfortunately, as A moves away from A_t this is no longer true, and the decrease in cross section with decreasing energy during target traversal can no longer be ignored. Application of a rigorously true factor to correct for the variation of cross section with energy would be very difficult and not worth the effort, particularly inasmuch as Rudstam does not claim his formulation to be more exact than a factor of three anyway.

Therefore, we have compensated for the decrease in cross section during traversal in the following manner. We have calculated the energy, E_f, at which the cross section for producing each nuclide drops to less than one-third of the production cross section at 200 MeV. Then we calculate the distance traversed by the particle in going from 200 MeV down to E_f, and we use this distance as the effective target thickness, ignoring the remainder of the distance required to reduce the energy to 50 MeV. (By ignoring this region we fail to take into account some activity produced in the region where the cross section is less than one-third of that at 200 MeV; on the other hand, this tends to compensate for the fact that in the region in which the cross section is still greater than one-third of that at 200 MeV we use the 200-MeV cross section, rather than an average cross section. In any case, it must be emphasized, the error thus introduced becomes greater, the farther we move away from A_t, but the farther we move from A_t, the less important and less interesting is the case for isotope production.)

On this basis, we derive the following expression for $Y_{Z,A}$, the activity (in millicuries) of ${}_ZL^A$ at the end of a bombardment with particles whose incident energy is 200 MeV:

$$Y_{Z,A} = K\, I\, (1 - e^{-\lambda T})\, (N_t/\text{at.wt.})\, (\Delta R) \left\{ 0.473\, A_t\, F(A_t) \right.$$
$$(A_t - 0.0887)^{-1} \exp\left[-0.338 (A_t - A) - 11.8\, A^{-0.45} \left| Z - \right.\right.$$
$$\left.\left. 0.486\, A + 0.00038\, A^2 \right|^{3/2} \right] \Big\} \quad \ldots\ldots\ldots\ldots (5)$$

where K = 102.5,
I = beam current (in microamperes),
λ = decay constant of ${}_ZL^A$ (in reciprocal units of T),
T = length of bombardment (in reciprocal units of λ),
N_t = fractional abundance of target isotope (or 1.0 for the natural element),
at.wt. = atomic weight of target element,
ΔR = target thickness (in grams/cm^2), and
A_t = mass number of target isotope.

It is worth noting that equation (5) is independent of type of bombarding particle and applies to protons, neutrons, deuterons, or alpha particles, (although an insufficiency of data prevented Rudstam from verifying his formulation for heavy ions). However, in applying this equation, one must not overlook the fact that different particles of the same energy have different ranges in a given target, and, as noted below, care must be taken not to apply the equation to a target of thickness greater than that which will slow the particle down to 50 MeV or to E_f (see above), choosing the thinner of the two targets where there is a choice. If thicker targets are actually used in practice, equation (5) applies only to the region just described. Obviously radioactivity will be produced beyond this region, but at energies lower than 50 MeV nuclear reactions other than spallation will predominate, and equation (5) can not be expected to give either the correct distribution of products or the proper value of the quantity of a given product in these near-end regions.

The specific formulations for ΔR were derived from Ref.

(1) and are as follows:

For $Z_t > 10$:

$$\Delta R = 30.332 + 0.225\ Z_t - \left\{(R_{air})_{E_f}\left[0.90 + 0.0275\ Z_t + (0.06 - 0.0086\ Z_t)(\log E_f)\right]\right\} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (6)$$

For $2 < Z_t < 11$:

$$\Delta R = 33.254 - 0.578\ Z_t - \left\{(R_{air})_{E_f}\left[1.00 + (0.06 - 0.0086\ Z_t)(\log E_f)\right]\right\} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (7)$$

Z_t is the atomic number of the target. The units of ΔR are grams/cm^2, and the logarithm is to the base 10. Table II will facilitate the use of Equations (6) and (7) in calculating the proper target thickness to use. E_f was obtained by the following procedure: An energy, E, was picked, and the ratio σ_E/σ_{200} was calculated as a function of $(A_t - A)$, where σ_{200} is the cross section for production of mass A by a 200-MeV particle; by trial and error, pairs of values of $(A_t - A)$ were found such that the ratio σ_E/σ_{200} just bracketed the value 1/3; then graphical interpolation was used to locate the value of E_f that would make σ_E/σ_{200} exactly 1/3 at given values of $(A_t - A)$. Values of $(R_{air})_{E_f}$, the proton range in air at the energy E_f, were read from graphs in Ref. (3).

Table II

Values of E_f and Corresponding Proton Ranges in Air as a Function of $(A_t - A)$

$A_t - A$	E_f	$(R_{air})_{E_f}$	$A_t - A$	E_f	$(R_{air})_{E_f}$
2	50	2.517	14	128	13.5
3	50	2.517	15	133	14.4
4	50	2.517	16	137	15.1
5	50	2.517	17	141	15.9
6	63	3.81	18	144	16.5
7	75	5.22	19	147	17.0
8	86	6.65	20	150	17.8
9	95	7.96	21	152	18.2
10	103	9.0	22	154	18.5
11	111	10.4	23	157	19.2
12	117	11.5	24	159	19.6
13	123	12.5	25	161	20.1

The values shown in Table II are for $A_t = 100$. They depend very slightly on A_t, the dependence being so small as not to be worth considering. Values beyond $(A_t - A) = 25$ are not shown because such a region so far removed from the target mass is of no practical interest and because 200-MeV protons possess insufficient energy to evaporate more than about 25 nucleons anyway.

Equation (5) assumes explicitly that the target volume is 1 cm^3 of the target element in question. It also assumes implicitly that the entire charged-particle beam passes through this volume for a distance ΔR equal to the thickness of the target. This implies that the area of the target being considered is $(D/\Delta R)$ cm^2, where D is the density of the element in grams/cm^3. Substitution of typical real values into this expression will show at once that such a target is too long and narrow to be practical. For example, in the case of an aluminum target, D would be 2.7 g/cm^3 and ΔR would be 30.3 g/cm^2 (= 11.2 cm), giving an area of 0.089 cm^2, which corresponds to a diameter of 3.4 mm. Even if a beam of high energy charged particles could be focused or collimated down to a diameter of 3.4 mm, the problem of lining up so long and narrow a target with the beam and, worse yet, the problem of dissipating the heat generated in such a concentrated target would be formidable. On the other hand, production of the activity predicted by equation (5) requires only that the thickness be ΔR and the area be at least as great as $D/\Delta R$ or greater. Increasing the area that the target presents to the beam will not increase the total amount of radioactivity producible inasmuch as the latter is determined by the beam current (for a given target, provided that the area is $\geq D/\Delta R$); what it will do is to diminish the activity producible per cubic centimeter.

It is probably worth mentioning that, although equation (5) assumes elemental targets, it may be used with targets that are alloys, compounds, or mixtures of elements, provided that the following modifications are taken into account. First, ΔR should be computed for the actual target to be used. This is done by calculating the range of the incident particle in the composite target by means of the procedure, outlined in Ref. (1), which involves summing up the weighted stopping powers of the individual elemental components; in a similar fashion the range of a particle of 50 MeV or of E_f MeV is calculated, and the difference between the two ranges is ΔR. Using this value for ΔR and the appropriate values for A_t, Equation (5) can be solved for each individual elemental component of the target. Multiplying each such solution by the volume fraction of the element in the composite target and summing these results will give the total $Y_{Z,A}$. However, this is a time-consuming procedure, and its tediousness increases in direct proportion to the number of components in the target. On the other hand, Rudstam states[2] that Equation (1) is expected to be valid only to within a factor of three on the average, with possibly an even greater error for very light or very heavy targets (due to the lack of experimental data with which to establish the correctness of the formula for such targets) and for targets that are far from stability (because the formula is based on distribution data from targets near stability, not for extreme cases). Moreover, the tabulations below already include ΔR for elemental targets, and the extreme values of ΔR are 25.1 and 45.3, a variation of only $\pm$ 29% about the median. Therefore, in view of these factors, it seems pointless to go through the procedure of correcting from the elemental ΔR values used in the tabulation to the exact ΔR for a particular composite target under consideration, and for composite targets we suggest that one merely look up $Y_{Z,A}$ values for each elemental component, multiply them by the volume fraction of the element in the target, and sum these weighted $Y_{Z,A}$ values. It seems particularly appropriate to make no more effort than this inasmuch as it is quite probable that in practice the target thickness actually used will not be exactly ΔR anyway. In spite of this, the tabulation below will be very helpful if used on a relative basis in that it will give at a glance the best target element with which to make a given product and the by-products likely to be formed in such a target, in addition to the magnitude of the quantities that can be produced.

Some Additional Practical Considerations

Before turning to the computer solution of Equation (5), it will be of interest to consider some additional general problems of practical interest. For example, if one wishes to produce a given isotope by spallation (assuming a completely free choice of target, i. e. the optimum target for that isotope), is there an optimum energy that will produce a maximum total amount of activity of that isotope? If so, what is that energy? If not, what effect does energy have?

Peak cross sections (i. e. maximum chain yields) decrease with increasing energy, but the peak (in the mass-yield curve) becomes broader and shifts away from the target mass. On the other hand, ΔR increases with increasing energy, so that perhaps there is an optimum energy at which, even though the cross section of interest is decreasing, the ΔR has increased enough so that a maximum activity is produced. Alternatively, if there is no maximum, perhaps the ΔR increases faster than the cross section decreases so that the net effect is an increase in activity of a given nuclide with increasing bombarding energy.

To answer these questions, we calculated the cross sections for $A_t = 100$ and $A_t - A = 3$, 6, and 9 at eleven bombarding energies ranging from 800 MeV down to 100 MeV. The range-energy relationships noted above were used to convert these energies to linear distances of penetration into the target. Graphical plotting indicated that within a given distance interval the cross section variation could be regarded as being linear with distance without introducing a significant error. The average cross section for a given interval was then taken to be $(\sigma_i + \sigma_f)/2$, where σ_i is the cross section for the production of a given nuclide at the beginning of the distance increment and σ_f is the corresponding cross section at the end of the distance increment.

The effect of beam attenuation was accounted for by calculating the average beam intensity, $\bar{I}$, for each interval from the following:

$$\bar{I} = I_o\left[\exp(-n\sigma_s x_2) - \exp(-n\sigma_s x_1)\right]\left[n\sigma_s(x_1 - x_2)\right]^{-1} \quad . \quad . \quad (8)$$

where I_o is the beam intensity initially,
n is the number of target atoms per cm^3,
σ_s is the total (geometric) nuclear cross section (in cm^2/atom), and
x is the linear distance in the target.

The following product was calculated for each distance interval:

$$(x_2 - x_1)(\bar{I})(\sigma_i + \sigma_f)/2.$$

These products were then summed over target thicknesses corresponding to those required to slow the protons down to 50 MeV from their respective initial energies (which ranged from 100 MeV to 800 MeV).

Results are shown in Table III for the case in which $Z_t = 44$ (i. e. for a metallic ruthenium* target).

Table III

Effect of Energy on the Relative Activity Produced in a Ruthenium Target for Three Isotopes of a Given Product Element

(normalized to the 200-MeV induced activity of mass 97)

Initial Energy (MeV)	I_f	$A_t - A = 3$	$A_t - A = 6$	$A_t - A = 9$
100	0.949	0.280	0.035	0.005
200	0.809	1.000	0.236	0.064
225	0.778	1.097		
300	0.654	1.392		
400	0.512	1.646		
500	0.391	1.819		
600	0.293	1.914		
700	0.220	1.952		
800	0.160	1.942	1.127	0.695

[I_f is the fraction of original beam intensity remaining (after nuclear interactions) when the energy has been reduced to 50 MeV.]

From the results shown in Table III it might appear that there is an optimum energy (at least for the "typical" case calculated) around 700 MeV or slightly higher. However, several practical considerations show this to be illusory. In order to increase the activity by the maximum possible amount (which is not even a factor of two) relative to what is produced at 200 MeV, one would have to use a target that is over eight times as thick. For example, in order to produce with an 800-MeV beam 1.94 times as much activity as one could produce with a 200-MeV beam one would have to use 25.5 cm of ruthenium metal instead of 2.95 cm; similarly an aluminum target to slow 800-MeV protons down to 50 MeV would have to be 89.2 cm thick whereas only 11.1 cm would suffice for 200-MeV protons. Clearly the higher energies require targets that are so thick that they are either very difficult to handle and process or very expensive or both.

Table III also clearly shows another disadvantage of using too high a bombarding energy, viz. the enhanced production of unwanted by-products. For example, at 200 MeV only 23.6% as much mass 94 is produced as mass 97 of the same element and only 6.4% as much mass 91, whereas with 800-MeV protons, the mass 94 isotope activity is 58% of the mass 97 activity and the mass 91 activity is 36% of mass 97.

If one uses a higher energy beam without using a correspondingly thicker target, the activity of a particular isotope of interest is actually less than what would have been produced by a lower energy beam. For example, as noted above, it requires 2.95 cm of ruthenium to slow a 200-MeV proton down to 50 MeV. If a 2.95-cm target is used at the higher energies, the ratio of yields from the 700-MeV beam to those from the 200-MeV beam is only 39% (for mass 97 and constant product Z). This is because at 700 MeV only 20% of the total activity produced occurs in the first 2.95 cm of ruthenium, so that even though the total activity produced in 25.5 cm is 95% greater than what is produced in 2.95 cm by 200-MeV protons, the amount of mass 97 produced at 700 MeV in the first 2.95 cm is 20% x 1.95 = 39% of what 200 MeV would produce. The situation is illustrated graphically for the 800- and 200-MeV cases in Figure 1, where the relative activities and distributions of mass 97 (for a given product element) in a ruthenium target are shown as a function of axial penetration of the beam.

Aside from the question of product yields, increasing the energies of the bombarding particles causes a considerable increase in the production of high energy neutrons, which, in turn, greatly complicate the shielding problem.

Computer Calculation of Activities

Equations (5), (6), and (7) have been programmed for computer solution, and the results are shown in Tables V and VI. The remainder of the text of this report is devoted to an explanation of the computer solution (in contrast to

*All of these calculations were carried out for a Ru^{100} target.

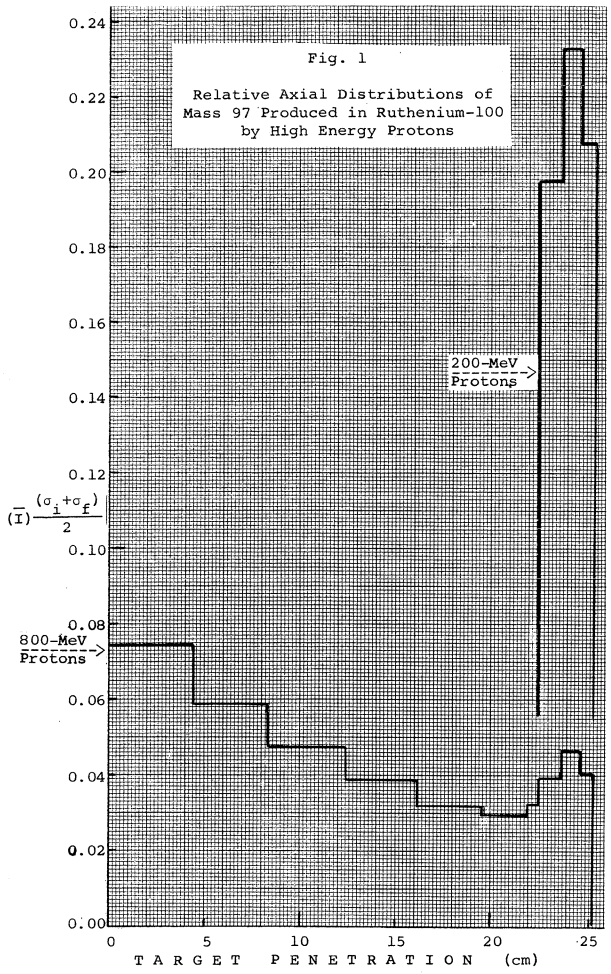

Fig. 1

Relative Axial Distributions of Mass 97 Produced in Ruthenium-100 by High Energy Protons

the foregoing discussion, which applied to the equations, themselves).

First, it must be emphasized that the yields shown are independent yields for the particular nuclide in question. In many cases there exist precursors that have half-lives short enough to contribute to the activity of the nuclide in question. Where this occurs, the independent yields of these precursors should be found (see Table VI) and added to that of the product of interest (making appropriate correction for the effect of half-life on activity).

Results for radioactive products with half-lives of less than one minute are not printed, because they are not likely to be of direct primary interest. Where they occur as precursors of a desired nuclide, their cross sections can be crudely estimated by extrapolation from appropriate values in Table VI and a correction thus made for their effect.

The integrated beam current (i. e. the time-averaged current rather than the instantaneous current per pulse) that strikes the target is assumed to be 200 microamperes. For some other current, I, multiply the results by I/200.

The irradiation time assumed is 24 hours, and the results are as of the end of the bombardment (no radioactive decay included). For products with half-lives of less than 443 minutes the activity values will be within 10% of the saturation activity (i. e. the activity at infinite bombardment time). For products with half-lives longer than 231 days, multiplication of the results by 365 will give the annual production rate to within 10%. For products with half-lives between 433 minutes and 231 days, if an accurate correction is desired for an irradiation time other than 24 hours, multiply the results by $(1 - e^{-0.693\ T/\tau})/(1 - e^{-0.693/\tau})$, where T is the length of irradiation time

in days and τ is the product half-life in days. However, in view of the above discussion concerning the accuracy of the cross-section formula and the errors involved in using an inexact ΔR value, this half-life correction could undoubtedly be made mentally with sufficient accuracy for most purposes.

The input data were taken from Ref. (4).

Table V is arranged by product. Products are identified by atomic number, Z, and mass number, A. The half-life is shown for ready reference, the units being S = second, M = minute, H = hour, D = day, Y = year, and T = megayear.

In Table V are listed the acitivities (in millicuries) of $_{Z}L^{A}$ producible from various targets. The first column gives the atomic number of the target, and the final column the activity produced when the natural element is used as a target. Intervening even columns give the activity produced when the target is the pure separated isotope whose mass number appears in the preceding odd column.

In all cases the number following the letter E is the exponent of the power to which the factor 10 must be raised before multiplying it by the coefficient preceding the E. For example, 2.3E-05 ≡ 2.3×10^{-5}, and 4.9E+04 ≡ 4.9×10^{4}.

To keep Table V from being too bulky, results are omitted for natural element targets that produce less than 0.1% of the activity that can be produced from the most prolific natural element source of that product.

Table VI is arranged by target (i. e. by atomic number, Z, of the target) and shows, in the next to the last column on the right, the activity (in millicuries) of the product whose atomic number and mass number are shown in the first two columns, respectively, that is produced when the natural element is used as the target. Column 3, labeled "half-life" is a reference column that shows mainly the half-lives of the respective radioactive products. However, since Table VI also includes stable products, Column 3 also shows the percent isotopic abundance in which a particular product nuclide is found in the natural element. This is indicated by the suffix letter A, which should not be confused with the mass number heading for Column 2; like the half-lives, these data are input, rather than output, and have nothing to do with amounts of these individual nuclides produced in spallation. Intervening columns show the activities of the same product produced when pure separated isotopes of the target are irradiated, the mass number of the target isotope being shown at the top of the column. The cross section (averaged over all of the isotopes of the natural element for which activity results are printed in columns to the left) is printed in the final right-hand column; the units are millibarns.

Due to an artifact inherent in the manner in which the computer program was designed, no results are shown for metastable isomers. In cases where the ground state isomer has a half-life of <1 minute, e. g. chlorine-34, no results at all appear for the isotope. In cases where the ground state isomer has a half-life of >1 minute, e. g. rhodium-102 (209-day ground state) or cadmium-113 (stable ground state), only the results for the ground-state appear. One can readily interpolate a crude estimate of the cross section in question and, using it, calculate the activity of an unlisted metastable isomer by hand quite simply.

From the cross section column one can see at a glance how the relative locations (on the nuclide chart) of the target, product, and line of greatest stability affect the spallation yield. Moreover, there may be special cases in which one wishes to calculate the weight of a particular stable isotope produced, particularly in cases of very long irradiation. (As an illustration of the order of magnitude of the effect involved, it may be useful to point out that a 200-μA beam of 200-MeV protons continuously bombarding a 2-cm diameter target would transmute the surface of the target at the rate of ~1% per year; viewed in another light, this is equivalent to generating solid impurities at the rate of ~25 ppm per day.)

In an effort to prevent Table VI from being too bulky while at the same time presenting enough information to be useful for most purposes, no results are printed for those products in which either the activity produced from the natural elemental target (if the product is radioactive) or the production cross section from the natural element is less than 10^{-3} of the respective values for the nuclide produced in greatest yield. If special cases require results for by-products produced in lesser amounts, the authors can supply a more complete table on request.

It should be noted that the value of zero as a result in either table does not necessarily mean that no activity is produced. It may mean that the Rudstam formula does not apply in that case and that the computer was ordered to skip the calculation. This is true, for example, when $A_{target} - A_{product} < 2$, for which no results will be found*. Thus, the tables appear to show that potassium-38 can not be produced by proton bombardment of potassium-39 but that similar treatment of potassium-40 and potassium-41 will yield potassium-38 in the amounts indicated (160 and 110 curies, respectively). Obviously, proton bombardment of potassium-39 will produce potassium-38, but not in the yield that blind use of the Rudstam formula would have given. This artifact should also be remembered when looking at the average cross section or the activity produced from the natural element, because the results printed are simply the sums of the products of the respective results for each isotope in the target multiplied by the abundance of that isotope. It is for this reason that the tables appear to show only eight curies of potassium-38 producible from natural potassium, even though it correctly indicates that irradiation of potassium-40 and potassium-41 individually would produce ten to twenty times that amount; for the same reason the 590 microbarn cross section shown for elemental potassium is unrealistically low. This kind of misinterpretation can be avoided by remembering to look to see whether a zero appears in a location for which there is a corresponding target mass number.

Finally, attention is called to the fact that a particular nuclide that appears in one table will not necessarily appear in the other. The reason for this is that a nuclide might be produced from a given target in a yield that is $>10^{-3}$ times its yield from the target that is the most prolific in forming it; such a nuclide would be included in Table V. However, the yield of that same nuclide from the same target might be $<10^{-3}$ times the yield of the nuclide that is produced in maximum yield in that same target; in this case the $<10^{-3}$-yield nuclide would be omitted from Table VI. For example, germanium-77 is shown in Table V as being produced from natural molybdenum at a daily rate of 0.3 mC, but it is omitted from Table VI because molybdenum will produce niobium-90 at a daily rate of 360 C, which is clearly $>>10^{3}$ greater than that for the production of germanium-77. An even more interesting case is that of strontium-90, which is shown in Table V as being producible from zirconium-92, -94, and -96 at (independent) daily rates of 0.16, 0.081, and 0.039 mC, respectively; however, strontium-90 does not appear at all in Table VI because its relatively long half-life and low formation cross section make its activity well below 10^{-3} times the yield of the peak product, regardless of what target is used.

References

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4. David T. Goldman and James R. Roesser, The Chart of the Nuclides, ninth edition, revised to July 1966, and distributed by the Educational Relations Department of the General Electric Company, Schenectady, New York, 12305.

5. A. A. Caretto, Jr., A Literature Survey of Nucleon, 2-Nucleon Reaction Cross Sections at Energies above 100 MeV, NYO 10693, (July 1964).

*Such results will be found in Ref. (5).

Table IV

The following lists will facilitate use of Tables V and VI:

Z	Element	Z	Element	Z	Element	Z	Element	Z	Element	Z	Element
1	hydrogen	19	potassium	36	krypton	53	iodine	70	ytterbium	87	francium
2	helium	20	calcium	37	rubidium	54	xenon	71	lutetium	88	radium
3	lithium	21	scandium	38	strontium	55	cesium	72	hafnium	89	actinium
4	beryllium	22	titanium	39	yttrium	56	barium	73	tantalum	90	thorium
5	boron	23	vanadium	40	zirconium	57	lanthanum	74	tungsten	91	protactinium
6	carbon	24	chromium	41	niobium	58	cerium	75	rhenium	92	uranium
7	nitrogen	25	manganese	42	molybdenum	59	praseodymium	76	osmium	93	neptunium
8	oxygen	26	iron	43	technetium	60	neodymium	77	iridium	94	plutonium
9	fluorine	27	cobalt	44	ruthenium	61	promethium	78	platinum	95	americium
10	neon	28	nickel	45	rhodium	62	samarium	79	gold	96	curium
11	sodium	29	copper	46	palladium	63	europium	80	mercury	97	berkelium
12	magnesium	30	zinc	47	silver	64	gadolinium	81	thallium	98	californium
13	aluminum	31	gallium	48	cadmium	65	terbium	82	lead	99	einsteinium
14	silicon	32	germanium	49	indium	66	dysprosium	83	bismuth	100	fermium
15	phosphorus	33	arsenic	50	tin	67	holmium	84	polonium	101	mendelevium
16	sulfur	34	selenium	51	antimony	68	erbium	85	astatine	102	nobellium
17	chlorine	35	bromine	52	tellurium	69	thulium	86	radon	103	lawrencium
18	argon										

Element	Z	Element	Z	Element	Z	Element	Z	Element	Z	Element	Z
actinium	89	cesium	55	gold	79	mendelevium	101	potassium	19	sulfur	16
aluminum	13	chlorine	17	hafnium	72	mercury	80	praseodymium	59	tantalum	73
americium	95	chromium	24	helium	2	molybdenum	42	promethium	61	technetium	43
antimony	51	cobalt	27	holmium	67	neodymium	60	protactinium	91	tellurium	52
argon	18	columbium	(see niobium)	hydrogen	1	neon	10	radium	88	terbium	65
arsenic	33	copper	29	indium	49	neptunium	93	radon	86	thallium	81
astatine	85	curium	96	iodine	53	nickel	28	rhenium	75	thorium	90
barium	56	dysprosium	66	iridium	77	niobium	41	rhodium	45	thulium	69
berkelium	97	einsteinium	99	iron	26	nitrogen	7	rubidium	37	tin	50
beryllium	4	erbium	68	krypton	36	nobellium	102	ruthenium	44	titanium	22
bismuth	83	europium	63	lanthanum	57	osmium	76	samarium	62	tungsten	74
boron	5	fermium	100	lawrencium	103	oxygen	8	scandium	21	uranium	92
bromine	35	fluorine	9	lead	82	palladium	46	selenium	34	vanadium	23
cadmium	48	francium	87	lithium	3	phosphorus	15	silicon	14	wolfram	(see tungsten)
calcium	20	gadolinium	64	lutetium	71	platinum	78	silver	47	xenon	54
californium	98	gallium	31	magnesium	12	plutonium	94	sodium	11	ytterbium	70
carbon	6	germanium	32	manganese	25	polonium	84	strontium	38	yttrium	39
cerium	58									zinc	30
										zirconium	40

Table V

Spallation Products Produced by 200-MeV Protons

(arranged by product)

...one-day irradiation

...200 microampere beam

...no calculations shown for products with half-lives less than one minute

...no yields included if cross section is <0.001 times the maximum cross section for producing that product

...expected accuracy: within a factor of 3

...Zero values in activity columns mean Rudstam formula does not apply in those cases; zero does not necessarily mean that no activity is produced. See text (page 5, column 2, paragraph 1) for precautions to observe in interpreting results when product mass is within two units of target mass

...other pertinent notes discussed in text of report.

...Key:

D = day

H = hour

M = minute

S = second

T = megayear

Y = year

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 4	4	9	4.9E+03	0	0.	0	0.	0	0.	0	0.	4.9E+03
PRODUCT A= 7	5	10	3.2E+03	11	2.1E+03	0	0.	0	0.	0	0.	2.3E+03
HALF LIFE= 53.000 D	6	12	1.4E+03	13	9.1E+02	0	0.	0	0.	0	0.	1.4E+03
	7	14	5.8E+02	15	3.8E+02	0	0.	0	0.	0	0.	5.8E+02
	8	16	2.4E+02	17	1.6E+02	18	1.0E+02	0	0.	0	0.	2.4E+02
	9	19	6.7E+01	0	0.	0	0.	0	0.	0	0.	6.7E+01
	10	20	4.3E+01	21	2.8E+01	22	1.9E+01	0	0.	0	0.	4.1E+01
	11	23	1.5E+01	0	0.	0	0.	0	0.	0	0.	1.5E+01
	12	24	9.8E+00	25	6.5E+00	26	4.4E+00	0	0.	0	0.	8.8E+00
PRODUCT Z= 4	6	12	1.0E-04	13	6.7E-05	0	0.	0	0.	0	0.	9.9E-05
PRODUCT A= 10	7	14	4.5E-05	15	3.1E-05	0	0.	0	0.	0	0.	4.5E-05
HALF LIFE= 2.700 T	8	16	2.0E-05	17	1.3E-05	18	8.6E-06	0	0.	0	0.	2.0E-05
	9	19	5.6E-06	0	0.	0	0.	0	0.	0	0.	5.6E-06
	10	20	3.6E-06	21	2.4E-06	22	1.6E-06	0	0.	0	0.	3.4E-06
	11	23	1.2E-06	0	0.	0	0.	0	0.	0	0.	1.2E-06
	12	24	8.1E-07	25	5.4E-07	26	3.6E-07	0	0.	0	0.	7.3E-07
	13	27	2.4E-07	0	0.	0	0.	0	0.	0	0.	2.4E-07
	14	28	1.6E-07	29	1.1E-07	30	7.3E-08	0	0.	0	0.	1.6E-07
PRODUCT Z= 6	6	12	0.	13	2.9E+05	0	0.	0	0.	0	0.	3.5E+03
PRODUCT A= 11	7	14	2.0E+05	15	1.3E+05	0	0.	0	0.	0	0.	2.0E+05
HALF LIFE= 20.500 M	8	16	9.1E+04	17	6.0E+04	18	3.9E+04	0	0.	0	0.	9.0E+04
	9	19	2.5E+04	0	0.	0	0.	0	0.	0	0.	2.5E+04
	10	20	1.6E+04	21	1.1E+04	22	7.1E+03	0	0.	0	0.	1.6E+04
	11	23	5.5E+03	0	0.	0	0.	0	0.	0	0.	5.5E+03
	12	24	3.7E+03	25	2.4E+03	26	1.6E+03	0	0.	0	0.	3.3E+03
	13	27	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.1E+03
	14	28	7.3E+02	29	4.9E+02	30	3.3E+02	0	0.	0	0.	7.1E+02
	15	31	2.2E+02	0	0.	0	0.	0	0.	0	0.	2.2E+02
PRODUCT Z= 6	8	16	9.2E-02	17	6.3E-02	18	4.4E-02	0	0.	0	0.	9.2E-02
PRODUCT A= 14	9	19	3.0E-02	0	0.	0	0.	0	0.	0	0.	3.0E-02
HALF LIFE= 5730.000 Y	10	20	2.0E-02	21	1.3E-02	22	8.5E-03	0	0.	0	0.	1.8E-02
	11	23	6.6E-03	0	0.	0	0.	0	0.	0	0.	6.6E-03
	12	24	4.4E-03	25	2.9E-03	26	1.9E-03	0	0.	0	0.	4.0E-03
	13	27	1.3E-03	0	0.	0	0.	0	0.	0	0.	1.3E-03
	14	28	8.7E-04	29	5.8E-04	30	3.9E-04	0	0.	0	0.	8.4E-04
	15	31	2.6E-04	0	0.	0	0.	0	0.	0	0.	2.6E-04
	16	32	1.8E-04	33	1.2E-04	34	7.9E-05	36	3.7E-05	0	0.	1.7E-04
PRODUCT Z= 7	7	14	0.	15	2.5E+05	0	0.	0	0.	0	0.	9.9E+02
PRODUCT A= 13	8	16	1.7E+05	17	1.2E+05	18	8.0E+04	0	0.	0	0.	1.7E+05
HALF LIFE= 9.960 M	9	19	5.3E+04	0	0.	0	0.	0	0.	0	0.	5.3E+04
	10	20	3.4E+04	21	2.3E+04	22	1.5E+04	0	0.	0	0.	3.2E+04
	11	23	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.2E+04
	12	24	7.7E+03	25	5.1E+03	26	3.4E+03	0	0.	0	0.	6.9E+03
	13	27	2.3E+03	0	0.	0	0.	0	0.	0	0.	2.3E+03
	14	28	1.5E+03	29	1.0E+03	30	6.8E+02	0	0.	0	0.	1.5E+03
	15	31	4.6E+02	0	0.	0	0.	0	0.	0	0.	4.6E+02
	16	32	3.1E+02	33	2.1E+02	34	1.4E+02	36	6.4E+01	0	0.	3.0E+02
PRODUCT Z= 8	8	16	1.5E+04	17	1.0E+04	18	7.2E+03	0	0.	0	0.	1.5E+04
PRODUCT A= 14	9	19	4.9E+03	0	0.	0	0.	0	0.	0	0.	4.9E+03
HALF LIFE= 71.000 S	10	20	3.2E+03	21	2.1E+03	22	1.4E+03	0	0.	0	0.	3.0E+03
	11	23	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.1E+03
	12	24	7.3E+02	25	4.8E+02	26	3.2E+02	0	0.	0	0.	6.6E+02
	13	27	2.1E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
	14	28	1.4E+02	29	9.5E+01	30	6.4E+01	0	0.	0	0.	1.4E+02
	15	31	4.3E+01	0	0.	0	0.	0	0.	0	0.	4.3E+01
	16	32	2.9E+01	33	2.0E+01	34	1.3E+01	36	6.1E+00	0	0.	2.8E+01
PRODUCT Z= 8	8	16	0.	17	2.1E+05	18	1.5E+05	0	0.	0	0.	4.2E+02
PRODUCT A= 15	9	19	1.0E+05	0	0.	0	0.	0	0.	0	0.	1.0E+05
HALF LIFE= 124.000 S	10	20	6.8E+04	21	4.6E+04	22	3.0E+04	0	0.	0	0.	6.5E+04
	11	23	2.3E+04	0	0.	0	0.	0	0.	0	0.	2.3E+04
	12	24	1.6E+04	25	1.0E+04	26	6.8E+03	0	0.	0	0.	1.4E+04
	13	27	4.6E+03	0	0.	0	0.	0	0.	0	0.	4.6E+03
	14	28	3.1E+03	29	2.0E+03	30	1.4E+03	0	0.	0	0.	3.0E+03
	15	31	9.2E+02	0	0.	0	0.	0	0.	0	0.	9.2E+02
	16	32	6.2E+02	33	4.2E+02	34	2.8E+02	36	1.3E+02	0	0.	6.0E+02
	17	35	1.9E+02	37	8.8E+01	0	0.	0	0.	0	0.	1.6E+02
PRODUCT Z= 9	9	19	1.8E+05	0	0.	0	0.	0	0.	0	0.	1.8E+05
PRODUCT A= 17	10	20	1.2E+05	21	8.5E+04	22	5.9E+04	0	0.	0	0.	1.2E+05
HALF LIFE= 66.000 S	11	23	4.6E+04	0	0.	0	0.	0	0.	0	0.	4.6E+04
	12	24	3.1E+04	25	2.0E+04	26	1.4E+04	0	0.	0	0.	2.8E+04
	13	27	9.2E+03	0	0.	0	0.	0	0.	0	0.	9.2E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 9 A= 17 (CONTINUED)	14	28	6.1E+03	29	4.0E+03	30	2.7E+03	0	0.	0	0.	0	0.	5.9E+03
	15	31	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
	16	32	1.2E+03	33	8.2E+02	34	5.5E+02	36	2.5E+02	0	0.	0	0.	1.2E+03
	17	35	3.7E+02	37	1.7E+02	0	0.	0	0.	0	0.	0	0.	3.2E+02
PRODUCT Z= 9	10	20	1.1E+06	21	7.4E+05	22	5.2E+05	0	0.	0	0.	0	0.	1.0E+06
PRODUCT A= 18	11	23	4.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+05
HALF LIFE= 110.000 M	12	24	2.8E+05	25	1.9E+05	26	1.3E+05	0	0.	0	0.	0	0.	2.6E+05
	13	27	8.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E+04
	14	28	5.7E+04	29	3.8E+04	30	2.5E+04	0	0.	0	0.	0	0.	5.5E+04
	15	31	1.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+04
	16	32	1.1E+04	33	7.5E+03	34	5.1E+03	36	2.3E+03	0	0.	0	0.	1.1E+04
	17	35	3.4E+03	37	1.6E+03	0	0.	0	0.	0	0.	0	0.	2.9E+03
PRODUCT Z= 10	12	24	0.	25	0.	26	1.7E+04	0	0.	0	0.	0	0.	2.0E+03
PRODUCT A= 24	13	27	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
HALF LIFE= 3.380 M	14	28	8.6E+03	29	6.0E+03	30	4.1E+03	0	0.	0	0.	0	0.	8.3E+03
	15	31	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+03
	16	32	1.8E+03	33	1.2E+03	34	8.3E+02	36	3.7E+02	0	0.	0	0.	1.8E+03
	17	35	5.5E+02	37	2.5E+02	0	0.	0	0.	0	0.	0	0.	4.7E+02
	18	36	3.7E+02	38	1.7E+02	40	7.5E+01	0	0.	0	0.	0	0.	7.6E+01
	19	39	1.1E+02	40	7.5E+01	41	5.1E+01	0	0.	0	0.	0	0.	1.1E+02
	20	40	7.6E+01	42	3.4E+01	43	2.4E+01	44	1.6E+01	46	7.4E+00	48	3.4E+00	7.4E+01
PRODUCT Z= 11	12	24	6.4E+02	25	4.5E+02	26	3.1E+02	0	0.	0	0.	0	0.	5.8E+02
PRODUCT A= 22	13	27	2.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+02
HALF LIFE= 2.600 Y	14	28	1.5E+02	29	1.0E+02	30	6.7E+01	0	0.	0	0.	0	0.	1.4E+02
	15	31	4.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E+01
	16	32	3.0E+01	33	2.0E+01	34	1.3E+01	36	6.0E+00	0	0.	0	0.	3.0E+01
	17	35	9.0E+00	37	4.0E+00	0	0.	0	0.	0	0.	0	0.	7.7E+00
	18	36	6.1E+00	38	2.7E+00	40	1.2E+00	0	0.	0	0.	0	0.	1.3E+00
	19	39	1.8E+00	40	1.2E+00	41	8.5E-01	0	0.	0	0.	0	0.	1.8E+00
	20	40	1.2E+00	42	5.7E-01	43	3.9E-01	44	2.7E-01	46	1.2E-01	48	5.7E-02	1.2E+00
PRODUCT Z= 11	12	24	0.	25	0.	26	6.7E+05	0	0.	0	0.	0	0.	8.0E+04
PRODUCT A= 24	13	27	4.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.8E+05
HALF LIFE= 15.000 H	14	28	3.4E+05	29	2.4E+05	30	1.6E+05	0	0.	0	0.	0	0.	3.3E+05
	15	31	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	16	32	7.2E+04	33	4.8E+04	34	3.2E+04	36	1.4E+04	0	0.	0	0.	7.0E+04
	17	35	2.2E+04	37	9.6E+03	0	0.	0	0.	0	0.	0	0.	1.9E+04
	18	36	1.5E+04	38	6.5E+03	40	2.9E+03	0	0.	0	0.	0	0.	3.0E+03
	19	39	4.4E+03	40	2.9E+03	41	2.0E+03	0	0.	0	0.	0	0.	4.2E+03
	20	40	3.0E+03	42	1.3E+03	43	9.2E+02	44	6.1E+02	46	2.9E+02	48	1.3E+02	2.9E+03
PRODUCT Z= 12	14	28	0.	29	2.8E+05	30	2.0E+05	0	0.	0	0.	0	0.	2.0E+04
PRODUCT A= 27	15	31	1.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+05
HALF LIFE= 9.500 M	16	32	9.9E+04	33	6.7E+04	34	4.5E+04	36	2.0E+04	0	0.	0	0.	9.7E+04
	17	35	3.0E+04	37	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.6E+04
	18	36	2.0E+04	38	9.1E+03	40	4.1E+03	0	0.	0	0.	0	0.	4.1E+03
	19	39	6.1E+03	40	4.1E+03	41	2.7E+03	0	0.	0	0.	0	0.	5.9E+03
	20	40	4.1E+03	42	1.8E+03	43	1.3E+03	44	8.4E+02	46	3.9E+02	48	1.8E+02	4.0E+03
	21	45	5.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+02
	22	46	4.0E+02	47	2.6E+02	48	1.8E+02	49	1.2E+02	50	8.3E+01	0	0.	1.9E+02
PRODUCT Z= 12	14	28	0.	29	0.	30	2.3E+04	0	0.	0	0.	0	0.	7.6E+02
PRODUCT A= 28	15	31	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
HALF LIFE= 21.300 H	16	32	1.2E+04	33	8.2E+03	34	5.5E+03	36	2.5E+03	0	0.	0	0.	1.1E+04
	17	35	3.7E+03	37	1.7E+03	0	0.	0	0.	0	0.	0	0.	3.2E+03
	18	36	2.5E+03	38	1.1E+03	40	5.0E+02	0	0.	0	0.	0	0.	5.1E+02
	19	39	7.6E+02	40	5.1E+02	41	3.4E+02	0	0.	0	0.	0	0.	7.3E+02
	20	40	5.1E+02	42	2.3E+02	43	1.5E+02	44	1.0E+02	46	4.7E+01	48	2.2E+01	5.0E+02
	21	45	7.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E+01
	22	46	4.8E+01	47	3.3E+01	48	2.2E+01	49	1.5E+01	50	1.0E+01	0	0.	2.4E+01
PRODUCT Z= 13	14	28	1.5E-03	29	1.1E-03	30	7.6E-04	0	0.	0	0.	0	0.	1.5E-03
PRODUCT A= 26	15	31	5.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E-04
HALF LIFE= .740 T	16	32	3.7E-04	33	2.5E-04	34	1.6E-04	36	7.4E-05	0	0.	0	0.	3.6E-04
	17	35	1.1E-04	37	4.9E-05	0	0.	0	0.	0	0.	0	0.	9.5E-05
	18	36	7.5E-05	38	3.3E-05	40	1.5E-05	0	0.	0	0.	0	0.	1.5E-05
	19	39	2.2E-05	40	1.5E-05	41	1.0E-05	0	0.	0	0.	0	0.	2.2E-05
	20	40	1.5E-05	42	6.8E-06	43	4.6E-06	44	3.1E-06	46	1.4E-06	48	6.7E-07	1.5E-05
	21	45	2.1E-06	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-06

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES														NATURAL MILLI CURIES
PRODUCT Z= 13	14	28	0.	29	0.	30	1.4E+06	0	0.	0	0.	0	0.			4.6E+04
PRODUCT A= 28	15	31	1.0E+06	0	0.	0	0.	0	0.	0	0.	0	0.			1.0E+06
HALF LIFE= 2.300 M	16	32	7.1E+05	33	5.0E+05	34	3.4E+05	36	1.5E+05	0	0.	0	0.			6.9E+05
	17	35	2.3E+05	37	1.0E+05	0	0.	0	0.	0	0.	0	0.			2.0E+05
	18	36	1.5E+05	38	6.9E+04	40	3.1E+04	0	0.	0	0.	0	0.			3.1E+04
	19	39	4.6E+04	40	3.1E+04	41	2.1E+04	0	0.	0	0.	0	0.			4.4E+04
	20	40	3.1E+04	42	1.4E+04	43	9.3E+03	44	6.3E+03	46	2.9E+03	48	1.3E+03			3.0E+04
	21	45	4.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.			4.3E+03
	22	46	2.9E+03	47	2.0E+03	48	1.3E+03	49	9.1E+02	50	6.3E+02	0	0.			1.4E+03
PRODUCT Z= 13	15	31	3.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.			3.8E+05
PRODUCT A= 29	16	32	2.7E+05	33	1.9E+05	34	1.3E+05	36	6.0E+04	0	0.	0	0.			2.6E+05
HALF LIFE= 6.600 M	17	35	9.0E+04	37	4.0E+04	0	0.	0	0.	0	0.	0	0.			7.8E+04
	18	36	6.1E+04	38	2.7E+04	40	1.2E+04	0	0.	0	0.	0	0.			1.2E+04
	19	39	1.9E+04	40	1.2E+04	41	8.2E+03	0	0.	0	0.	0	0.			1.8E+04
	20	40	1.2E+04	42	5.6E+03	43	3.7E+03	44	2.5E+03	46	1.1E+03	48	5.3E+02			1.2E+04
	21	45	1.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.			1.7E+03
	22	46	1.2E+03	47	7.8E+02	48	5.4E+02	49	3.6E+02	50	2.4E+02	0	0.			5.7E+02
PRODUCT Z= 14	16	32	0.	33	4.9E+05	34	3.5E+05	36	1.7E+05	0	0.	0	0.			1.9E+04
PRODUCT A= 31	17	35	2.5E+05	37	1.2E+05	0	0.	0	0.	0	0.	0	0.			2.1E+05
HALF LIFE= 2.620 H	18	36	1.8E+05	38	8.0E+04	40	3.6E+04	0	0.	0	0.	0	0.			3.6E+04
	19	39	5.4E+04	40	3.6E+04	41	2.4E+04	0	0.	0	0.	0	0.			5.2E+04
	20	40	3.6E+04	42	1.6E+04	43	1.1E+04	44	7.3E+03	46	3.3E+03	48	1.5E+03			3.5E+04
	21	45	4.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.			5.0E+03
	22	46	3.3E+03	47	2.3E+03	48	1.5E+03	49	1.0E+03	50	7.1E+02	0	0.			1.6E+03
	23	50	7.1E+02	51	4.7E+02	0	0.	0	0.	0	0.	0	0.			4.8E+02
	24	50	7.2E+02	52	3.3E+02	53	2.3E+02	54	1.5E+02	0	0.	0	0.			3.3E+02
PRODUCT Z= 14	16	32	0.	33	0.	34	2.6E-01	36	1.3E-01	0	0.	0	0.			1.2E-02
PRODUCT A= 32	17	35	1.8E-01	37	9.2E-02	0	0.	0	0.	0	0.	0	0.			1.6E-01
HALF LIFE= 700.000 Y	18	36	1.3E-01	38	6.3E-02	40	2.8E-02	0	0.	0	0.	0	0.			2.8E-02
	19	39	4.2E-02	40	2.8E-02	41	1.9E-02	0	0.	0	0.	0	0.			4.1E-02
	20	40	2.8E-02	42	1.3E-02	43	8.6E-03	44	5.7E-03	46	2.6E-03	48	1.2E-03			2.8E-02
	21	45	3.9E-03	0	0.	0	0.	0	0.	0	0.	0	0.			3.9E-03
	22	46	2.6E-03	47	1.8E-03	48	1.2E-03	49	8.0E-04	50	5.5E-04	0	0.			1.3E-03
	23	50	5.5E-04	51	3.8E-04	0	0.	0	0.	0	0.	0	0.			3.8E-04
	24	50	5.5E-04	52	2.5E-04	53	1.7E-04	54	1.2E-04	0	0.	0	0.			2.5E-04
PRODUCT Z= 15	16	32	4.0E+05	33	2.8E+05	34	2.0E+05	36	9.5E+04	0	0.	0	0.			3.9E+05
PRODUCT A= 30	17	35	1.4E+05	37	6.4E+04	0	0.	0	0.	0	0.	0	0.			1.2E+05
HALF LIFE= 2.500 M	18	36	9.7E+04	38	4.3E+04	40	2.0E+04	0	0.	0	0.	0	0.			2.0E+04
	19	39	2.9E+04	40	2.0E+04	41	1.3E+04	0	0.	0	0.	0	0.			2.8E+04
	20	40	2.0E+04	42	8.8E+03	43	5.9E+03	44	4.0E+03	46	1.8E+03	48	8.2E+02			1.9E+04
	21	45	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.			2.7E+03
	22	46	1.8E+03	47	1.2E+03	48	8.3E+02	49	5.7E+02	50	3.8E+02	0	0.			9.0E+02
PRODUCT Z= 15	16	32	0.	33	0.	34	8.6E+04	36	4.3E+04	0	0.	0	0.			3.8E+03
PRODUCT A= 32	17	35	6.1E+04	37	3.0E+04	0	0.	0	0.	0	0.	0	0.			5.3E+04
HALF LIFE= 14.300 D	18	36	4.4E+04	38	2.1E+04	40	9.3E+03	0	0.	0	0.	0	0.			9.5E+03
	19	39	1.4E+04	40	9.4E+03	41	6.3E+03	0	0.	0	0.	0	0.			1.3E+04
	20	40	9.4E+03	42	4.3E+03	43	2.8E+03	44	1.9E+03	46	8.6E+02	48	3.9E+02			9.2E+03
	21	45	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.			1.3E+03
	22	46	8.7E+02	47	5.9E+02	48	4.0E+02	49	2.7E+02	50	1.8E+02	0	0.			4.3E+02
	23	50	1.8E+02	51	1.2E+02	0	0.	0	0.	0	0.	0	0.			1.3E+02
	24	50	1.8E+02	52	8.4E+01	53	5.7E+01	54	4.0E+01	0	0.	0	0.			8.4E+01
PRODUCT Z= 15	16	32	0.	33	0.	34	0.	36	1.2E+04	0	0.	0	0.			1.9E+00
PRODUCT A= 33	17	35	1.7E+04	37	8.7E+03	0	0.	0	0.	0	0.	0	0.			1.5E+04
HALF LIFE= 25.000 D	18	36	1.2E+04	38	6.2E+03	40	2.8E+03	0	0.	0	0.	0	0.			2.8E+03
	19	39	4.2E+03	40	2.8E+03	41	1.9E+03	0	0.	0	0.	0	0.			4.0E+03
	20	40	2.8E+03	42	1.3E+03	43	8.7E+02	44	5.8E+02	46	2.6E+02	48	1.2E+02			2.8E+03
	21	45	3.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.			3.9E+02
	22	46	2.6E+02	47	1.8E+02	48	1.2E+02	49	8.1E+01	50	5.4E+01	0	0.			1.3E+02
	23	50	5.4E+01	51	3.7E+01	0	0.	0	0.	0	0.	0	0.			3.7E+01
	24	50	5.5E+01	52	2.5E+01	53	1.7E+01	54	1.2E+01	0	0.	0	0.			2.6E+01
PRODUCT Z= 16	17	35	0.	37	6.4E+03	0	0.	0	0.	0	0.	0	0.			1.6E+03
PRODUCT A= 35	18	36	0.	38	4.6E+03	40	2.3E+03	0	0.	0	0.	0	0.			2.3E+03
HALF LIFE= 86.700 D	19	39	3.2E+03	40	2.3E+03	41	1.5E+03	0	0.	0	0.	0	0.			3.1E+03
	20	40	2.3E+03	42	1.0E+03	43	7.0E+02	44	4.7E+02	46	2.1E+02	48	9.6E+01			2.2E+03
	21	45	3.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.			3.2E+02
	22	46	2.2E+02	47	1.5E+02	48	9.8E+01	49	6.5E+01	50	4.4E+01	0	0.			1.1E+02
	23	50	4.4E+01	51	3.0E+01	0	0.	0	0.	0	0.	0	0.			3.0E+01
	24	50	4.4E+01	52	2.0E+01	53	1.4E+01	54	9.4E+00	0	0.	0	0.			2.0E+01
	25	55	6.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.			6.3E+00
	26	54	9.5E+00	56	4.4E+00	57	3.0E+00	58	2.0E+00	0	0.	0	0.			4.6E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES														NATURAL MILLI CURIES
PRODUCT Z= 16	18	36	0.	38	0.	40	2.4E+04	0	0.	0	0.	0	0.			2.4E+04
PRODUCT A= 37	19	39	0.	40	2.4E+04	41	1.7E+04	0	0.	0	0.	0	0.			1.2E+03
HALF LIFE= 5.100 M	20	40	0.	42	1.2E+04	43	8.3E+03	44	5.6E+03	46	2.5E+03	48	1.1E+03			2.2E+02
	21	45	3.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.			3.8E+03
	22	46	2.6E+03	47	1.7E+03	48	1.2E+03	49	7.7E+02	50	5.2E+02	0	0.			1.2E+03
	23	50	5.2E+02	51	3.5E+02	0	0.	0	0.	0	0.	0	0.			3.5E+02
	24	50	5.3E+02	52	2.4E+02	53	1.6E+02	54	1.1E+02	0	0.	0	0.			2.4E+02
	25	55	7.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.			7.4E+01
	26	54	1.1E+02	56	5.1E+01	57	3.4E+01	58	2.3E+01	0	0.	0	0.			5.4E+01
PRODUCT Z= 16	18	36	0.	38	0.	40	4.6E+03	0	0.	0	0.	0	0.			4.6E+03
PRODUCT A= 38	19	39	0.	40	0.	41	3.2E+03	0	0.	0	0.	0	0.			2.3E+02
HALF LIFE= 2.900 H	20	40	0.	42	2.3E+03	43	1.6E+03	44	1.1E+03	46	5.0E+02	48	2.3E+02			4.4E+01
	21	45	7.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.			7.6E+02
	22	46	5.1E+02	47	3.4E+02	48	2.3E+02	49	1.6E+02	50	1.0E+02	0	0.			2.5E+02
	23	50	1.0E+02	51	7.1E+01	0	0.	0	0.	0	0.	0	0.			7.1E+01
	24	50	1.1E+02	52	4.8E+01	53	3.2E+01	54	2.2E+01	0	0.	0	0.			4.8E+01
	25	55	1.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.			1.5E+01
	26	54	2.2E+01	56	1.0E+01	57	6.9E+00	58	4.6E+00	0	0.	0	0.			1.1E+01
PRODUCT Z= 17	18	36	0.	38	1.3E-02	40	6.6E-03	0	0.	0	0.	0	0.			6.6E-03
PRODUCT A= 36	19	39	9.4E-03	40	6.6E-03	41	4.7E-03	0	0.	0	0.	0	0.			9.0E-03
HALF LIFE= .300 T	20	40	6.7E-03	42	3.2E-03	43	2.2E-03	44	1.4E-03	46	6.6E-04	48	2.9E-04			6.5E-03
	21	45	9.8E-04	0	0.	0	0.	0	0.	0	0.	0	0.			9.8E-04
	22	46	6.7E-04	47	4.5E-04	48	3.0E-04	49	2.0E-04	50	1.3E-04	0	0.			3.2E-04
	23	50	1.4E-04	51	9.1E-05	0	0.	0	0.	0	0.	0	0.			9.1E-05
	24	50	1.4E-04	52	6.2E-05	53	4.2E-05	54	2.8E-05	0	0.	0	0.			6.2E-05
	25	55	2.0E-05	0	0.	0	0.	0	0.	0	0.	0	0.			2.0E-05
	26	54	2.9E-05	56	1.3E-05	57	9.0E-06	58	6.2E-06	0	0.	0	0.			1.4E-05
PRODUCT Z= 17	18	36	0.	38	0.	40	2.7E+05	0	0.	0	0.	0	0.			2.7E+05
PRODUCT A= 38	19	39	0.	40	2.7E+05	41	1.9E+05	0	0.	0	0.	0	0.			1.4E+04
HALF LIFE= 37.300 M	20	40	0.	42	1.4E+05	43	9.8E+04	44	6.6E+04	46	3.0E+04	48	1.4E+04			2.6E+03
	21	45	4.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.			4.5E+04
	22	46	3.0E+04	47	2.0E+04	48	1.4E+04	49	9.2E+03	50	6.2E+03	0	0.			1.5E+04
	23	50	6.2E+03	51	4.2E+03	0	0.	0	0.	0	0.	0	0.			4.2E+03
	24	50	6.3E+03	52	2.8E+03	53	1.9E+03	54	1.3E+03	0	0.	0	0.			2.8E+03
	25	55	8.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.			8.7E+02
	26	54	1.3E+03	56	6.0E+02	57	4.1E+02	58	2.7E+02	0	0.	0	0.			6.3E+02
PRODUCT Z= 17	19	39	0.	40	0.	41	5.2E+04	0	0.	0	0.	0	0.			3.8E+03
PRODUCT A= 39	20	40	0.	42	3.7E+04	43	2.7E+04	44	1.9E+04	46	8.6E+03	48	3.9E+03			7.3E+02
HALF LIFE= 55.000 M	21	45	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.			1.3E+04
	22	46	8.8E+03	47	5.9E+03	48	3.9E+03	49	2.7E+03	50	1.8E+03	0	0.			4.3E+03
	23	50	1.8E+03	51	1.2E+03	0	0.	0	0.	0	0.	0	0.			1.2E+03
	24	50	1.8E+03	52	8.1E+02	53	5.5E+02	54	3.7E+02	0	0.	0	0.			8.2E+02
	25	55	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.			2.5E+02
	26	54	3.7E+02	56	1.7E+02	57	1.2E+02	58	7.9E+01	0	0.	0	0.			1.8E+02
	27	59	5.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.			5.3E+01
	28	58	8.0E+01	60	3.6E+01	61	2.5E+01	62	1.7E+01	64	7.8E+00	0	0.			6.4E+01
PRODUCT Z= 17	20	40	0.	42	0.	43	5.6E+03	44	3.9E+03	46	1.9E+03	48	8.6E+02			1.0E+02
PRODUCT A= 40	21	45	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.			2.8E+03
HALF LIFE= 1.400 M	22	46	1.9E+03	47	1.3E+03	48	8.7E+02	49	5.9E+02	50	4.0E+02	0	0.			9.4E+02
	23	50	4.0E+02	51	2.7E+02	0	0.	0	0.	0	0.	0	0.			2.7E+02
	24	50	4.0E+02	52	1.8E+02	53	1.2E+02	54	8.1E+01	0	0.	0	0.			1.8E+02
	25	55	5.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.			5.5E+01
	26	54	8.2E+01	56	3.8E+01	57	2.5E+01	58	1.7E+01	0	0.	0	0.			4.0E+01
	27	59	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.			1.2E+01
	28	58	1.7E+01	60	7.9E+00	61	5.4E+00	62	3.8E+00	64	1.7E+00	0	0.			1.4E+01
PRODUCT Z= 18	18	36	0.	38	0.	40	1.1E+04	0	0.	0	0.	0	0.			1.1E+04
PRODUCT A= 37	19	39	1.6E+04	40	1.1E+04	41	8.1E+03	0	0.	0	0.	0	0.			1.6E+04
HALF LIFE= 35.100 D	20	40	1.2E+04	42	5.8E+03	43	3.9E+03	44	2.6E+03	46	1.2E+03	48	5.4E+02			1.1E+04
	21	45	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.			1.8E+03
	22	46	1.2E+03	47	8.2E+02	48	5.5E+02	49	3.7E+02	50	2.5E+02	0	0.			5.9E+02
	23	50	2.5E+02	51	1.7E+02	0	0.	0	0.	0	0.	0	0.			1.7E+02
	24	50	2.5E+02	52	1.1E+02	53	7.6E+01	54	5.1E+01	0	0.	0	0.			1.1E+02
	25	55	3.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.			3.5E+01
	26	54	5.2E+01	56	2.4E+01	57	1.6E+01	58	1.1E+01	0	0.	0	0.			2.6E+01
PRODUCT Z= 18	19	39	0.	40	0.	41	8.5E+00	0	0.	0	0.	0	0.			6.2E-01
PRODUCT A= 39	20	40	0.	42	6.1E+00	43	4.3E+00	44	3.1E+00	46	1.4E+00	48	6.3E-01			1.2E-01
HALF LIFE= 270.000 Y	21	45	2.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.			2.1E+00
	22	46	1.4E+00	47	9.5E-01	48	6.4E-01	49	4.3E-01	50	2.9E-01	0	0.			6.9E-01
	23	50	2.9E-01	51	2.0E-01	0	0.	0	0.	0	0.	0	0.			2.0E-01
	24	50	2.9E-01	52	1.3E-01	53	8.9E-02	54	6.0E-02	0	0.	0	0.			1.3E-01
	25	55	4.1E-02	0	0.	0	0.	0	0.	0	0.	0	0.			4.1E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 18 A= 39 (CONTINUED)	26	54	6.0E-02	56	2.8E-02	57	1.9E-02	58	1.3E-02	0	0.	0	0.	2.9E-02
	27	59	8.6E-03	0	0.	0	0.	0	0.	0	0.	0	0.	8.6E-03
	28	58	1.3E-02	60	5.9E-03	61	4.1E-03	62	2.7E-03	64	1.3E-03	0	0.	1.0E-02
PRODUCT Z= 18	20	40	0.	42	0.	43	8.0E+04	44	5.6E+04	46	2.8E+04	48	1.3E+04	1.4E+03
PRODUCT A= 41	21	45	4.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+04
HALF LIFE= 1.830 H	22	46	2.9E+04	47	2.0E+04	48	1.3E+04	49	8.9E+03	50	6.0E+03	0	0.	1.4E+04
	23	50	6.0E+03	51	4.1E+03	0	0.	0	0.	0	0.	0	0.	4.1E+03
	24	50	6.0E+03	52	2.7E+03	53	1.8E+03	54	1.2E+03	0	0.	0	0.	2.7E+03
	25	55	8.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E+02
	26	54	1.2E+03	56	5.6E+02	57	3.8E+02	58	2.6E+02	0	0.	0	0.	6.0E+02
	27	59	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+02
	28	58	2.6E+02	60	1.2E+02	61	8.0E+01	62	5.5E+01	64	2.6E+01	0	0.	2.1E+02
PRODUCT Z= 18	20	40	0.	42	0.	43	0.	44	7.5E-01	46	3.8E-01	48	1.8E-01	1.7E-02
PRODUCT A= 42	21	45	5.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E-01
HALF LIFE= 33.000 Y	22	46	3.8E-01	47	2.7E-01	48	1.8E-01	49	1.2E-01	50	8.4E-02	0	0.	2.0E-01
	23	50	8.4E-02	51	5.7E-02	0	0.	0	0.	0	0.	0	0.	5.7E-02
	24	50	8.5E-02	52	3.9E-02	53	2.6E-02	54	1.7E-02	0	0.	0	0.	3.9E-02
	25	55	1.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-02
	26	54	1.7E-02	56	7.9E-03	57	5.3E-03	58	3.6E-03	0	0.	0	0.	8.4E-03
	27	59	2.4E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-03
	28	58	3.6E-03	60	1.7E-03	61	1.1E-03	62	7.6E-04	64	3.6E-04	0	0.	2.9E-03
PRODUCT Z= 19	18	36	0.	38	0.	40	1.6E+05	0	0.	0	0.	0	0.	1.6E+05
PRODUCT A= 38	19	39	0.	40	1.6E+05	41	1.1E+05	0	0.	0	0.	0	0.	8.0E+03
HALF LIFE= 7.700 M	20	40	1.6E+05	42	7.9E+04	43	5.6E+04	44	3.8E+04	46	1.7E+04	48	7.8E+03	1.5E+05
	21	45	2.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+04
	22	46	1.7E+04	47	1.2E+04	48	8.0E+03	49	5.3E+03	50	3.5E+03	0	0.	8.6E+03
	23	50	3.6E+03	51	2.4E+03	0	0.	0	0.	0	0.	0	0.	2.4E+03
	24	50	3.6E+03	52	1.6E+03	53	1.1E+03	54	7.4E+02	0	0.	0	0.	1.6E+03
	25	55	5.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+02
	26	54	7.5E+02	56	3.4E+02	57	2.3E+02	58	1.6E+02	0	0.	0	0.	3.6E+02
PRODUCT Z= 19	20	40	0.	42	0.	43	0.	44	3.7E+05	46	1.8E+05	48	8.9E+04	8.5E+03
PRODUCT A= 42	21	45	2.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+05
HALF LIFE= 12.400 H	22	46	1.9E+05	47	1.3E+05	48	9.1E+04	49	6.1E+04	50	4.1E+04	0	0.	9.7E+04
	23	50	4.1E+04	51	2.8E+04	0	0.	0	0.	0	0.	0	0.	2.8E+04
	24	50	4.2E+04	52	1.9E+04	53	1.3E+04	54	8.5E+03	0	0.	0	0.	1.9E+04
	25	55	5.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+03
	26	54	8.6E+03	56	3.9E+03	57	2.6E+03	58	1.8E+03	0	0.	0	0.	4.1E+03
	27	59	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	28	58	1.8E+03	60	8.2E+02	61	5.6E+02	62	3.7E+02	64	1.8E+02	0	0.	1.4E+03
PRODUCT Z= 19	20	40	0.	42	0.	43	0.	44	0.	46	4.4E+04	48	2.2E+04	5.0E+01
PRODUCT A= 43	21	45	6.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E+04
HALF LIFE= 22.000 H	22	46	4.5E+04	47	3.2E+04	48	2.3E+04	49	1.5E+04	50	1.0E+04	0	0.	2.4E+04
	23	50	1.0E+04	51	7.0E+03	0	0.	0	0.	0	0.	0	0.	7.0E+03
	24	50	1.1E+04	52	4.8E+03	53	3.2E+03	54	2.1E+03	0	0.	0	0.	4.8E+03
	25	55	1.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
	26	54	2.2E+03	56	9.8E+02	57	6.6E+02	58	4.4E+02	0	0.	0	0.	1.0E+03
	27	59	3.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+02
	28	58	4.5E+02	60	2.0E+02	61	1.4E+02	62	9.5E+01	64	4.4E+01	0	0.	3.6E+02
PRODUCT Z= 19	20	40	0.	42	0.	43	0.	44	0.	46	2.1E+04	48	1.1E+04	2.4E+01
PRODUCT A= 44	22	46	0.	47	1.5E+04	48	1.1E+04	49	7.7E+03	50	5.2E+03	0	0.	9.9E+03
HALF LIFE= 22.000 M	23	50	5.3E+03	51	3.6E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
	24	50	5.3E+03	52	2.4E+03	53	1.6E+03	54	1.1E+03	0	0.	0	0.	2.4E+03
	25	55	7.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E+02
	26	54	1.1E+03	56	4.9E+02	57	3.3E+02	58	2.2E+02	0	0.	0	0.	5.3E+02
	27	59	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
	28	58	2.3E+02	60	1.0E+02	61	6.9E+01	62	4.7E+01	64	2.2E+01	0	0.	1.8E+02
	29	63	3.3E+01	65	1.5E+01	0	0.	0	0.	0	0.	0	0.	2.7E+01
	30	64	2.2E+01	66	1.0E+01	67	6.9E+00	68	4.7E+00	70	2.2E+00	0	0.	1.5E+01
PRODUCT Z= 19	20	40	0.	42	0.	43	0.	44	0.	46	0.	48	2.2E+03	4.7E+00
PRODUCT A= 45	22	46	0.	47	0.	48	2.2E+03	49	1.6E+03	50	1.1E+03	0	0.	1.8E+03
HALF LIFE= 20.000 M	23	50	1.1E+03	51	7.6E+02	0	0.	0	0.	0	0.	0	0.	7.6E+02
	24	50	1.1E+03	52	5.2E+02	53	3.5E+02	54	2.3E+02	0	0.	0	0.	5.2E+02
	25	55	1.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+02
	26	54	2.4E+02	56	1.1E+02	57	7.2E+01	58	4.8E+01	0	0.	0	0.	1.1E+02
	27	59	3.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+01
	28	58	4.9E+01	60	2.2E+01	61	1.5E+01	62	1.0E+01	64	4.7E+00	0	0.	3.9E+01
	29	63	6.9E+00	65	3.1E+00	0	0.	0	0.	0	0.	0	0.	5.7E+00
	30	64	4.7E+00	66	2.2E+00	67	1.5E+00	68	1.0E+00	70	4.6E-01	0	0.	3.1E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 20	20	40	0.	42	0.	43	1.3E-02	44	9.4E-03	46	4.7E-03	48	2.2E-03	2.4E-04
PRODUCT A= 41	21	45	6.7E-03	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E-03
HALF LIFE= .077 T	22	46	4.8E-03	47	3.3E-03	48	2.2E-03	49	1.5E-03	50	9.9E-04	0	0.	2.4E-03
	23	50	1.0E-03	51	6.8E-04	0	0.	0	0.	0	0.	0	0.	6.8E-04
	24	50	1.0E-03	52	4.5E-04	53	3.0E-04	54	2.0E-04	0	0.	0	0.	4.5E-04
	25	55	1.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-04
	26	54	2.1E-04	56	9.3E-05	57	6.3E-05	58	4.3E-05	0	0.	0	0.	9.9E-05
	27	59	2.9E-05	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E-05
	28	58	4.3E-05	60	2.0E-05	61	1.3E-05	62	9.2E-06	64	4.2E-06	0	0.	3.5E-05
PRODUCT Z= 20	20	40	0.	42	0.	43	0.	44	0.	46	0.	48	5.1E+02	1.1E+00
PRODUCT A= 45	22	46	0.	47	7.4E+02	48	5.2E+02	49	3.7E+02	50	2.6E+02	0	0.	4.8E+02
HALF LIFE= 163.000 D	23	50	2.7E+02	51	1.8E+02	0	0.	0	0.	0	0.	0	0.	1.8E+02
	24	50	2.7E+02	52	1.2E+02	53	8.2E+01	54	5.5E+01	0	0.	0	0.	1.2E+02
	25	55	3.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+01
	26	54	5.6E+01	56	2.5E+01	57	1.7E+01	58	1.1E+01	0	0.	0	0.	2.7E+01
	27	59	7.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E+00
	28	58	1.2E+01	60	5.2E+00	61	3.5E+00	62	2.4E+00	64	1.1E+00	0	0.	9.3E+00
	29	63	1.6E+00	65	7.4E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
	30	64	1.1E+00	66	5.1E-01	67	3.6E-01	68	2.4E-01	70	1.1E-01	0	0.	7.4E-01
PRODUCT Z= 20	22	46	0.	47	0.	48	0.	49	7.7E+02	50	5.5E+02	0	0.	7.4E+01
PRODUCT A= 47	23	50	5.5E+02	51	3.9E+02	0	0.	0	0.	0	0.	0	0.	3.9E+02
HALF LIFE= 4.500 D	24	50	0.	52	2.8E+02	53	1.9E+02	54	1.3E+02	0	0.	0	0.	2.6E+02
	25	55	8.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E+01
	26	54	1.3E+02	56	5.9E+01	57	4.0E+01	58	2.7E+01	0	0.	0	0.	6.2E+01
	27	59	1.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+01
	28	58	2.7E+01	60	1.2E+01	61	8.2E+00	62	5.5E+00	64	2.5E+00	0	0.	2.2E+01
	29	63	3.8E+00	65	1.7E+00	0	0.	0	0.	0	0.	0	0.	3.1E+00
	30	64	2.5E+00	66	1.2E+00	67	7.9E-01	68	5.4E-01	70	2.5E-01	0	0.	1.7E+00
PRODUCT Z= 20	24	50	0.	52	0.	53	4.1E+01	54	2.9E+01	0	0.	0	0.	4.7E+00
PRODUCT A= 49	25	55	2.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+01
HALF LIFE= 8.800 M	26	54	0.	56	1.3E+01	57	9.1E+00	58	6.1E+00	0	0.	0	0.	1.3E+01
	27	59	4.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+00
	28	58	6.2E+00	60	2.8E+00	61	1.9E+00	62	1.3E+00	64	5.7E-01	0	0.	5.0E+00
	29	63	8.5E-01	65	3.9E-01	0	0.	0	0.	0	0.	0	0.	7.1E-01
	30	64	5.7E-01	66	2.6E-01	67	1.8E-01	68	1.2E-01	70	5.6E-02	0	0.	3.8E-01
	31	69	8.2E-02	71	3.9E-02	0	0.	0	0.	0	0.	0	0.	6.5E-02
	32	70	5.7E-02	72	2.6E-02	73	1.8E-02	74	1.2E-02	76	5.8E-03	0	0.	2.5E-02
PRODUCT Z= 21	20	40	0.	42	0.	43	0.	44	0.	46	2.9E+05	48	1.5E+05	3.3E+02
PRODUCT A= 43	21	45	4.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+05
HALF LIFE= 3.900 H	22	46	3.0E+05	47	2.1E+05	48	1.5E+05	49	1.0E+05	50	6.9E+04	0	0.	1.6E+05
	23	50	6.9E+04	51	4.7E+04	0	0.	0	0.	0	0.	0	0.	4.7E+04
	24	50	7.0E+04	52	3.1E+04	53	2.1E+04	54	1.4E+04	0	0.	0	0.	3.2E+04
	25	55	9.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.6E+03
	26	54	1.4E+04	56	6.5E+03	57	4.4E+03	58	2.9E+03	0	0.	0	0.	6.9E+03
	27	59	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	28	58	3.0E+03	60	1.4E+03	61	9.2E+02	62	6.3E+02	64	2.9E+02	0	0.	2.4E+03
PRODUCT Z= 21	20	40	0.	42	0.	43	0.	44	0.	46	1.3E+06	48	6.3E+05	1.4E+03
PRODUCT A= 44	22	46	1.3E+06	47	9.1E+05	48	6.4E+05	49	4.6E+05	50	3.1E+05	0	0.	6.8E+05
HALF LIFE= 4.000 H	23	50	3.1E+05	51	2.1E+05	0	0.	0	0.	0	0.	0	0.	2.1E+05
	24	50	3.1E+05	52	1.4E+05	53	9.6E+04	54	6.5E+04	0	0.	0	0.	1.4E+05
	25	55	4.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+04
	26	54	6.6E+04	56	2.9E+04	57	2.0E+04	58	1.3E+04	0	0.	0	0.	3.1E+04
	27	59	9.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.0E+03
	28	58	1.3E+04	60	6.1E+03	61	4.1E+03	62	2.8E+03	64	1.3E+03	0	0.	1.1E+04
	29	63	1.9E+03	65	8.9E+02	0	0.	0	0.	0	0.	0	0.	1.6E+03
	30	64	1.3E+03	66	6.2E+02	67	4.1E+02	68	2.8E+02	70	1.3E+02	0	0.	8.7E+02
PRODUCT Z= 21	20	40	0.	42	0.	43	0.	44	0.	46	0.	48	6.9E+03	1.5E+01
PRODUCT A= 46	22	46	0.	47	0.	48	7.0E+03	49	5.0E+03	50	3.5E+03	0	0.	5.7E+03
HALF LIFE= 83.800 D	23	50	3.6E+03	51	2.5E+03	0	0.	0	0.	0	0.	0	0.	2.5E+03
	24	50	3.6E+03	52	1.7E+03	53	1.2E+03	54	7.8E+02	0	0.	0	0.	1.7E+03
	25	55	5.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+02
	26	54	7.9E+02	56	3.6E+02	57	2.4E+02	58	1.6E+02	0	0.	0	0.	3.8E+02
	27	59	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
	28	58	1.6E+02	60	7.4E+01	61	5.0E+01	62	3.4E+01	64	1.5E+01	0	0.	1.3E+02
	29	63	2.3E+01	65	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.9E+01
	30	64	1.6E+01	66	7.1E+00	67	4.9E+00	68	3.4E+00	70	1.5E+00	0	0.	1.0E+01
PRODUCT Z= 21	22	46	0.	47	0.	48	0.	49	4.6E+04	50	3.2E+04	0	0.	4.4E+03
PRODUCT A= 47	23	50	3.3E+04	51	2.3E+04	0	0.	0	0.	0	0.	0	0.	2.3E+04
HALF LIFE= 3.400 D	24	50	3.3E+04	52	1.7E+04	53	1.1E+04	54	7.6E+03	0	0.	0	0.	1.6E+04
	25	55	5.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E+03
	26	54	7.7E+03	56	3.5E+03	57	2.4E+03	58	1.6E+03	0	0.	0	0.	3.7E+03

	TARGET Z	M@N@IS@T@PIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PR@DUCT Z= 21 A= 47 (C@NTINUED)	27	59	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
	28	58	1.6E+03	60	7.2E+02	61	4.8E+02	62	3.2E+02	64	1.5E+02	0	0.	1.3E+03
	29	63	2.2E+02	65	1.0E+02	0	0.	0	0.	0	0.	0	0.	1.8E+02
	30	64	1.5E+02	66	7.0E+01	67	4.6E+01	68	3.2E+01	70	1.5E+01	0	0.	9.9E+01
PR@DUCT Z= 21	22	46	0.	47	0.	48	0.	49	0.	50	1.7E+04	0	0.	9.4E+02
PR@DUCT A= 48	23	50	1.7E+04	51	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.2E+04
HALF LIFE= 44.000 H	24	50	0.	52	8.6E+03	53	6.1E+03	54	4.2E+03	0	0.	0	0.	7.9E+03
	25	55	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03
	26	54	4.2E+03	56	1.9E+03	57	1.3E+03	58	8.7E+02	0	0.	0	0.	2.0E+03
	27	59	5.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+02
	28	58	8.8E+02	60	3.9E+02	61	2.7E+02	62	1.8E+02	64	8.1E+01	0	0.	7.1E+02
	29	63	1.2E+02	65	5.5E+01	0	0.	0	0.	0	0.	0	0.	1.0E+02
	30	64	8.2E+01	66	3.8E+01	67	2.6E+01	68	1.7E+01	70	8.2E+00	0	0.	5.4E+01
PR@DUCT Z= 21	23	50	0.	51	9.3E+03	0	0.	0	0.	0	0.	0	0.	9.3E+03
PR@DUCT A= 49	24	50	0.	52	6.7E+03	53	4.7E+03	54	3.4E+03	0	0.	0	0.	6.1E+03
HALF LIFE= 57.500 M	25	55	2.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+03
	26	54	3.4E+03	56	1.6E+03	57	1.0E+03	58	7.0E+02	0	0.	0	0.	1.7E+03
	27	59	4.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.8E+02
	28	58	7.1E+02	60	3.2E+02	61	2.2E+02	62	1.5E+02	64	6.6E+01	0	0.	5.7E+02
	29	63	9.8E+01	65	4.5E+01	0	0.	0	0.	0	0.	0	0.	8.2E+01
	30	64	6.7E+01	66	3.0E+01	67	2.1E+01	68	1.4E+01	70	6.5E+00	0	0.	4.4E+01
PR@DUCT Z= 21	24	50	0.	52	0.	53	9.5E+02	54	6.8E+02	0	0.	0	0.	1.1E+02
PR@DUCT A= 50	25	55	4.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+02
HALF LIFE= 1.800 M	26	54	0.	56	3.3E+02	57	2.2E+02	58	1.5E+02	0	0.	0	0.	3.1E+02
	27	59	1.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+02
	28	58	1.5E+02	60	6.9E+01	61	4.6E+01	62	3.1E+01	64	1.4E+01	0	0.	1.2E+02
	29	63	2.1E+01	65	9.5E+00	0	0.	0	0.	0	0.	0	0.	1.7E+01
	30	64	1.4E+01	66	6.5E+00	67	4.4E+00	68	3.0E+00	70	1.4E+00	0	0.	9.4E+00
	31	69	2.0E+00	71	9.4E-01	0	0.	0	0.	0	0.	0	0.	1.6E+00
	32	70	1.4E+00	72	6.5E-01	73	4.4E-01	74	3.0E-01	76	1.4E-01	0	0.	6.0E-01
PR@DUCT Z= 22	22	46	2.8E+00	47	2.0E+00	48	1.4E+00	49	1.0E+00	50	6.8E-01	0	0.	1.5E+00
PR@DUCT A= 44	23	50	6.9E-01	51	4.6E-01	0	0.	0	0.	0	0.	0	0.	4.6E-01
HALF LIFE= 47.000 Y	24	50	6.9E-01	52	3.1E-01	53	2.1E-01	54	1.4E-01	0	0.	0	0.	3.1E-01
	25	55	9.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	9.6E-02
	26	54	1.4E-01	56	6.4E-02	57	4.3E-02	58	2.9E-02	0	0.	0	0.	6.8E-02
	27	59	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
	28	58	2.9E-02	60	1.3E-02	61	9.0E-03	62	6.2E-03	64	2.8E-03	0	0.	2.4E-02
	29	63	4.2E-03	65	1.9E-03	0	0.	0	0.	0	0.	0	0.	3.5E-03
	30	64	2.8E-03	66	1.4E-03	67	9.0E-04	68	6.2E-04	70	2.9E-04	0	0.	1.9E-03
PR@DUCT Z= 22	22	46	0.	47	3.3E+05	48	2.3E+05	49	1.7E+05	50	1.2E+05	0	0.	2.1E+05
PR@DUCT A= 45	23	50	1.2E+05	51	8.0E+04	0	0.	0	0.	0	0.	0	0.	8.1E+04
HALF LIFE= 3.080 H	24	50	1.2E+05	52	5.4E+04	53	3.7E+04	54	2.5E+04	0	0.	0	0.	5.5E+04
	25	55	1.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+04
	26	54	2.5E+04	56	1.1E+04	57	7.6E+03	58	5.1E+03	0	0.	0	0.	1.2E+04
	27	59	3.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+03
	28	58	5.1E+03	60	2.3E+03	61	1.6E+03	62	1.1E+03	64	4.9E+02	0	0.	4.1E+03
	29	63	7.3E+02	65	3.3E+02	0	0.	0	0.	0	0.	0	0.	6.0E+02
	30	64	5.0E+02	66	2.3E+02	67	1.6E+02	68	1.1E+02	70	4.9E+01	0	0.	3.3E+02
PR@DUCT Z= 22	24	50	0.	52	0.	53	1.6E+04	54	1.1E+04	0	0.	0	0.	1.8E+03
PR@DUCT A= 51	25	55	8.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.0E+03
HALF LIFE= 5.800 M	26	54	0.	56	5.7E+03	57	3.9E+03	58	2.6E+03	0	0.	0	0.	5.3E+03
	27	59	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
	28	58	2.6E+03	60	1.2E+03	61	8.1E+02	62	5.4E+02	64	2.4E+02	0	0.	2.1E+03
	29	63	3.7E+02	65	1.6E+02	0	0.	0	0.	0	0.	0	0.	3.0E+02
	30	64	2.5E+02	66	1.1E+02	67	7.6E+01	68	5.1E+01	70	2.4E+01	0	0.	1.6E+02
	31	69	3.5E+01	71	1.6E+01	0	0.	0	0.	0	0.	0	0.	2.7E+01
	32	70	2.4E+01	72	1.1E+01	73	7.6E+00	74	5.1E+00	76	2.4E+00	0	0.	1.0E+01
PR@DUCT Z= 23	22	46	0.	47	0.	48	0.	49	2.5E+05	50	1.8E+05	0	0.	2.4E+04
PR@DUCT A= 47	23	50	1.8E+05	51	1.3E+05	0	0.	0	0.	0	0.	0	0.	1.3E+05
HALF LIFE= 32.000 M	24	50	1.8E+05	52	9.1E+04	53	6.2E+04	54	4.2E+04	0	0.	0	0.	9.1E+04
	25	55	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
	26	54	4.2E+04	56	1.9E+04	57	1.3E+04	58	8.6E+03	0	0.	0	0.	2.0E+04
	27	59	5.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+03
	28	58	8.7E+03	60	3.9E+03	61	2.6E+03	62	1.8E+03	64	8.1E+02	0	0.	7.0E+03
	29	63	1.2E+03	65	5.6E+02	0	0.	0	0.	0	0.	0	0.	1.0E+03
	30	64	8.2E+02	66	3.8E+02	67	2.6E+02	68	1.8E+02	70	8.1E+01	0	0.	5.5E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 23	22	46	0.	47	0.	48	0.	49	0.	50	3.6E+04	0	0.	2.0E+03
PRODUCT A= 48	23	50	3.7E+04	51	2.6E+04	0	0.	0	0.	0	0.	0	0.	2.6E+04
HALF LIFE= 16.100 D	24	50	3.7E+04	52	1.9E+04	53	1.3E+04	54	9.0E+03	0	0.	0	0.	1.9E+04
	25	55	6.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+03
	26	54	9.1E+03	56	4.1E+03	57	2.8E+03	58	1.9E+03	0	0.	0	0.	4.4E+03
	27	59	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	28	58	1.9E+03	60	8.5E+02	61	5.7E+02	62	3.8E+02	64	1.8E+02	0	0.	1.5E+03
	29	63	2.6E+02	65	1.2E+02	0	0.	0	0.	0	0.	0	0.	2.2E+02
	30	64	1.8E+02	66	8.1E+01	67	5.6E+01	68	3.7E+01	70	1.8E+01	0	0.	1.2E+02
PRODUCT Z= 23	23	50	0.	51	3.9E+03	0	0.	0	0.	0	0.	0	0.	3.9E+03
PRODUCT A= 49	24	50	0.	52	2.8E+03	53	2.0E+03	54	1.4E+03	0	0.	0	0.	2.6E+03
HALF LIFE= 330.000 D	25	55	9.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+02
	26	54	1.4E+03	56	6.6E+02	57	4.4E+02	58	3.0E+02	0	0.	0	0.	7.0E+02
	27	59	2.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+02
	28	58	3.0E+02	60	1.4E+02	61	9.2E+01	62	6.2E+01	64	2.8E+01	0	0.	2.4E+02
	29	63	4.2E+01	65	1.9E+01	0	0.	0	0.	0	0.	0	0.	3.5E+01
	30	64	2.8E+01	66	1.3E+01	67	8.8E+00	68	6.0E+00	70	2.8E+00	0	0.	1.9E+01
PRODUCT Z= 23	24	50	0.	52	0.	53	0.	54	1.3E+05	0	0.	0	0.	3.1E+03
PRODUCT A= 52	25	55	9.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	9.0E+04
HALF LIFE= 3.770 M	26	54	0.	56	6.4E+04	57	4.5E+04	58	3.1E+04	0	0.	0	0.	6.0E+04
	27	59	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
	28	58	3.1E+04	60	1.4E+04	61	9.5E+03	62	6.5E+03	64	2.9E+03	0	0.	2.5E+04
	29	63	4.3E+03	65	2.0E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
	30	64	2.9E+03	66	1.3E+03	67	8.9E+02	68	6.1E+02	70	2.8E+02	0	0.	1.9E+03
	31	69	4.1E+02	71	1.9E+02	0	0.	0	0.	0	0.	0	0.	3.2E+02
	32	70	2.8E+02	72	1.3E+02	73	8.8E+01	74	6.1E+01	76	2.8E+01	0	0.	1.2E+02
PRODUCT Z= 23	25	55	2.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+04
PRODUCT A= 53	26	54	0.	56	1.9E+04	57	1.3E+04	58	9.4E+03	0	0.	0	0.	1.7E+04
HALF LIFE= 2.000 M	27	59	6.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+03
	28	58	9.5E+03	60	4.3E+03	61	2.9E+03	62	2.0E+03	64	8.9E+02	0	0.	7.6E+03
	29	63	1.3E+03	65	6.0E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
	30	64	9.0E+02	66	4.1E+02	67	2.7E+02	68	1.8E+02	70	8.4E+01	0	0.	5.9E+02
	31	69	1.3E+02	71	5.7E+01	0	0.	0	0.	0	0.	0	0.	9.8E+01
	32	70	8.5E+01	72	4.0E+01	73	2.6E+01	74	1.8E+01	76	8.4E+00	0	0.	3.7E+01
PRODUCT Z= 24	23	50	1.9E+04	51	1.4E+04	0	0.	0	0.	0	0.	0	0.	1.4E+04
PRODUCT A= 48	24	50	2.0E+04	52	9.8E+03	53	7.0E+03	54	4.7E+03	0	0.	0	0.	9.8E+03
HALF LIFE= 23.000 H	25	55	3.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+03
	26	54	4.8E+03	56	2.2E+03	57	1.5E+03	58	9.9E+02	0	0.	0	0.	2.3E+03
	27	59	6.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+02
	28	58	1.0E+03	60	4.5E+02	61	3.0E+02	62	2.0E+02	64	9.3E+01	0	0.	8.1E+02
	29	63	1.4E+02	65	6.3E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	30	64	9.4E+01	66	4.3E+01	67	2.9E+01	68	2.0E+01	70	9.3E+00	0	0.	6.2E+01
PRODUCT Z= 24	23	50	0.	51	1.9E+05	0	0.	0	0.	0	0.	0	0.	1.9E+05
PRODUCT A= 49	24	50	0.	52	1.4E+05	53	9.6E+04	54	6.8E+04	0	0.	0	0.	1.2E+05
HALF LIFE= 42.000 M	25	55	4.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+04
	26	54	6.9E+04	56	3.2E+04	57	2.1E+04	58	1.4E+04	0	0.	0	0.	3.4E+04
	27	59	9.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E+03
	28	58	1.5E+04	60	6.5E+03	61	4.4E+03	62	3.0E+03	64	1.3E+03	0	0.	1.2E+04
	29	63	2.0E+03	65	9.1E+02	0	0.	0	0.	0	0.	0	0.	1.7E+03
	30	64	1.4E+03	66	6.2E+02	67	4.2E+02	68	2.9E+02	70	1.3E+02	0	0.	9.0E+02
PRODUCT Z= 24	24	50	0.	52	0.	53	4.1E+04	54	2.9E+04	0	0.	0	0.	4.7E+03
PRODUCT A= 51	25	55	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
HALF LIFE= 27.800 D	26	54	3.0E+04	56	1.5E+04	57	1.0E+04	58	6.8E+03	0	0.	0	0.	1.6E+04
	27	59	4.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+03
	28	58	6.9E+03	60	3.1E+03	61	2.1E+03	62	1.4E+03	64	6.4E+02	0	0.	5.6E+03
	29	63	9.5E+02	65	4.3E+02	0	0.	0	0.	0	0.	0	0.	7.9E+02
	30	64	6.5E+02	66	2.9E+02	67	2.0E+02	68	1.3E+02	70	6.2E+01	0	0.	4.3E+02
	31	69	9.1E+01	71	4.2E+01	0	0.	0	0.	0	0.	0	0.	7.1E+01
	32	70	6.3E+01	72	2.9E+01	73	2.0E+01	74	1.3E+01	76	6.2E+00	0	0.	2.7E+01
PRODUCT Z= 24	26	54	0.	56	0.	57	4.2E+04	58	3.0E+04	0	0.	0	0.	1.0E+03
PRODUCT A= 55	27	59	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
HALF LIFE= 3.500 M	28	58	0.	60	1.5E+04	61	1.0E+04	62	7.0E+03	64	3.2E+03	0	0.	4.5E+03
	29	63	4.7E+03	65	2.2E+03	0	0.	0	0.	0	0.	0	0.	3.9E+03
	30	64	3.2E+03	66	1.4E+03	67	9.7E+02	68	6.5E+02	70	3.0E+02	0	0.	2.1E+03
	31	69	4.4E+02	71	2.0E+02	0	0.	0	0.	0	0.	0	0.	3.5E+02
	32	70	3.0E+02	72	1.4E+02	73	9.3E+01	74	6.4E+01	76	2.9E+01	0	0.	1.3E+02
	33	75	4.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 24	26	54	0.	56	0.	57	0.	58	7.7E+03	0	0.	0	0.	2.6E+01
PRODUCT A= 56	27	59	5.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E+03
HALF LIFE= 5.900 M	28	58	0.	60	3.9E+03	61	2.8E+03	62	1.9E+03	64	8.6E+02	0	0.	1.2E+03
	29	63	1.3E+03	65	5.8E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
	30	64	8.7E+02	66	4.0E+02	67	2.7E+02	68	1.8E+02	70	8.1E+01	0	0.	5.8E+02
	31	69	1.2E+02	71	5.5E+01	0	0.	0	0.	0	0.	0	0.	9.4E+01
	32	70	8.2E+01	72	3.7E+01	73	2.5E+01	74	1.7E+01	76	7.8E+00	0	0.	3.5E+01
	33	75	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
PRODUCT Z= 25	24	50	0.	52	0.	53	1.4E+05	54	1.0E+05	0	0.	0	0.	1.6E+04
PRODUCT A= 51	25	55	7.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+04
HALF LIFE= 45.000 M	26	54	1.0E+05	56	5.1E+04	57	3.5E+04	58	2.3E+04	0	0.	0	0.	5.4E+04
	27	59	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
	28	58	2.4E+04	60	1.1E+04	61	7.3E+03	62	4.8E+03	64	2.2E+03	0	0.	1.9E+04
	29	63	3.3E+03	65	1.5E+03	0	0.	0	0.	0	0.	0	0.	2.7E+03
	30	64	2.2E+03	66	1.0E+03	67	6.8E+02	68	4.6E+02	70	2.1E+02	0	0.	1.5E+03
	31	69	3.1E+02	71	1.4E+02	0	0.	0	0.	0	0.	0	0.	2.5E+02
	32	70	2.2E+02	72	9.9E+01	73	6.9E+01	74	4.6E+01	76	2.1E+01	0	0.	9.4E+01
PRODUCT Z= 25	24	50	0.	52	0.	53	0.	54	6.2E+04	0	0.	0	0.	1.5E+03
PRODUCT A= 52	25	55	4.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+04
HALF LIFE= 5.700 D	26	54	6.2E+04	56	3.1E+04	57	2.2E+04	58	1.5E+04	0	0.	0	0.	3.3E+04
	27	59	1.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+04
	28	58	1.5E+04	60	7.0E+03	61	4.7E+03	62	3.2E+03	64	1.4E+03	0	0.	1.2E+04
	29	63	2.1E+03	65	9.7E+02	0	0.	0	0.	0	0.	0	0.	1.8E+03
	30	64	1.4E+03	66	6.5E+02	67	4.4E+02	68	3.0E+02	70	1.4E+02	0	0.	9.5E+02
	31	69	2.0E+02	71	9.4E+01	0	0.	0	0.	0	0.	0	0.	1.6E+02
	32	70	1.4E+02	72	6.3E+01	73	4.3E+01	74	3.0E+01	76	1.4E+01	0	0.	6.0E+01
PRODUCT Z= 25	25	55	1.4E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-03
PRODUCT A= 53	26	54	0.	56	9.6E-04	57	6.9E-04	58	4.9E-04	0	0.	0	0.	9.0E-04
HALF LIFE= 2.000 T	27	59	3.3E-04	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-04
	28	58	4.9E-04	60	2.3E-04	61	1.5E-04	62	1.0E-04	64	4.6E-05	0	0.	4.0E-04
	29	63	7.0E-05	65	3.1E-05	0	0.	0	0.	0	0.	0	0.	5.8E-05
	30	64	4.7E-05	66	2.1E-05	67	1.4E-05	68	9.6E-06	70	4.4E-06	0	0.	3.1E-05
	31	69	6.5E-06	71	3.0E-06	0	0.	0	0.	0	0.	0	0.	5.1E-06
	32	70	4.4E-06	72	2.1E-06	73	1.4E-06	74	9.5E-07	76	4.4E-07	0	0.	1.9E-06
PRODUCT Z= 25	26	54	0.	56	4.0E+03	57	2.9E+03	58	2.0E+03	0	0.	0	0.	3.8E+03
PRODUCT A= 54	27	59	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
HALF LIFE= 312.000 D	28	58	2.1E+03	60	9.9E+02	61	6.7E+02	62	4.5E+02	64	2.1E+02	0	0.	1.7E+03
	29	63	3.1E+02	65	1.4E+02	0	0.	0	0.	0	0.	0	0.	2.5E+02
	30	64	2.1E+02	66	9.3E+01	67	6.3E+01	68	4.2E+01	70	1.9E+01	0	0.	1.4E+02
	31	69	2.9E+01	71	1.3E+01	0	0.	0	0.	0	0.	0	0.	2.2E+01
	32	70	2.0E+01	72	8.9E+00	73	6.1E+00	74	4.1E+00	76	1.9E+00	0	0.	8.4E+00
PRODUCT Z= 25	26	54	0.	56	0.	57	0.	58	2.7E+05	0	0.	0	0.	9.2E+02
PRODUCT A= 56	27	59	1.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+05
HALF LIFE= 2.580 H	28	58	0.	60	1.4E+05	61	9.8E+04	62	6.6E+04	64	3.0E+04	0	0.	4.1E+04
	29	63	4.5E+04	65	2.0E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	30	64	3.1E+04	66	1.4E+04	67	9.3E+03	68	6.2E+03	70	2.8E+03	0	0.	2.0E+04
	31	69	4.2E+03	71	1.9E+03	0	0.	0	0.	0	0.	0	0.	3.3E+03
	32	70	2.9E+03	72	1.3E+03	73	8.8E+02	74	6.0E+02	76	2.7E+02	0	0.	1.2E+03
	33	75	4.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+02
PRODUCT Z= 25	27	59	6.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+04
PRODUCT A= 57	28	58	0.	60	4.8E+04	61	3.4E+04	62	2.4E+04	64	1.1E+04	0	0.	1.4E+04
HALF LIFE= 1.700 M	29	63	1.6E+04	65	7.5E+03	0	0.	0	0.	0	0.	0	0.	1.4E+04
	30	64	1.1E+04	66	5.1E+03	67	3.4E+03	68	2.3E+03	70	1.0E+03	0	0.	7.4E+03
	31	69	1.5E+03	71	7.0E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03
	32	70	1.0E+03	72	4.7E+02	73	3.2E+02	74	2.2E+02	76	1.0E+02	0	0.	4.5E+02
	33	75	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
PRODUCT Z= 25	28	58	0.	60	0.	61	9.5E+03	62	6.7E+03	64	3.3E+03	0	0.	4.2E+02
PRODUCT A= 58	29	63	4.8E+03	65	2.2E+03	0	0.	0	0.	0	0.	0	0.	4.0E+03
HALF LIFE= 1.100 M	30	64	3.3E+03	66	1.5E+03	67	1.0E+03	68	6.8E+02	70	3.1E+02	0	0.	2.2E+03
	31	69	4.6E+02	71	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.6E+02
	32	70	3.1E+02	72	1.4E+02	73	9.4E+01	74	6.4E+01	76	2.9E+01	0	0.	1.3E+02
	33	75	4.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+01
	34	74	6.5E+01	76	3.0E+01	77	2.0E+01	78	1.4E+01	80	6.5E+00	82	3.0E+00	1.1E+01
	35	79	9.4E+00	81	4.4E+00	0	0.	0	0.	0	0.	0	0.	6.9E+00
PRODUCT Z= 26	25	55	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
PRODUCT A= 52	26	54	1.7E+04	56	8.5E+03	57	6.1E+03	58	4.1E+03	0	0.	0	0.	8.9E+03
HALF LIFE= 8.300 H	27	59	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 26 A= 52 (CONTINUED)	28	58	4.2E+03	60	1.9E+03	61	1.3E+03	62	8.6E+02	64	3.9E+02	0	0.	3.4E+03
	29	63	5.8E+02	65	2.6E+02	0	0.	0	0.	0	0.	0	0.	4.8E+02
	30	64	3.9E+02	66	1.8E+02	67	1.2E+02	68	8.1E+01	70	3.7E+01	0	0.	2.6E+02
	31	69	5.5E+01	71	2.5E+01	0	0.	0	0.	0	0.	0	0.	4.3E+01
	32	70	3.7E+01	72	1.7E+01	73	1.2E+01	74	8.1E+00	76	3.7E+00	0	0.	1.6E+01
PRODUCT Z= 26	25	55	1.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+05
PRODUCT A= 53	26	54	0.	56	7.4E+04	57	5.2E+04	58	3.7E+04	0	0.	0	0.	6.9E+04
HALF LIFE= 8.500 M	27	59	2.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+04
	28	58	3.8E+04	60	1.7E+04	61	1.2E+04	62	7.8E+03	64	3.5E+03	0	0.	3.0E+04
	29	63	5.3E+03	65	2.4E+03	0	0.	0	0.	0	0.	0	0.	4.4E+03
	30	64	3.6E+03	66	1.6E+03	67	1.1E+03	68	7.3E+02	70	3.3E+02	0	0.	2.4E+03
	31	69	5.0E+02	71	2.3E+02	0	0.	0	0.	0	0.	0	0.	3.9E+02
	32	70	3.4E+02	72	1.6E+02	73	1.1E+02	74	7.2E+01	76	3.3E+01	0	0.	1.5E+02
PRODUCT Z= 26	26	54	0.	56	0.	57	9.3E+02	58	6.6E+02	0	0.	0	0.	2.3E+01
PRODUCT A= 55	27	59	4.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+02
HALF LIFE= 2.400 Y	28	58	6.7E+02	60	3.4E+02	61	2.3E+02	62	1.5E+02	64	7.0E+01	0	0.	5.5E+02
	29	63	1.0E+02	65	4.8E+01	0	0.	0	0.	0	0.	0	0.	8.7E+01
	30	64	7.1E+01	66	3.2E+01	67	2.2E+01	68	1.5E+01	70	6.6E+00	0	0.	4.7E+01
	31	69	9.8E+00	71	4.5E+00	0	0.	0	0.	0	0.	0	0.	7.7E+00
	32	70	6.6E+00	72	3.0E+00	73	2.1E+00	74	1.4E+00	76	6.5E-01	0	0.	2.9E+00
	33	75	9.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E-01
PRODUCT Z= 26	28	58	0.	60	0.	61	1.6E+03	62	1.1E+03	64	5.7E+02	0	0.	7.0E+01
PRODUCT A= 59	29	63	8.1E+02	65	3.9E+02	0	0.	0	0.	0	0.	0	0.	6.8E+02
HALF LIFE= 45.000 D	30	64	5.8E+02	66	2.6E+02	67	1.8E+02	68	1.2E+02	70	5.4E+01	0	0.	3.8E+02
	31	69	8.2E+01	71	3.7E+01	0	0.	0	0.	0	0.	0	0.	6.4E+01
	32	70	5.5E+01	72	2.5E+01	73	1.7E+01	74	1.1E+01	76	5.1E+00	0	0.	2.3E+01
	33	75	7.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E+00
	34	74	1.1E+01	76	5.2E+00	77	3.5E+00	78	2.4E+00	80	1.1E+00	82	5.2E-01	2.0E+00
	35	79	1.6E+00	81	7.7E-01	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 26	28	58	0.	60	0.	61	0.	62	4.3E-04	64	2.2E-04	0	0.	1.9E-05
PRODUCT A= 60	29	63	3.1E-04	65	1.5E-04	0	0.	0	0.	0	0.	0	0.	2.6E-04
HALF LIFE= .100 T	30	64	2.2E-04	66	1.1E-04	67	7.1E-05	68	4.8E-05	70	2.2E-05	0	0.	1.5E-04
	31	69	3.2E-05	71	1.5E-05	0	0.	0	0.	0	0.	0	0.	2.5E-05
	32	70	2.2E-05	72	9.9E-06	73	6.7E-06	74	4.5E-06	76	2.0E-06	0	0.	9.4E-06
	33	75	3.0E-06	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E-06
	34	74	4.5E-06	76	2.1E-06	77	1.4E-06	78	9.5E-07	80	4.3E-07	82	2.1E-07	7.8E-07
	35	79	6.5E-07	81	3.0E-07	0	0.	0	0.	0	0.	0	0.	4.8E-07
PRODUCT Z= 26	28	58	0.	60	0.	61	0.	62	0.	64	2.9E+03	0	0.	3.4E+01
PRODUCT A= 61	29	63	0.	65	2.1E+03	0	0.	0	0.	0	0.	0	0.	6.6E+02
HALF LIFE= 6.000 M	30	64	0.	66	1.5E+03	67	1.0E+03	68	6.8E+02	70	3.1E+02	0	0.	5.9E+02
	31	69	4.6E+02	71	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.6E+02
	32	70	3.1E+02	72	1.4E+02	73	9.5E+01	74	6.4E+01	76	2.9E+01	0	0.	1.3E+02
	33	75	4.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+01
	34	74	6.5E+01	76	2.9E+01	77	2.0E+01	78	1.3E+01	80	6.2E+00	82	2.9E+00	1.1E+01
	35	79	9.1E+00	81	4.2E+00	0	0.	0	0.	0	0.	0	0.	6.7E+00
	36	78	1.3E+01	80	6.3E+00	82	2.9E+00	83	2.0E+00	84	1.4E+00	86	6.3E-01	1.6E+00
	37	85	9.3E-01	87	4.4E-01	0	0.	0	0.	0	0.	0	0.	8.0E-01
PRODUCT Z= 27	26	54	0.	56	0.	57	4.5E+04	58	3.2E+04	0	0.	0	0.	1.1E+03
PRODUCT A= 55	27	59	2.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+04
HALF LIFE= 18.000 H	28	58	3.2E+04	60	1.6E+04	61	1.1E+04	62	7.5E+03	64	3.4E+03	0	0.	2.7E+04
	29	63	5.1E+03	65	2.3E+03	0	0.	0	0.	0	0.	0	0.	4.2E+03
	30	64	3.4E+03	66	1.5E+03	67	1.0E+03	68	7.0E+02	70	3.2E+02	0	0.	2.3E+03
	31	69	4.7E+02	71	2.2E+02	0	0.	0	0.	0	0.	0	0.	3.7E+02
	32	70	3.2E+02	72	1.5E+02	73	1.0E+02	74	6.8E+01	76	3.1E+01	0	0.	1.4E+02
	33	75	4.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+01
PRODUCT Z= 27	26	54	0.	56	0.	57	0.	58	2.8E+03	0	0.	0	0.	9.5E+00
PRODUCT A= 56	27	59	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
HALF LIFE= 77.300 D	28	58	2.8E+03	60	1.4E+03	61	1.0E+03	62	6.8E+02	64	3.1E+02	0	0.	2.3E+03
	29	63	4.6E+02	65	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.8E+02
	30	64	3.1E+02	66	1.4E+02	67	9.5E+01	68	6.4E+01	70	2.9E+01	0	0.	2.1E+02
	31	69	4.4E+01	71	2.0E+01	0	0.	0	0.	0	0.	0	0.	3.4E+01
	32	70	2.9E+01	72	1.3E+01	73	9.0E+00	74	6.2E+00	76	2.8E+00	0	0.	1.3E+01
	33	75	4.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+00
PRODUCT Z= 27	27	59	2.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+03
PRODUCT A= 57	28	58	0.	60	1.7E+03	61	1.2E+03	62	8.7E+02	64	4.0E+02	0	0.	5.2E+02
HALF LIFE= 272.000 D	29	63	6.0E+02	65	2.7E+02	0	0.	0	0.	0	0.	0	0.	4.9E+02
	30	64	4.1E+02	66	1.8E+02	67	1.2E+02	68	8.3E+01	70	3.7E+01	0	0.	2.7E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 27 A= 57	31	69	5.6E+01	71	2.5E+01	0	0.	0	0.	0	0.	0	0.	4.4E+01
(CONTINUED)	32	70	3.8E+01	72	1.7E+01	73	1.2E+01	74	7.8E+00	76	3.7E+00	0	0.	1.6E+01
	33	75	5.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+00
PRODUCT Z= 27	28	58	0.	60	1.8E+04	61	1.3E+04	62	9.3E+03	64	4.5E+03	0	0.	5.5E+03
PRODUCT A= 58	29	63	6.7E+03	65	3.1E+03	0	0.	0	0.	0	0.	0	0.	5.5E+03
HALF LIFE= 71.000 D	30	64	4.6E+03	66	2.1E+03	67	1.4E+03	68	9.5E+02	70	4.2E+02	0	0.	3.0E+03
	31	69	6.3E+02	71	2.9E+02	0	0.	0	0.	0	0.	0	0.	4.9E+02
	32	70	4.3E+02	72	1.9E+02	73	1.3E+02	74	8.9E+01	76	4.1E+01	0	0.	1.8E+02
	33	75	6.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+01
	34	74	9.0E+01	76	4.1E+01	77	2.8E+01	78	1.9E+01	80	9.0E+00	82	4.1E+00	1.6E+01
	35	79	1.3E+01	81	6.0E+00	0	0.	0	0.	0	0.	0	0.	9.5E+00
PRODUCT Z= 27	28	58	0.	60	0.	61	0.	62	1.9E+02	64	9.7E+01	0	0.	8.6E+00
PRODUCT A= 60	29	63	1.4E+02	65	7.0E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
HALF LIFE= 5.240 Y	30	64	9.9E+01	66	4.8E+01	67	3.2E+01	68	2.2E+01	70	9.9E+00	0	0.	6.6E+01
	31	69	1.5E+01	71	6.6E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
	32	70	1.0E+01	72	4.5E+00	73	3.0E+00	74	2.0E+00	76	9.3E-01	0	0.	4.3E+00
	33	75	1.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+00
	34	74	2.1E+00	76	9.4E-01	77	6.3E-01	78	4.3E-01	80	2.0E-01	82	9.4E-02	3.5E-01
	35	79	3.0E-01	81	1.4E-01	0	0.	0	0.	0	0.	0	0.	2.2E-01
PRODUCT Z= 27	28	58	0.	60	0.	61	0.	62	0.	64	1.1E+05	0	0.	1.3E+03
PRODUCT A= 61	29	63	1.6E+05	65	8.0E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
HALF LIFE= 1.650 H	30	64	1.1E+05	66	5.7E+04	67	3.9E+04	68	2.6E+04	70	1.2E+04	0	0.	7.7E+04
	31	69	1.8E+04	71	8.1E+03	0	0.	0	0.	0	0.	0	0.	1.4E+04
	32	70	1.2E+04	72	5.4E+03	73	3.6E+03	74	2.5E+03	76	1.1E+03	0	0.	5.1E+03
	33	75	1.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+03
	34	74	2.5E+03	76	1.1E+03	77	7.6E+02	78	5.1E+02	80	2.4E+02	82	1.1E+02	4.3E+02
	35	79	3.5E+02	81	1.6E+02	0	0.	0	0.	0	0.	0	0.	2.6E+02
PRODUCT Z= 27	28	58	0.	60	0.	61	0.	62	0.	64	3.7E+04	0	0.	4.3E+02
PRODUCT A= 62	29	63	0.	65	2.6E+04	0	0.	0	0.	0	0.	0	0.	8.4E+03
HALF LIFE= 13.900 M	30	64	0.	66	1.9E+04	67	1.3E+04	68	9.2E+03	70	4.2E+03	0	0.	7.7E+03
	31	69	6.2E+03	71	2.8E+03	0	0.	0	0.	0	0.	0	0.	4.9E+03
	32	70	4.2E+03	72	1.9E+03	73	1.3E+03	74	8.6E+02	76	3.9E+02	0	0.	1.8E+03
	33	75	5.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+02
	34	74	8.7E+02	76	3.9E+02	77	2.6E+02	78	1.8E+02	80	8.3E+01	82	3.8E+01	1.5E+02
	35	79	1.2E+02	81	5.7E+01	0	0.	0	0.	0	0.	0	0.	8.9E+01
	36	78	1.8E+02	80	8.3E+01	82	3.8E+01	83	2.6E+01	84	1.8E+01	86	8.5E+00	2.2E+01
	37	85	1.2E+01	87	5.8E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
PRODUCT Z= 27	30	64	0.	66	0.	67	8.8E+02	68	6.3E+02	70	3.0E+02	0	0.	1.6E+02
PRODUCT A= 64	31	69	4.5E+02	71	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.5E+02
HALF LIFE= 7.800 M	32	70	3.1E+02	72	1.4E+02	73	9.4E+01	74	6.4E+01	76	2.8E+01	0	0.	1.3E+02
	33	75	4.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+01
	34	74	6.4E+01	76	2.9E+01	77	1.9E+01	78	1.3E+01	80	6.0E+00	82	2.8E+00	1.1E+01
	35	79	8.8E+00	81	4.0E+00	0	0.	0	0.	0	0.	0	0.	6.4E+00
	36	78	1.3E+01	80	6.0E+00	82	2.8E+00	83	1.9E+00	84	1.3E+00	86	6.1E-01	1.5E+00
	37	85	8.9E-01	87	4.1E-01	0	0.	0	0.	0	0.	0	0.	7.5E-01
PRODUCT Z= 28	27	59	7.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+02
PRODUCT A= 56	28	58	1.0E+03	60	5.2E+02	61	3.7E+02	62	2.5E+02	64	1.1E+02	0	0.	8.4E+02
HALF LIFE= 6.100 D	29	63	1.7E+02	65	7.7E+01	0	0.	0	0.	0	0.	0	0.	1.4E+02
	30	64	1.1E+02	66	5.2E+01	67	3.5E+01	68	2.3E+01	70	1.1E+01	0	0.	7.6E+01
	31	69	1.6E+01	71	7.2E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	32	70	1.1E+01	72	4.9E+00	73	3.3E+00	74	2.2E+00	76	1.0E+00	0	0.	4.6E+00
	33	75	1.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+00
PRODUCT Z= 28	27	59	2.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+04
PRODUCT A= 57	28	58	0.	60	1.4E+04	61	9.9E+03	62	7.1E+03	64	3.2E+03	0	0.	4.2E+03
HALF LIFE= 36.000 H	29	63	4.8E+03	65	2.2E+03	0	0.	0	0.	0	0.	0	0.	4.0E+03
	30	64	3.3E+03	66	1.5E+03	67	1.0E+03	68	6.7E+02	70	3.0E+02	0	0.	2.2E+03
	31	69	4.5E+02	71	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.5E+02
	32	70	3.1E+02	72	1.4E+02	73	9.5E+01	74	6.4E+01	76	3.0E+01	0	0.	1.3E+02
	33	75	4.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+01
PRODUCT Z= 28	28	58	0.	60	0.	61	1.8E-02	62	1.3E-02	64	6.4E-03	0	0.	7.8E-04
PRODUCT A= 59	29	63	9.0E-03	65	4.4E-03	0	0.	0	0.	0	0.	0	0.	7.5E-03
HALF LIFE= .080 T	30	64	6.4E-03	66	3.0E-03	67	2.0E-03	68	1.3E-03	70	6.0E-04	0	0.	4.3E-03
	31	69	9.1E-04	71	4.1E-04	0	0.	0	0.	0	0.	0	0.	7.1E-04
	32	70	6.1E-04	72	2.8E-04	73	1.9E-04	74	1.3E-04	76	5.7E-05	0	0.	2.6E-04
	33	75	8.5E-05	0	0.	0	0.	0	0.	0	0.	0	0.	8.6E-05
	34	74	1.3E-04	76	5.8E-05	77	3.9E-05	78	2.7E-05	80	1.2E-05	82	5.8E-06	2.2E-05
	35	79	1.8E-05	81	8.7E-06	0	0.	0	0.	0	0.	0	0.	1.3E-05

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 28	29	63	0.	65	4.8E+00	0	0.	0	0.	0	0.	0	0.	1.5E+00
PRODUCT A= 63	30	64	0.	66	3.5E+00	67	2.5E+00	68	1.7E+00	70	8.0E-01	0	0.	1.4E+00
HALF LIFE= 92.000 Y	31	69	1.2E+00	71	5.4E-01	0	0.	0	0.	0	0.	0	0.	9.3E-01
	32	70	8.1E-01	72	3.7E-01	73	2.5E-01	74	1.7E-01	76	7.5E-02	0	0.	3.5E-01
	33	75	1.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E-01
	34	74	1.7E-01	76	7.6E-02	77	5.1E-02	78	3.4E-02	80	1.6E-02	82	7.4E-03	2.8E-02
	35	79	2.4E-02	81	1.1E-02	0	0.	0	0.	0	0.	0	0.	1.7E-02
	36	78	3.5E-02	80	1.6E-02	82	7.5E-03	83	5.0E-03	84	3.5E-03	86	1.6E-03	4.1E-03
	37	85	2.4E-03	87	1.1E-03	0	0.	0	0.	0	0.	0	0.	2.0E-03
PRODUCT Z= 28	30	64	0.	66	0.	67	1.3E+04	68	9.1E+03	70	4.6E+03	0	0.	2.3E+03
PRODUCT A= 65	31	69	6.5E+03	71	3.2E+03	0	0.	0	0.	0	0.	0	0.	5.2E+03
HALF LIFE= 2.560 H	32	70	4.7E+03	72	2.1E+03	73	1.4E+03	74	9.7E+02	76	4.4E+02	0	0.	2.0E+03
	33	75	6.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+02
	34	74	9.8E+02	76	4.4E+02	77	3.0E+02	78	2.0E+02	80	9.1E+01	82	4.2E+01	1.7E+02
	35	79	1.4E+02	81	6.2E+01	0	0.	0	0.	0	0.	0	0.	9.9E+01
	36	78	2.0E+02	80	9.2E+01	82	4.2E+01	83	2.9E+01	84	2.0E+01	86	9.2E+00	2.4E+01
	37	85	1.3E+01	87	6.4E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
PRODUCT Z= 28	30	64	0.	66	0.	67	0.	68	6.1E+02	70	3.1E+02	0	0.	1.2E+02
PRODUCT A= 66	31	69	4.4E+02	71	2.2E+02	0	0.	0	0.	0	0.	0	0.	3.5E+02
HALF LIFE= 55.000 H	32	70	3.1E+02	72	1.5E+02	73	1.0E+02	74	6.8E+01	76	3.1E+01	0	0.	1.4E+02
	33	75	4.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+01
	34	74	6.9E+01	76	3.2E+01	77	2.1E+01	78	1.4E+01	80	6.4E+00	82	3.0E+00	1.2E+01
	35	79	9.6E+00	81	4.4E+00	0	0.	0	0.	0	0.	0	0.	7.0E+00
	36	78	1.4E+01	80	6.5E+00	82	3.0E+00	83	2.0E+00	84	1.4E+00	86	6.3E-01	1.7E+00
	37	85	9.5E-01	87	4.4E-01	0	0.	0	0.	0	0.	0	0.	8.1E-01
	38	84	1.4E+00	86	6.4E-01	87	4.4E-01	88	3.1E-01	0	0.	0	0.	3.6E-01
PRODUCT Z= 29	28	58	0.	60	0.	61	3.7E+04	62	2.6E+04	64	1.3E+04	0	0.	1.6E+03
PRODUCT A= 59	29	63	1.9E+04	65	9.1E+03	0	0.	0	0.	0	0.	0	0.	1.6E+04
HALF LIFE= 81.000 S	30	64	1.3E+04	66	6.2E+03	67	4.1E+03	68	2.8E+03	70	1.3E+03	0	0.	8.9E+03
	31	69	1.9E+03	71	8.5E+02	0	0.	0	0.	0	0.	0	0.	1.5E+03
	32	70	1.3E+03	72	5.8E+02	73	3.9E+02	74	2.6E+02	76	1.2E+02	0	0.	5.5E+02
	33	75	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+02
	34	74	2.6E+02	76	1.2E+02	77	8.2E+01	78	5.6E+01	80	2.6E+01	82	1.2E+01	4.6E+01
	35	79	3.8E+01	81	1.8E+01	0	0.	0	0.	0	0.	0	0.	2.8E+01
PRODUCT Z= 29	28	58	0.	60	0.	61	0.	62	1.7E+05	64	8.4E+04	0	0.	7.4E+03
PRODUCT A= 60	29	63	1.2E+05	65	6.0E+04	0	0.	0	0.	0	0.	0	0.	1.0E+05
HALF LIFE= 24.000 M	30	64	8.5E+04	66	4.1E+04	67	2.8E+04	68	1.9E+04	70	8.5E+03	0	0.	5.7E+04
	31	69	1.3E+04	71	5.7E+03	0	0.	0	0.	0	0.	0	0.	9.9E+03
	32	70	8.6E+03	72	3.9E+03	73	2.6E+03	74	1.7E+03	76	8.0E+02	0	0.	3.7E+03
	33	75	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	34	74	1.8E+03	76	8.1E+02	77	5.4E+02	78	3.7E+02	80	1.7E+02	82	8.1E+01	3.0E+02
	35	79	2.6E+02	81	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.9E+02
PRODUCT Z= 29	28	58	0.	60	0.	61	0.	62	0.	64	4.0E+05	0	0.	4.7E+03
PRODUCT A= 61	29	63	5.7E+05	65	2.9E+05	0	0.	0	0.	0	0.	0	0.	4.8E+05
HALF LIFE= 3.300 H	30	64	4.1E+05	66	2.1E+05	67	1.4E+05	68	9.4E+04	70	4.3E+04	0	0.	2.8E+05
	31	69	6.4E+04	71	2.9E+04	0	0.	0	0.	0	0.	0	0.	5.0E+04
	32	70	4.3E+04	72	2.0E+04	73	1.3E+04	74	8.9E+03	76	4.0E+03	0	0.	1.9E+04
	33	75	6.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+03
	34	74	9.0E+03	76	4.0E+03	77	2.8E+03	78	1.9E+03	80	8.6E+02	82	4.0E+02	1.5E+03
	35	79	1.3E+03	81	5.8E+02	0	0.	0	0.	0	0.	0	0.	9.2E+02
PRODUCT Z= 29	28	58	0.	60	0.	61	0.	62	0.	64	1.4E+06	0	0.	1.6E+04
PRODUCT A= 62	29	63	0.	65	1.0E+06	0	0.	0	0.	0	0.	0	0.	3.2E+05
HALF LIFE= 9.900 M	30	64	1.4E+06	66	7.2E+05	67	5.1E+05	68	3.5E+05	70	1.6E+05	0	0.	9.7E+05
	31	69	2.4E+05	71	1.1E+05	0	0.	0	0.	0	0.	0	0.	1.8E+05
	32	70	1.6E+05	72	7.3E+04	73	4.8E+04	74	3.3E+04	76	1.5E+04	0	0.	6.8E+04
	33	75	2.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+04
	34	74	3.3E+04	76	1.5E+04	77	1.0E+04	78	6.8E+03	80	3.1E+03	82	1.4E+03	5.6E+03
	35	79	4.6E+03	81	2.2E+03	0	0.	0	0.	0	0.	0	0.	3.4E+03
PRODUCT Z= 29	30	64	0.	66	6.9E+05	67	4.9E+05	68	3.5E+05	70	1.7E+05	0	0.	2.8E+05
PRODUCT A= 64	31	69	2.5E+05	71	1.2E+05	0	0.	0	0.	0	0.	0	0.	2.0E+05
HALF LIFE= 12.900 H	32	70	1.7E+05	72	7.8E+04	73	5.2E+04	74	3.6E+04	76	1.6E+04	0	0.	7.4E+04
	33	75	2.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+04
	34	74	3.6E+04	76	1.6E+04	77	1.1E+04	78	7.3E+03	80	3.3E+03	82	1.5E+03	6.0E+03
	35	79	4.9E+03	81	2.3E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
	36	78	7.4E+03	80	3.4E+03	82	1.6E+03	83	1.1E+03	84	7.2E+02	86	3.4E+02	8.6E+02
	37	85	5.0E+02	87	2.3E+02	0	0.	0	0.	0	0.	0	0.	4.2E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 29	30	64	0.	66	0.	67	0.	68	9.5E+04	70	4.8E+04	0	0.	1.9E+04
PRODUCT A= 66	31	69	6.8E+04	71	3.5E+04	0	0.	0	0.	0	0.	0	0.	5.5E+04
HALF LIFE= 5.100 M	32	70	4.9E+04	72	2.4E+04	73	1.6E+04	74	1.1E+04	76	4.9E+03	0	0.	2.2E+04
	33	75	7.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E+03
	34	74	1.1E+04	76	5.0E+03	77	3.3E+03	78	2.2E+03	80	1.0E+03	82	4.6E+02	1.8E+03
	35	79	1.5E+03	81	6.8E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
	36	78	2.2E+03	80	1.0E+03	82	4.7E+02	83	3.2E+02	84	2.2E+02	86	1.0E+02	2.6E+02
	37	85	1.5E+02	87	6.9E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	38	84	2.2E+02	86	1.0E+02	87	6.9E+01	88	4.8E+01	0	0.	0	0.	5.6E+01
PRODUCT Z= 29	30	64	0.	66	0.	67	0.	68	0.	70	3.7E+03	0	0.	2.5E+01
PRODUCT A= 67	31	69	5.3E+03	71	2.7E+03	0	0.	0	0.	0	0.	0	0.	4.2E+03
HALF LIFE= 61.000 H	32	70	3.8E+03	72	1.9E+03	73	1.3E+03	74	8.8E+02	76	4.0E+02	0	0.	1.7E+03
	33	75	5.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+02
	34	74	8.9E+02	76	4.0E+02	77	2.7E+02	78	1.8E+02	80	8.2E+01	82	3.8E+01	1.5E+02
	35	79	1.2E+02	81	5.6E+01	0	0.	0	0.	0	0.	0	0.	8.9E+01
	36	78	1.8E+02	80	8.3E+01	82	3.8E+01	83	2.6E+01	84	1.7E+01	86	8.2E+00	2.1E+01
	37	85	1.2E+01	87	5.5E+00	0	0.	0	0.	0	0.	0	0.	1.0E+01
	38	84	1.8E+01	86	8.3E+00	87	5.5E+00	88	3.8E+00	0	0.	0	0.	4.5E+00
PRODUCT Z= 30	29	63	3.1E+03	65	1.6E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
PRODUCT A= 60	30	64	2.2E+03	66	1.1E+03	67	7.2E+02	68	4.8E+02	70	2.2E+02	0	0.	1.5E+03
HALF LIFE= 2.100 M	31	69	3.3E+02	71	1.5E+02	0	0.	0	0.	0	0.	0	0.	2.6E+02
	32	70	2.2E+02	72	1.0E+02	73	6.8E+01	74	4.5E+01	76	2.1E+01	0	0.	9.6E+01
	33	75	3.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+01
	34	74	4.6E+01	76	2.1E+01	77	1.4E+01	78	9.6E+00	80	4.4E+00	82	2.1E+00	7.9E+00
	35	79	6.6E+00	81	3.0E+00	0	0.	0	0.	0	0.	0	0.	4.8E+00
PRODUCT Z= 30	29	63	2.5E+04	65	1.3E+04	0	0.	0	0.	0	0.	0	0.	2.2E+04
PRODUCT A= 61	30	64	1.8E+04	66	9.2E+03	67	6.3E+03	68	4.2E+03	70	1.9E+03	0	0.	1.2E+04
HALF LIFE= 89.000 S	31	69	2.9E+03	71	1.3E+03	0	0.	0	0.	0	0.	0	0.	2.2E+03
	32	70	1.9E+03	72	8.7E+02	73	5.9E+02	74	4.0E+02	76	1.8E+02	0	0.	8.3E+02
	33	75	2.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+02
	34	74	4.0E+02	76	1.8E+02	77	1.2E+02	78	8.3E+01	80	3.9E+01	82	1.8E+01	6.9E+01
	35	79	5.7E+01	81	2.6E+01	0	0.	0	0.	0	0.	0	0.	4.1E+01
PRODUCT Z= 30	29	63	0.	65	7.0E+04	0	0.	0	0.	0	0.	0	0.	2.2E+04
PRODUCT A= 62	30	64	9.9E+04	66	5.0E+04	67	3.6E+04	68	2.4E+04	70	1.1E+04	0	0.	6.8E+04
HALF LIFE= 9.300 H	31	69	1.7E+04	71	7.5E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
	32	70	1.1E+04	72	5.1E+03	73	3.4E+03	74	2.3E+03	76	1.0E+03	0	0.	4.8E+03
	33	75	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
	34	74	2.3E+03	76	1.0E+03	77	7.0E+02	78	4.8E+02	80	2.2E+02	82	1.0E+02	3.9E+02
	35	79	3.2E+02	81	1.5E+02	0	0.	0	0.	0	0.	0	0.	2.4E+02
PRODUCT Z= 30	29	63	0.	65	4.3E+05	0	0.	0	0.	0	0.	0	0.	1.4E+05
PRODUCT A= 63	30	64	0.	66	3.1E+05	67	2.2E+05	68	1.5E+05	70	7.1E+04	0	0.	1.3E+05
HALF LIFE= 38.000 M	31	69	1.1E+05	71	4.8E+04	0	0.	0	0.	0	0.	0	0.	8.3E+04
	32	70	7.2E+04	72	3.3E+04	73	2.2E+04	74	1.5E+04	76	6.7E+03	0	0.	3.1E+04
	33	75	9.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+03
	34	74	1.5E+04	76	6.7E+03	77	4.5E+03	78	3.0E+03	80	1.4E+03	82	6.5E+02	2.5E+03
	35	79	2.1E+03	81	9.6E+02	0	0.	0	0.	0	0.	0	0.	1.5E+03
	36	78	3.1E+03	80	1.4E+03	82	6.6E+02	83	4.4E+02	84	3.1E+02	86	1.4E+02	3.7E+02
	37	85	2.1E+02	87	9.8E+01	0	0.	0	0.	0	0.	0	0.	1.8E+02
PRODUCT Z= 30	30	64	0.	66	0.	67	5.6E+03	68	4.0E+03	70	2.0E+03	0	0.	1.0E+03
PRODUCT A= 65	31	69	2.9E+03	71	1.4E+03	0	0.	0	0.	0	0.	0	0.	2.3E+03
HALF LIFE= 243.000 D	32	70	2.1E+03	72	9.4E+02	73	6.3E+02	74	4.3E+02	76	1.9E+02	0	0.	8.9E+02
	33	75	2.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+02
	34	74	4.3E+02	76	2.0E+02	77	1.3E+02	78	8.8E+01	80	4.0E+01	82	1.8E+01	7.3E+01
	35	79	6.0E+01	81	2.7E+01	0	0.	0	0.	0	0.	0	0.	4.4E+01
	36	78	8.9E+01	80	4.0E+01	82	1.9E+01	83	1.3E+01	84	8.8E+00	86	4.0E+00	1.0E+01
	37	85	5.9E+00	87	2.8E+00	0	0.	0	0.	0	0.	0	0.	5.0E+00
PRODUCT Z= 30	31	69	0.	71	3.7E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
PRODUCT A= 69	32	70	0.	72	2.7E+04	73	1.9E+04	74	1.3E+04	76	6.2E+03	0	0.	1.4E+04
HALF LIFE= 55.000 M	33	75	9.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+03
	34	74	1.4E+04	76	6.3E+03	77	4.2E+03	78	2.8E+03	80	1.3E+03	82	5.8E+02	2.3E+03
	35	79	1.9E+03	81	8.7E+02	0	0.	0	0.	0	0.	0	0.	1.4E+03
	36	78	2.9E+03	80	1.3E+03	82	5.9E+02	83	4.0E+02	84	2.7E+02	86	1.2E+02	3.2E+02
	37	85	1.8E+02	87	8.5E+01	0	0.	0	0.	0	0.	0	0.	1.6E+02
	38	84	2.7E+02	86	1.2E+02	87	8.5E+01	88	5.9E+01	0	0.	0	0.	6.8E+01
	39	89	3.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+01
	40	90	2.7E+01	91	1.9E+01	92	1.3E+01	94	5.9E+00	96	2.9E+00	0	0.	1.9E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 30	32	70	0.	72	0.	73	1.4E+03	74	1.0E+03	76	5.2E+02	0	0.	5.4E+02
PRODUCT A= 71	33	75	7.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+02
HALF LIFE= 2.500 M	34	74	0.	76	5.3E+02	77	3.6E+02	78	2.4E+02	80	1.1E+02	82	5.0E+01	1.9E+02
	35	79	1.6E+02	81	7.5E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
	36	78	2.4E+02	80	1.1E+02	82	5.0E+01	83	3.4E+01	84	2.3E+01	86	1.0E+01	2.8E+01
	37	85	1.6E+01	87	7.2E+00	0	0.	0	0.	0	0.	0	0.	1.3E+01
	38	84	2.3E+01	86	1.1E+01	87	7.2E+00	88	4.9E+00	0	0.	0	0.	5.7E+00
	39	89	3.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+00
	40	90	2.3E+00	91	1.5E+00	92	1.1E+00	94	5.0E-01	96	2.3E-01	0	0.	1.6E+00
	41	93	7.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E-01
PRODUCT Z= 30	32	70	0.	72	0.	73	0.	74	7.0E+01	76	3.6E+01	0	0.	2.9E+01
PRODUCT A= 72	33	75	5.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+01
HALF LIFE= 46.500 H	34	74	0.	76	3.6E+01	77	2.6E+01	78	1.7E+01	80	7.9E+00	82	3.6E+00	1.3E+01
	35	79	1.2E+01	81	5.4E+00	0	0.	0	0.	0	0.	0	0.	8.6E+00
	36	78	1.8E+01	80	8.0E+00	82	3.7E+00	83	2.5E+00	84	1.7E+00	86	7.5E-01	2.0E+00
	37	85	1.1E+00	87	5.1E-01	0	0.	0	0.	0	0.	0	0.	9.5E-01
	38	84	1.7E+00	86	7.6E-01	87	5.1E-01	88	3.5E-01	0	0.	0	0.	4.1E-01
	39	89	2.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-01
	40	90	1.6E-01	91	1.1E-01	92	7.5E-02	94	3.6E-02	96	1.7E-02	0	0.	1.2E-01
	41	93	5.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E-02
PRODUCT Z= 31	30	64	0.	66	8.3E+04	67	5.9E+04	68	4.2E+04	70	2.0E+04	0	0.	3.4E+04
PRODUCT A= 64	31	69	3.0E+04	71	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.4E+04
HALF LIFE= 2.600 M	32	70	2.1E+04	72	9.3E+03	73	6.3E+03	74	4.3E+03	76	1.9E+03	0	0.	8.8E+03
	33	75	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
	34	74	4.3E+03	76	1.9E+03	77	1.3E+03	78	8.7E+02	80	4.0E+02	82	1.8E+02	7.2E+02
	35	79	5.9E+02	81	2.7E+02	0	0.	0	0.	0	0.	0	0.	4.3E+02
	36	78	8.8E+02	80	4.0E+02	82	1.9E+02	83	1.3E+02	84	8.6E+01	86	4.1E+01	1.0E+02
	37	85	5.9E+01	87	2.8E+01	0	0.	0	0.	0	0.	0	0.	5.1E+01
PRODUCT Z= 31	30	64	0.	66	0.	67	3.1E+05	68	2.2E+05	70	1.1E+05	0	0.	5.7E+04
PRODUCT A= 65	31	69	1.6E+05	71	7.7E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
HALF LIFE= 15.000 M	32	70	1.1E+05	72	5.3E+04	73	3.5E+04	74	2.4E+04	76	1.1E+04	0	0.	4.9E+04
	33	75	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
	34	74	2.4E+04	76	1.1E+04	77	7.3E+03	78	4.9E+03	80	2.2E+03	82	1.0E+03	4.0E+03
	35	79	3.3E+03	81	1.5E+03	0	0.	0	0.	0	0.	0	0.	2.4E+03
	36	78	5.0E+03	80	2.2E+03	82	1.0E+03	83	7.1E+02	84	4.9E+02	86	2.2E+02	5.8E+02
	37	85	3.3E+02	87	1.6E+02	0	0.	0	0.	0	0.	0	0.	2.8E+02
PRODUCT Z= 31	30	64	0.	66	0.	67	0.	68	7.4E+05	70	3.8E+05	0	0.	1.5E+05
PRODUCT A= 66	31	69	5.3E+05	71	2.7E+05	0	0.	0	0.	0	0.	0	0.	4.3E+05
HALF LIFE= 9.500 H	32	70	3.8E+05	72	1.8E+05	73	1.2E+05	74	8.4E+04	76	3.8E+04	0	0.	1.7E+05
	33	75	5.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+04
	34	74	8.5E+04	76	3.9E+04	77	2.6E+04	78	1.7E+04	80	7.8E+03	82	3.6E+03	1.4E+04
	35	79	1.2E+04	81	5.3E+03	0	0.	0	0.	0	0.	0	0.	8.5E+03
	36	78	1.8E+04	80	7.9E+03	82	3.6E+03	83	2.5E+03	84	1.7E+03	86	7.7E+02	2.0E+03
	37	85	1.2E+03	87	5.4E+02	0	0.	0	0.	0	0.	0	0.	9.9E+02
	38	84	1.7E+03	86	7.8E+02	87	5.4E+02	88	3.8E+02	0	0.	0	0.	4.3E+02
PRODUCT Z= 31	30	64	0.	66	0.	67	0.	68	0.	70	2.5E+05	0	0.	1.6E+03
PRODUCT A= 67	31	69	3.5E+05	71	1.8E+05	0	0.	0	0.	0	0.	0	0.	2.8E+05
HALF LIFE= 78.000 H	32	70	2.5E+05	72	1.3E+05	73	8.6E+04	74	5.8E+04	76	2.6E+04	0	0.	1.1E+05
	33	75	3.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+04
	34	74	5.8E+04	76	2.6E+04	77	1.8E+04	78	1.2E+04	80	5.4E+03	82	2.5E+03	9.8E+03
	35	79	8.1E+03	81	3.7E+03	0	0.	0	0.	0	0.	0	0.	5.9E+03
	36	78	1.2E+04	80	5.5E+03	82	2.5E+03	83	1.7E+03	84	1.1E+03	86	5.4E+02	1.4E+03
	37	85	7.9E+02	87	3.6E+02	0	0.	0	0.	0	0.	0	0.	6.7E+02
	38	84	1.2E+03	86	5.4E+02	87	3.6E+02	88	2.5E+02	0	0.	0	0.	2.9E+02
PRODUCT Z= 31	30	64	0.	66	0.	67	0.	68	0.	70	1.5E+06	0	0.	9.9E+03
PRODUCT A= 68	31	69	0.	71	1.1E+06	0	0.	0	0.	0	0.	0	0.	4.3E+05
HALF LIFE= 68.000 M	32	70	1.5E+06	72	7.7E+05	73	5.5E+05	74	3.7E+05	76	1.7E+05	0	0.	7.0E+05
	33	75	2.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+05
	34	74	3.8E+05	76	1.7E+05	77	1.1E+05	78	7.8E+04	80	3.5E+04	82	1.6E+04	6.4E+04
	35	79	5.2E+04	81	2.4E+04	0	0.	0	0.	0	0.	0	0.	3.8E+04
	36	78	7.9E+04	80	3.5E+04	82	1.6E+04	83	1.1E+04	84	7.4E+03	86	3.4E+03	8.9E+03
	37	85	5.0E+03	87	2.4E+03	0	0.	0	0.	0	0.	0	0.	4.3E+03
	38	84	7.5E+03	86	3.4E+03	87	2.4E+03	88	1.6E+03	0	0.	0	0.	1.9E+03
	39	89	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
PRODUCT Z= 31	32	70	0.	72	2.3E+05	73	1.6E+05	74	1.1E+05	76	5.5E+04	0	0.	1.2E+05
PRODUCT A= 70	33	75	8.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E+04
HALF LIFE= 21.000 M	34	74	1.2E+05	76	5.6E+04	77	3.8E+04	78	2.5E+04	80	1.2E+04	82	5.2E+03	2.1E+04
	35	79	1.7E+04	81	7.8E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
	36	78	2.6E+04	80	1.2E+04	82	5.3E+03	83	3.6E+03	84	2.4E+03	86	1.1E+03	2.9E+03
	37	85	1.6E+03	87	7.6E+02	0	0.	0	0.	0	0.	0	0.	1.4E+03
	38	84	2.4E+03	86	1.1E+03	87	7.6E+02	88	5.2E+02	0	0.	0	0.	6.1E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 31 A= 70	39	89	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
(CONTINUED)	40	90	2.4E+02	91	1.7E+02	92	1.2E+02	94	5.3E+01	96	2.5E+01	0	0.	1.7E+02
PRODUCT Z= 31	32	70	0.	72	0.	73	0.	74	9.7E+03	76	4.9E+03	0	0.	4.0E+03
PRODUCT A= 72	33	75	6.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E+03
HALF LIFE= 14.100 H	34	74	0.	76	5.0E+03	77	3.5E+03	78	2.4E+03	80	1.1E+03	82	5.0E+02	1.9E+03
	35	79	1.6E+03	81	7.4E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03
	36	78	2.4E+03	80	1.1E+03	82	5.1E+02	83	3.4E+02	84	2.3E+02	86	1.0E+02	2.8E+02
	37	85	1.6E+02	87	7.1E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	38	84	2.3E+02	86	1.1E+02	87	7.1E+01	88	4.9E+01	0	0.	0	0.	5.7E+01
	39	89	3.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+01
	40	90	2.3E+01	91	1.6E+01	92	1.0E+01	94	5.0E+00	96	2.3E+00	0	0.	1.6E+01
	41	93	7.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+00
PRODUCT Z= 31	32	70	0.	72	0.	73	0.	74	0.	76	1.9E+03	0	0.	1.5E+02
PRODUCT A= 73	33	75	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+03
HALF LIFE= 4.800 H	34	74	0.	76	1.9E+03	77	1.4E+03	78	9.8E+02	80	4.5E+02	82	2.0E+02	7.4E+02
	35	79	6.7E+02	81	3.0E+02	0	0.	0	0.	0	0.	0	0.	4.9E+02
	36	78	9.9E+02	80	4.5E+02	82	2.1E+02	83	1.4E+02	84	9.4E+01	86	4.3E+01	1.1E+02
	37	85	6.4E+01	87	2.9E+01	0	0.	0	0.	0	0.	0	0.	5.4E+01
	38	84	9.5E+01	86	4.3E+01	87	2.9E+01	88	2.0E+01	0	0.	0	0.	2.3E+01
	39	89	1.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+01
	40	90	9.1E+00	91	6.2E+00	92	4.3E+00	94	2.0E+00	96	9.2E-01	0	0.	6.5E+00
	41	93	2.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+00
PRODUCT Z= 31	32	70	0.	72	0.	73	0.	74	0.	76	4.8E+02	0	0.	3.9E+01
PRODUCT A= 74	34	74	0.	76	0.	77	3.4E+02	78	2.4E+02	80	1.2E+02	82	5.4E+01	1.5E+02
HALF LIFE= 8.000 M	35	79	1.8E+02	81	8.1E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	36	78	0.	80	1.2E+02	82	5.5E+01	83	3.7E+01	84	2.5E+01	86	1.1E+01	2.9E+01
	37	85	1.7E+01	87	7.7E+00	0	0.	0	0.	0	0.	0	0.	1.4E+01
	38	84	2.5E+01	86	1.1E+01	87	7.7E+00	88	5.2E+00	0	0.	0	0.	6.1E+00
	39	89	3.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+00
	40	90	2.4E+00	91	1.6E+00	92	1.1E+00	94	5.1E-01	96	2.5E-01	0	0.	1.7E+00
	41	93	7.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E-01
	42	92	1.1E+00	94	5.2E-01	95	3.6E-01	96	2.5E-01	97	1.7E-01	98	1.1E-01	3.6E-01
		100	5.4E-02											
PRODUCT Z= 31	34	74	0.	76	0.	77	0.	78	5.3E+01	80	2.7E+01	82	1.2E+01	2.7E+01
PRODUCT A= 75	35	79	3.8E+01	81	1.8E+01	0	0.	0	0.	0	0.	0	0.	2.8E+01
HALF LIFE= 2.000 M	36	78	0.	80	2.7E+01	82	1.3E+01	83	8.5E+00	84	5.7E+00	86	2.6E+00	6.7E+00
	37	85	3.9E+00	87	1.8E+00	0	0.	0	0.	0	0.	0	0.	3.3E+00
	38	84	5.8E+00	86	2.6E+00	87	1.8E+00	88	1.2E+00	0	0.	0	0.	1.4E+00
	39	89	8.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	8.1E-01
	40	90	5.5E-01	91	3.8E-01	92	2.5E-01	94	1.2E-01	96	5.5E-02	0	0.	3.9E-01
	41	93	1.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E-01
	42	92	2.6E-01	94	1.2E-01	95	8.0E-02	96	5.5E-02	97	3.9E-02	98	2.6E-02	8.2E-02
		100	1.2E-02											
PRODUCT Z= 32	31	69	5.8E+03	71	2.8E+03	0	0.	0	0.	0	0.	0	0.	4.6E+03
PRODUCT A= 65	32	70	4.2E+03	72	1.9E+03	73	1.3E+03	74	8.6E+02	76	3.9E+02	0	0.	1.8E+03
HALF LIFE= 1.500 M	33	75	5.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+02
	34	74	8.7E+02	76	4.0E+02	77	2.7E+02	78	1.8E+02	80	8.1E+01	82	3.7E+01	1.5E+02
	35	79	1.2E+02	81	5.5E+01	0	0.	0	0.	0	0.	0	0.	8.8E+01
	36	78	1.8E+02	80	8.2E+01	82	3.8E+01	83	2.6E+01	84	1.8E+01	86	8.2E+00	2.1E+01
	37	85	1.2E+01	87	5.7E+00	0	0.	0	0.	0	0.	0	0.	1.0E+01
PRODUCT Z= 32	31	69	4.1E+04	71	2.1E+04	0	0.	0	0.	0	0.	0	0.	3.3E+04
PRODUCT A= 66	32	70	2.9E+04	72	1.4E+04	73	9.5E+03	74	6.4E+03	76	2.9E+03	0	0.	1.3E+04
HALF LIFE= 2.400 H	33	75	4.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+03
	34	74	6.5E+03	76	2.9E+03	77	2.0E+03	78	1.3E+03	80	6.0E+02	82	2.8E+02	1.1E+03
	35	79	8.9E+02	81	4.1E+02	0	0.	0	0.	0	0.	0	0.	6.5E+02
	36	78	1.3E+03	80	6.0E+02	82	2.8E+02	83	1.9E+02	84	1.3E+02	86	5.9E+01	1.5E+02
	37	85	8.9E+01	87	4.1E+01	0	0.	0	0.	0	0.	0	0.	7.5E+01
	38	84	1.3E+02	86	6.0E+01	87	4.1E+01	88	2.9E+01	0	0.	0	0.	3.3E+01
PRODUCT Z= 32	31	69	2.3E+05	71	1.1E+05	0	0.	0	0.	0	0.	0	0.	1.8E+05
PRODUCT A= 67	32	70	1.6E+05	72	8.2E+04	73	5.6E+04	74	3.8E+04	76	1.7E+04	0	0.	7.4E+04
HALF LIFE= 19.000 M	33	75	2.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+04
	34	74	3.8E+04	76	1.7E+04	77	1.2E+04	78	7.8E+03	80	3.5E+03	82	1.6E+03	6.4E+03
	35	79	5.3E+03	81	2.4E+03	0	0.	0	0.	0	0.	0	0.	3.8E+03
	36	78	7.9E+03	80	3.6E+03	82	1.6E+03	83	1.1E+03	84	7.5E+02	86	3.5E+02	9.0E+02
	37	85	5.1E+02	87	2.4E+02	0	0.	0	0.	0	0.	0	0.	4.3E+02
	38	84	7.5E+02	86	3.5E+02	87	2.4E+02	88	1.6E+02	0	0.	0	0.	1.9E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 32	31	69	0.	71	1.2E+03	0	0.	0	0.	0	0.	0	0.	4.9E+02
PRODUCT A= 68	32	70	1.7E+03	72	8.7E+02	73	6.2E+02	74	4.2E+02	76	1.9E+02	0	0.	8.0E+02
HALF LIFE= 280.000 D	33	75	2.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+02
	34	74	4.3E+02	76	1.9E+02	77	1.3E+02	78	8.8E+01	80	4.0E+01	82	1.8E+01	7.2E+01
	35	79	5.9E+01	81	2.7E+01	0	0.	0	0.	0	0.	0	0.	4.3E+01
	36	78	8.9E+01	80	4.0E+01	82	1.8E+01	83	1.2E+01	84	8.4E+00	86	3.9E+00	1.0E+01
	37	85	5.7E+00	87	2.7E+00	0	0.	0	0.	0	0.	0	0.	4.8E+00
	38	84	8.5E+00	86	3.9E+00	87	2.7E+00	88	1.8E+00	0	0.	0	0.	2.1E+00
	39	89	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 32	31	69	0.	71	5.6E+05	0	0.	0	0.	0	0.	0	0.	2.2E+05
PRODUCT A= 69	32	70	0.	72	4.0E+05	73	2.8E+05	74	2.0E+05	76	9.3E+04	0	0.	2.1E+05
HALF LIFE= 37.000 H	33	75	1.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+05
	34	74	2.0E+05	76	9.4E+04	77	6.3E+04	78	4.2E+04	80	1.9E+04	82	8.8E+03	3.5E+04
	35	79	2.9E+04	81	1.3E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04
	36	78	4.3E+04	80	1.9E+04	82	8.8E+03	83	6.0E+03	84	4.0E+03	86	1.9E+03	4.9E+03
	37	85	2.8E+03	87	1.3E+03	0	0.	0	0.	0	0.	0	0.	2.3E+03
	38	84	4.1E+03	86	1.9E+03	87	1.3E+03	88	8.8E+02	0	0.	0	0.	1.0E+03
	39	89	5.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+02
	40	90	4.1E+02	91	2.9E+02	92	1.9E+02	94	8.9E+01	96	4.3E+01	0	0.	2.9E+02
PRODUCT Z= 32	32	70	0.	72	0.	73	5.5E+04	74	3.9E+04	76	2.0E+04	0	0.	2.1E+04
PRODUCT A= 71	33	75	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
HALF LIFE= 11.000 D	34	74	4.0E+04	76	2.0E+04	77	1.4E+04	78	9.2E+03	80	4.2E+03	82	1.9E+03	7.5E+03
	35	79	6.2E+03	81	2.9E+03	0	0.	0	0.	0	0.	0	0.	4.6E+03
	36	78	9.4E+03	80	4.2E+03	82	1.9E+03	83	1.3E+03	84	8.8E+02	86	4.0E+02	1.1E+03
	37	85	5.9E+02	87	2.7E+02	0	0.	0	0.	0	0.	0	0.	5.0E+02
	38	84	8.9E+02	86	4.0E+02	87	2.8E+02	88	1.9E+02	0	0.	0	0.	2.2E+02
	39	89	1.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+02
	40	90	8.8E+01	91	5.9E+01	92	4.1E+01	94	1.9E+01	96	8.8E+00	0	0.	6.2E+01
	41	93	2.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+01
PRODUCT Z= 32	34	74	0.	76	0.	77	5.2E+03	78	3.7E+03	80	1.9E+03	82	8.7E+02	2.3E+03
PRODUCT A= 75	35	79	2.7E+03	81	1.3E+03	0	0.	0	0.	0	0.	0	0.	2.0E+03
HALF LIFE= 82.000 M	36	78	0.	80	1.9E+03	82	8.8E+02	83	5.9E+02	84	4.0E+02	86	1.8E+02	4.7E+02
	37	85	2.7E+02	87	1.2E+02	0	0.	0	0.	0	0.	0	0.	2.3E+02
	38	84	4.0E+02	86	1.8E+02	87	1.2E+02	88	8.4E+01	0	0.	0	0.	9.8E+01
	39	89	5.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+01
	40	90	3.9E+01	91	2.6E+01	92	1.8E+01	94	8.3E+00	96	3.8E+00	0	0.	2.7E+01
	41	93	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
	42	92	1.8E+01	94	8.4E+00	95	5.6E+00	96	3.9E+00	97	2.7E+00	98	1.8E+00	5.8E+00
		100	8.4E-01											
PRODUCT Z= 32	34	74	0.	76	0.	77	0.	78	0.	80	8.8E+01	82	4.5E+01	4.9E+01
PRODUCT A= 77	35	79	0.	81	6.3E+01	0	0.	0	0.	0	0.	0	0.	3.2E+01
HALF LIFE= 11.300 H	36	78	0.	80	0.	82	4.5E+01	83	3.1E+01	84	2.1E+01	86	9.5E+00	2.2E+01
	37	85	1.4E+01	87	6.5E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	38	84	2.1E+01	86	9.6E+00	87	6.6E+00	88	4.4E+00	0	0.	0	0.	5.1E+00
	39	89	3.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+00
	40	90	2.0E+00	91	1.4E+00	92	9.2E-01	94	4.2E-01	96	2.0E-01	0	0.	1.4E+00
	41	93	6.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E-01
	42	92	9.3E-01	94	4.3E-01	95	2.9E-01	96	2.0E-01	97	1.3E-01	98	9.2E-02	3.0E-01
		100	4.3E-02											
PRODUCT Z= 32	34	74	0.	76	0.	77	0.	78	0.	80	2.4E+01	82	1.2E+01	1.3E+01
PRODUCT A= 78	35	79	0.	81	1.7E+01	0	0.	0	0.	0	0.	0	0.	8.6E+00
HALF LIFE= 88.000 M	36	78	0.	80	0.	82	1.2E+01	83	8.8E+00	84	6.0E+00	86	2.7E+00	6.3E+00
	37	85	4.1E+00	87	1.9E+00	0	0.	0	0.	0	0.	0	0.	3.5E+00
	38	84	6.1E+00	86	2.8E+00	87	1.9E+00	88	1.3E+00	0	0.	0	0.	1.5E+00
	39	89	8.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E-01
	40	90	5.8E-01	91	3.9E-01	92	2.6E-01	94	1.2E-01	96	5.6E-02	0	0.	4.1E-01
	41	93	1.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-01
	42	92	2.7E-01	94	1.2E-01	95	8.3E-02	96	5.6E-02	97	3.9E-02	98	2.6E-02	8.5E-02
		100	1.2E-02											
PRODUCT Z= 33	32	70	3.9E+04	72	2.0E+04	73	1.4E+04	74	9.4E+03	76	4.3E+03	0	0.	1.8E+04
PRODUCT A= 68	33	75	6.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+03
HALF LIFE= 7.000 M	34	74	9.6E+03	76	4.3E+03	77	2.9E+03	78	2.0E+03	80	8.9E+02	82	4.0E+02	1.6E+03
	35	79	1.3E+03	81	6.0E+02	0	0.	0	0.	0	0.	0	0.	9.6E+02
	36	78	2.0E+03	80	9.0E+02	82	4.1E+02	83	2.8E+02	84	1.9E+02	86	8.7E+01	2.3E+02
	37	85	1.3E+02	87	6.0E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	38	84	1.9E+02	86	8.8E+01	87	6.0E+01	88	4.0E+01	0	0.	0	0.	4.7E+01
	39	89	2.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+01
PRODUCT Z= 33	32	70	0.	72	1.1E+05	73	8.1E+04	74	5.7E+04	76	2.6E+04	0	0.	6.1E+04
PRODUCT A= 69	33	75	3.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+04
HALF LIFE= 15.000 M	34	74	5.8E+04	76	2.7E+04	77	1.8E+04	78	1.2E+04	80	5.4E+03	82	2.5E+03	9.9E+03
	35	79	8.2E+03	81	3.7E+03	0	0.	0	0.	0	0.	0	0.	6.0E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 33 A= 69 (CONTINUED)	36	78	1.2E+04	80	5.5E+03	82	2.5E+03	83	1.7E+03	84	1.1E+03	86	5.3E+02	1.4E+03
	37	85	7.8E+02	87	3.6E+02	0	0.	0	0.	0	0.	0	0.	6.7E+02
	38	84	1.2E+03	86	5.3E+02	87	3.6E+02	88	2.5E+02	0	0.	0	0.	2.9E+02
	39	89	1.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+02
	40	90	1.2E+02	91	8.1E+01	92	5.4E+01	94	2.5E+01	96	1.2E+01	0	0.	8.2E+01
PRODUCT Z= 33	32	70	0.	72	5.2E+05	73	3.7E+05	74	2.6E+05	76	1.3E+05	0	0.	2.8E+05
PRODUCT A= 70	33	75	1.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+05
HALF LIFE= 50.000 M	34	74	2.7E+05	76	1.3E+05	77	8.7E+04	78	5.8E+04	80	2.7E+04	82	1.2E+04	4.8E+04
	35	79	3.9E+04	81	1.8E+04	0	0.	0	0.	0	0.	0	0.	2.9E+04
	36	78	5.9E+04	80	2.7E+04	82	1.2E+04	83	8.2E+03	84	5.5E+03	86	2.5E+03	6.7E+03
	37	85	3.7E+03	87	1.7E+03	0	0.	0	0.	0	0.	0	0.	3.2E+03
	38	84	5.6E+03	86	2.6E+03	87	1.7E+03	88	1.2E+03	0	0.	0	0.	1.4E+03
	39	89	8.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E+02
	40	90	5.5E+02	91	3.8E+02	92	2.6E+02	94	1.2E+02	96	5.7E+01	0	0.	3.9E+02
PRODUCT Z= 33	32	70	0.	72	0.	73	3.0E+05	74	2.1E+05	76	1.1E+05	0	0.	1.1E+05
PRODUCT A= 71	33	75	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
HALF LIFE= 62.000 H	34	74	2.1E+05	76	1.1E+05	77	7.4E+04	78	5.0E+04	80	2.2E+04	82	1.0E+04	4.0E+04
	35	79	3.4E+04	81	1.5E+04	0	0.	0	0.	0	0.	0	0.	2.4E+04
	36	78	5.0E+04	80	2.3E+04	82	1.0E+04	83	7.0E+03	84	4.7E+03	86	2.1E+03	5.7E+03
	37	85	3.2E+03	87	1.5E+03	0	0.	0	0.	0	0.	0	0.	2.7E+03
	38	84	4.8E+03	86	2.2E+03	87	1.5E+03	88	1.0E+03	0	0.	0	0.	1.2E+03
	39	89	6.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+02
	40	90	4.7E+02	91	3.2E+02	92	2.2E+02	94	1.0E+02	96	4.7E+01	0	0.	3.3E+02
	41	93	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
PRODUCT Z= 33	32	70	0.	72	0.	73	0.	74	9.3E+05	76	4.7E+05	0	0.	3.9E+05
PRODUCT A= 72	33	75	6.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+05
HALF LIFE= 26.000 H	34	74	9.4E+05	76	4.8E+05	77	3.4E+05	78	2.3E+05	80	1.0E+05	82	4.8E+04	1.9E+05
	35	79	1.6E+05	81	7.1E+04	0	0.	0	0.	0	0.	0	0.	1.1E+05
	36	78	2.3E+05	80	1.1E+05	82	4.9E+04	83	3.3E+04	84	2.2E+04	86	1.0E+04	2.7E+04
	37	85	1.5E+04	87	6.8E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
	38	84	2.2E+04	86	1.0E+04	87	6.8E+03	88	4.7E+03	0	0.	0	0.	5.4E+03
	39	89	3.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+03
	40	90	2.2E+03	91	1.5E+03	92	1.0E+03	94	4.8E+02	96	2.2E+02	0	0.	1.5E+03
	41	93	6.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+02
PRODUCT Z= 33	32	70	0.	72	0.	73	0.	74	0.	76	7.6E+03	0	0.	6.2E+02
PRODUCT A= 73	33	75	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
HALF LIFE= 76.000 D	34	74	0.	76	7.7E+03	77	5.5E+03	78	3.9E+03	80	1.8E+03	82	8.1E+02	3.0E+03
	35	79	2.7E+03	81	1.2E+03	0	0.	0	0.	0	0.	0	0.	1.9E+03
	36	78	3.9E+03	80	1.8E+03	82	8.2E+02	83	5.6E+02	84	3.7E+02	86	1.7E+02	4.5E+02
	37	85	2.5E+02	87	1.2E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
	38	84	3.8E+02	86	1.7E+02	87	1.2E+02	88	7.8E+01	0	0.	0	0.	9.2E+01
	39	89	5.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+01
	40	90	3.6E+01	91	2.5E+01	92	1.7E+01	94	7.9E+00	96	3.7E+00	0	0.	2.6E+01
	41	93	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
PRODUCT Z= 33	32	70	0.	72	0.	73	0.	74	0.	76	1.8E+04	0	0.	1.5E+03
PRODUCT A= 74	34	74	0.	76	1.8E+04	77	1.3E+04	78	9.3E+03	80	4.5E+03	82	2.1E+03	7.2E+03
HALF LIFE= 18.000 D	35	79	6.7E+03	81	3.1E+03	0	0.	0	0.	0	0.	0	0.	4.9E+03
	36	78	9.4E+03	80	4.6E+03	82	2.1E+03	83	1.4E+03	84	9.6E+02	86	4.3E+02	1.2E+03
	37	85	6.4E+02	87	2.9E+02	0	0.	0	0.	0	0.	0	0.	5.4E+02
	38	84	9.7E+02	86	4.4E+02	87	2.9E+02	88	2.0E+02	0	0.	0	0.	2.3E+02
	39	89	1.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+02
	40	90	9.2E+01	91	6.2E+01	92	4.3E+01	94	2.0E+01	96	9.4E+00	0	0.	6.5E+01
	41	93	2.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+01
	42	92	4.3E+01	94	2.0E+01	95	1.4E+01	96	9.5E+00	97	6.3E+00	98	4.4E+00	1.4E+01
		100	2.1E+00											
PRODUCT Z= 33	34	74	0.	76	0.	77	0.	78	2.0E+04	80	9.9E+03	82	4.8E+03	1.0E+04
PRODUCT A= 76	35	79	1.4E+04	81	7.1E+03	0	0.	0	0.	0	0.	0	0.	1.1E+04
HALF LIFE= 26.500 H	36	78	0.	80	1.0E+04	82	4.9E+03	83	3.3E+03	84	2.2E+03	86	1.0E+03	2.6E+03
	37	85	1.5E+03	87	6.9E+02	0	0.	0	0.	0	0.	0	0.	1.3E+03
	38	84	2.3E+03	86	1.0E+03	87	6.9E+02	88	4.7E+02	0	0.	0	0.	5.5E+02
	39	89	3.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+02
	40	90	2.1E+02	91	1.4E+02	92	9.9E+01	94	4.6E+01	96	2.1E+01	0	0.	1.5E+02
	41	93	6.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+01
	42	92	1.0E+02	94	4.6E+01	95	3.2E+01	96	2.1E+01	97	1.5E+01	98	1.0E+01	3.2E+01
		100	4.6E+00											
PRODUCT Z= 33	34	74	0.	76	0.	77	0.	78	0.	80	2.4E+03	82	1.2E+03	1.3E+03
PRODUCT A= 77	35	79	3.3E+03	81	1.7E+03	0	0.	0	0.	0	0.	0	0.	2.5E+03
HALF LIFE= 39.000 H	36	78	0.	80	2.4E+03	82	1.2E+03	83	8.3E+02	84	5.6E+02	86	2.6E+02	6.5E+02
	37	85	3.8E+02	87	1.8E+02	0	0.	0	0.	0	0.	0	0.	3.2E+02
	38	84	5.7E+02	86	2.6E+02	87	1.8E+02	88	1.2E+02	0	0.	0	0.	1.4E+02
	39	89	8.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.0E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 33 A= 77 (CONTINUED)	40	90	5.4E+01	91	3.7E+01	92	2.5E+01	94	1.1E+01	96	5.3E+00	0	0.	3.8E+01
	41	93	1.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+01
	42	92	2.5E+01	94	1.1E+01	95	7.8E+00	96	5.4E+00	97	3.6E+00	98	2.5E+00	8.0E+00
		100	1.2E+00											
PRODUCT Z= 33	34	74	0.	76	0.	77	0.	78	0.	80	1.9E+03	82	9.7E+02	1.1E+03
PRODUCT A= 78	35	79	0.	81	1.4E+03	0	0.	0	0.	0	0.	0	0.	6.9E+02
HALF LIFE= 91.000 M	36	78	0.	80	0.	82	9.8E+02	83	7.0E+02	84	4.8E+02	86	2.2E+02	5.0E+02
	37	85	3.3E+02	87	1.5E+02	0	0.	0	0.	0	0.	0	0.	2.8E+02
	38	84	4.8E+02	86	2.2E+02	87	1.5E+02	88	1.0E+02	0	0.	0	0.	1.2E+02
	39	89	6.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E+01
	40	90	4.6E+01	91	3.1E+01	92	2.1E+01	94	9.7E+00	96	4.5E+00	0	0.	3.2E+01
	41	93	1.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+01
	42	92	2.1E+01	94	9.8E+00	95	6.6E+00	96	4.5E+00	97	3.1E+00	98	2.1E+00	6.8E+00
		100	9.9E-01											
PRODUCT Z= 33	34	74	0.	76	0.	77	0.	78	0.	80	0.	82	2.4E+02	2.3E+01
PRODUCT A= 79	35	79	0.	81	3.4E+02	0	0.	0	0.	0	0.	0	0.	1.7E+02
HALF LIFE= 9.000 M	36	78	0.	80	0.	82	2.4E+02	83	1.7E+02	84	1.2E+02	86	5.8E+01	1.3E+02
	37	85	8.5E+01	87	3.9E+01	0	0.	0	0.	0	0.	0	0.	7.2E+01
	38	84	1.3E+02	86	5.8E+01	87	3.9E+01	88	2.6E+01	0	0.	0	0.	3.1E+01
	39	89	1.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+01
	40	90	1.2E+01	91	8.2E+00	92	5.5E+00	94	2.5E+00	96	1.2E+00	0	0.	8.5E+00
	41	93	3.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+00
	42	92	5.6E+00	94	2.5E+00	95	1.7E+00	96	1.2E+00	97	8.0E-01	98	5.5E-01	1.8E+00
		100	2.5E-01											
	44	96	1.2E+00	98	5.6E-01	99	3.7E-01	100	2.6E-01	101	1.8E-01	102	1.2E-01	2.3E-01
		104	5.5E-02											
PRODUCT Z= 34	33	75	9.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+03
PRODUCT A= 70	34	74	1.3E+04	76	6.3E+03	77	4.3E+03	78	2.9E+03	80	1.3E+03	82	5.9E+02	2.3E+03
HALF LIFE= 44.000 M	35	79	1.9E+03	81	8.8E+02	0	0.	0	0.	0	0.	0	0.	1.4E+03
	36	78	2.9E+03	80	1.3E+03	82	6.0E+02	83	4.0E+02	84	2.7E+02	86	1.3E+02	3.3E+02
	37	85	1.8E+02	87	8.5E+01	0	0.	0	0.	0	0.	0	0.	1.6E+02
	38	84	2.7E+02	86	1.3E+02	87	8.5E+01	88	5.8E+01	0	0.	0	0.	6.8E+01
	39	89	4.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+01
	40	90	2.7E+01	91	1.9E+01	92	1.3E+01	94	6.0E+00	96	2.8E+00	0	0.	1.9E+01
PRODUCT Z= 34	33	75	5.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+04
PRODUCT A= 71	34	74	7.9E+04	76	4.0E+04	77	2.7E+04	78	1.8E+04	80	8.3E+03	82	3.8E+03	1.5E+04
HALF LIFE= 5.000 M	35	79	1.2E+04	81	5.7E+03	0	0.	0	0.	0	0.	0	0.	9.0E+03
	36	78	1.9E+04	80	8.4E+03	82	3.8E+03	83	2.6E+03	84	1.7E+03	86	7.9E+02	2.1E+03
	37	85	1.2E+03	87	5.4E+02	0	0.	0	0.	0	0.	0	0.	1.0E+03
	38	84	1.8E+03	86	8.0E+02	87	5.4E+02	88	3.7E+02	0	0.	0	0.	4.3E+02
	39	89	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+02
	40	90	1.7E+02	91	1.2E+02	92	8.0E+01	94	3.7E+01	96	1.7E+01	0	0.	1.2E+02
	41	93	5.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+01
PRODUCT Z= 34	33	75	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
PRODUCT A= 72	34	74	3.0E+04	76	1.5E+04	77	1.1E+04	78	7.4E+03	80	3.3E+03	82	1.5E+03	5.9E+03
HALF LIFE= 8.400 D	35	79	5.0E+03	81	2.3E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
	36	78	7.5E+03	80	3.4E+03	82	1.6E+03	83	1.0E+03	84	7.0E+02	86	3.2E+02	8.5E+02
	37	85	4.8E+02	87	2.2E+02	0	0.	0	0.	0	0.	0	0.	4.0E+02
	38	84	7.1E+02	86	3.2E+02	87	2.2E+02	88	1.5E+02	0	0.	0	0.	1.7E+02
	39	89	1.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+02
	40	90	6.9E+01	91	4.8E+01	92	3.2E+01	94	1.5E+01	96	7.0E+00	0	0.	4.9E+01
	41	93	2.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+01
PRODUCT Z= 34	33	75	9.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	9.0E+05
PRODUCT A= 73	34	74	0.	76	6.5E+05	77	4.6E+05	78	3.3E+05	80	1.5E+05	82	6.8E+04	2.5E+05
HALF LIFE= 7.100 H	35	79	2.2E+05	81	1.0E+05	0	0.	0	0.	0	0.	0	0.	1.6E+05
	36	78	3.3E+05	80	1.5E+05	82	6.9E+04	83	4.7E+04	84	3.1E+04	86	1.4E+04	3.8E+04
	37	85	2.1E+04	87	9.7E+03	0	0.	0	0.	0	0.	0	0.	1.8E+04
	38	84	3.2E+04	86	1.4E+04	87	9.7E+03	88	6.6E+03	0	0.	0	0.	7.7E+03
	39	89	4.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E+03
	40	90	3.1E+03	91	2.1E+03	92	1.4E+03	94	6.6E+02	96	3.1E+02	0	0.	2.2E+03
	41	93	9.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+02
PRODUCT Z= 34	34	74	0.	76	0.	77	8.6E+03	78	6.1E+03	80	3.1E+03	82	1.4E+03	3.7E+03
PRODUCT A= 75	35	79	4.4E+03	81	2.1E+03	0	0.	0	0.	0	0.	0	0.	3.2E+03
HALF LIFE= 120.000 D	36	78	6.2E+03	80	3.1E+03	82	1.4E+03	83	9.7E+02	84	6.6E+02	86	3.0E+02	7.9E+02
	37	85	4.5E+02	87	2.0E+02	0	0.	0	0.	0	0.	0	0.	3.8E+02
	38	84	6.6E+02	86	3.0E+02	87	2.0E+02	88	1.4E+02	0	0.	0	0.	1.6E+02
	39	89	9.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.3E+01
	40	90	6.3E+01	91	4.3E+01	92	2.9E+01	94	1.4E+01	96	6.3E+00	0	0.	4.5E+01
	41	93	2.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+01
	42	92	2.9E+01	94	1.4E+01	95	9.2E+00	96	6.4E+00	97	4.4E+00	98	3.0E+00	9.4E+00
		100	1.4E+00											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 34	34	74	0.	76	0.	77	0.	78	0.	80	0.	82	3.3E-04	3.2E-05
PRODUCT A= 79	35	79	0.	81	4.7E-04	0	0.	0	0.	0	0.	0	0.	2.3E-04
HALF LIFE= .070 T	36	78	0.	80	0.	82	3.4E-04	83	2.4E-04	84	1.7E-04	86	7.9E-05	1.8E-04
	37	85	1.2E-04	87	5.4E-05	0	0.	0	0.	0	0.	0	0.	1.0E-04
	38	84	1.7E-04	86	8.0E-05	87	5.4E-05	88	3.6E-05	0	0.	0	0.	4.3E-05
	39	89	2.5E-05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E-05
	40	90	1.7E-05	91	1.1E-05	92	7.6E-06	94	3.5E-06	96	1.6E-06	0	0.	1.2E-05
	41	93	5.2E-06	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E-06
	42	92	7.7E-06	94	3.5E-06	95	2.4E-06	96	1.6E-06	97	1.1E-06	98	7.6E-07	2.4E-06
		100	3.5E-07											
	44	96	1.6E-06	98	7.7E-07	99	5.1E-07	100	3.5E-07	101	2.5E-07	102	1.6E-07	3.2E-07
		104	7.6E-08											
PRODUCT Z= 34	36	78	0.	80	0.	82	0.	83	7.1E+02	84	5.1E+02	86	2.6E+02	4.2E+02
PRODUCT A= 81	37	85	3.6E+02	87	1.8E+02	0	0.	0	0.	0	0.	0	0.	3.1E+02
HALF LIFE= 18.000 M	38	84	0.	86	2.6E+02	87	1.8E+02	88	1.2E+02	0	0.	0	0.	1.4E+02
	39	89	8.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E+01
	40	90	5.5E+01	91	3.8E+01	92	2.5E+01	94	1.1E+01	96	5.2E+00	0	0.	3.9E+01
	41	93	1.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+01
	42	92	2.5E+01	94	1.2E+01	95	7.8E+00	96	5.3E+00	97	3.6E+00	98	2.4E+00	8.0E+00
		100	1.1E+00											
	44	96	5.3E+00	98	2.5E+00	99	1.7E+00	100	1.2E+00	101	7.7E-01	102	5.3E-01	1.0E+00
		104	2.5E-01											
PRODUCT Z= 34	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	1.3E+01	2.4E+00
PRODUCT A= 83	37	85	0.	87	9.6E+00	0	0.	0	0.	0	0.	0	0.	2.7E+00
HALF LIFE= 25.000 M	38	84	0.	86	0.	87	9.7E+00	88	6.9E+00	0	0.	0	0.	6.4E+00
	39	89	4.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+00
	40	90	3.2E+00	91	2.2E+00	92	1.5E+00	94	6.6E-01	96	3.0E-01	0	0.	2.3E+00
	41	93	1.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+00
	42	92	1.5E+00	94	6.7E-01	95	4.5E-01	96	3.1E-01	97	2.1E-01	98	1.4E-01	4.6E-01
		100	6.4E-02											
	44	96	3.1E-01	98	1.4E-01	99	9.6E-02	100	6.5E-02	101	4.4E-02	102	3.0E-02	5.9E-02
		104	1.4E-02											
	45	103	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
	46	102	3.1E-02	104	1.4E-02	105	9.8E-03	106	6.6E-03	108	3.0E-03	110	1.5E-03	6.7E-03
PRODUCT Z= 34	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	2.6E+00	4.7E-01
PRODUCT A= 84	37	85	0.	87	1.9E+00	0	0.	0	0.	0	0.	0	0.	5.4E-01
HALF LIFE= 3.000 M	38	84	0.	86	0.	87	0.	88	1.4E+00	0	0.	0	0.	1.1E+00
	39	89	9.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E-01
	40	90	6.7E-01	91	4.5E-01	92	3.1E-01	94	1.4E-01	96	6.3E-02	0	0.	4.7E-01
	41	93	2.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-01
	42	92	3.1E-01	94	1.4E-01	95	9.5E-02	96	6.4E-02	97	4.3E-02	98	2.9E-02	9.8E-02
		100	1.3E-02											
	44	96	6.5E-02	98	2.9E-02	99	2.0E-02	100	1.4E-02	101	9.1E-03	102	6.2E-03	1.2E-02
		104	2.9E-03											
	45	103	4.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E-03
	46	102	6.3E-03	104	2.9E-03	105	2.0E-03	106	1.4E-03	108	6.4E-04	110	3.0E-04	1.4E-03
PRODUCT Z= 35	34	74	0.	76	5.3E+04	77	3.8E+04	78	2.7E+04	80	1.2E+04	82	5.6E+03	2.0E+04
PRODUCT A= 73	35	79	1.8E+04	81	8.3E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
HALF LIFE= 4.000 M	36	78	2.7E+04	80	1.2E+04	82	5.7E+03	83	3.9E+03	84	2.6E+03	86	1.2E+03	3.1E+03
	37	85	1.7E+03	87	8.0E+02	0	0.	0	0.	0	0.	0	0.	1.5E+03
	38	84	2.6E+03	86	1.2E+03	87	8.0E+02	88	5.4E+02	0	0.	0	0.	6.3E+02
	39	89	3.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+02
	40	90	2.5E+02	91	1.7E+02	92	1.2E+02	94	5.4E+01	96	2.5E+01	0	0.	1.8E+02
	41	93	7.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+01
	42	92	1.2E+02	94	5.5E+01	95	3.8E+01	96	2.6E+01	97	1.8E+01	98	1.2E+01	3.8E+01
		100	5.7E+00											
PRODUCT Z= 35	34	74	0.	76	2.7E+05	77	1.9E+05	78	1.4E+05	80	6.6E+04	82	3.0E+04	1.1E+05
PRODUCT A= 74	35	79	9.7E+04	81	4.5E+04	0	0.	0	0.	0	0.	0	0.	7.1E+04
HALF LIFE= 42.000 M	36	78	1.4E+05	80	6.7E+04	82	3.0E+04	83	2.1E+04	84	1.4E+04	86	6.3E+03	1.7E+04
	37	85	9.4E+03	87	4.3E+03	0	0.	0	0.	0	0.	0	0.	7.9E+03
	38	84	1.4E+04	86	6.4E+03	87	4.3E+03	88	2.9E+03	0	0.	0	0.	3.4E+03
	39	89	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	40	90	1.3E+03	91	9.1E+02	92	6.2E+02	94	2.9E+02	96	1.4E+02	0	0.	9.5E+02
	41	93	4.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+02
	42	92	6.3E+02	94	2.9E+02	95	2.0E+02	96	1.4E+02	97	9.3E+01	98	6.4E+01	2.0E+02
		100	3.0E+01											
PRODUCT Z= 35	34	74	0.	76	0.	77	7.6E+05	78	5.4E+05	80	2.7E+05	82	1.3E+05	3.3E+05
PRODUCT A= 75	35	79	3.9E+05	81	1.9E+05	0	0.	0	0.	0	0.	0	0.	2.9E+05
HALF LIFE= 1.600 H	36	78	5.5E+05	80	2.8E+05	82	1.3E+05	83	8.6E+04	84	5.8E+04	86	2.7E+04	7.0E+04
	37	85	4.0E+04	87	1.8E+04	0	0.	0	0.	0	0.	0	0.	3.4E+04
	38	84	5.9E+04	86	2.7E+04	87	1.8E+04	88	1.2E+04	0	0.	0	0.	1.4E+04
	39	89	8.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E+03
	40	90	5.6E+03	91	3.8E+03	92	2.6E+03	94	1.2E+03	96	5.6E+02	0	0.	4.0E+03
	41	93	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
	42	92	2.6E+03	94	1.2E+03	95	8.2E+02	96	5.7E+02	97	3.9E+02	98	2.6E+02	8.4E+02
		100	1.2E+02											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 35	34	74	0.	76	0.	77	0.	78	1.0E+06	80	5.1E+05	82	2.5E+05	5.2E+05
PRODUCT A= 76	35	79	7.3E+05	81	3.7E+05	0	0.	0	0.	0	0.	0	0.	5.5E+05
HALF LIFE= 16.500 H	36	78	1.0E+06	80	5.2E+05	82	2.5E+05	83	1.7E+05	84	1.2E+05	86	5.3E+04	1.4E+05
	37	85	7.8E+04	87	3.6E+04	0	0.	0	0.	0	0.	0	0.	6.6E+04
	38	84	1.2E+05	86	5.4E+04	87	3.6E+04	88	2.4E+04	0	0.	0	0.	2.8E+04
	39	89	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
	40	90	1.1E+04	91	7.5E+03	92	5.1E+03	94	2.4E+03	96	1.1E+03	0	0.	7.8E+03
	41	93	3.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+03
	42	92	5.2E+03	94	2.4E+03	95	1.6E+03	96	1.1E+03	97	7.6E+02	98	5.3E+02	1.7E+03
		100	2.4E+02											
PRODUCT Z= 35	34	74	0.	76	0.	77	0.	78	0.	80	3.1E+05	82	1.6E+05	1.7E+05
PRODUCT A= 77	35	79	4.4E+05	81	2.3E+05	0	0.	0	0.	0	0.	0	0.	3.3E+05
HALF LIFE= 58.000 H	36	78	0.	80	3.2E+05	82	1.6E+05	83	1.1E+05	84	7.5E+04	86	3.4E+04	8.7E+04
	37	85	5.1E+04	87	2.3E+04	0	0.	0	0.	0	0.	0	0.	4.3E+04
	38	84	7.6E+04	86	3.4E+04	87	2.3E+04	88	1.6E+04	0	0.	0	0.	1.8E+04
	39	89	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
	40	90	7.2E+03	91	4.9E+03	92	3.3E+03	94	1.5E+03	96	7.1E+02	0	0.	5.1E+03
	41	93	2.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+03
	42	92	3.3E+03	94	1.5E+03	95	1.0E+03	96	7.2E+02	97	4.8E+02	98	3.3E+02	1.1E+03
		100	1.5E+02											
PRODUCT Z= 35	34	74	0.	76	0.	77	0.	78	0.	80	9.2E+05	82	4.7E+05	5.1E+05
PRODUCT A= 78	35	79	0.	81	6.6E+05	0	0.	0	0.	0	0.	0	0.	3.3E+05
HALF LIFE= 6.500 M	36	78	0.	80	9.3E+05	82	4.8E+05	83	3.4E+05	84	2.3E+05	86	1.1E+05	2.6E+05
	37	85	1.6E+05	87	7.2E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
	38	84	2.3E+05	86	1.1E+05	87	7.2E+04	88	4.9E+04	0	0.	0	0.	5.8E+04
	39	89	3.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+04
	40	90	2.2E+04	91	1.5E+04	92	1.0E+04	94	4.7E+03	96	2.2E+03	0	0.	1.6E+04
	41	93	6.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+03
	42	92	1.0E+04	94	4.7E+03	95	3.2E+03	96	2.2E+03	97	1.5E+03	98	1.0E+03	3.3E+03
		100	4.8E+02											
PRODUCT Z= 35	34	74	0.	76	0.	77	0.	78	0.	80	0.	82	1.1E+05	1.1E+04
PRODUCT A= 80	36	78	0.	80	0.	82	1.2E+05	83	8.2E+04	84	5.9E+04	86	2.9E+04	6.1E+04
HALF LIFE= 18.000 M	37	85	4.2E+04	87	1.9E+04	0	0.	0	0.	0	0.	0	0.	3.6E+04
	38	84	5.9E+04	86	2.9E+04	87	2.0E+04	88	1.3E+04	0	0.	0	0.	1.5E+04
	39	89	9.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.0E+03
	40	90	6.1E+03	91	4.1E+03	92	2.8E+03	94	1.3E+03	96	5.8E+02	0	0.	4.3E+03
	41	93	1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+03
	42	92	2.8E+03	94	1.3E+03	95	8.6E+02	96	5.8E+02	97	3.9E+02	98	2.7E+02	8.8E+02
		100	1.2E+02											
	44	96	5.9E+02	98	2.7E+02	99	1.9E+02	100	1.2E+02	101	8.6E+01	102	6.0E+01	1.1E+02
		104	2.7E+01											
PRODUCT Z= 35	36	78	0.	80	0.	82	0.	83	0.	84	2.7E+03	86	1.4E+03	1.8E+03
PRODUCT A= 82	37	85	1.9E+03	87	9.7E+02	0	0.	0	0.	0	0.	0	0.	1.6E+03
HALF LIFE= 35.300 H	38	84	0.	86	1.4E+03	87	9.8E+02	88	6.7E+02	0	0.	0	0.	7.5E+02
	39	89	4.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E+02
	40	90	3.1E+02	91	2.1E+02	92	1.4E+02	94	6.4E+01	96	2.9E+01	0	0.	2.2E+02
	41	93	9.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E+01
	42	92	1.4E+02	94	6.4E+01	95	4.3E+01	96	2.9E+01	97	2.0E+01	98	1.3E+01	4.5E+01
		100	6.2E+00											
	44	96	3.0E+01	98	1.4E+01	99	9.2E+00	100	6.3E+00	101	4.3E+00	102	2.9E+00	5.6E+00
		104	1.4E+00											
	45	103	2.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+00
PRODUCT Z= 35	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	1.0E+03	1.8E+02
PRODUCT A= 83	37	85	1.4E+03	87	7.4E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03
HALF LIFE= 2.400 H	38	84	0.	86	1.0E+03	87	7.4E+02	88	5.3E+02	0	0.	0	0.	5.9E+02
	39	89	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
	40	90	2.5E+02	91	1.7E+02	92	1.1E+02	94	5.1E+01	96	2.3E+01	0	0.	1.7E+02
	41	93	7.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E+01
	42	92	1.1E+02	94	5.2E+01	95	3.5E+01	96	2.4E+01	97	1.6E+01	98	1.1E+01	3.6E+01
		100	4.9E+00											
	44	96	2.4E+01	98	1.1E+01	99	7.4E+00	100	5.0E+00	101	3.4E+00	102	2.3E+00	4.5E+00
		104	1.1E+00											
	45	103	1.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+00
PRODUCT Z= 35	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	2.6E+02	4.7E+01
PRODUCT A= 84	37	85	0.	87	1.9E+02	0	0.	0	0.	0	0.	0	0.	5.3E+01
HALF LIFE= 32.000 M	38	84	0.	86	0.	87	1.9E+02	88	1.4E+02	0	0.	0	0.	1.3E+02
	39	89	9.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+01
	40	90	6.7E+01	91	4.5E+01	92	3.0E+01	94	1.4E+01	96	6.3E+00	0	0.	4.7E+01
	41	93	2.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+01
	42	92	3.1E+01	94	1.4E+01	95	9.4E+00	96	6.3E+00	97	4.3E+00	98	2.9E+00	9.7E+00
		100	1.3E+00											
	44	96	6.4E+00	98	2.9E+00	99	2.0E+00	100	1.3E+00	101	9.1E-01	102	6.2E-01	1.2E+00
		104	2.8E-01											
	45	103	4.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E-01
	46	102	6.2E-01	104	2.9E-01	105	2.0E-01	106	1.4E-01	108	6.3E-02	110	3.0E-02	1.4E-01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 35	37	85	0.	87	4.4E+01	0	0.	0	0.	0	0.	0	0.	1.2E+01
PRODUCT A= 85	38	84	0.	86	0.	87	0.	88	3.1E+01	0	0.	0	0.	2.6E+01
HALF LIFE= 3.000 M	39	89	2.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+01
	40	90	1.6E+01	91	1.1E+01	92	7.4E+00	94	3.4E+00	96	1.5E+00	0	0.	1.1E+01
	41	93	5.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+00
	42	92	7.5E+00	94	3.4E+00	95	2.3E+00	96	1.6E+00	97	1.0E+00	98	7.1E-01	2.4E+00
		100	3.2E-01											
	44	96	1.6E+00	98	7.1E-01	99	4.8E-01	100	3.2E-01	101	2.2E-01	102	1.5E-01	2.9E-01
		104	7.0E-02											
	45	103	1.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E-01
	46	102	1.5E-01	104	7.1E-02	105	4.7E-02	106	3.3E-02	108	1.5E-02	110	7.0E-03	3.3E-02
PRODUCT Z= 36	35	79	3.8E+03	81	1.8E+03	0	0.	0	0.	0	0.	0	0.	2.8E+03
PRODUCT A= 74	36	78	5.4E+03	80	2.6E+03	82	1.2E+03	83	8.1E+02	84	5.5E+02	86	2.5E+02	6.6E+02
HALF LIFE= 15.000 M	37	85	3.7E+02	87	1.7E+02	0	0.	0	0.	0	0.	0	0.	3.1E+02
	38	84	5.6E+02	86	2.5E+02	87	1.7E+02	88	1.1E+02	0	0.	0	0.	1.3E+02
	39	89	7.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.8E+01
	40	90	5.3E+01	91	3.6E+01	92	2.5E+01	94	1.1E+01	96	5.4E+00	0	0.	3.7E+01
	41	93	1.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+01
	42	92	2.5E+01	94	1.1E+01	95	7.9E+00	96	5.5E+00	97	3.7E+00	98	2.5E+00	8.0E+00
		100	1.2E+00											
PRODUCT Z= 36	35	79	2.5E+04	81	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.9E+04
PRODUCT A= 75	36	78	3.5E+04	80	1.8E+04	82	8.3E+03	83	5.6E+03	84	3.8E+03	86	1.7E+03	4.5E+03
HALF LIFE= 5.000 M	37	85	2.6E+03	87	1.2E+03	0	0.	0	0.	0	0.	0	0.	2.2E+03
	38	84	3.8E+03	86	1.7E+03	87	1.2E+03	88	7.9E+02	0	0.	0	0.	9.2E+02
	39	89	5.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+02
	40	90	3.6E+02	91	2.5E+02	92	1.7E+02	94	7.8E+01	96	3.6E+01	0	0.	2.6E+02
	41	93	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
	42	92	1.7E+02	94	7.9E+01	95	5.3E+01	96	3.6E+01	97	2.5E+01	98	1.7E+01	5.4E+01
		100	7.9E+00											
PRODUCT Z= 36	35	79	9.0E+04	81	4.6E+04	0	0.	0	0.	0	0.	0	0.	6.8E+04
PRODUCT A= 76	36	78	1.3E+05	80	6.4E+04	82	3.1E+04	83	2.1E+04	84	1.4E+04	86	6.6E+03	1.7E+04
HALF LIFE= 14.800 H	37	85	9.7E+03	87	4.4E+03	0	0.	0	0.	0	0.	0	0.	8.2E+03
	38	84	1.4E+04	86	6.6E+03	87	4.4E+03	88	3.0E+03	0	0.	0	0.	3.5E+03
	39	89	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	40	90	1.4E+03	91	9.3E+02	92	6.3E+02	94	2.9E+02	96	1.3E+02	0	0.	9.7E+02
	41	93	4.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+02
	42	92	6.4E+02	94	2.9E+02	95	2.0E+02	96	1.4E+02	97	9.3E+01	98	6.5E+01	2.0E
		100	3.0E+01											
PRODUCT Z= 36	35	79	5.6E+05	81	2.9E+05	0	0.	0	0.	0	0.	0	0.	4.3E+05
PRODUCT A= 77	36	78	0.	80	4.0E+05	82	2.1E+05	83	1.4E+05	84	9.5E+04	86	4.3E+04	1.1E+05
HALF LIFE= 1.200 H	37	85	6.4E+04	87	3.0E+04	0	0.	0	0.	0	0.	0	0.	5.5E+04
	38	84	9.6E+04	86	4.4E+04	87	3.0E+04	88	2.0E+04	0	0.	0	0.	2.3E+04
	39	89	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	40	90	9.2E+03	91	6.2E+03	92	4.2E+03	94	1.9E+03	96	9.0E+02	0	0.	6.4E+03
	41	93	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
	42	92	4.2E+03	94	1.9E+03	95	1.3E+03	96	9.1E+02	97	6.1E+02	98	4.2E+02	1.3E+03
		100	1.9E+02											
PRODUCT Z= 36	35	79	0.	81	7.7E+05	0	0.	0	0.	0	0.	0	0.	3.9E+05
PRODUCT A= 79	36	78	0.	80	0.	82	5.5E+05	83	3.9E+05	84	2.8E+05	86	1.3E+05	2.9E+05
HALF LIFE= 34.000 H	37	85	1.9E+05	87	8.8E+04	0	0.	0	0.	0	0.	0	0.	1.6E+05
	38	84	2.9E+05	86	1.3E+05	87	8.9E+04	88	6.0E+04	0	0.	0	0.	7.0E+04
	39	89	4.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+04
	40	90	2.8E+04	91	1.9E+04	92	1.3E+04	94	5.7E+03	96	2.6E+03	0	0.	1.9E+04
	41	93	8.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E+03
	42	92	1.3E+04	94	5.8E+03	95	3.9E+03	96	2.6E+03	97	1.8E+03	98	1.2E+03	4.0E+03
		100	5.7E+02											
	44	96	2.7E+03	98	1.3E+03	99	8.4E+02	100	5.8E+02	101	4.0E+02	102	2.7E+02	5.2E+02
		104	1.3E+02											
PRODUCT Z= 36	36	78	0.	80	0.	82	0.	83	4.8E-03	84	3.4E-03	86	1.8E-03	2.8E-03
PRODUCT A= 81	37	85	2.5E-03	87	1.2E-03	0	0.	0	0.	0	0.	0	0.	2.1E-03
HALF LIFE= .210 T	38	84	3.5E-03	86	1.8E-03	87	1.2E-03	88	8.2E-04	0	0.	0	0.	9.5E-04
	39	89	5.5E-04	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E-04
	40	90	3.8E-04	91	2.6E-04	92	1.7E-04	94	7.8E-05	96	3.5E-05	0	0.	2.6E-04
	41	93	1.2E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-04
	42	92	1.7E-04	94	7.9E-05	95	5.3E-05	96	3.6E-05	97	2.4E-05	98	1.6E-05	5.5E-05
		100	7.7E-06											
	44	96	3.6E-05	98	1.7E-05	99	1.1E-05	100	7.8E-06	101	5.2E-06	102	3.6E-06	6.9E-06
		104	1.7E-06											
PRODUCT Z= 36	37	85	0.	87	5.1E-01	0	0.	0	0.	0	0.	0	0.	1.4E-01
PRODUCT A= 85	38	84	0.	86	0.	87	5.1E-01	88	3.6E-01	0	0.	0	0.	3.4E-01
HALF LIFE= 10.800 Y	39	89	2.6E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E-01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 36 A= 85 (CONTINUED)	40	90	1.9E-01	91	1.3E-01	92	8.6E-02	94	3.9E-02	96	1.8E-02	0	0.	1.3E-01
	41	93	5.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E-02
	42	92	8.7E-02	94	4.0E-02	95	2.7E-02	96	1.8E-02	97	1.2E-02	98	8.2E-03	2.8E-02
		100	3.7E-03											
	44	96	1.8E-02	98	8.3E-03	99	5.6E-03	100	3.8E-03	101	2.6E-03	102	1.7E-03	3.4E-03
		104	8.1E-04											
	45	103	1.2E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-03
	46	102	1.8E-03	104	8.2E-04	105	5.5E-04	106	3.8E-04	108	1.8E-04	110	8.2E-05	3.9E-04
PRODUCT Z= 36	40	90	0.	91	5.1E+01	92	3.7E+01	94	1.7E+01	96	7.6E+00	0	0.	1.5E+01
PRODUCT A= 87	41	93	2.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+01
HALF LIFE= 76.000 M	42	92	0.	94	1.7E+01	95	1.1E+01	96	7.7E+00	97	5.3E+00	98	3.5E+00	6.1E+00
		100	1.6E+00											
	44	96	7.8E+00	98	3.5E+00	99	2.4E+00	100	1.6E+00	101	1.1E+00	102	7.3E-01	1.5E+00
		104	3.4E-01											
	45	103	5.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E-01
	46	102	7.4E-01	104	3.4E-01	105	2.3E-01	106	1.6E-01	108	7.4E-02	110	3.4E-02	1.6E-01
	47	107	1.1E-01	109	5.1E-02	0	0.	0	0.	0	0.	0	0.	8.0E-02
PRODUCT Z= 36	40	90	0.	91	0.	92	8.2E+00	94	4.0E+00	96	1.8E+00	0	0.	2.2E+00
PRODUCT A= 88	41	93	5.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+00
HALF LIFE= 2.800 H	42	92	0.	94	4.0E+00	95	2.7E+00	96	1.8E+00	97	1.2E+00	98	8.4E-01	1.4E+00
		100	3.8E-01											
	44	96	1.9E+00	98	8.5E-01	99	5.7E-01	100	3.8E-01	101	2.6E-01	102	1.7E-01	3.5E-01
		104	8.0E-02											
	45	103	1.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-01
	46	102	1.8E-01	104	8.1E-02	105	5.5E-02	106	3.7E-02	108	1.7E-02	110	8.2E-03	3.8E-02
	47	107	2.6E-02	109	1.2E-02	0	0.	0	0.	0	0.	0	0.	1.9E-02
PRODUCT Z= 36	40	90	0.	91	0.	92	0.	94	8.6E-01	96	4.0E-01	0	0.	1.7E-01
PRODUCT A= 89	42	92	0.	94	0.	95	5.9E-01	96	4.0E-01	97	2.7E-01	98	1.8E-01	2.4E-01
HALF LIFE= 3.200 M		100	8.3E-02											
	44	96	0.	98	1.8E-01	99	1.3E-01	100	8.4E-02	101	5.7E-02	102	3.8E-02	5.5E-02
		104	1.7E-02											
	45	103	2.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E-02
	46	102	3.9E-02	104	1.8E-02	105	1.2E-02	106	8.1E-03	108	3.8E-03	110	1.7E-03	8.3E-03
	47	107	5.5E-03	109	2.5E-03	0	0.	0	0.	0	0.	0	0.	4.1E-03
	48	106	8.1E-03	108	3.8E-03	110	1.8E-03	111	1.2E-03	112	8.2E-04	113	5.6E-04	8.8E-04
		114	3.8E-04	116	1.8E-04									
	49	113	5.6E-04	115	2.7E-04	0	0.	0	0.	0	0.	0	0.	2.8E-04
PRODUCT Z= 37	36	78	0.	80	0.	82	2.9E+05	83	2.1E+05	84	1.5E+05	86	6.9E+04	1.5E+05
PRODUCT A= 79	37	85	1.0E+05	87	4.6E+04	0	0.	0	0.	0	0.	0	0.	8.6E+04
HALF LIFE= 21.000 M	38	84	1.5E+05	86	6.9E+04	87	4.7E+04	88	3.2E+04	0	0.	0	0.	3.7E+04
	39	89	2.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+04
	40	90	1.4E+04	91	9.8E+03	92	6.6E+03	94	3.0E+03	96	1.4E+03	0	0.	1.0E+04
	41	93	4.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E+03
	42	92	6.7E+03	94	3.0E+03	95	2.1E+03	96	1.4E+03	97	9.5E+02	98	6.5E+02	2.1E+03
		100	3.0E+02											
	44	96	1.4E+03	98	6.6E+02	99	4.4E+02	100	3.0E+02	101	2.1E+02	102	1.4E+02	2.7E+02
		104	6.6E+01											
PRODUCT Z= 37	36	78	0.	80	0.	82	0.	83	1.8E+06	84	1.3E+06	86	6.6E+05	1.1E+06
PRODUCT A= 81	37	85	9.3E+05	87	4.5E+05	0	0.	0	0.	0	0.	0	0.	8.0E+05
HALF LIFE= 4.700 H	38	84	1.3E+06	86	6.7E+05	87	4.6E+05	88	3.1E+05	0	0.	0	0.	3.6E+05
	39	89	2.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+05
	40	90	1.4E+05	91	9.7E+04	92	6.5E+04	94	2.9E+04	96	1.3E+04	0	0.	1.0E+05
	41	93	4.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+04
	42	92	6.5E+04	94	3.0E+04	95	2.0E+04	96	1.4E+04	97	9.2E+03	98	6.2E+03	2.1E+04
		100	2.9E+03											
	44	96	1.4E+04	98	6.3E+03	99	4.3E+03	100	2.9E+03	101	2.0E+03	102	1.4E+03	2.6E+03
		104	6.3E+02											
PRODUCT Z= 37	36	78	0.	80	0.	82	0.	83	0.	84	1.6E+06	86	7.9E+05	1.0E+06
PRODUCT A= 82	37	85	1.1E+06	87	5.7E+05	0	0.	0	0.	0	0.	0	0.	9.6E+05
HALF LIFE= 75.000 S	38	84	1.6E+06	86	8.0E+05	87	5.7E+05	88	3.9E+05	0	0.	0	0.	4.5E+05
	39	89	2.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+05
	40	90	1.8E+05	91	1.2E+05	92	8.3E+04	94	3.7E+04	96	1.7E+04	0	0.	1.3E+05
	41	93	5.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+04
	42	92	8.4E+04	94	3.8E+04	95	2.5E+04	96	1.7E+04	97	1.2E+04	98	7.9E+03	2.6E+04
		100	3.6E+03											
	44	96	1.7E+04	98	7.9E+03	99	5.4E+03	100	3.7E+03	101	2.5E+03	102	1.7E+03	3.3E+03
		104	8.1E+02											
	45	103	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
PRODUCT Z= 37	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	4.5E+03	8.0E+02
PRODUCT A= 83	37	85	6.3E+03	87	3.2E+03	0	0.	0	0.	0	0.	0	0.	5.4E+03
HALF LIFE= 83.000 D	38	84	0.	86	4.5E+03	87	3.2E+03	88	2.3E+03	0	0.	0	0.	2.6E+03

	TAR GET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 37 A= 83 (CONTINUED)	39	89	1.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+03
	40	90	1.1E+03	91	7.3E+02	92	4.9E+02	94	2.2E+02	96	1.0E+02	0	0.	7.6E+02
	41	93	3.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+02
	42	92	4.9E+02	94	2.2E+02	95	1.5E+02	96	1.0E+02	97	6.9E+01	98	4.7E+01	1.6E+02
		100	2.1E+01											
	44	96	1.0E+02	98	4.7E+01	99	3.2E+01	100	2.2E+01	101	1.5E+01	102	1.0E+01	2.0E+01
		104	4.7E+00											
	45	103	6.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E+00
PRODUCT Z= 37	36	78	0.	80	0.	82	0.	83	0.	84	0.	86	5.9E+03	1.1E+03
PRODUCT A= 84	37	85	0.	87	4.2E+03	0	0.	0	0.	0	0.	0	0.	1.2E+03
HALF LIFE= 33.000 D	38	84	0.	86	6.0E+03	87	4.3E+03	88	3.1E+03	0	0.	0	0.	3.4E+03
	39	89	2.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+03
	40	90	1.5E+03	91	1.0E+03	92	6.8E+02	94	3.1E+02	96	1.4E+02	0	0.	1.1E+03
	41	93	4.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+02
	42	92	6.9E+02	94	3.2E+02	95	2.1E+02	96	1.4E+02	97	9.7E+01	98	6.5E+01	2.2E+02
		100	3.0E+01											
	44	96	1.4E+02	98	6.6E+01	99	4.4E+01	100	3.0E+01	101	2.0E+01	102	1.4E+01	2.7E+01
		104	6.4E+00											
	45	103	9.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	9.6E+00
PRODUCT Z= 37	38	84	0.	86	0.	87	0.	88	8.8E+02	0	0.	0	0.	7.3E+02
PRODUCT A= 86	39	89	6.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E+02
HALF LIFE= 18.700 D	40	90	4.5E+02	91	3.2E+02	92	2.2E+02	94	1.0E+02	96	4.6E+01	0	0.	3.2E+02
	41	93	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
	42	92	2.2E+02	94	1.0E+02	95	6.8E+01	96	4.6E+01	97	3.1E+01	98	2.1E+01	7.0E+01
		100	9.5E+00											
	44	96	4.7E+01	98	2.1E+01	99	1.4E+01	100	9.6E+00	101	6.5E+00	102	4.4E+00	8.7E+00
		104	2.0E+00											
	45	103	3.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+00
	46	102	4.5E+00	104	2.1E+00	105	1.4E+00	106	9.4E-01	108	4.5E-01	110	2.1E-01	9.8E-01
PRODUCT Z= 37	40	90	0.	91	8.5E+02	92	6.0E+02	94	2.9E+02	96	1.3E+02	0	0.	2.6E+02
PRODUCT A= 88	41	93	4.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+02
HALF LIFE= 18.000 M	42	92	0.	94	3.0E+02	95	2.0E+02	96	1.4E+02	97	9.1E+01	98	6.2E+01	1.1E+02
		100	2.8E+01											
	44	96	1.4E+02	98	6.3E+01	99	4.2E+01	100	2.8E+01	101	1.9E+01	102	1.3E+01	2.6E+01
		104	5.9E+00											
	45	103	8.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E+00
	46	102	1.3E+01	104	6.0E+00	105	4.0E+00	106	2.8E+00	108	1.3E+00	110	6.1E-01	2.8E+00
	47	107	1.9E+00	109	8.7E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
PRODUCT Z= 37	40	90	0.	91	0.	92	1.6E+02	94	8.1E+01	96	3.7E+01	0	0.	4.3E+01
PRODUCT A= 89	41	93	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
HALF LIFE= 15.000 M	42	92	0.	94	8.2E+01	95	5.6E+01	96	3.8E+01	97	2.5E+01	98	1.7E+01	3.0E+01
		100	7.8E+00											
	44	96	3.8E+01	98	1.7E+01	99	1.2E+01	100	7.9E+00	101	5.3E+00	102	3.6E+00	7.1E+00
		104	1.6E+00											
	45	103	2.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+00
	46	102	3.6E+00	104	1.6E+00	105	1.1E+00	106	7.6E-01	108	3.5E-01	110	1.6E-01	7.8E-01
	47	107	5.2E-01	109	2.4E-01	0	0.	0	0.	0	0.	0	0.	3.8E-01
PRODUCT Z= 37	40	90	0.	91	0.	92	0.	94	1.9E+01	96	9.4E+00	0	0.	3.7E+00
PRODUCT A= 90	42	92	0.	94	0.	95	1.4E+01	96	9.5E+00	97	6.4E+00	98	4.3E+00	5.6E+00
HALF LIFE= 2.900 M		100	2.0E+00											
	44	96	0.	98	4.4E+00	99	3.0E+00	100	2.0E+00	101	1.3E+00	102	9.1E-01	1.3E+00
		104	4.1E-01											
	45	103	6.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E-01
	46	102	9.1E-01	104	4.2E-01	105	2.8E-01	106	1.9E-01	108	8.8E-02	110	4.0E-02	2.0E-01
	47	107	1.3E-01	109	6.1E-02	0	0.	0	0.	0	0.	0	0.	9.6E-02
	48	106	1.9E-01	108	8.9E-02	110	4.1E-02	111	2.8E-02	112	2.0E-02	113	1.3E-02	2.1E-02
		114	9.0E-03	116	4.2E-03									
	49	113	1.3E-02	115	6.1E-03	0	0.	0	0.	0	0.	0	0.	6.4E-03
PRODUCT Z= 37	40	90	0.	91	0.	92	0.	94	4.3E+00	96	2.2E+00	0	0.	8.3E-01
PRODUCT A= 91	42	92	0.	94	0.	95	0.	96	2.2E+00	97	1.5E+00	98	1.0E+00	8.0E-01
HALF LIFE= 72.000 S		100	4.6E-01											
	44	96	0.	98	1.0E+00	99	6.9E-01	100	4.6E-01	101	3.2E-01	102	2.1E-01	3.0E-01
		104	9.6E-02											
	45	103	1.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-01
	46	102	2.1E-01	104	9.7E-02	105	6.5E-02	106	4.4E-02	108	2.0E-02	110	9.5E-03	4.5E-02
	47	107	3.0E-02	109	1.4E-02	0	0.	0	0.	0	0.	0	0.	2.2E-02
	48	106	4.4E-02	108	2.0E-02	110	9.6E-03	111	6.4E-03	112	4.4E-03	113	3.1E-03	4.8E-03
		114	2.0E-03	116	9.5E-04									
	49	113	3.1E-03	115	1.4E-03	0	0.	0	0.	0	0.	0	0.	1.5E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 38	37	85	3.1E+04	87	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.6E+04
PRODUCT A= 80	38	84	4.3E+04	86	2.1E+04	87	1.4E+04	88	9.6E+03	0	0.	0	0.	1.1E+04
HALF LIFE= 1.700 H	39	89	6.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E+03
	40	90	4.5E+03	91	3.0E+03	92	2.0E+03	94	9.2E+02	96	4.2E+02	0	0.	3.1E+03
	41	93	1.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+03
	42	92	2.0E+03	94	9.3E+02	95	6.3E+02	96	4.3E+02	97	2.9E+02	98	2.0E+02	6.4E+02
		100	9.0E+01											
	44	96	4.3E+02	98	2.0E+02	99	1.4E+02	100	9.1E+01	101	6.3E+01	102	4.4E+01	8.3E+01
		104	2.0E+01											
	45	103	2.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+01
PRODUCT Z= 38	37	85	1.5E+05	87	7.1E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
PRODUCT A= 81	38	84	2.1E+05	86	1.1E+05	87	7.2E+04	88	4.9E+04	0	0.	0	0.	5.7E+04
HALF LIFE= 29.000 M	39	89	3.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+04
	40	90	2.2E+04	91	1.5E+04	92	1.0E+04	94	4.6E+03	96	2.1E+03	0	0.	1.6E+04
	41	93	6.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+03
	42	92	1.0E+04	94	4.7E+03	95	3.1E+03	96	2.1E+03	97	1.4E+03	98	9.8E+02	3.2E+03
		100	4.6E+02											
	44	96	2.1E+03	98	9.9E+02	99	6.7E+02	100	4.6E+02	101	3.1E+02	102	2.1E+02	4.1E+02
		104	9.9E+01											
	45	103	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
PRODUCT Z= 38	37	85	1.5E+04	87	7.8E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
PRODUCT A= 82	38	84	2.1E+04	86	1.1E+04	87	7.8E+03	88	5.3E+03	0	0.	0	0.	6.1E+03
HALF LIFE= 25.000 D	39	89	3.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+03
	40	90	2.5E+03	91	1.7E+03	92	1.1E+03	94	5.1E+02	96	2.3E+02	0	0.	1.7E+03
	41	93	7.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+02
	42	92	1.1E+03	94	5.1E+02	95	3.5E+02	96	2.3E+02	97	1.6E+02	98	1.1E+02	3.6E+02
		100	5.0E+01											
	44	96	2.4E+02	98	1.1E+02	99	7.3E+01	100	5.0E+01	101	3.4E+01	102	2.3E+01	4.5E+01
		104	1.1E+01											
	45	103	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 38	37	85	6.3E+05	87	3.2E+05	0	0.	0	0.	0	0.	0	0.	5.5E+05
PRODUCT A= 83	38	84	0.	86	4.6E+05	87	3.3E+05	88	2.3E+05	0	0.	0	0.	2.6E+05
HALF LIFE= 33.000 H	39	89	1.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+05
	40	90	1.1E+05	91	7.3E+04	92	4.9E+04	94	2.2E+04	96	1.0E+04	0	0.	7.6E+04
	41	93	3.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+04
	42	92	5.0E+04	94	2.3E+04	95	1.5E+04	96	1.0E+04	97	6.9E+03	98	4.7E+03	1.6E+04
		100	2.2E+03											
	44	96	1.0E+04	98	4.7E+03	99	3.2E+03	100	2.2E+03	101	1.5E+03	102	1.0E+03	2.0E+03
		104	4.7E+02											
	45	103	6.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+02
PRODUCT Z= 38	37	85	0.	87	1.1E+04	0	0.	0	0.	0	0.	0	0.	3.1E+03
PRODUCT A= 85	38	84	0.	86	0.	87	1.1E+04	88	7.9E+03	0	0.	0	0.	7.3E+03
HALF LIFE= 65.000 D	39	89	5.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+03
	40	90	4.1E+03	91	2.8E+03	92	1.9E+03	94	8.5E+02	96	3.9E+02	0	0.	2.9E+03
	41	93	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	42	92	1.9E+03	94	8.6E+02	95	5.9E+02	96	3.9E+02	97	2.6E+02	98	1.8E+02	6.0E+02
		100	8.1E+01											
	44	96	4.0E+02	98	1.8E+02	99	1.2E+02	100	8.2E+01	101	5.6E+01	102	3.8E+01	7.4E+01
		104	1.8E+01											
	45	103	2.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+01
	46	102	3.8E+01	104	1.8E+01	105	1.2E+01	106	8.2E+00	108	3.8E+00	110	1.8E+00	8.4E+00
PRODUCT Z= 38	40	90	0.	91	1.5E+02	92	1.1E+02	94	5.4E+01	96	2.5E+01	0	0.	4.5E+01
PRODUCT A= 89	41	93	7.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E+01
HALF LIFE= 50.600 D	42	92	0.	94	5.4E+01	95	3.7E+01	96	2.5E+01	97	1.7E+01	98	1.1E+01	2.0E+01
		100	5.2E+00											
	44	96	2.5E+01	98	1.1E+01	99	7.8E+00	100	5.2E+00	101	3.5E+00	102	2.4E+00	4.7E+00
		104	1.1E+00											
	45	103	1.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+00
	46	102	2.4E+00	104	1.1E+00	105	7.4E-01	106	5.0E-01	108	2.3E-01	110	1.1E-01	5.1E-01
	47	107	3.4E-01	109	1.6E-01	0	0.	0	0.	0	0.	0	0.	2.5E-01
PRODUCT Z= 38	40	90	0.	91	0.	92	1.6E-01	94	8.1E-02	96	3.9E-02	0	0.	4.3E-02
PRODUCT A= 90	41	93	1.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E-01
HALF LIFE= 28.800 Y	42	92	0.	94	8.2E-02	95	5.8E-02	96	4.0E-02	97	2.7E-02	98	1.8E-02	3.1E-02
		100	8.3E-03											
	44	96	4.0E-02	98	1.8E-02	99	1.2E-02	100	8.4E-03	101	5.6E-03	102	3.8E-03	7.5E-03
		104	1.7E-03											
	45	103	2.6E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E-03
	46	102	3.8E-03	104	1.7E-03	105	1.2E-03	106	8.0E-04	108	3.7E-04	110	1.7E-04	8.2E-04
	47	107	5.4E-04	109	2.5E-04	0	0.	0	0.	0	0.	0	0.	4.0E-04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 38	40	90	0.	91	0.	92	0.	94	2.8E+02	96	1.4E+02	0	0.	5.5E+01
PRODUCT A= 91	42	92	0.	94	0.	95	2.0E+02	96	1.5E+02	97	9.9E+01	98	6.7E+01	8.5E+01
HALF LIFE= 9.700 H		100	3.0E+01											
	44	96	0.	98	6.8E+01	99	4.6E+01	100	3.1E+01	101	2.1E+01	102	1.4E+01	2.0E+01
		104	6.4E+00											
	45	103	9.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E+00
	46	102	1.4E+01	104	6.4E+00	105	4.3E+00	106	2.9E+00	108	1.3E+00	110	6.3E-01	3.0E+00
	47	107	2.0E+00	109	9.2E-01	0	0.	0	0.	0	0.	0	0.	1.5E+00
	48	106	2.9E+00	108	1.4E+00	110	6.4E-01	111	4.2E-01	112	2.9E-01	113	2.0E-01	3.2E-01
		114	1.4E-01	116	6.3E-02									
	49	113	2.0E-01	115	9.4E-02	0	0.	0	0.	0	0.	0	0.	9.9E-02
PRODUCT Z= 38	40	90	0.	91	0.	92	0.	94	8.8E+01	96	4.5E+01	0	0.	1.7E+01
PRODUCT A= 92	42	92	0.	94	0.	95	0.	96	4.5E+01	97	3.2E+01	98	2.2E+01	1.7E+01
HALF LIFE= 2.700 H		100	1.0E+01											
	44	96	0.	98	2.2E+01	99	1.5E+01	100	1.0E+01	101	6.8E+00	102	4.6E+00	6.6E+00
		104	2.1E+00											
	45	103	3.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+00
	46	102	4.7E+00	104	2.1E+00	105	1.4E+00	106	9.6E-01	108	4.4E-01	110	2.0E-01	9.9E-01
	47	107	6.5E-01	109	3.0E-01	0	0.	0	0.	0	0.	0	0.	4.8E-01
	48	106	9.7E-01	108	4.4E-01	110	2.0E-01	111	1.4E-01	112	9.4E-02	113	6.5E-02	1.0E-01
		114	4.5E-02	116	2.1E-02									
	49	113	6.5E-02	115	3.0E-02	0	0.	0	0.	0	0.	0	0.	3.2E-02
PRODUCT Z= 38	40	90	0.	91	0.	92	0.	94	0.	96	1.0E+01	0	0.	3.1E-01
PRODUCT A= 93	42	92	0.	94	0.	95	0.	96	0.	97	7.5E+00	98	5.4E+00	2.3E+00
HALF LIFE= 8.300 M		100	2.5E+00											
	44	96	0.	98	0.	99	3.7E+00	100	2.5E+00	101	1.7E+00	102	1.1E+00	1.5E+00
		104	5.2E-01											
	45	103	7.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.8E-01
	46	102	1.2E+00	104	5.2E-01	105	3.5E-01	106	2.4E-01	108	1.1E-01	110	5.0E-02	2.4E-01
	47	107	1.6E-01	109	7.4E-02	0	0.	0	0.	0	0.	0	0.	1.2E-01
	48	106	2.4E-01	108	1.1E-01	110	5.0E-02	111	3.4E-02	112	2.4E-02	113	1.6E-02	2.5E-02
		114	1.1E-02	116	5.0E-03									
	49	113	1.6E-02	115	7.6E-03	0	0.	0	0.	0	0.	0	0.	7.9E-03
	50	112	2.4E-02	114	1.1E-02	115	7.6E-03	116	5.1E-03	117	3.5E-03	118	2.4E-03	2.4E-03
		119	1.6E-03	120	1.1E-03	122	5.4E-04	124	2.6E-04					
PRODUCT Z= 38	40	90	0.	91	0.	92	0.	94	0.	96	2.3E+00	0	0.	6.6E-02
PRODUCT A= 94	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	1.2E+00	3.4E-01
HALF LIFE= 1.200 M		100	5.6E-01											
	44	96	0.	98	0.	99	0.	100	5.7E-01	101	3.9E-01	102	2.6E-01	2.4E-01
		104	1.2E-01											
	45	103	1.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-01
	46	102	2.6E-01	104	1.2E-01	105	8.0E-02	106	5.4E-02	108	2.5E-02	110	1.1E-02	5.6E-02
	47	107	3.7E-02	109	1.7E-02	0	0.	0	0.	0	0.	0	0.	2.7E-02
	48	106	5.5E-02	108	2.5E-02	110	1.1E-02	111	7.7E-03	112	5.3E-03	113	3.6E-03	5.7E-03
		114	2.4E-03	116	1.2E-03									
	49	113	3.6E-03	115	1.7E-03	0	0.	0	0.	0	0.	0	0.	1.8E-03
	50	112	5.3E-03	114	2.4E-03	115	1.7E-03	116	1.2E-03	117	7.8E-04	118	5.4E-04	5.4E-04
		119	3.6E-04	120	2.5E-04	122	1.2E-04	124	5.7E-05					
PRODUCT Z= 39	38	84	5.5E+04	86	2.8E+04	87	2.0E+04	88	1.4E+04	0	0.	0	0.	1.6E+04
PRODUCT A= 82	39	89	9.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.3E+03
HALF LIFE= 9.000 M	40	90	6.3E+03	91	4.3E+03	92	2.9E+03	94	1.3E+03	96	6.0E+02	0	0.	4.4E+03
	41	93	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	42	92	2.9E+03	94	1.3E+03	95	8.9E+02	96	6.0E+02	97	4.1E+02	98	2.8E+02	9.2E+02
		100	1.3E+02											
	44	96	6.1E+02	98	2.8E+02	99	1.9E+02	100	1.3E+02	101	8.9E+01	102	5.9E+01	1.2E+02
		104	2.8E+01											
	45	103	4.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+01
PRODUCT Z= 39	38	84	0.	86	1.4E+05	87	1.0E+05	88	7.2E+04	0	0.	0	0.	8.0E+04
PRODUCT A= 83	39	89	4.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+04
HALF LIFE= 7.400 M	40	90	3.4E+04	91	2.3E+04	92	1.5E+04	94	6.9E+03	96	3.2E+03	0	0.	2.4E+04
	41	93	1.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+04
	42	92	1.5E+04	94	7.0E+03	95	4.7E+03	96	3.2E+03	97	2.1E+03	98	1.4E+03	4.8E+03
		100	6.7E+02											
	44	96	3.2E+03	98	1.5E+03	99	1.0E+03	100	6.7E+02	101	4.6E+02	102	3.2E+02	6.1E+02
		104	1.5E+02											
	45	103	2.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+02
PRODUCT Z= 39	38	84	0.	86	5.7E+05	87	4.1E+05	88	2.9E+05	0	0.	0	0.	3.3E+05
PRODUCT A= 84	39	89	2.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+05
HALF LIFE= 42.000 M	40	90	1.4E+05	91	9.7E+04	92	6.5E+04	94	3.0E+04	96	1.4E+04	0	0.	1.0E+05
	41	93	4.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+04
	42	92	6.6E+04	94	3.0E+04	95	2.0E+04	96	1.4E+04	97	9.2E+03	98	6.2E+03	2.1E+04
		100	2.9E+03											
	44	96	1.4E+04	98	6.3E+03	99	4.2E+03	100	2.9E+03	101	2.0E+03	102	1.3E+03	2.6E+03
		104	6.1E+02											
	45	103	9.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+02

TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 39	38	84	0.	86	0.	87	1.3E+06	88	8.9E+05	0	0.	0	0.	8.3E+05
PRODUCT A= 85	39	89	6.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+05
HALF LIFE= 5.000 H	40	90	4.6E+05	91	3.1E+05	92	2.1E+05	94	9.6E+04	96	4.4E+04	0	0.	3.2E+05
	41	93	1.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+05
	42	92	2.1E+05	94	9.8E+04	95	6.6E+04	96	4.4E+04	97	3.0E+04	98	2.0E+04	6.8E+04
		100	9.2E+03											
	44	96	4.5E+04	98	2.0E+04	99	1.4E+04	100	9.3E+03	101	6.3E+03	102	4.3E+03	8.4E+03
		104	2.0E+03											
	45	103	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
	46	102	4.3E+03	104	2.0E+03	105	1.3E+03	106	9.3E+02	108	4.3E+02	110	2.0E+02	9.5E+02
PRODUCT Z= 39	38	84	0.	86	0.	87	0.	88	1.4E+06	0	0.	0	0.	1.1E+06
PRODUCT A= 86	39	89	9.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+05
HALF LIFE= 15.000 H	40	90	7.1E+05	91	5.1E+05	92	3.4E+05	94	1.6E+05	96	7.2E+04	0	0.	5.1E+05
	41	93	2.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+05
	42	92	3.5E+05	94	1.6E+05	95	1.1E+05	96	7.3E+04	97	4.9E+04	98	3.3E+04	1.1E+05
		100	1.5E+04											
	44	96	7.4E+04	98	3.3E+04	99	2.2E+04	100	1.5E+04	101	1.0E+04	102	6.9E+03	1.4E+04
		104	3.2E+03											
	45	103	4.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+03
	46	102	7.0E+03	104	3.2E+03	105	2.2E+03	106	1.5E+03	108	7.1E+02	110	3.3E+02	1.5E+03
PRODUCT Z= 39	39	89	2.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+05
PRODUCT A= 87	40	90	1.9E+05	91	1.3E+05	92	9.5E+04	94	4.4E+04	96	2.0E+04	0	0.	1.3E+05
HALF LIFE= 80.000 H	41	93	6.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E+04
	42	92	9.6E+04	94	4.4E+04	95	3.0E+04	96	2.0E+04	97	1.4E+04	98	9.1E+03	3.0E+04
		100	4.1E+03											
	44	96	2.0E+04	98	9.2E+03	99	6.2E+03	100	4.2E+03	101	2.8E+03	102	1.9E+03	3.8E+03
		104	8.7E+02											
	45	103	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	46	102	1.9E+03	104	8.8E+02	105	6.0E+02	106	4.1E+02	108	1.9E+02	110	8.9E+01	4.2E+02
PRODUCT Z= 39	40	90	4.1E+03	91	3.0E+03	92	2.1E+03	94	1.0E+03	96	4.7E+02	0	0.	3.0E+03
PRODUCT A= 88	41	93	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
HALF LIFE= 107.000 D	42	92	2.1E+03	94	1.0E+03	95	7.0E+02	96	4.7E+02	97	3.2E+02	98	2.2E+02	7.0E+02
		100	9.8E+01											
	44	96	4.8E+02	98	2.2E+02	99	1.5E+02	100	9.9E+01	101	6.7E+01	102	4.5E+01	8.9E+01
		104	2.1E+01											
	45	103	3.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+01
	46	102	4.5E+01	104	2.1E+01	105	1.4E+01	106	9.6E+00	108	4.4E+00	110	2.1E+00	9.8E+00
	47	107	6.6E+00	109	3.1E+00	0	0.	0	0.	0	0.	0	0.	4.9E+00
PRODUCT Z= 39	40	90	0.	91	0.	92	1.7E+04	94	8.6E+03	96	4.2E+03	0	0.	4.6E+03
PRODUCT A= 90	41	93	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
HALF LIFE= 64.200 H	42	92	0.	94	8.7E+03	95	6.2E+03	96	4.2E+03	97	2.9E+03	98	1.9E+03	3.3E+03
		100	8.9E+02											
	44	96	4.3E+03	98	2.0E+03	99	1.3E+03	100	9.0E+02	101	6.0E+02	102	4.0E+02	8.0E+02
		104	1.8E+02											
	45	103	2.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+02
	46	102	4.1E+02	104	1.9E+02	105	1.3E+02	106	8.5E+01	108	3.9E+01	110	1.8E+01	8.7E+01
	47	107	5.8E+01	109	2.7E+01	0	0.	0	0.	0	0.	0	0.	4.3E+01
PRODUCT Z= 39	40	90	0.	91	0.	92	0.	94	1.7E+02	96	8.5E+01	0	0.	3.3E+01
PRODUCT A= 91	41	93	2.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+02
HALF LIFE= 59.000 D	42	92	0.	94	1.7E+02	95	1.2E+02	96	8.6E+01	97	5.9E+01	98	4.0E+01	6.5E+01
		100	1.8E+01											
	44	96	8.7E+01	98	4.0E+01	99	2.7E+01	100	1.8E+01	101	1.2E+01	102	8.3E+00	1.6E+01
		104	3.8E+00											
	45	103	5.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+00
	46	102	8.4E+00	104	3.8E+00	105	2.6E+00	106	1.7E+00	108	8.0E-01	110	3.7E-01	1.8E+00
	47	107	1.2E+00	109	5.5E-01	0	0.	0	0.	0	0.	0	0.	8.7E-01
PRODUCT Z= 39	40	90	0.	91	0.	92	0.	94	4.7E+03	96	2.4E+03	0	0.	9.2E+02
PRODUCT A= 92	42	92	0.	94	0.	95	3.4E+03	96	2.4E+03	97	1.7E+03	98	1.2E+03	1.4E+03
HALF LIFE= 3.530 H		100	5.4E+02											
	44	96	0.	98	1.2E+03	99	8.1E+02	100	5.5E+02	101	3.7E+02	102	2.5E+02	3.6E+02
		104	1.1E+02											
	45	103	1.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+02
	46	102	2.5E+02	104	1.1E+02	105	7.7E+01	106	5.2E+01	108	2.4E+01	110	1.1E+01	5.3E+01
	47	107	3.5E+01	109	1.6E+01	0	0.	0	0.	0	0.	0	0.	2.6E+01
	48	106	5.2E+01	108	2.4E+01	110	1.1E+01	111	7.6E+00	112	5.1E+00	113	3.5E+00	5.6E+00
		114	2.4E+00	116	1.1E+00									
	49	113	3.5E+00	115	1.6E+00	0	0.	0	0.	0	0.	0	0.	1.7E+00
PRODUCT Z= 39	40	90	0.	91	0.	92	0.	94	0.	96	5.9E+02	0	0.	1.7E+01
PRODUCT A= 93	42	92	0.	94	0.	95	0.	96	6.0E+02	97	4.3E+02	98	3.0E+02	2.3E+02
HALF LIFE= 10.100 H		100	1.4E+02											
	44	96	0.	98	3.1E+02	99	2.1E+02	100	1.4E+02	101	9.5E+01	102	6.4E+01	9.2E+01
		104	2.9E+01											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 39 A= 93 (CONTINUED)	45	103	4.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+01
	46	102	6.5E+01	104	3.0E+01	105	2.0E+01	106	1.3E+01	108	6.1E+00	110	2.8E+00	1.4E+01
	47	107	9.1E+00	109	4.2E+00	0	0.	0	0.	0	0.	0	0.	6.7E+00
	48	106	1.4E+01	108	6.2E+00	110	2.8E+00	111	1.9E+00	112	1.3E+00	113	8.9E-01	1.4E+00
		114	6.1E-01	116	2.8E-01									
	49	113	8.9E-01	115	4.3E-01	0	0.	0	0.	0	0.	0	0.	4.5E-01
PRODUCT Z= 39	40	90	0.	91	0.	92	0.	94	0.	96	2.0E+02	0	0.	5.8E+00
PRODUCT A= 94	42	92	0.	94	0.	95	0.	96	0.	97	1.4E+02	98	1.0E+02	4.4E+01
HALF LIFE= 20.000 M		100	5.0E+01											
	44	96	0.	98	0.	99	7.4E+01	100	5.0E+01	101	3.4E+01	102	2.3E+01	3.1E+01
		104	1.1E+01											
	45	103	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	46	102	2.3E+01	104	1.1E+01	105	7.1E+00	106	4.8E+00	108	2.2E+00	110	1.0E+00	4.9E+00
	47	107	3.2E+00	109	1.5E+00	0	0.	0	0.	0	0.	0	0.	2.4E+00
	48	106	4.8E+00	108	2.2E+00	110	1.0E+00	111	6.8E-01	112	4.6E-01	113	3.2E-01	5.0E-01
		114	2.1E-01	116	1.0E-01									
	49	113	3.2E-01	115	1.5E-01	0	0.	0	0.	0	0.	0	0.	1.5E-01
	50	112	4.7E-01	114	2.1E-01	115	1.5E-01	116	1.0E-01	117	6.9E-02	118	4.7E-02	4.8E-02
		119	3.2E-02	120	2.2E-02	122	1.1E-02	124	5.1E-03					
PRODUCT Z= 39	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	2.5E+01	7.5E+00
PRODUCT A= 95		100	1.3E+01											
HALF LIFE= 11.000 M	44	96	0.	98	0.	99	0.	100	1.3E+01	101	8.9E+00	102	6.0E+00	5.6E+00
		104	2.7E+00											
	45	103	4.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+00
	46	102	6.1E+00	104	2.8E+00	105	1.9E+00	106	1.3E+00	108	5.7E-01	110	2.6E-01	1.3E+00
	47	107	8.5E-01	109	3.9E-01	0	0.	0	0.	0	0.	0	0.	6.3E-01
	48	106	1.3E+00	108	5.8E-01	110	2.6E-01	111	1.8E-01	112	1.2E-01	113	8.2E-02	1.3E-01
		114	5.7E-02	116	2.6E-02									
	49	113	8.3E-02	115	3.8E-02	0	0.	0	0.	0	0.	0	0.	4.0E-02
	50	112	1.2E-01	114	5.7E-02	115	3.8E-02	116	2.6E-02	117	1.8E-02	118	1.2E-02	1.2E-02
		119	8.4E-03	120	5.7E-03	122	2.7E-03	124	1.3E-03					
PRODUCT Z= 39	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	3.0E-01
PRODUCT A= 96		100	3.0E+00											
HALF LIFE= 2.300 M	44	96	0.	98	0.	99	0.	100	0.	101	2.1E+00	102	1.5E+00	9.6E-01
		104	6.6E-01											
	45	103	9.9E-01	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E-01
	46	102	0.	104	6.7E-01	105	4.5E-01	106	3.1E-01	108	1.4E-01	110	6.3E-02	3.0E-01
	47	107	2.1E-01	109	9.4E-02	0	0.	0	0.	0	0.	0	0.	1.5E-01
	48	106	3.1E-01	108	1.4E-01	110	6.3E-02	111	4.3E-02	112	2.9E-02	113	2.0E-02	3.2E-02
		114	1.3E-02	116	6.2E-03									
	49	113	2.0E-02	115	9.3E-03	0	0.	0	0.	0	0.	0	0.	9.7E-03
	50	112	2.9E-02	114	1.4E-02	115	9.3E-03	116	6.2E-03	117	4.3E-03	118	3.0E-03	3.0E-03
		119	2.0E-03	120	1.4E-03	122	6.5E-04	124	3.1E-04					
PRODUCT Z= 40	39	89	2.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+01
PRODUCT A= 81	40	90	1.9E+01	91	1.3E+01	92	8.6E+00	94	3.9E+00	96	1.8E+00	0	0.	1.3E+01
HALF LIFE= 11.000 M	41	93	5.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+00
	42	92	8.7E+00	94	3.9E+00	95	2.7E+00	96	1.8E+00	97	1.2E+00	98	8.2E-01	2.7E+00
		100	3.9E-01											
	44	96	1.8E+00	98	8.3E-01	99	5.7E-01	100	3.9E-01	101	2.6E-01	102	1.8E-01	3.5E-01
		104	8.4E-02											
	45	103	1.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-01
	46	102	1.8E-01	104	8.5E-02	105	5.8E-02	106	3.9E-02	108	1.9E-02	110	9.0E-03	4.0E-02
PRODUCT Z= 40	39	89	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+02
PRODUCT A= 82	40	90	1.7E+02	91	1.2E+02	92	7.9E+01	94	3.5E+01	96	1.6E+01	0	0.	1.2E+02
HALF LIFE= 7.500 M	41	93	5.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+01
	42	92	8.0E+01	94	3.6E+01	95	2.4E+01	96	1.6E+01	97	1.1E+01	98	7.5E+00	2.5E+01
		100	3.5E+00											
	44	96	1.6E+01	98	7.6E+00	99	5.1E+00	100	3.5E+00	101	2.4E+00	102	1.6E+00	3.1E+00
		104	7.7E-01											
	45	103	1.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+00
	46	102	1.6E+00	104	7.8E-01	105	5.2E-01	106	3.6E-01	108	1.7E-01	110	7.9E-02	3.6E-01
PRODUCT Z= 40	39	89	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
PRODUCT A= 83	40	90	1.3E+03	91	9.0E+02	92	6.1E+02	94	2.8E+02	96	1.3E+02	0	0.	9.4E+02
HALF LIFE= 7.000 M	41	93	4.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+02
	42	92	6.1E+02	94	2.8E+02	95	1.9E+02	96	1.3E+02	97	8.6E+01	98	5.8E+01	1.9E+02
		100	2.7E+01											
	44	96	1.3E+02	98	5.8E+01	99	4.0E+01	100	2.7E+01	101	1.8E+01	102	1.3E+01	2.4E+01
		104	5.8E+00											
	45	103	8.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E+00
	46	102	1.3E+01	104	5.9E+00	105	4.1E+00	106	2.7E+00	108	1.3E+00	110	6.1E-01	2.8E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 40	39	89	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04
PRODUCT A= 84	40	90	8.8E+03	91	6.0E+03	92	4.0E+03	94	1.8E+03	96	8.3E+02	0	0.	6.2E+03
HALF LIFE= 16.000 M	41	93	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+03
	42	92	4.1E+03	94	1.9E+03	95	1.2E+03	96	8.4E+02	97	5.7E+02	98	3.8E+02	1.3E+03
		100	1.8E+02											
	44	96	8.5E+02	98	3.9E+02	99	2.6E+02	100	1.8E+02	101	1.2E+02	102	8.2E+01	1.6E+02
		104	3.8E+01											
	45	103	5.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+01
	46	102	8.3E+01	104	3.8E+01	105	2.6E+01	106	1.8E+01	108	8.3E+00	110	3.9E+00	1.8E+01
PRODUCT Z= 40	39	89	6.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+04
PRODUCT A= 85	40	90	4.8E+04	91	3.3E+04	92	2.2E+04	94	1.0E+04	96	4.6E+03	0	0.	3.4E+04
HALF LIFE= 6.000 M	41	93	1.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+04
	42	92	2.3E+04	94	1.0E+04	95	7.0E+03	96	4.7E+03	97	3.1E+03	98	2.1E+03	7.1E+03
		100	9.6E+02											
	44	96	4.7E+03	98	2.1E+03	99	1.4E+03	100	9.7E+02	101	6.6E+02	102	4.5E+02	8.8E+02
		104	2.1E+02											
	45	103	3.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+02
	46	102	4.5E+02	104	2.1E+02	105	1.4E+02	106	9.8E+01	108	4.5E+01	110	2.1E+01	1.0E+02
PRODUCT Z= 40	39	89	1.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+05
PRODUCT A= 86	40	90	1.3E+05	91	9.5E+04	92	6.5E+04	94	2.9E+04	96	1.4E+04	0	0.	9.5E+04
HALF LIFE= 16.500 H	41	93	4.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+04
	42	92	6.5E+04	94	3.0E+04	95	2.0E+04	96	1.4E+04	97	9.1E+03	98	6.1E+03	2.1E+04
		100	2.8E+03											
	44	96	1.4E+04	98	6.2E+03	99	4.2E+03	100	2.8E+03	101	1.9E+03	102	1.3E+03	2.6E+03
		104	6.0E+02											
	45	103	8.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E+02
	46	102	1.3E+03	104	6.0E+02	105	4.2E+02	106	2.8E+02	108	1.3E+02	110	6.1E+01	2.9E+02
PRODUCT Z= 40	39	89	1.0E+06	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+06
PRODUCT A= 87	40	90	7.2E+05	91	5.1E+05	92	3.7E+05	94	1.7E+05	96	7.7E+04	0	0.	5.2E+05
HALF LIFE= 1.600 H	41	93	2.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+05
	42	92	3.7E+05	94	1.7E+05	95	1.2E+05	96	7.8E+04	97	5.3E+04	98	3.5E+04	1.2E+05
		100	1.6E+04											
	44	96	7.9E+04	98	3.6E+04	99	2.4E+04	100	1.6E+04	101	1.1E+04	102	7.4E+03	1.5E+04
		104	3.4E+03											
	45	103	5.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E+03
	46	102	7.5E+03	104	3.4E+03	105	2.3E+03	106	1.6E+03	108	7.4E+02	110	3.4E+02	1.6E+03
PRODUCT Z= 40	40	90	1.5E+04	91	1.1E+04	92	7.7E+03	94	3.7E+03	96	1.7E+03	0	0.	1.1E+04
PRODUCT A= 88	41	93	5.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E+03
HALF LIFE= 85.000 D	42	92	7.8E+03	94	3.8E+03	95	2.6E+03	96	1.7E+03	97	1.2E+03	98	7.9E+02	2.5E+03
		100	3.6E+02											
	44	96	1.7E+03	98	8.0E+02	99	5.3E+02	100	3.6E+02	101	2.4E+02	102	1.6E+02	3.3E+02
		104	7.5E+01											
	45	103	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
	46	102	1.7E+02	104	7.6E+01	105	5.1E+01	106	3.5E+01	108	1.6E+01	110	7.7E+00	3.6E+01
	47	107	2.4E+01	109	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.8E+01
PRODUCT Z= 40	40	90	0.	91	3.3E+05	92	2.4E+05	94	1.2E+05	96	5.5E+04	0	0.	1.0E+05
PRODUCT A= 89	41	93	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
HALF LIFE= 78.400 H	42	92	2.4E+05	94	1.2E+05	95	8.3E+04	96	5.6E+04	97	3.8E+04	98	2.5E+04	8.0E+04
		100	1.2E+04											
	44	96	5.7E+04	98	2.6E+04	99	1.8E+04	100	1.2E+04	101	7.9E+03	102	5.3E+03	1.1E+04
		104	2.4E+03											
	45	103	3.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+03
	46	102	5.4E+03	104	2.4E+03	105	1.7E+03	106	1.1E+03	108	5.3E+02	110	2.4E+02	1.2E+03
	47	107	7.7E+02	109	3.5E+02	0	0.	0	0.	0	0.	0	0.	5.7E+02
PRODUCT Z= 40	40	90	0.	91	0.	92	0.	94	0.	96	5.2E-05	0	0.	1.5E-06
PRODUCT A= 93	42	92	0.	94	0.	95	7.3E-05	96	5.2E-05	97	3.7E-05	98	2.7E-05	3.1E-05
HALF LIFE= .950 T		100	1.2E-05											
	44	96	0.	98	2.7E-05	99	1.8E-05	100	1.2E-05	101	8.4E-06	102	5.7E-06	8.1E-06
		104	2.6E-06											
	45	103	3.9E-06	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E-06
	46	102	5.7E-06	104	2.6E-06	105	1.7E-06	106	1.2E-06	108	5.4E-07	110	2.5E-07	1.2E-06
	47	107	8.0E-07	109	3.7E-07	0	0.	0	0.	0	0.	0	0.	5.9E-07
	48	106	1.2E-06	108	5.4E-07	110	2.5E-07	111	1.7E-07	112	1.2E-07	113	7.8E-08	1.3E-07
		114	5.4E-08	116	2.5E-08									
	49	113	7.8E-08	115	3.8E-08	0	0.	0	0.	0	0.	0	0.	3.9E-08
PRODUCT Z= 40	42	92	0.	94	0.	95	0.	96	0.	97	2.3E+01	98	1.6E+01	7.0E+00
PRODUCT A= 95		100	8.3E+00											
HALF LIFE= 65.000 D	44	96	0.	98	0.	99	1.2E+01	100	8.4E+00	101	5.7E+00	102	3.9E+00	5.1E+00
		104	1.8E+00											
	45	103	2.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+00
	46	102	3.9E+00	104	1.8E+00	105	1.2E+00	106	8.0E-01	108	3.7E-01	110	1.7E-01	8.3E-01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 40 A= 95 (CONTINUED)	47	107	5.4E-01	109	2.5E-01	0	0.	0	0.	0	0.	0	0.	4.0E-01
	48	106	8.1E-01	108	3.7E-01	110	1.7E-01	111	1.1E-01	112	7.7E-02	113	5.3E-02	8.4E-02
		114	3.6E-02	116	1.7E-02									
	49	113	5.3E-02	115	2.4E-02	0	0.	0	0.	0	0.	0	0.	2.6E-02
	50	112	7.8E-02	114	3.7E-02	115	2.4E-02	116	1.7E-02	117	1.2E-02	118	7.8E-03	7.9E-03
		119	5.4E-03	120	3.6E-03	122	1.8E-03	124	8.4E-04					
PRODUCT Z= 40	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	3.7E+00
PRODUCT A= 97		100	3.7E+01											
HALF LIFE= 17.000 H	44	96	0.	98	0.	99	0.	100	0.	101	2.7E+01	102	1.9E+01	1.2E+01
		104	8.9E+00											
	45	103	1.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+01
	46	102	0.	104	8.9E+00	105	6.0E+00	106	4.1E+00	108	1.8E+00	110	8.4E-01	4.0E+00
	47	107	2.8E+00	109	1.2E+00	0	0.	0	0.	0	0.	0	0.	2.0E+00
	48	106	4.1E+00	108	1.9E+00	110	8.5E-01	111	5.7E-01	112	3.8E-01	113	2.6E-01	4.2E-01
		114	1.8E-01	116	8.3E-02									
	49	113	2.6E-01	115	1.2E-01	0	0.	0	0.	0	0.	0	0.	1.3E-01
	50	112	3.9E-01	114	1.8E-01	115	1.2E-01	116	8.4E-02	117	5.6E-02	118	3.9E-02	3.9E-02
		119	2.7E-02	120	1.8E-02	122	8.3E-03	124	4.0E-03					
PRODUCT Z= 41	40	90	2.8E+05	91	2.0E+05	92	1.4E+05	94	7.0E+04	96	3.2E+04	0	0.	2.0E+05
PRODUCT A= 88	41	93	1.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+05
HALF LIFE= 21.000 M	42	92	1.5E+05	94	7.1E+04	95	4.8E+04	96	3.2E+04	97	2.2E+04	98	1.5E+04	4.7E+04
		100	6.6E+03											
	44	96	3.2E+04	98	1.5E+04	99	9.9E+03	100	6.7E+03	101	4.5E+03	102	3.0E+03	6.1E+03
		104	1.4E+03											
	45	103	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03
	46	102	3.1E+03	104	1.4E+03	105	9.6E+02	106	6.5E+02	108	3.0E+02	110	1.4E+02	6.7E+02
	47	107	4.5E+02	109	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.3E+02
PRODUCT Z= 41	40	90	0.	91	7.5E+05	92	5.3E+05	94	2.7E+05	96	1.3E+05	0	0.	2.3E+05
PRODUCT A= 89	41	93	3.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+05
HALF LIFE= 1.900 H	42	92	5.4E+05	94	2.7E+05	95	1.9E+05	96	1.3E+05	97	8.5E+04	98	5.7E+04	1.8E+05
		100	2.6E+04											
	44	96	1.3E+05	98	5.8E+04	99	4.0E+04	100	2.6E+04	101	1.8E+04	102	1.2E+04	2.4E+04
		104	5.5E+03											
	45	103	8.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.1E+03
	46	102	1.2E+04	104	5.5E+03	105	3.8E+03	106	2.5E+03	108	1.2E+03	110	5.5E+02	2.6E+03
	47	107	1.7E+03	109	8.0E+02	0	0.	0	0.	0	0.	0	0.	1.3E+03
PRODUCT Z= 41	40	90	0.	91	0.	92	1.0E+06	94	5.3E+05	96	2.6E+05	0	0.	2.8E+05
PRODUCT A= 90	41	93	7.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E+05
HALF LIFE= 14.600 H	42	92	1.1E+06	94	5.4E+05	95	3.9E+05	96	2.6E+05	97	1.8E+05	98	1.2E+05	3.6E+05
		100	5.5E+04											
	44	96	2.7E+05	98	1.2E+05	99	8.1E+04	100	5.5E+04	101	3.7E+04	102	2.5E+04	5.0E+04
		104	1.1E+04											
	45	103	1.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+04
	46	102	2.5E+04	104	1.1E+04	105	7.7E+03	106	5.3E+03	108	2.4E+03	110	1.1E+03	5.4E+03
	47	107	3.6E+03	109	1.7E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
PRODUCT Z= 41	40	90	0.	91	0.	92	0.	94	2.3E-04	96	1.2E-04	0	0.	4.5E-05
PRODUCT A= 92	42	92	0.	94	2.3E-04	95	1.7E-04	96	1.2E-04	97	8.5E-05	98	5.8E-05	9.2E-05
HALF LIFE= 10.000 T		100	2.7E-05											
	44	96	1.2E-04	98	5.9E-05	99	4.0E-05	100	2.7E-05	101	1.8E-05	102	1.2E-05	2.4E-05
		104	5.5E-06											
	45	103	8.2E-06	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E-06
	46	102	1.2E-05	104	5.6E-06	105	3.8E-06	106	2.5E-06	108	1.2E-06	110	5.4E-07	2.6E-06
	47	107	1.7E-06	109	7.9E-07	0	0.	0	0.	0	0.	0	0.	1.3E-06
	48	106	2.6E-06	108	1.2E-06	110	5.4E-07	111	3.7E-07	112	2.5E-07	113	1.7E-07	2.7E-07
		114	1.2E-07	116	5.5E-08									
PRODUCT Z= 41	40	90	0.	91	0.	92	0.	94	0.	96	1.9E-02	0	0.	5.7E-04
PRODUCT A= 94	42	92	0.	94	0.	95	0.	96	2.0E-02	97	1.4E-02	98	1.0E-02	7.5E-03
HALF LIFE= .020 T		100	4.8E-03											
	44	96	0.	98	1.0E-02	99	7.2E-03	100	4.9E-03	101	3.3E-03	102	2.2E-03	3.2E-03
		104	1.0E-03											
	45	103	1.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-03
	46	102	2.3E-03	104	1.0E-03	105	6.9E-04	106	4.7E-04	108	2.1E-04	110	9.7E-05	4.8E-04
	47	107	3.2E-04	109	1.4E-04	0	0.	0	0.	0	0.	0	0.	2.3E-04
	48	106	4.7E-04	108	2.1E-04	110	9.8E-05	111	6.6E-05	112	4.5E-05	113	3.1E-05	4.9E-05
		114	2.1E-05	116	9.9E-06									
	49	113	3.1E-05	115	1.4E-05	0	0.	0	0.	0	0.	0	0.	1.5E-05
PRODUCT Z= 41	42	92	0.	94	0.	95	0.	96	0.	97	1.3E+03	98	9.1E+02	3.9E+02
PRODUCT A= 95		100	4.6E+02											
HALF LIFE= 35.000 D	44	96	0.	98	9.2E+02	99	6.6E+02	100	4.7E+02	101	3.2E+02	102	2.2E+02	3.0E+02
		104	9.8E+01											
	45	103	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 41 A= 95 (CONTINUED)	46	102	2.2E+02	104	9.9E+01	105	6.7E+01	106	4.5E+01	108	2.0E+01	110	9.3E+00	4.6E+01
	47	107	3.0E+01	109	1.4E+01	0	0.	0	0.	0	0.	0	0.	2.2E+01
	48	106	4.5E+01	108	2.1E+01	110	9.4E+00	111	6.4E+00	112	4.3E+00	113	2.9E+00	4.7E+00
		114	2.0E+00	116	9.3E-01									
	49	113	2.9E+00	115	1.4E+00	0	0.	0	0.	0	0.	0	0.	1.4E+00
	50	112	4.3E+00	114	2.0E+00	115	1.4E+00	116	9.4E-01	117	6.5E-01	118	4.4E-01	4.4E-01
		119	3.0E-01	120	2.0E-01	122	9.8E-02	124	4.7E-02					
PRODUCT Z= 41	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	9.2E+03	2.7E+03
PRODUCT A= 96		100	4.7E+03											
HALF LIFE= 23.000 H	44	96	0.	98	0.	99	6.6E+03	100	4.7E+03	101	3.4E+03	102	2.3E+03	2.9E+03
		104	1.0E+03											
	45	103	1.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+03
	46	102	2.3E+03	104	1.1E+03	105	7.1E+02	106	4.9E+02	108	2.2E+02	110	9.9E+01	4.9E+02
	47	107	3.3E+02	109	1.5E+02	0	0.	0	0.	0	0.	0	0.	2.4E+02
	48	106	4.9E+02	108	2.2E+02	110	1.0E+02	111	6.7E+01	112	4.6E+01	113	3.1E+01	5.0E+01
		114	2.1E+01	116	9.7E+00									
	49	113	3.1E+01	115	1.5E+01	0	0.	0	0.	0	0.	0	0.	1.5E+01
	50	112	4.6E+01	114	2.1E+01	115	1.5E+01	116	9.8E+00	117	6.8E+00	118	4.7E+00	4.7E+00
		119	3.1E+00	120	2.2E+00	122	1.0E+00	124	4.8E-01					
PRODUCT Z= 41	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	3.1E+02
PRODUCT A= 97		100	3.1E+03											
HALF LIFE= 72.000 M	44	96	0.	98	0.	99	0.	100	3.1E+03	101	2.2E+03	102	1.6E+03	1.4E+03
		104	7.4E+02											
	45	103	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
	46	102	1.6E+03	104	7.5E+02	105	5.0E+02	106	3.4E+02	108	1.5E+02	110	7.0E+01	3.5E+02
	47	107	2.3E+02	109	1.0E+02	0	0.	0	0.	0	0.	0	0.	1.7E+02
	48	106	3.4E+02	108	1.6E+02	110	7.1E+01	111	4.8E+01	112	3.2E+01	113	2.2E+01	3.5E+01
		114	1.5E+01	116	6.9E+00									
	49	113	2.2E+01	115	1.0E+01	0	0.	0	0.	0	0.	0	0.	1.1E+01
	50	112	3.2E+01	114	1.5E+01	115	1.0E+01	116	7.0E+00	117	4.7E+00	118	3.2E+00	3.3E+00
		119	2.2E+00	120	1.5E+00	122	7.0E-01	124	3.4E-01					
PRODUCT Z= 41	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	9.6E+01
PRODUCT A= 98		100	9.6E+02											
HALF LIFE= 51.500 M	44	96	0.	98	0.	99	0.	100	0.	101	6.9E+02	102	4.9E+02	3.2E+02
		104	2.4E+02											
	45	103	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
	46	102	0.	104	2.4E+02	105	1.6E+02	106	1.1E+02	108	5.1E+01	110	2.3E+01	1.1E+02
	47	107	7.5E+01	109	3.4E+01	0	0.	0	0.	0	0.	0	0.	5.5E+01
	48	106	1.1E+02	108	5.1E+01	110	2.3E+01	111	1.6E+01	112	1.0E+01	113	7.1E+00	1.1E+01
		114	4.8E+00	116	2.2E+00									
	49	113	7.1E+00	115	3.3E+00	0	0.	0	0.	0	0.	0	0.	3.4E+00
	50	112	1.1E+01	114	4.9E+00	115	3.3E+00	116	2.2E+00	117	1.5E+00	118	1.0E+00	1.1E+00
		119	7.1E-01	120	4.9E-01	122	2.3E-01	124	1.1E-01					
PRODUCT Z= 41	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	1.4E+02	5.8E+01
PRODUCT A= 99		104	7.1E+01											
HALF LIFE= 2.500 M	45	103	1.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+02
	46	102	0.	104	7.2E+01	105	4.9E+01	106	3.3E+01	108	1.5E+01	110	6.8E+00	3.2E+01
	47	107	2.2E+01	109	1.0E+01	0	0.	0	0.	0	0.	0	0.	1.6E+01
	48	106	3.3E+01	108	1.5E+01	110	6.9E+00	111	4.6E+00	112	3.1E+00	113	2.1E+00	3.4E+00
		114	1.4E+00	116	6.5E-01									
	49	113	2.1E+00	115	9.7E-01	0	0.	0	0.	0	0.	0	0.	1.0E+00
	50	112	3.2E+00	114	1.4E+00	115	9.8E-01	116	6.6E-01	117	4.5E-01	118	3.1E-01	3.1E-01
		119	2.1E-01	120	1.4E-01	122	6.6E-02	124	3.1E-02					
PRODUCT Z= 41	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	3.5E+00
PRODUCT A=100		104	1.8E+01											
HALF LIFE= 3.000 M	46	102	0.	104	0.	105	1.3E+01	106	9.0E+00	108	4.1E+00	110	1.9E+00	6.7E+00
	47	107	6.1E+00	109	2.8E+00	0	0.	0	0.	0	0.	0	0.	4.5E+00
	48	106	0.	108	4.1E+00	110	1.9E+00	111	1.3E+00	112	8.5E-01	113	5.8E-01	8.3E-01
		114	3.9E-01	116	1.8E-01									
	49	113	5.8E-01	115	2.6E-01	0	0.	0	0.	0	0.	0	0.	2.8E-01
	50	112	8.6E-01	114	3.9E-01	115	2.6E-01	116	1.8E-01	117	1.2E-01	118	8.3E-02	8.4E-02
		119	5.7E-02	120	3.8E-02	122	1.8E-02	124	8.4E-03					
	51	121	2.6E-02	123	1.2E-02	0	0.	0	0.	0	0.	0	0.	2.0E-02
	52	120	3.8E-02	122	1.8E-02	123	1.2E-02	124	8.5E-03	125	5.7E-03	126	4.0E-03	1.4E-02
		128	1.9E-03	130	9.1E-04									
PRODUCT Z= 41	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	8.4E-01
PRODUCT A=101		104	4.4E+00											
HALF LIFE= 1.000 M	46	102	0.	104	0.	105	0.	106	2.3E+00	108	1.0E+00	110	4.7E-01	9.5E-01
	47	107	1.5E+00	109	7.0E-01	0	0.	0	0.	0	0.	0	0.	1.1E+00
	48	106	0.	108	1.0E+00	110	4.8E-01	111	3.2E+01	112	2.2E-01	113	1.5E-01	2.1E-01
		114	9.8E-02	116	4.5E-02									
	49	113	1.5E-01	115	6.6E-02	0	0.	0	0.	0	0.	0	0.	7.0E-02
	50	112	2.2E-01	114	9.9E-02	115	6.7E-02	116	4.5E-02	117	3.1E-02	118	2.1E-02	2.1E-02
		119	1.4E-02	120	9.7E-03	122	4.5E-03	124	2.1E-03					
	51	121	6.5E-03	123	3.1E-03	0	0.	0	0.	0	0.	0	0.	5.1E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 41 A=101 (CONTINUED)	52	120	9.8E-03	122	4.5E-03	123	3.2E-03	124	2.1E-03	125	1.4E-03	126	9.8E-04	3.5E-03
		128	4.7E-04	130	2.3E-04									
PRODUCT Z= 42	41	93	4.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+03
PRODUCT A= 88	42	92	6.9E+03	94	3.4E+03	95	2.3E+03	96	1.5E+03	97	1.0E+03	98	7.0E+02	2.3E+03
HALF LIFE= 27.000 M		100	3.2E+02											
	44	96	1.5E+03	98	7.1E+02	99	4.7E+02	100	3.2E+02	101	2.2E+02	102	1.5E+02	2.9E+02
		104	6.7E+01											
	45	103	9.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+01
	46	102	1.5E+02	104	6.8E+01	105	4.6E+01	106	3.1E+01	108	1.4E+01	110	6.9E+00	3.2E+01
	47	107	2.1E+01	109	9.9E+00	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 42	41	93	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
PRODUCT A= 89	42	92	3.9E+04	94	2.0E+04	95	1.4E+04	96	9.3E+03	97	6.2E+03	98	4.2E+03	1.3E+04
HALF LIFE= 7.000 M		100	1.9E+03											
	44	96	9.4E+03	98	4.3E+03	99	2.9E+03	100	1.9E+03	101	1.3E+03	102	8.8E+02	1.7E+03
		104	4.0E+02											
	45	103	6.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+02
	46	102	8.9E+02	104	4.0E+02	105	2.8E+02	106	1.9E+02	108	8.7E+01	110	4.0E+01	1.9E+02
	47	107	1.3E+02	109	5.8E+01	0	0.	0	0.	0	0.	0	0.	9.4E+01
PRODUCT Z= 42	41	93	1.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+05
PRODUCT A= 90	42	92	1.8E+05	94	9.1E+04	95	6.5E+04	96	4.4E+04	97	3.0E+04	98	2.0E+04	6.2E+04
HALF LIFE= 5.700 H		100	9.3E+03											
	44	96	4.5E+04	98	2.0E+04	99	1.4E+04	100	9.4E+03	101	6.3E+03	102	4.2E+03	8.4E+03
		104	1.9E+03											
	45	103	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
	46	102	4.3E+03	104	1.9E+03	105	1.3E+03	106	8.9E+02	108	4.1E+02	110	1.9E+02	9.1E+02
	47	107	6.1E+02	109	2.8E+02	0	0.	0	0.	0	0.	0	0.	4.5E+02
PRODUCT Z= 42	41	93	5.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+05
PRODUCT A= 91	42	92	0.	94	3.8E+05	95	2.7E+05	96	2.0E+05	97	1.3E+05	98	9.0E+04	1.5E+05
HALF LIFE= 15.500 M		100	4.1E+04											
	44	96	2.0E+05	98	9.1E+04	99	6.1E+04	100	4.1E+04	101	2.8E+04	102	1.9E+04	3.7E+04
		104	8.6E+03											
	45	103	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04
	46	102	1.9E+04	104	8.7E+03	105	5.8E+03	106	3.9E+03	108	1.8E+03	110	8.5E+02	4.0E+03
	47	107	2.7E+03	109	1.2E+03	0	0.	0	0.	0	0.	0	0.	2.0E+03
PRODUCT Z= 42	42	92	0.	94	0.	95	3.9E-01	96	2.8E-01	97	2.0E-01	98	1.4E-01	1.7E-01
PRODUCT A= 93		100	6.5E-02											
HALF LIFE= .010 T	44	96	2.8E-01	98	1.4E-01	99	9.7E-02	100	6.6E-02	101	4.4E-02	102	3.0E-02	5.7E-02
		104	1.4E-02											
	45	103	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
	46	102	3.0E-02	104	1.4E-02	105	9.2E-03	106	6.2E-03	108	2.8E-03	110	1.3E-03	6.4E-03
	47	107	4.2E-03	109	1.9E-03	0	0.	0	0.	0	0.	0	0.	3.1E-03
	48	106	6.3E-03	108	2.8E-03	110	1.3E-03	111	8.9E-04	112	6.1E-04	113	4.1E-04	6.6E-04
		114	2.8E-04	116	1.3E-04									
	49	113	4.1E-04	115	2.0E-04	0	0.	0	0.	0	0.	0	0.	2.1E-04
PRODUCT Z= 42	44	96	0.	98	0.	99	0.	100	0.	101	1.9E+03	102	1.4E+03	9.0E+02
PRODUCT A= 99		104	7.0E+02											
HALF LIFE= 67.000 H	45	103	9.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E+02
	46	102	0.	104	7.1E+02	105	4.8E+02	106	3.2E+02	108	1.5E+02	110	6.7E+01	3.2E+02
	47	107	2.2E+02	109	1.0E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
	48	106	3.3E+02	108	1.5E+02	110	6.7E+01	111	4.5E+01	112	3.1E+01	113	2.1E+01	3.3E+01
		114	1.4E+01	116	6.4E+00									
	49	113	2.1E+01	115	9.5E+00	0	0.	0	0.	0	0.	0	0.	1.0E+01
	50	112	3.1E+01	114	1.4E+01	115	9.6E+00	116	6.5E+00	117	4.4E+00	118	3.0E+00	3.1E+00
		119	2.0E+00	120	1.4E+00	122	6.5E-01	124	3.0E-01					
PRODUCT Z= 42	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	6.0E+01
PRODUCT A=101		104	3.1E+02											
HALF LIFE= 14.600 M	46	102	0.	104	0.	105	2.3E+02	106	1.6E+02	108	7.4E+01	110	3.4E+01	1.2E+02
	47	107	1.1E+02	109	5.0E+01	0	0.	0	0.	0	0.	0	0.	8.1E+01
	48	106	0.	108	7.5E+01	110	3.4E+01	111	2.3E+01	112	1.5E+01	113	1.0E+01	1.5E+01
		114	7.0E+00	116	3.2E+00									
	49	113	1.0E+01	115	4.7E+00	0	0.	0	0.	0	0.	0	0.	5.0E+00
	50	112	1.6E+01	114	7.1E+00	115	4.8E+00	116	3.2E+00	117	2.2E+00	118	1.5E+00	1.5E+00
		119	1.0E+00	120	6.9E-01	122	3.2E-01	124	1.5E-01					
	51	121	4.7E-01	123	2.2E-01	0	0.	0	0.	0	0.	0	0.	3.6E-01
	52	120	7.0E-01	122	3.2E-01	123	2.3E-01	124	1.5E-01	125	1.0E-01	126	7.0E-02	2.5E-01
		128	3.4E-02	130	1.6E-02									

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 42	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	1.6E+01
PRODUCT A=102		104	8.6E+01											
HALF LIFE= 11.000 M	46	102	0.	104	0.	105	0.	106	4.4E+01	108	2.2E+01	110	9.8E+00	1.9E+01
	47	107	3.2E+01	109	1.5E+01	0	0.	0	0.	0	0.	0	0.	2.3E+01
	48	106	0.	108	2.2E+01	110	9.9E+00	111	6.7E+00	112	4.5E+00	113	3.0E+00	4.4E+00
		114	2.0E+00	116	9.3E-01									
	49	113	3.0E+00	115	1.4E+00	0	0.	0	0.	0	0.	0	0.	1.5E+00
	50	112	4.6E+00	114	2.1E+00	115	1.4E+00	116	9.4E-01	117	6.3E-01	118	4.3E-01	4.4E-01
		119	2.9E-01	120	2.0E-01	122	9.1E-02	124	4.4E-02					
	51	121	1.4E-01	123	6.3E-02	0	0.	0	0.	0	0.	0	0.	1.1E-01
	52	120	2.0E-01	122	9.2E-02	123	6.3E-02	124	4.4E-02	125	3.0E-02	126	2.0E-02	7.0E-02
		128	9.6E-03	130	4.5E-03									
PRODUCT Z= 42	46	102	0.	104	0.	105	0.	106	0.	108	1.4E+00	110	6.6E-01	4.5E-01
PRODUCT A=104	47	107	0.	109	9.7E-01	0	0.	0	0.	0	0.	0	0.	4.7E-01
HALF LIFE= 1.600 M	48	106	0.	108	0.	110	6.6E-01	111	4.5E-01	112	3.0E-01	113	2.0E-01	2.8E-01
		114	1.4E-01	116	6.2E-02									
	49	113	2.0E-01	115	9.3E-02	0	0.	0	0.	0	0.	0	0.	9.7E-02
	50	112	3.0E-01	114	1.4E-01	115	9.3E-02	116	6.3E-02	117	4.2E-02	118	2.8E-02	2.9E-02
		119	1.9E-02	120	1.3E-02	122	6.0E-03	124	2.8E-03					
	51	121	8.9E-03	123	4.2E-03	0	0.	0	0.	0	0.	0	0.	6.9E-03
	52	120	1.3E-02	122	6.1E-03	123	4.2E-03	124	2.8E-03	125	1.9E-03	126	1.3E-03	4.6E-03
		128	6.2E-04	130	2.9E-04									
	53	127	9.1E-04	0	0.	0	0.	0	0.	0	0.	0	0.	9.1E-04
PRODUCT Z= 43	42	92	0.	94	1.2E+05	95	8.8E+04	96	6.3E+04	97	4.5E+04	98	3.1E+04	4.8E+04
PRODUCT A= 92		100	1.4E+04											
HALF LIFE= 4.100 M	44	96	6.3E+04	98	3.1E+04	99	2.1E+04	100	1.4E+04	101	9.5E+03	102	6.5E+03	1.2E+04
		104	2.9E+03											
	45	103	4.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+03
	46	102	6.5E+03	104	2.9E+03	105	2.0E+03	106	1.3E+03	108	6.1E+02	110	2.8E+02	1.4E+03
	47	107	9.0E+02	109	4.1E+02	0	0.	0	0.	0	0.	0	0.	6.7E+02
	48	106	1.3E+03	108	6.2E+02	110	2.8E+02	111	2.0E+02	112	1.3E+02	113	9.0E+01	1.4E+02
		114	6.3E+01	116	2.9E+01									
PRODUCT Z= 43	42	92	0.	94	0.	95	3.7E+05	96	2.6E+05	97	1.9E+05	98	1.3E+05	1.6E+05
PRODUCT A= 93		100	6.2E+04											
HALF LIFE= 2.700 H	44	96	2.7E+05	98	1.4E+05	99	9.3E+04	100	6.3E+04	101	4.2E+04	102	2.8E+04	5.5E+04
		104	1.3E+04											
	45	103	2.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+04
	46	102	2.9E+04	104	1.3E+04	105	8.8E+03	106	6.0E+03	108	2.7E+03	110	1.2E+03	6.1E+03
	47	107	4.0E+03	109	1.8E+03	0	0.	0	0.	0	0.	0	0.	3.0E+03
	48	106	6.0E+03	108	2.7E+03	110	1.3E+03	111	8.6E+02	112	5.9E+02	113	3.9E+02	6.3E+02
		114	2.7E+02	116	1.3E+02									
	49	113	3.9E+02	115	1.9E+02	0	0.	0	0.	0	0.	0	0.	2.0E+02
PRODUCT Z= 43	42	92	0.	94	0.	95	0.	96	8.8E+05	97	6.3E+05	98	4.5E+05	3.4E+05
PRODUCT A= 94		100	2.2E+05											
HALF LIFE= 4.800 H	44	96	8.9E+05	98	4.6E+05	99	3.3E+05	100	2.2E+05	101	1.5E+05	102	1.0E+05	1.9E+05
		104	4.6E+04											
	45	103	6.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E+04
	46	102	1.0E+05	104	4.7E+04	105	3.1E+04	106	2.1E+04	108	9.6E+03	110	4.4E+03	2.2E+04
	47	107	1.4E+04	109	6.5E+03	0	0.	0	0.	0	0.	0	0.	1.0E+04
	48	106	2.1E+04	108	9.6E+03	110	4.4E+03	111	3.0E+03	112	2.0E+03	113	1.4E+03	2.2E+03
		114	9.4E+02	116	4.5E+02									
	49	113	1.4E+03	115	6.5E+02	0	0.	0	0.	0	0.	0	0.	6.8E+02
PRODUCT Z= 43	42	92	0.	94	0.	95	0.	96	0.	97	9.8E+05	98	7.0E+05	3.0E+05
PRODUCT A= 95		100	3.6E+05											
HALF LIFE= 20.000 H	44	96	0.	98	7.1E+05	99	5.1E+05	100	3.6E+05	101	2.5E+05	102	1.7E+05	2.3E+05
		104	7.6E+04											
	45	103	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	46	102	1.7E+05	104	7.6E+04	105	5.2E+04	106	3.5E+04	108	1.6E+04	110	7.2E+03	3.6E+04
	47	107	2.3E+04	109	1.1E+04	0	0.	0	0.	0	0.	0	0.	1.7E+04
	48	106	3.5E+04	108	1.6E+04	110	7.2E+03	111	4.9E+03	112	3.3E+03	113	2.3E+03	3.6E+03
		114	1.6E+03	116	7.2E+02									
	49	113	2.3E+03	115	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.1E+03
	50	112	3.4E+03	114	1.6E+03	115	1.1E+03	116	7.2E+02	117	5.0E+02	118	3.4E+02	3.4E+02
		119	2.3E+02	120	1.6E+02	122	7.6E+01	124	3.6E+01					
PRODUCT Z= 43	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	2.9E+05	8.5E+04
PRODUCT A= 96		100	1.5E+05											
HALF LIFE= 4.300 D	44	96	0.	98	2.9E+05	99	2.1E+05	100	1.5E+05	101	1.1E+05	102	7.2E+04	9.7E+04
		104	3.3E+04											
	45	103	4.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+04
	46	102	7.3E+04	104	3.3E+04	105	2.2E+04	106	1.5E+04	108	6.9E+03	110	3.1E+03	1.6E+04
	47	107	1.0E+04	109	4.7E+03	0	0.	0	0.	0	0.	0	0.	7.5E+03
	48	106	1.5E+04	108	6.9E+03	110	3.2E+03	111	2.1E+03	112	1.5E+03	113	9.8E+02	1.6E+03
		114	6.7E+02	116	3.1E+02									
	49	113	9.8E+02	115	4.6E+02	0	0.	0	0.	0	0.	0	0.	4.8E+02
	50	112	1.5E+03	114	6.7E+02	115	4.6E+02	116	3.1E+02	117	2.1E+02	118	1.5E+02	1.5E+02
		119	9.9E+01	120	6.8E+01	122	3.2E+01	124	1.5E+01					

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 43	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	5.9E-05
PRODUCT A= 97		100	5.8E-04											
HALF LIFE= 2.600 T	44	96	0.	98	0.	99	8.3E-04	100	5.9E-04	101	4.2E-04	102	3.0E-04	3.7E-04
		104	1.4E-04											
	45	103	2.1E-04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-04
	46	102	3.0E-04	104	1.4E-04	105	9.4E-05	106	6.4E-05	108	2.9E-05	110	1.3E-05	6.5E-05
	47	107	4.4E-05	109	2.0E-05	0	0.	0	0.	0	0.	0	0.	3.2E-05
	48	106	6.4E-05	108	2.9E-05	110	1.3E-05	111	8.9E-06	112	6.0E-06	113	4.1E-06	6.6E-06
		114	2.8E-06	116	1.3E-06									
	49	113	4.1E-06	115	1.9E-06	0	0.	0	0.	0	0.	0	0.	2.0E-06
	50	112	6.1E-06	114	2.8E-06	115	1.9E-06	116	1.3E-06	117	8.8E-07	118	6.0E-07	6.1E-07
		119	4.2E-07	120	2.8E-07	122	1.3E-07	124	6.3E-08					
PRODUCT Z= 43	42	92	0.	94	0.	95	0.	96	0.	97	0.	98	0.	6.3E-05
PRODUCT A= 98		100	6.3E-04											
HALF LIFE= 1.500 T	44	96	0.	98	0.	99	0.	100	6.4E-04	101	4.6E-04	102	3.3E-04	2.9E-04
		104	1.6E-04											
	45	103	2.3E-04	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E-04
	46	102	3.3E-04	104	1.6E-04	105	1.1E-04	106	7.3E-05	108	3.3E-05	110	1.5E-05	7.5E-05
	47	107	4.9E-05	109	2.2E-05	0	0.	0	0.	0	0.	0	0.	3.6E-05
	48	106	7.4E-05	108	3.4E-05	110	1.5E-05	111	1.0E-05	112	6.9E-06	113	4.7E-06	7.5E-06
		114	3.2E-06	116	1.5E-06									
	49	113	4.7E-06	115	2.1E-06	0	0.	0	0.	0	0.	0	0.	2.3E-06
	50	112	7.0E-06	114	3.2E-06	115	2.2E-06	116	1.5E-06	117	1.0E-06	118	6.8E-07	6.9E-07
		119	4.7E-07	120	3.2E-07	122	1.5E-07	124	7.1E-08					
PRODUCT Z= 43	44	96	0.	98	0.	99	0.	100	0.	101	1.7E-03	102	1.2E-03	7.9E-04
PRODUCT A= 99		104	6.2E-04											
HALF LIFE= .210 T	45	103	8.7E-04	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E-04
	46	102	1.2E-03	104	6.2E-04	105	4.2E-04	106	2.9E-04	108	1.3E-04	110	5.9E-05	2.9E-04
	47	107	1.9E-04	109	8.9E-05	0	0.	0	0.	0	0.	0	0.	1.4E-04
	48	106	2.9E-04	108	1.3E-04	110	6.0E-05	111	4.0E-05	112	2.7E-05	113	1.8E-05	3.0E-05
		114	1.2E-05	116	5.7E-06									
	49	113	1.8E-05	115	8.4E-06	0	0.	0	0.	0	0.	0	0.	8.9E-06
	50	112	2.7E-05	114	1.2E-05	115	8.5E-06	116	5.7E-06	117	3.9E-06	118	2.7E-06	2.7E-06
		119	1.8E-06	120	1.2E-06	122	5.8E-07	124	2.7E-07					
PRODUCT Z= 43	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	2.3E+03
PRODUCT A=101		104	1.2E+04											
HALF LIFE= 14.000 M	45	103	1.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+04
	46	102	0.	104	1.2E+04	105	8.7E+03	106	6.2E+03	108	2.8E+03	110	1.3E+03	5.8E+03
	47	107	4.2E+03	109	1.9E+03	0	0.	0	0.	0	0.	0	0.	3.1E+03
	48	106	6.3E+03	108	2.9E+03	110	1.3E+03	111	8.9E+02	112	5.9E+02	113	4.0E+02	6.5E+02
		114	2.7E+02	116	1.2E+02									
	49	113	4.0E+02	115	1.8E+02	0	0.	0	0.	0	0.	0	0.	1.9E+02
	50	112	6.0E+02	114	2.7E+02	115	1.8E+02	116	1.2E+02	117	8.4E+01	118	5.7E+01	5.8E+01
		119	3.9E+01	120	2.7E+01	122	1.2E+01	124	5.7E+00					
PRODUCT Z= 43	46	102	0.	104	0.	105	0.	106	0.	108	1.0E+02	110	5.0E+01	3.4E+01
PRODUCT A=104	47	107	0.	109	7.4E+01	0	0.	0	0.	0	0.	0	0.	3.6E+01
HALF LIFE= 18.000 M	48	106	0.	108	0.	110	5.1E+01	111	3.4E+01	112	2.3E+01	113	1.6E+01	2.1E+01
		114	1.1E+01	116	4.8E+00									
	49	113	1.6E+01	115	7.1E+00	0	0.	0	0.	0	0.	0	0.	7.5E+00
	50	112	2.3E+01	114	1.1E+01	115	7.1E+00	116	4.8E+00	117	3.2E+00	118	2.2E+00	2.2E+00
		119	1.5E+00	120	1.0E+00	122	4.6E-01	124	2.1E-01					
	51	121	6.8E-01	123	3.2E-01	0	0.	0	0.	0	0.	0	0.	5.3E-01
	52	120	1.0E+00	122	4.7E-01	123	3.2E-01	124	2.2E-01	125	1.5E-01	126	1.0E-01	3.6E-01
		128	4.8E-02	130	2.3E-02									
	53	127	7.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E-02
PRODUCT Z= 43	46	102	0.	104	0.	105	0.	106	0.	108	2.8E+01	110	1.4E+01	9.3E+00
PRODUCT A=105	47	107	0.	109	2.0E+01	0	0.	0	0.	0	0.	0	0.	9.7E+00
HALF LIFE= 8.000 M	48	106	0.	108	0.	110	1.4E+01	111	9.8E+00	112	6.6E+00	113	4.4E+00	6.1E+00
		114	3.0E+00	116	1.4E+00									
	49	113	4.5E+00	115	2.0E+00	0	0.	0	0.	0	0.	0	0.	2.2E+00
	50	112	6.7E+00	114	3.0E+00	115	2.1E+00	116	1.4E+00	117	9.2E-01	118	6.2E-01	6.4E-01
		119	4.2E-01	120	2.8E-01	122	1.3E-01	124	6.1E-02					
	51	121	1.9E-01	123	9.0E-02	0	0.	0	0.	0	0.	0	0.	1.5E-01
	52	120	2.9E-01	122	1.3E-01	123	9.0E-02	124	6.2E-02	125	4.1E-02	126	2.9E-02	1.0E-01
		128	1.3E-02	130	6.2E-03									
	53	127	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
PRODUCT Z= 44	44	96	7.9E+04	98	4.0E+04	99	2.9E+04	100	1.9E+04	101	1.3E+04	102	8.9E+03	1.7E+04
PRODUCT A= 94		104	4.1E+03											
HALF LIFE= 53.000 M	45	103	6.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+03
	46	102	9.0E+03	104	4.1E+03	105	2.7E+03	106	1.8E+03	108	8.4E+02	110	3.9E+02	1.9E+03
	47	107	1.3E+03	109	5.7E+02	0	0.	0	0.	0	0.	0	0.	9.2E+02
	48	106	1.9E+03	108	8.5E+02	110	3.9E+02	111	2.6E+02	112	1.8E+02	113	1.2E+02	1.9E+02
		114	8.2E+01	116	4.0E+01									
	49	113	1.2E+02	115	5.7E+01	0	0.	0	0.	0	0.	0	0.	6.0E+01
	50	112	1.8E+02	114	8.3E+01	115	5.7E+01	116	4.0E+01	117	2.7E+01	118	1.8E+01	1.9E+01
		119	1.2E+01	120	8.7E+00	122	4.1E+00	124	2.0E+00					

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 44	44	96	0.	98	1.8E+05	99	1.3E+05	100	9.1E+04	101	6.2E+04	102	4.2E+04	5.8E+04
PRODUCT A= 95		104	1.9E+04											
HALF LIFE= 99.000 M	45	103	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
	46	102	4.2E+04	104	1.9E+04	105	1.3E+04	106	8.7E+03	108	4.0E+03	110	1.8E+03	9.0E+03
	47	107	5.9E+03	109	2.7E+03	0	0.	0	0.	0	0.	0	0.	4.4E+03
	48	106	8.8E+03	108	4.0E+03	110	1.8E+03	111	1.2E+03	112	8.4E+02	113	5.7E+02	9.1E+02
		114	3.9E+02	116	1.8E+02									
	49	113	5.8E+02	115	2.6E+02	0	0.	0	0.	0	0.	0	0.	2.8E+02
	50	112	8.5E+02	114	4.0E+02	115	2.7E+02	116	1.8E+02	117	1.3E+02	118	8.5E+01	8.6E+01
		119	5.8E+01	120	3.9E+01	122	1.9E+01	124	9.1E+00					
PRODUCT Z= 44	44	96	0.	98	0.	99	3.0E+05	100	2.1E+05	101	1.5E+05	102	1.1E+05	1.3E+05
PRODUCT A= 97		104	5.0E+04											
HALF LIFE= 2.900 D	45	103	7.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+04
	46	102	1.1E+05	104	5.0E+04	105	3.4E+04	106	2.3E+04	108	1.0E+04	110	4.7E+03	2.4E+04
	47	107	1.6E+04	109	7.0E+03	0	0.	0	0.	0	0.	0	0.	1.1E+04
	48	106	2.3E+04	108	1.1E+04	110	4.8E+03	111	3.2E+03	112	2.2E+03	113	1.5E+03	2.4E+03
		114	1.0E+03	116	4.7E+02									
	49	113	1.5E+03	115	6.8E+02	0	0.	0	0.	0	0.	0	0.	7.2E+02
	50	112	2.2E+03	114	1.0E+03	115	6.9E+02	116	4.7E+02	117	3.2E+02	118	2.2E+02	2.2E+02
		119	1.5E+02	120	1.0E+02	122	4.7E+01	124	2.3E+01					
PRODUCT Z= 44	46	102	0.	104	0.	105	5.5E+02	106	3.9E+02	108	2.0E+02	110	9.2E+01	2.9E+02
PRODUCT A=103	47	107	2.8E+02	109	1.4E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
HALF LIFE= 40.000 D	48	106	0.	108	2.0E+02	110	9.3E+01	111	6.2E+01	112	4.2E+01	113	2.9E+01	4.1E+01
		114	1.9E+01	116	8.7E+00									
	49	113	2.9E+01	115	1.3E+01	0	0.	0	0.	0	0.	0	0.	1.4E+01
	50	112	4.3E+01	114	1.9E+01	115	1.3E+01	116	8.8E+00	117	5.9E+00	118	4.0E+00	4.1E+00
		119	2.7E+00	120	1.8E+00	122	8.6E-01	124	4.0E-01					
	51	121	1.3E+00	123	5.8E-01	0	0.	0	0.	0	0.	0	0.	9.6E-01
	52	120	1.8E+00	122	8.7E-01	123	5.8E-01	124	4.0E-01	125	2.8E-01	126	1.9E-01	6.4E-01
		128	8.7E-02	130	4.2E-02									
PRODUCT Z= 44	46	102	0.	104	0.	105	0.	106	0.	108	1.5E+03	110	7.4E+02	4.9E+02
PRODUCT A=105	47	107	0.	109	1.0E+03	0	0.	0	0.	0	0.	0	0.	5.1E+02
HALF LIFE= 4.430 H	48	106	0.	108	0.	110	7.5E+02	111	5.1E+02	112	3.5E+02	113	2.3E+02	3.2E+02
		114	1.6E+02	116	7.1E+01									
	49	113	2.3E+02	115	1.1E+02	0	0.	0	0.	0	0.	0	0.	1.1E+02
	50	112	3.5E+02	114	1.6E+02	115	1.1E+02	116	7.2E+01	117	4.8E+01	118	3.3E+01	3.3E+01
		119	2.2E+01	120	1.5E+01	122	6.8E+00	124	3.2E+00					
	51	121	1.0E+01	123	4.7E+00	0	0.	0	0.	0	0.	0	0.	7.8E+00
	52	120	1.5E+01	122	6.9E+00	123	4.7E+00	124	3.2E+00	125	2.2E+00	126	1.5E+00	5.2E+00
		128	7.0E-01	130	3.2E-01									
	53	127	1.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+00
PRODUCT Z= 44	46	102	0.	104	0.	105	0.	106	0.	108	8.8E-01	110	4.5E-01	2.9E-01
PRODUCT A=106	47	107	0.	109	6.3E-01	0	0.	0	0.	0	0.	0	0.	3.1E-01
HALF LIFE= 1.000 Y	48	106	0.	108	0.	110	4.5E-01	111	3.2E-01	112	2.2E-01	113	1.5E-01	2.0E-01
		114	1.0E-01	116	4.6E-02									
	49	113	1.5E-01	115	6.8E-02	0	0.	0	0.	0	0.	0	0.	7.1E-02
	50	112	2.2E-01	114	1.0E-01	115	6.8E-02	116	4.6E-02	117	3.1E-02	118	2.1E-02	2.1E-02
		119	1.4E-02	120	9.5E-03	122	4.4E-03	124	2.0E-03					
	51	121	6.4E-03	123	3.0E-03	0	0.	0	0.	0	0.	0	0.	4.9E-03
	52	120	9.5E-03	122	4.4E-03	123	3.0E-03	124	2.0E-03	125	1.4E-03	126	9.3E-04	3.3E-03
		128	4.5E-04	130	2.1E-04									
	53	127	6.5E-04	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E-04
PRODUCT Z= 44	46	102	0.	104	0.	105	0.	106	0.	108	0.	110	6.8E+01	8.2E+00
PRODUCT A=107	48	106	0.	108	0.	110	0.	111	4.9E+01	112	3.5E+01	113	2.4E+01	2.3E+01
HALF LIFE= 4.200 M		114	1.6E+01	116	7.3E+00									
	49	113	2.4E+01	115	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.1E+01
	50	112	0.	114	1.6E+01	115	1.1E+01	116	7.3E+00	117	5.0E+00	118	3.3E+00	3.1E+00
		119	2.2E+00	120	1.5E+00	122	6.9E-01	124	3.2E-01					
	51	121	1.0E+00	123	4.7E-01	0	0.	0	0.	0	0.	0	0.	7.9E-01
	52	120	1.5E+00	122	6.9E-01	123	4.7E-01	124	3.2E-01	125	2.2E-01	126	1.5E-01	5.2E-01
		128	6.9E-02	130	3.2E-02									
	53	127	1.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E-01
	54	124	3.2E-01	126	1.5E-01	128	7.0E-02	129	4.9E-02	130	3.3E-02	131	2.2E-02	2.6E-02
		132	1.5E-02	134	7.3E-03	136	3.5E-03							
PRODUCT Z= 44	46	102	0.	104	0.	105	0.	106	0.	108	0.	110	1.8E+01	2.2E+00
PRODUCT A=108	48	106	0.	108	0.	110	0.	111	0.	112	9.2E+00	113	6.6E+00	4.5E+00
HALF LIFE= 4.500 M		114	4.5E+00	116	2.0E+00									
	49	113	6.6E+00	115	3.0E+00	0	0.	0	0.	0	0.	0	0.	3.2E+00
	50	112	0.	114	4.5E+00	115	3.1E+00	116	2.1E+00	117	1.4E+00	118	9.4E-01	8.7E-01
		119	6.3E-01	120	4.2E-01	122	1.9E-01	124	8.9E-02					
	51	121	2.9E-01	123	1.3E-01	0	0.	0	0.	0	0.	0	0.	2.2E-01
	52	120	4.3E-01	122	1.9E-01	123	1.3E-01	124	9.0E-02	125	6.1E-02	126	4.1E-02	1.5E-01
		128	1.9E-02	130	9.2E-03									
	53	127	2.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E-02
	54	124	9.1E-02	126	4.2E-02	128	1.9E-02	129	1.3E-02	130	9.2E-03	131	6.2E-03	7.1E-03
		132	4.2E-03	134	2.0E-03	136	9.5E-04							

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 45	44	96	0.	98	4.8E+04	99	3.5E+04	100	2.5E+04	101	1.8E+04	102	1.2E+04	1.6E+04
PRODUCT A= 96		104	5.5E+03											
HALF LIFE= 11.000 M	45	103	8.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E+03
	46	102	1.2E+04	104	5.5E+03	105	3.7E+03	106	2.5E+03	108	1.1E+03	110	5.2E+02	2.6E+03
	47	107	1.7E+03	109	7.7E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03
	48	106	2.6E+03	108	1.1E+03	110	5.2E+02	111	3.5E+02	112	2.4E+02	113	1.6E+02	2.6E+02
		114	1.1E+02	116	5.1E+01									
	49	113	1.6E+02	115	7.6E+01	0	0.	0	0.	0	0.	0	0.	8.0E+01
	50	112	2.4E+02	114	1.1E+02	115	7.7E+01	116	5.1E+01	117	3.5E+01	118	2.5E+01	2.4E+01
		119	1.6E+01	120	1.1E+01	122	5.3E+00	124	2.5E+00					
PRODUCT Z= 45	44	96	0.	98	0.	99	1.6E+05	100	1.2E+05	101	8.3E+04	102	5.9E+04	7.3E+04
PRODUCT A= 97		104	2.7E+04											
HALF LIFE= 33.000 M	45	103	4.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+04
	46	102	6.0E+04	104	2.8E+04	105	1.9E+04	106	1.2E+04	108	5.7E+03	110	2.6E+03	1.3E+04
	47	107	8.5E+03	109	3.8E+03	0	0.	0	0.	0	0.	0	0.	6.3E+03
	48	106	1.3E+04	108	5.7E+03	110	2.6E+03	111	1.8E+03	112	1.2E+03	113	8.1E+02	1.3E+03
		114	5.4E+02	116	2.6E+02									
	49	113	8.1E+02	115	3.7E+02	0	0.	0	0.	0	0.	0	0.	3.9E+02
	50	112	1.2E+03	114	5.5E+02	115	3.7E+02	116	2.6E+02	117	1.7E+02	118	1.2E+02	1.2E+02
		119	8.2E+01	120	5.5E+01	122	2.6E+01	124	1.2E+01					
PRODUCT Z= 45	44	96	0.	98	0.	99	0.	100	4.6E+05	101	3.3E+05	102	2.3E+05	2.1E+05
PRODUCT A= 98		104	1.1E+05											
HALF LIFE= 8.700 M	45	103	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
	46	102	2.4E+05	104	1.1E+05	105	7.8E+04	106	5.2E+04	108	2.4E+04	110	1.1E+04	5.4E+04
	47	107	3.5E+04	109	1.6E+04	0	0.	0	0.	0	0.	0	0.	2.6E+04
	48	106	5.3E+04	108	2.4E+04	110	1.1E+04	111	7.4E+03	112	4.9E+03	113	3.3E+03	5.4E+03
		114	2.3E+03	116	1.0E+03									
	49	113	3.4E+03	115	1.5E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	50	112	5.0E+03	114	2.3E+03	115	1.5E+03	116	1.1E+03	117	7.3E+02	118	4.9E+02	5.0E+02
		119	3.3E+02	120	2.3E+02	122	1.1E+02	124	5.1E+01					
PRODUCT Z= 45	44	96	0.	98	0.	99	0.	100	0.	101	4.5E+04	102	3.2E+04	2.1E+04
PRODUCT A= 99		104	1.6E+04											
HALF LIFE= 16.000 D	45	103	2.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+04
	46	102	3.2E+04	104	1.7E+04	105	1.1E+04	106	7.6E+03	108	3.5E+03	110	1.6E+03	7.7E+03
	47	107	5.1E+03	109	2.4E+03	0	0.	0	0.	0	0.	0	0.	3.8E+03
	48	106	7.7E+03	108	3.5E+03	110	1.6E+03	111	1.1E+03	112	7.2E+02	113	4.8E+02	7.8E+02
		114	3.3E+02	116	1.5E+02									
	49	113	4.9E+02	115	2.2E+02	0	0.	0	0.	0	0.	0	0.	2.3E+02
	50	112	7.3E+02	114	3.3E+02	115	2.2E+02	116	1.5E+02	117	1.0E+02	118	7.1E+01	7.2E+01
		119	4.7E+01	120	3.3E+01	122	1.5E+01	124	7.1E+00					
PRODUCT Z= 45	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	1.0E+06	4.3E+05
PRODUCT A=100		104	5.3E+05											
HALF LIFE= 21.000 H	45	103	7.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+05
	46	102	1.0E+06	104	5.3E+05	105	3.8E+05	106	2.6E+05	108	1.2E+05	110	5.4E+04	2.6E+05
	47	107	1.8E+05	109	8.0E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
	48	106	2.6E+05	108	1.2E+05	110	5.5E+04	111	3.6E+04	112	2.5E+04	113	1.7E+04	2.7E+04
		114	1.1E+04	116	5.1E+03									
	49	113	1.7E+04	115	7.6E+03	0	0.	0	0.	0	0.	0	0.	8.0E+03
	50	112	2.5E+04	114	1.1E+04	115	7.6E+03	116	5.2E+03	117	3.5E+03	118	2.4E+03	2.4E+03
		119	1.6E+03	120	1.1E+03	122	5.3E+02	124	2.4E+02					
PRODUCT Z= 45	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	1.5E+02
PRODUCT A=101		104	7.7E+02											
HALF LIFE= 3.300 Y	45	103	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
	46	102	0.	104	7.8E+02	105	5.6E+02	106	4.0E+02	108	1.8E+02	110	8.3E+01	3.7E+02
	47	107	2.7E+02	109	1.2E+02	0	0.	0	0.	0	0.	0	0.	2.0E+02
	48	106	4.0E+02	108	1.8E+02	110	8.4E+01	111	5.7E+01	112	3.8E+01	113	2.6E+01	4.1E+01
		114	1.7E+01	116	7.8E+00									
	49	113	2.6E+01	115	1.2E+01	0	0.	0	0.	0	0.	0	0.	1.2E+01
	50	112	3.8E+01	114	1.7E+01	115	1.2E+01	116	7.9E+00	117	5.4E+00	118	3.6E+00	3.7E+00
		119	2.5E+00	120	1.7E+00	122	7.9E-01	124	3.7E-01					
PRODUCT Z= 45	44	96	0.	98	0.	99	0.	100	0.	101	0.	102	0.	6.7E+02
PRODUCT A=102		104	3.5E+03											
HALF LIFE= 209.000 D	46	102	0.	104	3.5E+03	105	2.5E+03	106	1.8E+03	108	8.8E+02	110	4.0E+02	1.7E+03
	47	107	1.3E+03	109	6.0E+02	0	0.	0	0.	0	0.	0	0.	9.6E+02
	48	106	1.8E+03	108	8.9E+02	110	4.0E+02	111	2.7E+02	112	1.9E+02	113	1.2E+02	2.0E+02
		114	8.3E+01	116	3.8E+01									
	49	113	1.2E+02	115	5.6E+01	0	0.	0	0.	0	0.	0	0.	5.9E+01
	50	112	1.9E+02	114	8.4E+01	115	5.7E+01	116	3.8E+01	117	2.6E+01	118	1.8E+01	1.8E+01
		119	1.2E+01	120	8.1E+00	122	3.7E+00	124	1.8E+00					
	51	121	5.6E+00	123	2.6E+00	0	0.	0	0.	0	0.	0	0.	4.3E+00
	52	120	8.1E+00	122	3.7E+00	123	2.6E+00	124	1.8E+00	125	1.2E+00	126	8.3E-01	2.9E+00
		128	3.9E-01	130	1.8E-01									

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 45	46	102	0.	104	0.	105	0.	106	0.	108	1.5E+04	110	7.8E+03	5.1E+03
PRODUCT A=105	47	107	2.2E+04	109	1.1E+04	0	0.	0	0.	0	0.	0	0.	1.7E+04
HALF LIFE= 36.000 H	48	106	0.	108	1.6E+04	110	7.9E+03	111	5.4E+03	112	3.6E+03	113	2.5E+03	3.5E+03
		114	1.7E+03	116	7.5E+02									
	49	113	2.5E+03	115	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.2E+03
	50	112	3.7E+03	114	1.7E+03	115	1.1E+03	116	7.6E+02	117	5.1E+02	118	3.4E+02	3.5E+02
		119	2.3E+02	120	1.6E+02	122	7.2E+01	124	3.4E+01					
	51	121	1.1E+02	123	5.0E+01	0	0.	0	0.	0	0.	0	0.	8.2E+01
	52	120	1.6E+02	122	7.3E+01	123	5.0E+01	124	3.4E+01	125	2.3E+01	126	1.6E+01	5.5E+01
		128	7.4E+00	130	3.4E+00									
PRODUCT Z= 45	46	102	0.	104	0.	105	0.	106	0.	108	0.	110	3.1E+03	3.8E+02
PRODUCT A=107	47	107	0.	109	4.4E+03	0	0.	0	0.	0	0.	0	0.	2.1E+03
HALF LIFE= 21.700 M	48	106	0.	108	0.	110	3.2E+03	111	2.3E+03	112	1.6E+03	113	1.1E+03	1.4E+03
		114	7.4E+02	116	3.4E+02									
	49	113	1.1E+03	115	5.0E+02	0	0.	0	0.	0	0.	0	0.	5.3E+02
	50	112	1.6E+03	114	7.5E+02	115	5.0E+02	116	3.4E+02	117	2.3E+02	118	1.5E+02	1.6E+02
		119	1.0E+02	120	7.0E+01	122	3.2E+01	124	1.5E+01					
	51	121	4.7E+01	123	2.2E+01	0	0.	0	0.	0	0.	0	0.	3.6E+01
	52	120	7.1E+01	122	3.2E+01	123	2.2E+01	124	1.5E+01	125	1.0E+01	126	7.0E+00	2.4E+01
		128	3.2E+00	130	1.5E+00									
	53	127	4.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+00
PRODUCT Z= 46	45	103	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
PRODUCT A= 98	46	102	1.5E+04	104	7.3E+03	105	4.9E+03	106	3.3E+03	108	1.5E+03	110	6.8E+02	3.4E+03
HALF LIFE= 17.000 M	47	107	2.2E+03	109	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	48	106	3.3E+03	108	1.5E+03	110	6.9E+02	111	4.7E+02	112	3.1E+02	113	2.1E+02	3.4E+02
		114	1.4E+02	116	6.6E+01									
	49	113	2.1E+02	115	9.7E+01	0	0.	0	0.	0	0.	0	0.	1.0E+02
	50	112	3.2E+02	114	1.5E+02	115	9.8E+01	116	6.7E+01	117	4.6E+01	118	3.1E+01	3.1E+01
		119	2.1E+01	120	1.5E+01	122	6.8E+00	124	3.2E+00					
PRODUCT Z= 46	45	103	5.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+04
PRODUCT A= 99	46	102	7.4E+04	104	3.8E+04	105	2.6E+04	106	1.7E+04	108	7.9E+03	110	3.6E+03	1.8E+04
HALF LIFE= 22.000 M	47	107	1.2E+04	109	5.4E+03	0	0.	0	0.	0	0.	0	0.	8.6E+03
	48	106	1.8E+04	108	7.9E+03	110	3.6E+03	111	2.4E+03	112	1.6E+03	113	1.1E+03	1.8E+03
		114	7.4E+02	116	3.4E+02									
	49	113	1.1E+03	115	5.1E+02	0	0.	0	0.	0	0.	0	0.	5.4E+02
	50	112	1.7E+03	114	7.5E+02	115	5.1E+02	116	3.5E+02	117	2.4E+02	118	1.6E+02	1.6E+02
		119	1.1E+02	120	7.5E+01	122	3.5E+01	124	1.6E+01					
PRODUCT Z= 46	45	103	3.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+04
PRODUCT A=100	46	102	5.3E+04	104	2.7E+04	105	1.9E+04	106	1.3E+04	108	6.0E+03	110	2.7E+03	1.3E+04
HALF LIFE= 3.700 D	47	107	8.9E+03	109	4.0E+03	0	0.	0	0.	0	0.	0	0.	6.5E+03
	48	106	1.3E+04	108	6.0E+03	110	2.8E+03	111	1.8E+03	112	1.2E+03	113	8.4E+02	1.4E+03
		114	5.6E+02	116	2.6E+02									
	49	113	8.4E+02	115	3.8E+02	0	0.	0	0.	0	0.	0	0.	4.0E+02
	50	112	1.3E+03	114	5.7E+02	115	3.8E+02	116	2.6E+02	117	1.8E+02	118	1.2E+02	1.2E+02
		119	8.3E+01	120	5.5E+01	122	2.7E+01	124	1.2E+01					
PRODUCT Z= 46	45	103	6.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+05
PRODUCT A=101	46	102	0.	104	4.7E+05	105	3.4E+05	106	2.4E+05	108	1.1E+05	110	5.0E+04	2.3E+05
HALF LIFE= 8.500 H	47	107	1.7E+05	109	7.5E+04	0	0.	0	0.	0	0.	0	0.	1.2E+05
	48	106	2.4E+05	108	1.1E+05	110	5.1E+04	111	3.5E+04	112	2.3E+04	113	1.6E+04	2.5E+04
		114	1.1E+04	116	4.8E+03									
	49	113	1.6E+04	115	7.1E+03	0	0.	0	0.	0	0.	0	0.	7.5E+03
	50	112	2.3E+04	114	1.1E+04	115	7.2E+03	116	4.8E+03	117	3.3E+03	118	2.2E+03	2.3E+03
		119	1.5E+03	120	1.0E+03	122	4.8E+02	124	2.2E+02					
PRODUCT Z= 46	46	102	0.	104	0.	105	8.7E+04	106	6.2E+04	108	3.2E+04	110	1.5E+04	4.6E+04
PRODUCT A=103	47	107	4.5E+04	109	2.2E+04	0	0.	0	0.	0	0.	0	0.	3.3E+04
HALF LIFE= 17.000 D	48	106	6.3E+04	108	3.2E+04	110	1.5E+04	111	9.9E+03	112	6.7E+03	113	4.5E+03	7.2E+03
		114	3.0E+03	116	1.4E+03									
	49	113	4.6E+03	115	2.1E+03	0	0.	0	0.	0	0.	0	0.	2.2E+03
	50	112	6.7E+03	114	3.1E+03	115	2.1E+03	116	1.4E+03	117	9.4E+02	118	6.3E+02	6.5E+02
		119	4.3E+02	120	2.9E+02	122	1.4E+02	124	6.3E+01					
	51	121	2.0E+02	123	9.2E+01	0	0.	0	0.	0	0.	0	0.	1.5E+02
	52	120	2.9E+02	122	1.4E+02	123	9.2E+01	124	6.4E+01	125	4.4E+01	126	3.0E+01	1.0E+02
		128	1.4E+01	130	6.7E+00									
PRODUCT Z= 46	46	102	0.	104	0.	105	0.	106	0.	108	0.	110	2.0E-05	2.4E-06
PRODUCT A=107	47	107	0.	109	2.8E-05	0	0.	0	0.	0	0.	0	0.	1.4E-05
HALF LIFE= 7.000 T	48	106	0.	108	0.	110	2.0E-05	111	1.4E-05	112	1.0E-05	113	7.0E-06	9.2E-06
		114	4.7E-06	116	2.2E-06									
	49	113	7.1E-06	115	3.2E-06	0	0.	0	0.	0	0.	0	0.	3.4E-06
	50	112	1.0E-05	114	4.8E-06	115	3.2E-06	116	2.2E-06	117	1.5E-06	118	9.9E-07	1.0E-06
		119	6.6E-07	120	4.5E-07	122	2.0E-07	124	9.4E-08					
	51	121	3.0E-07	123	1.4E-07	0	0.	0	0.	0	0.	0	0.	2.3E-07

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 46 A=107 (CONTINUED)	52	120	4.5E-07	122	2.1E-07	123	1.4E-07	124	9.5E-08	125	6.5E-08	126	4.5E-08	1.6E-07
		128	2.1E-08	130	9.6E-09									
	53	127	3.0E-08	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E-08
PRODUCT Z= 46	48	106	0.	108	0.	110	0.	111	6.4E+03	112	4.6E+03	113	3.3E+03	3.1E+03
PRODUCT A=109		114	2.3E+03	116	1.1E+03									
HALF LIFE= 13.500 H	49	113	3.3E+03	115	1.6E+03	0	0.	0	0.	0	0.	0	0.	1.7E+03
	50	112	0.	114	2.3E+03	115	1.6E+03	116	1.1E+03	117	7.3E+02	118	4.9E+02	4.5E+02
		119	3.3E+02	120	2.2E+02	122	1.0E+02	124	4.6E+01					
	51	121	1.5E+02	123	6.8E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
	52	120	2.2E+02	122	1.0E+02	123	6.9E+01	124	4.6E+01	125	3.2E+01	126	2.1E+01	7.6E+01
		128	1.0E+01	130	4.6E+00									
	53	127	1.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+01
	54	124	4.7E+01	126	2.2E+01	128	1.0E+01	129	6.8E+00	130	4.7E+00	131	3.3E+00	3.6E+00
		132	2.2E+00	134	1.0E+00	136	4.9E-01							
PRODUCT Z= 46	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	5.2E+02	1.9E+02
PRODUCT A=111		114	3.7E+02	116	1.9E+02									
HALF LIFE= 22.000 M	49	113	0.	115	2.7E+02	0	0.	0	0.	0	0.	0	0.	2.6E+02
	50	112	0.	114	0.	115	2.7E+02	116	1.9E+02	117	1.3E+02	118	8.8E+01	7.9E+01
		119	5.9E+01	120	4.0E+01	122	1.8E+01	124	8.3E+00					
	51	121	2.7E+01	123	1.2E+01	0	0.	0	0.	0	0.	0	0.	2.1E+01
	52	120	4.1E+01	122	1.8E+01	123	1.2E+01	124	8.4E+00	125	5.7E+00	126	3.8E+00	1.4E+01
		128	1.8E+00	130	8.3E-01									
	53	127	2.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+00
	54	124	8.5E+00	126	3.9E+00	128	1.8E+00	129	1.2E+00	130	8.3E-01	131	5.6E-01	6.4E-01
		132	3.8E-01	134	1.8E-01	136	8.3E-02							
	55	133	2.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E-01
PRODUCT Z= 46	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	2.0E+01
PRODUCT A=112		114	6.1E+01	116	3.1E+01									
HALF LIFE= 21.000 H	49	113	0.	115	4.4E+01	0	0.	0	0.	0	0.	0	0.	4.2E+01
	50	112	0.	114	0.	115	0.	116	3.1E+01	117	2.2E+01	118	1.5E+01	1.3E+01
		119	1.0E+01	120	6.9E+00	122	3.2E+00	124	1.4E+00					
	51	121	4.7E+00	123	2.1E+00	0	0.	0	0.	0	0.	0	0.	3.6E+00
	52	120	7.0E+00	122	3.2E+00	123	2.1E+00	124	1.4E+00	125	9.8E-01	126	6.6E-01	2.4E+00
		128	3.0E-01	130	1.4E-01									
	53	127	4.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E-01
	54	124	1.5E+00	126	6.7E-01	128	3.1E-01	129	2.1E-01	130	1.4E-01	131	9.7E-02	1.1E-01
		132	6.5E-02	134	3.1E-02	136	1.4E-02							
	55	133	4.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E-02
PRODUCT Z= 46	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	1.2E+00
PRODUCT A=113		114	0.	116	1.6E+01									
HALF LIFE= 1.500 M	50	112	0.	114	0.	115	0.	116	0.	117	1.1E+01	118	8.1E+00	4.6E+00
		119	5.5E+00	120	3.7E+00	122	1.7E+00	124	7.7E-01					
	51	121	2.5E+00	123	1.2E+00	0	0.	0	0.	0	0.	0	0.	1.9E+00
	52	120	3.8E+00	122	1.7E+00	123	1.2E+00	124	7.8E-01	125	5.2E-01	126	3.5E-01	1.3E+00
		128	1.6E-01	130	7.4E-02									
	53	127	2.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-01
	54	124	7.9E-01	126	3.6E-01	128	1.6E-01	129	1.1E-01	130	7.5E-02	131	5.1E-02	5.9E-02
		132	3.5E-02	134	1.6E-02	136	7.6E-03							
	55	133	2.4E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-02
	56	130	7.6E-02	132	3.6E-02	134	1.6E-02	135	1.1E-02	136	7.6E-03	137	5.2E-03	5.0E-03
		138	3.5E-03											
PRODUCT Z= 46	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	3.2E-01
PRODUCT A=114		114	0.	116	4.1E+00									
HALF LIFE= 2.400 M	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	2.1E+00	1.0E+00
		119	1.5E+00	120	1.0E+00	122	4.6E-01	124	2.1E-01					
	51	121	6.9E-01	123	3.2E-01	0	0.	0	0.	0	0.	0	0.	5.3E-01
	52	120	1.0E+00	122	4.7E-01	123	3.2E-01	124	2.2E-01	125	1.4E-01	126	9.7E-02	3.5E-01
		128	4.4E-02	130	2.0E-02									
	53	127	6.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E-02
	54	124	2.2E-01	126	9.8E-02	128	4.5E-02	129	3.0E-02	130	2.1E-02	131	1.4E-02	1.6E-02
		132	9.5E-03	134	4.4E-03	136	2.1E-03							
	55	133	6.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E-03
	56	130	2.1E-02	132	9.6E-03	134	4.4E-03	135	3.0E-03	136	2.1E-03	137	1.4E-03	1.4E-03
		138	9.7E-04											
PRODUCT Z= 47	46	102	1.7E+04	104	8.7E+03	105	6.2E+03	106	4.2E+03	108	1.9E+03	110	8.9E+02	4.3E+03
PRODUCT A=100	47	107	2.9E+03	109	1.3E+03	0	0.	0	0.	0	0.	0	0.	2.1E+03
HALF LIFE= 9.000 M	48	106	4.3E+03	108	2.0E+03	110	9.0E+02	111	6.0E+02	112	4.0E+02	113	2.7E+02	4.4E+02
		114	1.8E+02	116	8.4E+01									
	49	113	2.7E+02	115	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.3E+02
	50	112	4.1E+02	114	1.8E+02	115	1.2E+02	116	8.5E+01	117	5.7E+01	118	3.9E+01	4.0E+01
		119	2.7E+01	120	1.8E+01	122	8.6E+00	124	4.0E+00					
	51	121	1.2E+01	123	5.8E+00	0	0.	0	0.	0	0.	0	0.	9.6E+00
	52	120	1.8E+01	122	8.7E+00	123	5.8E+00	124	4.0E+00	125	2.7E+00	126	1.9E+00	6.5E+00
		128	8.9E-01	130	4.3E-01									

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 47	46	102	0.	104	4.5E+04	105	3.2E+04	106	2.3E+04	108	1.1E+04	110	4.8E+03	2.2E+04
PRODUCT A=101	47	107	1.6E+04	109	7.2E+03	0	0.	0	0.	0	0.	0	0.	1.2E+04
HALF LIFE= 14.000 M	48	106	2.3E+04	108	1.1E+04	110	4.9E+03	111	3.3E+03	112	2.2E+03	113	1.5E+03	2.4E+03
		114	1.0E+03	116	4.5E+02									
	49	113	1.5E+03	115	6.8E+02	0	0.	0	0.	0	0.	0	0.	7.1E+02
	50	112	2.2E+03	114	1.0E+03	115	6.8E+02	116	4.6E+02	117	3.1E+02	118	2.1E+02	2.2E+02
		119	1.4E+02	120	9.9E+01	122	4.6E+01	124	2.1E+01					
	51	121	6.7E+01	123	3.2E+01	0	0.	0	0.	0	0.	0	0.	5.2E+01
	52	120	1.0E+02	122	4.6E+01	123	3.2E+01	124	2.2E+01	125	1.5E+01	126	1.0E+01	3.6E+01
		128	4.8E+00	130	2.3E+00									
PRODUCT Z= 47	46	102	0.	104	2.0E+05	105	1.4E+05	106	1.0E+05	108	5.0E+04	110	2.3E+04	9.7E+04
PRODUCT A=102	47	107	7.3E+04	109	3.4E+04	0	0.	0	0.	0	0.	0	0.	5.4E+04
HALF LIFE= 13.000 M	48	106	1.0E+05	108	5.0E+04	110	2.3E+04	111	1.5E+04	112	1.0E+04	113	7.0E+03	1.1E+04
		114	4.7E+03	116	2.1E+03									
	49	113	7.0E+03	115	3.2E+03	0	0.	0	0.	0	0.	0	0.	3.4E+03
	50	112	1.1E+04	114	4.8E+03	115	3.2E+03	116	2.2E+03	117	1.5E+03	118	9.9E+02	1.0E+03
		119	6.7E+02	120	4.6E+02	122	2.1E+02	124	1.0E+02					
	51	121	3.2E+02	123	1.5E+02	0	0.	0	0.	0	0.	0	0.	2.4E+02
	52	120	4.6E+02	122	2.1E+02	123	1.5E+02	124	1.0E+02	125	6.8E+01	126	4.7E+01	1.6E+02
		128	2.2E+01	130	1.0E+01									
PRODUCT Z= 47	46	102	0.	104	0.	105	5.4E+05	106	3.8E+05	108	2.0E+05	110	9.0E+04	2.9E+05
PRODUCT A=103	47	107	2.7E+05	109	1.3E+05	0	0.	0	0.	0	0.	0	0.	2.1E+05
HALF LIFE= 1.100 H	48	106	3.9E+05	108	2.0E+05	110	9.1E+04	111	6.1E+04	112	4.1E+04	113	2.8E+04	4.4E+04
		114	1.9E+04	116	8.5E+03									
	49	113	2.8E+04	115	1.3E+04	0	0.	0	0.	0	0.	0	0.	1.3E+04
	50	112	4.2E+04	114	1.9E+04	115	1.3E+04	116	8.6E+03	117	5.8E+03	118	3.9E+03	4.0E+03
		119	2.7E+03	120	1.8E+03	122	8.4E+02	124	3.9E+02					
	51	121	1.2E+03	123	5.7E+02	0	0.	0	0.	0	0.	0	0.	9.4E+02
	52	120	1.8E+03	122	8.5E+02	123	5.7E+02	124	3.9E+02	125	2.7E+02	126	1.8E+02	6.3E+02
		128	8.5E+01	130	4.1E+01									
PRODUCT Z= 47	46	102	0.	104	0.	105	0.	106	1.2E+06	108	6.0E+05	110	2.9E+05	5.2E+05
PRODUCT A=104	47	107	8.5E+05	109	4.3E+05	0	0.	0	0.	0	0.	0	0.	6.4E+05
HALF LIFE= 67.000 M	48	106	1.2E+06	108	6.1E+05	110	2.9E+05	111	2.0E+05	112	1.3E+05	113	9.0E+04	1.4E+05
		114	6.2E+04	116	2.8E+04									
	49	113	9.1E+04	115	4.1E+04	0	0.	0	0.	0	0.	0	0.	4.3E+04
	50	112	1.4E+05	114	6.2E+04	115	4.1E+04	116	2.8E+04	117	1.9E+04	118	1.3E+04	1.3E+04
		119	8.5E+03	120	5.8E+03	122	2.7E+03	124	1.2E+03					
	51	121	4.0E+03	123	1.9E+03	0	0.	0	0.	0	0.	0	0.	3.1E+03
	52	120	5.9E+03	122	2.7E+03	123	1.9E+03	124	1.2E+03	125	8.6E+02	126	6.0E+02	2.1E+03
		128	2.8E+02	130	1.3E+02									
PRODUCT Z= 47	46	102	0.	104	0.	105	0.	106	0.	108	2.5E+04	110	1.3E+04	8.2E+03
PRODUCT A=105	47	107	3.5E+04	109	1.8E+04	0	0.	0	0.	0	0.	0	0.	2.6E+04
HALF LIFE= 40.000 D	48	106	0.	108	2.5E+04	110	1.3E+04	111	8.6E+03	112	5.8E+03	113	3.9E+03	5.6E+03
		114	2.6E+03	116	1.2E+03									
	49	113	3.9E+03	115	1.8E+03	0	0.	0	0.	0	0.	0	0.	1.9E+03
	50	112	5.9E+03	114	2.7E+03	115	1.8E+03	116	1.2E+03	117	8.1E+02	118	5.5E+02	5.6E+02
		119	3.7E+02	120	2.5E+02	122	1.1E+02	124	5.4E+01					
	51	121	1.7E+02	123	7.9E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	52	120	2.5E+02	122	1.2E+02	123	7.9E+01	124	5.5E+01	125	3.6E+01	126	2.5E+01	8.8E+01
		128	1.2E+01	130	5.5E+00									
PRODUCT Z= 47	46	102	0.	104	0.	105	0.	106	0.	108	1.8E+06	110	9.4E+05	6.1E+05
PRODUCT A=106	47	107	0.	109	1.3E+06	0	0.	0	0.	0	0.	0	0.	6.4E+05
HALF LIFE= 24.000 M	48	106	0.	108	1.9E+06	110	9.5E+05	111	6.8E+05	112	4.6E+05	113	3.1E+05	4.3E+05
		114	2.1E+05	116	9.6E+04									
	49	113	3.1E+05	115	1.4E+05	0	0.	0	0.	0	0.	0	0.	1.5E+05
	50	112	4.7E+05	114	2.1E+05	115	1.4E+05	116	9.7E+04	117	6.5E+04	118	4.4E+04	4.5E+04
		119	2.9E+04	120	2.0E+04	122	9.1E+03	124	4.2E+03					
	51	121	1.3E+04	123	6.2E+03	0	0.	0	0.	0	0.	0	0.	1.0E+04
	52	120	2.0E+04	122	9.2E+03	123	6.2E+03	124	4.3E+03	125	2.9E+03	126	2.0E+03	6.9E+03
		128	9.4E+02	130	4.3E+02									
	53	127	1.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+03
PRODUCT Z= 47	46	102	0.	104	0.	105	0.	106	0.	108	0.	110	4.6E+05	5.7E+04
PRODUCT A=108	48	106	0.	108	0.	110	4.7E+05	111	3.4E+05	112	2.4E+05	113	1.7E+05	2.2E+05
HALF LIFE= 2.400 M		114	1.2E+05	116	5.3E+04									
	49	113	1.7E+05	115	7.9E+04	0	0.	0	0.	0	0.	0	0.	8.3E+04
	50	112	2.4E+05	114	1.2E+05	115	7.9E+04	116	5.3E+04	117	3.6E+04	118	2.4E+04	2.5E+04
		119	1.6E+04	120	1.1E+04	122	5.0E+03	124	2.3E+03					
	51	121	7.5E+03	123	3.4E+03	0	0.	0	0.	0	0.	0	0.	5.7E+03
	52	120	1.1E+04	122	5.1E+03	123	3.4E+03	124	2.3E+03	125	1.6E+03	126	1.1E+03	3.8E+03
		128	4.9E+02	130	2.4E+02									
	53	127	7.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+02

	TAR GET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 47	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	1.6E+03	5.7E+02
PRODUCT A=111		114	1.1E+03	116	5.7E+02									
HALF LIFE= 7.500 D	49	113	1.6E+03	115	8.1E+02	0	0.	0	0.	0	0.	0	0.	8.4E+02
	50	112	0.	114	1.1E+03	115	8.1E+02	116	5.8E+02	117	3.9E+02	118	2.7E+02	2.4E+02
		119	1.8E+02	120	1.2E+02	122	5.5E+01	124	2.5E+01					
	51	121	8.3E+01	123	3.7E+01	0	0.	0	0.	0	0.	0	0.	6.3E+01
	52	120	1.2E+02	122	5.5E+01	123	3.7E+01	124	2.5E+01	125	1.7E+01	126	1.2E+01	4.1E+01
		128	5.3E+00	130	2.5E+00									
	53	127	7.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+00
	54	124	2.6E+01	126	1.2E+01	128	5.3E+00	129	3.7E+00	130	2.5E+00	131	1.7E+00	1.9E+00
		132	1.2E+00	134	5.4E-01	136	2.5E-01							
PRODUCT Z= 47	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	1.6E+03
PRODUCT A=112		114	4.8E+03	116	2.4E+03									
HALF LIFE= 3.200 H	49	113	0.	115	3.4E+03	0	0.	0	0.	0	0.	0	0.	3.3E+03
	50	112	0.	114	0.	115	3.4E+03	116	2.5E+03	117	1.8E+03	118	1.2E+03	1.0E+03
		119	8.1E+02	120	5.4E+02	122	2.5E+02	124	1.1E+02					
	51	121	3.7E+02	123	1.7E+02	0	0.	0	0.	0	0.	0	0.	2.8E+02
	52	120	5.5E+02	122	2.5E+02	123	1.7E+02	124	1.1E+02	125	7.7E+01	126	5.2E+01	1.9E+02
		128	2.4E+01	130	1.1E+01									
	53	127	3.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+01
	54	124	1.1E+02	126	5.2E+01	128	2.4E+01	129	1.6E+01	130	1.1E+01	131	7.6E+00	8.6E+00
		132	5.1E+00	134	2.4E+00	136	1.1E+00							
	55	133	3.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+00
PRODUCT Z= 47	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	6.3E+01
PRODUCT A=113		114	0.	116	8.1E+02									
HALF LIFE= 5.300 H	49	113	0.	115	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.1E+03
	50	112	0.	114	0.	115	0.	116	8.1E+02	117	5.8E+02	118	4.1E+02	3.5E+02
		119	2.8E+02	120	1.9E+02	122	8.7E+01	124	3.9E+01					
	51	121	1.3E+02	123	5.9E+01	0	0.	0	0.	0	0.	0	0.	9.9E+01
	52	120	1.9E+02	122	8.8E+01	123	6.0E+01	124	4.0E+01	125	2.7E+01	126	1.8E+01	6.5E+01
		128	8.3E+00	130	3.8E+00									
	53	127	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
	54	124	4.0E+01	126	1.8E+01	128	8.3E+00	129	5.7E+00	130	3.8E+00	131	2.6E+00	3.0E+00
		132	1.8E+00	134	8.3E-01	136	3.9E-01							
	55	133	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 47	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	4.0E+01	2.0E+01
PRODUCT A=115		119	2.9E+01	120	2.1E+01	122	9.5E+00	124	4.3E+00					
HALF LIFE= 21.000 M	51	121	1.4E+01	123	6.4E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
	52	120	2.1E+01	122	9.6E+00	123	6.5E+00	124	4.4E+00	125	3.0E+00	126	2.0E+00	7.1E+00
		128	9.0E-01	130	4.1E-01									
	53	127	1.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+00
	54	124	4.4E+00	126	2.0E+00	128	9.1E-01	129	6.1E-01	130	4.1E-01	131	2.8E-01	3.2E-01
		132	1.9E-01	134	9.0E-02	136	4.1E-02							
	55	133	1.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-01
	56	130	4.2E-01	132	1.9E-01	134	9.0E-02	135	6.0E-02	136	4.2E-02	137	2.9E-02	2.7E-02
		138	1.9E-02											
PRODUCT Z= 47	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	2.8E+00
PRODUCT A=116		119	7.9E+00	120	5.6E+00	122	2.7E+00	124	1.3E+00					
HALF LIFE= 2.500 M	51	121	4.1E+00	123	1.9E+00	0	0.	0	0.	0	0.	0	0.	3.1E+00
	52	120	0.	122	2.8E+00	123	1.9E+00	124	1.3E+00	125	8.5E-01	126	5.8E-01	2.1E+00
		128	2.6E-01	130	1.2E-01									
	53	127	3.9E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E-01
	54	124	1.3E+00	126	5.9E-01	128	2.6E-01	129	1.8E-01	130	1.2E-01	131	8.1E-02	9.4E-02
		132	5.5E-02	134	2.6E-02	136	1.2E-02							
	55	133	3.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E-02
	56	130	1.2E-01	132	5.6E-02	134	2.6E-02	135	1.8E-02	136	1.2E-02	137	8.2E-03	7.8E-03
		138	5.7E-03											
	57	138	5.7E-03	139	3.8E-03	0	0.	0	0.	0	0.	0	0.	3.8E-03
PRODUCT Z= 47	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	5.4E-01
PRODUCT A=117		119	0.	120	1.5E+00	122	7.4E-01	124	3.4E-01					
HALF LIFE= 1.100 M	51	121	1.0E+00	123	5.1E-01	0	0.	0	0.	0	0.	0	0.	8.1E-01
	52	120	0.	122	7.5E-01	123	5.1E-01	124	3.5E-01	125	2.3E-01	126	1.6E-01	5.6E-01
		128	7.1E-02	130	3.2E-02									
	53	127	1.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E-01
	54	124	3.5E-01	126	1.6E-01	128	7.2E-02	129	4.9E-02	130	3.3E-02	131	2.2E-02	2.5E-02
		132	1.5E-02	134	6.9E-03	136	3.2E-03							
	55	133	1.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E-02
	56	130	3.3E-02	132	1.5E-02	134	6.9E-03	135	4.7E-03	136	3.3E-03	137	2.2E-03	2.1E-03
		138	1.5E-03											
	57	138	1.5E-03	139	1.0E-03	0	0.	0	0.	0	0.	0	0.	1.0E-03
PRODUCT Z= 48	47	107	5.5E+02	109	2.5E+02	0	0.	0	0.	0	0.	0	0.	4.1E+02
PRODUCT A=101	48	106	8.2E+02	108	3.8E+02	110	1.7E+02	111	1.2E+02	112	7.7E+01	113	5.2E+01	8.4E+01
HALF LIFE= 15.000 M		114	3.5E+01	116	1.6E+01									
	49	113	5.2E+01	115	2.4E+01	0	0.	0	0.	0	0.	0	0.	2.5E+01
	50	112	7.8E+01	114	3.6E+01	115	2.4E+01	116	1.6E+01	117	1.1E+01	118	7.4E+00	7.6E+00
		119	5.1E+00	120	3.5E+00	122	1.6E+00	124	7.5E-01					

	TAR GET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 48 A=101	51	121	2.3E+00	123	1.1E+00	0	0.	0	0.	0	0.	0	0.	1.8E+00
(CONTINUED)	52	120	3.5E+00	122	1.6E+00	123	1.1E+00	124	7.5E-01	125	5.2E-01	126	3.5E-01	1.2E+00
		128	1.7E-01	130	8.1E-02									
PRODUCT Z= 48	47	107	3.6E+03	109	1.6E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
PRODUCT A=102	48	106	5.0E+03	108	2.4E+03	110	1.1E+03	111	7.5E+02	112	5.1E+02	113	3.4E+02	5.5E+02
HALF LIFE= 30.000 M		114	2.3E+02	116	1.0E+02									
	49	113	3.4E+02	115	1.6E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
	50	112	5.2E+02	114	2.3E+02	115	1.6E+02	116	1.1E+02	117	7.1E+01	118	4.8E+01	4.9E+01
		119	3.3E+01	120	2.2E+01	122	1.0E+01	124	4.9E+00					
	51	121	1.5E+01	123	7.1E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	52	120	2.2E+01	122	1.0E+01	123	7.1E+00	124	5.0E+00	125	3.3E+00	126	2.3E+00	7.9E+00
		128	1.1E+00	130	5.1E-01									
PRODUCT Z= 48	47	107	1.9E+04	109	9.4E+03	0	0.	0	0.	0	0.	0	0.	1.4E+04
PRODUCT A=103	48	106	2.7E+04	108	1.4E+04	110	6.4E+03	111	4.3E+03	112	2.9E+03	113	2.0E+03	3.1E+03
HALF LIFE= 10.000 M		114	1.3E+03	116	6.0E+02									
	49	113	2.0E+03	115	8.9E+02	0	0.	0	0.	0	0.	0	0.	9.3E+02
	50	112	2.9E+03	114	1.3E+03	115	8.9E+02	116	6.0E+02	117	4.1E+02	118	2.7E+02	2.8E+02
		119	1.9E+02	120	1.3E+02	122	5.9E+01	124	2.7E+01					
	51	121	8.6E+01	123	4.0E+01	0	0.	0	0.	0	0.	0	0.	6.6E+01
	52	120	1.3E+02	122	6.0E+01	123	4.0E+01	124	2.8E+01	125	1.9E+01	126	1.3E+01	4.4E+01
		128	6.0E+00	130	2.9E+00									
PRODUCT Z= 48	47	107	9.0E+04	109	4.6E+04	0	0.	0	0.	0	0.	0	0.	6.9E+04
PRODUCT A=104	48	106	1.3E+05	108	6.5E+04	110	3.1E+04	111	2.1E+04	112	1.4E+04	113	9.6E+03	1.5E+04
HALF LIFE= 57.000 M		114	6.6E+03	116	2.9E+03									
	49	113	9.7E+03	115	4.4E+03	0	0.	0	0.	0	0.	0	0.	4.6E+03
	50	112	1.4E+04	114	6.6E+03	115	4.4E+03	116	3.0E+03	117	2.0E+03	118	1.4E+03	1.4E+03
		119	9.1E+02	120	6.2E+02	122	2.9E+02	124	1.3E+02					
	51	121	4.2E+02	123	2.0E+02	0	0.	0	0.	0	0.	0	0.	3.3E+02
	52	120	6.3E+02	122	2.9E+02	123	2.0E+02	124	1.3E+02	125	9.2E+01	126	6.4E+01	2.2E+02
		128	2.9E+01	130	1.4E+01									
PRODUCT Z= 48	47	107	3.6E+05	109	1.8E+05	0	0.	0	0.	0	0.	0	0.	2.7E+05
PRODUCT A=105	48	106	0.	108	2.6E+05	110	1.3E+05	111	9.0E+04	112	6.1E+04	113	4.1E+04	5.8E+04
HALF LIFE= 55.000 M		114	2.7E+04	116	1.2E+04									
	49	113	4.1E+04	115	1.9E+04	0	0.	0	0.	0	0.	0	0.	2.0E+04
	50	112	6.1E+04	114	2.8E+04	115	1.9E+04	116	1.3E+04	117	8.5E+03	118	5.7E+03	5.8E+03
		119	3.8E+03	120	2.6E+03	122	1.2E+03	124	5.6E+02					
	51	121	1.8E+03	123	8.2E+02	0	0.	0	0.	0	0.	0	0.	1.4E+03
	52	120	2.6E+03	122	1.2E+03	123	8.3E+02	124	5.7E+02	125	3.8E+02	126	2.6E+02	9.1E+02
		128	1.2E+02	130	5.7E+01									
PRODUCT Z= 48	47	107	0.	109	1.5E+06	0	0.	0	0.	0	0.	0	0.	7.4E+05
PRODUCT A=107	48	106	0.	108	0.	110	1.1E+06	111	7.8E+05	112	5.6E+05	113	3.8E+05	4.9E+05
HALF LIFE= 6.500 H		114	2.6E+05	116	1.2E+05									
	49	113	3.8E+05	115	1.7E+05	0	0.	0	0.	0	0.	0	0.	1.8E+05
	50	112	5.6E+05	114	2.6E+05	115	1.7E+05	116	1.2E+05	117	8.0E+04	118	5.3E+04	5.4E+04
		119	3.6E+04	120	2.4E+04	122	1.1E+04	124	5.1E+03					
	51	121	1.6E+04	123	7.5E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
	52	120	2.4E+04	122	1.1E+04	123	7.6E+03	124	5.1E+03	125	3.5E+03	126	2.4E+03	8.3E+03
		128	1.1E+03	130	5.2E+02									
	53	127	1.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+03
PRODUCT Z= 48	48	106	0.	108	0.	110	0.	111	2.2E+03	112	1.6E+03	113	1.1E+03	1.0E+03
PRODUCT A=109		114	7.9E+02	116	3.7E+02									
HALF LIFE= 453.000 D	49	113	1.1E+03	115	5.4E+02	0	0.	0	0.	0	0.	0	0.	5.7E+02
	50	112	1.6E+03	114	8.0E+02	115	5.5E+02	116	3.7E+02	117	2.5E+02	118	1.7E+02	1.7E+02
		119	1.1E+02	120	7.4E+01	122	3.5E+01	124	1.6E+01					
	51	121	5.1E+01	123	2.3E+01	0	0.	0	0.	0	0.	0	0.	3.9E+01
	52	120	7.7E+01	122	3.5E+01	123	2.4E+01	124	1.6E+01	125	1.1E+01	126	7.3E+00	2.6E+01
		128	3.4E+00	130	1.6E+00									
	53	127	5.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+00
	54	124	1.6E+01	126	7.4E+00	128	3.5E+00	129	2.3E+00	130	1.6E+00	131	1.1E+00	1.2E+00
		132	7.5E-01	134	3.5E-01	136	1.7E-01							
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	6.8E+02	118	4.9E+02	2.9E+02
PRODUCT A=115		119	3.5E+02	120	2.5E+02	122	1.1E+02	124	5.2E+01					
HALF LIFE= 2.300 D	51	121	1.7E+02	123	7.7E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	52	120	2.5E+02	122	1.2E+02	123	7.8E+01	124	5.2E+01	125	3.6E+01	126	2.4E+01	8.5E+01
		128	1.1E+01	130	4.9E+00									
	53	127	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	54	124	5.3E+01	126	2.4E+01	128	1.1E+01	129	7.4E+00	130	5.0E+00	131	3.4E+00	3.9E+00
		132	2.3E+00	134	1.1E+00	136	5.0E-01							
	55	133	1.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+00
	56	130	5.0E+00	132	2.3E+00	134	1.1E+00	135	7.3E-01	136	5.0E-01	137	3.5E-01	3.3E-01
		138	2.3E-01											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	4.9E+01
PRODUCT A=117		119	1.4E+02	120	1.0E+02	122	5.1E+01	124	2.3E+01					
HALF LIFE= 2.500 H	51	121	7.2E+01	123	3.5E+01	0	0.	0	0.	0	0.	0	0.	5.6E+01
	52	120	0.	122	5.2E+01	123	3.5E+01	124	2.4E+01	125	1.6E+01	126	1.1E+01	3.8E+01
		128	4.9E+00	130	2.2E+00									
	53	127	7.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+00
	54	124	2.4E+01	126	1.1E+01	128	5.0E+00	129	3.3E+00	130	2.3E+00	131	1.5E+00	1.8E+00
		132	1.0E+00	134	4.7E-01	136	2.2E-01							
	55	133	7.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E-01
	56	130	2.3E+00	132	1.0E+00	134	4.8E-01	135	3.3E-01	136	2.2E-01	137	1.5E-01	1.4E-01
		138	1.0E-01											
	57	138	1.0E-01	139	7.2E-02	0	0.	0	0.	0	0.	0	0.	7.2E-02
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	1.1E+01
PRODUCT A=118		119	0.	120	2.9E+01	122	1.5E+01	124	7.2E+00					
HALF LIFE= 50.000 M	51	121	2.1E+01	123	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.6E+01
	52	120	0.	122	1.5E+01	123	1.1E+01	124	7.3E+00	125	4.9E+00	126	3.3E+00	1.2E+01
		128	1.5E+00	130	6.9E-01									
	53	127	2.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+00
	54	124	7.4E+00	126	3.4E+00	128	1.5E+00	129	1.0E+00	130	6.9E-01	131	4.7E-01	5.4E-01
		132	3.2E-01	134	1.5E-01	136	6.7E-02							
	55	133	2.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-01
	56	130	7.0E-01	132	3.2E-01	134	1.5E-01	135	9.9E-02	136	6.8E-02	137	4.6E-02	4.4E-02
		138	3.1E-02											
	57	138	3.1E-02	139	2.2E-02	0	0.	0	0.	0	0.	0	0.	2.2E-02
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	3.2E-01
PRODUCT A=119		119	0.	120	0.	122	4.0E+00	124	2.1E+00					
HALF LIFE= 9.500 M	51	121	0.	123	2.9E+00	0	0.	0	0.	0	0.	0	0.	1.3E+00
	52	120	0.	122	0.	123	2.9E+00	124	2.1E+00	125	1.4E+00	126	9.6E-01	3.1E+00
		128	4.4E-01	130	2.0E-01									
	53	127	6.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E-01
	54	124	0.	126	9.7E-01	128	4.4E-01	129	3.0E-01	130	2.0E-01	131	1.3E-01	1.5E-01
		132	9.1E-02	134	4.1E-02	136	1.9E-02							
	55	133	6.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E-02
	56	130	2.0E-01	132	9.2E-02	134	4.2E-02	135	2.8E-02	136	1.9E-02	137	1.3E-02	1.3E-02
		138	9.0E-03											
	57	138	9.1E-03	139	6.1E-03	0	0.	0	0.	0	0.	0	0.	6.1E-03
	58	136	1.9E-02	138	9.1E-03	140	4.2E-03	142	2.0E-03	0	0.	0	0.	4.0E-03
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	8.3E-02
PRODUCT A=120		119	0.	120	0.	122	1.0E+00	124	5.3E-01					
HALF LIFE= 1.000 M	51	121	0.	123	7.4E-01	0	0.	0	0.	0	0.	0	0.	3.2E-01
	52	120	0.	122	0.	123	0.	124	5.3E-01	125	3.8E-01	126	2.6E-01	1.5E-01
		128	1.2E-01	130	5.4E-02									
	53	127	1.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-01
	54	124	0.	126	2.6E-01	128	1.2E-01	129	8.0E-02	130	5.5E-02	131	3.7E-02	4.2E-02
		132	2.5E-02	134	1.1E-02	136	5.2E-03							
	55	133	1.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E-02
	56	130	5.5E-02	132	2.5E-02	134	1.1E-02	135	7.6E-03	136	5.2E-03	137	3.5E-03	3.4E-03
		138	2.4E-03											
	57	138	2.4E-03	139	1.7E-03	0	0.	0	0.	0	0.	0	0.	1.7E-03
	58	136	5.3E-03	138	2.4E-03	140	1.1E-03	142	5.3E-04	0	0.	0	0.	1.1E-03
	59	141	7.7E-04	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E-04
PRODUCT Z= 48	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	7.9E-03
PRODUCT A=121		119	0.	120	0.	122	0.	124	1.3E-01					
HALF LIFE= 3.500 M	52	120	0.	122	0.	123	0.	124	0.	125	9.2E-02	126	6.6E-02	3.3E-02
		128	3.0E-02	130	1.4E-02									
	53	127	4.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E-02
	54	124	0.	126	0.	128	3.1E-02	129	2.1E-02	130	1.4E-02	131	9.5E-03	1.1E-02
		132	6.3E-03	134	2.9E-03	136	1.3E-03							
	55	133	4.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E-03
	56	130	1.4E-02	132	6.4E-03	134	2.9E-03	135	2.0E-03	136	1.3E-03	137	9.0E-04	8.6E-04
		138	6.1E-04											
	57	138	6.1E-04	139	4.2E-04	0	0.	0	0.	0	0.	0	0.	4.2E-04
	58	136	1.3E-03	138	6.1E-04	140	2.9E-04	142	1.3E-04	0	0.	0	0.	2.7E-04
	59	141	1.9E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-04
	60	142	1.3E-04	143	9.3E-05	144	6.2E-05	145	4.3E-05	146	2.9E-05	148	1.4E-05	7.2E-05
		150	6.6E-06											
PRODUCT Z= 49	48	106	0.	108	7.7E+04	110	3.9E+04	111	2.8E+04	112	1.9E+04	113	1.3E+04	1.8E+04
PRODUCT A=106		114	8.7E+03	116	4.0E+03									
HALF LIFE= 5.300 M	49	113	1.3E+04	115	5.9E+03	0	0.	0	0.	0	0.	0	0.	6.2E+03
	50	112	1.9E+04	114	8.8E+03	115	5.9E+03	116	4.0E+03	117	2.7E+03	118	1.8E+03	1.9E+03
		119	1.2E+03	120	8.2E+02	122	3.8E+02	124	1.7E+02					
	51	121	5.6E+02	123	2.6E+02	0	0.	0	0.	0	0.	0	0.	4.3E+02
	52	120	8.3E+02	122	3.8E+02	123	2.6E+02	124	1.8E+02	125	1.2E+02	126	8.1E+01	2.9E+02
		128	3.9E+01	130	1.8E+01									
	53	127	5.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 49	48	106	0.	108	0.	110	1.7E+05	111	1.2E+05	112	8.5E+04	113	5.8E+04	7.5E+04
PRODUCT A=107		114	3.9E+04	116	1.8E+04									
HALF LIFE= 32.000 M	49	113	5.8E+04	115	2.6E+04	0	0.	0	0.	0	0.	0	0.	2.8E+04
	50	112	8.6E+04	114	3.9E+04	115	2.6E+04	116	1.8E+04	117	1.2E+04	118	8.1E+03	8.3E+03
		119	5.5E+03	120	3.7E+03	122	1.7E+03	124	7.7E+02					
	51	121	2.5E+03	123	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.9E+03
	52	120	3.7E+03	122	1.7E+03	123	1.2E+03	124	7.8E+02	125	5.3E+02	126	3.7E+02	1.3E+03
		128	1.7E+02	130	7.9E+01									
	53	127	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+02
PRODUCT Z= 49	48	106	0.	108	0.	110	6.0E+05	111	4.3E+05	112	3.0E+05	113	2.2E+05	2.7E+05
PRODUCT A=108		114	1.5E+05	116	6.7E+04									
HALF LIFE= 58.000 M	49	113	2.2E+05	115	1.0E+05	0	0.	0	0.	0	0.	0	0.	1.1E+05
	50	112	3.1E+05	114	1.5E+05	115	1.0E+05	116	6.8E+04	117	4.6E+04	118	3.1E+04	3.1E+04
		119	2.1E+04	120	1.4E+04	122	6.4E+03	124	2.9E+03					
	51	121	9.5E+03	123	4.3E+03	0	0.	0	0.	0	0.	0	0.	7.3E+03
	52	120	1.4E+04	122	6.4E+03	123	4.3E+03	124	3.0E+03	125	2.0E+03	126	1.4E+03	4.8E+03
		128	6.3E+02	130	3.0E+02									
	53	127	9.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.4E+02
PRODUCT Z= 49	48	106	0.	108	0.	110	0.	111	1.2E+06	112	8.8E+05	113	6.3E+05	5.9E+05
PRODUCT A=109		114	4.5E+05	116	2.1E+05									
HALF LIFE= 4.300 H	49	113	6.3E+05	115	3.1E+05	0	0.	0	0.	0	0.	0	0.	3.2E+05
	50	112	8.9E+05	114	4.5E+05	115	3.1E+05	116	2.1E+05	117	1.4E+05	118	9.5E+04	9.6E+04
		119	6.4E+04	120	4.3E+04	122	2.0E+04	124	8.9E+03					
	51	121	2.9E+04	123	1.3E+04	0	0.	0	0.	0	0.	0	0.	2.2E+04
	52	120	4.3E+04	122	2.0E+04	123	1.3E+04	124	9.0E+03	125	6.1E+03	126	4.1E+03	1.5E+04
		128	1.9E+03	130	9.0E+02									
	53	127	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03
	54	124	9.1E+03	126	4.2E+03	128	2.0E+03	129	1.3E+03	130	9.1E+02	131	6.3E+02	7.0E+02
		132	4.2E+02	134	2.0E+02	136	9.5E+01							
PRODUCT Z= 49	48	106	0.	108	0.	110	0.	111	0.	112	2.1E+06	113	1.5E+06	1.0E+06
PRODUCT A=110		114	1.1E+06	116	5.1E+05									
HALF LIFE= 66.000 M	49	113	1.5E+06	115	7.6E+05	0	0.	0	0.	0	0.	0	0.	7.9E+05
	50	112	2.1E+06	114	1.1E+06	115	7.6E+05	116	5.2E+05	117	3.5E+05	118	2.4E+05	2.4E+05
		119	1.6E+05	120	1.1E+05	122	4.9E+04	124	2.2E+04					
	51	121	7.3E+04	123	3.3E+04	0	0.	0	0.	0	0.	0	0.	5.6E+04
	52	120	1.1E+05	122	4.9E+04	123	3.3E+04	124	2.2E+04	125	1.5E+04	126	1.0E+04	3.7E+04
		128	4.8E+03	130	2.2E+03									
	53	127	7.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E+03
	54	124	2.3E+04	126	1.0E+04	128	4.8E+03	129	3.3E+03	130	2.2E+03	131	1.5E+03	1.7E+03
		132	1.1E+03	134	4.9E+02	136	2.3E+02							
PRODUCT Z= 49	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	4.0E+05	1.5E+05
PRODUCT A=111		114	2.9E+05	116	1.5E+05									
HALF LIFE= 2.810 D	49	113	4.0E+05	115	2.1E+05	0	0.	0	0.	0	0.	0	0.	2.1E+05
	50	112	0.	114	2.9E+05	115	2.1E+05	116	1.5E+05	117	1.0E+05	118	6.8E+04	6.2E+04
		119	4.6E+04	120	3.1E+04	122	1.4E+04	124	6.4E+03					
	51	121	2.1E+04	123	9.5E+03	0	0.	0	0.	0	0.	0	0.	1.6E+04
	52	120	3.1E+04	122	1.4E+04	123	9.6E+03	124	6.5E+03	125	4.4E+03	126	2.9E+03	1.1E+04
		128	1.4E+03	130	6.4E+02									
	53	127	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	54	124	6.5E+03	126	3.0E+03	128	1.4E+03	129	9.3E+02	130	6.4E+02	131	4.3E+02	4.9E+02
		132	3.0E+02	134	1.4E+02	136	6.4E+01							
PRODUCT Z= 49	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	3.5E+05
PRODUCT A=112		114	1.0E+06	116	5.3E+05									
HALF LIFE= 14.000 M	49	113	0.	115	7.5E+05	0	0.	0	0.	0	0.	0	0.	7.1E+05
	50	112	0.	114	1.1E+06	115	7.5E+05	116	5.4E+05	117	3.8E+05	118	2.6E+05	2.3E+05
		119	1.8E+05	120	1.2E+05	122	5.4E+04	124	2.4E+04					
	51	121	8.0E+04	123	3.6E+04	0	0.	0	0.	0	0.	0	0.	6.1E+04
	52	120	1.2E+05	122	5.5E+04	123	3.7E+04	124	2.5E+04	125	1.7E+04	126	1.1E+04	4.0E+04
		128	5.2E+03	130	2.4E+03									
	53	127	7.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+03
	54	124	2.5E+04	126	1.1E+04	128	5.2E+03	129	3.5E+03	130	2.4E+03	131	1.7E+03	1.9E+03
		132	1.1E+03	134	5.3E+02	136	2.4E+02							
	55	133	7.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E+02
PRODUCT Z= 49	48	106	0.	108	0.	110	0.	111	0.	112	0.	113	0.	1.5E+04
PRODUCT A=114		114	0.	116	1.9E+05									
HALF LIFE= 72.000 S	50	112	0.	114	0.	115	0.	116	1.9E+05	117	1.3E+05	118	9.6E+04	8.2E+04
		119	6.9E+04	120	4.7E+04	122	2.1E+04	124	9.8E+03					
	51	121	3.2E+04	123	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.4E+04
	52	120	4.7E+04	122	2.1E+04	123	1.5E+04	124	9.9E+03	125	6.6E+03	126	4.4E+03	1.6E+04
		128	2.0E+03	130	9.3E+02									
	53	127	3.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+03
	54	124	1.0E+04	126	4.5E+03	128	2.0E+03	129	1.4E+03	130	9.4E+02	131	6.3E+02	7.3E+02
		132	4.3E+02	134	2.0E+02	136	9.6E+01							
	55	133	3.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 49 PRODUCT A=117 HALF LIFE= 45.000 M	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	2.0E+03
		119	5.6E+03	120	4.0E+03	122	2.0E+03	124	9.4E+02					
	51	121	2.9E+03	123	1.4E+03	0	0.	0	0.	0	0.	0	0.	2.2E+03
	52	120	4.0E+03	122	2.1E+03	123	1.4E+03	124	9.5E+02	125	6.4E+02	126	4.3E+02	1.5E+03
		128	2.0E+02	130	8.9E+01									
	53	127	3.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+02
	54	124	9.6E+02	126	4.4E+02	128	2.0E+02	129	1.3E+02	130	9.0E+01	131	6.1E+01	7.0E+01
		132	4.1E+01	134	1.9E+01	136	8.9E+00							
	55	133	2.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+01
	56	130	9.1E+01	132	4.1E+01	134	1.9E+01	135	1.3E+01	136	8.9E+00	137	6.0E+00	5.8E+00
		138	4.1E+00											
	57	138	4.1E+00	139	2.9E+00	0	0.	0	0.	0	0.	0	0.	2.9E+00
PRODUCT Z= 49 PRODUCT A=119 HALF LIFE= 2.000 M	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	1.9E+01
		119	0.	120	0.	122	2.4E+02	124	1.2E+02					
	51	121	3.4E+02	123	1.7E+02	0	0.	0	0.	0	0.	0	0.	2.7E+02
	52	120	0.	122	2.4E+02	123	1.7E+02	124	1.2E+02	125	8.5E+01	126	5.8E+01	1.9E+02
		128	2.6E+01	130	1.2E+01									
	53	127	3.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+01
	54	124	1.3E+02	126	5.8E+01	128	2.6E+01	129	1.8E+01	130	1.2E+01	131	8.1E+00	9.4E+00
		132	5.5E+00	134	2.5E+00	136	1.1E+00							
	55	133	3.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+00
	56	130	1.2E+01	132	5.5E+00	134	2.5E+00	135	1.7E+00	136	1.2E+00	137	7.9E-01	7.5E-01
		138	5.4E-01											
	57	138	5.4E-01	139	3.6E-01	0	0.	0	0.	0	0.	0	0.	3.6E-01
PRODUCT Z= 50 PRODUCT A=108 HALF LIFE= 9.000 M	49	113	1.7E+04	115	7.6E+03	0	0.	0	0.	0	0.	0	0.	8.0E+03
	50	112	2.3E+04	114	1.1E+04	115	7.7E+03	116	5.2E+03	117	3.5E+03	118	2.4E+03	2.4E+03
		119	1.6E+03	120	1.1E+03	122	4.9E+02	124	2.2E+02					
	51	121	7.2E+02	123	3.3E+02	0	0.	0	0.	0	0.	0	0.	5.5E+02
	52	120	1.1E+03	122	4.9E+02	123	3.3E+02	124	2.3E+02	125	1.5E+02	126	1.0E+02	3.7E+02
		128	4.8E+01	130	2.3E+01									
	53	127	7.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+01
	54	124	2.3E+02	126	1.1E+02	128	4.8E+01	129	3.3E+01	130	2.3E+01	131	1.6E+01	1.8E+01
		132	1.1E+01	134	5.1E+00	136	2.4E+00							
PRODUCT Z= 50 PRODUCT A=109 HALF LIFE= 18.000 M	49	113	7.4E+04	115	3.6E+04	0	0.	0	0.	0	0.	0	0.	3.8E+04
	50	112	1.0E+05	114	5.3E+04	115	3.6E+04	116	2.4E+04	117	1.6E+04	118	1.1E+04	1.1E+04
		119	7.6E+03	120	5.0E+03	122	2.3E+03	124	1.0E+03					
	51	121	3.4E+03	123	1.6E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
	52	120	5.1E+03	122	2.3E+03	123	1.6E+03	124	1.1E+03	125	7.2E+02	126	4.9E+02	1.7E+03
		128	2.3E+02	130	1.1E+02									
	53	127	3.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+02
	54	124	1.1E+03	126	4.9E+02	128	2.3E+02	129	1.5E+02	130	1.1E+02	131	7.4E+01	8.3E+01
		132	5.0E+01	134	2.3E+01	136	1.1E+01							
PRODUCT Z= 50 PRODUCT A=110 HALF LIFE= 4.000 H	49	113	2.8E+05	115	1.4E+05	0	0.	0	0.	0	0.	0	0.	1.5E+05
	50	112	3.9E+05	114	2.0E+05	115	1.4E+05	116	9.8E+04	117	6.6E+04	118	4.4E+04	4.5E+04
		119	3.0E+04	120	2.0E+04	122	9.2E+03	124	4.2E+03					
	51	121	1.4E+04	123	6.2E+03	0	0.	0	0.	0	0.	0	0.	1.0E+04
	52	120	2.1E+04	122	9.3E+03	123	6.3E+03	124	4.2E+03	125	2.8E+03	126	1.9E+03	6.9E+03
		128	9.0E+02	130	4.1E+02									
	53	127	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	54	124	4.2E+03	126	2.0E+03	128	9.0E+02	129	6.2E+02	130	4.2E+02	131	2.9E+02	3.3E+02
		132	2.0E+02	134	9.2E+01	136	4.3E+01							
PRODUCT Z= 50 PRODUCT A=111 HALF LIFE= 35.000 M	49	113	9.2E+05	115	4.7E+05	0	0.	0	0.	0	0.	0	0.	4.9E+05
	50	112	0.	114	6.6E+05	115	4.7E+05	116	3.4E+05	117	2.3E+05	118	1.5E+05	1.4E+05
		119	1.0E+05	120	7.0E+04	122	3.2E+04	124	1.4E+04					
	51	121	4.8E+04	123	2.2E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	52	120	7.1E+04	122	3.2E+04	123	2.2E+04	124	1.5E+04	125	9.9E+03	126	6.7E+03	2.4E+04
		128	3.1E+03	130	1.4E+03									
	53	127	4.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+03
	54	124	1.5E+04	126	6.7E+03	128	3.1E+03	129	2.1E+03	130	1.5E+03	131	9.7E+02	1.1E+03
		132	6.7E+02	134	3.1E+02	136	1.5E+02							
PRODUCT Z= 50 PRODUCT A=113 HALF LIFE= 118.000 D	49	113	0.	115	1.3E+04	0	0.	0	0.	0	0.	0	0.	1.2E+04
	50	112	0.	114	0.	115	1.3E+04	116	9.2E+03	117	6.6E+03	118	4.7E+03	4.0E+03
		119	3.2E+03	120	2.2E+03	122	9.8E+02	124	4.5E+02					
	51	121	1.5E+03	123	6.7E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
	52	120	2.2E+03	122	9.9E+02	123	6.8E+02	124	4.5E+02	125	3.0E+02	126	2.1E+02	7.4E+02
		128	9.4E+01	130	4.3E+01									
	53	127	1.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+02
	54	124	4.6E+02	126	2.1E+02	128	9.4E+01	129	6.4E+01	130	4.3E+01	131	3.0E+01	3.4E+01
		132	2.0E+01	134	9.4E+00	136	4.4E+00							
	55	133	1.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 50	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	1.6E+01
PRODUCT A=121		119	0.	120	0.	122	0.	124	2.6E+02					
HALF LIFE= 26.800 H	51	121	0.	123	3.7E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
	52	120	0.	122	0.	123	3.7E+02	124	2.7E+02	125	1.9E+02	126	1.4E+02	4.1E+02
		128	6.3E+01	130	2.8E+01									
	53	127	9.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.3E+01
	54	124	0.	126	1.4E+02	128	6.3E+01	129	4.3E+01	130	2.9E+01	131	2.0E+01	2.2E+01
		132	1.3E+01	134	5.9E+00	136	2.7E+00							
	55	133	8.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E+00
	56	130	2.9E+01	132	1.3E+01	134	6.0E+00	135	4.0E+00	136	2.7E+00	137	1.9E+00	1.8E+00
		138	1.3E+00											
	57	138	1.3E+00	139	8.6E-01	0	0.	0	0.	0	0.	0	0.	8.6E-01
	58	136	2.8E+00	138	1.3E+00	140	5.9E-01	142	2.7E-01	0	0.	0	0.	5.6E-01
PRODUCT Z= 50	52	120	0.	122	0.	123	0.	124	0.	125	4.1E+01	126	2.9E+01	1.5E+01
PRODUCT A=123		128	1.5E+01	130	6.9E+00									
HALF LIFE= 40.000 M	53	127	2.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+01
	54	124	0.	126	0.	128	1.5E+01	129	1.0E+01	130	6.9E+00	131	4.7E+00	5.3E+00
		132	3.2E+00	134	1.4E+00	136	6.5E-01							
	55	133	2.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+00
	56	130	7.0E+00	132	3.2E+00	134	1.4E+00	135	9.7E-01	136	6.6E-01	137	4.4E-01	4.2E-01
		138	3.0E-01											
	57	138	3.0E-01	139	2.0E-01	0	0.	0	0.	0	0.	0	0.	2.1E-01
	58	136	6.6E-01	138	3.0E-01	140	1.4E-01	142	6.5E-02	0	0.	0	0.	1.3E-01
	59	141	9.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E-02
	60	142	6.6E-02	143	4.4E-02	144	3.0E-02	145	2.1E-02	146	1.4E-02	148	6.6E-03	3.5E-02
		150	3.2E-03											
PRODUCT Z= 50	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	4.0E-02
PRODUCT A=125		128	8.0E-02	130	4.1E-02									
HALF LIFE= 9.620 D	54	124	0.	126	0.	128	0.	129	5.8E-02	130	4.1E-02	131	2.8E-02	2.9E-02
		132	1.9E-02	134	8.6E-03	136	3.9E-03							
	55	133	1.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-02
	56	130	0.	132	1.9E-02	134	8.7E-03	135	5.9E-03	136	4.0E-03	137	2.7E-03	2.5E-03
		138	1.8E-03											
	57	138	1.8E-03	139	1.2E-03	0	0.	0	0.	0	0.	0	0.	1.2E-03
	58	136	4.0E-03	138	1.8E-03	140	8.2E-04	142	3.8E-04	0	0.	0	0.	7.8E-04
	59	141	5.6E-04	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E-04
	60	142	3.8E-04	143	2.6E-04	144	1.8E-04	145	1.2E-04	146	8.3E-05	148	3.8E-05	2.0E-04
		150	1.8E-05											
PRODUCT Z= 50	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	2.8E-09
PRODUCT A=126		128	5.6E-09	130	2.8E-09									
HALF LIFE= .100 T	54	124	0.	126	0.	128	0.	129	0.	130	2.9E-09	131	2.1E-09	1.0E-09
		132	1.4E-09	134	6.4E-10	136	2.9E-10							
	55	133	9.5E-10	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E-10
	56	130	0.	132	1.4E-09	134	6.4E-10	135	4.3E-10	136	2.9E-10	137	2.0E-10	1.8E-10
		138	1.3E-10											
	57	138	1.3E-10	139	9.0E-11	0	0.	0	0.	0	0.	0	0.	9.0E-11
	58	136	3.0E-10	138	1.3E-10	140	6.1E-11	142	2.8E-11	0	0.	0	0.	5.8E-11
	59	141	4.1E-11	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E-11
	60	142	2.8E-11	143	1.9E-11	144	1.3E-11	145	8.9E-12	146	6.0E-12	148	2.9E-12	1.5E-11
		150	1.3E-12											
PRODUCT Z= 50	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	1.3E-02
PRODUCT A=127		128	0.	130	3.6E-02									
HALF LIFE= 2.100 H	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	2.6E-02	1.2E-02
		132	1.9E-02	134	8.6E-03	136	3.9E-03							
	55	133	1.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-02
	56	130	0.	132	0.	134	8.7E-03	135	5.9E-03	136	3.9E-03	137	2.7E-03	2.5E-03
		138	1.8E-03											
	57	138	1.8E-03	139	1.2E-03	0	0.	0	0.	0	0.	0	0.	1.2E-03
	58	136	4.0E-03	138	1.8E-03	140	8.2E-04	142	3.7E-04	0	0.	0	0.	7.8E-04
	59	141	5.6E-04	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E-04
	60	142	3.8E-04	143	2.6E-04	144	1.7E-04	145	1.2E-04	146	8.1E-05	148	3.7E-05	2.0E-04
		150	1.7E-05											
	62	144	1.7E-04	147	5.5E-05	148	3.8E-05	149	2.6E-05	150	1.8E-05	152	8.2E-06	2.5E-05
		154	4.0E-06											
PRODUCT Z= 50	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	2.9E-03
PRODUCT A=128		128	0.	130	8.4E-03									
HALF LIFE= 62.000 M	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	1.5E-03
		132	4.3E-03	134	2.1E-03	136	9.6E-04							
	55	133	3.1E-03	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E-03
	56	130	0.	132	0.	134	2.1E-03	135	1.4E-03	136	9.6E-04	137	6.5E-04	6.1E-04
		138	4.4E-04											
	57	138	4.5E-04	139	3.0E-04	0	0.	0	0.	0	0.	0	0.	3.0E-04
	58	136	9.7E-04	138	4.5E-04	140	2.0E-04	142	9.1E-05	0	0.	0	0.	1.9E-04
	59	141	1.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-04
	60	142	9.2E-05	143	6.2E-05	144	4.2E-05	145	2.9E-05	146	2.0E-05	148	9.0E-06	4.9E-05
		150	4.3E-06											
	62	144	4.3E-05	147	1.4E-05	148	9.0E-06	149	6.2E-06	150	4.3E-06	152	2.0E-06	6.2E-06
		154	9.4E-07											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES																NATURAL MILLI CURIES
PRODUCT Z= 50	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.					7.2E-05
PRODUCT A=129		132	0.	134	4.9E-04	136	2.2E-04											
HALF LIFE= 6.200 M	56	130	0.	132	0.	134	0.	135	3.3E-04	136	2.3E-04	137	1.5E-04					1.3E-04
		138	1.0E-04															
	57	138	1.0E-04	139	7.0E-05	0	0.	0	0.	0	0.	0	0.					7.0E-05
	58	136	0.	138	1.0E-04	140	4.7E-05	142	2.1E-05	0	0.	0	0.					4.4E-05
	59	141	3.2E-05	0	0.	0	0.	0	0.	0	0.	0	0.					3.2E-05
	60	142	2.2E-05	143	1.5E-05	144	9.8E-06	145	6.7E-06	146	4.5E-06	148	2.1E-06					1.1E-05
		150	9.7E-07															
	62	144	9.9E-06	147	3.1E-06	148	2.1E-06	149	1.4E-06	150	9.8E-07	152	4.6E-07					1.4E-06
		154	2.1E-07															
	63	151	6.9E-07	153	3.1E-07	0	0.	0	0.	0	0.	0	0.					4.9E-07
PRODUCT Z= 50	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.					1.6E-05
PRODUCT A=130		132	0.	134	1.0E-04	136	5.0E-05											
HALF LIFE= 2.600 M	56	130	0.	132	0.	134	0.	135	0.	136	5.0E-05	137	3.4E-05					2.4E-05
		138	2.3E-05															
	57	138	2.3E-05	139	1.6E-05	0	0.	0	0.	0	0.	0	0.					1.6E-05
	58	136	0.	138	2.3E-05	140	1.1E-05	142	4.8E-06	0	0.	0	0.					1.0E-05
	59	141	7.1E-06	0	0.	0	0.	0	0.	0	0.	0	0.					7.1E-06
	60	142	4.8E-06	143	3.3E-06	144	2.2E-06	145	1.5E-06	146	1.0E-06	148	4.6E-07					2.5E-06
		150	2.1E-07															
	62	144	2.2E-06	147	6.9E-07	148	4.7E-07	149	3.2E-07	150	2.1E-07	152	1.0E-07					3.2E-07
		154	4.7E-08															
	63	151	1.5E-07	153	6.9E-08	0	0.	0	0.	0	0.	0	0.					1.1E-07
PRODUCT Z= 50	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.					9.8E-07
PRODUCT A=131		132	0.	134	0.	136	1.1E-05											
HALF LIFE= 2.000 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	7.3E-06					4.4E-06
		138	4.9E-06															
	57	138	5.0E-06	139	3.3E-06	0	0.	0	0.	0	0.	0	0.					3.3E-06
	58	136	0.	138	0.	140	2.3E-06	142	1.0E-06	0	0.	0	0.					2.1E-06
	59	141	1.5E-06	0	0.	0	0.	0	0.	0	0.	0	0.					1.5E-06
	60	142	1.0E-06	143	7.0E-07	144	4.7E-07	145	3.2E-07	146	2.1E-07	148	9.9E-08					5.5E-07
		150	4.6E-08															
	62	144	4.8E-07	147	1.5E-07	148	9.9E-08	149	6.8E-08	150	4.7E-08	152	2.1E-08					6.8E-08
		154	1.0E-08															
	63	151	3.1E-08	153	1.5E-08	0	0.	0	0.	0	0.	0	0.					2.3E-08
PRODUCT Z= 50	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.					1.9E-07
PRODUCT A=132		132	0.	134	0.	136	2.1E-06											
HALF LIFE= 2.200 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.					7.4E-07
		138	1.0E-06															
	57	138	0.	139	6.9E-07	0	0.	0	0.	0	0.	0	0.					6.9E-07
	58	136	0.	138	0.	140	4.7E-07	142	2.2E-07	0	0.	0	0.					4.4E-07
	59	141	3.2E-07	0	0.	0	0.	0	0.	0	0.	0	0.					3.2E-07
	60	142	2.2E-07	143	1.4E-07	144	9.7E-08	145	6.6E-08	146	4.4E-08	148	2.0E-08					1.1E-07
		150	9.4E-09															
	62	144	9.8E-08	147	3.0E-08	148	2.1E-08	149	1.4E-08	150	9.5E-09	152	4.3E-09					1.4E-08
		154	2.1E-09															
	63	151	6.5E-09	153	3.0E-09	0	0.	0	0.	0	0.	0	0.					4.7E-09
PRODUCT Z= 51	50	112	0.	114	0.	115	6.4E+05	116	4.5E+05	117	3.2E+05	118	2.3E+05					2.0E+05
PRODUCT A=113		119	1.6E+05	120	1.1E+05	122	4.8E+04	124	2.2E+04									
HALF LIFE= 7.000 M	51	121	7.2E+04	123	3.3E+04	0	0.	0	0.	0	0.	0	0.					5.5E+04
	52	120	1.1E+05	122	4.9E+04	123	3.3E+04	124	2.2E+04	125	1.5E+04	126	1.0E+04					3.6E+04
		128	4.6E+03	130	2.1E+03													
	53	127	6.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.					6.8E+03
	54	124	2.2E+04	126	1.0E+04	128	4.6E+03	129	3.2E+03	130	2.1E+03	131	1.5E+03					1.7E+03
		132	1.0E+03	134	4.4E+02	136	2.2E+02											
	55	133	6.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.					6.7E+02
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	1.3E+06	117	9.3E+05	118	6.7E+05					5.7E+05
PRODUCT A=114		119	4.8E+05	120	3.2E+05	122	1.5E+05	124	6.8E+04									
HALF LIFE= 3.400 M	51	121	2.2E+05	123	1.0E+05	0	0.	0	0.	0	0.	0	0.					1.7E+05
	52	120	3.3E+05	122	1.5E+05	123	1.0E+05	124	6.9E+04	125	4.6E+04	126	3.1E+04					1.1E+05
		128	1.4E+04	130	6.5E+03													
	53	127	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.					2.1E+04
	54	124	6.9E+04	126	3.1E+04	128	1.4E+04	129	9.6E+03	130	6.5E+03	131	4.4E+03					5.1E+03
		132	3.0E+03	134	1.4E+03	136	6.6E+02											
	55	133	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.					2.1E+03
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	2.1E+06	118	1.5E+06					8.9E+05
PRODUCT A=115		119	1.1E+06	120	7.7E+05	122	3.5E+05	124	1.6E+05									
HALF LIFE= 31.000 M	51	121	5.3E+05	123	2.4E+05	0	0.	0	0.	0	0.	0	0.					4.0E+05
	52	120	7.8E+05	122	3.6E+05	123	2.4E+05	124	1.6E+05	125	1.1E+05	126	7.4E+04					2.6E+05
		128	3.4E+04	130	1.5E+04													
	53	127	5.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.					5.0E+04
	54	124	1.6E+05	126	7.5E+04	128	3.4E+04	129	2.3E+04	130	1.5E+04	131	1.1E+04					1.2E+04
		132	7.1E+03	134	3.3E+03	136	1.5E+03											
	55	133	4.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.					4.9E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 51 A=115 (CONTINUED)	56	130	1.6E+04	132	7.2E+03	134	3.4E+03	135	2.3E+03	136	1.6E+03	137	1.1E+03	1.0E+03
		138	7.2E+02											
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	1.9E+06	9.2E+05
PRODUCT A=116		119	1.3E+06	120	9.6E+05	122	4.7E+05	124	2.1E+05					
HALF LIFE= 15.000 M	51	121	6.9E+05	123	3.2E+05	0	0.	0	0.	0	0.	0	0.	5.3E+05
	52	120	9.7E+05	122	4.7E+05	123	3.2E+05	124	2.1E+05	125	1.4E+05	126	9.9E+04	3.5E+05
		128	4.4E+04	130	2.0E+04									
	53	127	6.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+04
	54	124	2.2E+05	126	1.0E+05	128	4.5E+04	129	3.0E+04	130	2.0E+04	131	1.4E+04	1.6E+04
		132	9.4E+03	134	4.3E+03	136	2.0E+03							
	55	133	6.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+03
	56	130	2.1E+04	132	9.5E+03	134	4.4E+03	135	3.0E+03	136	2.0E+03	137	1.4E+03	1.3E+03
		138	9.6E+02											
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	3.8E+05
PRODUCT A=117		119	1.1E+06	120	7.7E+05	122	3.9E+05	124	1.8E+05					
HALF LIFE= 2.800 H	51	121	5.5E+05	123	2.7E+05	0	0.	0	0.	0	0.	0	0.	4.3E+05
	52	120	7.8E+05	122	4.0E+05	123	2.7E+05	124	1.8E+05	125	1.2E+05	126	8.3E+04	3.0E+05
		128	3.8E+04	130	1.7E+04									
	53	127	5.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+04
	54	124	1.8E+05	126	8.4E+04	128	3.8E+04	129	2.6E+04	130	1.7E+04	131	1.2E+04	1.3E+04
		132	7.9E+03	134	3.6E+03	136	1.7E+03							
	55	133	5.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+03
	56	130	1.8E+04	132	8.0E+03	134	3.7E+03	135	2.5E+03	136	1.7E+03	137	1.2E+03	1.1E+03
		138	7.9E+02											
	57	138	8.0E+02	139	5.6E+02	0	0.	0	0.	0	0.	0	0.	5.6E+02
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	1.8E+05
PRODUCT A=118		119	0.	120	4.9E+05	122	2.5E+05	124	1.2E+05					
HALF LIFE= 5.100 H	51	121	3.5E+05	123	1.8E+05	0	0.	0	0.	0	0.	0	0.	2.8E+05
	52	120	4.9E+05	122	2.5E+05	123	1.8E+05	124	1.2E+05	125	8.3E+04	126	5.6E+04	2.0E+05
		128	2.6E+04	130	1.2E+04									
	53	127	3.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+04
	54	124	1.2E+05	126	5.6E+04	128	2.6E+04	129	1.7E+04	130	1.2E+04	131	7.9E+03	9.1E+03
		132	5.3E+03	134	2.4E+03	136	1.1E+03							
	55	133	3.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+03
	56	130	1.2E+04	132	5.4E+03	134	2.5E+03	135	1.7E+03	136	1.1E+03	137	7.8E+02	7.3E+02
		138	5.2E+02											
	57	138	5.2E+02	139	3.6E+02	0	0.	0	0.	0	0.	0	0.	3.6E+02
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	4.2E+03
PRODUCT A=119		119	0.	120	0.	122	5.2E+04	124	2.7E+04					
HALF LIFE= 38.000 H	51	121	7.3E+04	123	3.7E+04	0	0.	0	0.	0	0.	0	0.	5.8E+04
	52	120	0.	122	5.3E+04	123	3.8E+04	124	2.7E+04	125	1.8E+04	126	1.2E+04	4.2E+04
		128	5.6E+03	130	2.6E+03									
	53	127	8.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.4E+03
	54	124	2.7E+04	126	1.2E+04	128	5.7E+03	129	3.9E+03	130	2.6E+03	131	1.7E+03	2.0E+03
		132	1.2E+03	134	5.3E+02	136	2.5E+02							
	55	133	7.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+02
	56	130	2.6E+03	132	1.2E+03	134	5.4E+02	135	3.7E+02	136	2.5E+02	137	1.7E+02	1.6E+02
		138	1.2E+02											
	57	138	1.2E+02	139	7.8E+01	0	0.	0	0.	0	0.	0	0.	7.8E+01
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	5.9E+03
PRODUCT A=120		119	0.	120	0.	122	7.3E+04	124	3.7E+04					
HALF LIFE= 15.900 M	51	121	0.	123	5.3E+04	0	0.	0	0.	0	0.	0	0.	2.3E+04
	52	120	0.	122	7.4E+04	123	5.3E+04	124	3.8E+04	125	2.7E+04	126	1.8E+04	5.9E+04
		128	8.4E+03	130	3.9E+03									
	53	127	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04
	54	124	3.8E+04	126	1.9E+04	128	8.5E+03	129	5.7E+03	130	3.9E+03	131	2.6E+03	3.0E+03
		132	1.7E+03	134	8.0E+02	136	3.7E+02							
	55	133	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	56	130	3.9E+03	132	1.8E+03	134	8.0E+02	135	5.4E+02	136	3.7E+02	137	2.5E+02	2.4E+02
		138	1.7E+02											
	57	138	1.7E+02	139	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.2E+02
	58	136	3.7E+02	138	1.7E+02	140	7.9E+01	142	3.8E+01	0	0.	0	0.	7.5E+01
PRODUCT Z= 51	50	112	0.	114	0.	115	0.	116	0.	117	0.	118	0.	9.3E+01
PRODUCT A=122		119	0.	120	0.	122	0.	124	1.5E+03					
HALF LIFE= 2.800 D	52	120	0.	122	0.	123	0.	124	1.5E+03	125	1.1E+03	126	7.7E+02	4.7E+02
		128	3.8E+02	130	1.7E+02									
	53	127	5.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+02
	54	124	0.	126	7.8E+02	128	3.8E+02	129	2.6E+02	130	1.7E+02	131	1.2E+02	1.3E+02
		132	8.0E+01	134	3.6E+01	136	1.6E+01							
	55	133	5.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+01
	56	130	1.7E+02	132	8.0E+01	134	3.6E+01	135	2.4E+01	136	1.6E+01	137	1.1E+01	1.1E+01
		138	7.6E+00											
	57	138	7.6E+00	139	5.1E+00	0	0.	0	0.	0	0.	0	0.	5.1E+00
	58	136	1.7E+01	138	7.6E+00	140	3.5E+00	142	1.6E+00	0	0.	0	0.	3.3E+00
	59	141	2.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 51 A=122 (CONTINUED)	60	142	1.6E+00	143	1.1E+00	144	7.8E-01	145	5.2E-01	146	3.6E-01	148	1.7E-01	8.8E-01
		150	8.0E-02											
PRODUCT Z= 51	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	5.2E+00	2.3E+00
PRODUCT A=124		128	2.7E+00	130	1.3E+00									
HALF LIFE= 60.200 D	53	127	3.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+00
	54	124	0.	126	0.	128	2.7E+00	129	1.9E+00	130	1.3E+00	131	8.9E-01	1.0E+00
		132	6.0E-01	134	2.7E-01	136	1.2E-01							
	55	133	4.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E-01
	56	130	1.3E+00	132	6.0E-01	134	2.8E-01	135	1.9E-01	136	1.2E-01	137	8.4E-02	8.0E-02
		138	5.7E-02											
	57	138	5.7E-02	139	3.8E-02	0	0.	0	0.	0	0.	0	0.	3.8E-02
	58	136	1.3E-01	138	5.7E-02	140	2.6E-02	142	1.2E-02	0	0.	0	0.	2.5E-02
	59	141	1.8E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-02
	60	142	1.2E-02	143	8.4E-03	144	5.6E-03	145	3.9E-03	146	2.7E-03	148	1.2E-03	6.5E-03
		150	5.9E-04											
PRODUCT Z= 51	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	2.6E-02
PRODUCT A=125		128	5.3E-02	130	2.7E-02									
HALF LIFE= 2.700 Y	53	127	7.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E-02
	54	124	0.	126	0.	128	5.4E-02	129	3.8E-02	130	2.7E-02	131	1.9E-02	2.0E-02
		132	1.3E-02	134	5.7E-03	136	2.6E-03							
	55	133	8.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E-03
	56	130	2.8E-02	132	1.3E-02	134	5.8E-03	135	3.9E-03	136	2.6E-03	137	1.8E-03	1.7E-03
		138	1.2E-03											
	57	138	1.2E-03	139	8.1E-04	0	0.	0	0.	0	0.	0	0.	8.1E-04
	58	136	2.6E-03	138	1.2E-03	140	5.5E-04	142	2.5E-04	0	0.	0	0.	5.2E-04
	59	141	3.7E-04	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E-04
	60	142	2.5E-04	143	1.7E-04	144	1.2E-04	145	8.0E-05	146	5.5E-05	148	2.6E-05	1.4E-04
		150	1.2E-05											
PRODUCT Z= 51	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	6.1E-01
PRODUCT A=126		128	1.2E+00	130	6.3E-01									
HALF LIFE= 12.500 D	54	124	0.	126	0.	128	0.	129	8.9E-01	130	6.3E-01	131	4.5E-01	4.6E-01
		132	3.1E-01	134	1.4E-01	136	6.4E-02							
	55	133	2.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-01
	56	130	0.	132	3.1E-01	134	1.4E-01	135	9.6E-02	136	6.5E-02	137	4.3E-02	4.1E-02
		138	2.9E-02											
	57	138	2.9E-02	139	2.0E-02	0	0.	0	0.	0	0.	0	0.	2.0E-02
	58	136	6.6E-02	138	3.0E-02	140	1.3E-02	142	6.2E-03	0	0.	0	0.	1.3E-02
	59	141	9.1E-03	0	0.	0	0.	0	0.	0	0.	0	0.	9.1E-03
	60	142	6.2E-03	143	4.2E-03	144	2.9E-03	145	2.0E-03	146	1.3E-03	148	6.3E-04	3.3E-03
		150	2.9E-04											
PRODUCT Z= 51	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	1.9E-01
PRODUCT A=127		128	0.	130	5.4E-01									
HALF LIFE= 3.900 D	54	124	0.	126	0.	128	0.	129	0.	130	5.4E-01	131	3.9E-01	2.0E-01
		132	2.8E-01	134	1.3E-01	136	5.8E-02							
	55	133	1.9E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-01
	56	130	0.	132	2.8E-01	134	1.3E-01	135	8.7E-02	136	5.9E-02	137	4.0E-02	3.7E-02
		138	2.7E-02											
	57	138	2.7E-02	139	1.8E-02	0	0.	0	0.	0	0.	0	0.	1.8E-02
	58	136	5.9E-02	138	2.7E-02	140	1.2E-02	142	5.6E-03	0	0.	0	0.	1.2E-02
	59	141	8.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E-03
	60	142	5.6E-03	143	3.8E-03	144	2.6E-03	145	1.8E-03	146	1.2E-03	148	5.6E-04	3.0E-03
		150	2.6E-04											
	62	144	2.6E-03	147	8.2E-04	148	5.6E-04	149	3.9E-04	150	2.6E-04	152	1.2E-04	3.8E-04
		154	5.9E-05											
PRODUCT Z= 51	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	2.6E-01
PRODUCT A=128		128	0.	130	7.3E-01									
HALF LIFE= 9.600 H	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	5.3E-01	2.4E-01
		132	3.8E-01	134	1.8E-01	136	8.4E-02							
	55	133	2.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E-01
	56	130	0.	132	0.	134	1.9E-01	135	1.3E-01	136	8.5E-02	137	5.7E-02	5.3E-02
		138	3.9E-02											
	57	138	3.9E-02	139	2.6E-02	0	0.	0	0.	0	0.	0	0.	2.6E-02
	58	136	8.5E-02	138	3.9E-02	140	1.8E-02	142	8.0E-03	0	0.	0	0.	1.7E-02
	59	141	1.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-02
	60	142	8.1E-03	143	5.4E-03	144	3.7E-03	145	2.5E-03	146	1.7E-03	148	7.8E-04	4.3E-03
		150	3.8E-04											
	62	144	3.7E-03	147	1.2E-03	148	7.9E-04	149	5.5E-04	150	3.8E-04	152	1.7E-04	5.4E-04
		154	8.3E-05											
PRODUCT Z= 51	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	4.0E-02
PRODUCT A=129		132	1.1E-01	134	5.8E-02	136	2.7E-02							
HALF LIFE= 4.500 H	55	133	8.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E-02
	56	130	0.	132	0.	134	5.9E-02	135	4.0E-02	136	2.7E-02	137	1.8E-02	1.7E-02
		138	1.2E-02											
	57	138	1.2E-02	139	8.4E-03	0	0.	0	0.	0	0.	0	0.	8.4E-03
	58	136	2.7E-02	138	1.2E-02	140	5.6E-03	142	2.6E-03	0	0.	0	0.	5.4E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 51 A=129 (CONTINUED)	59	141	3.8E-03	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E-03
	60	142	2.6E-03	143	1.7E-03	144	1.2E-03	145	8.0E-04	146	5.4E-04	148	2.5E-04	1.4E-03
		150	1.2E-04											
	62	144	1.2E-03	147	3.7E-04	148	2.6E-04	149	1.7E-04	150	1.2E-04	152	5.5E-05	1.7E-04
		154	2.5E-05											
PRODUCT Z= 51	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	2.2E-03
PRODUCT A=130		132	0.	134	1.5E-02	136	7.1E-03							
HALF LIFE= 39.000 M	56	130	0.	132	0.	134	0.	135	1.0E-02	136	7.1E-03	137	4.8E-03	4.1E-03
		138	3.2E-03											
	57	138	3.3E-03	139	2.2E-03	0	0.	0	0.	0	0.	0	0.	2.2E-03
	58	136	0.	138	3.3E-03	140	1.5E-03	142	6.8E-04	0	0.	0	0.	1.4E-03
	59	141	1.0E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E-03
	60	142	6.8E-04	143	4.6E-04	144	3.1E-04	145	2.1E-04	146	1.4E-04	148	6.6E-05	3.6E-04
		150	3.0E-05											
	62	144	3.1E-04	147	9.7E-05	148	6.6E-05	149	4.6E-05	150	3.0E-05	152	1.5E-05	4.5E-05
		154	6.7E-06											
	63	151	2.1E-05	153	9.8E-06	0	0.	0	0.	0	0.	0	0.	1.5E-05
PRODUCT Z= 51	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	5.2E-04
PRODUCT A=131		132	0.	134	3.4E-03	136	1.7E-03							
HALF LIFE= 25.000 M	56	130	0.	132	0.	134	0.	135	0.	136	1.7E-03	137	1.2E-03	8.4E-04
		138	8.0E-04											
	57	138	8.0E-04	139	5.4E-04	0	0.	0	0.	0	0.	0	0.	5.4E-04
	58	136	0.	138	8.1E-04	140	3.7E-04	142	1.7E-04	0	0.	0	0.	3.4E-04
	59	141	2.5E-04	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E-04
	60	142	1.7E-04	143	1.1E-04	144	7.6E-05	145	5.1E-05	146	3.5E-05	148	1.6E-05	8.8E-05
		150	7.5E-06											
	62	144	7.7E-05	147	2.4E-05	148	1.6E-05	149	1.1E-05	150	7.5E-06	152	3.5E-06	1.1E-05
		154	1.6E-06											
	63	151	5.1E-06	153	2.4E-06	0	0.	0	0.	0	0.	0	0.	3.7E-06
PRODUCT Z= 51	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	3.5E-05
PRODUCT A=132		132	0.	134	0.	136	3.8E-04							
HALF LIFE= 2.100 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	2.8E-04	1.7E-04
		138	1.9E-04											
	57	138	1.9E-04	139	1.3E-04	0	0.	0	0.	0	0.	0	0.	1.3E-04
	58	136	0.	138	0.	140	8.6E-05	142	4.0E-05	0	0.	0	0.	8.1E-05
	59	141	5.8E-05	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E-05
	60	142	4.0E-05	143	2.7E-05	144	1.8E-05	145	1.2E-05	146	8.1E-06	148	3.7E-06	2.1E-05
		150	1.7E-06											
	62	144	1.8E-05	147	5.5E-06	148	3.8E-06	149	2.5E-06	150	1.7E-06	152	8.0E-07	2.5E-06
		154	3.8E-07											
	63	151	1.2E-06	153	5.5E-07	0	0.	0	0.	0	0.	0	0.	8.6E-07
PRODUCT Z= 51	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	7.5E-06
PRODUCT A=133		132	0.	134	0.	136	8.1E-05							
HALF LIFE= 4.100 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.	3.0E-05
		138	4.2E-05											
	57	138	0.	139	2.9E-05	0	0.	0	0.	0	0.	0	0.	2.9E-05
	58	136	0.	138	0.	140	1.9E-05	142	8.8E-06	0	0.	0	0.	1.8E-05
	59	141	1.3E-05	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-05
	60	142	8.9E-06	143	6.1E-06	144	4.0E-06	145	2.7E-06	146	1.8E-06	148	8.4E-07	4.7E-06
		150	3.8E-07											
	62	144	4.1E-06	147	1.2E-06	148	8.4E-07	149	5.7E-07	150	3.9E-07	152	1.8E-07	5.7E-07
		154	8.4E-08											
	63	151	2.7E-07	153	1.2E-07	0	0.	0	0.	0	0.	0	0.	1.9E-07
PRODUCT Z= 52	51	121	2.7E+04	123	1.2E+04	0	0.	0	0.	0	0.	0	0.	2.0E+04
PRODUCT A=114	52	120	4.0E+04	122	1.8E+04	123	1.2E+04	124	8.3E+03	125	5.5E+03	126	3.7E+03	1.3E+04
HALF LIFE= 16.000 M		128	1.7E+03	130	7.8E+02									
	53	127	2.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+03
	54	124	8.4E+03	126	3.8E+03	128	1.7E+03	129	1.2E+03	130	7.9E+02	131	5.3E+02	6.1E+02
		132	3.6E+02	134	1.7E+02	136	8.0E+01							
	55	133	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+02
	56	130	7.9E+02	132	3.7E+02	134	1.7E+02	135	1.2E+02	136	8.1E+01	137	5.4E+01	5.2E+01
		138	3.7E+01											
	57	138	3.7E+01	139	2.5E+01	0	0.	0	0.	0	0.	0	0.	2.5E+01
PRODUCT Z= 52	51	121	1.0E+05	123	4.8E+04	0	0.	0	0.	0	0.	0	0.	8.0E+04
PRODUCT A=115	52	120	1.5E+05	122	7.1E+04	123	4.8E+04	124	3.2E+04	125	2.2E+04	126	1.5E+04	5.3E+04
HALF LIFE= 6.000 M		128	6.7E+03	130	3.0E+03									
	53	127	9.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+03
	54	124	3.3E+04	126	1.5E+04	128	6.7E+03	129	4.5E+03	130	3.1E+03	131	2.1E+03	2.4E+03
		132	1.4E+03	134	6.6E+02	136	3.1E+02							
	55	133	9.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+02
	56	130	3.1E+03	132	1.4E+03	134	6.7E+02	135	4.5E+02	136	3.1E+02	137	2.1E+02	2.0E+02
		138	1.4E+02											
	57	138	1.4E+02	139	9.9E+01	0	0.	0	0.	0	0.	0	0.	9.9E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 52	51	121	3.4E+05	123	1.6E+05	0	0.	0	0.	0	0.	0	0.	2.6E+05
PRODUCT A=116	52	120	4.8E+05	122	2.4E+05	123	1.6E+05	124	1.1E+05	125	7.2E+04	126	4.9E+04	1.7E+05
HALF LIFE= 2.500 H		128	2.2E+04	130	1.0E+04									
	53	127	3.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+04
	54	124	1.1E+05	126	5.0E+04	128	2.2E+04	129	1.5E+04	130	1.0E+04	131	6.9E+03	7.9E+03
		132	4.7E+03	134	2.2E+03	136	9.9E+02							
	55	133	3.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+03
	56	130	1.0E+04	132	4.7E+03	134	2.2E+03	135	1.5E+03	136	1.0E+03	137	6.9E+02	6.7E+02
		138	4.8E+02											
	57	138	4.8E+02	139	3.2E+02	0	0.	0	0.	0	0.	0	0.	3.2E+02
PRODUCT Z= 52	51	121	8.8E+05	123	4.3E+05	0	0.	0	0.	0	0.	0	0.	6.9E+05
PRODUCT A=117	52	120	1.2E+06	122	6.4E+05	123	4.3E+05	124	2.9E+05	125	2.0E+05	126	1.3E+05	4.8E+05
HALF LIFE= 1.100 M		128	6.0E+04	130	2.8E+04									
	53	127	9.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	9.1E+04
	54	124	3.0E+05	126	1.3E+05	128	6.1E+04	129	4.1E+04	130	2.8E+04	131	1.9E+04	2.2E+04
		132	1.3E+04	134	5.8E+03	136	2.7E+03							
	55	133	8.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E+03
	56	130	2.8E+04	132	1.3E+04	134	5.9E+03	135	4.0E+03	136	2.8E+03	137	1.8E+03	1.8E+03
		138	1.3E+03											
	57	138	1.3E+03	139	8.9E+02	0	0.	0	0.	0	0.	0	0.	8.9E+02
PRODUCT Z= 52	51	121	1.7E+05	123	8.9E+04	0	0.	0	0.	0	0.	0	0.	1.4E+05
PRODUCT A=118	52	120	2.5E+05	122	1.3E+05	123	9.0E+04	124	6.1E+04	125	4.1E+04	126	2.8E+04	9.9E+04
HALF LIFE= 6.000 D		128	1.3E+04	130	5.8E+03									
	53	127	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
	54	124	6.2E+04	126	2.8E+04	128	1.3E+04	129	8.6E+03	130	5.8E+03	131	3.9E+03	4.5E+03
		132	2.6E+03	134	1.2E+03	136	5.6E+02							
	55	133	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
	56	130	5.9E+03	132	2.7E+03	134	1.2E+03	135	8.3E+02	136	5.7E+02	137	3.9E+02	3.7E+02
		138	2.6E+02											
	57	138	2.6E+02	139	1.8E+02	0	0.	0	0.	0	0.	0	0.	1.8E+02
PRODUCT Z= 52	51	121	9.7E+05	123	5.0E+05	0	0.	0	0.	0	0.	0	0.	7.7E+05
PRODUCT A=119	52	120	0.	122	7.0E+05	123	5.0E+05	124	3.6E+05	125	2.4E+05	126	1.6E+05	5.5E+05
HALF LIFE= 16.000 H		128	7.5E+04	130	3.4E+04									
	53	127	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	54	124	3.6E+05	126	1.7E+05	128	7.5E+04	129	5.1E+04	130	3.4E+04	131	2.3E+04	2.7E+04
		132	1.6E+04	134	7.1E+03	136	3.3E+03							
	55	133	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
	56	130	3.5E+04	132	1.6E+04	134	7.2E+03	135	4.9E+03	136	3.3E+03	137	2.3E+03	2.2E+03
		138	1.5E+03											
	57	138	1.6E+03	139	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.0E+03
PRODUCT Z= 52	51	121	0.	123	1.4E+04	0	0.	0	0.	0	0.	0	0.	6.0E+03
PRODUCT A=121	52	120	0.	122	0.	123	1.4E+04	124	1.0E+04	125	7.1E+03	126	5.1E+03	1.5E+04
HALF LIFE= 17.000 D		128	2.3E+03	130	1.1E+03									
	53	127	3.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+03
	54	124	1.0E+04	126	5.2E+03	128	2.4E+03	129	1.6E+03	130	1.1E+03	131	7.3E+02	8.4E+02
		132	4.9E+02	134	2.2E+02	136	1.0E+02							
	55	133	3.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+02
	56	130	1.1E+03	132	4.9E+02	134	2.2E+02	135	1.5E+02	136	1.0E+02	137	7.0E+01	6.6E+01
		138	4.7E+01											
	57	138	4.7E+01	139	3.2E+01	0	0.	0	0.	0	0.	0	0.	3.2E+01
	58	136	1.0E+02	138	4.7E+01	140	2.2E+01	142	1.0E+01	0	0.	0	0.	2.1E+01
PRODUCT Z= 52	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	5.5E+01
PRODUCT A=127		128	0.	130	1.6E+02									
HALF LIFE= 9.300 H	54	124	0.	126	0.	128	0.	129	2.2E+02	130	1.6E+02	131	1.1E+02	1.2E+02
		132	8.1E+01	134	3.7E+01	136	1.7E+01							
	55	133	5.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+01
	56	130	0.	132	8.2E+01	134	3.8E+01	135	2.5E+01	136	1.7E+01	137	1.2E+01	1.1E+01
		138	7.8E+00											
	57	138	7.8E+00	139	5.3E+00	0	0.	0	0.	0	0.	0	0.	5.3E+00
	58	136	1.7E+01	138	7.9E+00	140	3.6E+00	142	1.6E+00	0	0.	0	0.	3.4E+00
	59	141	2.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+00
	60	142	1.6E+00	143	1.1E+00	144	7.5E-01	145	5.1E-01	146	3.5E-01	148	1.6E-01	8.7E-01
		150	7.6E-02											
PRODUCT Z= 52	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	1.3E+01	6.0E+00
PRODUCT A=129		132	9.4E+00	134	4.8E+00	136	2.2E+00							
HALF LIFE= 67.000 M	55	133	6.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+00
	56	130	0.	132	0.	134	4.8E+00	135	3.3E+00	136	2.2E+00	137	1.5E+00	1.4E+00
		138	1.0E+00											
	57	138	1.0E+00	139	6.9E-01	0	0.	0	0.	0	0.	0	0.	6.9E-01
	58	136	2.2E+00	138	1.0E+00	140	4.6E-01	142	2.1E-01	0	0.	0	0.	4.4E-01
	59	141	3.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E-01
	60	142	2.1E-01	143	1.4E-01	144	9.6E-02	145	6.6E-02	146	4.4E-02	148	2.1E-02	1.1E-01
		150	9.6E-03											
	62	144	9.7E-02	147	3.1E-02	148	2.1E-02	149	1.4E-02	150	9.7E-03	152	4.5E-03	1.4E-02
		154	2.1E-03											

MONOISOTOPIC TARGET A/MILLICURIES

	TARGET Z													NATURAL MILLI CURIES
PRODUCT Z= 52	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	5.6E-02
PRODUCT A=131		132	0.	134	3.7E-01	136	1.9E-01							
HALF LIFE= 25.000 M	56	130	0.	132	0.	134	0.	135	2.6E-01	136	1.9E-01	137	1.3E-01	1.1E-01
		138	8.7E-02											
	57	138	8.7E-02	139	5.9E-02	0	0.	0	0.	0	0.	0	0.	5.9E-02
	58	136	0.	138	8.8E-02	140	4.0E-02	142	1.8E-02	0	0.	0	0.	3.7E-02
	59	141	2.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E-02
	60	142	1.8E-02	143	1.2E-02	144	8.3E-03	145	5.6E-03	146	3.8E-03	148	1.7E-03	9.6E-03
		150	8.1E-04											
	62	144	8.4E-03	147	2.6E-03	148	1.7E-03	149	1.2E-03	150	8.2E-04	152	3.8E-04	1.2E-03
		154	1.8E-04											
	63	151	5.5E-04	153	2.6E-04	0	0.	0	0.	0	0.	0	0.	4.0E-04
PRODUCT Z= 52	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	2.8E-03
PRODUCT A=132		132	0.	134	1.8E-02	136	9.2E-03							
HALF LIFE= 78.000 H	56	130	0.	132	0.	134	0.	135	0.	136	9.3E-03	137	6.6E-03	4.7E-03
		138	4.5E-03											
	57	138	4.5E-03	139	3.1E-03	0	0.	0	0.	0	0.	0	0.	3.1E-03
	58	136	0.	138	4.5E-03	140	2.1E-03	142	9.5E-04	0	0.	0	0.	1.9E-03
	59	141	1.4E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-03
	60	142	9.6E-04	143	6.4E-04	144	4.3E-04	145	2.9E-04	146	2.0E-04	148	9.0E-05	5.0E-04
		150	4.1E-05											
	62	144	4.3E-04	147	1.3E-04	148	9.1E-05	149	6.1E-05	150	4.2E-05	152	1.9E-05	6.1E-05
		154	9.2E-06											
	63	151	2.9E-05	153	1.3E-05	0	0.	0	0.	0	0.	0	0.	2.1E-05
PRODUCT Z= 52	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	1.1E-03
PRODUCT A=133		132	0.	134	0.	136	1.2E-02							
HALF LIFE= 2.000 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	8.4E-03	5.3E-03
		138	6.0E-03											
	57	138	6.0E-03	139	4.1E-03	0	0.	0	0.	0	0.	0	0.	4.1E-03
	58	136	0.	138	0.	140	2.8E-03	142	1.3E-03	0	0.	0	0.	2.6E-03
	59	141	1.9E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-03
	60	142	1.3E-03	143	8.7E-04	144	5.8E-04	145	3.9E-04	146	2.6E-04	148	1.2E-04	6.7E-04
		150	5.5E-05											
	62	144	5.8E-04	147	1.8E-04	148	1.2E-04	149	8.2E-05	150	5.5E-05	152	2.6E-05	8.2E-05
		154	1.2E-05											
	63	151	3.8E-05	153	1.7E-05	0	0.	0	0.	0	0.	0	0.	2.7E-05
PRODUCT Z= 52	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	2.5E-04
PRODUCT A=134		132	0.	134	0.	136	2.7E-03							
HALF LIFE= 42.000 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.	1.0E-03
		138	1.4E-03											
	57	138	0.	139	1.0E-03	0	0.	0	0.	0	0.	0	0.	1.0E-03
	58	136	0.	138	0.	140	6.9E-04	142	3.1E-04	0	0.	0	0.	6.4E-04
	59	141	4.7E-04	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E-04
	60	142	3.2E-04	143	2.1E-04	144	1.4E-04	145	9.7E-05	146	6.5E-05	148	3.0E-05	1.7E-04
		150	1.4E-05											
	62	144	1.5E-04	147	4.4E-05	148	3.0E-05	149	2.0E-05	150	1.4E-05	152	6.3E-06	2.0E-05
		154	2.9E-06											
	63	151	9.3E-06	153	4.4E-06	0	0.	0	0.	0	0.	0	0.	6.7E-06
	64	152	6.4E-06	154	2.9E-06	155	2.0E-06	156	1.4E-06	157	9.4E-07	158	6.4E-07	1.0E-06
		160	3.0E-07											
PRODUCT Z= 53	52	120	1.9E+05	122	9.8E+04	123	6.7E+04	124	4.5E+04	125	3.0E+04	126	2.0E+04	7.3E+04
PRODUCT A=117		128	9.3E+03	130	4.2E+03									
HALF LIFE= 7.000 M	53	127	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	54	124	4.5E+04	126	2.1E+04	128	9.4E+03	129	6.3E+03	130	4.3E+03	131	2.9E+03	3.3E+03
		132	1.9E+03	134	8.9E+02	136	4.2E+02							
	55	133	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	56	130	4.3E+03	132	2.0E+03	134	9.0E+02	135	6.2E+02	136	4.2E+02	137	2.8E+02	2.7E+02
		138	2.0E+02											
	57	138	2.0E+02	139	1.4E+02	0	0.	0	0.	0	0.	0	0.	1.4E+02
	58	136	4.3E+02	138	2.0E+02	140	9.2E+01	142	4.3E+01	0	0.	0	0.	8.7E+01
PRODUCT Z= 53	52	120	6.5E+05	122	3.3E+05	123	2.4E+05	124	1.6E+05	125	1.1E+05	126	7.4E+04	2.6E+05
PRODUCT A=118		128	3.4E+04	130	1.5E+04									
HALF LIFE= 14.000 M	53	127	5.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+04
	54	124	1.6E+05	126	7.4E+04	128	3.4E+04	129	2.3E+04	130	1.5E+04	131	1.0E+04	1.2E+04
		132	7.0E+03	134	3.2E+03	136	1.5E+03							
	55	133	4.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+03
	56	130	1.5E+04	132	7.0E+03	134	3.2E+03	135	2.2E+03	136	1.5E+03	137	1.0E+03	9.7E+02
		138	6.9E+02											
	57	138	6.9E+02	139	4.8E+02	0	0.	0	0.	0	0.	0	0.	4.8E+02
	58	136	1.5E+03	138	6.9E+02	140	3.3E+02	142	1.5E+02	0	0.	0	0.	3.2E+02
PRODUCT Z= 53	52	120	0.	122	9.4E+05	123	6.7E+05	124	4.8E+05	125	3.3E+05	126	2.2E+05	7.5E+05
PRODUCT A=119		128	1.0E+05	130	4.6E+04									
HALF LIFE= 20.000 M	53	127	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
	54	124	4.9E+05	126	2.2E+05	128	1.0E+05	129	6.9E+04	130	4.6E+04	131	3.1E+04	3.6E+04
		132	2.1E+04	134	9.6E+03	136	4.4E+03							

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 53 A=119 (CONTINUED)	55	133 1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.		1.4E+04
	56	130 4.7E+04	132	2.1E+04	134	9.7E+03	135	6.6E+03	136	4.4E+03	137	3.0E+03		2.9E+03
		138 2.1E+03												
	57	138 2.1E+03	139	1.4E+03	0	0.	0	0.	0	0.	0	0.		1.4E+03
	58	136 4.5E+03	138	2.1E+03	140	9.7E+02	142	4.5E+02	0	0.	0	0.		9.2E+02
PRODUCT Z= 53 PRODUCT A=120 HALF LIFE= 1.400 H	52	120 0.	122	2.1E+06	123	1.5E+06	124	1.1E+06	125	7.8E+05	126	5.3E+05		1.7E+06
		128 2.4E+05	130	1.1E+05										
	53	127 3.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.		3.6E+05
	54	124 1.1E+06	126	5.3E+05	128	2.4E+05	129	1.6E+05	130	1.1E+05	131	7.4E+04		8.6E+04
		132 5.0E+04	134	2.3E+04	136	1.1E+04								
	55	133 3.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.		3.4E+04
	56	130 1.1E+05	132	5.1E+04	134	2.3E+04	135	1.6E+04	136	1.1E+04	137	7.2E+03		6.9E+03
		138 4.9E+03												
	57	138 4.9E+03	139	3.4E+03	0	0.	0	0.	0	0.	0	0.		3.4E+03
	58	136 1.1E+04	138	4.9E+03	140	2.3E+03	142	1.1E+03	0	0.	0	0.		2.2E+03
PRODUCT Z= 53 PRODUCT A=121 HALF LIFE= 2.000 H	52	120 0.	122	0.	123	2.0E+06	124	1.4E+06	125	1.0E+06	126	7.2E+05		2.1E+06
		128 3.3E+05	130	1.5E+05										
	53	127 4.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.		4.9E+05
	54	124 1.4E+06	126	7.2E+05	128	3.3E+05	129	2.2E+05	130	1.5E+05	131	1.0E+05		1.2E+05
		132 6.9E+04	134	3.1E+04	136	1.4E+04								
	55	133 4.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.		4.7E+04
	56	130 1.5E+05	132	6.9E+04	134	3.2E+04	135	2.1E+04	136	1.4E+04	137	9.8E+03		9.3E+03
		138 6.6E+03												
	57	138 6.6E+03	139	4.5E+03	0	0.	0	0.	0	0.	0	0.		4.5E+03
	58	136 1.4E+04	138	6.7E+03	140	3.1E+03	142	1.4E+03	0	0.	0	0.		3.0E+03
PRODUCT Z= 53 PRODUCT A=122 HALF LIFE= 3.500 M	52	120 0.	122	0.	123	0.	124	1.2E+06	125	8.3E+05	126	5.9E+05		3.6E+05
		128 2.9E+05	130	1.3E+05										
	53	127 4.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.		4.3E+05
	54	124 1.2E+06	126	6.0E+05	128	2.9E+05	129	2.0E+05	130	1.3E+05	131	9.0E+04		1.0E+05
		132 6.1E+04	134	2.7E+04	136	1.2E+04								
	55	133 4.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.		4.1E+04
	56	130 1.3E+05	132	6.2E+04	134	2.8E+04	135	1.9E+04	136	1.3E+04	137	8.5E+03		8.2E+03
		138 5.8E+03												
	57	138 5.8E+03	139	3.9E+03	0	0.	0	0.	0	0.	0	0.		3.9E+03
	58	136 1.3E+04	138	5.8E+03	140	2.7E+03	142	1.2E+03	0	0.	0	0.		2.6E+03
	59	141 1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.		1.9E+03
	60	142 1.2E+03	143	8.6E+02	144	6.0E+02	145	4.0E+02	146	2.7E+02	148	1.3E+02		6.7E+02
		150 6.1E+01												
PRODUCT Z= 53 PRODUCT A=123 HALF LIFE= 13.000 H	52	120 0.	122	0.	123	0.	124	0.	125	4.1E+05	126	2.9E+05		1.5E+05
		128 1.5E+05	130	6.9E+04										
	53	127 2.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.		2.1E+05
	54	124 0.	126	2.9E+05	128	1.5E+05	129	1.0E+05	130	6.9E+04	131	4.7E+04		5.3E+04
		132 3.1E+04	134	1.4E+04	136	6.5E+03								
	55	133 2.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.		2.2E+04
	56	130 7.0E+04	132	3.2E+04	134	1.4E+04	135	9.7E+03	136	6.6E+03	137	4.4E+03		4.2E+03
		138 3.0E+03												
	57	138 3.0E+03	139	2.0E+03	0	0.	0	0.	0	0.	0	0.		2.0E+03
	58	136 6.6E+03	138	3.0E+03	140	1.4E+03	142	6.5E+02	0	0.	0	0.		1.3E+03
	59	141 9.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.		9.5E+02
	60	142 6.6E+02	143	4.4E+02	144	3.0E+02	145	2.1E+02	146	1.4E+02	148	6.5E+01		3.5E+02
		150 3.2E+01												
PRODUCT Z= 53 PRODUCT A=124 HALF LIFE= 4.200 D	52	120 0.	122	0.	123	0.	124	0.	125	0.	126	3.6E+04		1.6E+04
		128 1.8E+04	130	8.9E+03										
	53	127 2.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.		2.6E+04
	54	124 0.	126	3.6E+04	128	1.9E+04	129	1.3E+04	130	9.0E+03	131	6.1E+03		6.9E+03
		132 4.1E+03	134	1.9E+03	136	8.5E+02								
	55	133 2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.		2.8E+03
	56	130 9.1E+03	132	4.2E+03	134	1.9E+03	135	1.3E+03	136	8.6E+02	137	5.8E+02		5.5E+02
		138 3.9E+02												
	57	138 3.9E+02	139	2.6E+02	0	0.	0	0.	0	0.	0	0.		2.6E+02
	58	136 8.6E+02	138	3.9E+02	140	1.8E+02	142	8.3E+01	0	0.	0	0.		1.7E+02
	59	141 1.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.		1.2E+02
	60	142 8.4E+01	143	5.8E+01	144	3.9E+01	145	2.7E+01	146	1.9E+01	148	8.5E+00		4.5E+01
		150 4.0E+00												
PRODUCT Z= 53 PRODUCT A=125 HALF LIFE= 60.000 D	52	120 0.	122	0.	123	0.	124	0.	125	0.	126	0.		3.6E+02
		128 7.2E+02	130	3.7E+02										
	53	127 1.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.		1.0E+03
	54	124 0.	126	0.	128	7.3E+02	129	5.2E+02	130	3.7E+02	131	2.5E+02		2.7E+02
		132 1.7E+02	134	7.8E+01	136	3.5E+01								
	55	133 1.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.		1.2E+02
	56	130 3.8E+02	132	1.7E+02	134	7.8E+01	135	5.3E+01	136	3.6E+01	137	2.4E+01		2.3E+01
		138 1.6E+01												
	57	138 1.6E+01	139	1.1E+01	0	0.	0	0.	0	0.	0	0.		1.1E+01
	58	136 3.6E+01	138	1.6E+01	140	7.4E+00	142	3.4E+00	0	0.	0	0.		7.1E+00
	59	141 5.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.		5.1E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 53 A=125 (CONTINUED)	60	142	3.4E+00	143	2.4E+00	144	1.6E+00	145	1.1E+00	146	7.5E-01	148	3.5E-01	1.8E+00
		150	1.6E-01											
PRODUCT Z= 53	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	7.7E+02
PRODUCT A=126		128	1.5E+03	130	7.9E+02									
HALF LIFE= 12.800 D	54	124	0.	126	0.	128	1.6E+03	129	1.1E+03	130	8.0E+02	131	5.7E+02	6.0E+02
		132	3.9E+02	134	1.8E+02	136	8.1E+01							
	55	133	2.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+02
	56	130	8.0E+02	132	3.9E+02	134	1.8E+02	135	1.2E+02	136	8.2E+01	137	5.4E+01	5.2E+01
		138	3.7E+01											
	57	138	3.7E+01	139	2.5E+01	0	0.	0	0.	0	0.	0	0.	2.5E+01
	58	136	8.3E+01	138	3.7E+01	140	1.7E+01	142	7.7E+00	0	0.	0	0.	1.6E+01
	59	141	1.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+01
	60	142	7.8E+00	143	5.3E+00	144	3.6E+00	145	2.5E+00	146	1.7E+00	148	7.9E-01	4.1E+00
		150	3.6E-01											
PRODUCT Z= 53	52	120	0.	122	0.	123	0.	124	0.	125	0.	126	0.	8.8E+02
PRODUCT A=128		128	0.	130	2.5E+03									
HALF LIFE= 25.000 M	54	124	0.	126	0.	128	0.	129	0.	130	2.5E+03	131	1.8E+03	9.2E+02
		132	1.3E+03	134	6.3E+02	136	2.8E+02							
	55	133	9.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+02
	56	130	0.	132	1.3E+03	134	6.3E+02	135	4.3E+02	136	2.9E+02	137	1.9E+02	1.8E+02
		138	1.3E+02											
	57	138	1.3E+02	139	8.8E+01	0	0.	0	0.	0	0.	0	0.	8.8E+01
	58	136	2.9E+02	138	1.3E+02	140	6.0E+01	142	2.7E+01	0	0.	0	0.	5.7E+01
	59	141	4.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+01
	60	142	2.7E+01	143	1.8E+01	144	1.3E+01	145	8.5E+00	146	5.8E+00	148	2.7E+00	1.5E+01
		150	1.3E+00											
	62	144	1.3E+01	147	4.0E+00	148	2.7E+00	149	1.9E+00	150	1.3E+00	152	5.9E-01	1.8E+00
		154	2.8E-01											
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	7.8E-08	3.6E-08
PRODUCT A=129		132	5.5E-08	134	2.8E-08	136	1.3E-08							
HALF LIFE= 16.000 T	55	133	4.0E-08	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E-08
	56	130	0.	132	5.6E-08	134	2.9E-08	135	1.9E-08	136	1.3E-08	137	8.8E-09	8.3E-09
		138	6.0E-09											
	57	138	6.0E-09	139	4.1E-09	0	0.	0	0.	0	0.	0	0.	4.1E-09
	58	136	1.3E-08	138	6.0E-09	140	2.7E-09	142	1.2E-09	0	0.	0	0.	2.6E-09
	59	141	1.8E-09	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-09
	60	142	1.3E-09	143	8.4E-10	144	5.7E-10	145	3.9E-10	146	2.6E-10	148	1.2E-10	6.6E-10
		150	5.7E-11											
	62	144	5.7E-10	147	1.8E-10	148	1.2E-10	149	8.3E-11	150	5.7E-11	152	2.7E-11	8.3E-11
		154	1.2E-11											
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	4.0E+01
PRODUCT A=130		132	1.2E+02	134	5.9E+01	136	2.9E+01							
HALF LIFE= 12.500 H	55	133	8.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.4E+01
	56	130	0.	132	0.	134	6.0E+01	135	4.3E+01	136	2.9E+01	137	2.0E+01	1.8E+01
		138	1.3E+01											
	57	138	1.3E+01	139	9.0E+00	0	0.	0	0.	0	0.	0	0.	9.0E+00
	58	136	2.9E+01	138	1.3E+01	140	6.1E+00	142	2.8E+00	0	0.	0	0.	5.8E+00
	59	141	4.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+00
	60	142	2.8E+00	143	1.9E+00	144	1.3E+00	145	8.5E-01	146	5.8E-01	148	2.7E-01	1.5E+00
		150	1.2E-01											
	62	144	1.3E+00	147	4.0E-01	148	2.7E-01	149	1.9E-01	150	1.2E-01	152	6.0E-02	1.8E-01
		154	2.7E-02											
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	3.2E-01
PRODUCT A=131		132	0.	134	2.1E+00	136	1.1E+00							
HALF LIFE= 8.050 D	55	133	3.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+00
	56	130	0.	132	0.	134	2.1E+00	135	1.5E+00	136	1.1E+00	137	7.4E-01	6.8E-01
		138	5.0E-01											
	57	138	5.0E-01	139	3.4E-01	0	0.	0	0.	0	0.	0	0.	3.4E-01
	58	136	1.1E+00	138	5.1E-01	140	2.3E-01	142	1.0E-01	0	0.	0	0.	2.2E-01
	59	141	1.6E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E-01
	60	142	1.1E-01	143	7.1E-02	144	4.8E-02	145	3.2E-02	146	2.2E-02	148	1.0E-02	5.5E-02
		150	4.7E-03											
	62	144	4.8E-02	147	1.5E-02	148	1.0E-02	149	6.9E-03	150	4.7E-03	152	2.2E-03	6.9E-03
		154	1.0E-03											
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	1.2E+00
PRODUCT A=132		132	0.	134	7.7E+00	136	3.9E+00							
HALF LIFE= 2.300 H	56	130	0.	132	0.	134	0.	135	5.5E+00	136	4.0E+00	137	2.8E+00	2.4E+00
		138	1.9E+00											
	57	138	1.9E+00	139	1.3E+00	0	0.	0	0.	0	0.	0	0.	1.3E+00
	58	136	0.	138	1.9E+00	140	8.8E-01	142	4.1E-01	0	0.	0	0.	8.3E-01
	59	141	6.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E-01
	60	142	4.1E-01	143	2.7E-01	144	1.8E-01	145	1.2E-01	146	8.4E-02	148	3.8E-02	2.1E-01
		150	1.8E-02											
	62	144	1.9E-01	147	5.7E-02	148	3.9E-02	149	2.6E-02	150	1.8E-02	152	8.2E-03	2.6E-02
		154	3.9E-03											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 53 A=132 (CONTINUED)	63	151	1.2E-02	153	5.7E-03	0	0.	0	0.	0	0.	0	0.	8.8E-03
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	5.6E-02
PRODUCT A=133		132	0.	134	0.	136	6.1E-01							
HALF LIFE= 21.000 H	56	130	0.	132	0.	134	0.	135	0.	136	6.2E-01	137	4.4E-01	3.2E-01
		138	3.1E-01											
	57	138	3.2E-01	139	2.1E-01	0	0.	0	0.	0	0.	0	0.	2.1E-01
	58	136	0.	138	3.2E-01	140	1.5E-01	142	6.6E-02	0	0.	0	0.	1.4E-01
	59	141	9.8E-02	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E-02
	60	142	6.7E-02	143	4.5E-02	144	3.0E-02	145	2.0E-02	146	1.4E-02	148	6.2E-03	3.5E-02
		150	2.9E-03											
	62	144	3.1E-02	147	9.3E-03	148	6.3E-03	149	4.3E-03	150	2.9E-03	152	1.4E-03	4.3E-03
		154	6.3E-04											
	63	151	2.0E-03	153	9.1E-04	0	0.	0	0.	0	0.	0	0.	1.4E-03
PRODUCT Z= 53	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	2.8E-02
PRODUCT A=134		132	0.	134	0.	136	3.0E-01							
HALF LIFE= 53.000 M	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	2.2E-01	1.4E-01
		138	1.5E-01											
	57	138	1.6E-01	139	1.1E-01	0	0.	0	0.	0	0.	0	0.	1.1E-01
	58	136	0.	138	0.	140	7.6E-02	142	3.4E-02	0	0.	0	0.	7.1E-02
	59	141	5.1E-02	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E-02
	60	142	3.5E-02	143	2.3E-02	144	1.6E-02	145	1.1E-02	146	7.2E-03	148	3.3E-03	1.8E-02
		150	1.5E-03											
	62	144	1.6E-02	147	4.9E-03	148	3.3E-03	149	2.2E-03	150	1.5E-03	152	7.0E-04	2.2E-03
		154	3.2E-04											
	63	151	1.0E-03	153	4.8E-04	0	0.	0	0.	0	0.	0	0.	7.4E-04
PRODUCT Z= 53	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.	2.6E-02
PRODUCT A=135		138	3.6E-02											
HALF LIFE= 6.700 H	57	138	0.	139	2.6E-02	0	0.	0	0.	0	0.	0	0.	2.6E-02
	58	136	0.	138	0.	140	1.9E-02	142	8.6E-03	0	0.	0	0.	1.8E-02
	59	141	1.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-02
	60	142	8.7E-03	143	5.8E-03	144	3.9E-03	145	2.7E-03	146	1.8E-03	148	8.1E-04	4.6E-03
		150	3.7E-04											
	62	144	4.0E-03	147	1.2E-03	148	8.2E-04	149	5.5E-04	150	3.7E-04	152	1.7E-04	5.5E-04
		154	8.0E-05											
	63	151	2.6E-04	153	1.2E-04	0	0.	0	0.	0	0.	0	0.	1.8E-04
	64	152	1.7E-04	154	8.1E-05	155	5.4E-05	156	3.7E-05	157	2.6E-05	158	1.7E-05	2.8E-05
		160	8.1E-06											
PRODUCT Z= 53	58	136	0.	138	0.	140	0.	142	2.4E-03	0	0.	0	0.	2.7E-04
PRODUCT A=136	60	142	0.	143	1.7E-03	144	1.1E-03	145	7.5E-04	146	5.1E-04	148	2.3E-04	6.4E-04
HALF LIFE= 83.000 S		150	1.0E-04											
	62	144	0.	147	3.5E-04	148	2.3E-04	149	1.6E-04	150	1.1E-04	152	4.9E-05	1.2E-04
		154	2.2E-05											
	63	151	7.2E-05	153	3.3E-05	0	0.	0	0.	0	0.	0	0.	5.1E-05
	64	152	4.9E-05	154	2.3E-05	155	1.6E-05	156	1.0E-05	157	7.1E-06	158	5.0E-06	7.8E-06
		160	2.3E-06											
	65	159	3.3E-06	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-06
	66	156	1.0E-05	158	5.0E-06	160	2.3E-06	161	1.6E-06	162	1.1E-06	163	7.5E-07	9.7E-07
		164	5.1E-07											
PRODUCT Z= 54	53	127	4.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+03
PRODUCT A=118	54	124	1.4E+04	126	6.3E+03	128	2.9E+03	129	1.9E+03	130	1.3E+03	131	8.8E+02	1.0E+03
HALF LIFE= 6.000 M		132	5.9E+02	134	2.7E+02	136	1.3E+02							
	55	133	4.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+02
	56	130	1.3E+03	132	5.9E+02	134	2.7E+02	135	1.8E+02	136	1.3E+02	137	8.7E+01	8.2E+01
		138	5.8E+01											
	57	138	5.8E+01	139	4.0E+01	0	0.	0	0.	0	0.	0	0.	4.0E+01
	58	136	1.3E+02	138	5.8E+01	140	2.8E+01	142	1.3E+01	0	0.	0	0.	2.7E+01
	59	141	1.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+01
	60	142	1.3E+01	143	8.8E+00	144	6.2E+00	145	4.3E+00	146	2.9E+00	148	1.4E+00	7.0E+00
		150	6.6E-01											
PRODUCT Z= 54	53	127	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
PRODUCT A=119	54	124	6.0E+04	126	2.8E+04	128	1.3E+04	129	8.6E+03	130	5.7E+03	131	3.9E+03	4.5E+03
HALF LIFE= 6.000 M		132	2.6E+03	134	1.2E+03	136	5.5E+02							
	55	133	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
	56	130	5.8E+03	132	2.6E+03	134	1.2E+03	135	8.2E+02	136	5.5E+02	137	3.8E+02	3.6E+02
		138	2.6E+02											
	57	138	2.6E+02	139	1.7E+02	0	0.	0	0.	0	0.	0	0.	1.7E+02
	58	136	5.6E+02	138	2.6E+02	140	1.2E+02	142	5.6E+01	0	0.	0	0.	1.1E+02
	59	141	8.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.4E+01
	60	142	5.6E+01	143	3.9E+01	144	2.6E+01	145	1.8E+01	146	1.3E+01	148	6.0E+00	3.0E+01
		150	2.9E+00											

	TARGET Z		MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 54	53	127	7.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+04
PRODUCT A=120	54	124	2.2E+05	126	1.1E+05	128	4.9E+04	129	3.3E+04	130	2.2E+04	131	1.5E+04	1.7E+04
HALF LIFE= 41.000 M		132	1.0E+04	134	4.6E+03	136	2.1E+03							
	55	133	6.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E+03
	56	130	2.3E+04	132	1.0E+04	134	4.6E+03	135	3.1E+03	136	2.1E+03	137	1.4E+03	1.4E+03
		138	9.8E+02											
	57	138	9.8E+02	139	6.7E+02	0	0.	0	0.	0	0.	0	0.	6.8E+02
	58	136	2.1E+03	138	9.9E+02	140	4.5E+02	142	2.2E+02	0	0.	0	0.	4.3E+02
	59	141	3.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+02
	60	142	2.2E+02	143	1.5E+02	144	1.0E+02	145	6.8E+01	146	4.8E+01	148	2.2E+01	1.2E+02
		150	1.1E+01											
PRODUCT Z= 54	53	127	2.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+05
PRODUCT A=121	54	124	6.8E+05	126	3.5E+05	128	1.6E+05	129	1.1E+05	130	7.2E+04	131	4.9E+04	5.6E+04
HALF LIFE= 39.000 M		132	3.3E+04	134	1.5E+04	136	6.8E+03							
	55	133	2.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+04
	56	130	7.3E+04	132	3.3E+04	134	1.5E+04	135	1.0E+04	136	6.9E+03	137	4.7E+03	4.5E+03
		138	3.2E+03											
	57	138	3.2E+03	139	2.2E+03	0	0.	0	0.	0	0.	0	0.	2.2E+03
	58	136	6.9E+03	138	3.2E+03	140	1.5E+03	142	6.9E+02	0	0.	0	0.	1.4E+03
	59	141	1.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+03
	60	142	7.0E+02	143	4.9E+02	144	3.2E+02	145	2.2E+02	146	1.5E+02	148	7.3E+01	3.7E+02
		150	3.5E+01											
PRODUCT Z= 54	53	127	3.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+05
PRODUCT A=122	54	124	1.0E+06	126	5.2E+05	128	2.5E+05	129	1.7E+05	130	1.1E+05	131	7.7E+04	8.9E+04
HALF LIFE= 19.000 H		132	5.3E+04	134	2.4E+04	136	1.1E+04							
	55	133	3.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+04
	56	130	1.2E+05	132	5.3E+04	134	2.4E+04	135	1.6E+04	136	1.1E+04	137	7.3E+03	7.0E+03
		138	5.0E+03											
	57	138	5.0E+03	139	3.4E+03	0	0.	0	0.	0	0.	0	0.	3.4E+03
	58	136	1.1E+04	138	5.0E+03	140	2.3E+03	142	1.1E+03	0	0.	0	0.	2.2E+03
	59	141	1.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+03
	60	142	1.1E+03	143	7.4E+02	144	5.2E+02	145	3.5E+02	146	2.4E+02	148	1.1E+02	5.8E+02
		150	5.3E+01											
PRODUCT Z= 54	53	127	1.2E+06	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+06
PRODUCT A=123	54	124	0.	126	1.7E+06	128	8.5E+05	129	5.8E+05	130	3.9E+05	131	2.6E+05	3.0E+05
HALF LIFE= 2.000 H		132	1.8E+05	134	8.1E+04	136	3.7E+04							
	55	133	1.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+05
	56	130	3.9E+05	132	1.8E+05	134	8.1E+04	135	5.5E+04	136	3.7E+04	137	2.5E+04	2.4E+04
		138	1.7E+04											
	57	138	1.7E+04	139	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.2E+04
	58	136	3.7E+04	138	1.7E+04	140	7.8E+03	142	3.7E+03	0	0.	0	0.	7.4E+03
	59	141	5.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+03
	60	142	3.7E+03	143	2.5E+03	144	1.7E+03	145	1.2E+03	146	7.9E+02	148	3.7E+02	2.0E+03
		150	1.8E+02											
PRODUCT Z= 54	53	127	5.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E+05
PRODUCT A=125	54	124	0.	126	0.	128	3.9E+05	129	2.8E+05	130	2.0E+05	131	1.4E+05	1.5E+05
HALF LIFE= 17.000 H		132	9.2E+04	134	4.2E+04	136	1.9E+04							
	55	133	6.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E+04
	56	130	2.0E+05	132	9.3E+04	134	4.2E+04	135	2.9E+04	136	1.9E+04	137	1.3E+04	1.2E+04
		138	8.7E+03											
	57	138	8.8E+03	139	5.9E+03	0	0.	0	0.	0	0.	0	0.	5.9E+03
	58	136	1.9E+04	138	8.8E+03	140	4.0E+03	142	1.8E+03	0	0.	0	0.	3.8E+03
	59	141	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+03
	60	142	1.9E+03	143	1.3E+03	144	8.7E+02	145	5.8E+02	146	4.0E+02	148	1.9E+02	9.9E+02
		150	8.7E+01											
PRODUCT Z= 54	54	124	0.	126	0.	128	0.	129	3.0E+03	130	2.2E+03	131	1.6E+03	1.6E+03
PRODUCT A=127		132	1.1E+03	134	5.1E+02	136	2.3E+02							
HALF LIFE= 36.400 D	55	133	7.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+02
	56	130	2.2E+03	132	1.1E+03	134	5.2E+02	135	3.5E+02	136	2.3E+02	137	1.6E+02	1.5E+02
		138	1.1E+02											
	57	138	1.1E+02	139	7.2E+01	0	0.	0	0.	0	0.	0	0.	7.2E+01
	58	136	2.4E+02	138	1.1E+02	140	4.9E+01	142	2.2E+01	0	0.	0	0.	4.6E+01
	59	141	3.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+01
	60	142	2.2E+01	143	1.5E+01	144	1.0E+01	145	7.0E+00	146	4.8E+00	148	2.2E+00	1.2E+01
		150	1.0E+00											
PRODUCT Z= 54	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	7.7E-01
PRODUCT A=133		132	0.	134	0.	136	8.4E+00							
HALF LIFE= 5.270 D	56	130	0.	132	0.	134	0.	135	1.2E+01	136	8.5E+00	137	6.1E+00	5.2E+00
		138	4.3E+00											
	57	138	4.4E+00	139	3.0E+00	0	0.	0	0.	0	0.	0	0.	3.0E+00
	58	136	0.	138	4.4E+00	140	2.0E+00	142	9.1E-01	0	0.	0	0.	1.9E+00
	59	141	1.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+00
	60	142	9.2E-01	143	6.3E-01	144	4.2E-01	145	2.8E-01	146	1.9E-01	148	8.6E-02	4.9E-01
		150	4.0E-02											
	62	144	4.2E-01	147	1.3E-01	148	8.7E-02	149	5.9E-02	150	4.0E-02	152	1.9E-02	5.9E-02
		154	8.7E-03											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 54 A=133 (CONTINUED)	63	151	2.7E-02	153	1.3E-02	0	0.	0	0.	0	0.	0	0.	2.0E-02
PRODUCT Z= 54	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	3.9E+00	2.4E+00
PRODUCT A=135		138	2.8E+00											
HALF LIFE= 9.200 H	57	138	2.8E+00	139	2.0E+00	0	0.	0	0.	0	0.	0	0.	2.0E+00
	58	136	0.	138	0.	140	1.4E+00	142	6.6E-01	0	0.	0	0.	1.3E+00
	59	141	9.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E-01
	60	142	6.7E-01	143	4.5E-01	144	3.0E-01	145	2.1E-01	146	1.4E-01	148	6.2E-02	3.5E-01
		150	2.8E-02											
	62	144	3.1E-01	147	9.3E-02	148	6.3E-02	149	4.2E-02	150	2.9E-02	152	1.3E-02	4.3E-02
		154	6.2E-03											
	63	151	2.0E-02	153	9.0E-03	0	0.	0	0.	0	0.	0	0.	1.4E-02
PRODUCT Z= 54	58	136	0.	138	0.	140	0.	142	6.7E-02	0	0.	0	0.	7.5E-03
PRODUCT A=137	60	142	0.	143	4.6E-02	144	3.1E-02	145	2.1E-02	146	1.4E-02	148	6.4E-03	1.8E-02
HALF LIFE= 4.200 M		150	2.9E-03											
	62	144	0.	147	9.7E-03	148	6.5E-03	149	4.4E-03	150	2.9E-03	152	1.3E-03	3.5E-03
		154	6.1E-04											
	63	151	2.0E-03	153	9.1E-04	0	0.	0	0.	0	0.	0	0.	1.4E-03
	64	152	1.3E-03	154	6.2E-04	155	4.2E-04	156	2.9E-04	157	1.9E-04	158	1.3E-04	2.1E-04
		160	6.2E-05											
	65	159	9.4E-05	0	0.	0	0.	0	0.	0	0.	0	0.	9.4E-05
	66	156	2.9E-04	158	1.4E-04	160	6.3E-05	161	4.3E-05	162	2.9E-05	163	2.0E-05	2.6E-05
		164	1.4E-05											
PRODUCT Z= 54	58	136	0.	138	0.	140	0.	142	1.7E-02	0	0.	0	0.	1.9E-03
PRODUCT A=138	60	142	0.	143	0.	144	8.5E-03	145	5.7E-03	146	3.9E-03	148	1.8E-03	3.3E-03
HALF LIFE= 17.000 M		150	8.0E-04											
	62	144	0.	147	2.6E-03	148	1.8E-03	149	1.2E-03	150	8.0E-04	152	3.6E-04	9.4E-04
		154	1.7E-04											
	63	151	5.4E-04	153	2.5E-04	0	0.	0	0.	0	0.	0	0.	3.9E-04
	64	152	3.7E-04	154	1.7E-04	155	1.1E-04	156	7.8E-05	157	5.4E-05	158	3.6E-05	5.8E-05
		160	1.7E-05											
	65	159	2.5E-05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E-05
	66	156	7.9E-05	158	3.6E-05	160	1.7E-05	161	1.2E-05	162	8.0E-06	163	5.4E-06	7.1E-06
		164	3.8E-06											
PRODUCT Z= 55	54	124	0.	126	4.6E+05	128	2.3E+05	129	1.6E+05	130	1.1E+05	131	7.3E+04	8.2E+04
PRODUCT A=123		132	4.9E+04	134	2.2E+04	136	1.0E+04							
HALF LIFE= 8.000 M	55	133	3.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+04
	56	130	1.1E+05	132	4.9E+04	134	2.2E+04	135	1.5E+04	136	1.0E+04	137	6.9E+03	6.6E+03
		138	4.6E+03											
	57	138	4.7E+03	139	3.2E+03	0	0.	0	0.	0	0.	0	0.	3.2E+03
	58	136	1.0E+04	138	4.7E+03	140	2.2E+03	142	1.0E+03	0	0.	0	0.	2.1E+03
	59	141	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
	60	142	1.0E+03	143	6.8E+02	144	4.7E+02	145	3.3E+02	146	2.2E+02	148	1.0E+02	5.4E+02
		150	4.9E+01											
PRODUCT Z= 55	54	124	0.	126	0.	128	1.5E+06	129	1.1E+06	130	7.7E+05	131	5.2E+05	5.7E+05
PRODUCT A=125		132	3.5E+05	134	1.6E+05	136	7.3E+04							
HALF LIFE= 45.000 M	55	133	2.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+05
	56	130	7.8E+05	132	3.6E+05	134	1.6E+05	135	1.1E+05	136	7.4E+04	137	5.0E+04	4.8E+04
		138	3.4E+04											
	57	138	3.4E+04	139	2.3E+04	0	0.	0	0.	0	0.	0	0.	2.3E+04
	58	136	7.4E+04	138	3.4E+04	140	1.5E+04	142	7.1E+03	0	0.	0	0.	1.5E+04
	59	141	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
	60	142	7.1E+03	143	4.9E+03	144	3.4E+03	145	2.2E+03	146	1.5E+03	148	7.2E+02	3.8E+03
		150	3.3E+02											
PRODUCT Z= 55	54	124	0.	126	0.	128	2.1E+06	129	1.5E+06	130	1.1E+06	131	7.6E+05	8.1E+05
PRODUCT A=126		132	5.2E+05	134	2.4E+05	136	1.1E+05							
HALF LIFE= 1.600 M	55	133	3.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+05
	56	130	1.1E+06	132	5.2E+05	134	2.4E+05	135	1.6E+05	136	1.1E+05	137	7.3E+04	7.0E+04
		138	4.9E+04											
	57	138	4.9E+04	139	3.3E+04	0	0.	0	0.	0	0.	0	0.	3.3E+04
	58	136	1.1E+05	138	5.0E+04	140	2.3E+04	142	1.0E+04	0	0.	0	0.	2.1E+04
	59	141	1.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+04
	60	142	1.0E+04	143	7.1E+03	144	4.8E+03	145	3.3E+03	146	2.2E+03	148	1.1E+03	5.5E+03
		150	4.9E+02											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	1.2E+06	130	8.6E+05	131	6.1E+05	6.2E+05
PRODUCT A=127		132	4.4E+05	134	2.0E+05	136	9.1E+04							
HALF LIFE= 6.200 H	55	133	3.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+05
	56	130	8.6E+05	132	4.4E+05	134	2.0E+05	135	1.4E+05	136	9.2E+04	137	6.3E+04	5.9E+04
		138	4.2E+04											
	57	138	4.2E+04	139	2.8E+04	0	0.	0	0.	0	0.	0	0.	2.8E+04
	58	136	9.3E+04	138	4.2E+04	140	1.9E+04	142	8.7E+03	0	0.	0	0.	1.8E+04
	59	141	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 55 A=127 (CONTINUED)	60	142	8.8E+03	143	6.0E+03	144	4.0E+03	145	2.8E+03	146	1.9E+03	148	8.8E+02	4.7E+03
		150	4.1E+02											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	6.5E+05	131	4.6E+05	2.4E+05
PRODUCT A=128		132	3.3E+05	134	1.6E+05	136	7.3E+04							
HALF LIFE= 3.000 M	55	133	2.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+05
	56	130	6.6E+05	132	3.3E+05	134	1.6E+05	135	1.1E+05	136	7.4E+04	137	5.0E+04	4.8E+04
		138	3.4E+04											
	57	138	3.4E+04	139	2.3E+04	0	0.	0	0.	0	0.	0	0.	2.3E+04
	58	136	7.5E+04	138	3.4E+04	140	1.5E+04	142	7.0E+03	0	0.	0	0.	1.5E+04
	59	141	1.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+04
	60	142	7.1E+03	143	4.8E+03	144	3.3E+03	145	2.2E+03	146	1.5E+03	148	6.9E+02	3.7E+03
		150	3.3E+02											
	62	144	3.3E+03	147	1.0E+03	148	6.9E+02	149	4.8E+02	150	3.3E+02	152	1.5E+02	4.7E+02
		154	7.2E+01											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	1.1E+05	5.3E+04
PRODUCT A=129		132	8.2E+04	134	4.2E+04	136	1.9E+04							
HALF LIFE= 32.000 H	55	133	5.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+04
	56	130	0.	132	8.3E+04	134	4.2E+04	135	2.9E+04	136	1.9E+04	137	1.3E+04	1.2E+04
		138	8.8E+03											
	57	138	8.9E+03	139	6.0E+03	0	0.	0	0.	0	0.	0	0.	6.0E+03
	58	136	2.0E+04	138	8.9E+03	140	4.0E+03	142	1.8E+03	0	0.	0	0.	3.8E+03
	59	141	2.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+03
	60	142	1.9E+03	143	1.2E+03	144	8.4E+02	145	5.7E+02	146	3.9E+02	148	1.8E+02	9.8E+02
		150	8.4E+01											
	62	144	8.5E+02	147	2.7E+02	148	1.8E+02	149	1.2E+02	150	8.5E+01	152	3.9E+01	1.2E+02
		154	1.8E+01											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	3.8E+04
PRODUCT A=130		132	1.1E+05	134	5.6E+04	136	2.7E+04							
HALF LIFE= 30.000 M	55	133	7.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+04
	56	130	0.	132	1.1E+05	134	5.6E+04	135	4.0E+04	136	2.7E+04	137	1.9E+04	1.7E+04
		138	1.2E+04											
	57	138	1.3E+04	139	8.5E+03	0	0.	0	0.	0	0.	0	0.	8.5E+03
	58	136	2.8E+04	138	1.3E+04	140	5.8E+03	142	2.6E+03	0	0.	0	0.	5.5E+03
	59	141	3.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+03
	60	142	2.6E+03	143	1.8E+03	144	1.2E+03	145	8.0E+02	146	5.5E+02	148	2.5E+02	1.4E+03
		150	1.2E+02											
	62	144	1.2E+03	147	3.7E+02	148	2.5E+02	149	1.8E+02	150	1.2E+02	152	5.6E+01	1.7E+02
		154	2.6E+01											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	2.9E+02
PRODUCT A=131		132	0.	134	1.9E+03	136	9.6E+02							
HALF LIFE= 9.700 D	55	133	2.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+03
	56	130	0.	132	0.	134	1.9E+03	135	1.4E+03	136	9.7E+02	137	6.6E+02	6.0E+02
		138	4.5E+02											
	57	138	4.5E+02	139	3.0E+02	0	0.	0	0.	0	0.	0	0.	3.0E+02
	58	136	9.8E+02	138	4.5E+02	140	2.0E+02	142	9.3E+01	0	0.	0	0.	1.9E+02
	59	141	1.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+02
	60	142	9.4E+01	143	6.3E+01	144	4.3E+01	145	2.9E+01	146	1.9E+01	148	8.9E+00	4.9E+01
		150	4.2E+00											
	62	144	4.3E+01	147	1.3E+01	148	9.0E+00	149	6.1E+00	150	4.2E+00	152	1.9E+00	6.1E+00
		154	9.0E-01											
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	1.9E+02
PRODUCT A=132		132	0.	134	1.2E+03	136	6.2E+02							
HALF LIFE= 6.580 D	56	130	0.	132	0.	134	1.2E+03	135	8.8E+02	136	6.3E+02	137	4.5E+02	4.0E+02
		138	3.0E+02											
	57	138	3.1E+02	139	2.1E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
	58	136	6.3E+02	138	3.1E+02	140	1.4E+02	142	6.4E+01	0	0.	0	0.	1.3E+02
	59	141	9.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E+01
	60	142	6.5E+01	143	4.3E+01	144	2.9E+01	145	2.0E+01	146	1.3E+01	148	6.1E+00	3.4E+01
		150	2.8E+00											
	62	144	2.9E+01	147	9.0E+00	148	6.1E+00	149	4.1E+00	150	2.8E+00	152	1.3E+00	4.1E+00
		154	6.2E-01											
	63	151	1.9E+00	153	9.0E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
PRODUCT Z= 55	54	124	0.	126	0.	128	0.	129	0.	130	0.	131	0.	8.1E-02
PRODUCT A=134		132	0.	134	0.	136	8.8E-01							
HALF LIFE= 2.100 Y	56	130	0.	132	0.	134	0.	135	0.	136	8.9E-01	137	6.3E-01	4.7E-01
		138	4.5E-01											
	57	138	4.5E-01	139	3.3E-01	0	0.	0	0.	0	0.	0	0.	3.3E-01
	58	136	0.	138	4.6E-01	140	2.2E-01	142	1.0E-01	0	0.	0	0.	2.1E-01
	59	141	1.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-01
	60	142	1.0E-01	143	6.9E-02	144	4.7E-02	145	3.1E-02	146	2.1E-02	148	9.5E-03	5.4E-02
		150	4.4E-03											
	62	144	4.7E-02	147	1.4E-02	148	9.6E-03	149	6.5E-03	150	4.4E-03	152	2.0E-03	6.5E-03
		154	9.4E-04											
	63	151	3.0E-03	153	1.4E-03	0	0.	0	0.	0	0.	0	0.	2.2E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 55	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	2.4E-07	1.5E-07
PRODUCT A=135		138	1.7E-07											
HALF LIFE= 2.000 T	57	138	1.7E-07	139	1.2E-07	0	0.	0	0.	0	0.	0	0.	1.2E-07
	58	136	0.	138	1.7E-07	140	8.7E-08	142	4.0E-08	0	0.	0	0.	8.2E-08
	59	141	6.0E-08	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E-08
	60	142	4.0E-08	143	2.7E-08	144	1.8E-08	145	1.3E-08	146	8.3E-09	148	3.8E-09	2.1E-08
		150	1.7E-09											
	62	144	1.9E-08	147	5.7E-09	148	3.8E-09	149	2.6E-09	150	1.7E-09	152	8.0E-10	2.6E-09
		154	3.7E-10											
	63	151	1.2E-09	153	5.5E-10	0	0.	0	0.	0	0.	0	0.	8.5E-10
PRODUCT Z= 55	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.	2.2E+00
PRODUCT A=136		138	3.1E+00											
HALF LIFE= 13.000 D	57	138	3.1E+00	139	2.2E+00	0	0.	0	0.	0	0.	0	0.	2.2E+00
	58	136	0.	138	0.	140	1.6E+00	142	7.8E-01	0	0.	0	0.	1.5E+00
	59	141	1.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+00
	60	142	7.8E-01	143	5.3E-01	144	3.6E-01	145	2.4E-01	146	1.6E-01	148	7.3E-02	4.1E-01
		150	3.3E-02											
	62	144	3.6E-01	147	1.1E-01	148	7.4E-02	149	5.0E-02	150	3.4E-02	152	1.5E-02	5.0E-02
		154	7.1E-03											
	63	151	2.3E-02	153	1.0E-02	0	0.	0	0.	0	0.	0	0.	1.6E-02
	64	152	1.6E-02	154	7.2E-03	155	4.9E-03	156	3.3E-03	157	2.3E-03	158	1.6E-03	2.5E-03
		160	7.3E-04											
PRODUCT Z= 55	57	138	0.	139	8.6E-04	0	0.	0	0.	0	0.	0	0.	8.6E-04
PRODUCT A=137	58	136	0.	138	0.	140	6.2E-04	142	3.1E-04	0	0.	0	0.	5.8E-04
HALF LIFE= 30.000 Y	59	141	4.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E-04
	60	142	3.2E-04	143	2.2E-04	144	1.5E-04	145	9.8E-05	146	6.6E-05	148	3.0E-05	1.7E-04
		150	1.4E-05											
	62	144	1.5E-04	147	4.5E-05	148	3.0E-05	149	2.0E-05	150	1.4E-05	152	6.2E-06	2.0E-05
		154	2.9E-06											
	63	151	9.3E-06	153	4.3E-06	0	0.	0	0.	0	0.	0	0.	6.7E-06
	64	152	6.3E-06	154	2.9E-06	155	2.0E-06	156	1.4E-06	157	9.1E-07	158	6.3E-07	1.0E-06
		160	2.9E-07											
PRODUCT Z= 55	58	136	0.	138	0.	140	0.	142	1.5E+00	0	0.	0	0.	1.7E-01
PRODUCT A=138	60	142	0.	143	1.1E+00	144	7.3E-01	145	4.9E-01	146	3.3E-01	148	1.5E-01	4.1E-01
HALF LIFE= 32.200 M		150	6.8E-02											
	62	144	0.	147	2.3E-01	148	1.5E-01	149	1.0E-01	150	6.9E-02	152	3.1E-02	8.1E-02
		154	1.4E-02											
	63	151	4.7E-02	153	2.1E-02	0	0.	0	0.	0	0.	0	0.	3.3E-02
	64	152	3.2E-02	154	1.4E-02	155	9.8E-03	156	6.7E-03	157	4.6E-03	158	3.1E-03	4.9E-03
		160	1.5E-03											
	65	159	2.1E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-03
	66	156	6.7E-03	158	3.1E-03	160	1.5E-03	161	9.9E-04	162	6.8E-04	163	4.6E-04	6.1E-04
		164	3.2E-04											
PRODUCT Z= 55	58	136	0.	138	0.	140	0.	142	4.2E-01	0	0.	0	0.	4.7E-02
PRODUCT A=139	60	142	0.	143	0.	144	2.2E-01	145	1.5E-01	146	1.0E-01	148	4.5E-02	8.5E-02
HALF LIFE= 9.500 M		150	2.1E-02											
	62	144	0.	147	6.8E-02	148	4.6E-02	149	3.1E-02	150	2.1E-02	152	9.4E-03	2.4E-02
		154	4.3E-03											
	63	151	1.4E-02	153	6.4E-03	0	0.	0	0.	0	0.	0	0.	1.0E-02
	64	152	9.5E-03	154	4.3E-03	155	2.9E-03	156	2.0E-03	157	1.4E-03	158	9.3E-04	1.5E-03
		160	4.3E-04											
	65	159	6.2E-04	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E-04
	66	156	2.0E-03	158	9.4E-04	160	4.3E-04	161	3.0E-04	162	2.0E-04	163	1.4E-04	1.8E-04
		164	9.4E-05											
PRODUCT Z= 55	60	142	0.	143	0.	144	0.	145	4.2E-02	146	2.9E-02	148	1.3E-02	9.6E-03
PRODUCT A=140		150	6.0E-03											
HALF LIFE= 66.000 S	62	144	0.	147	2.0E-02	148	1.3E-02	149	8.9E-03	150	6.0E-03	152	2.7E-03	7.0E-03
		154	1.2E-03											
	63	151	4.0E-03	153	1.8E-03	0	0.	0	0.	0	0.	0	0.	2.9E-03
	64	152	2.7E-03	154	1.2E-03	155	8.4E-04	156	5.7E-04	157	3.8E-04	158	2.6E-04	4.2E-04
		160	1.2E-04											
	65	159	1.8E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-04
	66	156	5.8E-04	158	2.6E-04	160	1.2E-04	161	8.4E-05	162	5.8E-05	163	3.9E-05	5.1E-05
		164	2.7E-05											
	67	165	1.8E-05	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-05
PRODUCT Z= 56	55	133	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
PRODUCT A=123	56	130	9.4E+03	132	4.3E+03	134	1.9E+03	135	1.3E+03	136	8.8E+02	137	5.9E+02	5.7E+02
HALF LIFE= 2.000 M		138	4.0E+02											
	57	138	4.0E+02	139	2.7E+02	0	0.	0	0.	0	0.	0	0.	2.7E+02
	58	136	8.9E+02	138	4.0E+02	140	1.9E+02	142	8.7E+01	0	0.	0	0.	1.8E+02
	59	141	1.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+02
	60	142	8.8E+01	143	5.9E+01	144	4.1E+01	145	2.8E+01	146	1.9E+01	148	8.8E+00	4.7E+01
		150	4.2E+00											
	62	144	4.1E+01	147	1.3E+01	148	8.9E+00	149	6.2E+00	150	4.3E+00	152	2.0E+00	6.0E+00
		154	9.7E-01											

	TARGET Z	M@N@IS@T@PIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PR@DUCT Z= 56	55	133	4.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+04
PR@DUCT A=125	56	130	1.5E+05	132	7.0E+04	134	3.2E+04	135	2.2E+04	136	1.4E+04	137	9.7E+03	9.3E+03
HALF LIFE= 6.500 M		138	6.6E+03											
	57	138	6.6E+03	139	4.4E+03	0	0.	0	0.	0	0.	0	0.	4.5E+03
	58	136	1.5E+04	138	6.6E+03	140	3.0E+03	142	1.4E+03	0	0.	0	0.	2.9E+03
	59	141	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03
	60	142	1.4E+03	143	9.6E+02	144	6.6E+02	145	4.4E+02	146	3.0E+02	148	1.4E+02	7.5E+02
		150	6.5E+01											
	62	144	6.6E+02	147	2.1E+02	148	1.4E+02	149	9.7E+01	150	6.6E+01	152	3.2E+01	9.7E+01
		154	1.5E+01											
PR@DUCT Z= 56	55	133	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
PR@DUCT A=126	56	130	4.7E+05	132	2.3E+05	134	1.0E+05	135	7.0E+04	136	4.8E+04	137	3.2E+04	3.0E+04
HALF LIFE= 97.000 M		138	2.1E+04											
	57	138	2.2E+04	139	1.5E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
	58	136	4.8E+04	138	2.2E+04	140	9.8E+03	142	4.5E+03	0	0.	0	0.	9.3E+03
	59	141	6.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+03
	60	142	4.6E+03	143	3.1E+03	144	2.1E+03	145	1.4E+03	146	9.6E+02	148	4.6E+02	2.4E+03
		150	2.1E+02											
	62	144	2.1E+03	147	6.7E+02	148	4.7E+02	149	3.1E+02	150	2.1E+02	152	1.0E+02	3.1E+02
		154	4.8E+01											
PR@DUCT Z= 56	55	133	4.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+05
PR@DUCT A=127	56	130	1.2E+06	132	6.2E+05	134	2.8E+05	135	1.9E+05	136	1.3E+05	137	8.8E+04	8.3E+04
HALF LIFE= 10.000 M		138	5.8E+04											
	57	138	5.9E+04	139	4.0E+04	0	0.	0	0.	0	0.	0	0.	4.0E+04
	58	136	1.3E+05	138	5.9E+04	140	2.7E+04	142	1.2E+04	0	0.	0	0.	2.5E+04
	59	141	1.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+04
	60	142	1.2E+04	143	8.4E+03	144	5.6E+03	145	3.9E+03	146	2.7E+03	148	1.2E+03	6.5E+03
		150	5.7E+02											
	62	144	5.7E+03	147	1.8E+03	148	1.2E+03	149	8.6E+02	150	5.7E+02	152	2.7E+02	8.3E+02
		154	1.3E+02											
PR@DUCT Z= 56	55	133	2.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+05
PR@DUCT A=128	56	130	6.0E+05	132	3.1E+05	134	1.5E+05	135	1.0E+05	136	6.8E+04	137	4.6E+04	4.4E+04
HALF LIFE= 2.400 D		138	3.1E+04											
	57	138	3.1E+04	139	2.1E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04
	58	136	6.8E+04	138	3.1E+04	140	1.4E+04	142	6.4E+03	0	0.	0	0.	1.3E+04
	59	141	9.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E+03
	60	142	6.4E+03	143	4.3E+03	144	3.0E+03	145	2.0E+03	146	1.4E+03	148	6.3E+02	3.4E+03
		150	3.0E+02											
	62	144	3.0E+03	147	9.5E+02	148	6.3E+02	149	4.4E+02	150	3.0E+02	152	1.4E+02	4.3E+02
		154	6.6E+01											
PR@DUCT Z= 56	55	133	9.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	9.0E+05
PR@DUCT A=129	56	130	0.	132	1.3E+06	134	6.5E+05	135	4.4E+05	136	3.0E+05	137	2.0E+05	1.9E+05
HALF LIFE= 2.200 H		138	1.4E+05											
	57	138	1.4E+05	139	9.3E+04	0	0.	0	0.	0	0.	0	0.	9.3E+04
	58	136	3.0E+05	138	1.4E+05	140	6.2E+04	142	2.8E+04	0	0.	0	0.	5.9E+04
	59	141	4.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+04
	60	142	2.8E+04	143	1.9E+04	144	1.3E+04	145	8.8E+03	146	5.9E+03	148	2.8E+03	1.5E+04
		150	1.3E+03											
	62	144	1.3E+04	147	4.1E+03	148	2.8E+03	149	1.9E+03	150	1.3E+03	152	6.0E+02	1.9E+03
		154	2.8E+02											
PR@DUCT Z= 56	55	133	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
PR@DUCT A=131	56	130	0.	132	0.	134	2.0E+04	135	1.4E+04	136	1.0E+04	137	6.9E+03	6.3E+03
HALF LIFE= 11.600 D		138	4.7E+03											
	57	138	4.7E+03	139	3.2E+03	0	0.	0	0.	0	0.	0	0.	3.2E+03
	58	136	1.0E+04	138	4.7E+03	140	2.1E+03	142	9.7E+02	0	0.	0	0.	2.0E+03
	59	141	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
	60	142	9.8E+02	143	6.6E+02	144	4.5E+02	145	3.0E+02	146	2.0E+02	148	9.3E+01	5.2E+02
		150	4.4E+01											
	62	144	4.5E+02	147	1.4E+02	148	9.4E+01	149	6.4E+01	150	4.4E+01	152	2.0E+01	6.4E+01
		154	9.4E+00											
PR@DUCT Z= 56	56	130	0.	132	0.	134	0.	135	2.0E+01	136	1.4E+01	137	1.0E+01	8.8E+00
PR@DUCT A=133		138	7.3E+00											
HALF LIFE= 7.200 Y	57	138	7.3E+00	139	5.0E+00	0	0.	0	0.	0	0.	0	0.	5.0E+00
	58	136	1.4E+01	138	7.3E+00	140	3.4E+00	142	1.5E+00	0	0.	0	0.	3.2E+00
	59	141	2.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+00
	60	142	1.5E+00	143	1.0E+00	144	7.0E-01	145	4.7E-01	146	3.2E-01	148	1.4E-01	8.1E-01
		150	6.6E-02											
	62	144	7.1E-01	147	2.2E-01	148	1.5E-01	149	9.9E-02	150	6.7E-02	152	3.1E-02	9.9E-02
		154	1.4E-02											
	63	151	4.6E-02	153	2.1E-02	0	0.	0	0.	0	0.	0	0.	3.3E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 56	58	136	0.	138	0.	140	0.	142	2.7E+01	0	0.	0	0.	3.1E+00
PRODUCT A=139	60	142	0.	143	2.0E+01	144	1.4E+01	145	9.6E+00	146	6.5E+00	148	2.9E+00	7.9E+00
HALF LIFE= 83.000 M		150	1.3E+00											
	62	144	0.	147	4.4E+00	148	3.0E+00	149	2.0E+00	150	1.3E+00	152	6.1E-01	1.6E+00
		154	2.8E-01											
	63	151	9.1E-01	153	4.1E-01	0	0.	0	0.	0	0.	0	0.	6.5E-01
	64	152	6.2E-01	154	2.8E-01	155	1.9E-01	156	1.3E-01	157	8.8E-02	158	6.0E-02	9.6E-02
		160	2.8E-02											
	65	159	4.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E-02
	66	156	1.3E-01	158	6.1E-02	160	2.8E-02	161	1.9E-02	162	1.3E-02	163	9.0E-03	1.2E-02
		164	6.1E-03											
PRODUCT Z= 56	58	136	0.	138	0.	140	0.	142	4.5E-01	0	0.	0	0.	5.1E-02
PRODUCT A=140	60	142	0.	143	0.	144	2.3E-01	145	1.7E-01	146	1.1E-01	148	5.2E-02	9.4E-02
HALF LIFE= 12.800 D		150	2.4E-02											
	62	144	0.	147	7.7E-02	148	5.2E-02	149	3.5E-02	150	2.4E-02	152	1.1E-02	2.8E-02
		154	4.9E-03											
	63	151	1.6E-02	153	7.3E-03	0	0.	0	0.	0	0.	0	0.	1.1E-02
	64	152	1.1E-02	154	4.9E-03	155	3.3E-03	156	2.3E-03	157	1.5E-03	158	1.0E-03	1.7E-03
		160	4.8E-04											
	65	159	7.2E-04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E-04
	66	156	2.3E-03	158	1.0E-03	160	4.8E-04	161	3.3E-04	162	2.3E-04	163	1.6E-04	2.0E-04
		164	1.1E-04											
PRODUCT Z= 56	60	142	0.	143	0.	144	0.	145	9.5E-01	146	6.8E-01	148	3.1E-01	2.2E-01
PRODUCT A=141		150	1.4E-01											
HALF LIFE= 18.000 M	62	144	0.	147	4.7E-01	148	3.1E-01	149	2.1E-01	150	1.4E-01	152	6.5E-02	1.7E-01
		154	2.9E-02											
	63	151	9.8E-02	153	4.4E-02	0	0.	0	0.	0	0.	0	0.	6.9E-02
	64	152	6.5E-02	154	3.0E-02	155	2.0E-02	156	1.3E-02	157	9.2E-03	158	6.2E-03	1.0E-02
		160	2.9E-03											
	65	159	4.2E-03	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E-03
	66	156	1.4E-02	158	6.2E-03	160	2.9E-03	161	2.0E-03	162	1.4E-03	163	9.4E-04	1.2E-03
		164	6.3E-04											
	67	165	4.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E-04
PRODUCT Z= 56	60	142	0.	143	0.	144	0.	145	0.	146	1.9E-01	148	9.4E-02	4.2E-02
PRODUCT A=142		150	4.3E-02											
HALF LIFE= 11.000 M	62	144	0.	147	0.	148	9.5E-02	149	6.4E-02	150	4.3E-02	152	2.0E-02	3.0E-02
		154	8.9E-03											
	63	151	2.9E-02	153	1.3E-02	0	0.	0	0.	0	0.	0	0.	2.1E-02
	64	152	2.0E-02	154	9.0E-03	155	6.1E-03	156	4.1E-03	157	2.7E-03	158	1.9E-03	3.0E-03
		160	8.6E-04											
	65	159	1.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-03
	66	156	4.1E-03	158	1.9E-03	160	8.7E-04	161	6.0E-04	162	4.0E-04	163	2.8E-04	3.6E-04
		164	1.9E-04											
	67	165	1.3E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-04
	68	162	4.0E-04	164	1.9E-04	166	8.9E-05	167	6.0E-05	168	4.2E-05	170	2.0E-05	6.1E-05
PRODUCT Z= 57	56	130	2.2E+03	132	1.0E+03	134	4.6E+02	135	3.1E+02	136	2.1E+02	137	1.4E+02	1.3E+02
PRODUCT A=124		138	9.4E+01											
HALF LIFE= 7.000 M	57	138	9.5E+01	139	6.4E+01	0	0.	0	0.	0	0.	0	0.	6.4E+01
	58	136	2.1E+02	138	9.5E+01	140	4.4E+01	142	2.0E+01	0	0.	0	0.	4.2E+01
	59	141	3.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+01
	60	142	2.0E+01	143	1.4E+01	144	9.4E+00	145	6.5E+00	146	4.5E+00	148	2.1E+00	1.1E+01
		150	9.8E-01											
	62	144	9.4E+00	147	3.0E+00	148	2.1E+00	149	1.4E+00	150	9.9E-01	152	4.6E-01	1.4E+00
		154	2.2E-01											
	63	151	6.8E-01	153	3.2E-01	0	0.	0	0.	0	0.	0	0.	5.0E-01
PRODUCT Z= 57	56	130	1.1E+04	132	5.2E+03	134	2.3E+03	135	1.6E+03	136	1.1E+03	137	7.2E+02	6.9E+02
PRODUCT A=125		138	4.8E+02											
HALF LIFE= 1.000 M	57	138	4.9E+02	139	3.3E+02	0	0.	0	0.	0	0.	0	0.	3.3E+02
	58	136	1.1E+03	138	4.9E+02	140	2.2E+02	142	1.0E+02	0	0.	0	0.	2.1E+02
	59	141	1.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+02
	60	142	1.0E+02	143	7.0E+01	144	4.8E+01	145	3.2E+01	146	2.2E+01	148	1.0E+01	5.5E+01
		150	4.8E+00											
	62	144	4.9E+01	147	1.6E+01	148	1.0E+01	149	7.2E+00	150	4.9E+00	152	2.4E+00	7.1E+00
		154	1.1E+00											
	63	151	3.4E+00	153	1.6E+00	0	0.	0	0.	0	0.	0	0.	2.5E+00
PRODUCT Z= 57	56	130	4.8E+04	132	2.4E+04	134	1.1E+04	135	7.2E+03	136	4.9E+03	137	3.3E+03	3.1E+03
PRODUCT A=126		138	2.2E+03											
HALF LIFE= 1.000 M	57	138	2.2E+03	139	1.5E+03	0	0.	0	0.	0	0.	0	0.	1.5E+03
	58	136	5.0E+03	138	2.2E+03	140	1.0E+03	142	4.7E+02	0	0.	0	0.	9.6E+02
	59	141	6.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+02
	60	142	4.7E+02	143	3.2E+02	144	2.2E+02	145	1.5E+02	146	9.9E+01	148	4.8E+01	2.5E+02
		150	2.2E+01											
	62	144	2.2E+02	147	6.9E+01	148	4.8E+01	149	3.2E+01	150	2.2E+01	152	1.0E+01	3.2E+01
		154	4.9E+00											
	63	151	1.5E+01	153	7.3E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 57 PRODUCT A=127 HALF LIFE= 3.500 M	56	130	1.8E+05	132	9.4E+04	134	4.3E+04	135	2.9E+04	136	2.0E+04	137	1.3E+04	1.3E+04
		138	8.9E+03											
	57	138	8.9E+03	139	6.0E+03	0	0.	0	0.	0	0.	0	0.	6.0E+03
	58	136	2.0E+04	138	9.0E+03	140	4.1E+03	142	1.9E+03	0	0.	0	0.	3.9E+03
	59	141	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03
	60	142	1.9E+03	143	1.3E+03	144	8.6E+02	145	5.9E+02	146	4.0E+02	148	1.9E+02	1.0E+03
		150	8.7E+01											
	62	144	8.7E+02	147	2.7E+02	148	1.9E+02	149	1.3E+02	150	8.7E+01	152	4.1E+01	1.3E+02
		154	2.0E+01											
	63	151	6.0E+01	153	2.9E+01	0	0.	0	0.	0	0.	0	0.	4.4E+01
PRODUCT Z= 57 PRODUCT A=128 HALF LIFE= 4.600 M	56	130	6.1E+05	132	3.1E+05	134	1.5E+05	135	1.0E+05	136	6.9E+04	137	4.6E+04	4.4E+04
		138	3.2E+04											
	57	138	3.2E+04	139	2.1E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04
	58	136	7.0E+04	138	3.2E+04	140	1.4E+04	142	6.5E+03	0	0.	0	0.	1.4E+04
	59	141	9.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+03
	60	142	6.6E+03	143	4.4E+03	144	3.0E+03	145	2.0E+03	146	1.4E+03	148	6.4E+02	3.5E+03
		150	3.1E+02											
	62	144	3.1E+03	147	9.7E+02	148	6.5E+02	149	4.5E+02	150	3.1E+02	152	1.4E+02	4.4E+02
		154	6.7E+01											
	63	151	2.1E+02	153	9.7E+01	0	0.	0	0.	0	0.	0	0.	1.5E+02
PRODUCT Z= 57 PRODUCT A=129 HALF LIFE= 10.000 M	56	130	0.	132	8.8E+05	134	4.5E+05	135	3.1E+05	136	2.1E+05	137	1.4E+05	1.3E+05
		138	9.4E+04											
	57	138	9.5E+04	139	6.4E+04	0	0.	0	0.	0	0.	0	0.	6.4E+04
	58	136	2.1E+05	138	9.5E+04	140	4.3E+04	142	2.0E+04	0	0.	0	0.	4.1E+04
	59	141	2.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+04
	60	142	2.0E+04	143	1.3E+04	144	9.0E+03	145	6.1E+03	146	4.1E+03	148	1.9E+03	1.0E+04
		150	8.9E+02											
	62	144	9.1E+03	147	2.8E+03	148	2.0E+03	149	1.3E+03	150	9.0E+02	152	4.2E+02	1.3E+03
		154	1.9E+02											
	63	151	6.3E+02	153	2.9E+02	0	0.	0	0.	0	0.	0	0.	4.5E+02
PRODUCT Z= 57 PRODUCT A=130 HALF LIFE= 9.000 M	56	130	0.	132	2.1E+06	134	1.0E+06	135	7.5E+05	136	5.1E+05	137	3.4E+05	3.2E+05
		138	2.3E+05											
	57	138	2.3E+05	139	1.6E+05	0	0.	0	0.	0	0.	0	0.	1.6E+05
	58	136	5.1E+05	138	2.3E+05	140	1.1E+05	142	4.8E+04	0	0.	0	0.	1.0E+05
	59	141	7.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+04
	60	142	4.9E+04	143	3.3E+04	144	2.2E+04	145	1.5E+04	146	1.0E+04	148	4.7E+03	2.6E+04
		150	2.1E+03											
	62	144	2.2E+04	147	6.9E+03	148	4.7E+03	149	3.2E+03	150	2.2E+03	152	1.0E+03	3.2E+03
		154	4.8E+02											
	63	151	1.5E+03	153	7.0E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
PRODUCT Z= 57 PRODUCT A=131 HALF LIFE= 61.000 M	56	130	0.	132	0.	134	1.6E+06	135	1.1E+06	136	8.2E+05	137	5.5E+05	5.1E+05
		138	3.7E+05											
	57	138	3.8E+05	139	2.5E+05	0	0.	0	0.	0	0.	0	0.	2.5E+05
	58	136	8.2E+05	138	3.8E+05	140	1.7E+05	142	7.8E+04	0	0.	0	0.	1.6E+05
	59	141	1.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+05
	60	142	7.9E+04	143	5.3E+04	144	3.6E+04	145	2.4E+04	146	1.6E+04	148	7.5E+03	4.1E+04
		150	3.5E+03											
	62	144	3.6E+04	147	1.1E+04	148	7.5E+03	149	5.1E+03	150	3.5E+03	152	1.6E+03	5.1E+03
		154	7.6E+02											
	63	151	2.4E+03	153	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.7E+03
PRODUCT Z= 57 PRODUCT A=132 HALF LIFE= 4.800 H	56	130	0.	132	0.	134	1.4E+06	135	1.0E+06	136	7.2E+05	137	5.1E+05	4.6E+05
		138	3.5E+05											
	57	138	3.5E+05	139	2.4E+05	0	0.	0	0.	0	0.	0	0.	2.4E+05
	58	136	7.2E+05	138	3.5E+05	140	1.6E+05	142	7.3E+04	0	0.	0	0.	1.5E+05
	59	141	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	60	142	7.4E+04	143	4.9E+04	144	3.3E+04	145	2.2E+04	146	1.5E+04	148	7.0E+03	3.9E+04
		150	3.2E+03											
	62	144	3.4E+04	147	1.0E+04	148	7.0E+03	149	4.7E+03	150	3.2E+03	152	1.5E+03	4.7E+03
		154	7.1E+02											
	63	151	2.2E+03	153	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
PRODUCT Z= 57 PRODUCT A=133 HALF LIFE= 4.000 H	56	130	0.	132	0.	134	0.	135	7.6E+05	136	5.4E+05	137	3.9E+05	3.3E+05
		138	2.8E+05											
	57	138	2.8E+05	139	1.9E+05	0	0.	0	0.	0	0.	0	0.	1.9E+05
	58	136	5.4E+05	138	2.8E+05	140	1.3E+05	142	5.8E+04	0	0.	0	0.	1.2E+05
	59	141	8.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.6E+04
	60	142	5.9E+04	143	4.0E+04	144	2.7E+04	145	1.8E+04	146	1.2E+04	148	5.5E+03	3.1E+04
		150	2.5E+03											
	62	144	2.7E+04	147	8.2E+03	148	5.5E+03	149	3.8E+03	150	2.5E+03	152	1.2E+03	3.8E+03
		154	5.5E+02											
	63	151	1.7E+03	153	8.0E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 57	56	130	0.	132	0.	134	0.	135	0.	136	3.5E+05	137	2.5E+05	1.8E+05
PRODUCT A=134		138	1.8E+05											
HALF LIFE= 6.500 M	57	138	1.8E+05	139	1.3E+05	0	0.	0	0.	0	0.	0	0.	1.3E+05
	58	136	3.5E+05	138	1.8E+05	140	8.8E+04	142	4.0E+04	0	0.	0	0.	8.3E+04
	59	141	6.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+04
	60	142	4.0E+04	143	2.7E+04	144	1.8E+04	145	1.2E+04	146	8.3E+03	148	3.8E+03	2.1E+04
		150	1.7E+03											
	62	144	1.9E+04	147	5.7E+03	148	3.8E+03	149	2.6E+03	150	1.7E+03	152	8.1E+02	2.6E+03
		154	3.7E+02											
	63	151	1.2E+03	153	5.6E+02	0	0.	0	0.	0	0.	0	0.	8.5E+02
PRODUCT Z= 57	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	8.2E+04	5.1E+04
PRODUCT A=135		138	5.8E+04											
HALF LIFE= 19.400 H	57	138	5.9E+04	139	4.2E+04	0	0.	0	0.	0	0.	0	0.	4.2E+04
	58	136	0.	138	5.9E+04	140	3.0E+04	142	1.4E+04	0	0.	0	0.	2.8E+04
	59	141	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
	60	142	1.4E+04	143	9.4E+03	144	6.3E+03	145	4.3E+03	146	2.9E+03	148	1.3E+03	7.3E+03
		150	5.9E+02											
	62	144	6.4E+03	147	1.9E+03	148	1.3E+03	149	8.9E+02	150	6.0E+02	152	2.7E+02	8.9E+02
		154	1.3E+02											
	63	151	4.1E+02	153	1.9E+02	0	0.	0	0.	0	0.	0	0.	2.9E+02
PRODUCT Z= 57	56	130	0.	132	0.	134	0.	135	0.	136	0.	137	0.	3.7E+04
PRODUCT A=136		138	5.2E+04											
HALF LIFE= 9.500 M	57	138	5.2E+04	139	3.7E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	58	136	0.	138	5.2E+04	140	2.7E+04	142	1.3E+04	0	0.	0	0.	2.5E+04
	59	141	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
	60	142	1.3E+04	143	8.8E+03	144	6.0E+03	145	4.0E+03	146	2.7E+03	148	1.2E+03	6.9E+03
		150	5.6E+02											
	62	144	6.0E+03	147	1.8E+03	148	1.2E+03	149	8.4E+02	150	5.6E+02	152	2.6E+02	8.4E+02
		154	1.2E+02											
	63	151	3.8E+02	153	1.8E+02	0	0.	0	0.	0	0.	0	0.	2.7E+02
	64	152	2.6E+02	154	1.2E+02	155	8.3E+01	156	5.5E+01	157	3.8E+01	158	2.6E+01	4.1E+01
		160	1.2E+01											
PRODUCT Z= 57	57	138	0.	139	4.7E-04	0	0.	0	0.	0	0.	0	0.	4.7E-04
PRODUCT A=137	58	136	0.	138	0.	140	3.4E-04	142	1.7E-04	0	0.	0	0.	3.2E-04
HALF LIFE= .070 T	59	141	2.4E-04	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-04
	60	142	1.7E-04	143	1.2E-04	144	8.0E-05	145	5.4E-05	146	3.6E-05	148	1.6E-05	9.2E-05
		150	7.5E-06											
	62	144	8.1E-05	147	2.5E-05	148	1.7E-05	149	1.1E-05	150	7.6E-06	152	3.4E-06	1.1E-05
		154	1.6E-06											
	63	151	5.1E-06	153	2.4E-06	0	0.	0	0.	0	0.	0	0.	3.7E-06
	64	152	3.5E-06	154	1.6E-06	155	1.1E-06	156	7.5E-07	157	5.0E-07	158	3.4E-07	5.5E-07
		160	1.6E-07											
PRODUCT Z= 57	58	136	0.	138	0.	140	0.	142	1.4E+02	0	0.	0	0.	1.6E+01
PRODUCT A=140	60	142	0.	143	1.0E+02	144	7.2E+01	145	5.2E+01	146	3.5E+01	148	1.6E+01	4.1E+01
HALF LIFE= 40.200 H		150	7.3E+00											
	62	144	0.	147	2.4E+01	148	1.6E+01	149	1.1E+01	150	7.4E+00	152	3.3E+00	8.6E+00
		154	1.5E+00											
	63	151	4.9E+00	153	2.2E+00	0	0.	0	0.	0	0.	0	0.	3.5E+00
	64	152	3.3E+00	154	1.5E+00	155	1.0E+00	156	7.0E-01	157	4.7E-01	158	3.2E-01	5.2E-01
		160	1.5E-01											
	65	159	2.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E-01
	66	156	7.0E-01	158	3.2E-01	160	1.5E-01	161	1.0E-01	162	7.2E-02	163	4.8E-02	6.3E-02
		164	3.3E-02											
PRODUCT Z= 57	60	142	0.	143	0.	144	7.4E+01	145	5.3E+01	146	3.8E+01	148	1.7E+01	3.0E+01
PRODUCT A=141		150	7.9E+00											
HALF LIFE= 3.900 H	62	144	0.	147	2.6E+01	148	1.8E+01	149	1.2E+01	150	8.0E+00	152	3.6E+00	9.3E+00
		154	1.6E+00											
	63	151	5.4E+00	153	2.4E+00	0	0.	0	0.	0	0.	0	0.	3.9E+00
	64	152	3.6E+00	154	1.7E+00	155	1.1E+00	156	7.5E-01	157	5.1E-01	158	3.4E-01	5.6E-01
		160	1.6E-01											
	65	159	2.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-01
	66	156	7.6E-01	158	3.5E-01	160	1.6E-01	161	1.1E-01	162	7.5E-02	163	5.3E-02	6.7E-02
		164	3.5E-02											
PRODUCT Z= 57	60	142	0.	143	0.	144	0.	145	1.8E+01	146	1.3E+01	148	6.2E+00	4.3E+00
PRODUCT A=142		150	2.8E+00											
HALF LIFE= 1.400 H	62	144	0.	147	9.2E+00	148	6.3E+00	149	4.2E+00	150	2.8E+00	152	1.3E+00	3.3E+00
		154	5.9E-01											
	63	151	1.9E+00	153	8.7E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
	64	152	1.3E+00	154	5.9E-01	155	4.0E-01	156	2.7E-01	157	1.8E-01	158	1.2E-01	2.0E-01
		160	5.7E-02											
	65	159	8.4E-02	0	0.	0	0.	0	0.	0	0.	0	0.	8.4E-02
	66	156	2.7E-01	158	1.2E-01	160	5.7E-02	161	3.9E-02	162	2.6E-02	163	1.8E-02	2.4E-02
		164	1.3E-02											
	67	165	8.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 57	60	142	0.	143	0.	144	0.	145	0.	146	4.0E+00	148	2.1E+00	8.8E-01
PRODUCT A=143		150	9.5E-01											
HALF LIFE= 14.000 M	62	144	0.	147	0.	148	2.1E+00	149	1.4E+00	150	9.6E-01	152	4.3E-01	6.6E-01
		154	2.0E-01											
	63	151	6.5E-01	153	3.0E-01	0	0.	0	0.	0	0.	0	0.	4.6E-01
	64	152	4.4E-01	154	2.0E-01	155	1.3E-01	156	9.0E-02	157	6.1E-02	158	4.1E-02	6.7E-02
		160	1.9E-02											
	65	159	2.8E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E-02
	66	156	9.1E-02	158	4.1E-02	160	1.9E-02	161	1.3E-02	162	8.9E-03	163	6.0E-03	7.9E-03
		164	4.1E-03											
	67	165	2.9E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E-03
	68	162	9.0E-03	164	4.2E-03	166	1.9E-03	167	1.3E-03	168	9.0E-04	170	4.4E-04	1.3E-03
PRODUCT Z= 58	57	138	1.2E+04	139	7.9E+03	0	0.	0	0.	0	0.	0	0.	7.9E+03
PRODUCT A=129	58	136	2.6E+04	138	1.2E+04	140	5.3E+03	142	2.4E+03	0	0.	0	0.	5.0E+03
HALF LIFE= 13.000 M	59	141	3.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+03
	60	142	2.4E+03	143	1.6E+03	144	1.1E+03	145	7.5E+02	146	5.1E+02	148	2.4E+02	1.3E+03
		150	1.1E+02											
	62	144	1.1E+03	147	3.5E+02	148	2.4E+02	149	1.6E+02	150	1.1E+02	152	5.2E+01	1.6E+02
		154	2.4E+01											
	63	151	7.8E+01	153	3.6E+01	0	0.	0	0.	0	0.	0	0.	5.6E+01
	64	152	5.2E+01	154	2.4E+01	155	1.7E+01	156	1.2E+01	157	8.0E+00	158	5.6E+00	8.7E+00
		160	2.7E+00											
PRODUCT Z= 58	57	138	4.4E+04	139	3.0E+04	0	0.	0	0.	0	0.	0	0.	3.0E+04
PRODUCT A=130	58	136	9.7E+04	138	4.4E+04	140	2.0E+04	142	9.1E+03	0	0.	0	0.	1.9E+04
HALF LIFE= 30.000 M	59	141	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	60	142	9.1E+03	143	6.2E+03	144	4.2E+03	145	2.8E+03	146	1.9E+03	148	8.8E+02	4.8E+03
		150	4.0E+02											
	62	144	4.2E+03	147	1.3E+03	148	8.9E+02	149	6.1E+02	150	4.1E+02	152	2.0E+02	6.0E+02
		154	9.0E+01											
	63	151	2.8E+02	153	1.3E+02	0	0.	0	0.	0	0.	0	0.	2.0E+02
	64	152	2.0E+02	154	9.1E+01	155	6.1E+01	156	4.3E+01	157	3.0E+01	158	2.0E+01	3.2E+01
		160	9.7E+00											
PRODUCT Z= 58	57	138	1.4E+05	139	9.6E+04	0	0.	0	0.	0	0.	0	0.	9.6E+04
PRODUCT A=131	58	136	3.1E+05	138	1.4E+05	140	6.5E+04	142	3.0E+04	0	0.	0	0.	6.2E+04
HALF LIFE= 30.000 M	59	141	4.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.5E+04
	60	142	3.0E+04	143	2.0E+04	144	1.4E+04	145	9.1E+03	146	6.2E+03	148	2.8E+03	1.6E+04
		150	1.3E+03											
	62	144	1.4E+04	147	4.2E+03	148	2.9E+03	149	2.0E+03	150	1.3E+03	152	6.2E+02	1.9E+03
		154	2.9E+02											
	63	151	9.0E+02	153	4.3E+02	0	0.	0	0.	0	0.	0	0.	6.6E+02
	64	152	6.2E+02	154	2.9E+02	155	2.0E+02	156	1.3E+02	157	9.4E+01	158	6.5E+01	1.0E+02
		160	3.1E+01											
PRODUCT Z= 58	57	138	3.9E+05	139	2.6E+05	0	0.	0	0.	0	0.	0	0.	2.6E+05
PRODUCT A=132	58	136	8.0E+05	138	3.9E+05	140	1.8E+05	142	8.1E+04	0	0.	0	0.	1.7E+05
HALF LIFE= 4.200 H	59	141	1.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+05
	60	142	8.2E+04	143	5.5E+04	144	3.7E+04	145	2.5E+04	146	1.7E+04	148	7.7E+03	4.3E+04
		150	3.5E+03											
	62	144	3.7E+04	147	1.1E+04	148	7.7E+03	149	5.2E+03	150	3.6E+03	152	1.6E+03	5.2E+03
		154	7.9E+02											
	63	151	2.5E+03	153	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.8E+03
	64	152	1.7E+03	154	7.9E+02	155	5.3E+02	156	3.6E+02	157	2.5E+02	158	1.7E+02	2.7E+02
		160	8.1E+01											
PRODUCT Z= 58	57	138	8.0E+05	139	5.4E+05	0	0.	0	0.	0	0.	0	0.	5.4E+05
PRODUCT A=133	58	136	1.6E+06	138	8.0E+05	140	3.7E+05	142	1.7E+05	0	0.	0	0.	3.5E+05
HALF LIFE= 6.300 H	59	141	2.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+05
	60	142	1.7E+05	143	1.1E+05	144	7.6E+04	145	5.1E+04	146	3.5E+04	148	1.6E+04	8.9E+04
		150	7.2E+03											
	62	144	7.7E+04	147	2.4E+04	148	1.6E+04	149	1.1E+04	150	7.3E+03	152	3.4E+03	1.1E+04
		154	1.6E+03											
	63	151	5.0E+03	153	2.3E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
	64	152	3.5E+03	154	1.6E+03	155	1.1E+03	156	7.4E+02	157	5.1E+02	158	3.4E+02	5.5E+02
		160	1.7E+02											
PRODUCT Z= 58	57	138	2.1E+05	139	1.5E+05	0	0.	0	0.	0	0.	0	0.	1.5E+05
PRODUCT A=134	58	136	4.1E+05	138	2.1E+05	140	1.0E+05	142	4.6E+04	0	0.	0	0.	9.5E+04
HALF LIFE= 72.000 H	59	141	6.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E+04
	60	142	4.6E+04	143	3.1E+04	144	2.1E+04	145	1.4E+04	146	9.5E+03	148	4.3E+03	2.4E+04
		150	2.0E+03											
	62	144	2.1E+04	147	6.5E+03	148	4.4E+03	149	2.9E+03	150	2.0E+03	152	9.2E+02	3.0E+03
		154	4.2E+02											
	63	151	1.4E+03	153	6.4E+02	0	0.	0	0.	0	0.	0	0.	9.8E+02
	64	152	9.3E+02	154	4.3E+02	155	3.0E+02	156	2.1E+02	157	1.4E+02	158	9.4E+01	1.5E+02
		160	4.5E+01											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 58	57	138	5.0E+05	139	3.6E+05	0	0.	0	0.	0	0.	0	0.	3.6E+05
PRODUCT A=135	58	136	0.	138	5.1E+05	140	2.6E+05	142	1.2E+05	0	0.	0	0.	2.4E+05
HALF LIFE= 18.000 H	59	141	1.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+05
	60	142	1.2E+05	143	8.0E+04	144	5.4E+04	145	3.7E+04	146	2.5E+04	148	1.1E+04	6.3E+04
		150	5.1E+03											
	62	144	5.5E+04	147	1.7E+04	148	1.1E+04	149	7.6E+03	150	5.1E+03	152	2.4E+03	7.6E+03
		154	1.1E+03											
	63	151	3.5E+03	153	1.6E+03	0	0.	0	0.	0	0.	0	0.	2.5E+03
	64	152	2.4E+03	154	1.1E+03	155	7.4E+02	156	5.1E+02	157	3.6E+02	158	2.4E+02	3.8E+02
		160	1.1E+02											
PRODUCT Z= 58	57	138	0.	139	2.2E+05	0	0.	0	0.	0	0.	0	0.	2.2E+05
PRODUCT A=137	58	136	0.	138	0.	140	1.6E+05	142	7.9E+04	0	0.	0	0.	1.5E+05
HALF LIFE= 9.000 H	59	141	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	60	142	8.0E+04	143	5.4E+04	144	3.7E+04	145	2.5E+04	146	1.7E+04	148	7.6E+03	4.2E+04
		150	3.4E+03											
	62	144	3.7E+04	147	1.1E+04	148	7.6E+03	149	5.1E+03	150	3.5E+03	152	1.6E+03	5.2E+03
		154	7.2E+02											
	63	151	2.3E+03	153	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.7E+03
	64	152	1.6E+03	154	7.3E+02	155	5.0E+02	156	3.4E+02	157	2.3E+02	158	1.6E+02	2.5E+02
		160	7.3E+01											
PRODUCT Z= 58	58	136	0.	138	0.	140	0.	142	1.3E+02	0	0.	0	0.	1.5E+01
PRODUCT A=139	59	141	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+02
HALF LIFE= 138.000 D	60	142	1.3E+02	143	9.4E+01	144	6.7E+01	145	4.6E+01	146	3.1E+01	148	1.4E+01	7.3E+01
		150	6.3E+00											
	62	144	6.8E+01	147	2.1E+01	148	1.4E+01	149	9.6E+00	150	6.4E+00	152	2.9E+00	9.5E+00
		154	1.3E+00											
	63	151	4.3E+00	153	2.0E+00	0	0.	0	0.	0	0.	0	0.	3.1E+00
	64	152	2.9E+00	154	1.3E+00	155	9.1E-01	156	6.1E-01	157	4.2E-01	158	2.9E-01	4.6E-01
		160	1.3E-01											
	65	159	1.9E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-01
PRODUCT Z= 58	60	142	0.	143	7.8E+01	144	5.5E+01	145	4.0E+01	146	2.8E+01	148	1.3E+01	3.2E+01
PRODUCT A=141		150	5.9E+00											
HALF LIFE= 32.500 D	62	144	0.	147	1.9E+01	148	1.3E+01	149	8.8E+00	150	5.9E+00	152	2.7E+00	7.0E+00
		154	1.2E+00											
	63	151	4.1E+00	153	1.8E+00	0	0.	0	0.	0	0.	0	0.	2.9E+00
	64	152	2.7E+00	154	1.2E+00	155	8.3E-01	156	5.6E-01	157	3.8E-01	158	2.6E-01	4.2E-01
		160	1.2E-01											
	65	159	1.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-01
	66	156	5.7E-01	158	2.6E-01	160	1.2E-01	161	8.2E-02	162	5.6E-02	163	3.9E-02	5.0E-02
		164	2.6E-02											
PRODUCT Z= 58	60	142	0.	143	0.	144	0.	145	1.1E+02	146	7.9E+01	148	4.0E+01	2.6E+01
PRODUCT A=143		150	1.8E+01											
HALF LIFE= 33.000 H	62	144	0.	147	5.7E+01	148	4.1E+01	149	2.8E+01	150	1.9E+01	152	8.5E+00	2.1E+01
		154	3.8E+00											
	63	151	1.3E+01	153	5.8E+00	0	0.	0	0.	0	0.	0	0.	9.0E+00
	64	152	8.5E+00	154	3.9E+00	155	2.6E+00	156	1.8E+00	157	1.2E+00	158	8.0E-01	1.3E+00
		160	3.7E-01											
	65	159	5.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E-01
	66	156	1.8E+00	158	8.0E-01	160	3.7E-01	161	2.5E-01	162	1.7E-01	163	1.2E-01	1.5E-01
		164	8.0E-02											
	67	165	5.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E-02
PRODUCT Z= 58	60	142	0.	143	0.	144	0.	145	0.	146	1.7E-01	148	8.7E-02	3.7E-02
PRODUCT A=144		150	4.2E-02											
HALF LIFE= 285.000 D	62	144	0.	147	0.	148	8.8E-02	149	6.3E-02	150	4.3E-02	152	1.9E-02	2.9E-02
		154	8.9E-03											
	63	151	2.9E-02	153	1.3E-02	0	0.	0	0.	0	0.	0	0.	2.1E-02
	64	152	2.0E-02	154	9.0E-03	155	6.0E-03	156	4.0E-03	157	2.7E-03	158	1.8E-03	3.0E-03
		160	8.4E-04											
	65	159	1.2E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-03
	66	156	4.1E-03	158	1.8E-03	160	8.5E-04	161	5.7E-04	162	3.9E-04	163	2.7E-04	3.5E-04
		164	1.8E-04											
	67	165	1.2E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-04
	68	162	3.9E-04	164	1.8E-04	166	8.7E-05	167	5.8E-05	168	4.0E-05	170	1.9E-05	5.9E-05
PRODUCT Z= 58	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	1.2E+01	1.1E+00
PRODUCT A=145		150	6.1E+00											
HALF LIFE= 3.000 M	62	144	0.	147	0.	148	0.	149	8.6E+00	150	6.1E+00	152	2.8E+00	2.7E+00
		154	1.3E+00											
	63	151	4.2E+00	153	1.9E+00	0	0.	0	0.	0	0.	0	0.	3.0E+00
	64	152	2.8E+00	154	1.3E+00	155	8.8E-01	156	5.8E-01	157	3.9E-01	158	2.7E-01	4.3E-01
		160	1.2E-01											
	65	159	1.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-01
	66	156	5.9E-01	158	2.7E-01	160	1.2E-01	161	8.3E-02	162	5.6E-02	163	3.8E-02	5.0E-02
		164	2.6E-02											
	67	165	1.8E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E-02
	68	162	5.7E-02	164	2.7E-02	166	1.2E-02	167	8.6E-03	168	5.7E-03	170	2.7E-03	8.5E-03

	TAR GET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 58 A=145 (CONTINUED)	69	169	3.9E-03	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E-03
PRODUCT Z= 58	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	3.8E+00	3.3E-01
PRODUCT A=146		150	1.9E+00											
HALF LIFE= 14.000 M	62	144	0.	147	0.	148	0.	149	0.	150	1.9E+00	152	9.4E-01	5.0E-01
		154	4.3E-01											
	63	151	1.4E+00	153	6.4E-01	0	0.	0	0.	0	0.	0	0.	1.0E+00
	64	152	9.5E-01	154	4.3E-01	155	2.9E-01	156	2.0E-01	157	1.3E-01	158	8.9E-02	1.5E-01
		160	4.0E-02											
	65	159	6.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E-02
	66	156	2.0E-01	158	9.0E-02	160	4.1E-02	161	2.8E-02	162	1.9E-02	163	1.3E-02	1.7E-02
		164	8.7E-03											
	67	165	6.0E-03	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E-03
	68	162	1.9E-02	164	8.8E-03	166	4.0E-03	167	2.8E-03	168	1.9E-03	170	8.9E-04	2.8E-03
	69	169	1.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-03
PRODUCT Z= 58	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.	3.4E-02
PRODUCT A=147		150	5.8E-01											
HALF LIFE= 1.100 M	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	3.0E-01	1.1E-01
		154	1.4E-01											
	63	151	0.	153	2.0E-01	0	0.	0	0.	0	0.	0	0.	1.1E-01
	64	152	0.	154	1.4E-01	155	9.3E-02	156	6.3E-02	157	4.3E-02	158	2.9E-02	4.6E-02
		160	1.3E-02											
	65	159	1.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-02
	66	156	6.4E-02	158	2.9E-02	160	1.3E-02	161	8.8E-03	162	6.0E-03	163	4.1E-03	5.3E-03
		164	2.7E-03											
	67	165	1.9E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-03
	68	162	6.0E-03	164	2.8E-03	166	1.3E-03	167	8.7E-04	168	6.0E-04	170	2.8E-04	8.9E-04
	69	169	4.2E-04	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E-04
PRODUCT Z= 59	58	136	1.1E+06	138	5.8E+05	140	2.8E+05	142	1.3E+05	0	0.	0	0.	2.7E+05
PRODUCT A=134	59	141	1.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+05
HALF LIFE= 17.000 M	60	142	1.3E+05	143	8.7E+04	144	6.0E+04	145	4.0E+04	146	2.7E+04	148	1.2E+04	6.8E+04
		150	5.6E+03											
	62	144	6.0E+04	147	1.8E+04	148	1.2E+04	149	8.3E+03	150	5.6E+03	152	2.6E+03	8.3E+03
		154	1.2E+03											
	63	151	3.8E+03	153	1.8E+03	0	0.	0	0.	0	0.	0	0.	2.8E+03
	64	152	2.6E+03	154	1.2E+03	155	8.3E+02	156	5.8E+02	157	3.9E+02	158	2.6E+02	4.2E+02
		160	1.3E+02											
PRODUCT Z= 59	58	136	0.	138	1.4E+06	140	7.1E+05	142	3.3E+05	0	0.	0	0.	6.7E+05
PRODUCT A=135	59	141	4.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.8E+05
HALF LIFE= 22.000 M	60	142	3.3E+05	143	2.2E+05	144	1.5E+05	145	1.0E+05	146	6.8E+04	148	3.1E+04	1.7E+05
		150	1.4E+04											
	62	144	1.5E+05	147	4.6E+04	148	3.1E+04	149	2.1E+04	150	1.4E+04	152	6.5E+03	2.1E+04
		154	3.0E+03											
	63	151	9.6E+03	153	4.4E+03	0	0.	0	0.	0	0.	0	0.	6.9E+03
	64	152	6.5E+03	154	3.1E+03	155	2.0E+03	156	1.4E+03	157	9.8E+02	158	6.6E+02	1.0E+03
		160	3.0E+02											
PRODUCT Z= 59	58	136	0.	138	2.4E+06	140	1.2E+06	142	5.9E+05	0	0.	0	0.	1.2E+06
PRODUCT A=136	59	141	8.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E+05
HALF LIFE= 13.500 M	60	142	6.0E+05	143	4.0E+05	144	2.7E+05	145	1.8E+05	146	1.2E+05	148	5.6E+04	3.2E+05
		150	2.5E+04											
	62	144	2.8E+05	147	8.4E+04	148	5.7E+04	149	3.8E+04	150	2.6E+04	152	1.2E+04	3.8E+04
		154	5.4E+03											
	63	151	1.7E+04	153	8.0E+03	0	0.	0	0.	0	0.	0	0.	1.2E+04
	64	152	1.2E+04	154	5.5E+03	155	3.8E+03	156	2.5E+03	157	1.7E+03	158	1.2E+03	1.9E+03
		160	5.5E+02											
PRODUCT Z= 59	58	136	0.	138	0.	140	1.2E+06	142	6.1E+05	0	0.	0	0.	1.1E+06
PRODUCT A=137	59	141	8.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E+05
HALF LIFE= 70.000 M	60	142	6.1E+05	143	4.2E+05	144	2.8E+05	145	1.9E+05	146	1.3E+05	148	5.8E+04	3.2E+05
		150	2.6E+04											
	62	144	2.8E+05	147	8.8E+04	148	5.8E+04	149	3.9E+04	150	2.7E+04	152	1.2E+04	4.0E+04
		154	5.5E+03											
	63	151	1.8E+04	153	8.2E+03	0	0.	0	0.	0	0.	0	0.	1.3E+04
	64	152	1.2E+04	154	5.6E+03	155	3.8E+03	156	2.6E+03	157	1.8E+03	158	1.2E+03	1.9E+03
		160	5.6E+02											
PRODUCT Z= 59	58	136	0.	138	0.	140	9.3E+05	142	4.7E+05	0	0.	0	0.	8.7E+05
PRODUCT A=138	59	141	6.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+05
HALF LIFE= 2.000 H	60	142	4.8E+05	143	3.4E+05	144	2.3E+05	145	1.6E+05	146	1.1E+05	148	4.8E+04	2.6E+05
		150	2.2E+04											
	62	144	2.3E+05	147	7.2E+04	148	4.9E+04	149	3.3E+04	150	2.2E+04	152	1.0E+04	3.3E+04
		154	4.6E+03											
	63	151	1.5E+04	153	6.7E+03	0	0.	0	0.	0	0.	0	0.	1.1E+04
	64	152	1.0E+04	154	4.6E+03	155	3.1E+03	156	2.1E+03	157	1.5E+03	158	9.8E+02	1.6E+03
		160	4.7E+02											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 59	58	136	0.	138	0.	140	0.	142	3.1E+05	0	0.	0	0.	3.5E+04
PRODUCT A=139	59	141	4.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+05
HALF LIFE= 4.500 H	60	142	3.1E+05	143	2.2E+05	144	1.6E+05	145	1.1E+05	146	7.3E+04	148	3.3E+04	1.7E+05
		150	1.5E+04											
	62	144	1.6E+05	147	5.0E+04	148	3.4E+04	149	2.3E+04	150	1.5E+04	152	6.9E+03	2.3E+04
		154	3.1E+03											
	63	151	1.0E+04	153	4.7E+03	0	0.	0	0.	0	0.	0	0.	7.4E+03
	64	152	7.0E+03	154	3.2E+03	155	2.2E+03	156	1.5E+03	157	1.0E+03	158	6.8E+02	1.1E+03
		160	3.2E+02											
	65	159	4.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+02
PRODUCT Z= 59	58	136	0.	138	0.	140	0.	142	1.9E+05	0	0.	0	0.	2.1E+04
PRODUCT A=140	60	142	1.9E+05	143	1.4E+05	144	9.8E+04	145	7.0E+04	146	4.7E+04	148	2.2E+04	1.1E+05
HALF LIFE= 3.400 M		150	9.9E+03											
	62	144	9.9E+04	147	3.2E+04	148	2.2E+04	149	1.5E+04	150	1.0E+04	152	4.5E+03	1.4E+04
		154	2.0E+03											
	63	151	6.7E+03	153	3.0E+03	0	0.	0	0.	0	0.	0	0.	4.8E+03
	64	152	4.5E+03	154	2.1E+03	155	1.4E+03	156	9.4E+02	157	6.4E+02	158	4.3E+02	7.0E+02
		160	2.0E+02											
	65	159	3.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+02
PRODUCT Z= 59	60	142	0.	143	0.	144	1.5E+04	145	1.1E+04	146	7.6E+03	148	3.7E+03	6.1E+03
PRODUCT A=142		150	1.7E+03											
HALF LIFE= 19.200 H	62	144	0.	147	5.5E+03	148	3.8E+03	149	2.5E+03	150	1.7E+03	152	7.8E+02	2.0E+03
		154	3.5E+02											
	63	151	1.2E+03	153	5.2E+02	0	0.	0	0.	0	0.	0	0.	8.2E+02
	64	152	7.9E+02	154	3.5E+02	155	2.4E+02	156	1.6E+02	157	1.1E+02	158	7.4E+01	1.2E+02
		160	3.4E+01											
	65	159	5.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+01
	66	156	1.6E+02	158	7.4E+01	160	3.4E+01	161	2.4E+01	162	1.6E+01	163	1.1E+01	1.4E+01
		164	7.6E+00											
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	4.1E+02	146	3.0E+02	148	1.5E+02	9.9E+01
PRODUCT A=143		150	6.9E+01											
HALF LIFE= 13.700 D	62	144	0.	147	2.1E+02	148	1.5E+02	149	1.0E+02	150	7.0E+01	152	3.2E+01	7.9E+01
		154	1.4E+01											
	63	151	4.7E+01	153	2.2E+01	0	0.	0	0.	0	0.	0	0.	3.4E+01
	64	152	3.2E+01	154	1.5E+01	155	9.8E+00	156	6.6E+00	157	4.4E+00	158	3.0E+00	4.9E+00
		160	1.4E+00											
	65	159	2.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+00
	66	156	6.7E+00	158	3.0E+00	160	1.4E+00	161	9.5E-01	162	6.5E-01	163	4.4E-01	5.8E-01
		164	3.0E-01											
	67	165	2.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-01
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	0.	146	2.5E+03	148	1.3E+03	5.5E+02
PRODUCT A=144		150	6.3E+02											
HALF LIFE= 17.300 M	62	144	0.	147	1.8E+03	148	1.3E+03	149	9.3E+02	150	6.3E+02	152	2.9E+02	7.0E+02
		154	1.3E+02											
	63	151	4.3E+02	153	1.9E+02	0	0.	0	0.	0	0.	0	0.	3.1E+02
	64	152	2.9E+02	154	1.3E+02	155	8.9E+01	156	6.0E+01	157	4.0E+01	158	2.7E+01	4.4E+01
		160	1.2E+01											
	65	159	1.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+01
	66	156	6.0E+01	158	2.7E+01	160	1.3E+01	161	8.5E+00	162	5.8E+00	163	4.0E+00	5.2E+00
		164	2.7E+00											
	67	165	1.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+00
	68	162	5.9E+00	164	2.7E+00	166	1.3E+00	167	8.7E-01	168	6.0E-01	170	2.8E-01	8.8E-01
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	4.8E+02	4.3E+01
PRODUCT A=145		150	2.5E+02											
HALF LIFE= 5.900 H	62	144	0.	147	0.	148	4.9E+02	149	3.5E+02	150	2.5E+02	152	1.1E+02	1.6E+02
		154	5.2E+01											
	63	151	1.7E+02	153	7.7E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
	64	152	1.1E+02	154	5.2E+01	155	3.5E+01	156	2.4E+01	157	1.6E+01	158	1.1E+01	1.7E+01
		160	4.9E+00											
	65	159	7.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+00
	66	156	2.4E+01	158	1.1E+01	160	4.9E+00	161	3.3E+00	162	2.3E+00	163	1.5E+00	2.0E+00
		164	1.1E+00											
	67	165	7.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.1E-01
	68	162	2.3E+00	164	1.1E+00	166	5.0E-01	167	3.5E-01	168	2.3E-01	170	1.1E-01	3.4E-01
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	1.9E+02	1.7E+01
PRODUCT A=146		150	9.7E+01											
HALF LIFE= 24.000 M	62	144	0.	147	0.	148	0.	149	1.4E+02	150	9.8E+01	152	4.8E+01	4.4E+01
		154	2.2E+01											
	63	151	7.0E+01	153	3.2E+01	0	0.	0	0.	0	0.	0	0.	5.0E+01
	64	152	4.8E+01	154	2.2E+01	155	1.5E+01	156	1.0E+01	157	6.7E+00	158	4.5E+00	7.3E+00
		160	2.0E+00											
	65	159	3.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+00
	66	156	1.0E+01	158	4.5E+00	160	2.1E+00	161	1.4E+00	162	9.5E-01	163	6.4E-01	8.4E-01
		164	4.4E-01											
	67	165	3.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E-01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES														NATURAL MILLI CURIES
PRODUCT Z= 59 A=146 (CONTINUED)	68	162	9.6E-01	164	4.4E-01	166	2.0E-01	167	1.4E-01	168	9.8E-02	170	4.5E-02			1.4E-01
	69	169	6.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.			6.6E-02
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.			2.0E+00
PRODUCT A=147		150	3.4E+01													
HALF LIFE= 12.000 M	62	144	0.	147	0.	148	0.	149	0.	150	3.5E+01	152	1.8E+01			9.2E+00
		154	8.1E+00													
	63	151	2.5E+01	153	1.2E+01	0	0.	0	0.	0	0.	0	0.			1.8E+01
	64	152	1.8E+01	154	8.2E+00	155	5.5E+00	156	3.7E+00	157	2.5E+00	158	1.7E+00			2.7E+00
		160	7.6E-01													
	65	159	1.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.			1.1E+00
	66	156	3.7E+00	158	1.7E+00	160	7.7E-01	161	5.2E-01	162	3.5E-01	163	2.4E-01			3.1E-01
		164	1.6E-01													
	67	165	1.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.			1.1E-01
	68	162	3.5E-01	164	1.6E-01	166	7.6E-02	167	5.1E-02	168	3.5E-02	170	1.6E-02			5.2E-02
	69	169	2.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.			2.5E-02
PRODUCT Z= 59	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.			6.7E-01
PRODUCT A=148		150	1.1E+01													
HALF LIFE= 2.000 M	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	5.9E+00			2.3E+00
		154	2.9E+00													
	63	151	0.	153	4.2E+00	0	0.	0	0.	0	0.	0	0.			2.2E+00
	64	152	0.	154	2.9E+00	155	1.9E+00	156	1.3E+00	157	8.8E-01	158	6.0E-01			9.6E-01
		160	2.7E-01													
	65	159	4.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.			4.0E-01
	66	156	1.3E+00	158	6.1E-01	160	2.7E-01	161	1.8E-01	162	1.2E-01	163	8.3E-02			1.1E-01
		164	5.7E-02													
	67	165	3.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.			3.9E-02
	68	162	1.2E-01	164	5.7E-02	166	2.7E-02	167	1.8E-02	168	1.2E-02	170	5.9E-03			1.8E-02
	69	169	8.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.			8.5E-03
PRODUCT Z= 59	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	1.9E+00			7.3E-01
PRODUCT A=149		154	9.5E-01													
HALF LIFE= 23.000 M	63	151	0.	153	1.3E+00	0	0.	0	0.	0	0.	0	0.			7.0E-01
	64	152	0.	154	9.6E-01	155	6.5E-01	156	4.4E-01	157	3.0E-01	158	2.0E-01			3.2E-01
		160	9.1E-02													
	65	159	1.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.			1.4E-01
	66	156	4.5E-01	158	2.0E-01	160	9.2E-02	161	6.2E-02	162	4.2E-02	163	2.8E-02			3.7E-02
		164	1.9E-02													
	67	165	1.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.			1.3E-02
	68	162	4.2E-02	164	1.9E-02	166	8.8E-03	167	6.0E-03	168	4.2E-03	170	1.9E-03			6.1E-03
	69	169	2.8E-03	0	0.	0	0.	0	0.	0	0.	0	0.			2.8E-03
PRODUCT Z= 60	59	141	7.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.			7.4E+05
PRODUCT A=137	60	142	5.3E+05	143	3.6E+05	144	2.4E+05	145	1.6E+05	146	1.1E+05	148	5.0E+04			2.8E+05
HALF LIFE= 55.000 M		150	2.3E+04													
	62	144	2.5E+05	147	7.6E+04	148	5.1E+04	149	3.4E+04	150	2.3E+04	152	1.0E+04			3.4E+04
		154	4.8E+03													
	63	151	1.6E+04	153	7.2E+03	0	0.	0	0.	0	0.	0	0.			1.1E+04
	64	152	1.1E+04	154	4.9E+03	155	3.3E+03	156	2.3E+03	157	1.5E+03	158	1.1E+03			1.7E+03
		160	4.9E+02													
PRODUCT Z= 60	59	141	1.6E+06	0	0.	0	0.	0	0.	0	0.	0	0.			1.6E+06
PRODUCT A=138	60	142	1.1E+06	143	8.0E+05	144	5.4E+05	145	3.7E+05	146	2.5E+05	148	1.1E+05			6.1E+05
HALF LIFE= 5.000 H		150	5.1E+04													
	62	144	5.5E+05	147	1.7E+05	148	1.1E+05	149	7.6E+04	150	5.1E+04	152	2.3E+04			7.6E+04
		154	1.1E+04													
	63	151	3.5E+04	153	1.6E+04	0	0.	0	0.	0	0.	0	0.			2.5E+04
	64	152	2.3E+04	154	1.1E+04	155	7.3E+03	156	5.0E+03	157	3.4E+03	158	2.3E+03			3.7E+03
		160	1.1E+03													
	65	159	1.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.			1.6E+03
PRODUCT Z= 60	59	141	2.1E+06	0	0.	0	0.	0	0.	0	0.	0	0.			2.1E+06
PRODUCT A=139	60	142	1.5E+06	143	1.1E+06	144	7.7E+05	145	5.2E+05	146	3.5E+05	148	1.6E+05			8.3E+05
HALF LIFE= 5.200 H		150	7.2E+04													
	62	144	7.7E+05	147	2.4E+05	148	1.6E+05	149	1.1E+05	150	7.3E+04	152	3.3E+04			1.1E+05
		154	1.5E+04													
	63	151	4.9E+04	153	2.2E+04	0	0.	0	0.	0	0.	0	0.			3.5E+04
	64	152	3.4E+04	154	1.5E+04	155	1.0E+04	156	7.0E+03	157	4.8E+03	158	3.3E+03			5.2E+03
		160	1.5E+03													
	65	159	2.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.			2.2E+03
PRODUCT Z= 60	60	142	2.6E+05	143	1.9E+05	144	1.3E+05	145	9.6E+04	146	6.5E+04	148	3.0E+04			1.5E+05
PRODUCT A=140		150	1.4E+04													
HALF LIFE= 3.300 D	62	144	1.4E+05	147	4.5E+04	148	3.0E+04	149	2.0E+04	150	1.4E+04	152	6.2E+03			2.0E+04
		154	2.8E+03													
	63	151	9.2E+03	153	4.2E+03	0	0.	0	0.	0	0.	0	0.			6.6E+03
	64	152	6.2E+03	154	2.8E+03	155	1.9E+03	156	1.3E+03	157	8.8E+02	158	6.0E+02			9.6E+02
		160	2.7E+02													

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 60 A=140 (CONTINUED)	65	159	4.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+02
PRODUCT Z= 60 PRODUCT A=141 HALF LIFE= 2.500 H	60	142	0.	143	7.4E+05	144	5.3E+05	145	3.8E+05	146	2.7E+05	148	1.2E+05	3.0E+05
		150	5.6E+04											
	62	144	5.3E+05	147	1.8E+05	148	1.2E+05	149	8.4E+04	150	5.6E+04	152	2.6E+04	8.2E+04
		154	1.2E+04											
	63	151	3.9E+04	153	1.7E+04	0	0.	0	0.	0	0.	0	0.	2.7E+04
	64	152	2.6E+04	154	1.2E+04	155	7.9E+03	156	5.3E+03	157	3.6E+03	158	2.4E+03	4.0E+03
		160	1.1E+03											
	65	159	1.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+03
	66	156	5.4E+03	158	2.5E+03	160	1.2E+03	161	7.7E+02	162	5.3E+02	163	3.7E+02	4.8E+02
		164	2.5E+02											
PRODUCT Z= 60 PRODUCT A=147 HALF LIFE= 11.100 D	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.	4.5E+00
		150	7.7E+01											
	62	144	0.	147	0.	148	0.	149	1.1E+02	150	7.8E+01	152	4.0E+01	3.6E+01
		154	1.8E+01											
	63	151	5.6E+01	153	2.7E+01	0	0.	0	0.	0	0.	0	0.	4.1E+01
	64	152	4.0E+01	154	1.8E+01	155	1.2E+01	156	8.3E+00	157	5.7E+00	158	3.8E+00	6.2E+00
		160	1.7E+00											
	65	159	2.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+00
	66	156	8.4E+00	158	3.8E+00	160	1.7E+00	161	1.2E+00	162	7.9E-01	163	5.4E-01	7.0E-01
		164	3.6E-01											
	67	165	2.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E-01
	68	162	7.9E-01	164	3.7E-01	166	1.7E-01	167	1.2E-01	168	7.9E-02	170	3.7E-02	1.2E-01
	69	169	5.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E-02
PRODUCT Z= 60 PRODUCT A=149 HALF LIFE= 1.730 H	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	9.6E+01	3.7E+01
		154	4.9E+01											
	63	151	0.	153	6.9E+01	0	0.	0	0.	0	0.	0	0.	3.6E+01
	64	152	0.	154	4.9E+01	155	3.4E+01	156	2.3E+01	157	1.5E+01	158	1.0E+01	1.7E+01
		160	4.7E+00											
	65	159	7.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E+00
	66	156	2.3E+01	158	1.0E+01	160	4.7E+00	161	3.2E+00	162	2.1E+00	163	1.4E+00	1.9E+00
		164	9.7E-01											
	67	165	6.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E-01
	68	162	2.2E+00	164	9.8E-01	166	4.5E-01	167	3.1E-01	168	2.1E-01	170	9.8E-02	3.1E-01
	69	169	1.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-01
PRODUCT Z= 60 PRODUCT A=151 HALF LIFE= 12.000 M	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	0.	1.3E+00
		154	5.8E+00											
	64	152	0.	154	0.	155	4.2E+00	156	3.0E+00	157	2.0E+00	158	1.4E+00	2.0E+00
		160	6.2E-01											
	65	159	9.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E-01
	66	156	0.	158	1.4E+00	160	6.2E-01	161	4.3E-01	162	2.8E-01	163	1.9E-01	2.5E-01
		164	1.3E-01											
	67	165	8.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E-02
	68	162	2.9E-01	164	1.3E-01	166	5.9E-02	167	4.0E-02	168	2.7E-02	170	1.3E-02	4.1E-02
	69	169	1.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E-02
	70	168	2.8E-02	170	1.3E-02	171	8.7E-03	172	6.0E-03	173	4.2E-03	174	2.8E-03	4.7E-03
		176	1.3E-03											
PRODUCT Z= 61 PRODUCT A=140 HALF LIFE= 6.000 M	60	142	1.8E+06	143	1.3E+06	144	9.1E+05	145	6.5E+05	146	4.4E+05	148	2.0E+05	1.0E+06
		150	9.2E+04											
	62	144	9.2E+05	147	3.0E+05	148	2.0E+05	149	1.4E+05	150	9.3E+04	152	4.2E+04	1.4E+05
		154	1.9E+04											
	63	151	6.2E+04	153	2.8E+04	0	0.	0	0.	0	0.	0	0.	4.4E+04
	64	152	4.2E+04	154	1.9E+04	155	1.3E+04	156	8.8E+03	157	5.9E+03	158	4.0E+03	6.5E+03
		160	1.9E+03											
	65	159	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03
PRODUCT Z= 61 PRODUCT A=141 HALF LIFE= 22.000 M	60	142	0.	143	2.5E+06	144	1.8E+06	145	1.3E+06	146	9.0E+05	148	4.1E+05	1.0E+06
		150	1.9E+05											
	62	144	1.8E+06	147	6.2E+05	148	4.2E+05	149	2.8E+05	150	1.9E+05	152	8.6E+04	2.7E+05
		154	3.9E+04											
	63	151	1.3E+05	153	5.8E+04	0	0.	0	0.	0	0.	0	0.	9.2E+04
	64	152	8.7E+04	154	3.9E+04	155	2.7E+04	156	1.8E+04	157	1.2E+04	158	8.2E+03	1.3E+04
		160	3.9E+03											
	65	159	5.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+03
	66	156	1.8E+04	158	8.3E+03	160	3.9E+03	161	2.6E+03	162	1.8E+03	163	1.3E+03	1.6E+03
		164	8.4E+02											
PRODUCT Z= 61 PRODUCT A=143 HALF LIFE= 265.000 D	60	142	0.	143	0.	144	0.	145	3.0E+03	146	2.1E+03	148	1.1E+03	7.1E+02
		150	5.0E+02											
	62	144	0.	147	1.5E+03	148	1.1E+03	149	7.5E+02	150	5.0E+02	152	2.3E+02	5.7E+02
		154	1.0E+02											
	63	151	3.4E+02	153	1.6E+02	0	0.	0	0.	0	0.	0	0.	2.4E+02
	64	152	2.3E+02	154	1.0E+02	155	7.0E+01	156	4.7E+01	157	3.2E+01	158	2.2E+01	3.5E+01
		160	9.9E+00											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 61 A=143	65	159	1.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+01
(CONTINUED)	66	156	4.8E+01	158	2.2E+01	160	1.0E+01	161	6.8E+00	162	4.7E+00	163	3.1E+00	4.1E+00
		164	2.2E+00											
	67	165	1.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+00
PRODUCT Z= 61	60	142	0.	143	0.	144	0.	145	0.	146	1.1E+03	148	5.6E+02	2.4E+02
PRODUCT A=144		150	2.7E+02											
HALF LIFE= 365.000 D	62	144	0.	147	7.9E+02	148	5.7E+02	149	4.0E+02	150	2.8E+02	152	1.2E+02	3.0E+02
		154	5.7E+01											
	63	151	1.9E+02	153	8.5E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	64	152	1.3E+02	154	5.8E+01	155	3.9E+01	156	2.6E+01	157	1.8E+01	158	1.2E+01	1.9E+01
		160	5.4E+00											
	65	159	8.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	8.0E+00
	66	156	2.6E+01	158	1.2E+01	160	5.5E+00	161	3.7E+00	162	2.5E+00	163	1.7E+00	2.2E+00
		164	1.2E+00											
	67	165	8.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	8.0E-01
	68	162	2.5E+00	164	1.2E+00	166	5.6E-01	167	3.8E-01	168	2.6E-01	170	1.2E-01	3.8E-01
PRODUCT Z= 61	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	2.0E+01	1.7E+00
PRODUCT A=145		150	1.0E+01											
HALF LIFE= 18.000 Y	62	144	0.	147	2.8E+01	148	2.0E+01	149	1.4E+01	150	1.0E+01	152	4.6E+00	1.1E+01
		154	2.1E+00											
	63	151	6.9E+00	153	3.1E+00	0	0.	0	0.	0	0.	0	0.	4.9E+00
	64	152	4.7E+00	154	2.1E+00	155	1.4E+00	156	9.6E-01	157	6.5E-01	158	4.4E-01	7.1E-01
		160	2.0E-01											
	65	159	3.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E-01
	66	156	9.7E-01	158	4.4E-01	160	2.0E-01	161	1.4E-01	162	9.2E-02	163	6.3E-02	8.3E-02
		164	4.3E-02											
	67	165	2.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E-02
	68	162	9.3E-02	164	4.4E-02	166	2.0E-02	167	1.4E-02	168	9.4E-03	170	4.4E-03	1.4E-02
PRODUCT Z= 61	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	4.6E+01	4.1E+00
PRODUCT A=146		150	2.3E+01											
HALF LIFE= 1600.000 D	62	144	0.	147	0.	148	4.6E+01	149	3.3E+01	150	2.4E+01	152	1.1E+01	1.6E+01
		154	5.2E+00											
	63	151	1.7E+01	153	7.8E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	64	152	1.2E+01	154	5.2E+00	155	3.5E+00	156	2.4E+00	157	1.6E+00	158	1.1E+00	1.8E+00
		160	4.9E-01											
	65	159	7.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E-01
	66	156	2.4E+00	158	1.1E+00	160	4.9E-01	161	3.3E-01	162	2.3E-01	163	1.5E-01	2.0E-01
		164	1.1E-01											
	67	165	7.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E-02
	68	162	2.3E-01	164	1.1E-01	166	4.9E-02	167	3.4E-02	168	2.3E-02	170	1.1E-02	3.4E-02
	69	169	1.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E-02
PRODUCT Z= 61	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.	1.2E+00
PRODUCT A=147		150	2.0E+01											
HALF LIFE= 2.600 Y	62	144	0.	147	0.	148	0.	149	2.9E+01	150	2.1E+01	152	1.1E+01	9.5E+00
		154	4.8E+00											
	63	151	1.5E+01	153	7.2E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
	64	152	1.1E+01	154	4.9E+00	155	3.3E+00	156	2.2E+00	157	1.5E+00	158	1.0E+00	1.6E+00
		160	4.6E-01											
	65	159	6.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	6.8E-01
	66	156	2.2E+00	158	1.0E+00	160	4.6E-01	161	3.1E-01	162	2.1E-01	163	1.4E-01	1.9E-01
		164	9.6E-02											
	67	165	6.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E-02
	68	162	2.1E-01	164	9.7E-02	166	4.6E-02	167	3.1E-02	168	2.1E-02	170	9.8E-03	3.1E-02
	69	169	1.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-02
PRODUCT Z= 61	60	142	0.	143	0.	144	0.	145	0.	146	0.	148	0.	9.4E+01
PRODUCT A=148		150	1.6E+03											
HALF LIFE= 5.400 D	62	144	0.	147	0.	148	0.	149	0.	150	1.6E+03	152	8.3E+02	4.4E+02
		154	4.0E+02											
	63	151	1.2E+03	153	6.0E+02	0	0.	0	0.	0	0.	0	0.	8.7E+02
	64	152	8.4E+02	154	4.1E+02	155	2.8E+02	156	1.9E+02	157	1.2E+02	158	8.5E+01	1.4E+02
		160	3.8E+01											
	65	159	5.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+01
	66	156	1.9E+02	158	8.6E+01	160	3.8E+01	161	2.6E+01	162	1.8E+01	163	1.2E+01	1.6E+01
		164	8.1E+00											
	67	165	5.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E+00
	68	162	1.8E+01	164	8.1E+00	166	3.8E+00	167	2.6E+00	168	1.7E+00	170	8.3E-01	2.6E+00
	69	169	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 61	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	8.3E+02	3.2E+02
PRODUCT A=149		154	4.2E+02											
HALF LIFE= 53.000 H	63	151	1.2E+03	153	6.0E+02	0	0.	0	0.	0	0.	0	0.	8.7E+02
	64	152	8.4E+02	154	4.3E+02	155	2.9E+02	156	2.0E+02	157	1.3E+02	158	8.9E+01	1.4E+02
		160	4.0E+01											
	65	159	6.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+01
	66	156	2.0E+02	158	9.0E+01	160	4.1E+01	161	2.7E+01	162	1.9E+01	163	1.2E+01	1.6E+01
		164	8.4E+00											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 61 A=149 (CONTINUED)	67	165	5.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+00
	68	162	1.9E+01	164	8.5E+00	166	3.9E+00	167	2.7E+00	168	1.8E+00	170	8.5E-01	2.7E+00
	69	169	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 61	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	1.3E+03	5.0E+02
PRODUCT A=150		154	6.6E+02											
HALF LIFE= 2.700 H	63	151	0.	153	9.2E+02	0	0.	0	0.	0	0.	0	0.	4.8E+02
	64	152	0.	154	6.6E+02	155	4.7E+02	156	3.2E+02	157	2.2E+02	158	1.5E+02	2.3E+02
		160	6.7E+01											
	65	159	9.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+01
	66	156	3.2E+02	158	1.5E+02	160	6.8E+01	161	4.5E+01	162	3.0E+01	163	2.1E+01	2.7E+01
		164	1.4E+01											
	67	165	9.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	9.4E+00
	68	162	3.1E+01	164	1.4E+01	166	6.4E+00	167	4.3E+00	168	3.0E+00	170	1.4E+00	4.4E+00
	69	169	2.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+00
	70	168	3.0E+00	170	1.4E+00	171	9.5E-01	172	6.6E-01	173	4.4E-01	174	3.0E-01	5.1E-01
		176	1.4E-01											
PRODUCT Z= 61	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	0.	2.7E+01
PRODUCT A=151		154	1.2E+02											
HALF LIFE= 28.000 H	63	151	0.	153	1.6E+02	0	0.	0	0.	0	0.	0	0.	8.6E+01
	64	152	0.	154	1.2E+02	155	8.4E+01	156	6.0E+01	157	4.1E+01	158	2.7E+01	4.3E+01
		160	1.2E+01											
	65	159	1.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+01
	66	156	6.0E+01	158	2.8E+01	160	1.3E+01	161	8.5E+00	162	5.7E+00	163	3.8E+00	5.1E+00
		164	2.6E+00											
	67	165	1.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+00
	68	162	5.7E+00	164	2.6E+00	166	1.2E+00	167	8.1E-01	168	5.5E-01	170	2.6E-01	8.2E-01
	69	169	3.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E-01
	70	168	5.5E-01	170	2.6E-01	171	1.7E-01	172	1.2E-01	173	8.4E-02	174	5.6E-02	9.4E-02
		176	2.6E-02											
PRODUCT Z= 61	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	0.	2.2E+01
PRODUCT A=152		154	9.6E+01											
HALF LIFE= 6.000 M	64	152	0.	154	0.	155	6.9E+01	156	5.0E+01	157	3.5E+01	158	2.4E+01	3.4E+01
		160	1.1E+01											
	65	159	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	66	156	0.	158	2.4E+01	160	1.1E+01	161	7.4E+00	162	5.1E+00	163	3.4E+00	4.4E+00
		164	2.3E+00											
	67	165	1.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+00
	68	162	5.1E+00	164	2.3E+00	166	1.0E+00	167	7.1E-01	168	4.8E-01	170	2.2E-01	7.2E-01
	69	169	3.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-01
	70	168	4.9E-01	170	2.2E-01	171	1.5E-01	172	1.0E-01	173	7.1E-02	174	5.0E-02	8.2E-02
		176	2.3E-02											
PRODUCT Z= 61	64	152	0.	154	0.	155	0.	156	1.8E+01	157	1.3E+01	158	8.9E+00	8.7E+00
PRODUCT A=153		160	4.1E+00											
HALF LIFE= 5.500 M	65	159	6.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+00
	66	156	0.	158	9.0E+00	160	4.1E+00	161	2.8E+00	162	1.9E+00	163	1.3E+00	1.7E+00
		164	8.5E-01											
	67	165	5.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E-01
	68	162	1.9E+00	164	8.6E-01	166	3.9E-01	167	2.6E-01	168	1.8E-01	170	8.2E-02	2.7E-01
	69	169	1.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-01
	70	168	1.8E-01	170	8.3E-02	171	5.7E-02	172	3.9E-02	173	2.6E-02	174	1.8E-02	3.0E-02
		176	8.4E-03											
	71	175	1.3E-02	176	8.4E-03	0	0.	0	0.	0	0.	0	0.	1.2E-02
PRODUCT Z= 61	64	152	0.	154	0.	155	0.	156	0.	157	4.2E+00	158	3.0E+00	1.7E+00
PRODUCT A=154		160	1.5E+00											
HALF LIFE= 2.500 M	65	159	2.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+00
	66	156	0.	158	0.	160	1.5E+00	161	1.0E+00	162	6.7E-01	163	4.5E-01	5.9E-01
		164	3.1E-01											
	67	165	2.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E-01
	68	162	6.8E-01	164	3.1E-01	166	1.4E-01	167	9.5E-02	168	6.4E-02	170	2.9E-02	9.5E-02
	69	169	4.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E-02
	70	168	6.4E-02	170	3.0E-02	171	2.0E-02	172	1.4E-02	173	9.4E-03	174	6.3E-03	1.1E-02
		176	3.0E-03											
	71	175	4.3E-03	176	3.0E-03	0	0.	0	0.	0	0.	0	0.	4.3E-03
PRODUCT Z= 62	62	144	1.6E+04	147	5.6E+03	148	3.8E+03	149	2.6E+03	150	1.7E+03	152	7.8E+02	2.5E+03
PRODUCT A=141		154	3.6E+02											
HALF LIFE= 20.000 D	63	151	1.2E+03	153	5.3E+02	0	0.	0	0.	0	0.	0	0.	8.4E+02
	64	152	7.9E+02	154	3.6E+02	155	2.4E+02	156	1.6E+02	157	1.1E+02	158	7.5E+01	1.2E+02
		160	3.5E+01											
	65	159	5.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E+01
	66	156	1.6E+02	158	7.5E+01	160	3.5E+01	161	2.4E+01	162	1.6E+01	163	1.1E+01	1.5E+01
		164	7.6E+00											
	67	165	5.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 62	62	144	1.3E+06	147	4.7E+05	148	3.2E+05	149	2.2E+05	150	1.5E+05	152	6.7E+04	2.1E+05
PRODUCT A=142		154	3.0E+04											
HALF LIFE= 72.000 M	63	151	9.9E+04	153	4.5E+04	0	0.	0	0.	0	0.	0	0.	7.0E+04
	64	152	6.8E+04	154	3.0E+04	155	2.0E+04	156	1.4E+04	157	9.3E+03	158	6.3E+03	1.0E+04
		160	2.9E+03											
	65	159	4.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+03
	66	156	1.4E+04	158	6.4E+03	160	2.9E+03	161	2.0E+03	162	1.4E+03	163	9.3E+02	1.2E+03
		164	6.5E+02											
	67	165	4.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.4E+02
PRODUCT Z= 62	62	144	0.	147	1.1E+06	148	7.7E+05	149	5.2E+05	150	3.5E+05	152	1.6E+05	4.0E+05
PRODUCT A=143		154	7.2E+04											
HALF LIFE= 9.000 M	63	151	2.4E+05	153	1.1E+05	0	0.	0	0.	0	0.	0	0.	1.7E+05
	64	152	1.6E+05	154	7.3E+04	155	4.9E+04	156	3.3E+04	157	2.2E+04	158	1.5E+04	2.5E+04
		160	6.9E+03											
	65	159	1.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+04
	66	156	3.4E+04	158	1.5E+04	160	7.0E+03	161	4.8E+03	162	3.3E+03	163	2.2E+03	2.9E+03
		164	1.5E+03											
	67	165	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
	68	162	3.3E+03	164	1.5E+03	166	7.1E+02	167	4.9E+02	168	3.3E+02	170	1.6E+02	4.9E+02
PRODUCT Z= 62	62	144	0.	147	3.4E+03	148	2.4E+03	149	1.7E+03	150	1.2E+03	152	5.7E+02	1.3E+03
PRODUCT A=145		154	2.6E+02											
HALF LIFE= 340.000 D	63	151	8.4E+02	153	3.8E+02	0	0.	0	0.	0	0.	0	0.	6.0E+02
	64	152	5.7E+02	154	2.6E+02	155	1.8E+02	156	1.2E+02	157	7.9E+01	158	5.3E+01	8.7E+01
		160	2.4E+01											
	65	159	3.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+01
	66	156	1.2E+02	158	5.4E+01	160	2.4E+01	161	1.7E+01	162	1.1E+01	163	7.7E+00	1.0E+01
		164	5.3E+00											
	67	165	3.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+00
	68	162	1.1E+01	164	5.4E+00	166	2.5E+00	167	1.7E+00	168	1.2E+00	170	5.4E-01	1.7E+00
PRODUCT Z= 62	62	144	0.	147	0.	148	1.5E-05	149	1.1E-05	150	7.6E-06	152	3.7E-06	5.0E-06
PRODUCT A=146		154	1.7E-06											
HALF LIFE= 120.000 T	63	151	5.4E-06	153	2.5E-06	0	0.	0	0.	0	0.	0	0.	3.9E-06
	64	152	3.7E-06	154	1.7E-06	155	1.1E-06	156	7.7E-07	157	5.2E-07	158	3.5E-07	5.7E-07
		160	1.6E-07											
	65	159	2.4E-07	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-07
	66	156	7.8E-07	158	3.5E-07	160	1.6E-07	161	1.1E-07	162	7.3E-08	163	5.0E-08	6.5E-08
		164	3.4E-08											
	67	165	2.3E-08	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E-08
	68	162	7.4E-08	164	3.4E-08	166	1.6E-08	167	1.1E-08	168	7.6E-09	170	3.5E-09	1.1E-08
	69	169	5.1E-09	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E-09
PRODUCT Z= 62	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	0.	3.5E-02
PRODUCT A=151		154	1.5E-01											
HALF LIFE= 90.000 Y	63	151	0.	153	2.1E-01	0	0.	0	0.	0	0.	0	0.	1.1E-01
	64	152	0.	154	1.5E-01	155	1.1E-01	156	7.8E-02	157	5.3E-02	158	3.6E-02	5.6E-02
		160	1.6E-02											
	65	159	2.4E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-02
	66	156	7.8E-02	158	3.6E-02	160	1.6E-02	161	1.1E-02	162	7.4E-03	163	5.0E-03	6.6E-03
		164	3.4E-03											
	67	165	2.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E-03
	68	162	7.5E-03	164	3.4E-03	166	1.5E-03	167	1.1E-03	168	7.1E-04	170	3.4E-04	1.1E-03
	69	169	4.9E-04	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E-04
	70	168	7.2E-04	170	3.4E-04	171	2.3E-04	172	1.6E-04	173	1.1E-04	174	7.3E-05	1.2E-04
		176	3.4E-05											
PRODUCT Z= 62	64	152	0.	154	0.	155	2.8E+02	156	2.0E+02	157	1.5E+02	158	1.0E+02	1.4E+02
PRODUCT A=153		160	4.8E+01											
HALF LIFE= 47.000 H	65	159	7.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.1E+01
	66	156	0.	158	1.0E+02	160	4.8E+01	161	3.2E+01	162	2.2E+01	163	1.5E+01	1.9E+01
		164	9.9E+00											
	67	165	6.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+00
	68	162	2.2E+01	164	1.0E+01	166	4.6E+00	167	3.1E+00	168	2.1E+00	170	9.5E-01	3.1E+00
	69	169	1.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+00
	70	168	2.1E+00	170	9.6E-01	171	6.6E-01	172	4.5E-01	173	3.0E-01	174	2.1E-01	3.5E-01
		176	9.7E-02											
	71	175	1.5E-01	176	9.7E-02	0	0.	0	0.	0	0.	0	0.	1.4E-01
PRODUCT Z= 62	64	152	0.	154	0.	155	0.	156	0.	157	7.1E+01	158	5.1E+01	3.0E+01
PRODUCT A=155		160	2.6E+01											
HALF LIFE= 22.000 M	65	159	3.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+01
	66	156	0.	158	0.	160	2.6E+01	161	1.8E+01	162	1.2E+01	163	8.1E+00	1.1E+01
		164	5.5E+00											
	67	165	3.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+00
	68	162	1.2E+01	164	5.5E+00	166	2.5E+00	167	1.7E+00	168	1.1E+00	170	5.2E-01	1.7E+00
	69	169	7.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E-01
	70	168	1.2E+00	170	5.2E-01	171	3.6E-01	172	2.4E-01	173	1.7E-01	174	1.1E-01	1.9E-01
		176	5.2E-02											
	71	175	7.6E-02	176	5.3E-02	0	0.	0	0.	0	0.	0	0.	7.6E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 62	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	1.5E+01	5.5E+00
PRODUCT A=156		160	7.6E+00											
HALF LIFE= 9.400 H	65	159	1.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+01
	66	156	0.	158	0.	160	7.7E+00	161	5.5E+00	162	3.8E+00	163	2.5E+00	3.3E+00
		164	1.7E+00											
	67	165	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
	68	162	3.8E+00	164	1.7E+00	166	7.9E-01	167	5.3E-01	168	3.6E-01	170	1.6E-01	5.4E-01
	69	169	2.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-01
	70	168	3.6E-01	170	1.6E-01	171	1.1E-01	172	7.5E-02	173	5.1E-02	174	3.5E-02	5.9E-02
		176	1.6E-02											
	71	175	2.4E-02	176	1.6E-02	0	0.	0	0.	0	0.	0	0.	2.4E-02
PRODUCT Z= 62	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	0.	2.3E-01
PRODUCT A=158		160	1.0E+00											
HALF LIFE= 15.000 M	66	156	0.	158	0.	160	0.	161	0.	162	5.2E-01	163	3.7E-01	3.0E-01
		164	2.5E-01											
	67	165	1.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E-01
	68	162	0.	164	2.6E-01	166	1.2E-01	167	7.9E-02	168	5.4E-02	170	2.4E-02	7.9E-02
	69	169	3.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E-02
	70	168	5.4E-02	170	2.4E-02	171	1.6E-02	172	1.1E-02	173	7.5E-03	174	5.1E-03	8.6E-03
		176	2.3E-03											
	71	175	3.4E-03	176	2.4E-03	0	0.	0	0.	0	0.	0	0.	3.4E-03
	72	174	5.1E-03	176	2.4E-03	177	1.6E-03	178	1.1E-03	179	7.5E-04	180	5.2E-04	1.0E-03
	73	180	5.2E-04	181	3.5E-04	0	0.	0	0.	0	0.	0	0.	3.5E-04
PRODUCT Z= 63	62	144	0.	147	2.1E+05	148	1.5E+05	149	1.0E+05	150	6.9E+04	152	3.1E+04	7.8E+04
PRODUCT A=143		154	1.4E+04											
HALF LIFE= 2.300 M	63	151	4.6E+04	153	2.1E+04	0	0.	0	0.	0	0.	0	0.	3.3E+04
	64	152	3.1E+04	154	1.4E+04	155	9.6E+03	156	6.5E+03	157	4.4E+03	158	2.9E+03	4.8E+03
		160	1.4E+03											
	65	159	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
	66	156	6.5E+03	158	3.0E+03	160	1.4E+03	161	9.3E+02	162	6.4E+02	163	4.3E+02	5.7E+02
		164	3.0E+02											
	67	165	2.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+02
	68	162	6.5E+02	164	3.0E+02	166	1.4E+02	167	9.6E+01	168	6.5E+01	170	3.1E+01	9.6E+01
PRODUCT Z= 63	62	144	0.	147	1.8E+05	148	1.3E+05	149	8.9E+04	150	6.4E+04	152	2.9E+04	6.7E+04
PRODUCT A=145		154	1.3E+04											
HALF LIFE= 5.900 D	63	151	4.4E+04	153	2.0E+04	0	0.	0	0.	0	0.	0	0.	3.1E+04
	64	152	3.0E+04	154	1.3E+04	155	9.1E+03	156	6.1E+03	157	4.1E+03	158	2.8E+03	4.5E+03
		160	1.3E+03											
	65	159	1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+03
	66	156	6.1E+03	158	2.8E+03	160	1.3E+03	161	8.6E+02	162	5.8E+02	163	4.0E+02	5.2E+02
		164	2.7E+02											
	67	165	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+02
	68	162	5.9E+02	164	2.8E+02	166	1.3E+02	167	8.9E+01	168	5.9E+01	170	2.8E+01	8.8E+01
PRODUCT Z= 63	62	144	0.	147	0.	148	3.3E+05	149	2.4E+05	150	1.7E+05	152	8.2E+04	1.1E+05
PRODUCT A=146		154	3.7E+04											
HALF LIFE= 4.600 D	63	151	1.2E+05	153	5.6E+04	0	0.	0	0.	0	0.	0	0.	8.7E+04
	64	152	8.3E+04	154	3.8E+04	155	2.5E+04	156	1.7E+04	157	1.1E+04	158	7.7E+03	1.3E+04
		160	3.5E+03											
	65	159	5.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+03
	66	156	1.7E+04	158	7.8E+03	160	3.5E+03	161	2.4E+03	162	1.6E+03	163	1.1E+03	1.4E+03
		164	7.5E+02											
	67	165	5.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+02
	68	162	1.6E+03	164	7.6E+02	166	3.5E+02	167	2.4E+02	168	1.7E+02	170	7.7E+01	2.4E+02
	69	169	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
PRODUCT Z= 63	62	144	0.	147	0.	148	0.	149	6.3E+04	150	4.5E+04	152	2.3E+04	2.1E+04
PRODUCT A=147		154	1.1E+04											
HALF LIFE= 24.000 D	63	151	3.2E+04	153	1.6E+04	0	0.	0	0.	0	0.	0	0.	2.4E+04
	64	152	2.3E+04	154	1.1E+04	155	7.1E+03	156	4.8E+03	157	3.3E+03	158	2.2E+03	3.6E+03
		160	9.9E+02											
	65	159	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
	66	156	4.9E+03	158	2.2E+03	160	1.0E+03	161	6.7E+02	162	4.6E+02	163	3.1E+02	4.1E+02
		164	2.1E+02											
	67	165	1.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+02
	68	162	4.6E+02	164	2.1E+02	166	1.0E+02	167	6.7E+01	168	4.6E+01	170	2.1E+01	6.8E+01
	69	169	3.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+01
PRODUCT Z= 63	62	144	0.	147	0.	148	0.	149	0.	150	1.8E+04	152	9.2E+03	4.9E+03
PRODUCT A=148		154	4.5E+03											
HALF LIFE= 54.000 D	63	151	1.3E+04	153	6.6E+03	0	0.	0	0.	0	0.	0	0.	9.6E+03
	64	152	9.3E+03	154	4.5E+03	155	3.0E+03	156	2.1E+03	157	1.4E+03	158	9.4E+02	1.5E+03
		160	4.2E+02											
	65	159	6.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E+02
	66	156	2.1E+03	158	9.5E+02	160	4.3E+02	161	2.9E+02	162	1.9E+02	163	1.3E+02	1.7E+02
		164	8.9E+01											
	67	165	6.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+01
	68	162	2.0E+02	164	9.0E+01	166	4.2E+01	167	2.9E+01	168	1.9E+01	170	9.2E+00	2.9E+01

	TARGET Z			MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 63 A=148 (CONTINUED)	69	169	1.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+01
PRODUCT Z= 63	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	3.6E+03	1.4E+03
PRODUCT A=149		154	1.8E+03											
HALF LIFE= 106.000 D	63	151	5.0E+03	153	2.6E+03	0	0.	0	0.	0	0.	0	0.	3.7E+03
	64	152	3.6E+03	154	1.8E+03	155	1.2E+03	156	8.4E+02	157	5.7E+02	158	3.8E+02	6.2E+02
		160	1.7E+02											
	65	159	2.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+02
	66	156	8.5E+02	158	3.9E+02	160	1.7E+02	161	1.2E+02	162	8.0E+01	163	5.4E+01	7.1E+01
		164	3.6E+01											
	67	165	2.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+01
	68	162	8.0E+01	164	3.7E+01	166	1.7E+01	167	1.2E+01	168	7.9E+00	170	3.7E+00	1.2E+01
	69	169	5.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+00
PRODUCT Z= 63	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	1.4E+02	5.4E+01
PRODUCT A=150		154	7.1E+01											
HALF LIFE= 5.000 Y	63	151	0.	153	1.0E+02	0	0.	0	0.	0	0.	0	0.	5.2E+01
	64	152	1.4E+02	154	7.2E+01	155	5.1E+01	156	3.5E+01	157	2.3E+01	158	1.6E+01	2.5E+01
		160	7.2E+00											
	65	159	1.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+01
	66	156	3.5E+01	158	1.6E+01	160	7.3E+00	161	4.9E+00	162	3.3E+00	163	2.2E+00	2.9E+00
		164	1.5E+00											
	67	165	1.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+00
	68	162	3.3E+00	164	1.5E+00	166	6.9E-01	167	4.7E-01	168	3.2E-01	170	1.5E-01	4.7E-01
	69	169	2.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E-01
	70	168	3.2E-01	170	1.5E-01	171	1.0E-01	172	7.1E-02	173	4.8E-02	174	3.3E-02	5.5E-02
		176	1.6E-02											
PRODUCT Z= 63	62	144	0.	147	0.	148	0.	149	0.	150	0.	152	0.	2.2E+00
PRODUCT A=152		154	9.4E+00											
HALF LIFE= 12.400 Y	64	152	0.	154	9.5E+00	155	6.8E+00	156	4.9E+00	157	3.5E+00	158	2.4E+00	3.5E+00
		160	1.1E+00											
	65	159	1.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+00
	66	156	4.9E+00	158	2.4E+00	160	1.1E+00	161	7.3E-01	162	5.0E-01	163	3.3E-01	4.4E-01
		164	2.2E-01											
	67	165	1.5E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-01
	68	162	5.0E-01	164	2.3E-01	166	1.0E-01	167	6.9E-02	168	4.7E-02	170	2.2E-02	7.0E-02
	69	169	3.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E-02
	70	168	4.8E-02	170	2.2E-02	171	1.5E-02	172	1.0E-02	173	7.0E-03	174	4.9E-03	8.0E-03
		176	2.2E-03											
PRODUCT Z= 63	64	152	0.	154	0.	155	0.	156	9.0E-01	157	6.4E-01	158	4.6E-01	4.5E-01
PRODUCT A=154		160	2.2E-01											
HALF LIFE= 16.000 Y	65	159	3.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-01
	66	156	0.	158	4.7E-01	160	2.3E-01	161	1.5E-01	162	1.0E-01	163	6.9E-02	9.1E-02
		164	4.7E-02											
	67	165	3.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E-02
	68	162	1.0E-01	164	4.8E-02	166	2.1E-02	167	1.4E-02	168	9.7E-03	170	4.5E-03	1.5E-02
	69	169	6.6E-03	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E-03
	70	168	9.8E-03	170	4.5E-03	171	3.1E-03	172	2.1E-03	173	1.4E-03	174	9.6E-04	1.6E-03
		176	4.6E-04											
	71	175	6.7E-04	176	4.6E-04	0	0.	0	0.	0	0.	0	0.	6.6E-04
PRODUCT Z= 63	64	152	0.	154	0.	155	0.	156	0.	157	2.5E+00	158	1.8E+00	1.1E+00
PRODUCT A=155		160	9.2E-01											
HALF LIFE= 1.800 Y	65	159	1.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+00
	66	156	0.	158	1.8E+00	160	9.3E-01	161	6.3E-01	162	4.3E-01	163	2.9E-01	3.8E-01
		164	1.9E-01											
	67	165	1.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-01
	68	162	4.3E-01	164	2.0E-01	166	8.9E-02	167	6.0E-02	168	4.1E-02	170	1.8E-02	6.1E-02
	69	169	2.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E-02
	70	168	4.1E-02	170	1.9E-02	171	1.3E-02	172	8.6E-03	173	5.9E-03	174	4.0E-03	6.7E-03
		176	1.9E-03											
	71	175	2.7E-03	176	1.9E-03	0	0.	0	0.	0	0.	0	0.	2.7E-03
PRODUCT Z= 63	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	3.2E+01	1.2E+01
PRODUCT A=156		160	1.6E+01											
HALF LIFE= 15.200 D	65	159	2.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+01
	66	156	0.	158	0.	160	1.6E+01	161	1.2E+01	162	8.0E+00	163	5.4E+00	7.0E+00
		164	3.6E+00											
	67	165	2.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+00
	68	162	8.1E+00	164	3.7E+00	166	1.7E+00	167	1.1E+00	168	7.6E-01	170	3.4E-01	1.1E+00
	69	169	5.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E-01
	70	168	7.6E-01	170	3.5E-01	171	2.3E-01	172	1.6E-01	173	1.1E-01	174	7.4E-02	1.2E-01
		176	3.4E-02											
	71	175	5.1E-02	176	3.4E-02	0	0.	0	0.	0	0.	0	0.	5.1E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 63	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	0.	2.1E+01
PRODUCT A=157		160	9.5E+01											
HALF LIFE= 15.200 H	65	159	1.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+02
	66	156	0.	158	0.	160	9.6E+01	161	6.9E+01	162	4.9E+01	163	3.4E+01	4.2E+01
		164	2.3E+01											
	67	165	1.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+01
	68	162	5.0E+01	164	2.3E+01	166	1.0E+01	167	7.1E+00	168	4.7E+00	170	2.2E+00	7.1E+00
	69	169	3.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+00
	70	168	4.8E+00	170	2.2E+00	171	1.5E+00	172	9.9E-01	173	6.7E-01	174	4.5E-01	7.7E-01
		176	2.1E-01											
	71	175	3.1E-01	176	2.1E-01	0	0.	0	0.	0	0.	0	0.	3.1E-01
PRODUCT Z= 63	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	0.	1.2E+01
PRODUCT A=158		160	5.4E+01											
HALF LIFE= 46.000 M	66	156	0.	158	0.	160	0.	161	3.9E+01	162	2.8E+01	163	2.0E+01	2.3E+01
		164	1.3E+01											
	67	165	9.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+00
	68	162	0.	164	1.4E+01	166	6.2E+00	167	4.2E+00	168	2.8E+00	170	1.3E+00	4.2E+00
	69	169	1.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+00
	70	168	2.9E+00	170	1.3E+00	171	8.7E-01	172	5.9E-01	173	4.0E-01	174	2.7E-01	4.6E-01
		176	1.2E-01											
	71	175	1.8E-01	176	1.3E-01	0	0.	0	0.	0	0.	0	0.	1.8E-01
	72	174	2.7E-01	176	1.3E-01	177	8.6E-02	178	5.8E-02	179	4.0E-02	180	2.8E-02	5.4E-02
PRODUCT Z= 63	66	156	0.	158	0.	160	0.	161	0.	162	9.9E+00	163	7.1E+00	5.7E+00
PRODUCT A=159		164	5.1E+00											
HALF LIFE= 19.000 M	67	165	3.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+00
	68	162	0.	164	5.1E+00	166	2.3E+00	167	1.6E+00	168	1.1E+00	170	4.8E-01	1.6E+00
	69	169	7.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E-01
	70	168	1.1E+00	170	4.9E-01	171	3.3E-01	172	2.2E-01	173	1.5E-01	174	1.0E-01	1.7E-01
		176	4.7E-02											
	71	175	6.9E-02	176	4.7E-02	0	0.	0	0.	0	0.	0	0.	6.9E-02
	72	174	1.0E-01	176	4.7E-02	177	3.2E-02	178	2.2E-02	179	1.5E-02	180	1.0E-02	2.0E-02
	73	180	1.0E-02	181	7.1E-03	0	0.	0	0.	0	0.	0	0.	7.1E-03
PRODUCT Z= 63	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	2.4E+00	1.1E+00
PRODUCT A=160		164	1.7E+00											
HALF LIFE= 2.500 M	67	165	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
	68	162	0.	164	0.	166	8.5E-01	167	5.7E-01	168	3.8E-01	170	1.8E-01	5.4E-01
	69	169	2.6E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E-01
	70	168	3.9E-01	170	1.8E-01	171	1.2E-01	172	8.0E-02	173	5.4E-02	174	3.6E-02	6.3E-02
		176	1.7E-02											
	71	175	2.5E-02	176	1.7E-02	0	0.	0	0.	0	0.	0	0.	2.4E-02
	72	174	3.7E-02	176	1.7E-02	177	1.1E-02	178	7.8E-03	179	5.4E-03	180	3.6E-03	7.2E-03
	73	180	3.6E-03	181	2.5E-03	0	0.	0	0.	0	0.	0	0.	2.5E-03
PRODUCT Z= 64	63	151	6.0E+04	153	2.7E+04	0	0.	0	0.	0	0.	0	0.	4.3E+04
PRODUCT A=145	64	152	4.1E+04	154	1.8E+04	155	1.3E+04	156	8.3E+03	157	5.6E+03	158	3.8E+03	6.2E+03
HALF LIFE= 25.000 M		160	1.7E+03											
	65	159	2.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+03
	66	156	8.4E+03	158	3.8E+03	160	1.7E+03	161	1.2E+03	162	8.0E+02	163	5.5E+02	7.2E+02
		164	3.8E+02											
	67	165	2.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+02
	68	162	8.1E+02	164	3.8E+02	166	1.8E+02	167	1.2E+02	168	8.2E+01	170	3.8E+01	1.2E+02
	69	169	5.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.6E+01
PRODUCT Z= 64	63	151	2.9E+03	153	1.3E+03	0	0.	0	0.	0	0.	0	0.	2.1E+03
PRODUCT A=146	64	152	2.0E+03	154	8.9E+02	155	6.0E+02	156	4.1E+02	157	2.7E+02	158	1.8E+02	3.0E+02
HALF LIFE= 48.000 D		160	8.3E+01											
	65	159	1.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+02
	66	156	4.1E+02	158	1.8E+02	160	8.4E+01	161	5.7E+01	162	3.9E+01	163	2.6E+01	3.4E+01
		164	1.8E+01											
	67	165	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
	68	162	3.9E+01	164	1.8E+01	166	8.3E+00	167	5.7E+00	168	4.0E+00	170	1.8E+00	5.7E+00
	69	169	2.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+00
PRODUCT Z= 64	63	151	2.7E+05	153	1.3E+05	0	0.	0	0.	0	0.	0	0.	2.0E+05
PRODUCT A=147	64	152	2.0E+05	154	9.0E+04	155	6.0E+04	156	4.1E+04	157	2.8E+04	158	1.8E+04	3.0E+04
HALF LIFE= 25.000 H		160	8.4E+03											
	65	159	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
	66	156	4.1E+04	158	1.9E+04	160	8.4E+03	161	5.7E+03	162	3.8E+03	163	2.6E+03	3.4E+03
		164	1.8E+03											
	67	165	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	68	162	3.9E+03	164	1.8E+03	166	8.4E+02	167	5.6E+02	168	3.9E+02	170	1.8E+02	5.7E+02
	69	169	2.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 64	63	151	3.0E+01	153	1.5E+01	0	0.	0	0.	0	0.	0	0.	2.2E+01
PRODUCT A=148	64	152	2.1E+01	154	1.0E+01	155	7.0E+00	156	4.7E+00	157	3.2E+00	158	2.2E+00	3.5E+00
HALF LIFE= 85.000 Y		160	9.7E-01											
	65	159	1.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+00
	66	156	4.8E+00	158	2.2E+00	160	9.8E-01	161	6.6E-01	162	4.5E-01	163	3.0E-01	4.0E-01
		164	2.1E-01											
	67	165	1.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-01
	68	162	4.5E-01	164	2.1E-01	166	9.6E-02	167	6.6E-02	168	4.4E-02	170	2.1E-02	6.6E-02
	69	169	3.1E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E-02
PRODUCT Z= 64	63	151	1.9E+05	153	9.6E+04	0	0.	0	0.	0	0.	0	0.	1.4E+05
PRODUCT A=149	64	152	1.4E+05	154	6.9E+04	155	4.7E+04	156	3.2E+04	157	2.1E+04	158	1.4E+04	2.3E+04
HALF LIFE= 9.000 D		160	6.5E+03											
	65	159	9.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E+03
	66	156	3.2E+04	158	1.5E+04	160	6.6E+03	161	4.4E+03	162	3.0E+03	163	2.0E+03	2.7E+03
		164	1.4E+03											
	67	165	9.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.3E+02
	68	162	3.0E+03	164	1.4E+03	166	6.3E+02	167	4.3E+02	168	3.0E+02	170	1.4E+02	4.4E+02
	69	169	2.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+02
PRODUCT Z= 64	63	151	0.	153	1.5E-03	0	0.	0	0.	0	0.	0	0.	7.8E-04
PRODUCT A=150	64	152	2.1E-03	154	1.1E-03	155	7.7E-04	156	5.2E-04	157	3.5E-04	158	2.4E-04	3.8E-04
HALF LIFE= 1.800 T		160	1.1E-04											
	65	159	1.6E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E-04
	66	156	5.3E-04	158	2.4E-04	160	1.1E-04	161	7.3E-05	162	4.9E-05	163	3.3E-05	4.4E-05
		164	2.2E-05											
	67	165	1.5E-05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-05
	68	162	5.0E-05	164	2.3E-05	166	1.0E-05	167	7.0E-06	168	4.8E-06	170	2.2E-06	7.1E-06
	69	169	3.3E-06	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-06
	70	168	4.8E-06	170	2.2E-06	171	1.5E-06	172	1.1E-06	173	7.2E-07	174	4.9E-07	8.3E-07
		176	2.3E-07											
PRODUCT Z= 64	63	151	0.	153	6.9E+03	0	0.	0	0.	0	0.	0	0.	3.6E+03
PRODUCT A=151	64	152	0.	154	5.0E+03	155	3.6E+03	156	2.5E+03	157	1.7E+03	158	1.2E+03	1.8E+03
HALF LIFE= 120.000 D		160	5.3E+02											
	65	159	7.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+02
	66	156	2.6E+03	158	1.2E+03	160	5.3E+02	161	3.6E+02	162	2.4E+02	163	1.6E+02	2.2E+02
		164	1.1E+02											
	67	165	7.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E+01
	68	162	2.4E+02	164	1.1E+02	166	5.1E+01	167	3.5E+01	168	2.3E+01	170	1.1E+01	3.5E+01
	69	169	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	70	168	2.4E+01	170	1.1E+01	171	7.4E+00	172	5.1E+00	173	3.6E+00	174	2.4E+00	4.0E+00
		176	1.1E+00											
PRODUCT Z= 64	64	152	0.	154	0.	155	8.5E+02	156	6.1E+02	157	4.3E+02	158	3.1E+02	4.2E+02
PRODUCT A=153		160	1.4E+02											
HALF LIFE= 240.000 D	65	159	2.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+02
	66	156	6.1E+02	158	3.1E+02	160	1.4E+02	161	9.7E+01	162	6.5E+01	163	4.4E+01	5.8E+01
		164	3.0E+01											
	67	165	2.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+01
	68	162	6.6E+01	164	3.0E+01	166	1.4E+01	167	9.2E+00	168	6.2E+00	170	2.9E+00	9.3E+00
	69	169	4.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+00
	70	168	6.2E+00	170	2.9E+00	171	2.0E+00	172	1.4E+00	173	9.0E-01	174	6.2E-01	1.0E+00
		176	2.9E-01											
	71	175	4.4E-01	176	2.9E-01	0	0.	0	0.	0	0.	0	0.	4.3E-01
PRODUCT Z= 64	66	156	0.	158	0.	160	0.	161	3.3E+02	162	2.4E+02	163	1.7E+02	2.0E+02
PRODUCT A=159		164	1.2E+02											
HALF LIFE= 18.000 H	67	165	8.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	8.4E+01
	68	162	0.	164	1.2E+02	166	5.7E+01	167	3.8E+01	168	2.6E+01	170	1.2E+01	3.8E+01
	69	169	1.8E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+01
	70	168	2.6E+01	170	1.2E+01	171	7.9E+00	172	5.4E+00	173	3.6E+00	174	2.4E+00	4.2E+00
		176	1.1E+00											
	71	175	1.7E+00	176	1.1E+00	0	0.	0	0.	0	0.	0	0.	1.7E+00
	72	174	2.5E+00	176	1.1E+00	177	7.7E-01	178	5.3E-01	179	3.6E-01	180	2.5E-01	4.8E-01
PRODUCT Z= 64	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	4.2E+01	1.9E+01
PRODUCT A=161		164	3.0E+01											
HALF LIFE= 3.700 M	67	165	2.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+01
	68	162	0.	164	0.	166	1.6E+01	167	1.1E+01	168	7.1E+00	170	3.2E+00	1.0E+01
	69	169	4.8E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.8E+00
	70	168	7.2E+00	170	3.3E+00	171	2.2E+00	172	1.5E+00	173	1.0E+00	174	6.8E-01	1.2E+00
		176	3.1E-01											
	71	175	4.6E-01	176	3.1E-01	0	0.	0	0.	0	0.	0	0.	4.5E-01
	72	174	6.8E-01	176	3.1E-01	177	2.1E-01	178	1.4E-01	179	9.7E-02	180	6.7E-02	1.3E-01
	73	180	6.7E-02	181	4.5E-02	0	0.	0	0.	0	0.	0	0.	4.5E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 64 PRODUCT A=162 HALF LIFE= 1.000 Y	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	0.	5.8E-03
		164	2.0E-02											
	67	165	1.5E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-02
	68	162	0.	164	0.	166	1.1E-02	167	7.5E-03	168	5.1E-03	170	2.3E-03	7.0E-03
	69	169	3.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E-03
	70	168	5.2E-03	170	2.4E-03	171	1.6E-03	172	1.1E-03	173	7.2E-04	174	4.9E-04	8.4E-04
		176	2.2E-04											
	71	175	3.3E-04	176	2.2E-04	0	0.	0	0.	0	0.	0	0.	3.3E-04
	72	174	4.9E-04	176	2.2E-04	177	1.5E-04	178	1.0E-04	179	6.9E-05	180	4.7E-05	9.4E-05
	73	180	4.8E-05	181	3.3E-05	0	0.	0	0.	0	0.	0	0.	3.3E-05
PRODUCT Z= 65 PRODUCT A=147 HALF LIFE= 24.000 M	64	152	4.9E+04	154	2.3E+04	155	1.5E+04	156	1.0E+04	157	7.0E+03	158	4.7E+03	7.6E+03
		160	2.1E+03											
	65	159	3.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+03
	66	156	1.0E+04	158	4.7E+03	160	2.1E+03	161	1.4E+03	162	9.7E+02	163	6.6E+02	8.7E+02
		164	4.5E+02											
	67	165	3.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+02
	68	162	9.8E+02	164	4.5E+02	166	2.1E+02	167	1.4E+02	168	9.8E+01	170	4.6E+01	1.4E+02
	69	169	6.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E+01
	70	168	9.9E+01	170	4.6E+01	171	3.2E+01	172	2.1E+01	173	1.5E+01	174	1.0E+01	1.7E+01
		176	4.9E+00											
PRODUCT Z= 65 PRODUCT A=148 HALF LIFE= 70.000 M	64	152	1.7E+05	154	8.2E+04	155	5.5E+04	156	3.7E+04	157	2.5E+04	158	1.7E+04	2.7E+04
		160	7.6E+03											
	65	159	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
	66	156	3.7E+04	158	1.7E+04	160	7.7E+03	161	5.2E+03	162	3.5E+03	163	2.4E+03	3.1E+03
		164	1.6E+03											
	67	165	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
	68	162	3.5E+03	164	1.6E+03	166	7.5E+02	167	5.2E+02	168	3.5E+02	170	1.7E+02	5.2E+02
	69	169	2.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+02
	70	168	3.5E+02	170	1.7E+02	171	1.1E+02	172	7.7E+01	173	5.2E+01	174	3.6E+01	6.0E+01
		176	1.7E+01											
PRODUCT Z= 65 PRODUCT A=149 HALF LIFE= 4.100 H	64	152	5.0E+05	154	2.6E+05	155	1.7E+05	156	1.2E+05	157	7.9E+04	158	5.3E+04	8.6E+04
		160	2.4E+04											
	65	159	3.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+04
	66	156	1.2E+05	158	5.4E+04	160	2.4E+04	161	1.6E+04	162	1.1E+04	163	7.4E+03	9.8E+03
		164	5.0E+03											
	67	165	3.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+03
	68	162	1.1E+04	164	5.1E+03	166	2.3E+03	167	1.6E+03	168	1.1E+03	170	5.1E+02	1.6E+03
	69	169	7.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+02
	70	168	1.1E+03	170	5.1E+02	171	3.6E+02	172	2.4E+02	173	1.6E+02	174	1.1E+02	1.9E+02
		176	5.4E+01											
PRODUCT Z= 65 PRODUCT A=150 HALF LIFE= 3.100 H	64	152	1.3E+06	154	6.8E+05	155	4.9E+05	156	3.3E+05	157	2.2E+05	158	1.5E+05	2.4E+05
		160	6.9E+04											
	65	159	1.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+05
	66	156	3.3E+05	158	1.5E+05	160	7.0E+04	161	4.6E+04	162	3.1E+04	163	2.1E+04	2.8E+04
		164	1.4E+04											
	67	165	9.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+03
	68	162	3.2E+04	164	1.4E+04	166	6.6E+03	167	4.5E+03	168	3.1E+03	170	1.4E+03	4.5E+03
	69	169	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03
	70	168	3.1E+03	170	1.4E+03	171	9.8E+02	172	6.8E+02	173	4.6E+02	174	3.1E+02	5.3E+02
		176	1.5E+02											
PRODUCT Z= 65 PRODUCT A=151 HALF LIFE= 18.000 H	64	152	0.	154	9.3E+05	155	6.6E+05	156	4.7E+05	157	3.2E+05	158	2.2E+05	3.4E+05
		160	9.8E+04											
	65	159	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
	66	156	4.8E+05	158	2.2E+05	160	9.9E+04	161	6.8E+04	162	4.5E+04	163	3.0E+04	4.0E+04
		164	2.1E+04											
	67	165	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	68	162	4.5E+04	164	2.1E+04	166	9.4E+03	167	6.4E+03	168	4.3E+03	170	2.0E+03	6.5E+03
	69	169	3.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+03
	70	168	4.4E+03	170	2.1E+03	171	1.4E+03	172	9.5E+02	173	6.6E+02	174	4.4E+02	7.4E+02
		176	2.1E+02											
PRODUCT Z= 65 PRODUCT A=152 HALF LIFE= 18.000 H	64	152	0.	154	1.5E+06	155	1.1E+06	156	7.7E+05	157	5.5E+05	158	3.7E+05	5.6E+05
		160	1.7E+05											
	65	159	2.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+05
	66	156	7.7E+05	158	3.8E+05	160	1.7E+05	161	1.2E+05	162	7.8E+04	163	5.2E+04	6.9E+04
		164	3.5E+04											
	67	165	2.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+04
	68	162	7.9E+04	164	3.6E+04	166	1.6E+04	167	1.1E+04	168	7.5E+03	170	3.4E+03	1.1E+04
	69	169	5.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E+03
	70	168	7.5E+03	170	3.5E+03	171	2.4E+03	172	1.6E+03	173	1.1E+03	174	7.7E+02	1.3E+03
		176	3.5E+02											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 65	64	152	0.	154	0.	155	4.1E+05	156	2.9E+05	157	2.1E+05	158	1.5E+05	2.0E+05
PRODUCT A=153		160	6.9E+04											
HALF LIFE= 2.600 D	65	159	1.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+05
	66	156	3.0E+05	158	1.5E+05	160	6.9E+04	161	4.7E+04	162	3.2E+04	163	2.1E+04	2.8E+04
		164	1.4E+04											
	67	165	9.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+03
	68	162	3.2E+04	164	1.4E+04	166	6.6E+03	167	4.4E+03	168	3.0E+03	170	1.4E+03	4.5E+03
	69	169	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03
	70	168	3.0E+03	170	1.4E+03	171	9.5E+02	172	6.5E+02	173	4.4E+02	174	3.0E+02	5.1E+02
		176	1.4E+02											
	71	175	2.1E+02	176	1.4E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
PRODUCT Z= 65	64	152	0.	154	0.	155	0.	156	5.6E+05	157	4.0E+05	158	2.9E+05	2.8E+05
PRODUCT A=154		160	1.4E+05											
HALF LIFE= 21.000 H	65	159	2.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+05
	66	156	5.7E+05	158	2.9E+05	160	1.4E+05	161	9.5E+04	162	6.4E+04	163	4.3E+04	5.7E+04
		164	2.9E+04											
	67	165	2.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+04
	68	162	6.4E+04	164	3.0E+04	166	1.3E+04	167	9.0E+03	168	6.0E+03	170	2.8E+03	9.1E+03
	69	169	4.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+03
	70	168	6.1E+03	170	2.8E+03	171	1.9E+03	172	1.3E+03	173	8.9E+02	174	6.0E+02	1.0E+03
		176	2.9E+02											
	71	175	4.1E+02	176	2.9E+02	0	0.	0	0.	0	0.	0	0.	4.1E+02
PRODUCT Z= 65	64	152	0.	154	0.	155	0.	156	0.	157	6.1E+04	158	4.3E+04	2.5E+04
PRODUCT A=155		160	2.2E+04											
HALF LIFE= 5.600 D	65	159	3.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+04
	66	156	0.	158	4.4E+04	160	2.2E+04	161	1.5E+04	162	1.0E+04	163	6.9E+03	9.0E+03
		164	4.7E+03											
	67	165	3.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+03
	68	162	1.0E+04	164	4.7E+03	166	2.1E+03	167	1.4E+03	168	9.7E+02	170	4.4E+02	1.5E+03
	69	169	6.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+02
	70	168	9.8E+02	170	4.5E+02	171	3.0E+02	172	2.1E+02	173	1.4E+02	174	9.7E+01	1.6E+02
		176	4.5E+01											
	71	175	6.5E+01	176	4.5E+01	0	0.	0	0.	0	0.	0	0.	6.4E+01
PRODUCT Z= 65	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	2.9E+04	1.0E+04
PRODUCT A=156		160	1.5E+04											
HALF LIFE= 5.400 D	65	159	2.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+04
	66	156	0.	158	2.9E+04	160	1.5E+04	161	1.1E+04	162	7.2E+03	163	4.9E+03	6.3E+03
		164	3.3E+03											
	67	165	2.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+03
	68	162	7.3E+03	164	3.3E+03	166	1.5E+03	167	1.0E+03	168	6.8E+02	170	3.1E+02	1.0E+03
	69	169	4.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+02
	70	168	6.9E+02	170	3.1E+02	171	2.1E+02	172	1.4E+02	173	9.7E+01	174	6.6E+01	1.1E+02
		176	3.1E+01											
	71	175	4.6E+01	176	3.1E+01	0	0.	0	0.	0	0.	0	0.	4.6E+01
PRODUCT Z= 65	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	0.	2.0E-01
PRODUCT A=157		160	9.0E-01											
HALF LIFE= 150.000 Y	65	159	1.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+00
	66	156	0.	158	0.	160	9.1E-01	161	6.5E-01	162	4.6E-01	163	3.2E-01	4.0E-01
		164	2.1E-01											
	67	165	1.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E-01
	68	162	4.7E-01	164	2.2E-01	166	9.8E-02	167	6.7E-02	168	4.4E-02	170	2.0E-02	6.7E-02
	69	169	3.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E-02
	70	168	4.5E-02	170	2.0E-02	171	1.4E-02	172	9.3E-03	173	6.3E-03	174	4.3E-03	7.3E-03
		176	2.0E-03											
	71	175	2.9E-03	176	2.0E-03	0	0.	0	0.	0	0.	0	0.	2.9E-03
PRODUCT Z= 65	64	152	0.	154	0.	155	0.	156	0.	157	0.	158	0.	1.1E-01
PRODUCT A=158		160	4.8E-01											
HALF LIFE= 150.000 Y	66	156	0.	158	0.	160	4.9E-01	161	3.5E-01	162	2.5E-01	163	1.8E-01	2.2E-01
		164	1.2E-01											
	67	165	8.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	8.2E-02
	68	162	2.5E-01	164	1.2E-01	166	5.6E-02	167	3.8E-02	168	2.6E-02	170	1.2E-02	3.8E-02
	69	169	1.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E-02
	70	168	2.6E-02	170	1.2E-02	171	7.8E-03	172	5.3E-03	173	3.6E-03	174	2.4E-03	4.1E-03
		176	1.1E-03											
	71	175	1.6E-03	176	1.1E-03	0	0.	0	0.	0	0.	0	0.	1.6E-03
	72	174	2.5E-03	176	1.1E-03	177	7.8E-04	178	5.2E-04	179	3.6E-04	180	2.5E-04	4.8E-04
PRODUCT Z= 65	66	156	0.	158	0.	160	0.	161	0.	162	4.4E+01	163	3.2E+01	2.6E+01
PRODUCT A=160		164	2.3E+01											
HALF LIFE= 72.000 D	67	165	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	68	162	0.	164	2.3E+01	166	1.1E+01	167	7.5E+00	168	5.1E+00	170	2.3E+00	7.5E+00
	69	169	3.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+00
	70	168	5.1E+00	170	2.3E+00	171	1.6E+00	172	1.1E+00	173	7.1E-01	174	4.8E-01	8.2E-01
		176	2.2E-01											
	71	175	3.2E-01	176	2.2E-01	0	0.	0	0.	0	0.	0	0.	3.2E-01
	72	174	4.8E-01	176	2.2E-01	177	1.5E-01	178	1.0E-01	179	7.1E-02	180	4.7E-02	9.4E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 65 A=160 (CONTINUED)	73	180	4.7E-02	181	3.3E-02	0	0.	0	0.	0	0.	0	0.	3.3E-02
PRODUCT Z= 65	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	1.4E+02	6.3E+01
PRODUCT A=161		164	1.0E+02											
HALF LIFE= 6.900 D	67	165	7.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+01
	68	162	0.	164	1.0E+02	166	5.1E+01	167	3.5E+01	168	2.4E+01	170	1.1E+01	3.5E+01
	69	169	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
	70	168	2.4E+01	170	1.1E+01	171	7.4E+00	172	4.9E+00	173	3.3E+00	174	2.2E+00	3.8E+00
		176	1.0E+00											
	71	175	1.5E+00	176	1.0E+00	0	0.	0	0.	0	0.	0	0.	1.5E+00
	72	174	2.3E+00	176	1.0E+00	177	7.0E-01	178	4.7E-01	179	3.2E-01	180	2.2E-01	4.4E-01
	73	180	2.2E-01	181	1.5E-01	0	0.	0	0.	0	0.	0	0.	1.5E-01
PRODUCT Z= 65	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	0.	1.2E+02
PRODUCT A=162		164	4.4E+02											
HALF LIFE= 2.000 H	67	165	3.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+02
	68	162	0.	164	0.	166	2.2E+02	167	1.6E+02	168	1.1E+02	170	5.0E+01	1.5E+02
	69	169	7.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E+01
	70	168	1.1E+02	170	5.0E+01	171	3.4E+01	172	2.3E+01	173	1.5E+01	174	1.0E+01	1.8E+01
		176	4.7E+00											
	71	175	7.0E+00	176	4.7E+00	0	0.	0	0.	0	0.	0	0.	7.0E+00
	72	174	1.0E+01	176	4.7E+00	177	3.2E+00	178	2.2E+00	179	1.5E+00	180	1.0E+00	2.0E+00
	73	180	1.0E+00	181	7.0E-01	0	0.	0	0.	0	0.	0	0.	7.0E-01
PRODUCT Z= 65	67	165	1.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+02
PRODUCT A=163	68	162	0.	164	0.	166	8.2E+01	167	5.9E+01	168	4.2E+01	170	1.9E+01	5.5E+01
HALF LIFE= 6.500 H	69	169	2.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+01
	70	168	4.2E+01	170	2.0E+01	171	1.3E+01	172	8.9E+00	173	6.0E+00	174	4.0E+00	6.9E+00
		176	1.8E+00											
	71	175	2.7E+00	176	1.8E+00	0	0.	0	0.	0	0.	0	0.	2.7E+00
	72	174	4.1E+00	176	1.8E+00	177	1.2E+00	178	8.4E-01	179	5.7E-01	180	3.9E-01	7.7E-01
	73	180	3.9E-01	181	2.6E-01	0	0.	0	0.	0	0.	0	0.	2.6E-01
PRODUCT Z= 65	68	162	0.	164	0.	166	0.	167	1.2E+01	168	8.6E+00	170	4.2E+00	5.7E+00
PRODUCT A=164	69	169	6.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E+00
HALF LIFE= 1.000 D	70	168	0.	170	4.2E+00	171	2.9E+00	172	1.9E+00	173	1.3E+00	174	8.8E-01	1.5E+00
		176	4.0E-01											
	71	175	5.9E-01	176	4.0E-01	0	0.	0	0.	0	0.	0	0.	5.9E-01
	72	174	8.9E-01	176	4.0E-01	177	2.7E-01	178	1.8E-01	179	1.2E-01	180	8.4E-02	1.7E-01
	73	180	8.4E-02	181	5.7E-02	0	0.	0	0.	0	0.	0	0.	5.7E-02
	74	180	8.4E-02	182	3.9E-02	183	2.7E-02	184	1.8E-02	186	8.6E-03	0	0.	2.2E-02
	75	185	1.2E-02	187	5.8E-03	0	0.	0	0.	0	0.	0	0.	8.2E-03
PRODUCT Z= 66	65	159	3.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+03
PRODUCT A=149	66	156	1.2E+04	158	5.5E+03	160	2.5E+03	161	1.7E+03	162	1.1E+03	163	7.7E+02	1.0E+03
HALF LIFE= 15.000 M		164	5.2E+02											
	67	165	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
	68	162	1.2E+03	164	5.2E+02	166	2.4E+02	167	1.7E+02	168	1.1E+02	170	5.2E+01	1.7E+02
	69	169	7.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+01
	70	168	1.1E+02	170	5.3E+01	171	3.7E+01	172	2.5E+01	173	1.7E+01	174	1.1E+01	1.9E+01
		176	5.5E+00											
	71	175	8.1E+00	176	5.6E+00	0	0.	0	0.	0	0.	0	0.	8.0E+00
PRODUCT Z= 66	65	159	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
PRODUCT A=150	66	156	4.7E+04	158	2.1E+04	160	9.7E+03	161	6.5E+03	162	4.4E+03	163	3.0E+03	3.9E+03
HALF LIFE= 7.400 M		164	2.0E+03											
	67	165	1.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+03
	68	162	4.4E+03	164	2.0E+03	166	9.2E+02	167	6.2E+02	168	4.3E+02	170	2.0E+02	6.3E+02
	69	169	2.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+02
	70	168	4.3E+02	170	2.0E+02	171	1.4E+02	172	9.5E+01	173	6.4E+01	174	4.4E+01	7.3E+01
		176	2.1E+01											
	71	175	3.0E+01	176	2.1E+01	0	0.	0	0.	0	0.	0	0.	3.0E+01
PRODUCT Z= 66	65	159	4.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+04
PRODUCT A=151	66	156	1.6E+05	158	7.3E+04	160	3.3E+04	161	2.3E+04	162	1.5E+04	163	1.0E+04	1.3E+04
HALF LIFE= 18.000 M		164	6.9E+03											
	67	165	4.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+03
	68	162	1.5E+04	164	6.9E+03	166	3.1E+03	167	2.1E+03	168	1.4E+03	170	6.8E+02	2.2E+03
	69	169	9.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+02
	70	168	1.5E+03	170	6.9E+02	171	4.6E+02	172	3.2E+02	173	2.2E+02	174	1.5E+02	2.5E+02
		176	6.9E+01											
	71	175	1.0E+02	176	6.9E+01	0	0.	0	0.	0	0.	0	0.	1.0E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 66	65	159	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
PRODUCT A=152	66	156	4.6E+05	158	2.2E+05	160	1.0E+05	161	6.8E+04	162	4.6E+04	163	3.1E+04	4.1E+04
HALF LIFE= 2.400 H		164	2.1E+04											
	67	165	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	68	162	4.7E+04	164	2.1E+04	166	9.6E+03	167	6.5E+03	168	4.4E+03	170	2.0E+03	6.5E+03
	69	169	3.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+03
	70	168	4.5E+03	170	2.1E+03	171	1.4E+03	172	9.4E+02	173	6.5E+02	174	4.5E+02	7.5E+02
		176	2.1E+02											
	71	175	3.0E+02	176	2.1E+02	0	0.	0	0.	0	0.	0	0.	3.0E+02
PRODUCT Z= 66	65	159	3.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+05
PRODUCT A=153	66	156	1.1E+06	158	5.5E+05	160	2.5E+05	161	1.7E+05	162	1.1E+05	163	7.8E+04	1.0E+05
HALF LIFE= 6.000 H		164	5.2E+04											
	67	165	3.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+04
	68	162	1.2E+05	164	5.2E+04	166	2.4E+04	167	1.6E+04	168	1.1E+04	170	5.0E+03	1.6E+04
	69	169	7.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E+03
	70	168	1.1E+04	170	5.1E+03	171	3.5E+03	172	2.4E+03	173	1.6E+03	174	1.1E+03	1.8E+03
		176	5.1E+02											
	71	175	7.7E+02	176	5.1E+02	0	0.	0	0.	0	0.	0	0.	7.6E+02
PRODUCT Z= 66	65	159	1.7E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E-03
PRODUCT A=154	66	156	4.6E-03	158	2.3E-03	160	1.1E-03	161	7.6E-04	162	5.1E-04	163	3.5E-04	4.6E-04
HALF LIFE= 1.000 T		164	2.4E-04											
	67	165	1.6E-04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E-04
	68	162	5.2E-04	164	2.4E-04	166	1.1E-04	167	7.2E-05	168	4.9E-05	170	2.2E-05	7.3E-05
	69	169	3.3E-05	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E-05
	70	168	4.9E-05	170	2.3E-05	171	1.5E-05	172	1.0E-05	173	7.2E-06	174	4.8E-06	8.2E-06
		176	2.3E-06											
	71	175	3.3E-06	176	2.3E-06	0	0.	0	0.	0	0.	0	0.	3.3E-06
PRODUCT Z= 66	65	159	9.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+05
PRODUCT A=155	66	156	0.	158	1.4E+06	160	6.9E+05	161	4.7E+05	162	3.2E+05	163	2.1E+05	2.8E+05
HALF LIFE= 10.000 H		164	1.4E+05											
	67	165	9.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	9.9E+04
	68	162	3.2E+05	164	1.5E+05	166	6.6E+04	167	4.5E+04	168	3.0E+04	170	1.4E+04	4.5E+04
	69	169	2.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+04
	70	168	3.0E+04	170	1.4E+04	171	9.4E+03	172	6.4E+03	173	4.4E+03	174	3.0E+03	5.0E+03
		176	1.4E+03											
	71	175	2.0E+03	176	1.4E+03	0	0.	0	0.	0	0.	0	0.	2.0E+03
PRODUCT Z= 66	65	159	7.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	7.5E+05
PRODUCT A=157	66	156	0.	158	0.	160	5.4E+05	161	3.8E+05	162	2.7E+05	163	1.9E+05	2.4E+05
HALF LIFE= 8.500 H		164	1.3E+05											
	67	165	8.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.5E+04
	68	162	2.8E+05	164	1.3E+05	166	5.8E+04	167	3.9E+04	168	2.6E+04	170	1.2E+04	3.9E+04
	69	169	1.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+04
	70	168	2.7E+04	170	1.2E+04	171	8.1E+03	172	5.5E+03	173	3.7E+03	174	2.5E+03	4.3E+03
		176	1.2E+03											
	71	175	1.7E+03	176	1.2E+03	0	0.	0	0.	0	0.	0	0.	1.7E+03
PRODUCT Z= 66	66	156	0.	158	0.	160	0.	161	9.4E+02	162	6.7E+02	163	4.8E+02	5.7E+02
PRODUCT A=159		164	3.4E+02											
HALF LIFE= 144.000 D	67	165	2.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+02
	68	162	6.8E+02	164	3.5E+02	166	1.6E+02	167	1.1E+02	168	7.3E+01	170	3.3E+01	1.1E+02
	69	169	5.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.0E+01
	70	168	7.3E+01	170	3.3E+01	171	2.2E+01	172	1.5E+01	173	1.0E+01	174	6.9E+00	1.2E+01
		176	3.2E+00											
	71	175	4.7E+00	176	3.2E+00	0	0.	0	0.	0	0.	0	0.	4.7E+00
	72	174	6.9E+00	176	3.2E+00	177	2.2E+00	178	1.5E+00	179	1.0E+00	180	6.9E-01	1.4E+00
PRODUCT Z= 66	68	162	0.	164	0.	166	0.	167	3.5E+02	168	2.5E+02	170	1.3E+02	1.7E+02
PRODUCT A=165	69	169	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+02
HALF LIFE= 2.350 H	70	168	0.	170	1.3E+02	171	8.9E+01	172	6.0E+01	173	4.0E+01	174	2.7E+01	4.6E+01
		176	1.2E+01											
	71	175	1.9E+01	176	1.2E+01	0	0.	0	0.	0	0.	0	0.	1.8E+01
	72	174	2.7E+01	176	1.2E+01	177	8.4E+00	178	5.7E+00	179	3.8E+00	180	2.6E+00	5.2E+00
	73	180	2.6E+00	181	1.8E+00	0	0.	0	0.	0	0.	0	0.	1.8E+00
	74	180	2.6E+00	182	1.2E+00	183	8.2E-01	184	5.6E-01	186	2.6E-01	0	0.	6.8E-01
	75	185	3.8E-01	187	1.8E-01	0	0.	0	0.	0	0.	0	0.	2.5E-01
PRODUCT Z= 66	68	162	0.	164	0.	166	0.	167	0.	168	1.9E+01	170	9.5E+00	6.5E+00
PRODUCT A=166	69	169	1.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+01
HALF LIFE= 82.000 H	70	168	0.	170	9.6E+00	171	6.8E+00	172	4.7E+00	173	3.1E+00	174	2.1E+00	3.6E+00
		176	9.7E-01											
	71	175	1.4E+00	176	9.8E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
	72	174	2.1E+00	176	9.8E-01	177	6.5E-01	178	4.4E-01	179	3.0E-01	180	2.0E-01	4.0E-01
	73	180	2.0E-01	181	1.4E-01	0	0.	0	0.	0	0.	0	0.	1.4E-01
	74	180	2.0E-01	182	9.3E-02	183	6.3E-02	184	4.3E-02	186	2.0E-02	0	0.	5.2E-02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 66 A=166 (CONTINUED)	75	185	3.0E-02	187	1.4E-02	0	0.	0	0.	0	0.	0	0.	1.9E-02
PRODUCT Z= 66 PRODUCT A=167 HALF LIFE= 4.400 M	68	162	0.	164	0.	166	0.	167	0.	168	0.	170	2.0E+01	3.0E+00
	70	168	0.	170	0.	171	1.4E+01	172	1.0E+01	173	6.9E+00	174	4.7E+00	7.1E+00
		176	2.1E+00											
	71	175	3.1E+00	176	2.1E+00	0	0.	0	0.	0	0.	0	0.	3.1E+00
	72	174	4.7E+00	176	2.1E+00	177	1.5E+00	178	9.7E-01	179	6.5E-01	180	4.4E-01	8.9E-01
	73	180	4.4E-01	181	3.0E-01	0	0.	0	0.	0	0.	0	0.	3.0E-01
	74	180	4.4E-01	182	2.0E-01	183	1.4E-01	184	9.3E-02	186	4.4E-02	0	0.	1.1E-01
	75	185	6.4E-02	187	2.9E-02	0	0.	0	0.	0	0.	0	0.	4.2E-02
	76	184	9.4E-02	186	4.4E-02	187	2.9E-02	188	2.0E-02	189	1.4E-02	190	9.4E-03	1.0E-02
		192	4.4E-03											
PRODUCT Z= 67 PRODUCT A=153 HALF LIFE= 9.000 M	66	156	1.8E+05	158	9.2E+04	160	4.2E+04	161	2.8E+04	162	1.9E+04	163	1.3E+04	1.7E+04
		164	8.7E+03											
	67	165	5.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+03
	68	162	1.9E+04	164	8.8E+03	166	4.0E+03	167	2.7E+03	168	1.8E+03	170	8.4E+02	2.7E+03
	69	169	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	70	168	1.8E+03	170	8.4E+02	171	5.8E+02	172	4.0E+02	173	2.6E+02	174	1.8E+02	3.1E+02
		176	8.5E+01											
	71	175	1.3E+02	176	8.5E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	72	174	1.8E+02	176	8.6E+01	177	5.9E+01	178	4.0E+01	179	2.8E+01	180	1.9E+01	3.7E+01
PRODUCT Z= 67 PRODUCT A=154 HALF LIFE= 7.000 M	66	156	5.6E+05	158	2.8E+05	160	1.4E+05	161	9.3E+04	162	6.3E+04	163	4.2E+04	5.6E+04
		164	2.9E+04											
	67	165	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
	68	162	6.3E+04	164	2.9E+04	166	1.3E+04	167	8.9E+03	168	6.0E+03	170	2.7E+03	8.9E+03
	69	169	4.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+03
	70	168	6.0E+03	170	2.8E+03	171	1.9E+03	172	1.3E+03	173	8.8E+02	174	5.9E+02	1.0E+03
		176	2.8E+02											
	71	175	4.1E+02	176	2.8E+02	0	0.	0	0.	0	0.	0	0.	4.0E+02
	72	174	5.9E+02	176	2.8E+02	177	1.9E+02	178	1.3E+02	179	8.9E+01	180	6.2E+01	1.2E+02
PRODUCT Z= 67 PRODUCT A=155 HALF LIFE= 46.000 M	66	156	0.	158	7.8E+05	160	4.0E+05	161	2.7E+05	162	1.8E+05	163	1.2E+05	1.6E+05
		164	8.3E+04											
	67	165	5.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+04
	68	162	1.8E+05	164	8.4E+04	166	3.8E+04	167	2.6E+04	168	1.7E+04	170	7.9E+03	2.6E+04
	69	169	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
	70	168	1.8E+04	170	8.0E+03	171	5.4E+03	172	3.7E+03	173	2.5E+03	174	1.7E+03	2.9E+03
		176	8.0E+02											
	71	175	1.2E+03	176	8.0E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03
	72	174	1.7E+03	176	8.0E+02	177	5.6E+02	178	3.7E+02	179	2.6E+02	180	1.7E+02	3.5E+02
PRODUCT Z= 67 PRODUCT A=156 HALF LIFE= 57.000 M	66	156	0.	158	1.9E+06	160	9.5E+05	161	6.8E+05	162	4.6E+05	163	3.1E+05	4.0E+05
		164	2.1E+05											
	67	165	1.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+05
	68	162	4.6E+05	164	2.1E+05	166	9.7E+04	167	6.5E+04	168	4.4E+04	170	2.0E+04	6.6E+04
	69	169	3.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+04
	70	168	4.4E+04	170	2.0E+04	171	1.4E+04	172	9.2E+03	173	6.2E+03	174	4.3E+03	7.2E+03
		176	2.0E+03											
	71	175	2.9E+03	176	2.0E+03	0	0.	0	0.	0	0.	0	0.	2.9E+03
	72	174	4.3E+03	176	2.0E+03	177	1.4E+03	178	9.5E+02	179	6.3E+02	180	4.4E+02	8.6E+02
PRODUCT Z= 67 PRODUCT A=157 HALF LIFE= 18.000 M	66	156	0.	158	0.	160	1.8E+06	161	1.3E+06	162	9.4E+05	163	6.4E+05	8.1E+05
		164	4.3E+05											
	67	165	2.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+05
	68	162	9.5E+05	164	4.4E+05	166	2.0E+05	167	1.3E+05	168	9.0E+04	170	4.1E+04	1.4E+05
	69	169	6.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+04
	70	168	9.1E+04	170	4.1E+04	171	2.8E+04	172	1.9E+04	173	1.3E+04	174	8.6E+03	1.5E+04
		176	4.1E+03											
	71	175	5.9E+03	176	4.1E+03	0	0.	0	0.	0	0.	0	0.	5.9E+03
	72	174	8.7E+03	176	4.1E+03	177	2.7E+03	178	1.9E+03	179	1.3E+03	180	8.8E+02	1.7E+03
PRODUCT Z= 67 PRODUCT A=158 HALF LIFE= 10.900 M	66	156	0.	158	0.	160	2.2E+06	161	1.5E+06	162	1.1E+06	163	7.9E+05	9.7E+05
		164	5.4E+05											
	67	165	3.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+05
	68	162	1.1E+06	164	5.4E+05	166	2.5E+05	167	1.7E+05	168	1.1E+05	170	5.1E+04	1.7E+05
	69	169	7.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+04
	70	168	1.1E+05	170	5.1E+04	171	3.5E+04	172	2.3E+04	173	1.6E+04	174	1.1E+04	1.8E+04
		176	4.9E+03											
	71	175	7.3E+03	176	5.0E+03	0	0.	0	0.	0	0.	0	0.	7.2E+03
	72	174	1.1E+04	176	5.0E+03	177	3.4E+03	178	2.3E+03	179	1.6E+03	180	1.1E+03	2.1E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 67	66	156	0.	158	0.	160	0.	161	1.4E+06	162	9.8E+05	163	7.0E+05	8.2E+05
PRODUCT A=159		164	5.0E+05											
HALF LIFE= 33.000 M	67	165	3.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+05
	68	162	9.9E+05	164	5.0E+05	166	2.3E+05	167	1.6E+05	168	1.1E+05	170	4.8E+04	1.6E+05
	69	169	7.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+04
	70	168	1.1E+05	170	4.8E+04	171	3.2E+04	172	2.2E+04	173	1.5E+04	174	1.0E+04	1.7E+04
		176	4.6E+03											
	71	175	6.8E+03	176	4.6E+03	0	0.	0	0.	0	0.	0	0.	6.8E+03
	72	174	1.0E+04	176	4.6E+03	177	3.2E+03	178	2.2E+03	179	1.5E+03	180	1.0E+03	2.0E+03
PRODUCT Z= 67	66	156	0.	158	0.	160	0.	161	0.	162	7.5E+05	163	5.4E+05	4.3E+05
PRODUCT A=160		164	3.8E+05											
HALF LIFE= 25.600 M	67	165	2.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+05
	68	162	7.6E+05	164	3.9E+05	166	1.9E+05	167	1.3E+05	168	8.6E+04	170	3.9E+04	1.3E+05
	69	169	5.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+04
	70	168	8.6E+04	170	4.0E+04	171	2.6E+04	172	1.8E+04	173	1.2E+04	174	8.1E+03	1.4E+04
		176	3.7E+03											
	71	175	5.5E+03	176	3.7E+03	0	0.	0	0.	0	0.	0	0.	5.4E+03
	72	174	8.2E+03	176	3.8E+03	177	2.5E+03	178	1.7E+03	179	1.2E+03	180	8.0E+02	1.6E+03
	73	180	8.0E+02	181	5.5E+02	0	0.	0	0.	0	0.	0	0.	5.5E+02
PRODUCT Z= 67	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	3.7E+05	1.7E+05
PRODUCT A=161		164	2.6E+05											
HALF LIFE= 2.500 H	67	165	1.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+05
	68	162	0.	164	2.6E+05	166	1.4E+05	167	9.2E+04	168	6.2E+04	170	2.8E+04	9.1E+04
	69	169	4.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+04
	70	168	6.3E+04	170	2.8E+04	171	1.9E+04	172	1.3E+04	173	8.7E+03	174	5.9E+03	1.0E+04
		176	2.7E+03											
	71	175	4.0E+03	176	2.7E+03	0	0.	0	0.	0	0.	0	0.	3.9E+03
	72	174	5.9E+03	176	2.7E+03	177	1.8E+03	178	1.2E+03	179	8.5E+02	180	5.8E+02	1.1E+03
	73	180	5.9E+02	181	3.9E+02	0	0.	0	0.	0	0.	0	0.	3.9E+02
PRODUCT Z= 67	66	156	0.	158	0.	160	0.	161	0.	162	0.	163	0.	4.6E+04
PRODUCT A=162		164	1.6E+05											
HALF LIFE= 15.000 M	67	165	1.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+05
	68	162	0.	164	1.6E+05	166	8.4E+04	167	6.0E+04	168	4.1E+04	170	1.9E+04	5.8E+04
	69	169	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04
	70	168	4.1E+04	170	1.9E+04	171	1.3E+04	172	8.6E+03	173	5.8E+03	174	3.9E+03	6.7E+03
		176	1.8E+03											
	71	175	2.6E+03	176	1.8E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
	72	174	3.9E+03	176	1.8E+03	177	1.2E+03	178	8.2E+02	179	5.5E+02	180	3.8E+02	7.5E+02
	73	180	3.8E+02	181	2.6E+02	0	0.	0	0.	0	0.	0	0.	2.6E+02
PRODUCT Z= 67	67	165	2.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+00
PRODUCT A=163	68	162	0.	164	0.	166	1.5E+00	167	1.1E+00	168	7.8E-01	170	3.6E-01	1.0E+00
HALF LIFE= 60.000 Y	69	169	5.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E-01
	70	168	7.9E-01	170	3.6E-01	171	2.4E-01	172	1.6E-01	173	1.1E-01	174	7.5E-02	1.3E-01
		176	3.4E-02											
	71	175	5.0E-02	176	3.4E-02	0	0.	0	0.	0	0.	0	0.	5.0E-02
	72	174	7.5E-02	176	3.4E-02	177	2.3E-02	178	1.6E-02	179	1.1E-02	180	7.2E-03	1.4E-02
	73	180	7.2E-03	181	4.9E-03	0	0.	0	0.	0	0.	0	0.	4.9E-03
PRODUCT Z= 67	68	162	0.	164	0.	166	0.	167	0.	168	1.4E+03	170	7.2E+02	4.9E+02
PRODUCT A=166	69	169	1.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+03
HALF LIFE= 27.200 H	70	168	0.	170	7.2E+02	171	5.2E+02	172	3.5E+02	173	2.4E+02	174	1.6E+02	2.7E+02
		176	7.3E+01											
	71	175	1.1E+02	176	7.4E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	72	174	1.6E+02	176	7.4E+01	177	4.9E+01	178	3.3E+01	179	2.2E+01	180	1.5E+01	3.1E+01
	73	180	1.5E+01	181	1.0E+01	0	0.	0	0.	0	0.	0	0.	1.0E+01
	74	180	1.5E+01	182	7.0E+00	183	4.7E+00	184	3.2E+00	186	1.5E+00	0	0.	3.9E+00
	75	185	2.2E+00	187	1.0E+00	0	0.	0	0.	0	0.	0	0.	1.5E+00
PRODUCT Z= 67	68	162	0.	164	0.	166	0.	167	0.	168	0.	170	6.9E+02	1.0E+02
PRODUCT A=167	69	169	9.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+02
HALF LIFE= 3.100 H	70	168	0.	170	7.0E+02	171	5.0E+02	172	3.6E+02	173	2.4E+02	174	1.6E+02	2.7E+02
		176	7.4E+01											
	71	175	1.1E+02	176	7.5E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	72	174	1.7E+02	176	7.5E+01	177	5.1E+01	178	3.4E+01	179	2.3E+01	180	1.5E+01	3.1E+01
	73	180	1.6E+01	181	1.0E+01	0	0.	0	0.	0	0.	0	0.	1.0E+01
	74	180	1.6E+01	182	7.1E+00	183	4.8E+00	184	3.3E+00	186	1.5E+00	0	0.	4.0E+00
	75	185	2.2E+00	187	1.0E+00	0	0.	0	0.	0	0.	0	0.	1.5E+00
PRODUCT Z= 67	68	162	0.	164	0.	166	0.	167	0.	168	0.	170	2.9E+02	4.4E+01
PRODUCT A=168	70	168	0.	170	0.	171	2.1E+02	172	1.5E+02	173	1.1E+02	174	7.3E+01	1.1E+02
HALF LIFE= 3.000 M		176	3.3E+01											
	71	175	5.0E+01	176	3.3E+01	0	0.	0	0.	0	0.	0	0.	4.9E+01
	72	174	7.4E+01	176	3.4E+01	177	2.3E+01	178	1.5E+01	179	1.0E+01	180	6.9E+00	1.4E+01
	73	180	7.0E+00	181	4.7E+00	0	0.	0	0.	0	0.	0	0.	4.7E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 67 A=168 (CONTINUED)	74	180	7.0E+00	182	3.2E+00	183	2.1E+00	184	1.5E+00	186	6.7E-01	0	0.	1.8E+00
	75	185	9.9E-01	187	4.6E-01	0	0.	0	0.	0	0.	0	0.	6.6E-01
	76	184	1.5E+00	186	6.8E-01	187	4.7E-01	188	3.1E-01	189	2.2E-01	190	1.5E-01	1.6E-01
		192	6.9E-02											
PRODUCT Z= 67	70	168	0.	170	0.	171	0.	172	6.0E+01	173	4.3E+01	174	3.1E+01	3.2E+01
PRODUCT A=169		176	1.4E+01											
HALF LIFE= 4.800 M	71	175	2.1E+01	176	1.4E+01	0	0.	0	0.	0	0.	0	0.	2.1E+01
	72	174	3.1E+01	176	1.4E+01	177	9.6E+00	178	6.5E+00	179	4.4E+00	180	2.9E+00	6.0E+00
	73	180	3.0E+00	181	2.0E+00	0	0.	0	0.	0	0.	0	0.	2.0E+00
	74	180	3.0E+00	182	1.4E+00	183	9.1E-01	184	6.1E-01	186	2.8E-01	0	0.	7.6E-01
	75	185	4.2E-01	187	1.9E-01	0	0.	0	0.	0	0.	0	0.	2.8E-01
	76	184	6.2E-01	186	2.8E-01	187	1.9E-01	188	1.3E-01	189	8.9E-02	190	6.2E-02	6.8E-02
		192	2.9E-02											
PRODUCT Z= 68	67	165	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
PRODUCT A=154	68	162	6.0E+03	164	2.8E+03	166	1.2E+03	167	8.4E+02	168	5.6E+02	170	2.6E+02	8.4E+02
HALF LIFE= 4.500 M	69	169	3.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+02
	70	168	5.7E+02	170	2.6E+02	171	1.8E+02	172	1.2E+02	173	8.3E+01	174	5.5E+01	9.4E+01
		176	2.7E+01											
	71	175	3.8E+01	176	2.7E+01	0	0.	0	0.	0	0.	0	0.	3.8E+01
	72	174	5.6E+01	176	2.7E+01	177	1.8E+01	178	1.2E+01	179	8.4E+00	180	5.8E+00	1.1E+01
	73	180	5.9E+00	181	4.1E+00	0	0.	0	0.	0	0.	0	0.	4.1E+00
PRODUCT Z= 68	67	165	2.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E+04
PRODUCT A=156	68	162	8.2E+04	164	3.7E+04	166	1.7E+04	167	1.1E+04	168	7.7E+03	170	3.5E+03	1.2E+04
HALF LIFE= 12.000 M	69	169	5.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+03
	70	168	7.7E+03	170	3.5E+03	171	2.4E+03	172	1.6E+03	173	1.1E+03	174	7.5E+02	1.3E+03
		176	3.4E+02											
	71	175	5.2E+02	176	3.5E+02	0	0.	0	0.	0	0.	0	0.	5.1E+02
	72	174	7.6E+02	176	3.5E+02	177	2.4E+02	178	1.7E+02	179	1.1E+02	180	7.7E+01	1.5E+02
	73	180	7.7E+01	181	5.2E+01	0	0.	0	0.	0	0.	0	0.	5.2E+01
PRODUCT Z= 68	67	165	7.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E+04
PRODUCT A=157	68	162	2.6E+05	164	1.2E+05	166	5.3E+04	167	3.6E+04	168	2.4E+04	170	1.1E+04	3.6E+04
HALF LIFE= 24.000 M	69	169	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
	70	168	2.4E+04	170	1.1E+04	171	7.5E+03	172	5.1E+03	173	3.4E+03	174	2.3E+03	4.0E+03
		176	1.1E+03											
	71	175	1.6E+03	176	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	72	174	2.3E+03	176	1.1E+03	177	7.4E+02	178	5.1E+02	179	3.5E+02	180	2.4E+02	4.7E+02
	73	180	2.4E+02	181	1.6E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
PRODUCT Z= 68	67	165	2.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+05
PRODUCT A=158	68	162	6.7E+05	164	3.3E+05	166	1.5E+05	167	1.0E+05	168	6.8E+04	170	3.1E+04	1.0E+05
HALF LIFE= 2.400 H	69	169	4.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+04
	70	168	6.9E+04	170	3.1E+04	171	2.1E+04	172	1.4E+04	173	9.5E+03	174	6.5E+03	1.1E+04
		176	3.0E+03											
	71	175	4.4E+03	176	3.0E+03	0	0.	0	0.	0	0.	0	0.	4.3E+03
	72	174	6.5E+03	176	3.0E+03	177	2.1E+03	178	1.4E+03	179	9.5E+02	180	6.6E+02	1.3E+03
	73	180	6.7E+02	181	4.5E+02	0	0.	0	0.	0	0.	0	0.	4.5E+02
PRODUCT Z= 68	67	165	5.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+05
PRODUCT A=159	68	162	1.5E+06	164	7.7E+05	166	3.5E+05	167	2.4E+05	168	1.6E+05	170	7.3E+04	2.4E+05
HALF LIFE= 1.000 H	69	169	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	70	168	1.6E+05	170	7.4E+04	171	5.0E+04	172	3.4E+04	173	2.3E+04	174	1.5E+04	2.6E+04
		176	7.0E+03											
	71	175	1.0E+04	176	7.1E+03	0	0.	0	0.	0	0.	0	0.	1.0E+04
	72	174	1.5E+04	176	7.1E+03	177	4.8E+03	178	3.3E+03	179	2.2E+03	180	1.5E+03	3.0E+03
	73	180	1.5E+03	181	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.1E+03
PRODUCT Z= 68	67	165	4.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+05
PRODUCT A=160	68	162	1.2E+06	164	5.9E+05	166	2.9E+05	167	1.9E+05	168	1.3E+05	170	6.0E+04	1.9E+05
HALF LIFE= 29.000 H	69	169	8.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.9E+04
	70	168	1.3E+05	170	6.1E+04	171	4.0E+04	172	2.7E+04	173	1.8E+04	174	1.2E+04	2.1E+04
		176	5.7E+03											
	71	175	8.4E+03	176	5.7E+03	0	0.	0	0.	0	0.	0	0.	8.3E+03
	72	174	1.2E+04	176	5.7E+03	177	3.9E+03	178	2.7E+03	179	1.8E+03	180	1.2E+03	2.4E+03
	73	180	1.2E+03	181	8.4E+02	0	0.	0	0.	0	0.	0	0.	8.4E+02
PRODUCT Z= 68	67	165	1.0E+06	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+06
PRODUCT A=161	68	162	0.	164	1.4E+06	166	7.2E+05	167	4.9E+05	168	3.3E+05	170	1.5E+05	4.9E+05
HALF LIFE= 3.100 H	69	169	2.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+05
	70	168	3.3E+05	170	1.5E+05	171	1.0E+05	172	6.9E+04	173	4.6E+04	174	3.1E+04	5.4E+04
		176	1.4E+04											
	71	175	2.1E+04	176	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 68 A=161	72	174	3.2E+04	176	1.4E+04	177	9.8E+03	178	6.6E+03	179	4.5E+03	180	3.1E+03	6.1E+03
(CONTINUED)	73	180	3.1E+03	181	2.1E+03	0	0.	0	0.	0	0.	0	0.	2.1E+03
PRODUCT Z= 68	67	165	6.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E+05
PRODUCT A=163	68	162	0.	164	0.	166	4.7E+05	167	3.3E+05	168	2.4E+05	170	1.1E+05	3.1E+05
HALF LIFE= 75.000 M	69	169	1.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+05
	70	168	2.4E+05	170	1.1E+05	171	7.4E+04	172	5.0E+04	173	3.4E+04	174	2.3E+04	3.9E+04
		176	1.0E+04											
	71	175	1.5E+04	176	1.0E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
	72	174	2.3E+04	176	1.0E+04	177	7.0E+03	178	4.7E+03	179	3.2E+03	180	2.2E+03	4.4E+03
	73	180	2.2E+03	181	1.5E+03	0	0.	0	0.	0	0.	0	0.	1.5E+03
PRODUCT Z= 68	68	162	0.	164	0.	166	0.	167	1.1E+05	168	7.9E+04	170	4.0E+04	5.3E+04
PRODUCT A=165	69	169	5.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E+04
HALF LIFE= 10.360 H	70	168	8.0E+04	170	4.1E+04	171	2.8E+04	172	1.9E+04	173	1.3E+04	174	8.5E+03	1.5E+04
		176	3.9E+03											
	71	175	5.8E+03	176	3.9E+03	0	0.	0	0.	0	0.	0	0.	5.8E+03
	72	174	8.6E+03	176	3.9E+03	177	2.6E+03	178	1.8E+03	179	1.2E+03	180	8.1E+02	1.6E+03
	73	180	8.1E+02	181	5.5E+02	0	0.	0	0.	0	0.	0	0.	5.5E+02
	74	180	8.1E+02	182	3.7E+02	183	2.6E+02	184	1.8E+02	186	8.1E+01	0	0.	2.1E+02
	75	185	1.2E+02	187	5.7E+01	0	0.	0	0.	0	0.	0	0.	7.9E+01
PRODUCT Z= 68	70	168	0.	170	0.	171	1.8E+02	172	1.3E+02	173	9.4E+01	174	6.7E+01	9.5E+01
PRODUCT A=169		176	3.1E+01											
HALF LIFE= 9.400 D	71	175	4.6E+01	176	3.1E+01	0	0.	0	0.	0	0.	0	0.	4.5E+01
	72	174	6.8E+01	176	3.1E+01	177	2.1E+01	178	1.4E+01	179	9.6E+00	180	6.4E+00	1.3E+01
	73	180	6.4E+00	181	4.3E+00	0	0.	0	0.	0	0.	0	0.	4.3E+00
	74	180	6.5E+00	182	2.9E+00	183	2.0E+00	184	1.3E+00	186	6.1E-01	0	0.	1.6E+00
	75	185	9.1E-01	187	4.2E-01	0	0.	0	0.	0	0.	0	0.	6.0E-01
	76	184	1.3E+00	186	6.2E-01	187	4.2E-01	188	2.9E-01	189	1.9E-01	190	1.3E-01	1.5E-01
		192	6.2E-02											
PRODUCT Z= 68	70	168	0.	170	0.	171	0.	172	0.	173	2.2E+02	174	1.6E+02	9.7E+01
PRODUCT A=171		176	8.1E+01											
HALF LIFE= 7.500 H	71	175	1.1E+02	176	8.1E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	72	174	0.	176	8.2E+01	177	5.6E+01	178	3.8E+01	179	2.5E+01	180	1.7E+01	3.4E+01
	73	180	1.7E+01	181	1.2E+01	0	0.	0	0.	0	0.	0	0.	1.2E+01
	74	180	1.7E+01	182	7.8E+00	183	5.2E+00	184	3.5E+00	186	1.6E+00	0	0.	4.4E+00
	75	185	2.4E+00	187	1.1E+00	0	0.	0	0.	0	0.	0	0.	1.6E+00
	76	184	3.6E+00	186	1.6E+00	187	1.1E+00	188	7.5E-01	189	5.1E-01	190	3.5E-01	3.8E-01
		192	1.6E-01											
	77	191	2.3E-01	193	1.1E-01	0	0.	0	0.	0	0.	0	0.	1.6E-01
PRODUCT Z= 68	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	2.1E+01	8.0E+00
PRODUCT A=172		176	1.1E+01											
HALF LIFE= 49.000 H	71	175	1.5E+01	176	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.5E+01
	72	174	0.	176	1.1E+01	177	7.6E+00	178	5.2E+00	179	3.5E+00	180	2.4E+00	4.7E+00
	73	180	2.4E+00	181	1.6E+00	0	0.	0	0.	0	0.	0	0.	1.6E+00
	74	180	2.4E+00	182	1.1E+00	183	7.3E-01	184	4.9E-01	186	2.2E-01	0	0.	6.1E-01
	75	185	3.3E-01	187	1.5E-01	0	0.	0	0.	0	0.	0	0.	2.2E-01
	76	184	4.9E-01	186	2.2E-01	187	1.5E-01	188	1.0E-01	189	7.0E-02	190	4.8E-02	5.2E-02
		192	2.2E-02											
	77	191	3.3E-02	193	1.5E-02	0	0.	0	0.	0	0.	0	0.	2.2E-02
PRODUCT Z= 69	68	162	0.	164	1.1E+06	166	5.6E+05	167	3.8E+05	168	2.6E+05	170	1.2E+05	3.8E+05
PRODUCT A=161	69	169	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
HALF LIFE= 30.000 M	70	168	2.6E+05	170	1.2E+05	171	8.0E+04	172	5.3E+04	173	3.6E+04	174	2.4E+04	4.2E+04
		176	1.1E+04											
	71	175	1.6E+04	176	1.1E+04	0	0.	0	0.	0	0.	0	0.	1.6E+04
	72	174	2.4E+04	176	1.1E+04	177	7.6E+03	178	5.1E+03	179	3.5E+03	180	2.4E+03	4.7E+03
	73	180	2.4E+03	181	1.6E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	74	180	2.4E+03	182	1.1E+03	183	7.8E+02	184	5.2E+02	186	2.4E+02	0	0.	6.4E+02
PRODUCT Z= 69	68	162	0.	164	2.3E+06	166	1.2E+06	167	8.5E+05	168	5.8E+05	170	2.6E+05	8.2E+05
PRODUCT A=162	69	169	3.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+05
HALF LIFE= 22.000 M	70	168	5.8E+05	170	2.7E+05	171	1.8E+05	172	1.2E+05	173	8.1E+04	174	5.5E+04	9.4E+04
		176	2.5E+04											
	71	175	3.7E+04	176	2.5E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	72	174	5.5E+04	176	2.5E+04	177	1.7E+04	178	1.2E+04	179	7.8E+03	180	5.3E+03	1.1E+04
	73	180	5.4E+03	181	3.7E+03	0	0.	0	0.	0	0.	0	0.	3.7E+03
	74	180	5.4E+03	182	2.5E+03	183	1.7E+03	184	1.2E+03	186	5.4E+02	0	0.	1.4E+03
PRODUCT Z= 69	68	162	0.	164	0.	166	1.8E+06	167	1.3E+06	168	9.3E+05	170	4.3E+05	1.2E+06
PRODUCT A=163	69	169	6.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+05
HALF LIFE= 1.800 H	70	168	9.4E+05	170	4.3E+05	171	2.9E+05	172	2.0E+05	173	1.3E+05	174	8.9E+04	1.5E+05
		176	4.1E+04											

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 69 A=163 (CONTINUED)	71	175	6.0E+04	176	4.1E+04	0	0.	0	0.	0	0.	0	0.	6.0E+04
	72	174	9.0E+04	176	4.1E+04	177	2.8E+04	178	1.9E+04	179	1.3E+04	180	8.6E+03	1.7E+04
	73	180	8.6E+03	181	5.9E+03	0	0.	0	0.	0	0.	0	0.	5.9E+03
	74	180	8.6E+03	182	4.1E+03	183	2.7E+03	184	1.9E+03	186	8.7E+02	0	0.	2.3E+03
PRODUCT Z= 69	68	162	0.	164	0.	166	1.8E+06	167	1.3E+06	168	9.2E+05	170	4.5E+05	1.2E+06
PRODUCT A=164	69	169	6.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+05
HALF LIFE= 1.900 M	70	168	9.3E+05	170	4.5E+05	171	3.1E+05	172	2.1E+05	173	1.4E+05	174	9.5E+04	1.6E+05
		176	4.2E+04											
	71	175	6.3E+04	176	4.3E+04	0	0.	0	0.	0	0.	0	0.	6.3E+04
	72	174	9.5E+04	176	4.3E+04	177	2.9E+04	178	1.9E+04	179	1.3E+04	180	9.0E+03	1.8E+04
	73	180	9.0E+03	181	6.1E+03	0	0.	0	0.	0	0.	0	0.	6.1E+03
	74	180	9.0E+03	182	4.2E+03	183	2.9E+03	184	1.9E+03	186	9.2E+02	0	0.	2.4E+03
PRODUCT Z= 69	68	162	0.	164	0.	166	0.	167	4.7E+05	168	3.4E+05	170	1.7E+05	2.2E+05
PRODUCT A=165	69	169	2.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+05
HALF LIFE= 29.000 H	70	168	3.4E+05	170	1.7E+05	171	1.2E+05	172	8.0E+04	173	5.4E+04	174	3.6E+04	6.2E+04
		176	1.6E+04											
	71	175	2.5E+04	176	1.6E+04	0	0.	0	0.	0	0.	0	0.	2.4E+04
	72	174	3.6E+04	176	1.7E+04	177	1.1E+04	178	7.5E+03	179	5.1E+03	180	3.4E+03	6.9E+03
	73	180	3.4E+03	181	2.3E+03	0	0.	0	0.	0	0.	0	0.	2.3E+03
	74	180	3.4E+03	182	1.6E+03	183	1.1E+03	184	7.5E+02	186	3.4E+02	0	0.	9.0E+02
	75	185	5.0E+02	187	2.4E+02	0	0.	0	0.	0	0.	0	0.	3.4E+02
PRODUCT Z= 69	68	162	0.	164	0.	166	0.	167	0.	168	5.0E+05	170	2.6E+05	1.8E+05
PRODUCT A=166	69	169	3.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+05
HALF LIFE= 7.700 H	70	168	5.1E+05	170	2.6E+05	171	1.9E+05	172	1.3E+05	173	8.5E+04	174	5.7E+04	9.7E+04
		176	2.6E+04											
	71	175	3.9E+04	176	2.6E+04	0	0.	0	0.	0	0.	0	0.	3.8E+04
	72	174	5.8E+04	176	2.6E+04	177	1.8E+04	178	1.2E+04	179	8.0E+03	180	5.4E+03	1.1E+04
	73	180	5.4E+03	181	3.7E+03	0	0.	0	0.	0	0.	0	0.	3.7E+03
	74	180	5.4E+03	182	2.5E+03	183	1.7E+03	184	1.2E+03	186	5.3E+02	0	0.	1.4E+03
	75	185	8.0E+02	187	3.7E+02	0	0.	0	0.	0	0.	0	0.	5.3E+02
PRODUCT Z= 69	68	162	0.	164	0.	166	0.	167	0.	168	0.	170	1.3E+04	2.0E+03
PRODUCT A=167	69	169	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
HALF LIFE= 9.600 D	70	168	0.	170	1.4E+04	171	9.7E+03	172	6.9E+03	173	4.7E+03	174	3.2E+03	5.3E+03
		176	1.4E+03											
	71	175	2.2E+03	176	1.5E+03	0	0.	0	0.	0	0.	0	0.	2.1E+03
	72	174	3.2E+03	176	1.5E+03	177	9.9E+02	178	6.6E+02	179	4.5E+02	180	3.0E+02	6.1E+02
	73	180	3.0E+02	181	2.0E+02	0	0.	0	0.	0	0.	0	0.	2.0E+02
	74	180	3.0E+02	182	1.4E+02	183	9.4E+01	184	6.3E+01	186	3.0E+01	0	0.	7.8E+01
	75	185	4.4E+01	187	2.0E+01	0	0.	0	0.	0	0.	0	0.	2.9E+01
PRODUCT Z= 69	68	162	0.	164	0.	166	0.	167	0.	168	0.	170	9.5E+02	1.4E+02
PRODUCT A=168	70	168	0.	170	9.6E+02	171	6.8E+02	172	4.9E+02	173	3.5E+02	174	2.4E+02	3.8E+02
HALF LIFE= 86.000 D		176	1.1E+02											
	71	175	1.6E+02	176	1.1E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
	72	174	2.4E+02	176	1.1E+02	177	7.4E+01	178	5.0E+01	179	3.3E+01	180	2.2E+01	4.6E+01
	73	180	2.3E+01	181	1.5E+01	0	0.	0	0.	0	0.	0	0.	1.5E+01
	74	180	2.3E+01	182	1.0E+01	183	7.0E+00	184	4.7E+00	186	2.2E+00	0	0.	5.8E+00
	75	185	3.2E+00	187	1.5E+00	0	0.	0	0.	0	0.	0	0.	2.1E+00
	76	184	4.8E+00	186	2.2E+00	187	1.5E+00	188	1.0E+00	189	7.0E-01	190	4.9E-01	5.2E-01
		192	2.2E-01											
PRODUCT Z= 69	70	168	0.	170	0.	171	0.	172	1.0E+02	173	7.3E+01	174	5.2E+01	5.4E+01
PRODUCT A=170		176	2.5E+01											
HALF LIFE= 125.000 D	71	175	3.7E+01	176	2.5E+01	0	0.	0	0.	0	0.	0	0.	3.7E+01
	72	174	5.2E+01	176	2.5E+01	177	1.7E+01	178	1.2E+01	179	7.8E+00	180	5.3E+00	1.1E+01
	73	180	5.3E+00	181	3.5E+00	0	0.	0	0.	0	0.	0	0.	3.6E+00
	74	180	5.4E+00	182	2.4E+00	183	1.6E+00	184	1.1E+00	186	5.0E-01	0	0.	1.3E+00
	75	185	7.4E-01	187	3.4E-01	0	0.	0	0.	0	0.	0	0.	4.9E-01
	76	184	1.1E+00	186	5.1E-01	187	3.4E-01	188	2.3E-01	189	1.6E-01	190	1.1E-01	1.2E-01
		192	5.1E-02											
PRODUCT Z= 69	70	168	0.	170	0.	171	0.	172	0.	173	6.5E+00	174	4.7E+00	2.9E+00
PRODUCT A=171		176	2.4E+00											
HALF LIFE= 1.900 Y	71	175	3.4E+00	176	2.4E+00	0	0.	0	0.	0	0.	0	0.	3.3E+00
	72	174	4.7E+00	176	2.4E+00	177	1.6E+00	178	1.1E+00	179	7.4E-01	180	5.0E-01	1.0E+00
	73	180	5.0E-01	181	3.4E-01	0	0.	0	0.	0	0.	0	0.	3.4E-01
	74	180	5.1E-01	182	2.3E-01	183	1.5E-01	184	1.0E-01	186	4.7E-02	0	0.	1.3E-01
	75	185	7.1E-02	187	3.2E-02	0	0.	0	0.	0	0.	0	0.	4.6E-02
	76	184	1.1E-01	186	4.8E-02	187	3.3E-02	188	2.2E-02	189	1.5E-02	190	1.0E-02	1.1E-02
		192	4.8E-03											
	77	191	6.9E-03	193	3.3E-03	0	0.	0	0.	0	0.	0	0.	4.7E-03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 69	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	5.0E+02	2.0E+02
PRODUCT A=172		176	2.6E+02											
HALF LIFE= 64.000 H	71	175	3.6E+02	176	2.6E+02	0	0.	0	0.	0	0.	0	0.	3.6E+02
	72	174	0.	176	2.6E+02	177	1.9E+02	178	1.3E+02	179	8.5E+01	180	5.7E+01	1.1E+02
	73	180	5.8E+01	181	3.9E+01	0	0.	0	0.	0	0.	0	0.	3.9E+01
	74	180	5.8E+01	182	2.7E+01	183	1.8E+01	184	1.2E+01	186	5.4E+00	0	0.	1.5E+01
	75	185	8.1E+00	187	3.7E+00	0	0.	0	0.	0	0.	0	0.	5.3E+00
	76	184	1.2E+01	186	5.5E+00	187	3.7E+00	188	2.5E+00	189	1.7E+00	190	1.2E+00	1.3E+00
		192	5.3E-01											
	77	191	8.0E-01	193	3.7E-01	0	0.	0	0.	0	0.	0	0.	5.3E-01
PRODUCT Z= 69	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	0.	5.7E+01
PRODUCT A=173		176	4.4E+02											
HALF LIFE= 8.200 H	71	175	6.2E+02	176	4.4E+02	0	0.	0	0.	0	0.	0	0.	6.1E+02
	72	174	0.	176	4.4E+02	177	3.2E+02	178	2.3E+02	179	1.5E+02	180	1.0E+02	2.0E+02
	73	180	1.0E+02	181	7.0E+01	0	0.	0	0.	0	0.	0	0.	7.0E+01
	74	180	1.0E+02	182	4.7E+01	183	3.2E+01	184	2.2E+01	186	9.8E+00	0	0.	2.7E+01
	75	185	1.5E+01	187	6.6E+00	0	0.	0	0.	0	0.	0	0.	9.5E+00
	76	184	2.2E+01	186	9.9E+00	187	6.6E+00	188	4.5E+00	189	3.1E+00	190	2.1E+00	2.3E+00
		192	9.7E-01											
	77	191	1.4E+00	193	6.5E-01	0	0.	0	0.	0	0.	0	0.	9.3E-01
PRODUCT Z= 69	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	0.	2.8E+01
PRODUCT A=174		176	2.2E+02											
HALF LIFE= 5.200 M	71	175	0.	176	2.2E+02	0	0.	0	0.	0	0.	0	0.	5.6E+00
	72	174	0.	176	0.	177	1.6E+02	178	1.1E+02	179	7.9E+01	180	5.4E+01	8.9E+01
	73	180	5.4E+01	181	3.7E+01	0	0.	0	0.	0	0.	0	0.	3.7E+01
	74	180	5.4E+01	182	2.5E+01	183	1.7E+01	184	1.1E+01	186	5.1E+00	0	0.	1.4E+01
	75	185	7.6E+00	187	3.4E+00	0	0.	0	0.	0	0.	0	0.	5.0E+00
	76	184	1.1E+01	186	5.1E+00	187	3.5E+00	188	2.3E+00	189	1.6E+00	190	1.1E+00	1.2E+00
		192	4.9E-01											
	77	191	7.3E-01	193	3.4E-01	0	0.	0	0.	0	0.	0	0.	4.8E-01
	78	190	1.1E+00	192	5.0E-01	194	2.3E-01	195	1.6E-01	196	1.1E-01	198	5.0E-02	1.6E-01
PRODUCT Z= 69	72	174	0.	176	0.	177	0.	178	4.5E+01	179	3.2E+01	180	2.3E+01	2.5E+01
PRODUCT A=175	73	180	2.3E+01	181	1.6E+01	0	0.	0	0.	0	0.	0	0.	1.6E+01
HALF LIFE= 20.000 M	74	180	2.3E+01	182	1.1E+01	183	7.2E+00	184	4.8E+00	186	2.2E+00	0	0.	6.0E+00
	75	185	3.3E+00	187	1.5E+00	0	0.	0	0.	0	0.	0	0.	2.2E+00
	76	184	4.9E+00	186	2.2E+00	187	1.5E+00	188	1.0E+00	189	6.8E-01	190	4.6E-01	5.1E-01
		192	2.1E-01											
	77	191	3.1E-01	193	1.4E-01	0	0.	0	0.	0	0.	0	0.	2.1E-01
	78	190	4.6E-01	192	2.1E-01	194	1.0E-01	195	6.7E-02	196	4.6E-02	198	2.1E-02	7.0E-02
	79	197	3.2E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E-02
PRODUCT Z= 69	72	174	0.	176	0.	177	0.	178	0.	179	1.3E+01	180	9.0E+00	4.9E+00
PRODUCT A=176	73	180	9.1E+00	181	6.5E+00	0	0.	0	0.	0	0.	0	0.	6.5E+00
HALF LIFE= 1.500 M	74	180	0.	182	4.4E+00	183	3.0E+00	184	2.0E+00	186	9.2E-01	0	0.	2.5E+00
	75	185	1.4E+00	187	6.2E-01	0	0.	0	0.	0	0.	0	0.	8.9E-01
	76	184	2.0E+00	186	9.3E-01	187	6.2E-01	188	4.2E-01	189	2.8E-01	190	1.9E-01	2.1E-01
		192	8.7E-02											
	77	191	1.3E-01	193	5.9E-02	0	0.	0	0.	0	0.	0	0.	8.5E-02
	78	190	1.9E-01	192	8.8E-02	194	4.0E-02	195	2.8E-02	196	1.9E-02	198	8.9E-03	2.9E-02
	79	197	1.3E-02	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-02
PRODUCT Z= 70	69	169	8.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E+04
PRODUCT A=162	70	168	1.3E+05	170	5.9E+04	171	4.0E+04	172	2.7E+04	173	1.8E+04	174	1.2E+04	2.1E+04
HALF LIFE= 24.000 M		176	5.5E+03											
	71	175	8.2E+03	176	5.5E+03	0	0.	0	0.	0	0.	0	0.	8.1E+03
	72	174	1.2E+04	176	5.5E+03	177	3.7E+03	178	2.6E+03	179	1.7E+03	180	1.2E+03	2.3E+03
	73	180	1.2E+03	181	8.1E+02	0	0.	0	0.	0	0.	0	0.	8.1E+02
	74	180	1.2E+03	182	5.5E+02	183	3.8E+02	184	2.6E+02	186	1.2E+02	0	0.	3.1E+02
	75	185	1.8E+02	187	8.2E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
PRODUCT Z= 70	69	169	6.4E+05	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+05
PRODUCT A=164	70	168	8.9E+05	170	4.3E+05	171	2.9E+05	172	2.0E+05	173	1.3E+05	174	9.1E+04	1.5E+05
HALF LIFE= 75.000 M		176	4.1E+04											
	71	175	6.1E+04	176	4.1E+04	0	0.	0	0.	0	0.	0	0.	6.0E+04
	72	174	9.2E+04	176	4.1E+04	177	2.8E+04	178	1.9E+04	179	1.3E+04	180	8.6E+03	1.7E+04
	73	180	8.6E+03	181	5.8E+03	0	0.	0	0.	0	0.	0	0.	5.8E+03
	74	180	8.7E+03	182	4.0E+03	183	2.8E+03	184	1.8E+03	186	8.8E+02	0	0.	2.3E+03
	75	185	1.3E+03	187	5.9E+02	0	0.	0	0.	0	0.	0	0.	8.4E+02
PRODUCT Z= 70	69	169	1.3E+06	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+06
PRODUCT A=165	70	168	1.8E+06	170	9.3E+05	171	6.3E+05	172	4.3E+05	173	2.9E+05	174	1.9E+05	3.3E+05
HALF LIFE= 10.000 M		176	8.8E+04											
	71	175	1.3E+05	176	8.8E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
	72	174	1.9E+05	176	8.8E+04	177	6.0E+04	178	4.0E+04	179	2.7E+04	180	1.8E+04	3.7E+04
	73	180	1.8E+04	181	1.3E+04	0	0.	0	0.	0	0.	0	0.	1.3E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 70 A=165 (CONTINUED)	74	180	1.8E+04	182	8.5E+03	183	5.8E+03	184	4.0E+03	186	1.8E+03	0	0.	4.8E+03
	75	185	2.7E+03	187	1.3E+03	0	0.	0	0.	0	0.	0	0.	1.8E+03
PRODUCT Z= 70	69	169	4.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+05
PRODUCT A=166	70	168	6.1E+05	170	3.1E+05	171	2.2E+05	172	1.5E+05	173	1.0E+05	174	6.9E+04	1.2E+05
HALF LIFE= 58.000 H		176	3.2E+04											
	71	175	4.7E+04	176	3.2E+04	0	0.	0	0.	0	0.	0	0.	4.6E+04
	72	174	7.0E+04	176	3.2E+04	177	2.1E+04	178	1.4E+04	179	9.7E+03	180	6.5E+03	1.3E+04
	73	180	6.5E+03	181	4.4E+03	0	0.	0	0.	0	0.	0	0.	4.4E+03
	74	180	6.6E+03	182	3.0E+03	183	2.0E+03	184	1.4E+03	186	6.4E+02	0	0.	1.7E+03
	75	185	9.6E+02	187	4.4E+02	0	0.	0	0.	0	0.	0	0.	6.4E+02
PRODUCT Z= 70	69	169	1.7E+06	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+06
PRODUCT A=167	70	168	0.	170	1.2E+06	171	8.5E+05	172	6.1E+05	173	4.1E+05	174	2.8E+05	4.6E+05
HALF LIFE= 18.000 M		176	1.3E+05											
	71	175	1.9E+05	176	1.3E+05	0	0.	0	0.	0	0.	0	0.	1.9E+05
	72	174	2.8E+05	176	1.3E+05	177	8.7E+04	178	5.8E+04	179	3.9E+04	180	2.6E+04	5.3E+04
	73	180	2.6E+04	181	1.8E+04	0	0.	0	0.	0	0.	0	0.	1.8E+04
	74	180	2.7E+04	182	1.2E+04	183	8.2E+03	184	5.6E+03	186	2.6E+03	0	0.	6.8E+03
	75	185	3.8E+03	187	1.8E+03	0	0.	0	0.	0	0.	0	0.	2.5E+03
PRODUCT Z= 70	70	168	0.	170	0.	171	1.1E+04	172	7.7E+03	173	5.5E+03	174	3.9E+03	5.6E+03
PRODUCT A=169		176	1.8E+03											
HALF LIFE= 32.000 D	71	175	2.7E+03	176	1.8E+03	0	0.	0	0.	0	0.	0	0.	2.7E+03
	72	174	4.0E+03	176	1.8E+03	177	1.2E+03	178	8.3E+02	179	5.6E+02	180	3.8E+02	7.6E+02
	73	180	3.8E+02	181	2.5E+02	0	0.	0	0.	0	0.	0	0.	2.5E+02
	74	180	3.8E+02	182	1.7E+02	183	1.2E+02	184	7.8E+01	186	3.6E+01	0	0.	9.6E+01
	75	185	5.4E+01	187	2.5E+01	0	0.	0	0.	0	0.	0	0.	3.5E+01
	76	184	7.9E+01	186	3.6E+01	187	2.5E+01	188	1.7E+01	189	1.1E+01	190	7.8E+00	8.6E+00
		192	3.7E+00											
PRODUCT Z= 70	72	174	0.	176	0.	177	3.0E+02	178	2.1E+02	179	1.5E+02	180	1.1E+02	1.7E+02
PRODUCT A=175	73	180	1.1E+02	181	7.4E+01	0	0.	0	0.	0	0.	0	0.	7.4E+01
HALF LIFE= 4.200 D	74	180	1.1E+02	182	5.0E+01	183	3.4E+01	184	2.3E+01	186	1.0E+01	0	0.	2.8E+01
	75	185	1.5E+01	187	6.9E+00	0	0.	0	0.	0	0.	0	0.	1.0E+01
	76	184	2.3E+01	186	1.0E+01	187	7.0E+00	188	4.7E+00	189	3.2E+00	190	2.1E+00	2.4E+00
		192	9.8E-01											
	77	191	1.5E+00	193	6.7E-01	0	0.	0	0.	0	0.	0	0.	9.7E-01
	78	190	2.2E+00	192	9.9E-01	194	4.7E-01	195	3.1E-01	196	2.1E-01	198	1.0E-01	3.3E-01
PRODUCT Z= 70	72	174	0.	176	0.	177	0.	178	0.	179	1.9E+02	180	1.4E+02	7.5E+01
PRODUCT A=177	73	180	1.4E+02	181	9.9E+01	0	0.	0	0.	0	0.	0	0.	9.9E+01
HALF LIFE= 1.900 H	74	180	0.	182	7.1E+01	183	4.8E+01	184	3.2E+01	186	1.5E+01	0	0.	4.0E+01
	75	185	2.2E+01	187	1.0E+01	0	0.	0	0.	0	0.	0	0.	1.4E+01
	76	184	3.3E+01	186	1.5E+01	187	1.0E+01	188	6.7E+00	189	4.5E+00	190	3.1E+00	3.4E+00
		192	1.4E+00											
	77	191	2.1E+00	193	9.5E-01	0	0.	0	0.	0	0.	0	0.	1.4E+00
	78	190	3.1E+00	192	1.4E+00	194	6.4E-01	195	4.4E-01	196	3.0E-01	198	1.4E-01	4.6E-01
	79	197	2.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-01
PRODUCT Z= 71	70	168	0.	170	1.4E+06	171	1.0E+06	172	7.1E+05	173	4.8E+05	174	3.3E+05	5.4E+05
PRODUCT A=167		176	1.5E+05											
HALF LIFE= 55.000 M	71	175	2.2E+05	176	1.5E+05	0	0.	0	0.	0	0.	0	0.	2.2E+05
	72	174	3.3E+05	176	1.5E+05	177	1.0E+05	178	6.8E+04	179	4.6E+04	180	3.1E+04	6.3E+04
	73	180	3.1E+04	181	2.1E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04
	74	180	3.1E+04	182	1.4E+04	183	9.7E+03	184	6.5E+03	186	3.1E+03	0	0.	8.0E+03
	75	185	4.5E+03	187	2.1E+03	0	0.	0	0.	0	0.	0	0.	2.9E+03
	76	184	6.6E+03	186	3.1E+03	187	2.1E+03	188	1.4E+03	189	9.9E+02	190	6.6E+02	7.3E+02
		192	3.1E+02											
PRODUCT Z= 71	70	168	0.	170	2.7E+06	171	1.9E+06	172	1.4E+06	173	9.8E+05	174	6.7E+05	1.1E+06
PRODUCT A=168		176	3.0E+05											
HALF LIFE= 2.000 H	71	175	4.5E+05	176	3.0E+05	0	0.	0	0.	0	0.	0	0.	4.5E+05
	72	174	6.7E+05	176	3.1E+05	177	2.1E+05	178	1.4E+05	179	9.3E+04	180	6.3E+04	1.3E+05
	73	180	6.3E+04	181	4.3E+04	0	0.	0	0.	0	0.	0	0.	4.3E+04
	74	180	6.3E+04	182	2.9E+04	183	1.9E+04	184	1.3E+04	186	6.1E+03	0	0.	1.6E+04
	75	185	9.0E+03	187	4.2E+03	0	0.	0	0.	0	0.	0	0.	6.0E+03
	76	184	1.3E+04	186	6.2E+03	187	4.2E+03	188	2.8E+03	189	2.0E+03	190	1.4E+03	1.5E+03
		192	6.2E+02											
PRODUCT Z= 71	70	168	0.	170	0.	171	8.6E+05	172	6.1E+05	173	4.4E+05	174	3.1E+05	4.4E+05
PRODUCT A=169		176	1.4E+05											
HALF LIFE= 1.500 D	71	175	2.1E+05	176	1.4E+05	0	0.	0	0.	0	0.	0	0.	2.1E+05
	72	174	3.2E+05	176	1.4E+05	177	9.7E+04	178	6.6E+04	179	4.5E+04	180	3.0E+04	6.0E+04
	73	180	3.0E+04	181	2.0E+04	0	0.	0	0.	0	0.	0	0.	2.0E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES														NATURAL MILLI CURIES
PRODUCT Z= 71 A=169	74	180	3.0E+04	182	1.4E+04	183	9.2E+03	184	6.2E+03	186	2.9E+03	0	0.			7.7E+03
(CONTINUED)	75	185	4.3E+03	187	2.0E+03	0	0.	0	0.	0	0.	0	0.			2.8E+03
	76	184	6.3E+03	186	2.9E+03	187	2.0E+03	188	1.4E+03	189	9.0E+02	190	6.2E+02			6.8E+02
		192	2.9E+02													
PRODUCT Z= 71	70	168	0.	170	0.	171	0.	172	4.5E+05	173	3.2E+05	174	2.3E+05			2.4E+05
PRODUCT A=170		176	1.1E+05													
HALF LIFE= 2.000 D	71	175	1.6E+05	176	1.1E+05	0	0.	0	0.	0	0.	0	0.			1.6E+05
	72	174	2.3E+05	176	1.1E+05	177	7.5E+04	178	5.1E+04	179	3.4E+04	180	2.3E+04			4.7E+04
	73	180	2.3E+04	181	1.6E+04	0	0.	0	0.	0	0.	0	0.			1.6E+04
	74	180	2.3E+04	182	1.1E+04	183	7.1E+03	184	4.8E+03	186	2.2E+03	0	0.			5.9E+03
	75	185	3.2E+03	187	1.5E+03	0	0.	0	0.	0	0.	0	0.			2.1E+03
	76	184	4.8E+03	186	2.2E+03	187	1.5E+03	188	1.0E+03	189	7.0E+02	190	4.7E+02			5.2E+02
		192	2.3E+02													
PRODUCT Z= 71	70	168	0.	170	0.	171	0.	172	0.	173	7.0E+04	174	5.0E+04			3.1E+04
PRODUCT A=171		176	2.6E+04													
HALF LIFE= 8.200 D	71	175	3.6E+04	176	2.6E+04	0	0.	0	0.	0	0.	0	0.			3.6E+04
	72	174	5.1E+04	176	2.6E+04	177	1.8E+04	178	1.2E+04	179	8.0E+03	180	5.4E+03			1.1E+04
	73	180	5.4E+03	181	3.7E+03	0	0.	0	0.	0	0.	0	0.			3.7E+03
	74	180	5.5E+03	182	2.5E+03	183	1.7E+03	184	1.1E+03	186	5.1E+02	0	0.			1.4E+03
	75	185	7.6E+02	187	3.5E+02	0	0.	0	0.	0	0.	0	0.			5.0E+02
	76	184	1.1E+03	186	5.2E+02	187	3.5E+02	188	2.4E+02	189	1.6E+02	190	1.1E+02			1.2E+02
		192	5.1E+01													
	77	191	7.5E+01	193	3.6E+01	0	0.	0	0.	0	0.	0	0.			5.0E+01
PRODUCT Z= 71	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	4.4E+04			1.7E+04
PRODUCT A=172		176	2.2E+04													
HALF LIFE= 6.700 D	71	175	3.2E+04	176	2.3E+04	0	0.	0	0.	0	0.	0	0.			3.1E+04
	72	174	4.4E+04	176	2.3E+04	177	1.6E+04	178	1.1E+04	179	7.4E+03	180	5.0E+03			1.0E+04
	73	180	5.0E+03	181	3.4E+03	0	0.	0	0.	0	0.	0	0.			3.4E+03
	74	180	5.0E+03	182	2.3E+03	183	1.5E+03	184	1.0E+03	186	4.7E+02	0	0.			1.3E+03
	75	185	7.0E+02	187	3.2E+02	0	0.	0	0.	0	0.	0	0.			4.6E+02
	76	184	1.0E+03	186	4.8E+02	187	3.2E+02	188	2.2E+02	189	1.5E+02	190	1.0E+02			1.1E+02
		192	4.6E+01													
	77	191	7.0E+01	193	3.2E+01	0	0.	0	0.	0	0.	0	0.			4.6E+01
PRODUCT Z= 71	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	0.			2.6E+01
PRODUCT A=173		176	2.0E+02													
HALF LIFE= 1.400 Y	71	175	2.9E+02	176	2.0E+02	0	0.	0	0.	0	0.	0	0.			2.8E+02
	72	174	0.	176	2.1E+02	177	1.5E+02	178	1.0E+02	179	7.1E+01	180	4.8E+01			9.3E+01
	73	180	4.8E+01	181	3.2E+01	0	0.	0	0.	0	0.	0	0.			3.3E+01
	74	180	4.9E+01	182	2.2E+01	183	1.5E+01	184	1.0E+01	186	4.5E+00	0	0.			1.2E+01
	75	185	6.7E+00	187	3.1E+00	0	0.	0	0.	0	0.	0	0.			4.4E+00
	76	184	1.0E+01	186	4.6E+00	187	3.1E+00	188	2.1E+00	189	1.4E+00	190	9.6E-01			1.1E+00
		192	4.5E-01													
	77	191	6.5E-01	193	3.0E-01	0	0.	0	0.	0	0.	0	0.			4.3E-01
PRODUCT Z= 71	70	168	0.	170	0.	171	0.	172	0.	173	0.	174	0.			2.7E+01
PRODUCT A=174		176	2.1E+02													
HALF LIFE= 300.000 D	71	175	0.	176	2.1E+02	0	0.	0	0.	0	0.	0	0.			5.5E+00
	72	174	0.	176	2.1E+02	177	1.5E+02	178	1.1E+02	179	7.7E+01	180	5.3E+01			9.7E+01
	73	180	5.3E+01	181	3.6E+01	0	0.	0	0.	0	0.	0	0.			3.6E+01
	74	180	5.3E+01	182	2.4E+01	183	1.6E+01	184	1.1E+01	186	5.0E+00	0	0.			1.4E+01
	75	185	7.4E+00	187	3.4E+00	0	0.	0	0.	0	0.	0	0.			4.9E+00
	76	184	1.1E+01	186	5.0E+00	187	3.4E+00	188	2.3E+00	189	1.5E+00	190	1.0E+00			1.2E+00
		192	4.8E-01													
	77	191	7.1E-01	193	3.3E-01	0	0.	0	0.	0	0.	0	0.			4.7E-01
	78	190	1.1E+00	192	4.9E-01	194	2.2E-01	195	1.5E-01	196	1.1E-01	198	4.9E-02			1.6E-01
PRODUCT Z= 71	72	174	0.	176	0.	177	0.	178	0.	179	5.0E+02	180	3.6E+02			2.0E+02
PRODUCT A=177	73	180	3.6E+02	181	2.6E+02	0	0.	0	0.	0	0.	0	0.			2.6E+02
HALF LIFE= 6.700 D	74	180	3.6E+02	182	1.8E+02	183	1.2E+02	184	8.4E+01	186	3.8E+01	0	0.			1.0E+02
	75	185	5.7E+01	187	2.6E+01	0	0.	0	0.	0	0.	0	0.			3.8E+01
	76	184	8.5E+01	186	3.9E+01	187	2.6E+01	188	1.7E+01	189	1.2E+01	190	8.0E+00			8.8E+00
		192	3.6E+00													
	77	191	5.4E+00	193	2.5E+00	0	0.	0	0.	0	0.	0	0.			3.5E+00
	78	190	8.0E+00	192	3.6E+00	194	1.7E+00	195	1.1E+00	196	7.9E-01	198	3.6E-01			1.2E+00
	79	197	5.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.			5.3E-01
PRODUCT Z= 71	72	174	0.	176	0.	177	0.	178	0.	179	0.	180	1.7E+03			6.1E+02
PRODUCT A=178	73	180	1.7E+03	181	1.2E+03	0	0.	0	0.	0	0.	0	0.			1.2E+03
HALF LIFE= 5.000 M	74	180	0.	182	8.9E+02	183	6.4E+02	184	4.3E+02	186	2.0E+02	0	0.			5.1E+02
	75	185	2.9E+02	187	1.3E+02	0	0.	0	0.	0	0.	0	0.			1.9E+02
	76	184	4.4E+02	186	2.0E+02	187	1.3E+02	188	9.1E+01	189	6.1E+01	190	4.1E+01			4.5E+01
		192	1.9E+01													
	77	191	2.8E+01	193	1.3E+01	0	0.	0	0.	0	0.	0	0.			1.8E+01
	78	190	4.1E+01	192	1.9E+01	194	8.6E+00	195	5.8E+00	196	4.0E+00	198	1.8E+00			6.1E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 71 A=178 (CONTINUED)	79	197	2.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+00
PRODUCT Z= 71	73	180	0.	181	5.5E+02	0	0.	0	0.	0	0.	0	0.	5.5E+02
PRODUCT A=179	74	180	0.	182	3.9E+02	183	2.8E+02	184	2.0E+02	186	9.2E+01	0	0.	2.3E+02
HALF LIFE= 4.600 H	75	185	1.4E+02	187	6.2E+01	0	0.	0	0.	0	0.	0	0.	9.0E+01
	76	184	2.0E+02	186	9.3E+01	187	6.3E+01	188	4.2E+01	189	2.9E+01	190	1.9E+01	2.1E+01
		192	8.7E+00											
	77	191	1.3E+01	193	5.9E+00	0	0.	0	0.	0	0.	0	0.	8.5E+00
	78	190	1.9E+01	192	8.8E+00	194	4.0E+00	195	2.7E+00	196	1.8E+00	198	8.6E-01	2.8E+00
	79	197	1.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+00
PRODUCT Z= 71	74	180	0.	182	0.	183	1.3E+02	184	9.0E+01	186	4.4E+01	0	0.	5.8E+01
PRODUCT A=180	75	185	6.4E+01	187	3.0E+01	0	0.	0	0.	0	0.	0	0.	4.2E+01
HALF LIFE= 2.500 M	76	184	0.	186	4.4E+01	187	3.0E+01	188	2.0E+01	189	1.3E+01	190	9.1E+00	1.0E+01
		192	4.1E+00											
	77	191	6.1E+00	193	2.8E+00	0	0.	0	0.	0	0.	0	0.	4.0E+00
	78	190	9.2E+00	192	4.1E+00	194	1.9E+00	195	1.3E+00	196	8.6E-01	198	4.0E-01	1.3E+00
	79	197	5.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E-01
	80	196	8.7E-01	198	4.0E-01	199	2.8E-01	200	1.8E-01	201	1.2E-01	202	8.3E-02	1.7E-01
		204	3.6E-02											
PRODUCT Z= 72	71	175	1.2E+05	176	8.4E+04	0	0.	0	0.	0	0.	0	0.	1.2E+05
PRODUCT A=168	72	174	1.8E+05	176	8.4E+04	177	5.7E+04	178	3.9E+04	179	2.6E+04	180	1.7E+04	3.5E+04
HALF LIFE= 22.000 M	73	180	1.7E+04	181	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.2E+04
	74	180	1.7E+04	182	7.9E+03	183	5.4E+03	184	3.7E+03	186	1.7E+03	0	0.	4.5E+03
	75	185	2.5E+03	187	1.2E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	76	184	3.7E+03	186	1.7E+03	187	1.2E+03	188	7.8E+02	189	5.4E+02	190	3.7E+02	4.0E+02
		192	1.7E+02											
	77	191	2.5E+02	193	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.7E+02
PRODUCT Z= 72	71	175	3.4E+05	176	2.3E+05	0	0.	0	0.	0	0.	0	0.	3.3E+05
PRODUCT A=169	72	174	5.0E+05	176	2.3E+05	177	1.5E+05	178	1.0E+05	179	7.0E+04	180	4.7E+04	9.5E+04
HALF LIFE= 1.500 H	73	180	4.7E+04	181	3.2E+04	0	0.	0	0.	0	0.	0	0.	3.2E+04
	74	180	4.7E+04	182	2.2E+04	183	1.4E+04	184	9.8E+03	186	4.5E+03	0	0.	1.2E+04
	75	185	6.7E+03	187	3.1E+03	0	0.	0	0.	0	0.	0	0.	4.4E+03
	76	184	9.9E+03	186	4.5E+03	187	3.1E+03	188	2.1E+03	189	1.4E+03	190	9.8E+02	1.1E+03
		192	4.6E+02											
	77	191	6.9E+02	193	3.1E+02	0	0.	0	0.	0	0.	0	0.	4.5E+02
PRODUCT Z= 72	71	175	5.9E+05	176	4.0E+05	0	0.	0	0.	0	0.	0	0.	5.8E+05
PRODUCT A=170	72	174	8.3E+05	176	4.0E+05	177	2.7E+05	178	1.8E+05	179	1.2E+05	180	8.4E+04	1.7E+05
HALF LIFE= 12.000 H	73	180	8.4E+04	181	5.6E+04	0	0.	0	0.	0	0.	0	0.	5.6E+04
	74	180	8.5E+04	182	3.8E+04	183	2.6E+04	184	1.7E+04	186	7.9E+03	0	0.	2.1E+04
	75	185	1.2E+04	187	5.4E+03	0	0.	0	0.	0	0.	0	0.	7.7E+03
	76	184	1.7E+04	186	8.0E+03	187	5.4E+03	188	3.7E+03	189	2.5E+03	190	1.7E+03	1.9E+03
		192	8.1E+02											
	77	191	1.2E+03	193	5.5E+02	0	0.	0	0.	0	0.	0	0.	7.8E+02
PRODUCT Z= 72	71	175	9.9E+05	176	7.1E+05	0	0.	0	0.	0	0.	0	0.	9.8E+05
PRODUCT A=171	72	174	1.4E+06	176	7.1E+05	177	4.8E+05	178	3.3E+05	179	2.2E+05	180	1.5E+05	3.0E+05
HALF LIFE= 14.000 H	73	180	1.5E+05	181	1.0E+05	0	0.	0	0.	0	0.	0	0.	1.0E+05
	74	180	1.5E+05	182	6.7E+04	183	4.5E+04	184	3.1E+04	186	1.4E+04	0	0.	3.8E+04
	75	185	2.1E+04	187	9.5E+03	0	0.	0	0.	0	0.	0	0.	1.4E+04
	76	184	3.1E+04	186	1.4E+04	187	9.6E+03	188	6.5E+03	189	4.4E+03	190	3.0E+03	3.3E+03
		192	1.4E+03											
	77	191	2.0E+03	193	9.8E+02	0	0.	0	0.	0	0.	0	0.	1.4E+03
PRODUCT Z= 72	71	175	5.9E+02	176	4.2E+02	0	0.	0	0.	0	0.	0	0.	5.9E+02
PRODUCT A=172	72	174	8.3E+02	176	4.3E+02	177	3.0E+02	178	2.1E+02	179	1.4E+02	180	9.4E+01	1.9E+02
HALF LIFE= 5.000 Y	73	180	9.5E+01	181	6.4E+01	0	0.	0	0.	0	0.	0	0.	6.4E+01
	74	180	9.5E+01	182	4.4E+01	183	2.9E+01	184	2.0E+01	186	8.9E+00	0	0.	2.4E+01
	75	185	1.3E+01	187	6.0E+00	0	0.	0	0.	0	0.	0	0.	8.7E+00
	76	184	2.0E+01	186	9.0E+00	187	6.0E+00	188	4.1E+00	189	2.8E+00	190	1.9E+00	2.1E+00
		192	8.7E-01											
	77	191	1.3E+00	193	6.0E-01	0	0.	0	0.	0	0.	0	0.	8.7E-01
PRODUCT Z= 72	71	175	7.0E+05	176	5.0E+05	0	0.	0	0.	0	0.	0	0.	7.0E+05
PRODUCT A=173	72	174	0.	176	5.0E+05	177	3.6E+05	178	2.6E+05	179	1.8E+05	180	1.2E+05	2.3E+05
HALF LIFE= 24.000 H	73	180	1.2E+05	181	8.0E+04	0	0.	0	0.	0	0.	0	0.	8.0E+04
	74	180	1.2E+05	182	5.4E+04	183	3.7E+04	184	2.5E+04	186	1.1E+04	0	0.	3.0E+04
	75	185	1.7E+04	187	7.5E+03	0	0.	0	0.	0	0.	0	0.	1.1E+04
	76	184	2.5E+04	186	1.1E+04	187	7.6E+03	188	5.1E+03	189	3.5E+03	190	2.3E+03	2.6E+03
		192	1.1E+03											
	77	191	1.6E+03	193	7.4E+02	0	0.	0	0.	0	0.	0	0.	1.1E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 72	72	174	0.	176	0.	177	4.0E+03	178	2.9E+03	179	2.0E+03	180	1.5E+03	2.3E+03
PRODUCT A=175	73	180	1.5E+03	181	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.0E+03
HALF LIFE= 70.000 D	74	180	1.5E+03	182	6.8E+02	183	4.5E+02	184	3.1E+02	186	1.4E+02	0	0.	3.8E+02
	75	185	2.1E+02	187	9.4E+01	0	0.	0	0.	0	0.	0	0.	1.4E+02
	76	184	3.1E+02	186	1.4E+02	187	9.4E+01	188	6.4E+01	189	4.3E+01	190	2.9E+01	3.2E+01
		192	1.3E+01											
	77	191	2.0E+01	193	9.1E+00	0	0.	0	0.	0	0.	0	0.	1.3E+01
	78	190	2.9E+01	192	1.3E+01	194	6.3E+00	195	4.2E+00	196	2.9E+00	198	1.3E+00	4.4E+00
PRODUCT Z= 72	74	180	0.	182	0.	183	2.5E+01	184	1.8E+01	186	9.3E+00	0	0.	1.2E+01
PRODUCT A=181	75	185	1.3E+01	187	6.3E+00	0	0.	0	0.	0	0.	0	0.	8.8E+00
HALF LIFE= 43.000 D	76	184	0.	186	9.4E+00	187	6.4E+00	188	4.3E+00	189	2.9E+00	190	1.9E+00	2.2E+00
		192	8.8E-01											
	77	191	1.3E+00	193	6.0E-01	0	0.	0	0.	0	0.	0	0.	8.7E-01
	78	190	2.0E+00	192	8.9E-01	194	4.0E-01	195	2.7E-01	196	1.8E-01	198	8.4E-02	2.8E-01
	79	197	1.3E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-01
	80	196	1.8E-01	198	8.5E-02	199	5.8E-02	200	4.0E-02	201	2.6E-02	202	1.7E-02	3.7E-02
		204	7.5E-03											
PRODUCT Z= 72	74	180	0.	182	0.	183	0.	184	1.1E-07	186	5.6E-08	0	0.	5.0E-08
PRODUCT A=182	75	185	7.9E-08	187	4.0E-08	0	0.	0	0.	0	0.	0	0.	5.4E-08
HALF LIFE= 9.000 T	76	184	0.	186	5.7E-08	187	4.0E-08	188	2.7E-08	189	1.9E-08	190	1.2E-08	1.4E-08
		192	5.7E-09											
	77	191	8.4E-09	193	3.8E-09	0	0.	0	0.	0	0.	0	0.	5.5E-09
	78	190	1.3E-08	192	5.8E-09	194	2.6E-09	195	1.7E-09	196	1.2E-09	198	5.4E-10	1.8E-09
	79	197	7.9E-10	0	0.	0	0.	0	0.	0	0.	0	0.	7.9E-10
	80	196	1.2E-09	198	5.4E-10	199	3.7E-10	200	2.5E-10	201	1.7E-10	202	1.1E-10	2.3E-10
		204	4.8E-11											
PRODUCT Z= 72	74	180	0.	182	0.	183	0.	184	0.	186	1.2E+02	0	0.	3.3E+01
PRODUCT A=183	75	185	0.	187	8.3E+01	0	0.	0	0.	0	0.	0	0.	5.3E+01
HALF LIFE= 64.000 M	76	184	0.	186	0.	187	8.4E+01	188	6.0E+01	189	4.1E+01	190	2.7E+01	2.8E+01
		192	1.2E+01											
	77	191	1.9E+01	193	8.5E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	78	190	2.8E+01	192	1.3E+01	194	5.7E+00	195	3.8E+00	196	2.6E+00	198	1.2E+00	4.0E+00
	79	197	1.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+00
	80	196	2.6E+00	198	1.2E+00	199	8.1E-01	200	5.4E-01	201	3.6E-01	202	2.4E-01	5.1E-01
		204	1.0E-01											
	81	203	1.6E-01	205	7.0E-02	0	0.	0	0.	0	0.	0	0.	9.5E-02
PRODUCT Z= 73	72	174	1.5E+06	176	7.8E+05	177	5.6E+05	178	3.8E+05	179	2.5E+05	180	1.7E+05	3.4E+05
PRODUCT A=172	73	180	1.7E+05	181	1.2E+05	0	0.	0	0.	0	0.	0	0.	1.2E+05
HALF LIFE= 44.000 M	74	180	1.7E+05	182	7.9E+04	183	5.3E+04	184	3.6E+04	186	1.6E+04	0	0.	4.4E+04
	75	185	2.4E+04	187	1.1E+04	0	0.	0	0.	0	0.	0	0.	1.6E+04
	76	184	3.6E+04	186	1.6E+04	187	1.1E+04	188	7.5E+03	189	5.1E+03	190	3.5E+03	3.8E+03
		192	1.6E+03											
	77	191	2.4E+03	193	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.6E+03
	78	190	3.5E+03	192	1.6E+03	194	7.7E+02	195	5.1E+02	196	3.5E+02	198	1.7E+02	5.4E+02
PRODUCT Z= 73	72	174	0.	176	1.7E+06	177	1.2E+06	178	8.5E+05	179	5.8E+05	180	3.9E+05	7.5E+05
PRODUCT A=173	73	180	3.9E+05	181	2.6E+05	0	0.	0	0.	0	0.	0	0.	2.6E+05
HALF LIFE= 2.500 H	74	180	3.9E+05	182	1.8E+05	183	1.2E+05	184	8.1E+04	186	3.7E+04	0	0.	1.0E+05
	75	185	5.5E+04	187	2.5E+04	0	0.	0	0.	0	0.	0	0.	3.6E+04
	76	184	8.2E+04	186	3.7E+04	187	2.5E+04	188	1.7E+04	189	1.1E+04	190	7.7E+03	8.6E+03
		192	3.6E+03											
	77	191	5.3E+03	193	2.4E+03	0	0.	0	0.	0	0.	0	0.	3.5E+03
	78	190	7.8E+03	192	3.7E+03	194	1.7E+03	195	1.2E+03	196	7.9E+02	198	3.7E+02	1.2E+03
PRODUCT Z= 73	72	174	0.	176	2.8E+06	177	2.0E+06	178	1.4E+06	179	1.0E+06	180	6.9E+05	1.3E+06
PRODUCT A=174	73	180	6.9E+05	181	4.7E+05	0	0.	0	0.	0	0.	0	0.	4.7E+05
HALF LIFE= 1.300 H	74	180	6.9E+05	182	3.1E+05	183	2.1E+05	184	1.4E+05	186	6.5E+04	0	0.	1.8E+05
	75	185	9.7E+04	187	4.4E+04	0	0.	0	0.	0	0.	0	0.	6.3E+04
	76	184	1.5E+05	186	6.5E+04	187	4.4E+04	188	3.0E+04	189	2.0E+04	190	1.4E+04	1.5E+04
		192	6.3E+03											
	77	191	9.2E+03	193	4.3E+03	0	0.	0	0.	0	0.	0	0.	6.2E+03
	78	190	1.4E+04	192	6.3E+03	194	2.9E+03	195	2.0E+03	196	1.4E+03	198	6.4E+02	2.1E+03
PRODUCT Z= 73	72	174	0.	176	0.	177	1.6E+06	178	1.2E+06	179	8.4E+05	180	6.0E+05	9.5E+05
PRODUCT A=175	73	180	6.0E+05	181	4.1E+05	0	0.	0	0.	0	0.	0	0.	4.1E+05
HALF LIFE= 10.500 H	74	180	6.1E+05	182	2.8E+05	183	1.9E+05	184	1.3E+05	186	5.7E+04	0	0.	1.6E+05
	75	185	8.6E+04	187	3.9E+04	0	0.	0	0.	0	0.	0	0.	5.6E+04
	76	184	1.3E+05	186	5.8E+04	187	3.9E+04	188	2.6E+04	189	1.8E+04	190	1.2E+04	1.3E+04
		192	5.5E+03											
	77	191	8.2E+03	193	3.8E+03	0	0.	0	0.	0	0.	0	0.	5.4E+03
	78	190	1.2E+04	192	5.5E+03	194	2.6E+03	195	1.7E+03	196	1.2E+03	198	5.6E+02	1.8E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 73	72	174	0.	176	0.	177	0.	178	1.1E+06	179	8.2E+05	180	5.8E+05	6.3E+05
PRODUCT A=176	73	180	5.9E+05	181	4.2E+05	0	0.	0	0.	0	0.			4.2E+05
HALF LIFE= 8.000 H	74	180	5.9E+05	182	2.9E+05	183	1.9E+05	184	1.3E+05	186	6.0E+04	0	0.	1.6E+05
	75	185	8.8E+04	187	4.0E+04	0	0.	0	0.	0	0.	0	0.	5.8E+04
	76	184	1.3E+05	186	6.0E+04	187	4.0E+04	188	2.7E+04	189	1.8E+04	190	1.2E+04	1.4E+04
		192	5.6E+03											
	77	191	8.3E+03	193	3.8E+03	0	0.	0	0.	0	0.	0	0.	5.5E+03
	78	190	1.2E+04	192	5.7E+03	194	2.6E+03	195	1.8E+03	196	1.2E+03	198	5.8E+02	1.9E+03
	79	197	8.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E+02
PRODUCT Z= 73	72	174	0.	176	0.	177	0.	178	0.	179	1.9E+05	180	1.3E+05	7.3E+04
PRODUCT A=177	73	180	1.3E+05	181	9.6E+04	0	0.	0	0.	0	0.	0	0.	9.6E+04
HALF LIFE= 56.400 H	74	180	1.3E+05	182	6.9E+04	183	4.7E+04	184	3.1E+04	186	1.4E+04	0	0.	3.9E+04
	75	185	2.1E+04	187	9.7E+03	0	0.	0	0.	0	0.	0	0.	1.4E+04
	76	184	3.2E+04	186	1.4E+04	187	9.8E+03	188	6.5E+03	189	4.4E+03	190	3.0E+03	3.3E+03
		192	1.3E+03											
	77	191	2.0E+03	193	9.2E+02	0	0.	0	0.	0	0.	0	0.	1.3E+03
	78	190	3.0E+03	192	1.4E+03	194	6.2E+02	195	4.3E+02	196	2.9E+02	198	1.3E+02	4.4E+02
	79	197	2.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+02
PRODUCT Z= 73	72	174	0.	176	0.	177	0.	178	0.	179	0.	180	3.7E+05	1.3E+05
PRODUCT A=178	73	180	3.7E+05	181	2.6E+05	0	0.	0	0.	0	0.	0	0.	2.7E+05
HALF LIFE= 2.200 H	74	180	3.7E+05	182	1.9E+05	183	1.4E+05	184	9.2E+04	186	4.2E+04	0	0.	1.1E+05
	75	185	6.3E+04	187	2.8E+04	0	0.	0	0.	0	0.	0	0.	4.1E+04
	76	184	9.3E+04	186	4.2E+04	187	2.9E+04	188	1.9E+04	189	1.3E+04	190	8.7E+03	9.7E+03
		192	4.0E+03											
	77	191	5.9E+03	193	2.7E+03	0	0.	0	0.	0	0.	0	0.	3.9E+03
	78	190	8.8E+03	192	4.0E+03	194	1.8E+03	195	1.2E+03	196	8.4E+02	198	3.9E+02	1.3E+03
	79	197	5.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+02
PRODUCT Z= 73	73	180	0.	181	2.1E+02	0	0.	0	0.	0	0.	0	0.	2.1E+02
PRODUCT A=179	74	180	0.	182	1.5E+02	183	1.1E+02	184	7.5E+01	186	3.5E+01	0	0.	8.7E+01
HALF LIFE= 1.600 Y	75	185	5.1E+01	187	2.3E+01	0	0.	0	0.	0	0.	0	0.	3.4E+01
	76	184	7.6E+01	186	3.5E+01	187	2.3E+01	188	1.6E+01	189	1.1E+01	190	7.2E+00	8.0E+00
		192	3.3E+00											
	77	191	4.8E+00	193	2.2E+00	0	0.	0	0.	0	0.	0	0.	3.2E+00
	78	190	7.2E+00	192	3.3E+00	194	1.5E+00	195	1.0E+00	196	6.8E-01	198	3.2E-01	1.1E+00
	79	197	4.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E-01
PRODUCT Z= 73	74	180	0.	182	0.	183	0.	184	7.1E+01	186	3.6E+01	0	0.	3.2E+01
PRODUCT A=182	75	185	5.1E+01	187	2.6E+01	0	0.	0	0.	0	0.	0	0.	3.5E+01
HALF LIFE= 115.000 D	76	184	0.	186	3.6E+01	187	2.6E+01	188	1.8E+01	189	1.2E+01	190	8.0E+00	8.9E+00
		192	3.7E+00											
	77	191	5.4E+00	193	2.5E+00	0	0.	0	0.	0	0.	0	0.	3.6E+00
	78	190	8.1E+00	192	3.7E+00	194	1.7E+00	195	1.1E+00	196	7.6E-01	198	3.5E-01	1.2E+00
	79	197	5.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E-01
	80	196	7.6E-01	198	3.5E-01	199	2.4E-01	200	1.6E-01	201	1.1E-01	202	6.9E-02	1.5E-01
		204	3.1E-02											
PRODUCT Z= 73	74	180	0.	182	0.	183	0.	184	0.	186	4.0E+02	0	0.	1.1E+02
PRODUCT A=183	75	185	5.6E+02	187	2.8E+02	0	0.	0	0.	0	0.	0	0.	3.8E+02
HALF LIFE= 5.000 D	76	184	0.	186	4.0E+02	187	2.9E+02	188	2.0E+02	189	1.4E+02	190	9.3E+01	1.0E+02
		192	4.2E+01											
	77	191	6.3E+01	193	2.9E+01	0	0.	0	0.	0	0.	0	0.	4.2E+01
	78	190	9.4E+01	192	4.3E+01	194	1.9E+01	195	1.3E+01	196	8.8E+00	198	4.0E+00	1.4E+01
	79	197	5.9E+00	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+00
	80	196	8.9E+00	198	4.0E+00	199	2.7E+00	200	1.8E+00	201	1.2E+00	202	8.1E-01	1.7E+00
		204	3.5E-01											
PRODUCT Z= 73	74	180	0.	182	0.	183	0.	184	0.	186	1.3E+03	0	0.	3.6E+02
PRODUCT A=184	75	185	0.	187	9.0E+02	0	0.	0	0.	0	0.	0	0.	5.7E+02
HALF LIFE= 8.700 H	76	184	0.	186	0.	187	9.1E+02	188	6.5E+02	189	4.6E+02	190	3.2E+02	3.2E+02
		192	1.4E+02											
	77	191	2.1E+02	193	9.7E+01	0	0.	0	0.	0	0.	0	0.	1.4E+02
	78	190	3.2E+02	192	1.4E+02	194	6.6E+01	195	4.4E+01	196	3.0E+01	198	1.3E+01	4.6E+01
	79	197	2.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+01
	80	196	3.0E+01	198	1.4E+01	199	9.2E+00	200	6.2E+00	201	4.1E+00	202	2.7E+00	5.8E+00
		204	1.2E+00											
	81	203	1.8E+00	205	7.7E-01	0	0.	0	0.	0	0.	0	0.	1.1E+00
PRODUCT Z= 73	75	185	0.	187	4.9E+02	0	0.	0	0.	0	0.	0	0.	3.1E+02
PRODUCT A=185	76	184	0.	186	0.	187	0.	188	3.5E+02	189	2.5E+02	190	1.8E+02	1.7E+02
HALF LIFE= 49.000 M		192	8.2E+01											
	77	191	1.2E+02	193	5.6E+01	0	0.	0	0.	0	0.	0	0.	8.1E+01
	78	190	1.8E+02	192	8.3E+01	194	3.8E+01	195	2.6E+01	196	1.7E+01	198	7.8E+00	2.7E+01
	79	197	1.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+01
	80	196	1.7E+01	198	7.8E+00	199	5.3E+00	200	3.5E+00	201	2.3E+00	202	1.5E+00	3.3E+00
		204	6.7E-01											

	TARGET Z					MONOISOTOPIC TARGET A/MILLICURIES									NATURAL MILLI CURIES
PRODUCT Z= 73 A=185 (CONTINUED)	81	203	1.0E+00	205	4.3E-01	0	0.	0	0.	0	0.	0	0.		6.0E-01
PRODUCT Z= 73	76	184	0.	186	0.	187	0.	188	0.	189	1.1E+02	190	8.0E+01		5.5E+01
PRODUCT A=186		192	3.9E+01												
HALF LIFE= 10.000 M	77	191	5.7E+01	193	2.6E+01	0	0.	0	0.	0	0.	0	0.		3.8E+01
	78	190	0.	192	3.9E+01	194	1.8E+01	195	1.2E+01	196	8.1E+00	198	3.6E+00		1.2E+01
	79	197	5.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.		5.4E+00
	80	196	8.2E+00	198	3.7E+00	199	2.5E+00	200	1.7E+00	201	1.1E+00	202	7.2E-01		1.6E+00
		204	3.1E-01												
	81	203	4.7E-01	205	2.1E-01	0	0.	0	0.	0	0.	0	0.		2.8E-01
	82	204	3.1E-01	206	1.3E-01	207	8.9E-02	208	5.9E-02	0	0.	0	0.		8.7E-02
PRODUCT Z= 74	73	180	2.4E+05	181	1.6E+05	0	0.	0	0.	0	0.	0	0.		1.6E+05
PRODUCT A=174	74	180	2.4E+05	182	1.1E+05	183	7.5E+04	184	5.1E+04	186	2.3E+04	0	0.		6.2E+04
HALF LIFE= 29.000 M	75	185	3.4E+04	187	1.6E+04	0	0.	0	0.	0	0.	0	0.		2.2E+04
	76	184	5.1E+04	186	2.3E+04	187	1.6E+04	188	1.0E+04	189	7.1E+03	190	4.8E+03		5.3E+03
		192	2.2E+03												
	77	191	3.3E+03	193	1.5E+03	0	0.	0	0.	0	0.	0	0.		2.2E+03
	78	190	4.9E+03	192	2.2E+03	194	1.0E+03	195	7.1E+02	196	4.9E+02	198	2.3E+02		7.4E+02
	79	197	3.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.		3.3E+02
PRODUCT Z= 74	73	180	6.1E+05	181	4.2E+05	0	0.	0	0.	0	0.	0	0.		4.2E+05
PRODUCT A=175	74	180	6.2E+05	182	2.8E+05	183	1.9E+05	184	1.3E+05	186	5.8E+04	0	0.		1.6E+05
HALF LIFE= 1.500 H	75	185	8.8E+04	187	3.9E+04	0	0.	0	0.	0	0.	0	0.		5.7E+04
	76	184	1.3E+05	186	5.9E+04	187	4.0E+04	188	2.7E+04	189	1.8E+04	190	1.2E+04		1.3E+04
		192	5.6E+03												
	77	191	8.3E+03	193	3.8E+03	0	0.	0	0.	0	0.	0	0.		5.5E+03
	78	190	1.2E+04	192	5.6E+03	194	2.6E+03	195	1.8E+03	196	1.2E+03	198	5.7E+02		1.9E+03
	79	197	8.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.		8.5E+02
PRODUCT Z= 74	73	180	1.3E+06	181	9.1E+05	0	0.	0	0.	0	0.	0	0.		9.1E+05
PRODUCT A=176	74	180	1.3E+06	182	6.2E+05	183	4.2E+05	184	2.8E+05	186	1.3E+05	0	0.		3.5E+05
HALF LIFE= 2.500 H	75	185	1.9E+05	187	8.6E+04	0	0.	0	0.	0	0.	0	0.		1.2E+05
	76	184	2.8E+05	186	1.3E+05	187	8.7E+04	188	5.8E+04	189	3.9E+04	190	2.7E+04		2.9E+04
		192	1.2E+04												
	77	191	1.8E+04	193	8.3E+03	0	0.	0	0.	0	0.	0	0.		1.2E+04
	78	190	2.7E+04	192	1.2E+04	194	5.7E+03	195	3.9E+03	196	2.6E+03	198	1.2E+03		4.0E+03
	79	197	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.		1.8E+03
PRODUCT Z= 74	73	180	1.9E+06	181	1.4E+06	0	0.	0	0.	0	0.	0	0.		1.4E+06
PRODUCT A=177	74	180	1.9E+06	182	1.0E+06	183	6.8E+05	184	4.6E+05	186	2.1E+05	0	0.		5.6E+05
HALF LIFE= 2.200 H	75	185	3.1E+05	187	1.4E+05	0	0.	0	0.	0	0.	0	0.		2.0E+05
	76	184	4.6E+05	186	2.1E+05	187	1.4E+05	188	9.5E+04	189	6.4E+04	190	4.3E+04		4.8E+04
		192	2.0E+04												
	77	191	2.9E+04	193	1.3E+04	0	0.	0	0.	0	0.	0	0.		1.9E+04
	78	190	4.3E+04	192	2.0E+04	194	9.1E+03	195	6.2E+03	196	4.3E+03	198	2.0E+03		6.4E+03
	79	197	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.		2.8E+03
PRODUCT Z= 74	73	180	6.1E+04	181	4.4E+04	0	0.	0	0.	0	0.	0	0.		4.4E+04
PRODUCT A=178	74	180	6.1E+04	182	3.1E+04	183	2.2E+04	184	1.5E+04	186	6.9E+03	0	0.		1.8E+04
HALF LIFE= 22.000 D	75	185	1.0E+04	187	4.7E+03	0	0.	0	0.	0	0.	0	0.		6.8E+03
	76	184	1.5E+04	186	7.0E+03	187	4.7E+03	188	3.2E+03	189	2.1E+03	190	1.4E+03		1.6E+03
		192	6.5E+02												
	77	191	9.7E+02	193	4.4E+02	0	0.	0	0.	0	0.	0	0.		6.4E+02
	78	190	1.4E+03	192	6.6E+02	194	3.0E+02	195	2.0E+02	196	1.4E+02	198	6.4E+01		2.1E+02
	79	197	9.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.		9.6E+01
PRODUCT Z= 74	73	180	0.	181	1.2E+06	0	0.	0	0.	0	0.	0	0.		1.2E+06
PRODUCT A=179	74	180	0.	182	8.8E+05	183	6.3E+05	184	4.5E+05	186	2.1E+05	0	0.		5.2E+05
HALF LIFE= 38.000 M	75	185	3.1E+05	187	1.4E+05	0	0.	0	0.	0	0.	0	0.		2.0E+05
	76	184	4.5E+05	186	2.1E+05	187	1.4E+05	188	9.4E+04	189	6.4E+04	190	4.3E+04		4.7E+04
		192	1.9E+04												
	77	191	2.9E+04	193	1.3E+04	0	0.	0	0.	0	0.	0	0.		1.9E+04
	78	190	4.3E+04	192	2.0E+04	194	8.9E+03	195	6.1E+03	196	4.1E+03	198	1.9E+03		6.3E+03
	79	197	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.		2.8E+03
PRODUCT Z= 74	74	180	0.	182	0.	183	1.8E+03	184	1.3E+03	186	6.7E+02	0	0.		8.5E+02
PRODUCT A=181	75	185	9.4E+02	187	4.6E+02	0	0.	0	0.	0	0.	0	0.		6.3E+02
HALF LIFE= 130.000 D	76	184	1.3E+03	186	6.7E+02	187	4.6E+02	188	3.1E+02	189	2.1E+02	190	1.4E+02		1.6E+02
		192	6.3E+01												
	77	191	9.6E+01	193	4.3E+01	0	0.	0	0.	0	0.	0	0.		6.2E+01
	78	190	1.4E+02	192	6.4E+01	194	2.9E+01	195	2.0E+01	196	1.3E+01	198	6.1E+00		2.0E+01
	79	197	9.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.		9.0E+00
	80	196	1.3E+01	198	6.1E+00	199	4.2E+00	200	2.9E+00	201	1.9E+00	202	1.2E+00		2.6E+00
		204	5.4E-01												

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 74 PRODUCT A=185 HALF LIFE= 74.000 D	75	185	0.	187	1.0E+02	0	0.	0	0.	0	0.	0	0.	6.5E+01
	76	184	0.	186	0.	187	1.0E+02	188	7.4E+01	189	5.3E+01	190	3.8E+01	3.7E+01
		192	1.7E+01											
	77	191	2.6E+01	193	1.2E+01	0	0.	0	0.	0	0.	0	0.	1.7E+01
	78	190	3.8E+01	192	1.7E+01	194	7.9E+00	195	5.4E+00	196	3.6E+00	198	1.6E+00	5.6E+00
	79	197	2.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+00
	80	196	3.6E+00	198	1.6E+00	199	1.1E+00	200	7.4E-01	201	4.9E-01	202	3.2E-01	6.9E-01
		204	1.4E-01											
	81	203	2.1E-01	205	9.1E-02	0	0.	0	0.	0	0.	0	0.	1.3E-01
PRODUCT Z= 74 PRODUCT A=187 HALF LIFE= 24.000 H	76	184	0.	186	0.	187	0.	188	0.	189	7.1E+02	190	5.1E+02	3.5E+02
		192	2.6E+02											
	77	191	3.6E+02	193	1.8E+02	0	0.	0	0.	0	0.	0	0.	2.5E+02
	78	190	0.	192	2.6E+02	194	1.2E+02	195	8.0E+01	196	5.4E+01	198	2.5E+01	8.4E+01
	79	197	3.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+01
	80	196	5.5E+01	198	2.5E+01	199	1.7E+01	200	1.1E+01	201	7.3E+00	202	4.8E+00	1.0E+01
		204	2.1E+00											
	81	203	3.2E+00	205	1.4E+00	0	0.	0	0.	0	0.	0	0.	1.9E+00
	82	204	2.1E+00	206	9.1E-01	207	5.8E-01	208	3.9E-01	0	0.	0	0.	5.8E-01
PRODUCT Z= 74 PRODUCT A=188 HALF LIFE= 69.000 D	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	4.7E+00	2.2E+00
		192	2.4E+00											
	77	191	3.4E+00	193	1.7E+00	0	0.	0	0.	0	0.	0	0.	2.3E+00
	78	190	0.	192	2.4E+00	194	1.2E+00	195	8.0E-01	196	5.4E-01	198	2.5E-01	8.3E-01
	79	197	3.6E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E-01
	80	196	5.4E-01	198	2.5E-01	199	1.7E-01	200	1.1E-01	201	7.3E-02	202	4.7E-02	1.0E-01
		204	2.0E-02											
	81	203	3.1E-02	205	1.3E-02	0	0.	0	0.	0	0.	0	0.	1.8E-02
	82	204	2.0E-02	206	8.8E-03	207	5.8E-03	208	3.7E-03	0	0.	0	0.	5.6E-03
	83	209	2.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	2.5E-03
PRODUCT Z= 74 PRODUCT A=189 HALF LIFE= 11.000 M	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	0.	4.5E+01
		192	1.1E+02											
	77	191	0.	193	7.8E+01	0	0.	0	0.	0	0.	0	0.	4.9E+01
	78	190	0.	192	0.	194	5.6E+01	195	3.8E+01	196	2.6E+01	198	1.2E+01	3.8E+01
	79	197	1.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+01
	80	196	2.6E+01	198	1.2E+01	199	7.9E+00	200	5.3E+00	201	3.4E+00	202	2.3E+00	4.9E+00
		204	9.5E-01											
	81	203	1.5E+00	205	6.3E-01	0	0.	0	0.	0	0.	0	0.	8.8E-01
	82	204	9.6E-01	206	4.1E-01	207	2.7E-01	208	1.8E-01	0	0.	0	0.	2.7E-01
	83	209	1.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E-01
PRODUCT Z= 75 PRODUCT A=177 HALF LIFE= 17.000 M	74	180	7.9E+05	182	4.0E+05	183	2.7E+05	184	1.8E+05	186	8.4E+04	0	0.	2.3E+05
	75	185	1.2E+05	187	5.7E+04	0	0.	0	0.	0	0.	0	0.	8.2E+04
	76	184	1.9E+05	186	8.4E+04	187	5.7E+04	188	3.8E+04	189	2.6E+04	190	1.7E+04	1.9E+04
		192	7.9E+03											
	77	191	1.2E+04	193	5.4E+03	0	0.	0	0.	0	0.	0	0.	7.7E+03
	78	190	1.8E+04	192	7.9E+03	194	3.7E+03	195	2.5E+03	196	1.7E+03	198	7.9E+02	2.6E+03
	79	197	1.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+03
	80	196	1.7E+03	198	8.0E+02	199	5.5E+02	200	3.7E+02	201	2.5E+02	202	1.6E+02	3.5E+02
		204	7.3E+01											
PRODUCT Z= 75 PRODUCT A=178 HALF LIFE= 15.000 M	74	180	1.8E+06	182	9.4E+05	183	6.7E+05	184	4.6E+05	186	2.1E+05	0	0.	5.4E+05
	75	185	3.1E+05	187	1.4E+05	0	0.	0	0.	0	0.	0	0.	2.0E+05
	76	184	4.6E+05	186	2.1E+05	187	1.4E+05	188	9.6E+04	189	6.4E+04	190	4.3E+04	4.8E+04
		192	1.9E+04											
	77	191	2.9E+04	193	1.3E+04	0	0.	0	0.	0	0.	0	0.	1.9E+04
	78	190	4.3E+04	192	2.0E+04	194	9.0E+03	195	6.1E+03	196	4.2E+03	198	1.9E+03	6.4E+03
	79	197	2.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+03
	80	196	4.2E+03	198	1.9E+03	199	1.3E+03	200	9.2E+02	201	6.0E+02	202	4.0E+02	8.4E+02
		204	1.8E+02											
PRODUCT Z= 75 PRODUCT A=179 HALF LIFE= 19.700 M	74	180	0.	182	1.9E+06	183	1.3E+06	184	9.6E+05	186	4.4E+05	0	0.	1.1E+06
	75	185	6.5E+05	187	3.0E+05	0	0.	0	0.	0	0.	0	0.	4.3E+05
	76	184	9.7E+05	186	4.4E+05	187	3.0E+05	188	2.0E+05	189	1.4E+05	190	9.1E+04	1.0E+05
		192	4.1E+04											
	77	191	6.2E+04	193	2.8E+04	0	0.	0	0.	0	0.	0	0.	4.0E+04
	78	190	9.2E+04	192	4.2E+04	194	1.9E+04	195	1.3E+04	196	8.7E+03	198	4.1E+03	1.3E+04
	79	197	6.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+03
	80	196	8.8E+03	198	4.1E+03	199	2.8E+03	200	1.9E+03	201	1.3E+03	202	8.3E+02	1.8E+03
		204	3.6E+02											
PRODUCT Z= 75 PRODUCT A=180 HALF LIFE= 2.400 M	74	180	0.	182	2.7E+06	183	1.9E+06	184	1.4E+06	186	6.6E+05	0	0.	1.6E+06
	75	185	9.7E+05	187	4.5E+05	0	0.	0	0.	0	0.	0	0.	6.4E+05
	76	184	1.4E+06	186	6.6E+05	187	4.5E+05	188	3.0E+05	189	2.0E+05	190	1.4E+05	1.5E+05
		192	6.2E+04											
	77	191	9.3E+04	193	4.2E+04	0	0.	0	0.	0	0.	0	0.	6.1E+04
	78	190	1.4E+05	192	6.3E+04	194	2.8E+04	195	1.9E+04	196	1.3E+04	198	6.0E+03	2.0E+04

	TARGET Z		MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 75 A=180 (CONTINUED)	79	197	8.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.		8.8E+03
	80	196	1.3E+04	198	6.1E+03	199	4.2E+03	200	2.8E+03	201	1.9E+03	202	1.3E+03		2.6E+03
		204	5.4E+02												
PRODUCT Z= 75	74	180	0.	182	0.	183	1.1E+06	184	7.9E+05	186	4.0E+05	0	0.		5.1E+05
PRODUCT A=181	75	185	5.6E+05	187	2.7E+05	0	0.	0	0.	0	0.	0	0.		3.8E+05
HALF LIFE= 19.000 H	76	184	7.9E+05	186	4.1E+05	187	2.8E+05	188	1.9E+05	189	1.3E+05	190	8.4E+04		9.3E+04
		192	3.8E+04												
	77	191	5.8E+04	193	2.6E+04	0	0.	0	0.	0	0.	0	0.		3.8E+04
	78	190	8.5E+04	192	3.8E+04	194	1.7E+04	195	1.2E+04	196	7.9E+03	198	3.7E+03		1.2E+04
	79	197	5.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.		5.4E+03
	80	196	8.0E+03	198	3.7E+03	199	2.5E+03	200	1.7E+03	201	1.1E+03	202	7.5E+02		1.6E+03
		204	3.2E+02												
PRODUCT Z= 75	74	180	0.	182	0.	183	0.	184	2.7E+05	186	1.4E+05	0	0.		1.2E+05
PRODUCT A=182	75	185	1.9E+05	187	9.7E+04	0	0.	0	0.	0	0.	0	0.		1.3E+05
HALF LIFE= 64.000 H	76	184	2.7E+05	186	1.4E+05	187	9.8E+04	188	6.6E+04	189	4.5E+04	190	3.0E+04		3.3E+04
		192	1.4E+04												
	77	191	2.0E+04	193	9.2E+03	0	0.	0	0.	0	0.	0	0.		1.3E+04
	78	190	3.0E+04	192	1.4E+04	194	6.2E+03	195	4.2E+03	196	2.8E+03	198	1.3E+03		4.4E+03
	79	197	1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.		1.9E+03
	80	196	2.9E+03	198	1.3E+03	199	8.9E+02	200	6.0E+02	201	4.0E+02	202	2.6E+02		5.6E+02
		204	1.2E+02												
PRODUCT Z= 75	74	180	0.	182	0.	183	0.	184	0.	186	4.5E+03	0	0.		1.3E+03
PRODUCT A=183	75	185	6.3E+03	187	3.2E+03	0	0.	0	0.	0	0.	0	0.		4.4E+03
HALF LIFE= 70.000 D	76	184	0.	186	4.5E+03	187	3.2E+03	188	2.3E+03	189	1.6E+03	190	1.1E+03		1.2E+03
		192	4.8E+02												
	77	191	7.2E+02	193	3.3E+02	0	0.	0	0.	0	0.	0	0.		4.7E+02
	78	190	1.1E+03	192	4.9E+02	194	2.2E+02	195	1.5E+02	196	1.0E+02	198	4.5E+01		1.5E+02
	79	197	6.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.		6.7E+01
	80	196	1.0E+02	198	4.6E+01	199	3.1E+01	200	2.1E+01	201	1.4E+01	202	9.2E+00		2.0E+01
		204	4.0E+00												
PRODUCT Z= 75	74	180	0.	182	0.	183	0.	184	0.	186	5.8E+03	0	0.		1.7E+03
PRODUCT A=184	75	185	0.	187	4.2E+03	0	0.	0	0.	0	0.	0	0.		2.6E+03
HALF LIFE= 38.000 D	76	184	0.	186	5.9E+03	187	4.2E+03	188	3.0E+03	189	2.1E+03	190	1.5E+03		1.6E+03
		192	6.6E+02												
	77	191	9.9E+02	193	4.5E+02	0	0.	0	0.	0	0.	0	0.		6.5E+02
	78	190	1.5E+03	192	6.7E+02	194	3.1E+02	195	2.0E+02	196	1.4E+02	198	6.2E+01		2.1E+02
	79	197	9.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.		9.3E+01
	80	196	1.4E+02	198	6.3E+01	199	4.2E+01	200	2.9E+01	201	1.9E+01	202	1.2E+01		2.7E+01
		204	5.3E+00												
	81	203	8.3E+00	205	3.6E+00	0	0.	0	0.	0	0.	0	0.		5.0E+00
PRODUCT Z= 75	76	184	0.	186	0.	187	0.	188	1.1E+04	189	8.0E+03	190	5.7E+03		5.4E+03
PRODUCT A=186		192	2.8E+03												
HALF LIFE= 90.000 H	77	191	4.1E+03	193	1.9E+03	0	0.	0	0.	0	0.	0	0.		2.7E+03
	78	190	5.8E+03	192	2.8E+03	194	1.3E+03	195	8.5E+02	196	5.8E+02	198	2.6E+02		8.9E+02
	79	197	3.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.		3.9E+02
	80	196	5.9E+02	198	2.6E+02	199	1.8E+02	200	1.2E+02	201	7.8E+01	202	5.1E+01		1.1E+02
		204	2.2E+01												
	81	203	3.4E+01	205	1.5E+01	0	0.	0	0.	0	0.	0	0.		2.0E+01
	82	204	2.2E+01	206	9.5E+00	207	6.3E+00	208	4.3E+00	0	0.	0	0.		6.2E+00
PRODUCT Z= 75	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	6.6E+03		3.2E+03
PRODUCT A=188		192	3.4E+03												
HALF LIFE= 16.800 H	77	191	4.8E+03	193	2.4E+03	0	0.	0	0.	0	0.	0	0.		3.3E+03
	78	190	0.	192	3.4E+03	194	1.7E+03	195	1.1E+03	196	7.5E+02	198	3.5E+02		1.2E+03
	79	197	5.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.		5.1E+02
	80	196	7.6E+02	198	3.5E+02	199	2.3E+02	200	1.6E+02	201	1.0E+02	202	6.6E+01		1.5E+02
		204	2.9E+01												
	81	203	4.4E+01	205	1.9E+01	0	0.	0	0.	0	0.	0	0.		2.6E+01
	82	204	2.9E+01	206	1.2E+01	207	8.2E+00	208	5.3E+00	0	0.	0	0.		7.9E+00
	83	209	3.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.		3.5E+00
PRODUCT Z= 75	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	0.		5.8E+02
PRODUCT A=189		192	1.4E+03												
HALF LIFE= 24.000 H	77	191	2.0E+03	193	1.0E+03	0	0.	0	0.	0	0.	0	0.		1.4E+03
	78	190	0.	192	1.4E+03	194	7.2E+02	195	4.9E+02	196	3.3E+02	198	1.5E+02		5.1E+02
	79	197	2.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.		2.2E+02
	80	196	3.3E+02	198	1.5E+02	199	1.0E+02	200	6.8E+01	201	4.4E+01	202	2.9E+01		6.4E+01
		204	1.2E+01												
	81	203	1.9E+01	205	8.1E+00	0	0.	0	0.	0	0.	0	0.		1.1E+01
	82	204	1.2E+01	206	5.3E+00	207	3.5E+00	208	2.3E+00	0	0.	0	0.		3.4E+00
	83	209	1.5E+00	0	0.	0	0.	0	0.	0	0.	0	0.		1.5E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 75 PRODUCT A=190 HALF LIFE= 3.000 M	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	0.	5.7E+02
		192	1.4E+03											
	77	191	0.	193	9.9E+02	0	0.	0	0.	0	0.	0	0.	6.2E+02
	78	190	0.	192	0.	194	7.1E+02	195	5.1E+02	196	3.4E+02	198	1.6E+02	5.0E+02
	79	197	2.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+02
	80	196	3.5E+02	198	1.6E+02	199	1.1E+02	200	7.2E+01	201	4.7E+01	202	3.0E+01	6.7E+01
		204	1.3E+01											
	81	203	2.0E+01	205	8.4E+00	0	0.	0	0.	0	0.	0	0.	1.2E+01
	82	204	1.3E+01	206	5.6E+00	207	3.6E+00	208	2.4E+00	0	0.	0	0.	3.6E+00
	83	209	1.6E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+00
PRODUCT Z= 75 PRODUCT A=191 HALF LIFE= 10.000 M	77	191	0.	193	4.7E+02	0	0.	0	0.	0	0.	0	0.	2.9E+02
	78	190	0.	192	0.	194	3.4E+02	195	2.4E+02	196	1.7E+02	198	7.8E+01	2.4E+02
	79	197	1.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+02
	80	196	1.7E+02	198	7.9E+01	199	5.3E+01	200	3.6E+01	201	2.4E+01	202	1.5E+01	3.3E+01
		204	6.5E+00											
	81	203	9.9E+00	205	4.2E+00	0	0.	0	0.	0	0.	0	0.	5.9E+00
	82	204	6.5E+00	206	2.8E+00	207	1.8E+00	208	1.2E+00	0	0.	0	0.	1.8E+00
	83	209	7.8E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.8E-01
PRODUCT Z= 76 PRODUCT A=180 HALF LIFE= 22.000 M	75	185	4.4E+05	187	2.0E+05	0	0.	0	0.	0	0.	0	0.	2.9E+05
	76	184	6.2E+05	186	3.0E+05	187	2.0E+05	188	1.4E+05	189	9.3E+04	190	6.3E+04	6.9E+04
		192	2.8E+04											
	77	191	4.2E+04	193	1.9E+04	0	0.	0	0.	0	0.	0	0.	2.8E+04
	78	190	6.4E+04	192	2.8E+04	194	1.3E+04	195	8.7E+03	196	5.9E+03	198	2.7E+03	9.1E+03
	79	197	4.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+03
	80	196	6.0E+03	198	2.8E+03	199	1.9E+03	200	1.3E+03	201	8.5E+02	202	5.7E+02	1.2E+03
		204	2.4E+02											
PRODUCT Z= 76 PRODUCT A=181 HALF LIFE= 105.000 M	75	185	1.0E+06	187	4.9E+05	0	0.	0	0.	0	0.	0	0.	6.8E+05
	76	184	1.4E+06	186	7.2E+05	187	4.9E+05	188	3.3E+05	189	2.2E+05	190	1.5E+05	1.7E+05
		192	6.8E+04											
	77	191	1.0E+05	193	4.6E+04	0	0.	0	0.	0	0.	0	0.	6.7E+04
	78	190	1.5E+05	192	6.9E+04	194	3.1E+04	195	2.1E+04	196	1.4E+04	198	6.5E+03	2.2E+04
	79	197	9.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.7E+03
	80	196	1.4E+04	198	6.6E+03	199	4.5E+03	200	3.1E+03	201	2.0E+03	202	1.3E+03	2.8E+03
		204	5.8E+02											
PRODUCT Z= 76 PRODUCT A=182 HALF LIFE= 21.000 H	75	185	1.1E+06	187	5.5E+05	0	0.	0	0.	0	0.	0	0.	7.4E+05
	76	184	1.5E+06	186	7.7E+05	187	5.5E+05	188	3.7E+05	189	2.5E+05	190	1.7E+05	1.9E+05
		192	7.8E+04											
	77	191	1.1E+05	193	5.2E+04	0	0.	0	0.	0	0.	0	0.	7.5E+04
	78	190	1.7E+05	192	7.8E+04	194	3.5E+04	195	2.4E+04	196	1.6E+04	198	7.3E+03	2.5E+04
	79	197	1.1E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+04
	80	196	1.6E+04	198	7.4E+03	199	5.0E+03	200	3.4E+03	201	2.3E+03	202	1.5E+03	3.2E+03
		204	6.6E+02											
PRODUCT Z= 76 PRODUCT A=183 HALF LIFE= 14.000 H	75	185	1.8E+06	187	9.2E+05	0	0.	0	0.	0	0.	0	0.	1.2E+06
	76	184	0.	186	1.3E+06	187	9.3E+05	188	6.6E+05	189	4.5E+05	190	3.0E+05	3.3E+05
		192	1.4E+05											
	77	191	2.1E+05	193	9.4E+04	0	0.	0	0.	0	0.	0	0.	1.4E+05
	78	190	3.1E+05	192	1.4E+05	194	6.3E+04	195	4.2E+04	196	2.9E+04	198	1.3E+04	4.4E+04
	79	197	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
	80	196	2.9E+04	198	1.3E+04	199	8.9E+03	200	6.0E+03	201	4.0E+03	202	2.6E+03	5.6E+03
		204	1.1E+03											
PRODUCT Z= 76 PRODUCT A=185 HALF LIFE= 94.000 D	75	185	0.	187	8.1E+03	0	0.	0	0.	0	0.	0	0.	5.1E+03
	76	184	0.	186	0.	187	8.2E+03	188	5.8E+03	189	4.2E+03	190	3.0E+03	2.9E+03
		192	1.4E+03											
	77	191	2.0E+03	193	9.2E+02	0	0.	0	0.	0	0.	0	0.	1.3E+03
	78	190	3.0E+03	192	1.4E+03	194	6.2E+02	195	4.2E+02	196	2.8E+02	198	1.3E+02	4.4E+02
	79	197	1.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+02
	80	196	2.9E+02	198	1.3E+02	199	8.7E+01	200	5.9E+01	201	3.9E+01	202	2.5E+01	5.5E+01
		204	1.1E+01											
	81	203	1.7E+01	205	7.2E+00	0	0.	0	0.	0	0.	0	0.	1.0E+01
PRODUCT Z= 76 PRODUCT A=191 HALF LIFE= 15.000 D	77	191	0.	193	4.7E+02	0	0.	0	0.	0	0.	0	0.	2.9E+02
	78	190	0.	192	0.	194	3.3E+02	195	2.4E+02	196	1.7E+02	198	7.8E+01	2.4E+02
	79	197	1.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+02
	80	196	1.7E+02	198	7.9E+01	199	5.3E+01	200	3.6E+01	201	2.4E+01	202	1.5E+01	3.3E+01
		204	6.4E+00											
	81	203	9.9E+00	205	4.2E+00	0	0.	0	0.	0	0.	0	0.	5.9E+00
	82	204	6.5E+00	206	2.7E+00	207	1.8E+00	208	1.2E+00	0	0.	0	0.	1.8E+00
	83	209	7.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.7E-01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 76	78	190	0.	192	0.	194	0.	195	5.6E+02	196	4.0E+02	198	2.0E+02	3.1E+02
PRODUCT A=193	79	197	2.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+02
HALF LIFE= 32.000 H	80	196	0.	198	2.1E+02	199	1.4E+02	200	9.4E+01	201	6.1E+01	202	4.0E+01	8.7E+01
		204	1.7E+01											
	81	203	2.6E+01	205	1.1E+01	0	0.	0	0.	0	0.	0	0.	1.6E+01
	82	204	1.7E+01	206	7.2E+00	207	4.7E+00	208	3.0E+00	0	0.	0	0.	4.6E+00
	83	209	2.0E+00	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+00
PRODUCT Z= 76	78	190	0.	192	0.	194	0.	195	0.	196	1.5E-01	198	7.6E-02	4.3E-02
PRODUCT A=194	79	197	1.1E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E-01
HALF LIFE= 6.000 Y	80	196	0.	198	7.7E-02	199	5.5E-02	200	3.7E-02	201	2.4E-02	202	1.6E-02	3.4E-02
		204	6.8E-03											
	81	203	1.0E-02	205	4.4E-03	0	0.	0	0.	0	0.	0	0.	6.1E-03
	82	204	6.8E-03	206	2.9E-03	207	1.9E-03	208	1.2E-03	0	0.	0	0.	1.8E-03
	83	209	7.8E-04	0	0.	0	0.	0	0.	0	0.	0	0.	7.8E-04
PRODUCT Z= 76	78	190	0.	192	0.	194	0.	195	0.	196	0.	198	1.1E+02	8.1E+00
PRODUCT A=195	80	196	0.	198	0.	199	7.9E+01	200	5.7E+01	201	3.7E+01	202	2.4E+01	3.9E+01
HALF LIFE= 6.000 M		204	1.0E+01											
	81	203	1.6E+01	205	6.8E+00	0	0.	0	0.	0	0.	0	0.	9.5E+00
	82	204	1.0E+01	206	4.4E+00	207	2.9E+00	208	1.9E+00	0	0.	0	0.	2.8E+00
	83	209	1.2E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+00
PRODUCT Z= 77	76	184	7.4E+05	186	3.8E+05	187	2.7E+05	188	1.8E+05	189	1.2E+05	190	8.3E+04	9.2E+04
PRODUCT A=182		192	3.8E+04											
HALF LIFE= 15.000 M	77	191	5.6E+04	193	2.5E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	78	190	8.4E+04	192	3.8E+04	194	1.7E+04	195	1.2E+04	196	7.8E+03	198	3.6E+03	1.2E+04
	79	197	5.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+03
	80	196	7.9E+03	198	3.6E+03	199	2.4E+03	200	1.7E+03	201	1.1E+03	202	7.2E+02	1.5E+03
		204	3.2E+02											
	81	203	4.8E+02	205	2.1E+02	0	0.	0	0.	0	0.	0	0.	2.9E+02
PRODUCT Z= 77	76	184	0.	186	9.4E+05	187	6.8E+05	188	4.8E+05	189	3.3E+05	190	2.2E+05	2.4E+05
PRODUCT A=183		192	1.0E+05											
HALF LIFE= 58.000 M	77	191	1.5E+05	193	6.8E+04	0	0.	0	0.	0	0.	0	0.	9.8E+04
	78	190	2.2E+05	192	1.0E+05	194	4.6E+04	195	3.1E+04	196	2.1E+04	198	9.4E+03	3.2E+04
	79	197	1.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+04
	80	196	2.1E+04	198	9.5E+03	199	6.5E+03	200	4.4E+03	201	2.9E+03	202	1.9E+03	4.1E+03
		204	8.3E+02											
	81	203	1.2E+03	205	5.6E+02	0	0.	0	0.	0	0.	0	0.	7.6E+02
PRODUCT Z= 77	76	184	0.	186	2.1E+06	187	1.5E+06	188	1.1E+06	189	7.6E+05	190	5.2E+05	5.5E+05
PRODUCT A=184		192	2.3E+05											
HALF LIFE= 3.200 H	77	191	3.5E+05	193	1.6E+05	0	0.	0	0.	0	0.	0	0.	2.3E+05
	78	190	5.2E+05	192	2.4E+05	194	1.1E+05	195	7.2E+04	196	4.9E+04	198	2.2E+04	7.6E+04
	79	197	3.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	3.3E+04
	80	196	4.9E+04	198	2.2E+04	199	1.5E+04	200	1.0E+04	201	6.7E+03	202	4.4E+03	9.5E+03
		204	1.9E+03											
	81	203	3.0E+03	205	1.3E+03	0	0.	0	0.	0	0.	0	0.	1.8E+03
PRODUCT Z= 77	76	184	0.	186	0.	187	2.0E+06	188	1.4E+06	189	1.0E+06	190	7.2E+05	7.0E+05
PRODUCT A=185		192	3.3E+05											
HALF LIFE= 14.000 H	77	191	4.9E+05	193	2.2E+05	0	0.	0	0.	0	0.	0	0.	3.2E+05
	78	190	7.2E+05	192	3.3E+05	194	1.5E+05	195	1.0E+05	196	6.8E+04	198	3.1E+04	1.1E+05
	79	197	4.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+04
	80	196	6.9E+04	198	3.1E+04	199	2.1E+04	200	1.4E+04	201	9.4E+03	202	6.1E+03	1.3E+04
		204	2.7E+03											
	81	203	4.1E+03	205	1.7E+03	0	0.	0	0.	0	0.	0	0.	2.4E+03
	82	204	2.7E+03	206	1.2E+03	207	7.8E+02	208	5.0E+02	0	0.	0	0.	7.5E+02
PRODUCT Z= 77	76	184	0.	186	0.	187	0.	188	1.7E+06	189	1.2E+06	190	8.7E+05	8.3E+05
PRODUCT A=186		192	4.2E+05											
HALF LIFE= 15.000 H	77	191	6.3E+05	193	2.9E+05	0	0.	0	0.	0	0.	0	0.	4.1E+05
	78	190	8.8E+05	192	4.3E+05	194	1.9E+05	195	1.3E+05	196	8.9E+04	198	4.0E+04	1.4E+05
	79	197	5.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.9E+04
	80	196	9.0E+04	198	4.0E+04	199	2.7E+04	200	1.8E+04	201	1.2E+04	202	7.9E+03	1.7E+04
		204	3.4E+03											
	81	203	5.1E+03	205	2.3E+03	0	0.	0	0.	0	0.	0	0.	3.1E+03
	82	204	3.4E+03	206	1.5E+03	207	9.7E+02	208	6.5E+02	0	0.	0	0.	9.5E+02
PRODUCT Z= 77	76	184	0.	186	0.	187	0.	188	0.	189	1.4E+06	190	9.8E+05	6.9E+05
PRODUCT A=187		192	5.0E+05											
HALF LIFE= 11.000 H	77	191	7.0E+05	193	3.4E+05	0	0.	0	0.	0	0.	0	0.	4.8E+05
	78	190	9.9E+05	192	5.1E+05	194	2.3E+05	195	1.6E+05	196	1.0E+05	198	4.7E+04	1.6E+05
	79	197	7.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 77 A=187 (CONTINUED)	80	196	1.1E+05	198	4.8E+04	199	3.2E+04	200	2.2E+04	201	1.4E+04	202	9.3E+03	2.0E+04
		204	4.0E+03											
	81	203	6.1E+03	205	2.6E+03	0	0.	0	0.	0	0.	0	0.	3.7E+03
	82	204	4.0E+03	206	1.8E+03	207	1.1E+03	208	7.5E+02	0	0.	0	0.	1.1E+03
PRODUCT Z= 77	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	3.6E+05	1.7E+05
PRODUCT A=188		192	1.8E+05											
HALF LIFE= 41.000 H	77	191	2.6E+05	193	1.3E+05	0	0.	0	0.	0	0.	0	0.	1.8E+05
	78	190	3.6E+05	192	1.8E+05	194	8.9E+04	195	6.0E+04	196	4.0E+04	198	1.9E+04	6.2E+04
	79	197	2.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+04
	80	196	4.1E+04	198	1.9E+04	199	1.2E+04	200	8.4E+03	201	5.5E+03	202	3.6E+03	7.8E+03
		204	1.5E+03											
	81	203	2.3E+03	205	1.0E+03	0	0.	0	0.	0	0.	0	0.	1.4E+03
	82	204	1.5E+03	206	6.6E+02	207	4.4E+02	208	2.8E+02	0	0.	0	0.	4.3E+02
	83	209	1.9E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+02
PRODUCT Z= 77	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	0.	8.8E+03
PRODUCT A=189		192	2.1E+04											
HALF LIFE= 13.300 D	77	191	3.0E+04	193	1.5E+04	0	0.	0	0.	0	0.	0	0.	2.1E+04
	78	190	0.	192	2.1E+04	194	1.1E+04	195	7.4E+03	196	5.0E+03	198	2.3E+03	7.7E+03
	79	197	3.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.4E+03
	80	196	5.1E+03	198	2.3E+03	199	1.6E+03	200	1.0E+03	201	6.8E+02	202	4.4E+02	9.7E+02
		204	1.9E+02											
	81	203	2.9E+02	205	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.7E+02
	82	204	1.9E+02	206	8.1E+01	207	5.3E+01	208	3.5E+01	0	0.	0	0.	5.2E+01
	83	209	2.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+01
PRODUCT Z= 77	76	184	0.	186	0.	187	0.	188	0.	189	0.	190	0.	6.9E+03
PRODUCT A=190		192	1.7E+04											
HALF LIFE= 12.000 D	77	191	0.	193	1.2E+04	0	0.	0	0.	0	0.	0	0.	7.5E+03
	78	190	0.	192	1.7E+04	194	8.6E+03	195	6.1E+03	196	4.2E+03	198	1.9E+03	6.2E+03
	79	197	2.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+03
	80	196	4.2E+03	198	1.9E+03	199	1.3E+03	200	8.7E+02	201	5.6E+02	202	3.7E+02	8.0E+02
		204	1.6E+02											
	81	203	2.4E+02	205	1.0E+02	0	0.	0	0.	0	0.	0	0.	1.4E+02
	82	204	1.6E+02	206	6.7E+01	207	4.4E+01	208	2.9E+01	0	0.	0	0.	4.3E+01
	83	209	1.9E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+01
PRODUCT Z= 77	78	190	0.	192	0.	194	5.8E+02	195	4.1E+02	196	3.0E+02	198	1.4E+02	4.2E+02
PRODUCT A=192	79	197	2.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+02
HALF LIFE= 74.000 D	80	196	3.0E+02	198	1.4E+02	199	9.8E+01	200	6.6E+01	201	4.3E+01	202	2.8E+01	6.1E+01
		204	1.2E+01											
	81	203	1.8E+01	205	7.7E+00	0	0.	0	0.	0	0.	0	0.	1.1E+01
	82	204	1.2E+01	206	5.0E+00	207	3.3E+00	208	2.2E+00	0	0.	0	0.	3.2E+00
	83	209	1.4E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+00
PRODUCT Z= 77	78	190	0.	192	0.	194	0.	195	0.	196	6.0E+03	198	3.1E+03	1.7E+03
PRODUCT A=194	79	197	4.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.3E+03
HALF LIFE= 19.000 H	80	196	0.	198	3.1E+03	199	2.2E+03	200	1.5E+03	201	9.8E+02	202	6.4E+02	1.4E+03
		204	2.7E+02											
	81	203	4.2E+02	205	1.8E+02	0	0.	0	0.	0	0.	0	0.	2.5E+02
	82	204	2.8E+02	206	1.1E+02	207	7.5E+01	208	4.8E+01	0	0.	0	0.	7.3E+01
	83	209	3.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+01
PRODUCT Z= 77	78	190	0.	192	0.	194	0.	195	0.	196	0.	198	2.7E+03	2.0E+02
PRODUCT A=195	79	197	3.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E+03
HALF LIFE= 4.200 H	80	196	0.	198	2.7E+03	199	2.0E+03	200	1.4E+03	201	9.2E+02	202	6.0E+02	1.2E+03
		204	2.5E+02											
	81	203	3.9E+02	205	1.7E+02	0	0.	0	0.	0	0.	0	0.	2.3E+02
	82	204	2.6E+02	206	1.1E+02	207	7.0E+01	208	4.6E+01	0	0.	0	0.	6.9E+01
	83	209	3.0E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.0E+01
PRODUCT Z= 77	78	190	0.	192	0.	194	0.	195	0.	196	0.	198	1.4E+03	1.0E+02
PRODUCT A=196	80	196	0.	198	0.	199	1.0E+03	200	7.2E+02	201	5.0E+02	202	3.3E+02	5.1E+02
HALF LIFE= 2.000 H		204	1.4E+02											
	81	203	2.1E+02	205	9.1E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	82	204	1.4E+02	206	6.0E+01	207	3.8E+01	208	2.5E+01	0	0.	0	0.	3.8E+01
	83	209	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 77	80	196	0.	198	0.	199	0.	200	3.5E+02	201	2.4E+02	202	1.7E+02	1.7E+02
PRODUCT A=197		204	7.1E+01											
HALF LIFE= 7.000 M	81	203	1.1E+02	205	4.6E+01	0	0.	0	0.	0	0.	0	0.	6.5E+01
	82	204	7.2E+01	206	3.0E+01	207	2.0E+01	208	1.3E+01	0	0.	0	0.	1.9E+01
	83	209	8.3E+00	0	0.	0	0.	0	0.	0	0.	0	0.	8.3E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 78	77	191	6.4E+03	193	2.9E+03	0	0.	0	0.	0	0.	0	0.	4.2E+03
PRODUCT A=182	78	190	9.6E+03	192	4.4E+03	194	2.0E+03	195	1.3E+03	196	8.9E+02	198	4.1E+02	1.4E+03
HALF LIFE= 3.000 M	79	197	6.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.1E+02
	80	196	9.0E+02	198	4.1E+02	199	2.8E+02	200	1.9E+02	201	1.3E+02	202	8.2E+01	1.8E+02
		204	3.7E+01											
	81	203	5.5E+01	205	2.4E+01	0	0.	0	0.	0	0.	0	0.	3.3E+01
	82	204	3.7E+01	206	1.6E+01	207	1.0E+01	208	7.0E+00	0	0.	0	0.	1.0E+01
	83	209	4.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+00
PRODUCT Z= 78	77	191	2.2E+04	193	1.0E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
PRODUCT A=183	78	190	3.3E+04	192	1.5E+04	194	6.8E+03	195	4.5E+03	196	3.1E+03	198	1.4E+03	4.7E+03
HALF LIFE= 6.000 M	79	197	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03
	80	196	3.1E+03	198	1.4E+03	199	9.6E+02	200	6.5E+02	201	4.3E+02	202	2.8E+02	6.0E+02
		204	1.2E+02											
	81	203	1.8E+02	205	8.3E+01	0	0.	0	0.	0	0.	0	0.	1.1E+02
	82	204	1.2E+02	206	5.3E+01	207	3.5E+01	208	2.3E+01	0	0.	0	0.	3.4E+01
	83	209	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 78	77	191	7.0E+04	193	3.2E+04	0	0.	0	0.	0	0.	0	0.	4.6E+04
PRODUCT A=184	78	190	1.0E+05	192	4.7E+04	194	2.2E+04	195	1.4E+04	196	9.7E+03	198	4.4E+03	1.5E+04
HALF LIFE= 20.000 M	79	197	6.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.5E+03
	80	196	9.7E+03	198	4.4E+03	199	3.0E+03	200	2.0E+03	201	1.3E+03	202	8.8E+02	1.9E+03
		204	3.8E+02											
	81	203	5.9E+02	205	2.5E+02	0	0.	0	0.	0	0.	0	0.	3.5E+02
	82	204	3.8E+02	206	1.7E+02	207	1.1E+02	208	7.2E+01	0	0.	0	0.	1.1E+02
	83	209	4.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	4.7E+01
PRODUCT Z= 78	77	191	2.0E+05	193	9.1E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
PRODUCT A=185	78	190	3.0E+05	192	1.4E+05	194	6.2E+04	195	4.2E+04	196	2.8E+04	198	1.3E+04	4.3E+04
HALF LIFE= 1.000 H	79	197	1.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+04
	80	196	2.8E+04	198	1.3E+04	199	8.6E+03	200	5.8E+03	201	3.8E+03	202	2.5E+03	5.4E+03
		204	1.1E+03											
	81	203	1.7E+03	205	7.1E+02	0	0.	0	0.	0	0.	0	0.	9.9E+02
	82	204	1.1E+03	206	4.7E+02	207	3.2E+02	208	2.0E+02	0	0.	0	0.	3.1E+02
	83	209	1.4E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+02
PRODUCT Z= 78	77	191	5.2E+05	193	2.4E+05	0	0.	0	0.	0	0.	0	0.	3.4E+05
PRODUCT A=186	78	190	7.3E+05	192	3.5E+05	194	1.6E+05	195	1.1E+05	196	7.3E+04	198	3.3E+04	1.1E+05
HALF LIFE= 2.000 H	79	197	4.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+04
	80	196	7.4E+04	198	3.3E+04	199	2.2E+04	200	1.5E+04	201	9.8E+03	202	6.5E+03	1.4E+04
		204	2.8E+03											
	81	203	4.3E+03	205	1.9E+03	0	0.	0	0.	0	0.	0	0.	2.6E+03
	82	204	2.8E+03	206	1.2E+03	207	8.0E+02	208	5.4E+02	0	0.	0	0.	7.9E+02
	83	209	3.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+02
PRODUCT Z= 78	77	191	1.1E+06	193	5.5E+05	0	0.	0	0.	0	0.	0	0.	7.6E+05
PRODUCT A=187	78	190	1.6E+06	192	8.1E+05	194	3.7E+05	195	2.5E+05	196	1.7E+05	198	7.6E+04	2.6E+05
HALF LIFE= 2.100 H	79	197	1.1E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+05
	80	196	1.7E+05	198	7.7E+04	199	5.2E+04	200	3.5E+04	201	2.3E+04	202	1.5E+04	3.2E+04
		204	6.4E+03											
	81	203	9.8E+03	205	4.2E+03	0	0.	0	0.	0	0.	0	0.	5.9E+03
	82	204	6.4E+03	206	2.8E+03	207	1.8E+03	208	1.2E+03	0	0.	0	0.	1.8E+03
	83	209	8.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	8.1E+02
PRODUCT Z= 78	77	191	1.4E+05	193	7.1E+04	0	0.	0	0.	0	0.	0	0.	9.6E+04
PRODUCT A=188	78	190	2.0E+05	192	1.0E+05	194	4.8E+04	195	3.3E+04	196	2.2E+04	198	1.0E+04	3.4E+04
HALF LIFE= 10.000 D	79	197	1.5E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+04
	80	196	2.2E+04	198	1.0E+04	199	6.8E+03	200	4.6E+03	201	3.0E+03	202	1.9E+03	4.2E+03
		204	8.3E+02											
	81	203	1.3E+03	205	5.4E+02	0	0.	0	0.	0	0.	0	0.	7.6E+02
	82	204	8.4E+02	206	3.6E+02	207	2.4E+02	208	1.5E+02	0	0.	0	0.	2.3E+02
	83	209	1.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+02
PRODUCT Z= 78	77	191	2.0E+06	193	1.0E+06	0	0.	0	0.	0	0.	0	0.	1.4E+06
PRODUCT A=189	78	190	0.	192	1.4E+06	194	7.2E+05	195	4.9E+05	196	3.3E+05	198	1.5E+05	5.1E+05
HALF LIFE= 10.900 H	79	197	2.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+05
	80	196	3.3E+05	198	1.5E+05	199	1.0E+05	200	6.8E+04	201	4.5E+04	202	2.9E+04	6.4E+04
		204	1.2E+04											
	81	203	1.9E+04	205	8.2E+03	0	0.	0	0.	0	0.	0	0.	1.1E+04
	82	204	1.2E+04	206	5.3E+03	207	3.5E+03	208	2.3E+03	0	0.	0	0.	3.4E+03
	83	209	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+03
PRODUCT Z= 78	77	191	0.	193	2.1E+05	0	0.	0	0.	0	0.	0	0.	1.4E+05
PRODUCT A=191	78	190	0.	192	0.	194	1.5E+05	195	1.1E+05	196	7.9E+04	198	3.6E+04	1.1E+05
HALF LIFE= 3.000 D	79	197	5.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.4E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 78 A=191 (CONTINUED)	80	196	7.9E+04	198	3.6E+04	199	2.4E+04	200	1.6E+04	201	1.1E+04	202	7.0E+03	1.5E+04
		204	3.0E+03											
	81	203	4.6E+03	205	1.9E+03	0	0.	0	0.	0	0.	0	0.	2.7E+03
	82	204	3.0E+03	206	1.3E+03	207	8.3E+02	208	5.4E+02	0	0.	0	0.	8.1E+02
	83	209	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
PRODUCT Z= 78	78	190	0.	192	0.	194	0.	195	1.1E+00	196	7.9E-01	198	4.0E-01	6.1E-01
PRODUCT A=193	79	197	5.7E-01	0	0.	0	0.	0	0.	0	0.	0	0.	5.7E-01
HALF LIFE= 500.000 Y	80	196	8.0E-01	198	4.1E-01	199	2.8E-01	200	1.9E-01	201	1.2E-01	202	7.9E-02	1.7E-01
		204	3.4E-02											
	81	203	5.2E-02	205	2.2E-02	0	0.	0	0.	0	0.	0	0.	3.1E-02
	82	204	3.4E-02	206	1.4E-02	207	9.3E-03	208	6.0E-03	0	0.	0	0.	9.1E-03
	83	209	4.0E-03	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E-03
PRODUCT Z= 78	80	196	0.	198	0.	199	5.9E+03	200	4.2E+03	201	2.9E+03	202	2.0E+03	3.0E+03
PRODUCT A=197		204	8.6E+02											
HALF LIFE= 20.000 H	81	203	1.3E+03	205	5.6E+02	0	0.	0	0.	0	0.	0	0.	7.9E+02
	82	204	8.7E+02	206	3.7E+02	207	2.4E+02	208	1.5E+02	0	0.	0	0.	2.3E+02
	83	209	1.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+02
PRODUCT Z= 78	80	196	0.	198	0.	199	0.	200	0.	201	1.4E+03	202	9.7E+02	5.1E+02
PRODUCT A=199		204	4.7E+02											
HALF LIFE= 31.000 M	81	203	6.8E+02	205	3.1E+02	0	0.	0	0.	0	0.	0	0.	4.2E+02
	82	204	4.7E+02	206	2.0E+02	207	1.3E+02	208	8.4E+01	0	0.	0	0.	1.3E+02
	83	209	5.5E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.5E+01
PRODUCT Z= 78	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	3.7E+02	1.2E+02
PRODUCT A=200		204	1.7E+02											
HALF LIFE= 11.500 H	81	203	2.5E+02	205	1.2E+02	0	0.	0	0.	0	0.	0	0.	1.6E+02
	82	204	1.8E+02	206	8.0E+01	207	5.2E+01	208	3.4E+01	0	0.	0	0.	5.1E+01
	83	209	2.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+01
PRODUCT Z= 78	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	0.	7.5E+00
PRODUCT A=201		204	1.1E+02											
HALF LIFE= 2.500 M	81	203	0.	205	7.5E+01	0	0.	0	0.	0	0.	0	0.	5.3E+01
	82	204	0.	206	5.2E+01	207	3.4E+01	208	2.2E+01	0	0.	0	0.	3.1E+01
	83	209	1.4E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.4E+01
PRODUCT Z= 79	78	190	3.5E+04	192	1.6E+04	194	7.3E+03	195	5.0E+03	196	3.3E+03	198	1.5E+03	5.2E+03
PRODUCT A=185	79	197	2.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+03
HALF LIFE= 4.330 M	80	196	3.4E+03	198	1.5E+03	199	1.0E+03	200	6.9E+02	201	4.6E+02	202	3.0E+02	6.5E+02
		204	1.3E+02											
	81	203	2.0E+02	205	8.5E+01	0	0.	0	0.	0	0.	0	0.	1.2E+02
	82	204	1.3E+02	206	5.7E+01	207	3.8E+01	208	2.4E+01	0	0.	0	0.	3.7E+01
	83	209	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 79	78	190	1.1E+05	192	5.4E+04	194	2.5E+04	195	1.7E+04	196	1.1E+04	198	5.1E+03	1.7E+04
PRODUCT A=186	79	197	7.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	7.6E+03
HALF LIFE= 12.000 M	80	196	1.1E+04	198	5.1E+03	199	3.5E+03	200	2.3E+03	201	1.5E+03	202	1.0E+03	2.2E+03
		204	4.3E+02											
	81	203	6.5E+02	205	2.9E+02	0	0.	0	0.	0	0.	0	0.	3.9E+02
	82	204	4.3E+02	206	1.9E+02	207	1.2E+02	208	8.3E+01	0	0.	0	0.	1.2E+02
	83	209	5.3E+01	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+01
PRODUCT Z= 79	78	190	3.3E+05	192	1.7E+05	194	7.7E+04	195	5.1E+04	196	3.5E+04	198	1.6E+04	5.4E+04
PRODUCT A=187	79	197	2.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E+04
HALF LIFE= 8.000 M	80	196	3.5E+04	198	1.6E+04	199	1.1E+04	200	7.2E+03	201	4.7E+03	202	3.1E+03	6.7E+03
		204	1.3E+03											
	81	203	2.0E+03	205	8.7E+02	0	0.	0	0.	0	0.	0	0.	1.2E+03
	82	204	1.3E+03	206	5.8E+02	207	3.7E+02	208	2.5E+02	0	0.	0	0.	3.7E+02
	83	209	1.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+02
PRODUCT Z= 79	78	190	8.7E+05	192	4.5E+05	194	2.2E+05	195	1.5E+05	196	9.8E+04	198	4.5E+04	1.5E+05
PRODUCT A=188	79	197	6.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.6E+04
HALF LIFE= 8.000 M	80	196	9.9E+04	198	4.5E+04	199	3.0E+04	200	2.0E+04	201	1.3E+04	202	8.6E+03	1.9E+04
		204	3.7E+03											
	81	203	5.7E+03	205	2.4E+03	0	0.	0	0.	0	0.	0	0.	3.4E+03
	82	204	3.7E+03	206	1.6E+03	207	1.1E+03	208	6.9E+02	0	0.	0	0.	1.0E+03
	83	209	4.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.6E+02

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 79	78	190	0.	192	1.1E+06	194	5.5E+05	195	3.7E+05	196	2.5E+05	198	1.1E+05	3.9E+05
PRODUCT A=189	79	197	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
HALF LIFE= 38.000 M	80	196	2.5E+05	198	1.1E+05	199	7.8E+04	200	5.2E+04	201	3.4E+04	202	2.2E+04	4.9E+04
		204	9.4E+03											
	81	203	1.4E+04	205	6.2E+03	0	0.	0	0.	0	0.	0	0.	8.6E+03
	82	204	9.5E+03	206	4.1E+03	207	2.7E+03	208	1.8E+03	0	0.	0	0.	2.6E+03
	83	209	1.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.1E+03
PRODUCT Z= 79	78	190	0.	192	2.3E+06	194	1.2E+06	195	8.4E+05	196	5.7E+05	198	2.6E+05	8.5E+05
PRODUCT A=190	79	197	3.9E+05	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+05
HALF LIFE= 43.000 M	80	196	5.8E+05	198	2.6E+05	199	1.8E+05	200	1.2E+05	201	7.7E+04	202	5.0E+04	1.1E+05
		204	2.1E+04											
	81	203	3.3E+04	205	1.4E+04	0	0.	0	0.	0	0.	0	0.	2.0E+04
	82	204	2.1E+04	206	9.2E+03	207	6.0E+03	208	3.9E+03	0	0.	0	0.	5.9E+03
	83	209	2.6E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+03
PRODUCT Z= 79	78	190	0.	192	0.	194	2.1E+06	195	1.5E+06	196	1.1E+06	198	4.9E+05	1.5E+06
PRODUCT A=191	79	197	7.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.	7.3E+05
HALF LIFE= 3.200 H	80	196	1.1E+06	198	5.0E+05	199	3.3E+05	200	2.2E+05	201	1.5E+05	202	9.6E+04	2.1E+05
		204	4.1E+04											
	81	203	6.2E+04	205	2.6E+04	0	0.	0	0.	0	0.	0	0.	3.7E+04
	82	204	4.1E+04	206	1.7E+04	207	1.1E+04	208	7.4E+03	0	0.	0	0.	1.1E+04
	83	209	4.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.9E+03
PRODUCT Z= 79	78	190	0.	192	0.	194	2.4E+06	195	1.7E+06	196	1.2E+06	198	5.9E+05	1.7E+06
PRODUCT A=192	79	197	8.8E+05	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E+05
HALF LIFE= 5.000 H	80	196	1.2E+06	198	6.0E+05	199	4.0E+05	200	2.7E+05	201	1.8E+05	202	1.2E+05	2.5E+05
		204	4.9E+04											
	81	203	7.5E+04	205	3.2E+04	0	0.	0	0.	0	0.	0	0.	4.5E+04
	82	204	4.9E+04	206	2.1E+04	207	1.4E+04	208	8.9E+03	0	0.	0	0.	1.3E+04
	83	209	5.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+03
PRODUCT Z= 79	78	190	0.	192	0.	194	0.	195	1.0E+06	196	7.3E+05	198	3.7E+05	5.6E+05
PRODUCT A=193	79	197	5.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+05
HALF LIFE= 18.000 H	80	196	7.4E+05	198	3.8E+05	199	2.6E+05	200	1.7E+05	201	1.1E+05	202	7.3E+04	1.6E+05
		204	3.1E+04											
	81	203	4.8E+04	205	2.0E+04	0	0.	0	0.	0	0.	0	0.	2.8E+04
	82	204	3.1E+04	206	1.3E+04	207	8.6E+03	208	5.6E+03	0	0.	0	0.	8.4E+03
	83	209	3.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E+03
PRODUCT Z= 79	78	190	0.	192	0.	194	0.	195	0.	196	3.6E+05	198	1.8E+05	1.0E+05
PRODUCT A=194	79	197	2.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.	2.6E+05
HALF LIFE= 39.000 H	80	196	3.6E+05	198	1.8E+05	199	1.3E+05	200	8.9E+04	201	5.8E+04	202	3.8E+04	8.1E+04
		204	1.6E+04											
	81	203	2.5E+04	205	1.0E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
	82	204	1.6E+04	206	6.8E+03	207	4.4E+03	208	2.9E+03	0	0.	0	0.	4.4E+03
	83	209	1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+03
PRODUCT Z= 79	78	190	0.	192	0.	194	0.	195	0.	196	0.	198	1.5E+03	1.1E+02
PRODUCT A=195	79	197	2.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.2E+03
HALF LIFE= 183.000 D	80	196	0.	198	1.5E+03	199	1.1E+03	200	7.9E+02	201	5.2E+02	202	3.4E+02	7.0E+02
		204	1.4E+02											
	81	203	2.2E+02	205	9.5E+01	0	0.	0	0.	0	0.	0	0.	1.3E+02
	82	204	1.4E+02	206	6.1E+01	207	4.0E+01	208	2.6E+01	0	0.	0	0.	3.9E+01
	83	209	1.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+01
PRODUCT Z= 79	78	190	0.	192	0.	194	0.	195	0.	196	0.	198	3.1E+04	2.2E+03
PRODUCT A=196	80	196	0.	198	3.1E+04	199	2.2E+04	200	1.6E+04	201	1.1E+04	202	7.2E+03	1.4E+04
HALF LIFE= 6.200 D		204	3.0E+03											
	81	203	4.7E+03	205	2.0E+03	0	0.	0	0.	0	0.	0	0.	2.8E+03
	82	204	3.1E+03	206	1.3E+03	207	8.4E+02	208	5.5E+02	0	0.	0	0.	8.3E+02
	83	209	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
PRODUCT Z= 79	80	196	0.	198	0.	199	0.	200	1.4E+04	201	9.8E+03	202	6.8E+03	6.8E+03
PRODUCT A=198		204	3.1E+03											
HALF LIFE= 64.800 H	81	203	4.7E+03	205	2.0E+03	0	0.	0	0.	0	0.	0	0.	2.8E+03
	82	204	3.1E+03	206	1.3E+03	207	8.5E+02	208	5.6E+02	0	0.	0	0.	8.4E+02
	83	209	3.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E+02
PRODUCT Z= 79	80	196	0.	198	0.	199	0.	200	0.	201	5.1E+03	202	3.5E+03	1.8E+03
PRODUCT A=199		204	1.7E+03											
HALF LIFE= 3.150 D	81	203	2.4E+03	205	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.5E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES														NATURAL MILLI CURIES
PRODUCT Z= 79 A=199 (CONTINUED)	82	204	1.7E+03	206	7.2E+02	207	4.7E+02	208	3.0E+02	0	0.	0	0.			4.6E+02
	83	209	2.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.			2.0E+02
PRODUCT Z= 79	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	1.0E+04			3.4E+03
PRODUCT A=200		204	4.8E+03													
HALF LIFE= 48.000 M	81	203	7.0E+03	205	3.3E+03	0	0.	0	0.	0	0.	0	0.			4.4E+03
	82	204	4.9E+03	206	2.2E+03	207	1.4E+03	208	9.2E+02	0	0.	0	0.			1.4E+03
	83	209	6.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.			6.0E+02
PRODUCT Z= 79	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	0.			1.8E+02
PRODUCT A=201		204	2.6E+03													
HALF LIFE= 22.000 M	81	203	3.8E+03	205	1.8E+03	0	0.	0	0.	0	0.	0	0.			2.4E+03
	82	204	2.6E+03	206	1.2E+03	207	8.2E+02	208	5.3E+02	0	0.	0	0.			7.9E+02
	83	209	3.5E+02	0	0.	0	0.	0	0.	0	0.	0	0.			3.5E+02
PRODUCT Z= 80	79	197	2.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.			2.3E+03
PRODUCT A=187	80	196	3.5E+03	198	1.6E+03	199	1.1E+03	200	7.1E+02	201	4.6E+02	202	3.0E+02			6.6E+02
HALF LIFE= 3.000 M		204	1.3E+02													
	81	203	2.0E+02	205	8.6E+01	0	0.	0	0.	0	0.	0	0.			1.2E+02
	82	204	1.3E+02	206	5.7E+01	207	3.7E+01	208	2.5E+01	0	0.	0	0.			3.7E+01
	83	209	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.			1.6E+01
PRODUCT Z= 80	79	197	8.2E+03	0	0.	0	0.	0	0.	0	0.	0	0.			8.2E+03
PRODUCT A=188	80	196	1.2E+04	198	5.6E+03	199	3.7E+03	200	2.5E+03	201	1.6E+03	202	1.1E+03			2.4E+03
HALF LIFE= 3.000 M		204	4.6E+02													
	81	203	7.0E+02	205	3.0E+02	0	0.	0	0.	0	0.	0	0.			4.2E+02
	82	204	4.6E+02	206	2.0E+02	207	1.3E+02	208	8.5E+01	0	0.	0	0.			1.3E+02
	83	209	5.7E+01	0	0.	0	0.	0	0.	0	0.	0	0.			5.7E+01
PRODUCT Z= 80	79	197	2.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.			2.7E+04
PRODUCT A=189	80	196	4.1E+04	198	1.8E+04	199	1.2E+04	200	8.3E+03	201	5.4E+03	202	3.5E+03			7.8E+03
HALF LIFE= 9.300 M		204	1.5E+03													
	81	203	2.3E+03	205	9.9E+02	0	0.	0	0.	0	0.	0	0.			1.4E+03
	82	204	1.5E+03	206	6.5E+02	207	4.3E+02	208	2.8E+02	0	0.	0	0.			4.2E+02
	83	209	1.8E+02	0	0.	0	0.	0	0.	0	0.	0	0.			1.8E+02
PRODUCT Z= 80	79	197	8.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.			8.3E+04
PRODUCT A=190	80	196	1.2E+05	198	5.6E+04	199	3.8E+04	200	2.6E+04	201	1.7E+04	202	1.1E+04			2.4E+04
HALF LIFE= 20.000 M		204	4.6E+03													
	81	203	7.1E+03	205	3.0E+03	0	0.	0	0.	0	0.	0	0.			4.2E+03
	82	204	4.6E+03	206	2.0E+03	207	1.3E+03	208	8.4E+02	0	0.	0	0.			1.3E+03
	83	209	5.6E+02	0	0.	0	0.	0	0.	0	0.	0	0.			5.6E+02
PRODUCT Z= 80	79	197	2.3E+05	0	0.	0	0.	0	0.	0	0.	0	0.			2.3E+05
PRODUCT A=191	80	196	3.4E+05	198	1.6E+05	199	1.0E+05	200	7.1E+04	201	4.7E+04	202	3.0E+04			6.6E+04
HALF LIFE= 57.000 M		204	1.3E+04													
	81	203	2.0E+04	205	8.3E+03	0	0.	0	0.	0	0.	0	0.			1.2E+04
	82	204	1.3E+04	206	5.4E+03	207	3.6E+03	208	2.3E+03	0	0.	0	0.			3.5E+03
	83	209	1.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.			1.5E+03
PRODUCT Z= 80	79	197	5.6E+05	0	0.	0	0.	0	0.	0	0.	0	0.			5.6E+05
PRODUCT A=192	80	196	7.8E+05	198	3.8E+05	199	2.6E+05	200	1.7E+05	201	1.1E+05	202	7.4E+04			1.6E+05
HALF LIFE= 4.900 H		204	3.1E+04													
	81	203	4.8E+04	205	2.0E+04	0	0.	0	0.	0	0.	0	0.			2.8E+04
	82	204	3.1E+04	206	1.3E+04	207	8.6E+03	208	5.6E+03	0	0.	0	0.			8.5E+03
	83	209	3.7E+03	0	0.	0	0.	0	0.	0	0.	0	0.			3.7E+03
PRODUCT Z= 80	79	197	1.2E+06	0	0.	0	0.	0	0.	0	0.	0	0.			1.2E+06
PRODUCT A=193	80	196	1.7E+06	198	8.6E+05	199	5.9E+05	200	4.0E+05	201	2.6E+05	202	1.7E+05			3.7E+05
HALF LIFE= 3.500 H		204	7.1E+04													
	81	203	1.1E+05	205	4.6E+04	0	0.	0	0.	0	0.	0	0.			6.5E+04
	82	204	7.2E+04	206	3.0E+04	207	2.0E+04	208	1.3E+04	0	0.	0	0.			1.9E+04
	83	209	8.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.			8.4E+03
PRODUCT Z= 80	79	197	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.			2.1E+03
PRODUCT A=194	80	196	3.0E+03	198	1.5E+03	199	1.1E+03	200	7.4E+02	201	4.8E+02	202	3.1E+02			6.8E+02
HALF LIFE= 700.000 D		204	1.3E+02													
	81	203	2.1E+02	205	8.7E+01	0	0.	0	0.	0	0.	0	0.			1.2E+02
	82	204	1.4E+02	206	5.7E+01	207	3.7E+01	208	2.4E+01	0	0.	0	0.			3.6E+01

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 80 A=194 (CONTINUED)	83	209	1.6E+01	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+01
PRODUCT Z= 80	79	197	2.0E+06	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+06
PRODUCT A=195	80	196	0.	198	1.5E+06	199	1.0E+06	200	7.5E+05	201	4.9E+05	202	3.2E+05	6.6E+05
HALF LIFE= 9.500 H		204	1.4E+05											
	81	203	2.1E+05	205	9.0E+04	0	0.	0	0.	0	0.	0	0.	1.3E+05
	82	204	1.4E+05	206	5.8E+04	207	3.8E+04	208	2.4E+04	0	0.	0	0.	3.7E+04
	83	209	1.6E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.6E+04
PRODUCT Z= 80	80	196	0.	198	0.	199	2.3E+05	200	1.7E+05	201	1.1E+05	202	7.9E+04	1.2E+05
PRODUCT A=197		204	3.4E+04											
HALF LIFE= 65.000 H	81	203	5.2E+04	205	2.2E+04	0	0.	0	0.	0	0.	0	0.	3.1E+04
	82	204	3.4E+04	206	1.4E+04	207	9.5E+03	208	6.1E+03	0	0.	0	0.	9.2E+03
	83	209	4.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	4.0E+03
PRODUCT Z= 80	81	203	0.	205	1.4E+02	0	0.	0	0.	0	0.	0	0.	1.0E+02
PRODUCT A=203	82	204	0.	206	9.8E+01	207	6.8E+01	208	4.6E+01	0	0.	0	0.	6.3E+01
HALF LIFE= 46.600 D	83	209	3.1E+01	0	0.	0	0.	0	0.	0	0.	0	0.	3.1E+01
PRODUCT Z= 80	82	204	0.	206	0.	207	1.3E+03	208	9.0E+02	0	0.	0	0.	7.7E+02
PRODUCT A=205	83	209	6.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.2E+02
HALF LIFE= 5.200 M														
PRODUCT Z= 80	82	204	0.	206	0.	207	0.	208	4.6E+02	0	0.	0	0.	2.4E+02
PRODUCT A=206	83	209	3.2E+02	0	0.	0	0.	0	0.	0	0.	0	0.	3.2E+02
HALF LIFE= 8.200 M														
PRODUCT Z= 81	80	196	4.4E+04	198	2.0E+04	199	1.3E+04	200	9.0E+03	201	6.0E+03	202	3.8E+03	8.4E+03
PRODUCT A=191		204	1.6E+03											
HALF LIFE= 10.000 M	81	203	2.5E+03	205	1.1E+03	0	0.	0	0.	0	0.	0	0.	1.5E+03
	82	204	1.6E+03	206	7.0E+02	207	4.6E+02	208	3.0E+02	0	0.	0	0.	4.5E+02
	83	209	2.0E+02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+02
PRODUCT Z= 81	80	196	1.3E+05	198	6.5E+04	199	4.4E+04	200	2.9E+04	201	1.9E+04	202	1.3E+04	2.7E+04
PRODUCT A=192		204	5.3E+03											
HALF LIFE= 11.000 M	81	203	8.2E+03	205	3.5E+03	0	0.	0	0.	0	0.	0	0.	4.8E+03
	82	204	5.3E+03	206	2.3E+03	207	1.5E+03	208	9.6E+02	0	0.	0	0.	1.4E+03
	83	209	6.3E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E+02
PRODUCT Z= 81	80	196	3.8E+05	198	1.9E+05	199	1.3E+05	200	8.8E+04	201	5.7E+04	202	3.7E+04	8.2E+04
PRODUCT A=193		204	1.6E+04											
HALF LIFE= 23.000 M	81	203	2.5E+04	205	1.0E+04	0	0.	0	0.	0	0.	0	0.	1.5E+04
	82	204	1.6E+04	206	6.8E+03	207	4.4E+03	208	2.9E+03	0	0.	0	0.	4.3E+03
	83	209	1.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.9E+03
PRODUCT Z= 81	80	196	9.8E+05	198	5.0E+05	199	3.6E+05	200	2.4E+05	201	1.6E+05	202	1.0E+05	2.2E+05
PRODUCT A=194		204	4.4E+04											
HALF LIFE= 35.000 M	81	203	6.7E+04	205	2.8E+04	0	0.	0	0.	0	0.	0	0.	4.0E+04
	82	204	4.4E+04	206	1.9E+04	207	1.2E+04	208	7.8E+03	0	0.	0	0.	1.2E+04
	83	209	5.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	5.1E+03
PRODUCT Z= 81	80	196	0.	198	1.2E+06	199	8.4E+05	200	6.0E+05	201	3.9E+05	202	2.6E+05	5.3E+05
PRODUCT A=195		204	1.1E+05											
HALF LIFE= 1.200 H	81	203	1.7E+05	205	7.2E+04	0	0.	0	0.	0	0.	0	0.	1.0E+05
	82	204	1.1E+05	206	4.6E+04	207	3.0E+04	208	2.0E+04	0	0.	0	0.	2.9E+04
	83	209	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04
PRODUCT Z= 81	80	196	0.	198	2.4E+06	199	1.7E+06	200	1.2E+06	201	8.6E+05	202	5.7E+05	1.1E+06
PRODUCT A=196		204	2.4E+05											
HALF LIFE= 1.800 H	81	203	3.7E+05	205	1.6E+05	0	0.	0	0.	0	0.	0	0.	2.2E+05
	82	204	2.4E+05	206	1.0E+05	207	6.6E+04	208	4.3E+04	0	0.	0	0.	6.5E+04
	83	209	2.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.8E+04

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 81	80	196	0.	198	0.	199	3.0E+06	200	2.2E+06	201	1.5E+06	202	1.0E+06	1.5E+06
PRODUCT A=197		204	4.4E+05											
HALF LIFE= 2.800 H	81	203	6.8E+05	205	2.9E+05	0	0.	0	0.	0	0.	0	0.	4.1E+05
	82	204	4.5E+05	206	1.9E+05	207	1.2E+05	208	8.0E+04	0	0.	0	0.	1.2E+05
	83	209	5.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.2E+04
PRODUCT Z= 81	80	196	0.	198	0.	199	0.	200	2.4E+06	201	1.6E+06	202	1.1E+06	1.1E+06
PRODUCT A=198		204	5.1E+05											
HALF LIFE= 5.300 H	81	203	7.9E+05	205	3.4E+05	0	0.	0	0.	0	0.	0	0.	4.7E+05
	82	204	5.2E+05	206	2.2E+05	207	1.4E+05	208	9.3E+04	0	0.	0	0.	1.4E+05
	83	209	6.0E+04	0	0.	0	0.	0	0.	0	0.	0	0.	6.0E+04
PRODUCT Z= 81	80	196	0.	198	0.	199	0.	200	0.	201	1.5E+06	202	1.0E+06	5.3E+05
PRODUCT A=199		204	4.8E+05											
HALF LIFE= 7.400 H	81	203	7.0E+05	205	3.2E+05	0	0.	0	0.	0	0.	0	0.	4.3E+05
	82	204	4.9E+05	206	2.1E+05	207	1.3E+05	208	8.8E+04	0	0.	0	0.	1.3E+05
	83	209	5.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.8E+04
PRODUCT Z= 81	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	4.6E+05	1.5E+05
PRODUCT A=200		204	2.2E+05											
HALF LIFE= 26.000 H	81	203	3.2E+05	205	1.5E+05	0	0.	0	0.	0	0.	0	0.	2.0E+05
	82	204	2.2E+05	206	1.0E+05	207	6.5E+04	208	4.2E+04	0	0.	0	0.	6.3E+04
	83	209	2.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.7E+04
PRODUCT Z= 81	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	0.	5.1E+03
PRODUCT A=201		204	7.4E+04											
HALF LIFE= 73.000 H	81	203	1.1E+05	205	5.1E+04	0	0.	0	0.	0	0.	0	0.	6.7E+04
	82	204	7.4E+04	206	3.5E+04	207	2.3E+04	208	1.5E+04	0	0.	0	0.	2.2E+04
	83	209	9.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.8E+03
PRODUCT Z= 81	80	196	0.	198	0.	199	0.	200	0.	201	0.	202	0.	9.9E+02
PRODUCT A=202		204	1.4E+04											
HALF LIFE= 12.400 D	81	203	0.	205	9.9E+03	0	0.	0	0.	0	0.	0	0.	7.0E+03
	82	204	1.4E+04	206	6.8E+03	207	4.7E+03	208	3.1E+03	0	0.	0	0.	4.5E+03
	83	209	2.0E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E+03
PRODUCT Z= 81	82	204	0.	206	2.8E+01	207	1.9E+01	208	1.3E+01	0	0.	0	0.	1.8E+01
PRODUCT A=204	83	209	9.1E+00	0	0.	0	0.	0	0.	0	0.	0	0.	9.1E+00
HALF LIFE= 3.750 Y														
PRODUCT Z= 81	82	204	0.	206	0.	207	0.	208	9.2E+03	0	0.	0	0.	4.8E+03
PRODUCT A=206	83	209	6.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+03
HALF LIFE= 4.300 M														
PRODUCT Z= 81 PRODUCT A=207	83	209	3.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.5E+03
HALF LIFE= 4.780 M														
PRODUCT Z= 81	90	232	6.9E-02	0	0.	0	0.	0	0.	0	0.	0	0.	6.9E-02
PRODUCT A=208	92	234	2.5E-02	235	1.4E-02	238	1.8E-03	0	0.	0	0.	0	0.	1.9E-03
HALF LIFE= 3.100 M														
PRODUCT Z= 81	90	232	3.7E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.7E-02
PRODUCT A=209	92	234	1.3E-02	235	7.4E-03	238	9.7E-04	0	0.	0	0.	0	0.	1.0E-03
HALF LIFE= 2.200 M														
PRODUCT Z= 81	90	232	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
PRODUCT A=210	92	234	6.7E-03	235	3.8E-03	238	4.9E-04	0	0.	0	0.	0	0.	5.1E-04
HALF LIFE= 1.300 M														
PRODUCT Z= 82	81	203	8.9E+03	205	3.7E+03	0	0.	0	0.	0	0.	0	0.	5.2E+03
PRODUCT A=194	82	204	5.9E+03	206	2.4E+03	207	1.6E+03	208	1.0E+03	0	0.	0	0.	1.6E+03
HALF LIFE= 11.000 M	83	209	6.7E+02	0	0.	0	0.	0	0.	0	0.	0	0.	6.7E+02
PRODUCT Z= 82	81	203	2.8E+04	205	1.2E+04	0	0.	0	0.	0	0.	0	0.	1.7E+04
PRODUCT A=195	82	204	1.9E+04	206	7.8E+03	207	5.1E+03	208	3.3E+03	0	0.	0	0.	5.0E+03
HALF LIFE= 17.000 M	83	209	2.1E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.1E+03

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 82	81	203	8.4E+04	205	3.5E+04	0	0.	0	0.	0	0.	0	0.	5.0E+04
PRODUCT A=196	82	204	5.5E+04	206	2.3E+04	207	1.5E+04	208	9.7E+03	0	0.	0	0.	1.5E+04
HALF LIFE= 37.000 M	83	209	6.4E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.4E+03
PRODUCT Z= 82	81	203	5.6E+05	205	2.4E+05	0	0.	0	0.	0	0.	0	0.	3.3E+05
PRODUCT A=198	82	204	3.7E+05	206	1.6E+05	207	1.0E+05	208	6.6E+04	0	0.	0	0.	9.9E+04
HALF LIFE= 2.400 H	83	209	4.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	4.2E+04
PRODUCT Z= 82	81	203	1.2E+06	205	5.2E+05	0	0.	0	0.	0	0.	0	0.	7.1E+05
PRODUCT A=199	82	204	8.0E+05	206	3.4E+05	207	2.2E+05	208	1.4E+05	0	0.	0	0.	2.2E+05
HALF LIFE= 1.500 H	83	209	9.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	9.4E+04
PRODUCT Z= 82	81	203	1.1E+06	205	5.2E+05	0	0.	0	0.	0	0.	0	0.	6.9E+05
PRODUCT A=200	82	204	7.6E+05	206	3.4E+05	207	2.2E+05	208	1.4E+05	0	0.	0	0.	2.2E+05
HALF LIFE= 21.000 H	83	209	9.4E+04	0	0.	0	0.	0	0.	0	0.	0	0.	9.4E+04
PRODUCT Z= 82	81	203	1.9E+06	205	9.0E+05	0	0.	0	0.	0	0.	0	0.	1.2E+06
PRODUCT A=201	82	204	1.3E+06	206	6.2E+05	207	4.1E+05	208	2.6E+05	0	0.	0	0.	3.9E+05
HALF LIFE= 9.400 H	83	209	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
PRODUCT Z= 82	81	203	0.	205	6.6E-03	0	0.	0	0.	0	0.	0	0.	4.6E-03
PRODUCT A=202	82	204	9.5E-03	206	4.5E-03	207	3.1E-03	208	2.0E-03	0	0.	0	0.	3.0E-03
HALF LIFE= .300 T	83	209	1.3E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E-03
PRODUCT Z= 82	81	203	0.	205	2.4E+05	0	0.	0	0.	0	0.	0	0.	1.7E+05
PRODUCT A=203	82	204	0.	206	1.7E+05	207	1.2E+05	208	8.0E+04	0	0.	0	0.	1.1E+05
HALF LIFE= 52.000 H	83	209	5.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	5.3E+04
PRODUCT Z= 82	82	204	0.	206	0.	207	1.6E-05	208	1.1E-05	0	0.	0	0.	9.1E-06
PRODUCT A=205	83	209	7.4E-06	0	0.	0	0.	0	0.	0	0.	0	0.	7.4E-06
HALF LIFE= 30.000 T														
PRODUCT Z= 82	90	232	7.2E-01	0	0.	0	0.	0	0.	0	0.	0	0.	7.2E-01
PRODUCT A=209	92	234	2.5E-01	235	1.5E-01	238	1.9E-02	0	0.	0	0.	0	0.	2.0E-02
HALF LIFE= 3.300 H														
PRODUCT Z= 82	90	232	3.8E-05	0	0.	0	0.	0	0.	0	0.	0	0.	3.8E-05
PRODUCT A=210	92	234	1.3E-05	235	7.3E-06	238	9.5E-07	0	0.	0	0.	0	0.	9.9E-07
HALF LIFE= 22.000 Y														
PRODUCT Z= 82	90	232	2.4E-01	0	0.	0	0.	0	0.	0	0.	0	0.	2.4E-01
PRODUCT A=211	92	234	8.4E-02	235	4.8E-02	238	6.2E-03	0	0.	0	0.	0	0.	6.5E-03
HALF LIFE= 36.100 M														
PRODUCT Z= 82	90	232	1.0E-01	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E-01
PRODUCT A=212	92	234	3.7E-02	235	2.1E-02	238	2.7E-03	0	0.	0	0.	0	0.	2.8E-03
HALF LIFE= 10.640 H														
PRODUCT Z= 82	90	232	7.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	7.0E-02
PRODUCT A=213	92	234	2.4E-02	235	1.4E-02	238	1.7E-03	0	0.	0	0.	0	0.	1.8E-03
HALF LIFE= 10.000 M														
PRODUCT Z= 82	90	232	3.6E-02	0	0.	0	0.	0	0.	0	0.	0	0.	3.6E-02
PRODUCT A=214	92	234	1.2E-02	235	7.0E-03	238	8.8E-04	0	0.	0	0.	0	0.	9.3E-04
HALF LIFE= 26.800 M														
PRODUCT Z= 83	82	204	2.0E+04	206	8.5E+03	207	5.6E+03	208	3.6E+03	0	0.	0	0.	5.4E+03
PRODUCT A=197	83	209	2.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+03
HALF LIFE= 1.700 M														

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES
PRODUCT Z= 83	82	204	6.3E+04	206	2.7E+04	207	1.7E+04	208	1.1E+04	0 0.	0 0.	1.7E+04
PRODUCT A=198	83	209	7.3E+03	0	0.	0	0.	0	0.	0 0.	0 0.	7.3E+03
HALF LIFE= 8.000 M												
PRODUCT Z= 83	82	204	1.8E+05	206	7.8E+04	207	5.1E+04	208	3.3E+04	0 0.	0 0.	5.0E+04
PRODUCT A=199	83	209	2.2E+04	0	0.	0	0.	0	0.	0 0.	0 0.	2.2E+04
HALF LIFE= 27.000 M												
PRODUCT Z= 83	82	204	4.7E+05	206	2.1E+05	207	1.4E+05	208	8.9E+04	0 0.	0 0.	1.3E+05
PRODUCT A=200	83	209	5.8E+04	0	0.	0	0.	0	0.	0 0.	0 0.	5.8E+04
HALF LIFE= 35.000 M												
PRODUCT Z= 83	82	204	1.1E+06	206	5.1E+05	207	3.3E+05	208	2.2E+05	0 0.	0 0.	3.3E+05
PRODUCT A=201	83	209	1.4E+05	0	0.	0	0.	0	0.	0 0.	0 0.	1.4E+05
HALF LIFE= 1.800 H												
PRODUCT Z= 83	82	204	2.2E+06	206	1.0E+06	207	7.2E+05	208	4.7E+05	0 0.	0 0.	6.9E+05
PRODUCT A=202	83	209	3.1E+05	0	0.	0	0.	0	0.	0 0.	0 0.	3.1E+05
HALF LIFE= 1.600 H												
PRODUCT Z= 83	82	204	0.	206	1.4E+06	207	9.4E+05	208	6.5E+05	0 0.	0 0.	8.8E+05
PRODUCT A=203	83	209	4.3E+05	0	0.	0	0.	0	0.	0 0.	0 0.	4.3E+05
HALF LIFE= 11.800 H												
PRODUCT Z= 83	82	204	0.	206	1.6E+06	207	1.1E+06	208	7.6E+05	0 0.	0 0.	1.0E+06
PRODUCT A=204	83	209	5.2E+05	0	0.	0	0.	0	0.	0 0.	0 0.	5.2E+05
HALF LIFE= 11.200 H												
PRODUCT Z= 83	82	204	0.	206	0.	207	6.1E+04	208	4.2E+04	0 0.	0 0.	3.6E+04
PRODUCT A=205	83	209	2.9E+04	0	0.	0	0.	0	0.	0 0.	0 0.	2.9E+04
HALF LIFE= 15.300 D												
PRODUCT Z= 83	82	204	0.	206	0.	207	0.	208	8.6E+04	0 0.	0 0.	4.5E+04
PRODUCT A=206	83	209	6.0E+04	0	0.	0	0.	0	0.	0 0.	0 0.	6.0E+04
HALF LIFE= 6.240 D												
PRODUCT Z= 83 PRODUCT A=207	83	209	2.9E+01	0	0.	0	0.	0	0.	0 0.	0 0.	2.9E+01
HALF LIFE= 30.000 Y												
PRODUCT Z= 83	90	232	6.3E-08	0	0.	0	0.	0	0.	0 0.	0 0.	6.3E-08
PRODUCT A=208	92	234	2.2E-08	235	1.3E-08	238	1.7E-09	0	0.	0 0.	0 0.	1.7E-09
HALF LIFE= .370 T												
PRODUCT Z= 83	90	232	8.2E-01	0	0.	0	0.	0	0.	0 0.	0 0.	8.2E-01
PRODUCT A=210	92	234	2.8E-01	235	1.6E-01	238	2.0E-02	0	0.	0 0.	0 0.	2.1E-02
HALF LIFE= 5.000 D												
PRODUCT Z= 83	90	232	4.0E+00	0	0.	0	0.	0	0.	0 0.	0 0.	4.0E+00
PRODUCT A=211	92	234	1.4E+00	235	8.0E-01	238	1.0E-01	0	0.	0 0.	0 0.	1.1E-01
HALF LIFE= 2.150 M												
PRODUCT Z= 83	90	232	2.5E+00	0	0.	0	0.	0	0.	0 0.	0 0.	2.5E+00
PRODUCT A=212	92	234	9.0E-01	235	5.0E-01	238	6.4E-02	0	0.	0 0.	0 0.	6.7E-02
HALF LIFE= 60.600 M												
PRODUCT Z= 83	90	232	1.5E+00	0	0.	0	0.	0	0.	0 0.	0 0.	1.5E+00
PRODUCT A=213	92	234	5.3E-01	235	3.0E-01	238	3.7E-02	0	0.	0 0.	0 0.	3.9E-02
HALF LIFE= 47.000 M												
PRODUCT Z= 83	90	232	8.8E-01	0	0.	0	0.	0	0.	0 0.	0 0.	8.8E-01
PRODUCT A=214	92	234	3.0E-01	235	1.7E-01	238	2.2E-02	0	0.	0 0.	0 0.	2.3E-02
HALF LIFE= 19.700 M												
PRODUCT Z= 83	90	232	4.8E-01	0	0.	0	0.	0	0.	0 0.	0 0.	4.8E-01
PRODUCT A=215	92	234	1.7E-01	235	9.4E-02	238	1.2E-02	0	0.	0 0.	0 0.	1.3E-02
HALF LIFE= 8.000 M												

	TAR GET Z			MONOISOTOPIC TARGET A/MILLICURIES					NATURAL MILLI CURIES
PRODUCT Z= 84 PRODUCT A=198 HALF LIFE= 1.750 M	83	209	6.6E+02	0 0.	0 0.	0 0.	0 0.	0 0.	6.6E+02
PRODUCT Z= 84 PRODUCT A=199 HALF LIFE= 4.240 M	83	209	2.4E+03	0 0.	0 0.	0 0.	0 0.	0 0.	2.4E+03
PRODUCT Z= 84 PRODUCT A=200 HALF LIFE= 11.400 M	83	209	7.9E+03	0 0.	0 0.	0 0.	0 0.	0 0.	7.9E+03
PRODUCT Z= 84 PRODUCT A=201 HALF LIFE= 17.500 M	83	209	2.5E+04	0 0.	0 0.	0 0.	0 0.	0 0.	2.5E+04
PRODUCT Z= 84 PRODUCT A=202 HALF LIFE= 45.000 M	83	209	7.2E+04	0 0.	0 0.	0 0.	0 0.	0 0.	7.2E+04
PRODUCT Z= 84 PRODUCT A=203 HALF LIFE= 45.000 M	83	209	1.9E+05	0 0.	0 0.	0 0.	0 0.	0 0.	1.9E+05
PRODUCT Z= 84 PRODUCT A=204 HALF LIFE= 3.500 H	83	209	4.6E+05	0 0.	0 0.	0 0.	0 0.	0 0.	4.6E+05
PRODUCT Z= 84 PRODUCT A=205 HALF LIFE= 1.800 H	83	209	9.4E+05	0 0.	0 0.	0 0.	0 0.	0 0.	9.4E+05
PRODUCT Z= 84 PRODUCT A=206 HALF LIFE= 8.800 D	83	209	1.2E+05	0 0.	0 0.	0 0.	0 0.	0 0.	1.2E+05
PRODUCT Z= 84 PRODUCT A=207 HALF LIFE= 6.200 H	83	209	1.8E+06	0 0.	0 0.	0 0.	0 0.	0 0.	1.8E+06
PRODUCT Z= 84 PRODUCT A=208 HALF LIFE= 2.900 Y	90 92	232 234	4.4E-02 1.6E-02	0 0. 235 9.0E-03	0 0. 238 1.2E-03	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	4.4E-02 1.2E-03
PRODUCT Z= 84 PRODUCT A=209 HALF LIFE= 103.000 Y	90 92	232 234	1.1E-03 4.0E-04	0 0. 235 2.3E-04	0 0. 238 3.0E-05	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.1E-03 3.1E-05
PRODUCT Z= 84 PRODUCT A=210 HALF LIFE= 138.400 D	90 92	232 234	2.7E-01 9.1E-02	0 0. 235 5.1E-02	0 0. 238 6.7E-03	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.7E-01 7.0E-03
PRODUCT Z= 84 PRODUCT A=218 HALF LIFE= 3.050 M	90 92	232 234	1.8E+00 6.3E-01	0 0. 235 3.5E-01	0 0. 238 4.4E-02	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.8E+00 4.6E-02
PRODUCT Z= 85 PRODUCT A=201 HALF LIFE= 1.500 M	90 92	232 234	7.7E-02 2.7E-02	0 0. 235 1.5E-02	0 0. 238 2.0E-03	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	7.7E-02 2.1E-03
PRODUCT Z= 85 PRODUCT A=202 HALF LIFE= 3.000 M	90 92	232 234	2.6E-01 9.4E-02	0 0. 235 5.3E-02	0 0. 238 7.0E-03	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.6E-01 7.3E-03
PRODUCT Z= 85 PRODUCT A=203 HALF LIFE= 7.200 M	90 92	232 234	8.6E-01 3.1E-01	0 0. 235 1.7E-01	0 0. 238 2.2E-02	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	8.6E-01 2.4E-02
PRODUCT Z= 85 PRODUCT A=204 HALF LIFE= 9.000 M	90 92	232 234	2.6E+00 9.2E-01	0 0. 235 5.3E-01	0 0. 238 6.7E-02	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.6E+00 7.1E-02

	TARGET Z		MONOISOTOPIC TARGET A/MILLICURIES						NATURAL MILLI CURIES
PRODUCT Z= 85 PRODUCT A=205 HALF LIFE= 26.000 M	90 92	232 234	7.3E+00 2.6E+00	0 0. 235 1.5E+00	0 0. 238 1.9E-01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	7.3E+00 2.0E-01
PRODUCT Z= 85 PRODUCT A=206 HALF LIFE= 30.000 M	90 92	232 234	1.9E+01 6.6E+00	0 0. 235 3.8E+00	0 0. 238 5.0E-01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.9E+01 5.2E-01
PRODUCT Z= 85 PRODUCT A=207 HALF LIFE= 1.800 H	90 92	232 234	4.4E+01 1.6E+01	0 0. 235 8.9E+00	0 0. 238 1.2E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	4.4E+01 1.2E+00
PRODUCT Z= 85 PRODUCT A=208 HALF LIFE= 1.600 H	90 92	232 234	9.5E+01 3.3E+01	0 0. 235 1.9E+01	0 0. 238 2.5E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	9.5E+01 2.6E+00
PRODUCT Z= 85 PRODUCT A=209 HALF LIFE= 5.500 H	90 92	232 234	1.6E+02 5.7E+01	0 0. 235 3.3E+01	0 0. 238 4.3E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.6E+02 4.5E+00
PRODUCT Z= 85 PRODUCT A=210 HALF LIFE= 8.300 H	90 92	232 234	1.9E+02 6.4E+01	0 0. 235 3.6E+01	0 0. 238 4.7E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.9E+02 4.9E+00
PRODUCT Z= 85 PRODUCT A=211 HALF LIFE= 7.200 H	90 92	232 234	2.0E+02 6.9E+01	0 0. 235 3.9E+01	0 0. 238 5.1E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.0E+02 5.3E+00
PRODUCT Z= 86 PRODUCT A=204 HALF LIFE= 3.000 M	90 92	232 234	2.4E-01 8.5E-02	0 0. 235 4.9E-02	0 0. 238 6.3E-03	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.4E-01 6.6E-03
PRODUCT Z= 86 PRODUCT A=206 HALF LIFE= 6.500 M	90 92	232 234	2.6E+00 9.2E-01	0 0. 235 5.3E-01	0 0. 238 6.9E-02	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.6E+00 7.3E-02
PRODUCT Z= 86 PRODUCT A=207 HALF LIFE= 11.000 M	90 92	232 234	7.8E+00 2.8E+00	0 0. 235 1.6E+00	0 0. 238 2.1E-01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	7.8E+00 2.2E-01
PRODUCT Z= 86 PRODUCT A=208 HALF LIFE= 23.000 M	90 92	232 234	2.2E+01 7.8E+00	0 0. 235 4.5E+00	0 0. 238 5.8E-01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	2.2E+01 6.1E-01
PRODUCT Z= 86 PRODUCT A=209 HALF LIFE= 30.000 M	90 92	232 234	5.7E+01 2.0E+01	0 0. 235 1.2E+01	0 0. 238 1.5E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	5.7E+01 1.6E+00
PRODUCT Z= 86 PRODUCT A=210 HALF LIFE= 2.700 H	90 92	232 234	1.4E+02 4.8E+01	0 0. 235 2.7E+01	0 0. 238 3.5E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.4E+02 3.7E+00
PRODUCT Z= 86 PRODUCT A=211 HALF LIFE= 16.000 H	90 92	232 234	1.9E+02 6.6E+01	0 0. 235 3.7E+01	0 0. 238 4.9E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.9E+02 5.1E+00
PRODUCT Z= 86 PRODUCT A=212 HALF LIFE= 25.000 M	90 92	232 234	5.4E+02 1.9E+02	0 0. 235 1.1E+02	0 0. 238 1.4E+01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	5.4E+02 1.4E+01
PRODUCT Z= 86 PRODUCT A=215 HALF LIFE= 1.000 M	90 92	232 234	6.8E+02 2.4E+02	0 0. 235 1.3E+02	0 0. 238 1.7E+01	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	6.8E+02 1.8E+01
PRODUCT Z= 86 PRODUCT A=221 HALF LIFE= 25.000 M	90 92	232 234	1.3E+02 4.3E+01	0 0. 235 2.4E+01	0 0. 238 2.9E+00	0 0. 0 0.	0 0. 0 0.	0 0. 0 0.	1.3E+02 3.1E+00

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES								NATURAL MILLI CURIES
PRODUCT Z= 86	90	232	1.3E+01	0	0.	0	0.	0	0.	1.3E+01
PRODUCT A=222	92	234	4.5E+00	235	2.5E+00	238	3.1E-01	0	0.	3.3E-01
HALF LIFE= 3.823 D										
PRODUCT Z= 86	90	232	4.9E+01	0	0.	0	0.	0	0.	4.9E+01
PRODUCT A=223	92	234	1.7E+01	235	9.3E+00	238	1.1E+00	0	0.	1.2E+00
HALF LIFE= 43.000 M										
PRODUCT Z= 86	90	232	2.9E+01	0	0.	0	0.	0	0.	2.9E+01
PRODUCT A=224	92	234	1.0E+01	235	5.5E+00	238	6.7E-01	0	0.	7.0E-01
HALF LIFE= 1.900 H										
PRODUCT Z= 87	90	232	2.5E+01	0	0.	0	0.	0	0.	2.5E+01
PRODUCT A=210	92	234	8.4E+00	235	4.7E+00	238	6.2E-01	0	0.	6.5E-01
HALF LIFE= 2.650 M										
PRODUCT Z= 87	90	232	6.8E+01	0	0.	0	0.	0	0.	6.8E+01
PRODUCT A=211	92	234	2.4E+01	235	1.3E+01	238	1.7E+00	0	0.	1.8E+00
HALF LIFE= 3.100 M										
PRODUCT Z= 87	90	232	1.7E+02	0	0.	0	0.	0	0.	1.7E+02
PRODUCT A=212	92	234	6.2E+01	235	3.5E+01	238	4.5E+00	0	0.	4.7E+00
HALF LIFE= 19.000 M										
PRODUCT Z= 87	90	232	1.4E+03	0	0.	0	0.	0	0.	1.4E+03
PRODUCT A=221	92	234	4.6E+02	235	2.6E+02	238	3.2E+01	0	0.	3.3E+01
HALF LIFE= 4.800 M										
PRODUCT Z= 87	90	232	1.0E+03	0	0.	0	0.	0	0.	1.0E+03
PRODUCT A=222	92	234	3.4E+02	235	1.9E+02	238	2.4E+01	0	0.	2.5E+01
HALF LIFE= 15.000 M										
PRODUCT Z= 87	90	232	7.2E+02	0	0.	0	0.	0	0.	7.2E+02
PRODUCT A=223	92	234	2.4E+02	235	1.4E+02	238	1.6E+01	0	0.	1.7E+01
HALF LIFE= 22.000 M										
PRODUCT Z= 87	90	232	4.9E+02	0	0.	0	0.	0	0.	4.9E+02
PRODUCT A=224	92	234	1.7E+02	235	9.2E+01	238	1.1E+01	0	0.	1.2E+01
HALF LIFE= 2.000 M										
PRODUCT Z= 88	90	232	7.4E+01	0	0.	0	0.	0	0.	7.4E+01
PRODUCT A=213	92	234	2.6E+01	235	1.5E+01	238	1.8E+00	0	0.	1.9E+00
HALF LIFE= 2.700 M										
PRODUCT Z= 88	90	232	7.6E+03	0	0.	0	0.	0	0.	7.6E+03
PRODUCT A=219	92	234	2.6E+03	235	1.5E+03	238	1.8E+02	0	0.	1.9E+02
HALF LIFE= 1.000 M										
PRODUCT Z= 88	90	232	3.7E+02	0	0.	0	0.	0	0.	3.7E+02
PRODUCT A=223	92	234	1.3E+02	235	7.1E+01	238	8.6E+00	0	0.	9.0E+00
HALF LIFE= 11.400 D										
PRODUCT Z= 88	90	232	8.8E+02	0	0.	0	0.	0	0.	8.8E+02
PRODUCT A=224	92	234	3.0E+02	235	1.7E+02	238	2.0E+01	0	0.	2.1E+01
HALF LIFE= 3.640 D										
PRODUCT Z= 88	90	232	1.8E+02	0	0.	0	0.	0	0.	1.8E+02
PRODUCT A=225	92	234	5.9E+01	235	3.4E+01	238	4.0E+00	0	0.	4.2E+00
HALF LIFE= 14.800 D										
PRODUCT Z= 88	90	232	3.2E-03	0	0.	0	0.	0	0.	3.2E-03
PRODUCT A=226	92	234	1.1E-03	235	6.1E-04	238	7.4E-05	0	0.	7.8E-05
HALF LIFE= .016 T										
PRODUCT Z= 88	90	232	1.9E+03	0	0.	0	0.	0	0.	1.9E+03
PRODUCT A=227	92	234	6.5E+02	235	3.6E+02	238	4.4E+01	0	0.	4.6E+01
HALF LIFE= 41.000 M										

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 88	90	232	3.9E-01	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E-01
PRODUCT A=228	92	234	1.4E-01	235	8.0E-02	238	9.7E-03	0	0.	0	0.	0	0.	1.0E-02
HALF LIFE= 5.700 Y														
PRODUCT Z= 88	90	232	7.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	7.1E+02
PRODUCT A=229	92	234	2.7E+02	235	1.5E+02	238	1.8E+01	0	0.	0	0.	0	0.	1.9E+01
HALF LIFE= 5.000 M														
PRODUCT Z= 88	90	232	4.1E+02	0	0.	0	0.	0	0.	0	0.	0	0.	4.1E+02
PRODUCT A=230	92	234	1.6E+02	235	9.3E+01	238	1.1E+01	0	0.	0	0.	0	0.	1.2E+01
HALF LIFE= 1.000 H														
PRODUCT Z= 89	90	232	2.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+04
PRODUCT A=223	92	234	9.8E+03	235	5.5E+03	238	6.7E+02	0	0.	0	0.	0	0.	7.0E+02
HALF LIFE= 2.200 M														
PRODUCT Z= 89	90	232	2.9E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.9E+04
PRODUCT A=224	92	234	1.0E+04	235	5.5E+03	238	6.7E+02	0	0.	0	0.	0	0.	7.0E+02
HALF LIFE= 2.900 H														
PRODUCT Z= 89	90	232	1.8E+03	0	0.	0	0.	0	0.	0	0.	0	0.	1.8E+03
PRODUCT A=225	92	234	6.2E+02	235	3.5E+02	238	4.2E+01	0	0.	0	0.	0	0.	4.4E+01
HALF LIFE= 10.000 D														
PRODUCT Z= 89	90	232	2.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	2.3E+04
PRODUCT A=226	92	234	7.9E+03	235	4.4E+03	238	5.3E+02	0	0.	0	0.	0	0.	5.6E+02
HALF LIFE= 2.900 H														
PRODUCT Z= 89	90	232	1.7E+00	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+00
PRODUCT A=227	92	234	5.8E-01	235	3.2E-01	238	3.9E-02	0	0.	0	0.	0	0.	4.1E-02
HALF LIFE= 21.200 Y														
PRODUCT Z= 89	90	232	1.3E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.3E+04
PRODUCT A=228	92	234	4.6E+03	235	2.6E+03	238	3.2E+02	0	0.	0	0.	0	0.	3.3E+02
HALF LIFE= 6.130 H														
PRODUCT Z= 89	90	232	9.5E+03	0	0.	0	0.	0	0.	0	0.	0	0.	9.5E+03
PRODUCT A=229	92	234	3.6E+03	235	2.0E+03	238	2.5E+02	0	0.	0	0.	0	0.	2.6E+02
HALF LIFE= 66.000 M														
PRODUCT Z= 89	90	232	6.3E+03	0	0.	0	0.	0	0.	0	0.	0	0.	6.3E+03
PRODUCT A=230	92	234	2.4E+03	235	1.4E+03	238	1.7E+02	0	0.	0	0.	0	0.	1.8E+02
HALF LIFE= 1.000 M														
PRODUCT Z= 89 PRODUCT A=231	92	234	1.5E+03	235	9.0E+02	238	1.2E+02	0	0.	0	0.	0	0.	1.2E+02
HALF LIFE= 15.000 M														
PRODUCT Z= 90	90	232	8.8E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.8E+04
PRODUCT A=225	92	234	3.0E+04	235	1.7E+04	238	2.0E+03	0	0.	0	0.	0	0.	2.1E+03
HALF LIFE= 8.000 M														
PRODUCT Z= 90	90	232	1.0E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.0E+05
PRODUCT A=226	92	234	3.4E+04	235	1.9E+04	238	2.3E+03	0	0.	0	0.	0	0.	2.4E+03
HALF LIFE= 31.000 M														
PRODUCT Z= 90	90	232	3.9E+03	0	0.	0	0.	0	0.	0	0.	0	0.	3.9E+03
PRODUCT A=227	92	234	1.3E+03	235	7.4E+02	238	9.0E+01	0	0.	0	0.	0	0.	9.4E+01
HALF LIFE= 18.170 D														
PRODUCT Z= 90	90	232	9.2E+01	0	0.	0	0.	0	0.	0	0.	0	0.	9.2E+01
PRODUCT A=228	92	234	3.3E+01	235	1.9E+01	238	2.3E+00	0	0.	0	0.	0	0.	2.4E+00
HALF LIFE= 1.910 Y														
PRODUCT Z= 90	90	232	2.0E-02	0	0.	0	0.	0	0.	0	0.	0	0.	2.0E-02
PRODUCT A=229	92	234	7.6E-03	235	4.3E-03	238	5.2E-04	0	0.	0	0.	0	0.	5.5E-04
HALF LIFE= 7300.000 Y														

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES												NATURAL MILLI CURIES
PRODUCT Z= 90	90	232	1.5E-03	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E-03
PRODUCT A=230	92	234	5.7E-04	235	3.4E-04	238	4.1E-05	0	0.	0	0.	0	0.	4.3E-05
HALF LIFE= .076 T														
PRODUCT Z= 90 PRODUCT A=231	92	234	8.1E+03	235	4.8E+03	238	6.2E+02	0	0.	0	0.	0	0.	6.5E+02
HALF LIFE= 25.600 H														
PRODUCT Z= 90 PRODUCT A=233	92	234	0.	235	4.8E+03	238	6.9E+02	0	0.	0	0.	0	0.	7.2E+02
HALF LIFE= 22.100 M														
PRODUCT Z= 90 PRODUCT A=234	92	234	0.	235	0.	238	1.3E+01	0	0.	0	0.	0	0.	1.3E+01
HALF LIFE= 24.100 D														
PRODUCT Z= 90 PRODUCT A=235	92	234	0.	235	0.	238	2.8E+02	0	0.	0	0.	0	0.	2.8E+02
HALF LIFE= 5.000 M														
PRODUCT Z= 91	90	232	8.7E+04	0	0.	0	0.	0	0.	0	0.	0	0.	8.7E+04
PRODUCT A=226	92	234	2.9E+04	235	1.6E+04	238	2.0E+03	0	0.	0	0.	0	0.	2.1E+03
HALF LIFE= 1.800 M														
PRODUCT Z= 91	90	232	1.7E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.7E+05
PRODUCT A=227	92	234	6.0E+04	235	3.3E+04	238	4.0E+03	0	0.	0	0.	0	0.	4.2E+03
HALF LIFE= 38.300 M														
PRODUCT Z= 91	90	232	1.5E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.5E+05
PRODUCT A=228	92	234	5.3E+04	235	3.0E+04	238	3.6E+03	0	0.	0	0.	0	0.	3.8E+03
HALF LIFE= 22.000 H														
PRODUCT Z= 91	90	232	1.2E+05	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+05
PRODUCT A=229	92	234	4.4E+04	235	2.5E+04	238	3.0E+03	0	0.	0	0.	0	0.	3.2E+03
HALF LIFE= 1.500 D														
PRODUCT Z= 91	90	232	1.2E+04	0	0.	0	0.	0	0.	0	0.	0	0.	1.2E+04
PRODUCT A=230	92	234	4.8E+03	235	2.8E+03	238	3.4E+02	0	0.	0	0.	0	0.	3.6E+02
HALF LIFE= 17.000 D														
PRODUCT Z= 91 PRODUCT A=231	92	234	6.3E-03	235	3.7E-03	238	4.9E-04	0	0.	0	0.	0	0.	5.1E-04
HALF LIFE= .032 T														
PRODUCT Z= 91 PRODUCT A=232	92	234	3.7E+04	235	2.2E+04	238	3.1E+03	0	0.	0	0.	0	0.	3.2E+03
HALF LIFE= 1.320 D														
PRODUCT Z= 91 PRODUCT A=233	92	234	0.	235	1.1E+03	238	1.6E+02	0	0.	0	0.	0	0.	1.6E+02
HALF LIFE= 27.400 D														
PRODUCT Z= 91 PRODUCT A=234	92	234	0.	235	0.	238	4.3E+03	0	0.	0	0.	0	0.	4.3E+03
HALF LIFE= 6.660 H														
PRODUCT Z= 91 PRODUCT A=235	92	234	0.	235	0.	238	3.4E+03	0	0.	0	0.	0	0.	3.4E+03
HALF LIFE= 24.000 M														
PRODUCT Z= 92 PRODUCT A=227	92	234	1.6E+04	235	8.9E+03	238	1.1E+03	0	0.	0	0.	0	0.	1.1E+03
HALF LIFE= 1.300 M														
PRODUCT Z= 92 PRODUCT A=228	92	234	4.0E+04	235	2.2E+04	238	2.7E+03	0	0.	0	0.	0	0.	2.8E+03
HALF LIFE= 9.300 M														
PRODUCT Z= 92 PRODUCT A=229	92	234	9.0E+04	235	5.0E+04	238	6.1E+03	0	0.	0	0.	0	0.	6.4E+03
HALF LIFE= 58.000 M														

	TARGET Z	MONOISOTOPIC TARGET A/MILLICURIES								NATURAL MILLI CURIES
PRODUCT Z= 92 PRODUCT A=230 HALF LIFE= 20.800 D	92	234	5.7E+03	235	3.4E+03	238	4.1E+02	0 0.	0 0.	0 0.	4.3E+02
PRODUCT Z= 92 PRODUCT A=231 HALF LIFE= 4.200 D	92	234	4.5E+04	235	2.7E+04	238	3.4E+03	0 0.	0 0.	0 0.	3.6E+03
PRODUCT Z= 92 PRODUCT A=232 HALF LIFE= 72.000 Y	92	234	9.2E+00	235	5.5E+00	238	7.5E-01	0 0.	0 0.	0 0.	7.9E-01
PRODUCT Z= 92 PRODUCT A=233 HALF LIFE= .162 T	92	234	0.	235	2.5E-03	238	3.6E-04	0 0.	0 0.	0 0.	3.8E-04
PRODUCT Z= 92 PRODUCT A=236 HALF LIFE= 23.900 T	92	234	0.	235	0.	238	1.6E-06	0 0.	0 0.	0 0.	1.6E-06

Table VI

Spallation Products Produced by 200-MeV Protons

(arranged by target)

...one-day irradiation

...200 microampere beam

...no calculations shown for products with half-lives less than one minute

...no yields included if either the yield or the cross section is <0.001 times the maximum yield or the maximum cross section, respectively, produced in the target

...expected accuracy: within a factor of 3

...Zero values in activity columns mean Rudstam formula does not apply in those cases; zero does not mean that no activity is produced

...see text (page 5, column 2, paragraph 1) for precautions to observe in interpreting activity values and "AVG SIGMA" values when product mass is within two units of target mass.

...other pertinent notes discussed in text of report

...Key:

A = % abundance of (stable) isotope in natural element

D = day

H = hour

M = minute

S = second

T = megayear

Y = year

TARGET Z= 3

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 6	7	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
2	3	.000 A												2.1E+00
2	4	100.000 A												4.9E+01
1	1	99.990 A												2.5E-01
1	2	.015 A												2.6E+01
1	3	12.300 Y	7.0E+01	4.3E+01	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+01	4.3E+00

TARGET Z= 4

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 9	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
4	7	53.000 D	4.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	7.2E+00
3	6	7.420 A												4.7E+01
3	7	92.580 A												2.4E+01
2	3	.000 A												1.1E+00
2	4	100.000 A												2.5E+01
1	1	99.990 A												1.3E-01
1	2	.015 A												1.4E+01
1	3	12.300 Y	1.7E+01	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+01	2.2E+00

TARGET Z= 5

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 10	11	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
4	7	53.000 D	3.2E+03	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	4.1E+00
4	9	100.000 A												2.7E+01
3	6	7.420 A												2.7E+01
3	7	92.580 A												1.4E+01
2	3	.000 A												6.3E-01
2	4	100.000 A												1.4E+01
1	1	99.990 A												7.5E-02
1	2	.015 A												7.8E+00
1	3	12.300 Y	1.1E+01	6.7E+00	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+00	1.3E+00

TARGET Z= 6

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 12	13	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
6	11	20.500 M	0.	2.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+03	9.8E-02
5	10	19.780 A												6.1E+01
5	11	80.220 A												5.3E-01
4	7	53.000 D	1.4E+03	9.1E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	2.8E+00
4	9	100.000 A												2.4E+01
3	6	7.420 A												1.8E+01
3	7	92.580 A												9.4E+00
2	3	.000 A												4.3E-01
2	4	100.000 A												9.9E+00
1	2	.015 A												5.3E+00
1	3	12.300 Y	4.2E+00	2.7E+00	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+00	8.6E-01

TARGET Z= 7

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 14	15	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
6	11	20.500 M	2.0E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	5.9E+00
6	12	98.890 A												5.8E+01
6	13	1.110 A												2.2E-01
5	10	19.780 A												3.2E+01
5	11	80.220 A												3.2E+01
4	7	53.000 D	5.8E+02	3.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+02	1.5E+00
4	9	100.000 A												1.3E+01
3	6	7.420 A												9.8E+00
3	7	92.580 A												5.0E+00
2	3	.000 A												2.3E-01
2	4	100.000 A												5.3E+00
1	2	.015 A												2.8E+00

TARGET Z= 8

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 16	17	18	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
8	14	71.000 S	1.5E+04	1.0E+04	7.2E+03	0.	0.	0.	0.	0.	0.	0.	1.5E+04	5.3E-01
8	16	99.760 A												1.2E-01
7	13	9.960 M	1.7E+05	1.2E+05	8.0E+04	0.	0.	0.	0.	0.	0.	0.	1.7E+05	5.9E+00
7	14	99.630 A												5.5E+01
7	15	.370 A												1.4E-01
6	11	20.500 M	9.1E+04	6.0E+04	3.9E+04	0.	0.	0.	0.	0.	0.	0.	9.0E+04	3.2E+00
6	12	98.890 A												3.1E+01
6	13	1.110 A												4.1E+01
5	10	19.780 A												1.7E+01
5	11	80.220 A												1.7E+01
4	7	53.000 D	2.4E+02	1.6E+02	1.0E+02	0.	0.	0.	0.	0.	0.	0.	2.4E+02	8.0E-01
4	9	100.000 A												7.0E+00
3	6	7.420 A												5.2E+00
3	7	92.580 A												2.7E+00
2	3	.000 A												1.2E-01
2	4	100.000 A												2.8E+00
1	2	.015 A												1.5E+00

TARGET Z= 9

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 19	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
9	17	66.000 S	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	7.5E+00
8	14	71.000 S	4.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	2.1E-01
8	15	124.000 S	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	4.2E+00
8	16	99.760 A												3.8E+01
8	17	.037 A												8.1E+01
7	13	9.960 M	5.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.3E+04	2.3E+00
7	14	99.630 A												2.2E+01
7	15	.370 A												3.6E+01
6	11	20.500 M	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+04	1.2E+00
6	12	98.890 A												1.2E+01
6	13	1.110 A												1.6E+01
5	10	19.780 A												6.7E+00
5	11	80.220 A												6.7E+00
4	9	100.000 A												2.7E+00
3	6	7.420 A												2.0E+00
3	7	92.580 A												1.0E+00
2	4	100.000 A												1.1E+00
1	2	.015 A												5.9E-01

TARGET Z= 10

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 20	21	22	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
10	20	90.920 A												4.2E+00
9	17	66.000 S	1.2E+05	8.5E+04	5.9E+04	0.	0.	0.	0.	0.	0.	0.	1.2E+05	5.2E+00
9	18	110.000 M	1.1E+06	7.4E+05	5.2E+05	0.	0.	0.	0.	0.	0.	0.	1.0E+06	4.6E+01
9	19	100.000 A												6.8E+00
8	14	71.000 S	3.2E+03	2.1E+03	1.4E+03	0.	0.	0.	0.	0.	0.	0.	3.0E+03	1.4E-01
8	15	124.000 S	6.8E+04	4.6E+04	3.0E+04	0.	0.	0.	0.	0.	0.	0.	6.5E+04	2.9E+00
8	16	99.760 A												2.6E+01
8	17	.037 A												5.6E+01
8	18	.204 A												2.0E+01
7	13	9.960 M	3.4E+04	2.3E+04	1.5E+04	0.	0.	0.	0.	0.	0.	0.	3.2E+04	1.6E+00
7	14	99.630 A												1.5E+01
7	15	.370 A												2.5E+01
6	11	20.500 M	1.6E+04	1.1E+04	7.1E+03	0.	0.	0.	0.	0.	0.	0.	1.6E+04	8.6E-01
6	12	98.890 A												8.4E+00
6	13	1.110 A												1.1E+01
5	10	19.780 A												4.7E+00
5	11	80.220 A												4.7E+00
4	9	100.000 A												1.9E+00
3	6	7.420 A												1.4E+00
3	7	92.580 A												7.3E-01
2	4	100.000 A												7.7E-01
1	2	.015 A												4.1E-01

TARGET Z= 11

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 23	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
10	20	90.920 A												3.2E+01
10	21	.257 A												1.1E+02
9	17	66.000 S	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+04	2.1E+00
9	18	110.000 M	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	1.9E+01
9	19	100.000 A												5.0E+01
8	15	124.000 S	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	1.2E+00
8	16	99.760 A												1.1E+01

TARGET Z= 11 (CONTINUED)

PRODUCTS Z	A	HALF LIFE		24	25	26	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
8	17	.037	A												2.3E+01
8	18	.204	A												8.0E+00
7	13	9.960	M	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	6.5E-01
7	14	99.630	A												6.1E+00
7	15	.370	A												1.0E+01
6	11	20.500	M	5.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+03	3.5E-01
6	12	98.890	A												3.4E+00
6	13	1.110	A												4.5E+00
5	10	19.780	A												1.9E+00
5	11	80.220	A												1.9E+00
4	9	100.000	A												7.7E-01
3	6	7.420	A												5.8E-01
3	7	92.580	A												3.0E-01
2	4	100.000	A												3.1E-01
1	2	.015	A												1.7E-01

TARGET Z= 12

PRODUCTS Z	A	HALF LIFE		24	25	26	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
12	24	78.700	A												4.3E+00
11	22	2.600	Y	6.4E+02	4.5E+02	3.1E+02	0.	0.	0.	0.	0.	0.	0.	5.8E+02	3.7E+01
11	23	100.000	A												2.1E+01
11	24	15.000	H	0.	0.	6.7E+05	0.	0.	0.	0.	0.	0.	0.	8.0E+04	5.9E+00
10	20	90.920	A												2.1E+01
10	21	.257	A												7.0E+01
10	22	8.820	A												3.5E+01
10	24	3.380	M	0.	0.	1.7E+04	0.	0.	0.	0.	0.	0.	0.	2.0E+03	1.0E-01
9	17	66.000	S	3.1E+04	2.0E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	2.8E+04	1.4E+00
9	18	110.000	M	2.8E+05	1.9E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	2.6E+05	1.2E+01
9	19	100.000	A												3.3E+01
8	15	124.000	S	1.6E+04	1.0E+04	6.8E+03	0.	0.	0.	0.	0.	0.	0.	1.4E+04	8.0E-01
8	16	99.760	A												7.2E+00
8	17	.037	A												1.5E+01
8	18	.204	A												5.3E+00
7	13	9.960	M	7.7E+03	5.1E+03	3.4E+03	0.	0.	0.	0.	0.	0.	0.	6.9E+03	4.4E-01
7	14	99.630	A												4.1E+00
7	15	.370	A												6.8E+00
6	11	20.500	M	3.7E+03	2.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	3.3E+03	2.3E-01
6	12	98.890	A												2.3E+00
6	13	1.110	A												3.0E+00
5	10	19.780	A												1.3E+00
5	11	80.220	A												1.3E+00
4	9	100.000	A												5.1E-01
3	6	7.420	A												3.8E-01
3	7	92.580	A												2.0E-01
2	4	100.000	A												2.1E-01
1	2	.015	A												1.1E-01

TARGET Z= 13

PRODUCTS Z	A	HALF LIFE		27	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
12	24	78.700	A												2.6E+01
12	25	10.130	A												1.1E+02
11	23	100.000	A												5.9E+01
11	24	15.000	H	4.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.8E+05	3.6E+01
10	20	90.920	A												9.0E+00
10	21	.257	A												3.0E+01
10	22	8.820	A												1.5E+01
10	24	3.380	M	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	6.2E-01
9	17	66.000	S	9.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+03	6.0E-01
9	18	110.000	M	8.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+04	5.2E+00
9	19	100.000	A												1.4E+01
8	15	124.000	S	4.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	3.4E-01
8	16	99.760	A												3.0E+00
8	17	.037	A												6.4E+00
8	18	.204	A												2.2E+00
7	13	9.960	M	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	1.8E-01
7	14	99.630	A												1.7E+00
7	15	.370	A												2.9E+00
6	12	98.890	A												9.6E-01
6	13	1.110	A												1.3E+00
5	10	19.780	A												5.4E-01
5	11	80.220	A												5.3E-01
4	9	100.000	A												2.2E-01
3	6	7.420	A												1.6E-01

TARGET Z= 14

PRODUCTS Z	A	HALF LIFE		28	29	30	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
14	28	92.210	A												9.0E-01

TARGET Z= 14 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 31	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
13	27	100.000 A											7.5E+00
13	28	2.300 M	0.	0.	1.4E+06	0.	0.	0.	0.	0.	0.	4.6E+04	2.6E+00
12	24	78.700 A											1.8E+01
12	25	10.130 A											7.7E+01
12	26	11.170 A											6.1E+01
12	27	9.500 M	0.	2.8E+05	2.0E+05	0.	0.	0.	0.	0.	0.	2.0E+04	1.1E+00
12	28	21.300 H	0.	0.	2.3E+04	0.	0.	0.	0.	0.	0.	7.6E+02	7.9E-02
11	23	100.000 A											4.2E+01
11	24	15.000 H	3.4E+05	2.4E+05	1.6E+05	0.	0.	0.	0.	0.	0.	3.3E+05	2.5E+01
10	20	90.920 A											6.4E+00
10	21	.257 A											2.1E+01
10	22	8.820 A											1.0E+01
10	24	3.380 M	8.6E+03	6.0E+03	4.1E+03	0.	0.	0.	0.	0.	0.	8.3E+03	4.4E-01
9	17	66.000 S	6.1E+03	4.0E+03	2.7E+03	0.	0.	0.	0.	0.	0.	5.9E+03	4.2E-01
9	18	110.000 M	5.7E+04	3.8E+04	2.5E+04	0.	0.	0.	0.	0.	0.	5.5E+04	3.7E+00
9	19	100.000 A											9.9E+00
8	15	124.000 S	3.1E+03	2.0E+03	1.4E+03	0.	0.	0.	0.	0.	0.	3.0E+03	2.4E-01
8	16	99.760 A											2.1E+00
8	17	.037 A											4.5E+00
8	18	.204 A											1.6E+00
7	13	9.960 M	1.5E+03	1.0E+03	6.8E+02	0.	0.	0.	0.	0.	0.	1.5E+03	1.3E-01
7	14	99.630 A											1.2E+00
7	15	.370 A											2.0E+00
6	12	98.890 A											6.8E-01
6	13	1.110 A											8.9E-01
5	10	19.780 A											3.8E-01
5	11	80.220 A											3.8E-01
4	9	100.000 A											1.5E-01
3	6	7.420 A											1.1E-01

TARGET Z= 15

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 31	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
14	28	92.210 A											2.0E+01
14	29	4.700 A											9.6E+01
13	27	100.000 A											5.5E+01
13	28	2.300 M	1.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+06	5.7E+01
13	29	6.600 M	3.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+05	2.2E+01
12	24	78.700 A											7.3E+00
12	25	10.130 A											3.0E+01
12	26	11.170 A											2.4E+01
12	27	9.500 M	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	8.0E+00
12	28	21.300 H	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	1.7E+00
11	23	100.000 A											1.6E+01
11	24	15.000 H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	1.0E+01
10	20	90.920 A											2.5E+00
10	21	.257 A											8.3E+00
10	22	8.820 A											4.1E+00
10	24	3.380 M	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	1.7E-01
9	17	66.000 S	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	1.7E-01
9	18	110.000 M	1.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	1.5E+00
9	19	100.000 A											3.9E+00
8	16	99.760 A											8.4E-01
8	17	.037 A											1.8E+00
8	18	.204 A											6.3E-01
7	14	99.630 A											4.8E-01
7	15	.370 A											8.1E-01
6	12	98.890 A											2.7E-01
6	13	1.110 A											3.5E-01
5	10	19.780 A											1.5E-01
5	11	80.220 A											1.5E-01

TARGET Z= 16

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 32	33	34	36	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
16	32	95.000 A											8.9E-01
15	30	2.500 M	4.0E+05	2.8E+05	2.0E+05	9.5E+04	0.	0.	0.	0.	0.	3.9E+05	2.3E+01
15	31	100.000 A											3.5E+00
15	32	14.300 D	0.	0.	8.6E+04	4.3E+04	0.	0.	0.	0.	0.	3.8E+03	5.1E+00
14	28	92.210 A											1.4E+01
14	29	4.700 A											6.8E+01
14	30	3.090 A											9.4E+01
14	31	2.620 H	0.	4.9E+05	3.5E+05	1.7E+05	0.	0.	0.	0.	0.	1.9E+04	1.2E+00
13	27	100.000 A											3.9E+01
13	28	2.300 M	7.1E+05	5.0E+05	3.4E+05	1.5E+05	0.	0.	0.	0.	0.	6.9E+05	4.1E+01
13	29	6.600 M	2.7E+05	1.9E+05	1.3E+05	6.0E+04	0.	0.	0.	0.	0.	2.6E+05	1.5E+01
12	24	78.700 A											5.2E+00
12	25	10.130 A											2.2E+01
12	26	11.170 A											1.7E+01
12	27	9.500 M	9.9E+04	6.7E+04	4.5E+04	2.0E+04	0.	0.	0.	0.	0.	9.7E+04	5.7E+00
12	28	21.300 H	1.2E+04	8.2E+03	5.5E+03	2.5E+03	0.	0.	0.	0.	0.	1.1E+04	1.2E+00
11	23	100.000 A											1.2E+01
11	24	15.000 H	7.2E+04	4.8E+04	3.2E+04	1.4E+04	0.	0.	0.	0.	0.	7.0E+04	7.2E+00
10	20	90.920 A											1.8E+00
10	21	.257 A											5.9E+00
10	22	8.820 A											2.9E+00
10	24	3.380 M	1.8E+03	1.2E+03	8.3E+02	3.7E+02	0.	0.	0.	0.	0.	1.8E+03	1.2E-01

TARGET Z= 16 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 32	33	34	35	36	37	38	40	NATURAL MILLI CURIES	AVG SIGMA
9	17	66.000 S	1.2E+03	8.2E+02	5.5E+02	2.5E+02	0.	0.	0.	0.	0.	0.	1.2E+03	1.2E-01
9	18	110.000 M	1.1E+04	7.5E+03	5.1E+03	2.3E+03	0.	0.	0.	0.	0.	0.	1.1E+04	1.0E+00
9	19	100.000 A												2.8E+00
8	16	99.760 A												6.0E-01
8	17	.037 A												1.3E+00
8	18	.204 A												4.5E-01
7	14	99.630 A												3.4E-01
7	15	.370 A												5.7E-01
6	12	98.890 A												1.9E-01
6	13	1.110 A												2.5E-01
5	10	19.780 A												1.1E-01
5	11	80.220 A												1.1E-01

TARGET Z= 17

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 35	37	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
17	35	75.530 A											1.7E+01
16	32	95.000 A											1.3E+01
16	33	.760 A											6.8E+01
16	34	4.220 A											2.4E+01
16	35	86.700 D	0.	6.4E+03	0.	0.	0.	0.	0.	0.	0.	1.6E+03	1.4E+01
15	30	2.500 M	1.4E+05	6.4E+04	0.	0.	0.	0.	0.	0.	0.	1.2E+05	7.9E+00
15	31	100.000 A											4.0E+01
15	32	14.300 D	6.1E+04	3.0E+04	0.	0.	0.	0.	0.	0.	0.	5.3E+04	7.2E+01
15	33	25.000 D	1.7E+04	8.7E+03	0.	0.	0.	0.	0.	0.	0.	1.5E+04	3.6E+01
14	28	92.210 A											4.9E+00
14	29	4.700 A											2.3E+01
14	30	3.090 A											3.2E+01
14	31	2.620 H	2.5E+05	1.2E+05	0.	0.	0.	0.	0.	0.	0.	2.1E+05	1.4E+01
13	27	100.000 A											1.3E+01
13	28	2.300 M	2.3E+05	1.0E+05	0.	0.	0.	0.	0.	0.	0.	2.0E+05	1.4E+01
13	29	6.600 M	9.0E+04	4.0E+04	0.	0.	0.	0.	0.	0.	0.	7.8E+04	5.3E+00
12	24	78.700 A											1.8E+00
12	25	10.130 A											7.4E+00
12	26	11.170 A											5.9E+00
12	27	9.500 M	3.0E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	2.6E+04	2.0E+00
12	28	21.300 H	3.7E+03	1.7E+03	0.	0.	0.	0.	0.	0.	0.	3.2E+03	4.2E-01
11	23	100.000 A											4.0E+00
11	24	15.000 H	2.2E+04	9.6E+03	0.	0.	0.	0.	0.	0.	0.	1.9E+04	2.5E+00
10	20	90.920 A											6.2E-01
10	21	.257 A											2.0E+00
10	22	8.820 A											1.0E+00
9	18	110.000 M	3.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	2.9E+03	3.6E-01
9	19	100.000 A											9.6E-01
8	16	99.760 A											2.1E-01
8	17	.037 A											4.4E-01
8	18	.204 A											1.5E-01
7	14	99.630 A											1.2E-01
7	15	.370 A											2.0E-01
6	13	1.110 A											8.6E-02

TARGET Z= 18

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 36	38	40	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
19	38	7.700 M	0.	0.	1.6E+05	0.	0.	0.	0.	0.	0.	1.6E+05	1.1E+01
18	36	.337 A											7.2E+00
18	37	35.100 D	0.	0.	1.1E+04	0.	0.	0.	0.	0.	0.	1.1E+04	4.2E+01
18	38	.063 A											1.4E+02
17	35	75.530 A											2.6E+01
17	37	24.470 A											5.1E+01
17	38	37.300 M	0.	0.	2.7E+05	0.	0.	0.	0.	0.	0.	2.7E+05	1.9E+01
16	32	95.000 A											2.9E+00
16	33	.760 A											1.6E+01
16	34	4.220 A											3.6E+01
16	35	86.700 D	0.	4.6E+03	2.3E+03	0.	0.	0.	0.	0.	0.	2.3E+03	2.1E+01
16	36	.014 A											7.0E+00
16	37	5.100 M	0.	0.	2.4E+04	0.	0.	0.	0.	0.	0.	2.4E+04	1.7E+00
16	38	2.900 H	0.	0.	4.6E+03	0.	0.	0.	0.	0.	0.	4.6E+03	3.3E-01
15	30	2.500 M	9.7E+04	4.3E+04	2.0E+04	0.	0.	0.	0.	0.	0.	2.0E+04	1.8E+00
15	31	100.000 A											9.3E+00
15	32	14.300 D	4.4E+04	2.1E+04	9.3E+03	0.	0.	0.	0.	0.	0.	9.5E+03	1.7E+01
15	33	25.000 D	1.2E+04	6.2E+03	2.8E+03	0.	0.	0.	0.	0.	0.	2.8E+03	8.2E+00
14	28	92.210 A											1.1E+00
14	29	4.700 A											5.4E+00
14	30	3.090 A											7.4E+00
14	31	2.620 H	1.8E+05	8.0E+04	3.6E+04	0.	0.	0.	0.	0.	0.	3.6E+04	3.2E+00
13	27	100.000 A											3.1E+00
13	28	2.300 M	1.5E+05	6.9E+04	3.1E+04	0.	0.	0.	0.	0.	0.	3.1E+04	3.2E+00
13	29	6.600 M	6.1E+04	2.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	1.2E+04	1.2E+00
12	24	78.700 A											4.1E-01
12	25	10.130 A											1.7E+00
12	26	11.170 A											1.4E+00
12	27	9.500 M	2.0E+04	9.1E+03	4.1E+03	0.	0.	0.	0.	0.	0.	4.1E+03	4.5E-01
11	23	100.000 A											9.3E-01
11	24	15.000 H	1.5E+04	6.5E+03	2.9E+03	0.	0.	0.	0.	0.	0.	3.0E+03	5.7E-01
10	20	90.920 A											1.4E-01
10	21	.257 A											4.7E-01

TARGET Z= 18 (CONTINUED)

10	22	8.820	A											2.3E-01
9	19	100.000	A											2.2E-01

TARGET Z= 19

PRODUCTS Z	A	HALF LIFE		39	40	41	MONOISOTOPIC TARGET A/MILLICURIES 0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
19	38	7.700	M	0.	1.6E+05	1.1E+05	0.	0.	0.	0.	0.	0.	0.	8.0E+03	5.9E-01
19	39	93.100	A												3.5E+00
18	36	.337	A												9.6E+00
18	37	35.100	D	1.6E+04	1.1E+04	8.1E+03	0.	0.	0.	0.	0.	0.	0.	1.6E+04	5.6E+01
18	38	.063	A												7.4E+00
17	35	75.530	A												3.4E+01
17	37	24.470	A												6.8E+01
17	38	37.300	M	0.	2.7E+05	1.9E+05	0.	0.	0.	0.	0.	0.	0.	1.4E+04	1.0E+00
17	39	55.000	M	0.	0.	5.2E+04	0.	0.	0.	0.	0.	0.	0.	3.8E+03	2.8E-01
16	32	95.000	A												3.9E+00
16	33	.760	A												2.1E+01
16	34	4.220	A												4.8E+01
16	35	86.700	D	3.2E+03	2.3E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	3.1E+03	2.7E+01
16	36	.014	A												9.4E+00
15	30	2.500	M	2.9E+04	2.0E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	2.8E+04	2.4E+00
15	31	100.000	A												1.2E+01
15	32	14.300	D	1.4E+04	9.4E+03	6.3E+03	0.	0.	0.	0.	0.	0.	0.	1.3E+04	2.2E+01
15	33	25.000	D	4.2E+03	2.8E+03	1.9E+03	0.	0.	0.	0.	0.	0.	0.	4.0E+03	1.1E+01
14	28	92.210	A												1.5E+00
14	29	4.700	A												7.1E+00
14	30	3.090	A												9.8E+00
14	31	2.620	H	5.4E+04	3.6E+04	2.4E+04	0.	0.	0.	0.	0.	0.	0.	5.2E+04	4.2E+00
13	27	100.000	A												4.1E+00
13	28	2.300	M	4.6E+04	3.1E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	4.4E+04	4.3E+00
13	29	6.600	M	1.9E+04	1.2E+04	8.2E+03	0.	0.	0.	0.	0.	0.	0.	1.8E+04	1.6E+00
12	24	78.700	A												5.4E-01
12	25	10.130	A												2.3E+00
12	26	11.170	A												1.8E+00
12	27	9.500	M	6.1E+03	4.1E+03	2.7E+03	0.	0.	0.	0.	0.	0.	0.	5.9E+03	6.0E-01
12	28	21.300	H	7.6E+02	5.1E+02	3.4E+02	0.	0.	0.	0.	0.	0.	0.	7.3E+02	1.3E-01
11	23	100.000	A												1.2E+00
11	24	15.000	H	4.4E+03	2.9E+03	2.0E+03	0.	0.	0.	0.	0.	0.	0.	4.2E+03	7.5E-01
10	20	90.920	A												1.9E-01
10	21	.257	A												6.2E-01
10	22	8.820	A												3.0E-01
9	18	110.000	M	7.2E+02	4.9E+02	3.3E+02	0.	0.	0.	0.	0.	0.	0.	6.9E+02	1.1E-01
9	19	100.000	A												2.9E-01
8	17	.037	A												1.3E-01

TARGET Z= 20

PRODUCTS Z	A	HALF LIFE		40	42	43	MONOISOTOPIC TARGET A/MILLICURIES 44	46	48	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
21	45	100.000	A												2.4E-01
20	40	96.970	A												1.8E-01
20	42	.640	A												2.8E+00
19	38	7.700	M	1.6E+05	7.9E+04	5.6E+04	3.8E+04	1.7E+04	7.8E+03	0.	0.	0.	0.	1.5E+05	1.1E+01
19	39	93.100	A												7.2E-01
19	40	.012	A												2.6E+00
19	41	6.880	A												2.0E+00
19	42	12.400	H	0.	0.	0.	3.7E+05	1.8E+05	8.9E+04	0.	0.	0.	0.	8.5E+03	9.1E-01
18	36	.337	A												7.1E+00
18	37	35.100	D	1.2E+04	5.8E+03	3.9E+03	2.6E+03	1.2E+03	5.4E+02	0.	0.	0.	0.	1.1E+04	4.1E+01
18	38	.063	A												1.4E+02
18	40	99.600	A												5.6E-01
17	35	75.530	A												2.5E+01
17	37	24.470	A												5.0E+01
17	38	37.300	M	0.	1.4E+05	9.8E+04	6.6E+04	3.0E+04	1.4E+04	0.	0.	0.	0.	2.6E+03	2.1E-01
16	32	95.000	A												2.8E+00
16	33	.760	A												1.5E+01
16	34	4.220	A												3.5E+01
16	35	86.700	D	2.3E+03	1.0E+03	7.0E+02	4.7E+02	2.1E+02	9.6E+01	0.	0.	0.	0.	2.2E+03	2.0E+01
16	36	.014	A												6.9E+00
15	30	2.500	M	2.0E+04	8.8E+03	5.9E+03	4.0E+03	1.8E+03	8.2E+02	0.	0.	0.	0.	1.9E+04	1.8E+00
15	31	100.000	A												9.0E+00
15	32	14.300	D	9.4E+03	4.3E+03	2.8E+03	1.9E+03	8.6E+02	3.9E+02	0.	0.	0.	0.	9.2E+03	1.6E+01
15	33	25.000	D	2.8E+03	1.3E+03	8.7E+02	5.8E+02	2.6E+02	1.2E+02	0.	0.	0.	0.	2.8E+03	8.0E+00
14	28	92.210	A												1.1E+00
14	29	4.700	A												5.2E+00
14	30	3.090	A												7.2E+00
14	31	2.620	H	3.6E+04	1.6E+04	1.1E+04	7.3E+03	3.3E+03	1.5E+03	0.	0.	0.	0.	3.5E+04	3.1E+00
13	27	100.000	A												3.0E+00
13	28	2.300	M	3.1E+04	1.4E+04	9.3E+03	6.3E+03	2.9E+03	1.3E+03	0.	0.	0.	0.	3.0E+04	3.1E+00
13	29	6.600	M	1.2E+04	5.6E+03	3.7E+03	2.5E+03	1.1E+03	5.3E+02	0.	0.	0.	0.	1.2E+04	1.2E+00
12	24	78.700	A												4.0E-01
12	25	10.130	A												1.7E+00
12	26	11.170	A												1.3E+00
12	27	9.500	M	4.1E+03	1.8E+03	1.3E+03	8.4E+02	3.9E+02	1.8E+02	0.	0.	0.	0.	4.0E+03	4.4E-01
11	23	100.000	A												9.0E-01
11	24	15.000	H	3.0E+03	1.3E+03	9.2E+02	6.1E+02	2.9E+02	1.3E+02	0.	0.	0.	0.	2.9E+03	5.5E-01
10	20	90.920	A												1.4E-01
10	21	.257	A												4.5E-01

TARGET Z= 20 (CONTINUED)

10	22	8.820 A														2.2E-01
9	19	100.000 A														2.1E-01

TARGET Z= 21

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 45	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
21	43	3.900 H	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	3.4E+01
20	40	96.970 A												3.4E+00
20	42	.640 A												8.6E+01
20	43	.145 A												1.3E+02
19	38	7.700 M	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	2.3E+00
19	39	93.100 A												1.4E+01
19	40	.012 A												5.0E+01
19	41	6.880 A												5.8E+01
19	42	12.400 H	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	2.8E+01
19	43	22.000 H	6.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.3E+04	9.4E+00
18	36	.337 A												1.5E+00
18	37	35.100 D	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	8.5E+00
18	38	.063 A												2.8E+01
18	40	99.600 A												1.1E+01
18	41	1.830 H	4.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+04	3.2E+00
17	35	75.530 A												5.2E+00
17	37	24.470 A												1.0E+01
17	38	37.300 M	4.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+04	3.9E+00
17	39	55.000 M	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	1.1E+00
17	40	1.400 M	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	2.2E-01
16	32	95.000 A												5.9E-01
16	33	.760 A												3.1E+00
16	34	4.220 A												7.3E+00
16	36	.014 A												1.4E+00
16	37	5.100 M	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+03	3.5E-01
15	30	2.500 M	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	3.6E-01
15	31	100.000 A												1.8E+00
15	32	14.300 D	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	3.3E+00
14	28	92.210 A												2.2E-01
14	29	4.700 A												1.1E+00
14	30	3.090 A												1.5E+00
14	31	2.620 H	4.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.0E+03	6.4E-01
13	27	100.000 A												6.1E-01
13	28	2.300 M	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	6.4E-01
13	29	6.600 M	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	2.4E-01
12	25	10.130 A												3.4E-01
12	26	11.170 A												2.7E-01
11	23	100.000 A												1.9E-01

TARGET Z= 22

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 46	47	48	49	50	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
23	47	32.000 M	0.	0.	0.	2.5E+05	1.8E+05	0.	0.	0.	0.	0.	2.4E+04	2.1E+00
23	48	16.100 D	0.	0.	0.	0.	3.6E+04	0.	0.	0.	0.	0.	2.0E+03	4.2E+00
22	45	3.080 H	0.	3.3E+05	2.3E+05	1.7E+05	1.2E+05	0.	0.	0.	0.	0.	2.1E+05	1.8E+01
22	46	7.930 A												7.3E+01
22	47	7.280 A												1.7E+01
22	48	73.940 A												5.2E+00
21	43	3.900 H	3.0E+05	2.1E+05	1.5E+05	1.0E+05	6.9E+04	0.	0.	0.	0.	0.	1.6E+05	1.3E+01
21	44	4.000 H	1.3E+06	9.1E+05	6.4E+05	4.6E+05	3.1E+05	0.	0.	0.	0.	0.	6.8E+05	5.8E+01
21	45	100.000 A												1.0E+02
21	46	83.800 D	0.	0.	7.0E+03	5.0E+03	3.5E+03	0.	0.	0.	0.	0.	5.7E+03	5.8E+01
21	47	3.400 D	0.	0.	0.	4.6E+04	3.2E+04	0.	0.	0.	0.	0.	4.4E+03	2.0E+00
21	48	44.000 H	0.	0.	0.	0.	1.7E+04	0.	0.	0.	0.	0.	9.4E+02	2.6E-01
20	40	96.970 A												1.4E+00
20	42	.640 A												3.5E+01
20	43	.145 A												5.4E+01
20	44	2.060 A												3.0E+01
20	46	.003 A												2.3E+00
19	38	7.700 M	1.7E+04	1.2E+04	8.0E+03	5.3E+03	3.5E+03	0.	0.	0.	0.	0.	8.6E+03	9.1E-01
19	39	93.100 A												5.5E+00
19	40	.012 A												2.0E+01
19	41	6.880 A												2.3E+01
19	42	12.400 H	1.9E+05	1.3E+05	9.1E+04	6.1E+04	4.1E+04	0.	0.	0.	0.	0.	9.7E+04	1.1E+01
19	43	22.000 H	4.5E+04	3.2E+04	2.3E+04	1.5E+04	1.0E+04	0.	0.	0.	0.	0.	2.4E+04	3.8E+00
19	44	22.000 M	0.	1.5E+04	1.1E+04	7.7E+03	5.2E+03	0.	0.	0.	0.	0.	9.9E+03	8.3E-01
19	45	20.000 M	0.	0.	2.2E+03	1.6E+03	1.1E+03	0.	0.	0.	0.	0.	1.8E+03	1.5E-01
18	36	.337 A												5.8E-01
18	38	.063 A												1.1E+01
18	40	99.600 A												4.3E+00
18	41	1.830 H	2.9E+04	2.0E+04	1.3E+04	8.9E+03	6.0E+03	0.	0.	0.	0.	0.	1.4E+04	1.3E+00
17	35	75.530 A												2.1E+00
17	37	24.470 A												4.1E+00
17	38	37.300 M	3.0E+04	2.0E+04	1.4E+04	9.2E+03	6.2E+03	0.	0.	0.	0.	0.	1.5E+04	1.6E+00
17	39	55.000 M	8.8E+03	5.9E+03	3.9E+03	2.7E+03	1.8E+03	0.	0.	0.	0.	0.	4.3E+03	4.3E-01
16	32	95.000 A												2.4E-01
16	33	.760 A												1.3E+00
16	34	4.220 A												2.9E+00
16	36	.014 A												5.7E-01
16	37	5.100 M	2.6E+03	1.7E+03	1.2E+03	7.7E+02	5.2E+02	0.	0.	0.	0.	0.	1.2E+03	1.4E-01
15	30	2.500 M	1.8E+03	1.2E+03	8.3E+02	5.7E+02	3.8E+02	0.	0.	0.	0.	0.	9.0E+02	1.5E-01

TARGET Z= 22 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 50	51	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
15	31	100.000 A												7.4E-01
14	29	4.700 A												4.3E-01
14	30	3.090 A												5.9E-01
14	31	2.620 H	3.3E+03	2.3E+03	1.5E+03	1.0E+03	7.1E+02	0.	0.	0.	0.	0.	1.6E+03	2.6E-01
13	27	100.000 A												2.5E-01
13	28	2.300 M	2.9E+03	2.0E+03	1.3E+03	9.1E+02	6.3E+02	0.	0.	0.	0.	0.	1.4E+03	2.6E-01
12	25	10.130 A												1.4E-01
12	26	11.170 A												1.1E-01

TARGET Z= 23

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 50	51	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
24	48	23.000 H	1.9E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	2.4E+00
24	49	42.000 M	0.	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	1.7E+01
23	47	32.000 M	1.8E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.1E+01
23	48	16.100 D	3.7E+04	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	5.5E+01
23	49	330.000 D	0.	3.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+03	1.7E+02
22	45	3.080 H	1.2E+05	8.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.1E+04	7.5E+00
22	46	7.930 A												3.4E+01
22	47	7.280 A												9.0E+01
22	48	73.940 A												6.8E+01
22	49	5.510 A												3.1E+01
21	43	3.900 H	6.9E+04	4.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+04	4.9E+00
21	44	4.000 H	3.1E+05	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	2.1E+01
21	45	100.000 A												4.3E+01
21	46	83.800 D	3.6E+03	2.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+03	2.7E+01
21	47	3.400 D	3.3E+04	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	1.1E+01
21	48	44.000 H	1.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	3.4E+00
21	49	57.500 M	0.	9.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	9.3E+03	8.2E-01
20	40	96.970 A												5.0E-01
20	42	.640 A												1.2E+01
20	43	.145 A												1.9E+01
20	44	2.060 A												1.1E+01
20	46	.003 A												1.1E+00
20	47	4.500 D	5.5E+02	3.9E+02	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+02	2.4E-01
19	38	7.700 M	3.6E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+03	3.3E-01
19	39	93.100 A												2.0E+00
19	40	.012 A												7.3E+00
19	41	6.880 A												8.4E+00
19	42	12.400 H	4.1E+04	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	4.1E+00
19	43	22.000 H	1.0E+04	7.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.0E+03	1.4E+00
19	44	22.000 M	5.3E+03	3.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	3.5E-01
18	36	.337 A												2.1E-01
18	38	.063 A												4.1E+00
18	40	99.600 A												1.5E+00
18	41	1.830 H	6.0E+03	4.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+03	4.7E-01
17	35	75.530 A												7.5E-01
17	37	24.470 A												1.5E+00
17	38	37.300 M	6.2E+03	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+03	5.7E-01
16	33	.760 A												4.5E-01
16	34	4.220 A												1.1E+00
16	36	.014 A												2.1E-01
15	31	100.000 A												2.7E-01
14	30	3.090 A												2.1E-01

TARGET Z= 24

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 50	52	53	54	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
25	51	45.000 M	0.	0.	1.4E+05	1.0E+05	0.	0.	0.	0.	0.	0.	1.6E+04	1.5E+00
25	52	5.700 D	0.	0.	0.	6.2E+04	0.	0.	0.	0.	0.	0.	1.5E+03	1.2E+00
24	48	23.000 H	2.0E+04	9.8E+03	7.0E+03	4.7E+03	0.	0.	0.	0.	0.	0.	9.8E+03	1.7E+00
24	49	42.000 M	0.	1.4E+05	9.6E+04	6.8E+04	0.	0.	0.	0.	0.	0.	1.2E+05	1.1E+01
24	50	4.310 A												5.7E+01
24	51	27.800 D	0.	0.	4.1E+04	2.9E+04	0.	0.	0.	0.	0.	0.	4.7E+03	1.8E+01
24	52	83.760 A												3.6E+00
23	47	32.000 M	1.8E+05	9.1E+04	6.2E+04	4.2E+04	0.	0.	0.	0.	0.	0.	9.1E+04	8.2E+00
23	48	16.100 D	3.7E+04	1.9E+04	1.3E+04	9.0E+03	0.	0.	0.	0.	0.	0.	1.9E+04	4.0E+01
23	49	330.000 D	0.	2.8E+03	2.0E+03	1.4E+03	0.	0.	0.	0.	0.	0.	2.6E+03	1.1E+02
23	50	.240 A												1.1E+02
23	51	99.760 A												5.0E+00
23	52	3.770 M	0.	0.	0.	1.3E+05	0.	0.	0.	0.	0.	0.	3.1E+03	2.9E-01
22	45	3.080 H	1.2E+05	5.4E+04	3.7E+04	2.5E+04	0.	0.	0.	0.	0.	0.	5.5E+04	5.4E+00
22	46	7.930 A												2.5E+01
22	47	7.280 A												6.5E+01
22	48	73.940 A												4.9E+01
22	49	5.510 A												2.0E+01
22	50	5.340 A												6.9E+00
22	51	5.800 M	0.	0.	1.6E+04	1.1E+04	0.	0.	0.	0.	0.	0.	1.8E+03	1.7E-01
21	43	3.900 H	7.0E+04	3.1E+04	2.1E+04	1.4E+04	0.	0.	0.	0.	0.	0.	3.2E+04	3.5E+00
21	44	4.000 H	3.1E+05	1.4E+05	9.6E+04	6.5E+04	0.	0.	0.	0.	0.	0.	1.4E+05	1.5E+01
21	45	100.000 A												3.1E+01
21	46	83.800 D	3.6E+03	1.7E+03	1.2E+03	7.8E+02	0.	0.	0.	0.	0.	0.	1.7E+03	2.0E+01
21	47	3.400 D	3.3E+04	1.7E+04	1.1E+04	7.6E+03	0.	0.	0.	0.	0.	0.	1.6E+04	8.0E+00
21	48	44.000 H	0.	8.6E+03	6.1E+03	4.2E+03	0.	0.	0.	0.	0.	0.	7.9E+03	2.3E+00
21	49	57.500 M	0.	6.7E+03	4.7E+03	3.4E+03	0.	0.	0.	0.	0.	0.	6.1E+03	5.5E-01
20	40	96.970 A												3.6E-01
20	42	.640 A												9.0E+00

TARGET Z= 24 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	55	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
20	43	.145 A												1.4E+01
20	44	2.060 A												7.7E+00
20	46	.003 A												7.9E-01
20	47	4.500 D	0.	2.8E+02	1.9E+02	1.3E+02	0.	0.	0.	0.	0.	0.	2.6E+02	1.6E-01
19	38	7.700 M	3.6E+03	1.6E+03	1.1E+03	7.4E+02	0.	0.	0.	0.	0.	0.	1.6E+03	2.4E-01
19	39	93.100 A												1.4E+00
19	40	.012 A												5.2E+00
19	41	6.880 A												6.1E+00
19	42	12.400 H	4.2E+04	1.9E+04	1.3E+04	8.5E+03	0.	0.	0.	0.	0.	0.	1.9E+04	3.0E+00
19	43	22.000 H	1.1E+04	4.8E+03	3.2E+03	2.1E+03	0.	0.	0.	0.	0.	0.	4.8E+03	9.9E-01
19	44	22.000 M	5.3E+03	2.4E+03	1.6E+03	1.1E+03	0.	0.	0.	0.	0.	0.	2.4E+03	2.5E-01
18	36	.337 A												1.5E-01
18	38	.063 A												3.0E+00
18	40	99.600 A												1.1E+00
18	41	1.830 H	6.0E+03	2.7E+03	1.8E+03	1.2E+03	0.	0.	0.	0.	0.	0.	2.7E+03	3.4E-01
17	35	75.530 A												5.4E-01
17	37	24.470 A												1.1E+00
17	38	37.300 M	6.3E+03	2.8E+03	1.9E+03	1.3E+03	0.	0.	0.	0.	0.	0.	2.8E+03	4.1E-01
17	39	55.000 M	1.8E+03	8.1E+02	5.5E+02	3.7E+02	0.	0.	0.	0.	0.	0.	8.2E+02	1.1E-01
16	33	.760 A												3.3E-01
16	34	4.220 A												7.6E-01
16	36	.014 A												1.5E-01
15	31	100.000 A												1.9E-01
14	29	4.700 A												1.1E-01
14	30	3.090 A												1.6E-01

TARGET Z= 25

PRODUCTS Z	A	HALF LIFE	55	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
26	52	8.300 H	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	1.3E+00
26	53	8.500 M	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	9.7E+00
25	51	45.000 M	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+04	6.8E+00
25	52	5.700 D	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	3.6E+01
24	48	23.000 H	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	6.5E-01
24	49	42.000 M	4.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+04	4.6E+00
24	50	4.310 A												2.4E+01
24	51	27.800 D	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	8.0E+01
24	52	83.760 A												1.1E+02
24	53	9.550 A												6.1E+01
23	47	32.000 M	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	3.1E+00
23	48	16.100 D	6.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.1E+03	1.5E+01
23	49	330.000 D	9.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+02	4.6E+01
23	50	.240 A												4.5E+01
23	51	99.760 A												2.3E+01
23	52	3.770 M	9.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+04	8.4E+00
23	53	2.000 M	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	2.4E+00
22	45	3.080 H	1.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	2.1E+00
22	46	7.930 A												9.4E+00
22	47	7.280 A												2.5E+01
22	48	73.940 A												1.9E+01
22	49	5.510 A												8.4E+00
22	50	5.340 A												2.8E+00
22	51	5.800 M	8.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+03	7.5E-01
21	43	3.900 H	9.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+03	1.3E+00
21	44	4.000 H	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	5.7E+00
21	45	100.000 A												1.2E+01
21	46	83.800 D	5.3E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.3E+02	7.4E+00
21	47	3.400 D	5.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.1E+03	3.0E+00
21	48	44.000 H	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	9.3E-01
21	49	57.500 M	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	2.3E-01
20	40	96.970 A												1.4E-01
20	42	.640 A												3.4E+00
20	43	.145 A												5.3E+00
20	44	2.060 A												2.9E+00
20	46	.003 A												3.0E-01
19	39	93.100 A												5.4E-01
19	40	.012 A												2.0E+00
19	41	6.880 A												2.3E+00
19	42	12.400 H	5.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+03	1.1E+00
19	43	22.000 H	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	3.7E-01
18	38	.063 A												1.1E+00
18	40	99.600 A												4.2E-01
17	35	75.530 A												2.1E-01
17	37	24.470 A												4.1E-01
17	38	37.300 M	8.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+02	1.6E-01
16	34	4.220 A												2.9E-01

TARGET Z= 26

PRODUCTS Z	A	HALF LIFE	54	56	57	58	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES										
27	55	18.000 H	0.	0.	4.5E+04	3.2E+04	0.	0.	0.	0.	0.	1.1E+03	1.8E-01
26	52	8.300 H	1.7E+04	8.5E+03	6.1E+03	4.1E+03	0.	0.	0.	0.	0.	8.9E+03	9.8E-01
26	53	8.500 M	0.	7.4E+04	5.2E+04	3.7E+04	0.	0.	0.	0.	0.	6.9E+04	6.6E+00
26	54	5.820 A											3.7E+01
26	56	91.660 A											6.7E-01
25	51	45.000 M	1.0E+05	5.1E+04	3.5E+04	2.3E+04	0.	0.	0.	0.	0.	5.4E+04	5.1E+00
25	52	5.700 D	6.2E+04	3.1E+04	2.2E+04	1.5E+04	0.	0.	0.	0.	0.	3.3E+04	2.7E+01

TARGET Z= 26 (CONTINUED)

25	54	312.000	D	0.	4.0E+03	2.9E+03	2.0E+03	0.	0.	0.	0.	0.	0.	3.8E+03	1.6E+02
25	55	100.000	A												2.0E+00
24	48	23.000	H	4.8E+03	2.2E+03	1.5E+03	9.9E+02	0.	0.	0.	0.	0.	0.	2.3E+03	4.9E-01
24	49	42.000	M	6.9E+04	3.2E+04	2.1E+04	1.4E+04	0.	0.	0.	0.	0.	0.	3.4E+04	3.5E+00
24	50	4.310	A												1.8E+01
24	51	27.800	D	3.0E+04	1.5E+04	1.0E+04	6.8E+03	0.	0.	0.	0.	0.	0.	1.6E+04	6.0E+01
24	52	83.760	A												8.0E+01
24	53	9.550	A												4.1E+01
24	54	2.380	A												1.7E+01
23	47	32.000	M	4.2E+04	1.9E+04	1.3E+04	8.6E+03	0.	0.	0.	0.	0.	0.	2.0E+04	2.3E+00
23	48	16.100	D	9.1E+03	4.1E+03	2.8E+03	1.9E+03	0.	0.	0.	0.	0.	0.	4.4E+03	1.1E+01
23	49	330.000	D	1.4E+03	6.6E+02	4.4E+02	3.0E+02	0.	0.	0.	0.	0.	0.	7.0E+02	3.5E+01
23	50	.240	A												3.4E+01
23	51	99.760	A												1.7E+01
23	52	3.770	M	0.	6.4E+04	4.5E+04	3.1E+04	0.	0.	0.	0.	0.	0.	6.0E+04	5.7E+00
23	53	2.000	M	0.	1.9E+04	1.3E+04	9.4E+03	0.	0.	0.	0.	0.	0.	1.7E+04	1.7E+00
22	45	3.080	H	2.5E+04	1.1E+04	7.6E+03	5.1E+03	0.	0.	0.	0.	0.	0.	1.2E+04	1.5E+00
22	46	7.930	A												7.1E+00
22	47	7.280	A												1.9E+01
22	48	73.940	A												1.4E+01
22	49	5.510	A												6.4E+00
22	50	5.340	A												2.1E+00
22	51	5.800	M	0.	5.7E+03	3.9E+03	2.6E+03	0.	0.	0.	0.	0.	0.	5.3E+03	5.1E-01
21	43	3.900	H	1.4E+04	6.5E+03	4.4E+03	2.9E+03	0.	0.	0.	0.	0.	0.	6.9E+03	1.0E+00
21	44	4.000	H	6.6E+04	2.9E+04	2.0E+04	1.3E+04	0.	0.	0.	0.	0.	0.	3.1E+04	4.3E+00
21	45	100.000	A												8.9E+00
21	46	83.800	D	7.9E+02	3.6E+02	2.4E+02	1.6E+02	0.	0.	0.	0.	0.	0.	3.8E+02	5.6E+00
21	47	3.400	D	7.7E+03	3.5E+03	2.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	3.7E+03	2.3E+00
21	48	44.000	H	4.2E+03	1.9E+03	1.3E+03	8.7E+02	0.	0.	0.	0.	0.	0.	2.0E+03	7.0E-01
21	49	57.500	M	3.4E+03	1.6E+03	1.0E+03	7.0E+02	0.	0.	0.	0.	0.	0.	1.7E+03	1.7E-01
20	42	.640	A												2.6E+00
20	43	.145	A												4.0E+00
20	44	2.060	A												2.2E+00
20	46	.003	A												2.3E-01
19	39	93.100	A												4.1E-01
19	40	.012	A												1.5E+00
19	41	6.880	A												1.7E+00
19	42	12.400	H	8.6E+03	3.9E+03	2.6E+03	1.8E+03	0.	0.	0.	0.	0.	0.	4.1E+03	8.5E-01
19	43	22.000	H	2.2E+03	9.8E+02	6.6E+02	4.4E+02	0.	0.	0.	0.	0.	0.	1.0E+03	2.8E-01
18	38	.063	A												8.5E-01
18	40	99.600	A												3.2E-01
17	37	24.470	A												3.1E-01
16	34	4.220	A												2.2E-01

TARGET Z= 27

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 59	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
28	56	6.100	D	7.2E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+02	6.7E-01
28	57	36.000	H	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	5.3E+00
27	55	18.000	H	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	3.8E+00
27	56	77.300	D	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	2.2E+01
27	57	272.000	D	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+03	9.5E+01
26	52	8.300	H	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	3.6E-01
26	53	8.500	M	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	2.7E+00
26	54	5.820	A												1.5E+01
26	55	2.400	Y	4.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+02	6.0E+01
26	56	91.660	A												1.4E+02
26	57	2.190	A												1.1E+02
25	51	45.000	M	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	1.8E+00
25	52	5.700	D	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	9.9E+00
25	54	312.000	D	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	6.5E+01
25	55	100.000	A												4.3E+01
25	56	2.580	H	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	1.9E+01
25	57	1.700	M	6.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+04	6.6E+00
24	48	23.000	H	6.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+02	1.8E-01
24	49	42.000	M	9.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+03	1.3E+00
24	50	4.310	A												6.4E+00
24	51	27.800	D	4.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	2.2E+01
24	52	83.760	A												2.9E+01
24	53	9.550	A												1.7E+01
24	54	2.380	A												6.7E+00
24	55	3.500	M	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	2.1E+00
24	56	5.900	M	5.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+03	5.5E-01
23	47	32.000	M	5.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+03	8.5E-01
23	48	16.100	D	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	4.1E+00
23	49	330.000	D	2.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+02	1.3E+01
23	50	.240	A												1.2E+01
23	51	99.760	A												6.3E+00
23	52	3.770	M	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	2.3E+00
23	53	2.000	M	6.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+03	6.7E-01
22	45	3.080	H	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	5.6E-01
22	46	7.930	A												2.6E+00
22	47	7.280	A												6.8E+00
22	48	73.940	A												5.1E+00
22	49	5.510	A												2.3E+00
22	50	5.340	A												7.7E-01
22	51	5.800	M	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	2.1E-01
21	43	3.900	H	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	3.7E-01
21	44	4.000	H	9.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+03	1.6E+00
21	45	100.000	A												3.2E+00
21	47	3.400	D	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	8.3E-01
21	48	44.000	H	5.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+02	2.5E-01
20	42	.640	A												9.4E-01
20	43	.145	A												1.5E+00

TARGET Z= 27 (CONTINUED)

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES	AVG SIGMA
				58	60	61	62	64	0	0	0	0	0		
20	44	2.060	A												8.0E-01
19	39	93.100	A												1.5E-01
19	40	.012	A												5.4E-01
19	41	6.880	A												6.3E-01
19	42	12.400	H	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	3.1E-01
18	38	.063	A												3.1E-01

TARGET Z= 28

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES	AVG SIGMA
				58	60	61	62	64	0	0	0	0	0		
29	59	81.000	S	0.	0.	3.7E+04	2.6E+04	1.3E+04	0.	0.	0.	0.	0.	1.6E+03	1.7E-01
29	60	24.000	M	0.	0.	0.	1.7E+05	8.4E+04	0.	0.	0.	0.	0.	7.4E+03	7.7E-01
29	61	3.300	H	0.	0.	0.	0.	4.0E+05	0.	0.	0.	0.	0.	4.7E+03	5.1E-01
29	62	9.900	M	0.	0.	0.	0.	1.4E+06	0.	0.	0.	0.	0.	1.6E+04	1.8E+00
28	56	6.100	D	1.0E+03	5.2E+02	3.7E+02	2.5E+02	1.1E+02	0.	0.	0.	0.	0.	8.4E+02	7.7E-01
28	57	36.000	H	0.	1.4E+04	9.9E+03	7.1E+03	3.2E+03	0.	0.	0.	0.	0.	4.2E+03	1.1E+00
28	58	67.880	A												7.0E+00
28	60	26.230	A												7.8E+00
28	61	1.190	A												1.4E+00
28	62	3.660	A												9.1E-01
27	55	18.000	H	3.2E+04	1.6E+04	1.1E+04	7.5E+03	3.4E+03	0.	0.	0.	0.	0.	2.7E+04	4.3E+00
27	56	77.300	D	2.8E+03	1.4E+03	1.0E+03	6.8E+02	3.1E+02	0.	0.	0.	0.	0.	2.3E+03	2.5E+01
27	57	272.000	D	0.	1.7E+03	1.2E+03	8.7E+02	4.0E+02	0.	0.	0.	0.	0.	5.2E+02	2.1E+01
27	58	71.000	D	0.	1.8E+04	1.3E+04	9.3E+03	4.5E+03	0.	0.	0.	0.	0.	5.5E+03	5.7E+01
27	59	100.000	A												6.2E+00
26	52	8.300	H	4.2E+03	1.9E+03	1.3E+03	8.6E+02	3.9E+02	0.	0.	0.	0.	0.	3.4E+03	4.1E-01
26	53	8.500	M	3.8E+04	1.7E+04	1.2E+04	7.8E+03	3.5E+03	0.	0.	0.	0.	0.	3.0E+04	3.0E+00
26	54	5.820	A												1.7E+01
26	55	2.400	Y	6.7E+02	3.4E+02	2.3E+02	1.5E+02	7.0E+01	0.	0.	0.	0.	0.	5.5E+02	6.8E+01
26	56	91.660	A												1.6E+02
26	57	2.190	A												2.3E+01
26	58	.330	A												1.2E+01
26	59	45.000	D	0.	0.	1.6E+03	1.1E+03	5.7E+02	0.	0.	0.	0.	0.	7.0E+01	4.7E-01
25	51	45.000	M	2.4E+04	1.1E+04	7.3E+03	4.8E+03	2.2E+03	0.	0.	0.	0.	0.	1.9E+04	2.1E+00
25	52	5.700	D	1.5E+04	7.0E+03	4.7E+03	3.2E+03	1.4E+03	0.	0.	0.	0.	0.	1.2E+04	1.1E+01
25	54	312.000	D	2.1E+03	9.9E+02	6.7E+02	4.5E+02	2.1E+02	0.	0.	0.	0.	0.	1.7E+03	7.5E+01
25	55	100.000	A												4.9E+01
25	56	2.580	H	0.	1.4E+05	9.8E+04	6.6E+04	3.0E+04	0.	0.	0.	0.	0.	4.1E+04	4.2E+00
25	57	1.700	M	0.	4.8E+04	3.4E+04	2.4E+04	1.1E+04	0.	0.	0.	0.	0.	1.4E+04	1.4E+00
24	48	23.000	H	1.0E+03	4.5E+02	3.0E+02	2.0E+02	9.3E+01	0.	0.	0.	0.	0.	8.1E+02	2.0E-01
24	49	42.000	M	1.5E+04	6.5E+03	4.4E+03	3.0E+03	1.3E+03	0.	0.	0.	0.	0.	1.2E+04	1.4E+00
24	50	4.310	A												7.4E+00
24	51	27.800	D	6.9E+03	3.1E+03	2.1E+03	1.4E+03	6.4E+02	0.	0.	0.	0.	0.	5.6E+03	2.5E+01
24	52	83.760	A												3.3E+01
24	53	9.550	A												1.9E+01
24	54	2.380	A												7.7E+00
24	55	3.500	M	0.	1.5E+04	1.0E+04	7.0E+03	3.2E+03	0.	0.	0.	0.	0.	4.5E+03	4.6E-01
23	47	32.000	M	8.7E+03	3.9E+03	2.6E+03	1.8E+03	8.1E+02	0.	0.	0.	0.	0.	7.0E+03	9.7E-01
23	48	16.100	D	1.9E+03	8.5E+02	5.7E+02	3.8E+02	1.8E+02	0.	0.	0.	0.	0.	1.5E+03	4.7E+00
23	49	330.000	D	3.0E+02	1.4E+02	9.2E+01	6.2E+01	2.8E+01	0.	0.	0.	0.	0.	2.4E+02	1.4E+01
23	50	.240	A												1.4E+01
23	51	99.760	A												7.1E+00
23	52	3.770	M	3.1E+04	1.4E+04	9.5E+03	6.5E+03	2.9E+03	0.	0.	0.	0.	0.	2.5E+04	2.6E+00
23	53	2.000	M	9.5E+03	4.3E+03	2.9E+03	2.0E+03	8.9E+02	0.	0.	0.	0.	0.	7.6E+03	7.6E-01
22	45	3.080	H	5.1E+03	2.3E+03	1.6E+03	1.1E+03	4.9E+02	0.	0.	0.	0.	0.	4.1E+03	6.4E-01
22	46	7.930	A												2.9E+00
22	47	7.280	A												7.7E+00
22	48	73.940	A												5.8E+00
22	49	5.510	A												2.6E+00
22	50	5.340	A												8.9E-01
22	51	5.800	M	2.6E+03	1.2E+03	8.1E+02	5.4E+02	2.4E+02	0.	0.	0.	0.	0.	2.1E+03	2.3E-01
21	43	3.900	H	3.0E+03	1.4E+03	9.2E+02	6.3E+02	2.9E+02	0.	0.	0.	0.	0.	2.4E+03	4.2E-01
21	44	4.000	H	1.3E+04	6.1E+03	4.1E+03	2.8E+03	1.3E+03	0.	0.	0.	0.	0.	1.1E+04	1.8E+00
21	45	100.000	A												3.7E+00
21	46	83.800	D	1.6E+02	7.4E+01	5.0E+01	3.4E+01	1.5E+01	0.	0.	0.	0.	0.	1.3E+02	2.3E+00
21	47	3.400	D	1.6E+03	7.2E+02	4.8E+02	3.2E+02	1.5E+02	0.	0.	0.	0.	0.	1.3E+03	9.5E-01
21	48	44.000	H	8.8E+02	3.9E+02	2.7E+02	1.8E+02	8.1E+01	0.	0.	0.	0.	0.	7.1E+02	2.9E-01
20	42	.640	A												1.1E+00
20	43	.145	A												1.7E+00
20	44	2.060	A												9.2E-01
19	39	93.100	A												1.7E-01
19	40	.012	A												6.2E-01
19	41	6.880	A												7.2E-01
19	42	12.400	H	1.8E+03	8.2E+02	5.6E+02	3.7E+02	1.8E+02	0.	0.	0.	0.	0.	1.4E+03	3.5E-01
18	38	.063	A												3.5E-01

TARGET Z= 29

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES	AVG SIGMA
				63	65	0	0	0	0	0	0	0	0		
30	60	2.100	M	3.1E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	2.8E-01
30	61	89.000	S	2.5E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	2.3E+00
30	62	9.300	H	0.	7.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	2.9E+00
30	63	38.000	M	0.	4.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	1.5E+01
29	59	81.000	S	1.9E+04	9.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	1.7E+00
29	60	24.000	M	1.2E+05	6.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	1.1E+01
29	61	3.300	H	5.7E+05	2.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.8E+05	5.1E+01
29	62	9.900	M	0.	1.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+05	3.4E+01

TARGET Z= 29 (CONTINUED)

29	63	69.090	A											6.4E+01
28	57	36.000	H	4.8E+03	2.2E+03	0.	0.	0.	0.	0.	0.	0.	4.0E+03	1.2E+00
28	58	67.880	A											7.4E+00
28	60	26.230	A											1.1E+02
28	61	1.190	A											1.4E+02
28	62	3.660	A											1.8E+01
27	55	18.000	H	5.1E+03	2.3E+03	0.	0.	0.	0.	0.	0.	0.	4.2E+03	8.8E-01
27	57	272.000	D	6.0E+02	2.7E+02	0.	0.	0.	0.	0.	0.	0.	4.9E+02	2.2E+01
27	58	71.000	D	6.7E+03	3.1E+03	0.	0.	0.	0.	0.	0.	0.	5.5E+03	6.1E+01
27	59	100.000	A											6.1E+01
27	61	1.650	H	1.6E+05	8.0E+04	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.4E+01
27	62	13.900	M	0.	2.6E+04	0.	0.	0.	0.	0.	0.	0.	8.4E+03	9.1E-01
26	53	8.500	M	5.3E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	4.4E+03	6.2E-01
26	54	5.820	A											3.5E+00
26	56	91.660	A											3.3E+01
26	57	2.190	A											2.5E+01
26	58	.330	A											1.2E+01
26	59	45.000	D	8.1E+02	3.9E+02	0.	0.	0.	0.	0.	0.	0.	6.8E+02	4.7E+00
25	51	45.000	M	3.3E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	2.7E+03	4.3E-01
25	52	5.700	D	2.1E+03	9.7E+02	0.	0.	0.	0.	0.	0.	0.	1.8E+03	2.3E+00
25	55	100.000	A											9.9E+00
25	56	2.580	H	4.5E+04	2.0E+04	0.	0.	0.	0.	0.	0.	0.	3.7E+04	4.5E+00
25	57	1.700	M	1.6E+04	7.5E+03	0.	0.	0.	0.	0.	0.	0.	1.4E+04	1.5E+00
25	58	1.100	M	4.8E+03	2.2E+03	0.	0.	0.	0.	0.	0.	0.	4.0E+03	4.3E-01
24	49	42.000	M	2.0E+03	9.1E+02	0.	0.	0.	0.	0.	0.	0.	1.7E+03	2.9E-01
24	50	4.310	A											1.5E+00
24	51	27.800	D	9.5E+02	4.3E+02	0.	0.	0.	0.	0.	0.	0.	7.9E+02	5.0E+00
24	52	83.760	A											6.7E+00
24	53	9.550	A											3.8E+00
24	54	2.380	A											1.6E+00
24	55	3.500	M	4.7E+03	2.2E+03	0.	0.	0.	0.	0.	0.	0.	3.9E+03	4.9E-01
23	47	32.000	M	1.2E+03	5.6E+02	0.	0.	0.	0.	0.	0.	0.	1.0E+03	2.0E-01
23	50	.240	A											2.8E+00
23	51	99.760	A											1.4E+00
23	52	3.770	M	4.3E+03	2.0E+03	0.	0.	0.	0.	0.	0.	0.	3.6E+03	5.3E-01
23	53	2.000	M	1.3E+03	6.0E+02	0.	0.	0.	0.	0.	0.	0.	1.1E+03	1.5E-01
22	46	7.930	A											5.9E-01
22	47	7.280	A											1.6E+00
22	48	73.940	A											1.2E+00
22	49	5.510	A											5.3E-01
22	50	5.340	A											1.8E-01
21	44	4.000	H	1.9E+03	8.9E+02	0.	0.	0.	0.	0.	0.	0.	1.6E+03	3.6E-01
21	45	100.000	A											7.5E-01
20	42	.640	A											2.2E-01
20	43	.145	A											3.4E-01
20	44	2.060	A											1.9E-01
19	41	6.880	A											1.5E-01

TARGET Z= 30

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 64	66	67	68	70	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
31	64	2.600	M	0.	8.3E+04	5.9E+04	4.2E+04	2.0E+04	0.	0.	0.	0.	0.	3.4E+04	3.7E+00
31	65	15.000	M	0.	0.	3.1E+05	2.2E+05	1.1E+05	0.	0.	0.	0.	0.	5.7E+04	6.4E+00
31	66	9.500	H	0.	0.	0.	7.4E+05	3.8E+05	0.	0.	0.	0.	0.	1.5E+05	2.0E+01
31	67	78.000	H	0.	0.	0.	0.	2.5E+05	0.	0.	0.	0.	0.	1.6E+03	9.8E-01
31	68	68.000	M	0.	0.	0.	0.	1.5E+06	0.	0.	0.	0.	0.	9.9E+03	1.1E+00
30	60	2.100	M	2.2E+03	1.1E+03	7.2E+02	4.8E+02	2.2E+02	0.	0.	0.	0.	0.	1.5E+03	1.6E-01
30	61	89.000	S	1.8E+04	9.2E+03	6.3E+03	4.2E+03	1.9E+03	0.	0.	0.	0.	0.	1.2E+04	1.3E+00
30	62	9.300	H	9.9E+04	5.0E+04	3.6E+04	2.4E+04	1.1E+04	0.	0.	0.	0.	0.	6.8E+04	8.8E+00
30	63	38.000	M	0.	3.1E+05	2.2E+05	1.5E+05	7.1E+04	0.	0.	0.	0.	0.	1.3E+05	1.4E+01
30	64	48.890	A												5.2E+01
30	65	243.000	D	0.	0.	5.6E+03	4.0E+03	2.0E+03	0.	0.	0.	0.	0.	1.0E+03	4.0E+01
30	66	27.810	A												2.7E+01
30	67	4.110	A												2.6E-01
30	68	18.570	A												1.1E-01
29	59	81.000	S	1.3E+04	6.2E+03	4.1E+03	2.8E+03	1.3E+03	0.	0.	0.	0.	0.	8.9E+03	9.9E-01
29	60	24.000	M	8.5E+04	4.1E+04	2.8E+04	1.9E+04	8.5E+03	0.	0.	0.	0.	0.	5.7E+04	6.3E+00
29	61	3.300	H	4.1E+05	2.1E+05	1.4E+05	9.4E+04	4.3E+04	0.	0.	0.	0.	0.	2.8E+05	3.0E+01
29	62	9.900	M	1.4E+06	7.2E+05	5.1E+05	3.5E+05	1.6E+05	0.	0.	0.	0.	0.	9.7E+05	1.0E+02
29	63	69.090	A												6.0E+01
29	64	12.900	H	0.	6.9E+05	4.9E+05	3.5E+05	1.7E+05	0.	0.	0.	0.	0.	2.8E+05	4.3E+01
29	65	30.910	A												7.0E+00
29	66	5.100	M	0.	0.	0.	9.5E+04	4.8E+04	0.	0.	0.	0.	0.	1.9E+04	2.1E+00
28	57	36.000	H	3.3E+03	1.5E+03	1.0E+03	6.7E+02	3.0E+02	0.	0.	0.	0.	0.	2.2E+03	7.2E-01
28	58	67.880	A												4.4E+00
28	60	26.230	A												6.3E+01
28	61	1.190	A												8.5E+01
28	62	3.660	A												5.4E+01
28	64	1.080	A												2.7E+00
28	65	2.560	H	0.	0.	1.3E+04	9.1E+03	4.6E+03	0.	0.	0.	0.	0.	2.3E+03	2.6E-01
27	55	18.000	H	3.4E+03	1.5E+03	1.0E+03	7.0E+02	3.2E+02	0.	0.	0.	0.	0.	2.3E+03	5.2E-01
27	58	71.000	D	4.6E+03	2.1E+03	1.4E+03	9.5E+02	4.2E+02	0.	0.	0.	0.	0.	3.0E+03	3.6E+01
27	59	100.000	A												3.6E+01
27	61	1.650	H	1.1E+05	5.7E+04	3.9E+04	2.6E+04	1.2E+04	0.	0.	0.	0.	0.	7.7E+04	8.3E+00
27	62	13.900	M	0.	1.9E+04	1.3E+04	9.2E+03	4.2E+03	0.	0.	0.	0.	0.	7.7E+03	8.6E-01
26	53	8.500	M	3.6E+03	1.6E+03	1.1E+03	7.3E+02	3.3E+02	0.	0.	0.	0.	0.	2.4E+03	3.6E-01
26	54	5.820	A												2.0E+00
26	56	91.660	A												1.9E+01
26	57	2.190	A												1.5E+01
26	58	.330	A												7.3E+00
25	51	45.000	M	2.2E+03	1.0E+03	6.8E+02	4.6E+02	2.1E+02	0.	0.	0.	0.	0.	1.5E+03	2.5E-01
25	55	100.000	A												5.9E+00
25	56	2.580	H	3.1E+04	1.4E+04	9.3E+03	6.2E+03	2.8E+03	0.	0.	0.	0.	0.	2.0E+04	2.6E+00
25	57	1.700	M	1.1E+04	5.1E+03	3.4E+03	2.3E+03	1.0E+03	0.	0.	0.	0.	0.	7.4E+03	9.1E-01

TARGET Z= 30 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	69	71	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
25	58	1.100 M	3.3E+03	1.5E+03	1.0E+03	6.8E+02	3.1E+02	0.	0.	0.	0.	0.	2.2E+03	2.5E-01
24	50	4.310 A												8.8E-01
24	52	83.760 A												3.9E+00
24	53	9.550 A												2.3E+00
24	54	2.380 A												9.2E-01
24	55	3.500 M	3.2E+03	1.4E+03	9.7E+02	6.5E+02	3.0E+02	0.	0.	0.	0.	0.	2.1E+03	2.9E-01
23	50	.240 A												1.7E+00
23	51	99.760 A												8.5E-01
23	52	3.770 M	2.9E+03	1.3E+03	8.9E+02	6.1E+02	2.8E+02	0.	0.	0.	0.	0.	1.9E+03	3.2E-01
22	46	7.930 A												3.5E-01
22	47	7.280 A												9.3E-01
22	48	73.940 A												6.9E-01
22	49	5.510 A												3.2E-01
22	50	5.340 A												1.1E-01
21	45	100.000 A												4.4E-01
20	42	.640 A												1.3E-01
20	43	.145 A												2.0E-01
20	44	2.060 A												1.1E-01

TARGET Z= 31

PRODUCTS Z	A	HALF LIFE	69	71	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
32	65	1.500 M	5.8E+03	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	5.3E-01
32	66	2.400 H	4.1E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	3.7E+00
32	67	19.000 M	2.3E+05	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	2.1E+01
32	68	280.000 D	0.	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+02	2.3E+01
32	69	37.000 H	0.	5.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	7.2E+01
31	64	2.600 M	3.0E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	2.8E+00
31	65	15.000 M	1.6E+05	7.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.5E+01
31	66	9.500 H	5.3E+05	2.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	5.9E+01
31	67	78.000 H	3.5E+05	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+05	1.7E+02
31	68	68.000 M	0.	1.1E+06	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	5.0E+01
31	69	60.400 A												3.2E+01
30	61	89.000 S	2.9E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	3.1E-01
30	62	9.300 H	1.7E+04	7.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	2.0E+00
30	63	38.000 M	1.1E+05	4.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.3E+04	1.0E+01
30	64	48.890 A												3.8E+01
30	65	243.000 D	2.9E+03	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	9.2E+01
30	66	27.810 A												8.0E+01
30	67	4.110 A												4.5E+01
30	68	18.570 A												5.0E+00
30	69	55.000 M	0.	3.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	1.7E+00
29	59	81.000 S	1.9E+03	8.5E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	2.3E-01
29	60	24.000 M	1.3E+04	5.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+03	1.4E+00
29	61	3.300 H	6.4E+04	2.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.0E+04	6.9E+00
29	62	9.900 M	2.4E+05	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	2.4E+01
29	63	69.090 A												4.4E+01
29	64	12.900 H	2.5E+05	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	3.2E+01
29	65	30.910 A												1.6E+01
29	66	5.100 M	6.8E+04	3.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+04	6.3E+00
29	67	61.000 H	5.3E+03	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+03	2.0E+00
28	58	67.880 A												1.0E+00
28	60	26.230 A												1.4E+01
28	61	1.190 A												2.0E+01
28	62	3.660 A												1.2E+01
28	64	1.080 A												2.0E+00
28	65	2.560 H	6.5E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+03	6.0E-01
27	58	71.000 D	6.3E+02	2.9E+02	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+02	8.3E+00
27	59	100.000 A												8.2E+00
27	61	1.650 H	1.8E+04	8.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	1.9E+00
27	62	13.900 M	6.2E+03	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	6.3E-01
26	54	5.820 A												4.7E-01
26	56	91.660 A												4.4E+00
26	57	2.190 A												3.4E+00
26	58	.330 A												1.7E+00
25	55	100.000 A												1.3E+00
25	56	2.580 H	4.2E+03	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+03	6.0E-01
25	57	1.700 M	1.5E+03	7.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	2.1E-01
24	50	4.310 A												2.0E-01
24	52	83.760 A												9.0E-01
24	53	9.550 A												5.2E-01
24	54	2.380 A												2.1E-01
23	50	.240 A												3.8E-01
23	51	99.760 A												1.9E-01
22	47	7.280 A												2.1E-01

TARGET Z= 32

PRODUCTS Z	A	HALF LIFE	70	72	73	74	76	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
33	68	7.000 M	3.9E+04	2.0E+04	1.4E+04	9.4E+03	4.3E+03	0.	0.	0.	0.	0.	1.8E+04	2.1E+00
33	69	15.000 M	0.	1.1E+05	8.1E+04	5.7E+04	2.6E+04	0.	0.	0.	0.	0.	6.1E+04	7.2E+00
33	70	50.000 M	0.	5.2E+05	3.7E+05	2.6E+05	1.3E+05	0.	0.	0.	0.	0.	2.8E+05	3.3E+01
33	71	62.000 H	0.	0.	3.0E+05	2.1E+05	1.1E+05	0.	0.	0.	0.	0.	1.1E+05	5.7E+01
33	72	26.000 H	0.	0.	0.	9.3E+05	4.7E+05	0.	0.	0.	0.	0.	3.9E+05	9.9E+01
33	74	18.000 D	0.	0.	0.	0.	1.8E+04	0.	0.	0.	0.	0.	1.5E+03	4.8E+00
32	65	1.500 M	4.2E+03	1.9E+03	1.3E+03	8.6E+02	3.9E+02	0.	0.	0.	0.	0.	1.8E+03	2.3E-01
32	66	2.400 H	2.9E+04	1.4E+04	9.5E+03	6.4E+03	2.9E+03	0.	0.	0.	0.	0.	1.3E+04	1.6E+00

TARGET Z= 32 (CONTINUED)

32	67	19.000	M	1.6E+05	8.2E+04	5.6E+04	3.8E+04	1.7E+04	0.	0.	0.	0.	0.	7.4E+04	8.9E+00
32	68	280.000	D	1.7E+03	8.7E+02	6.2E+02	4.2E+02	1.9E+02	0.	0.	0.	0.	0.	8.0E+02	3.8E+01
32	69	37.000	H	0.	4.0E+05	2.8E+05	2.0E+05	9.3E+04	0.	0.	0.	0.	0.	2.1E+05	7.0E+01
32	70	20.520	A												1.1E+02
32	71	11.000	D	0.	0.	5.5E+04	3.9E+04	2.0E+04	0.	0.	0.	0.	0.	2.1E+04	4.1E+01
32	72	27.430	A												1.7E+01
32	73	7.760	A												7.1E-01
32	74	36.540	A												2.5E-01
31	64	2.600	M	2.1E+04	9.3E+03	6.3E+03	4.3E+03	1.9E+03	0.	0.	0.	0.	0.	8.8E+03	1.2E+00
31	65	15.000	M	1.1E+05	5.3E+04	3.5E+04	2.4E+04	1.1E+04	0.	0.	0.	0.	0.	4.9E+04	6.3E+00
31	66	9.500	H	3.8E+05	1.8E+05	1.2E+05	8.4E+04	3.8E+04	0.	0.	0.	0.	0.	1.7E+05	2.5E+01
31	67	78.000	H	2.5E+05	1.3E+05	8.6E+04	5.8E+04	2.6E+04	0.	0.	0.	0.	0.	1.1E+05	7.1E+01
31	68	68.000	M	1.5E+06	7.7E+05	5.5E+05	3.7E+05	1.7E+05	0.	0.	0.	0.	0.	7.0E+05	8.3E+01
31	69	60.400	A												3.1E+01
31	70	21.000	M	0.	2.3E+05	1.6E+05	1.1E+05	5.5E+04	0.	0.	0.	0.	0.	1.2E+05	1.4E+01
31	71	39.600	A												2.8E+00
31	72	14.100	H	0.	0.	0.	9.7E+03	4.9E+03	0.	0.	0.	0.	0.	4.0E+03	7.0E-01
30	61	89.000	S	1.9E+03	8.7E+02	5.9E+02	4.0E+02	1.8E+02	0.	0.	0.	0.	0.	8.3E+02	1.3E-01
30	62	9.300	H	1.1E+04	5.1E+03	3.4E+03	2.3E+03	1.0E+03	0.	0.	0.	0.	0.	4.8E+03	8.6E-01
30	63	38.000	M	7.2E+04	3.3E+04	2.2E+04	1.5E+04	6.7E+03	0.	0.	0.	0.	0.	3.1E+04	4.4E+00
30	64	48.890	A												1.6E+01
30	65	243.000	D	2.1E+03	9.4E+02	6.3E+02	4.3E+02	1.9E+02	0.	0.	0.	0.	0.	8.9E+02	4.0E+01
30	66	27.810	A												3.4E+01
30	67	4.110	A												1.9E+01
30	68	18.570	A												8.2E+00
30	69	55.000	M	0.	2.7E+04	1.9E+04	1.3E+04	6.2E+03	0.	0.	0.	0.	0.	1.4E+04	1.7E+00
30	70	.620	A												5.1E-01
29	60	24.000	M	8.6E+03	3.9E+03	2.6E+03	1.7E+03	8.0E+02	0.	0.	0.	0.	0.	3.7E+03	6.1E-01
29	61	3.300	H	4.3E+04	2.0E+04	1.3E+04	8.9E+03	4.0E+03	0.	0.	0.	0.	0.	1.9E+04	3.0E+00
29	62	9.900	M	1.6E+05	7.3E+04	4.8E+04	3.3E+04	1.5E+04	0.	0.	0.	0.	0.	6.8E+04	1.0E+01
29	63	69.090	A												1.9E+01
29	64	12.900	H	1.7E+05	7.8E+04	5.2E+04	3.6E+04	1.6E+04	0.	0.	0.	0.	0.	7.4E+04	1.4E+01
29	65	30.910	A												6.9E+00
29	66	5.100	M	4.9E+04	2.4E+04	1.6E+04	1.1E+04	4.9E+03	0.	0.	0.	0.	0.	2.2E+04	2.7E+00
29	67	61.000	H	3.8E+03	1.9E+03	1.3E+03	8.8E+02	4.0E+02	0.	0.	0.	0.	0.	1.7E+03	8.7E-01
28	58	67.880	A												4.3E-01
28	60	26.230	A												6.2E+00
28	61	1.190	A												8.4E+00
28	62	3.660	A												5.3E+00
28	64	1.080	A												8.6E-01
28	65	2.560	H	4.7E+03	2.1E+03	1.4E+03	9.7E+02	4.4E+02	0.	0.	0.	0.	0.	2.0E+03	2.6E-01
27	59	100.000	A												3.5E+00
27	61	1.650	H	1.2E+04	5.4E+03	3.6E+03	2.5E+03	1.1E+03	0.	0.	0.	0.	0.	5.1E+03	8.2E-01
27	62	13.900	M	4.2E+03	1.9E+03	1.3E+03	8.6E+02	3.9E+02	0.	0.	0.	0.	0.	1.8E+03	2.7E-01
26	54	5.820	A												2.0E-01
26	56	91.660	A												1.9E+00
26	57	2.190	A												1.4E+00
26	58	.330	A												7.2E-01
25	55	100.000	A												5.7E-01
25	56	2.580	H	2.9E+03	1.3E+03	8.8E+02	6.0E+02	2.7E+02	0.	0.	0.	0.	0.	1.2E+03	2.6E-01
24	52	83.760	A												3.9E-01
24	53	9.550	A												2.2E-01
23	50	.240	A												1.6E-01

TARGET Z= 33

PRODUCTS Z	A	HALF LIFE	75	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
						MONOISOTOPIC TARGET A/MILLICURIES								
34	70	44.000 M	9.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+03	1.1E+00
34	71	5.000 M	5.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+04	6.8E+00
34	72	8.400 D	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	3.3E+01
34	73	7.100 H	9.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+05	1.2E+02
33	68	7.000 M	6.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+03	8.6E-01
33	69	15.000 M	3.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+04	5.0E+00
33	70	50.000 M	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	2.3E+01
33	71	62.000 H	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	7.8E+01
33	72	26.000 H	6.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+05	1.7E+02
33	73	76.000 D	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	1.4E+02
32	66	2.400 H	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	6.5E-01
32	67	19.000 M	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+04	3.6E+00
32	69	37.000 H	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	4.9E+01
32	70	20.520 A												7.9E+01
32	71	11.000 D	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	5.6E+01
32	72	27.430 A												2.9E+01
32	73	7.760 A												1.2E+01
31	64	2.600 M	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	4.8E-01
31	65	15.000 M	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	2.6E+00
31	66	9.500 H	5.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+04	1.0E+01
31	67	78.000 H	3.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+04	2.9E+01
31	68	68.000 M	2.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+05	3.4E+01
31	69	60.400 A												2.1E+01
31	70	21.000 M	8.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.2E+04	1.0E+01
31	71	39.600 A												3.8E+00
31	72	14.100 H	6.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.0E+03	1.2E+00
31	73	4.800 H	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	3.4E-01
30	62	9.300 H	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	3.5E-01
30	63	38.000 M	9.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+03	1.8E+00
30	64	48.890 A												6.7E+00
30	66	27.810 A												1.4E+01
30	67	4.110 A												7.8E+00
30	68	18.570 A												3.3E+00
30	69	55.000 M	9.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+03	1.2E+00
30	70	.620 A												3.5E-01
29	60	24.000 M	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	2.5E-01
29	61	3.300 H	6.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	1.2E+00

TARGET Z= 33 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 74	76	77	78	80	82	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
29	62	9.900 M	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	4.7E+00
29	63	69.090 A												7.7E+00
29	64	12.900 H	2.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	5.5E+00
29	65	30.910 A												2.8E+00
29	66	5.100 M	7.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.3E+03	1.1E+00
28	58	67.880 A												1.8E-01
28	60	26.230 A												2.5E+00
28	61	1.190 A												3.4E+00
28	62	3.660 A												2.1E+00
28	64	1.080 A												3.5E-01
27	59	100.000 A												1.4E+00
27	61	1.650 H	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	3.3E-01
26	56	91.660 A												7.7E-01
26	57	2.190 A												5.9E-01
26	58	.330 A												2.9E-01
25	55	100.000 A												2.3E-01

TARGET Z= 34

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 74	76	77	78	80	82	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
35	73	4.000 M	0.	5.3E+04	3.8E+04	2.7E+04	1.2E+04	5.6E+03	0.	0.	0.	0.	2.0E+04	2.7E+00
35	74	42.000 M	0.	2.7E+05	1.9E+05	1.4E+05	6.6E+04	3.0E+04	0.	0.	0.	0.	1.1E+05	1.3E+01
35	75	1.600 H	0.	0.	7.6E+05	5.4E+05	2.7E+05	1.3E+05	0.	0.	0.	0.	3.3E+05	4.2E+01
35	76	16.500 H	0.	0.	0.	1.0E+06	5.1E+05	2.5E+05	0.	0.	0.	0.	5.2E+05	1.0E+02
35	77	58.000 H	0.	0.	0.	0.	3.1E+05	1.6E+05	0.	0.	0.	0.	1.7E+05	9.0E+01
35	78	6.500 M	0.	0.	0.	0.	9.2E+05	4.7E+05	0.	0.	0.	0.	5.1E+05	6.6E+01
35	79	50.540 A												3.2E+00
35	80	18.000 M	0.	0.	0.	0.	0.	1.1E+05	0.	0.	0.	0.	1.1E+04	1.4E+00
34	70	44.000 M	1.3E+04	6.3E+03	4.3E+03	2.9E+03	1.3E+03	5.9E+02	0.	0.	0.	0.	2.3E+03	3.4E-01
34	71	5.000 M	7.9E+04	4.0E+04	2.7E+04	1.8E+04	8.3E+03	3.8E+03	0.	0.	0.	0.	1.5E+04	2.1E+00
34	72	8.400 D	3.0E+04	1.5E+04	1.1E+04	7.4E+03	3.3E+03	1.5E+03	0.	0.	0.	0.	5.9E+03	1.0E+01
34	73	7.100 H	0.	6.5E+05	4.6E+05	3.3E+05	1.5E+05	6.8E+04	0.	0.	0.	0.	2.5E+05	3.6E+01
34	74	.870 A												9.4E+01
34	75	120.000 D	0.	0.	8.6E+03	6.1E+03	3.1E+03	1.4E+03	0.	0.	0.	0.	3.7E+03	8.3E+01
34	76	9.020 A												4.5E+01
34	77	7.580 A												1.2E+01
34	78	23.520 A												5.0E+00
33	68	7.000 M	9.6E+03	4.3E+03	2.9E+03	2.0E+03	8.9E+02	4.0E+02	0.	0.	0.	0.	1.6E+03	2.6E-01
33	69	15.000 M	5.8E+04	2.7E+04	1.8E+04	1.2E+04	5.4E+03	2.5E+03	0.	0.	0.	0.	9.9E+03	1.5E+00
33	70	50.000 M	2.7E+05	1.3E+05	8.7E+04	5.8E+04	2.7E+04	1.2E+04	0.	0.	0.	0.	4.8E+04	7.0E+00
33	71	62.000 H	2.1E+05	1.1E+05	7.4E+04	5.0E+04	2.2E+04	1.0E+04	0.	0.	0.	0.	4.0E+04	2.4E+01
33	72	26.000 H	9.4E+05	4.8E+05	3.4E+05	2.3E+05	1.0E+05	4.8E+04	0.	0.	0.	0.	1.9E+05	5.3E+01
33	73	76.000 D	0.	7.7E+03	5.5E+03	3.9E+03	1.8E+03	8.1E+02	0.	0.	0.	0.	3.0E+03	4.3E+01
33	74	18.000 D	0.	1.8E+04	1.3E+04	9.3E+03	4.5E+03	2.1E+03	0.	0.	0.	0.	7.2E+03	2.4E+01
33	75	100.000 A												8.7E+00
33	76	26.500 H	0.	0.	0.	2.0E+04	9.9E+03	4.8E+03	0.	0.	0.	0.	1.0E+04	2.7E+00
33	77	39.000 H	0.	0.	0.	0.	2.4E+03	1.2E+03	0.	0.	0.	0.	1.3E+03	4.9E-01
33	78	91.000 M	0.	0.	0.	0.	1.9E+03	9.7E+02	0.	0.	0.	0.	1.1E+03	1.4E-01
32	66	2.400 H	6.5E+03	2.9E+03	2.0E+03	1.3E+03	6.0E+02	2.8E+02	0.	0.	0.	0.	1.1E+03	2.0E-01
32	67	19.000 M	3.8E+04	1.7E+04	1.2E+04	7.8E+03	3.5E+03	1.6E+03	0.	0.	0.	0.	6.4E+03	1.1E+00
32	69	37.000 H	2.0E+05	9.4E+04	6.3E+04	4.2E+04	1.9E+04	8.8E+03	0.	0.	0.	0.	3.5E+04	1.5E+01
32	70	20.520 A												2.4E+01
32	71	11.000 D	4.0E+04	2.0E+04	1.4E+04	9.2E+03	4.2E+03	1.9E+03	0.	0.	0.	0.	7.5E+03	1.7E+01
32	72	27.430 A												9.0E+00
32	73	7.760 A												3.6E+00
32	74	36.540 A												1.2E+00
32	75	82.000 M	0.	0.	5.2E+03	3.7E+03	1.9E+03	8.7E+02	0.	0.	0.	0.	2.3E+03	2.9E-01
31	64	2.600 M	4.3E+03	1.9E+03	1.3E+03	8.7E+02	4.0E+02	1.8E+02	0.	0.	0.	0.	7.2E+02	1.5E-01
31	65	15.000 M	2.4E+04	1.1E+04	7.3E+03	4.9E+03	2.2E+03	1.0E+03	0.	0.	0.	0.	4.0E+03	7.9E-01
31	66	9.500 H	8.5E+04	3.9E+04	2.6E+04	1.7E+04	7.8E+03	3.6E+03	0.	0.	0.	0.	1.4E+04	3.2E+00
31	67	78.000 H	5.8E+04	2.6E+04	1.8E+04	1.2E+04	5.4E+03	2.5E+03	0.	0.	0.	0.	9.8E+03	8.9E+00
31	68	68.000 M	3.8E+05	1.7E+05	1.1E+05	7.8E+04	3.5E+04	1.6E+04	0.	0.	0.	0.	6.4E+04	1.0E+01
31	69	60.400 A												6.5E+00
31	70	21.000 M	1.2E+05	5.6E+04	3.8E+04	2.5E+04	1.2E+04	5.2E+03	0.	0.	0.	0.	2.1E+04	3.1E+00
31	71	39.600 A												1.2E+00
31	72	14.100 H	0.	5.0E+03	3.5E+03	2.4E+03	1.1E+03	5.0E+02	0.	0.	0.	0.	1.9E+03	3.6E-01
30	63	38.000 M	1.5E+04	6.7E+03	4.5E+03	3.0E+03	1.4E+03	6.5E+02	0.	0.	0.	0.	2.5E+03	5.5E-01
30	64	48.890 A												2.0E+00
30	66	27.810 A												4.3E+00
30	67	4.110 A												2.4E+00
30	68	18.570 A												1.0E+00
30	69	55.000 M	1.4E+04	6.3E+03	4.2E+03	2.8E+03	1.3E+03	5.8E+02	0.	0.	0.	0.	2.3E+03	3.6E-01
30	70	.620 A												1.1E-01
29	61	3.300 H	9.0E+03	4.0E+03	2.8E+03	1.9E+03	8.6E+02	4.0E+02	0.	0.	0.	0.	1.5E+03	3.7E-01
29	62	9.900 M	3.3E+04	1.5E+04	1.0E+04	6.8E+03	3.1E+03	1.4E+03	0.	0.	0.	0.	5.6E+03	1.3E+00
29	63	69.090 A												2.4E+00
29	64	12.900 H	3.6E+04	1.6E+04	1.1E+04	7.3E+03	3.3E+03	1.5E+03	0.	0.	0.	0.	6.0E+03	1.7E+00
29	65	30.910 A												8.4E-01
29	66	5.100 M	1.1E+04	5.0E+03	3.3E+03	2.2E+03	1.0E+03	4.6E+02	0.	0.	0.	0.	1.8E+03	3.4E-01
28	60	26.230 A												7.7E-01
28	61	1.190 A												1.0E+00
28	62	3.660 A												6.6E-01
28	64	1.080 A												1.1E-01
27	59	100.000 A												4.4E-01
26	56	91.660 A												2.4E-01
26	57	2.190 A												1.8E-01

TARGET Z= 35

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 79	81	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
36	74	15.000 M	3.8E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	3.7E-01
36	75	5.000 M	2.5E+04	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	2.4E+00
36	76	14.800 H	9.0E+04	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+04	1.3E+01
36	77	1.200 H	5.6E+05	2.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	5.4E+01
36	78	.350 A												6.0E+01
36	79	34.000 H	0.	7.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+05	1.3E+02
35	73	4.000 M	1.8E+04	8.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	1.8E+00
35	74	42.000 M	9.7E+04	4.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.1E+04	9.4E+00
35	75	1.600 H	3.9E+05	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+05	3.7E+01
35	76	16.500 H	7.3E+05	3.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+05	1.1E+02
35	77	58.000 H	4.4E+05	2.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+05	1.7E+02
35	78	6.500 M	0.	6.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+05	4.3E+01
35	79	50.540 A												2.4E+01
34	70	44.000 M	1.9E+03	8.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	2.3E-01
34	71	5.000 M	1.2E+04	5.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+03	1.4E+00
34	72	8.400 D	5.0E+03	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	6.7E+00
34	73	7.100 H	2.2E+05	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	2.5E+01
34	74	.870 A												6.5E+01
34	75	120.000 D	4.4E+03	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	7.3E+01
34	76	9.020 A												4.7E+01
34	77	7.580 A												2.3E+01
34	78	23.520 A												3.3E+00
33	68	7.000 M	1.3E+03	6.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+02	1.8E-01
33	69	15.000 M	8.2E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	1.0E+00
33	70	50.000 M	3.9E+04	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+04	4.7E+00
33	71	62.000 H	3.4E+04	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	1.6E+01
33	72	26.000 H	1.6E+05	7.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	3.5E+01
33	73	76.000 D	2.7E+03	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+03	3.0E+01
33	74	18.000 D	6.7E+03	3.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	1.7E+01
33	75	100.000 A												7.7E+00
33	76	26.500 H	1.4E+04	7.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	2.9E+00
33	77	39.000 H	3.3E+03	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+03	9.2E-01
32	67	19.000 M	5.3E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+03	7.4E-01
32	69	37.000 H	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	1.0E+01
32	70	20.520 A												1.6E+01
32	71	11.000 D	6.2E+03	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	1.2E+01
32	72	27.430 A												6.0E+00
32	73	7.760 A												2.5E+00
32	74	36.540 A												8.6E-01
32	75	82.000 M	2.7E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	2.6E-01
31	65	15.000 M	3.3E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+03	5.3E-01
31	66	9.500 H	1.2E+04	5.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+03	2.1E+00
31	67	78.000 H	8.1E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+03	5.9E+00
31	68	68.000 M	5.2E+04	2.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	7.0E+00
31	69	60.400 A												4.4E+00
31	70	21.000 M	1.7E+04	7.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	2.1E+00
31	71	39.600 A												7.8E-01
31	72	14.100 H	1.6E+03	7.4E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	2.5E-01
30	63	38.000 M	2.1E+03	9.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	3.6E-01
30	64	48.890 A												1.4E+00
30	66	27.810 A												2.9E+00
30	67	4.110 A												1.6E+00
30	68	18.870 A												6.9E-01
30	69	55.000 M	1.9E+03	8.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	2.4E-01
29	61	3.300 H	1.3E+03	5.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+02	2.5E-01
29	62	9.900 M	4.6E+03	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	8.5E-01
29	63	69.090 A												1.6E+00
29	64	12.900 H	4.9E+03	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	1.1E+00
29	65	30.910 A												5.7E-01
29	66	5.100 M	1.5E+03	6.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	2.3E-01
28	60	26.230 A												5.1E-01
28	61	1.190 A												7.0E-01
28	62	3.660 A												4.4E-01
27	59	100.000 A												3.0E-01

TARGET Z= 36

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 78	80	82	83	84	86	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
37	79	21.000 M	0.	0.	2.9E+05	2.1E+05	1.5E+05	6.9E+04	0.	0.	0.	0.	1.5E+05	2.1E+01
37	81	4.700 H	0.	0.	0.	1.8E+06	1.3E+06	6.6E+05	0.	0.	0.	0.	1.1E+06	1.5E+02
37	82	75.000 S	0.	0.	0.	0.	1.6E+06	7.9E+05	0.	0.	0.	0.	1.0E+06	1.4E+02
36	75	5.000 M	3.5E+04	1.8E+04	8.3E+03	5.6E+03	3.8E+03	1.7E+03	0.	0.	0.	0.	4.5E+03	7.1E-01
36	76	14.800 H	1.3E+05	6.4E+04	3.1E+04	2.1E+04	1.4E+04	6.6E+03	0.	0.	0.	0.	1.7E+04	3.8E+00
36	77	1.200 H	0.	4.0E+05	2.1E+05	1.4E+05	9.5E+04	4.3E+04	0.	0.	0.	0.	1.1E+05	1.6E+01
36	78	.350 A												5.1E+01
36	79	34.000 H	0.	0.	5.5E+05	3.9E+05	2.8E+05	1.3E+05	0.	0.	0.	0.	2.9E+05	1.0E+02
36	80	2.270 A												8.7E+01
36	82	11.560 A												1.6E+01
36	83	11.550 A												9.2E-01
36	84	56.900 A												3.2E-01
35	73	4.000 M	2.7E+04	1.2E+04	5.7E+03	3.9E+03	2.6E+03	1.2E+03	0.	0.	0.	0.	3.1E+03	5.5E-01
35	74	42.000 M	1.4E+05	6.7E+04	3.0E+04	2.1E+04	1.4E+04	6.3E+03	0.	0.	0.	0.	1.7E+04	2.8E+00
35	75	1.600 H	5.5E+05	2.8E+05	1.3E+05	8.6E+04	5.8E+04	2.7E+04	0.	0.	0.	0.	7.0E+04	1.1E+01
35	76	16.500 H	1.0E+06	5.2E+05	2.5E+05	1.7E+05	1.2E+05	5.3E+04	0.	0.	0.	0.	1.4E+05	3.2E+01
35	77	58.000 H	0.	3.2E+05	1.6E+05	1.1E+05	7.5E+04	3.4E+04	0.	0.	0.	0.	8.7E+04	5.0E+01
35	78	6.500 M	0.	9.3E+05	4.8E+05	3.4E+05	2.3E+05	1.1E+05	0.	0.	0.	0.	2.6E+05	3.6E+01
35	79	50.540 A												1.8E+01
35	80	18.000 M	0.	0.	1.2E+05	8.2E+04	5.9E+04	2.9E+04	0.	0.	0.	0.	6.1E+04	8.1E+00
35	81	49.460 A												2.4E+00
35	82	35.300 H	0.	0.	0.	0.	2.7E+03	1.4E+03	0.	0.	0.	0.	1.8E+03	6.3E-01

TARGET Z= 36 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	85	87	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
					MONOISOTOPIC TARGET A/MILLICURIES									
34	71	5.000 M	1.9E+04	8.4E+03	3.8E+03	2.6E+03	1.7E+03	7.9E+02	0.	0.	0.	0.	2.1E+03	4.1E-01
34	73	7.100 H	3.3E+05	1.5E+05	6.9E+04	4.7E+04	3.1E+04	1.4E+04	0.	0.	0.	0.	3.8E+04	7.4E+00
34	74	.870 A												1.9E+01
34	76	9.020 A												1.4E+01
34	77	7.580 A												6.7E+00
34	78	23.520 A												2.7E+00
34	80	49.820 A												2.6E-01
33	69	15.000 M	1.2E+04	5.5E+03	2.5E+03	1.7E+03	1.1E+03	5.3E+02	0.	0.	0.	0.	1.4E+03	3.0E-01
33	70	50.000 M	5.9E+04	2.7E+04	1.2E+04	8.2E+03	5.5E+03	2.5E+03	0.	0.	0.	0.	6.7E+03	1.4E+00
33	71	62.000 H	5.0E+04	2.3E+04	1.0E+04	7.0E+03	4.7E+03	2.1E+03	0.	0.	0.	0.	5.7E+03	4.7E+00
33	72	26.000 H	2.3E+05	1.1E+05	4.9E+04	3.3E+04	2.2E+04	1.0E+04	0.	0.	0.	0.	2.7E+04	1.0E+01
33	74	18.000 D	9.4E+03	4.6E+03	2.1E+03	1.4E+03	9.6E+02	4.3E+02	0.	0.	0.	0.	1.2E+03	5.0E+00
33	75	100.000 A												2.3E+00
33	76	26.500 H	0.	1.0E+04	4.9E+03	3.3E+03	2.2E+03	1.0E+03	0.	0.	0.	0.	2.6E+03	8.3E-01
32	69	37.000 H	4.3E+04	1.9E+04	8.8E+03	6.0E+03	4.0E+03	1.9E+03	0.	0.	0.	0.	4.9E+03	3.0E+00
32	70	20.520 A												4.8E+00
32	72	27.430 A												1.8E+00
32	73	7.760 A												7.3E-01
32	74	36.540 A												2.5E-01
31	66	9.500 H	1.8E+04	7.9E+03	3.6E+03	2.5E+03	1.7E+03	7.7E+02	0.	0.	0.	0.	2.0E+03	6.3E-01
31	67	78.000 H	1.2E+04	5.5E+03	2.5E+03	1.7E+03	1.1E+03	5.4E+02	0.	0.	0.	0.	1.4E+03	1.8E+00
31	68	68.000 M	7.9E+04	3.5E+04	1.6E+04	1.1E+04	7.4E+03	3.4E+03	0.	0.	0.	0.	8.9E+03	2.1E+00
31	69	60.400 A												1.3E+00
31	70	21.000 M	2.6E+04	1.2E+04	5.3E+03	3.6E+03	2.4E+03	1.1E+03	0.	0.	0.	0.	2.9E+03	6.1E-01
31	71	39.600 A												2.3E-01
30	64	48.890 A												4.0E-01
30	66	27.810 A												8.5E-01
30	67	4.110 A												4.7E-01
30	68	18.570 A												2.0E-01
29	63	69.090 A												4.7E-01
29	65	30.910 A												1.7E-01
28	60	26.230 A												1.5E-01
28	61	1.190 A												2.1E-01

TARGET Z= 37

PRODUCTS Z	A	HALF LIFE	85	87	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
					MONOISOTOPIC TARGET A/MILLICURIES									
38	80	1.700 H	3.1E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	3.6E+00
38	81	29.000 M	1.5E+05	7.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.7E+01
38	82	25.000 D	1.5E+04	7.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	6.5E+01
38	83	33.000 H	6.3E+05	3.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+05	1.9E+02
38	84	.560 A												5.2E+01
38	85	65.000 D	0.	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+03	4.0E+01
37	79	21.000 M	1.0E+05	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.6E+04	1.2E+01
37	81	4.700 H	9.3E+05	4.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+05	1.1E+02
37	82	75.000 S	1.1E+06	5.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+05	1.3E+02
37	83	83.000 D	6.3E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	8.8E+01
37	84	33.000 D	0.	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	8.0E+00
37	85	72.150 A												3.5E+00
36	75	5.000 M	2.6E+03	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	3.9E-01
36	76	14.800 H	9.7E+03	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.2E+03	2.1E+00
36	77	1.200 H	6.4E+04	3.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+04	8.8E+00
36	78	.350 A												2.9E+01
36	79	34.000 H	1.9E+05	8.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	6.1E+01
36	80	2.270 A												5.2E+01
36	82	11.560 A												1.5E+01
36	83	11.550 A												6.2E+00
36	84	56.900 A												3.7E-01
35	73	4.000 M	1.7E+03	8.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	3.0E-01
35	74	42.000 M	9.4E+03	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.9E+03	1.5E+00
35	75	1.600 H	4.0E+04	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+04	6.0E+00
35	76	16.500 H	7.8E+04	3.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+04	1.8E+01
35	77	58.000 H	5.1E+04	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+04	2.8E+01
35	78	6.500 M	1.6E+05	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	2.0E+01
35	79	50.540 A												1.1E+01
35	80	18.000 M	4.2E+04	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+04	4.9E+00
35	81	49.460 A												1.8E+00
35	82	35.300 H	1.9E+03	9.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	5.9E-01
34	71	5.000 M	1.2E+03	5.4E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+03	2.3E-01
34	73	7.100 H	2.1E+04	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+04	4.0E+00
34	74	.870 A												1.1E+01
34	76	9.020 A												7.6E+00
34	77	7.580 A												3.8E+00
34	78	23.520 A												1.5E+00
33	70	50.000 M	3.7E+03	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	7.6E-01
33	71	62.000 H	3.2E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	2.6E+00
33	72	26.000 H	1.5E+04	6.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	5.7E+00
33	75	100.000 A												1.2E+00
33	76	26.500 H	1.5E+03	6.9E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	4.7E-01
32	69	37.000 H	2.8E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	1.6E+00
32	70	20.520 A												2.6E+00
32	72	27.430 A												9.7E-01
32	73	7.760 A												4.0E-01
31	66	9.500 H	1.2E+03	5.4E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+02	3.4E-01
31	68	68.000 M	5.0E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	1.1E+00
31	69	60.400 A												7.1E-01
31	70	21.000 M	1.6E+03	7.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	3.3E-01
30	64	48.890 A												2.2E-01
30	66	27.810 A												4.6E-01
30	67	4.110 A												2.6E-01
29	63	69.090 A												2.6E-01

TARGET Z= 38

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 84	86	87	88	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
39	82	9.000 M	5.5E+04	2.8E+04	2.0E+04	1.4E+04	0.	0.	0.	0.	0.	0.	1.6E+04	2.3E+00
39	83	7.400 M	0.	1.4E+05	1.0E+05	7.2E+04	0.	0.	0.	0.	0.	0.	8.0E+04	1.1E+01
39	84	42.000 M	0.	5.7E+05	4.1E+05	2.9E+05	0.	0.	0.	0.	0.	0.	3.3E+05	4.5E+01
39	85	5.000 H	0.	0.	1.3E+06	8.9E+05	0.	0.	0.	0.	0.	0.	8.3E+05	1.2E+02
39	86	15.000 H	0.	0.	0.	1.4E+06	0.	0.	0.	0.	0.	0.	1.1E+06	2.4E+02
38	80	1.700 H	4.3E+04	2.1E+04	1.4E+04	9.6E+03	0.	0.	0.	0.	0.	0.	1.1E+04	1.8E+00
38	81	29.000 M	2.1E+05	1.1E+05	7.2E+04	4.9E+04	0.	0.	0.	0.	0.	0.	5.7E+04	8.4E+00
38	82	25.000 D	2.1E+04	1.1E+04	7.8E+03	5.3E+03	0.	0.	0.	0.	0.	0.	6.1E+03	3.2E+01
38	83	33.000 H	0.	4.6E+05	3.3E+05	2.3E+05	0.	0.	0.	0.	0.	0.	2.6E+05	9.0E+01
38	84	.560 A												1.5E+02
38	85	65.000 D	0.	0.	1.1E+04	7.9E+03	0.	0.	0.	0.	0.	0.	7.3E+03	9.5E+01
38	86	9.860 A												5.0E+01
37	79	21.000 M	1.5E+05	6.9E+04	4.7E+04	3.2E+04	0.	0.	0.	0.	0.	0.	3.7E+04	6.1E+00
37	81	4.700 H	1.3E+06	6.7E+05	4.6E+05	3.1E+05	0.	0.	0.	0.	0.	0.	3.6E+05	5.5E+01
37	82	75.000 S	1.6E+06	8.0E+05	5.7E+05	3.9E+05	0.	0.	0.	0.	0.	0.	4.5E+05	6.4E+01
37	83	83.000 D	0.	4.5E+03	3.2E+03	2.3E+03	0.	0.	0.	0.	0.	0.	2.6E+03	4.3E+01
37	84	33.000 D	0.	6.0E+03	4.3E+03	3.1E+03	0.	0.	0.	0.	0.	0.	3.4E+03	2.3E+01
37	85	72.150 A												8.2E+00
36	76	14.800 H	1.4E+04	6.6E+03	4.4E+03	3.0E+03	0.	0.	0.	0.	0.	0.	3.5E+03	1.0E+00
36	77	1.200 H	9.6E+04	4.4E+04	3.0E+04	2.0E+04	0.	0.	0.	0.	0.	0.	2.3E+04	4.3E+00
36	78	.350 A												1.4E+01
36	79	34.000 H	2.9E+05	1.3E+05	8.9E+04	6.0E+04	0.	0.	0.	0.	0.	0.	7.0E+04	3.0E+01
36	80	2.270 A												2.6E+01
36	82	11.560 A												7.6E+00
36	83	11.550 A												3.0E+00
36	84	56.900 A												1.0E+00
35	74	42.000 M	1.4E+04	6.4E+03	4.3E+03	2.9E+03	0.	0.	0.	0.	0.	0.	3.4E+03	7.5E-01
35	75	1.600 H	5.9E+04	2.7E+04	1.8E+04	1.2E+04	0.	0.	0.	0.	0.	0.	1.4E+04	3.0E+00
35	76	16.500 H	1.2E+05	5.4E+04	3.6E+04	2.4E+04	0.	0.	0.	0.	0.	0.	2.8E+04	8.8E+00
35	77	58.000 H	7.6E+04	3.4E+04	2.3E+04	1.6E+04	0.	0.	0.	0.	0.	0.	1.8E+04	1.4E+01
35	78	6.500 M	2.3E+05	1.1E+05	7.2E+04	4.9E+04	0.	0.	0.	0.	0.	0.	5.8E+04	1.0E+01
35	79	50.540 A												5.5E+00
35	80	18.000 M	5.9E+04	2.9E+04	2.0E+04	1.3E+04	0.	0.	0.	0.	0.	0.	1.5E+04	2.4E+00
35	81	49.460 A												9.0E-01
34	73	7.100 H	3.2E+04	1.4E+04	9.7E+03	6.6E+03	0.	0.	0.	0.	0.	0.	7.7E+03	2.0E+00
34	74	.870 A												5.2E+00
34	76	9.020 A												3.7E+00
34	77	7.580 A												1.9E+00
34	78	23.520 A												7.6E-01
33	70	50.000 M	5.6E+03	2.6E+03	1.7E+03	1.2E+03	0.	0.	0.	0.	0.	0.	1.4E+03	3.7E-01
33	71	62.000 H	4.8E+03	2.2E+03	1.5E+03	1.0E+03	0.	0.	0.	0.	0.	0.	1.2E+03	1.3E+00
33	72	26.000 H	2.2E+04	1.0E+04	6.8E+03	4.7E+03	0.	0.	0.	0.	0.	0.	5.4E+03	2.8E+00
33	75	100.000 A												6.1E-01
32	70	20.520 A												1.3E+00
32	72	27.430 A												4.8E-01
31	68	68.000 M	7.5E+03	3.4E+03	2.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	1.9E+03	5.6E-01
31	69	60.400 A												3.5E-01

TARGET Z= 39

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 89	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
40	83	7.000 M	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	2.9E-01
40	84	16.000 M	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	1.8E+00
40	85	6.000 M	6.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+04	9.4E+00
40	86	16.500 H	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	4.1E+01
40	87	1.600 H	1.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+06	1.4E+02
39	82	9.000 M	9.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.3E+03	1.4E+00
39	83	7.400 M	4.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+04	7.2E+00
39	84	42.000 M	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	2.9E+01
39	85	5.000 H	6.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	9.3E+01
39	86	15.000 H	9.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+05	2.1E+02
39	87	80.000 H	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	1.9E+02
38	80	1.700 H	6.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+03	1.1E+00
38	81	29.000 M	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	5.4E+00
38	82	25.000 D	3.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	2.0E+01
38	83	33.000 H	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	5.9E+01
38	84	.560 A												9.6E+01
38	85	65.000 D	5.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+03	7.4E+01
38	86	9.860 A												4.3E+01
38	87	7.020 A												2.1E+01
37	79	21.000 M	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	3.9E+00
37	81	4.700 H	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	3.5E+01
37	82	75.000 S	2.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+05	4.1E+01
37	83	83.000 D	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	2.8E+01
37	84	33.000 D	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	1.5E+01
37	85	72.150 A												6.4E+00
37	87	27.850 A												7.9E-01
36	76	14.800 H	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	6.5E-01
36	77	1.200 H	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	2.8E+00
36	78	.350 A												9.0E+00
36	79	34.000 H	4.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+04	1.9E+01
36	80	2.270 A												1.7E+01
36	82	11.560 A												4.8E+00
36	83	11.550 A												1.9E+00
36	84	56.900 A												6.8E-01
35	74	42.000 M	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	4.8E-01
35	75	1.600 H	8.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.3E+03	1.9E+00
35	76	16.500 H	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	5.6E+00
35	77	58.000 H	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	8.7E+00
35	78	6.500 M	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	6.4E+00

TARGET Z= 39 (CONTINUED)

PRODUCTS Z	A	HALF LIFE		90	91	92	94	96	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
35	79	50.540	A												3.5E+00
35	80	18.000	M	9.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+03	1.5E+00
35	81	49.460	A												5.8E-01
34	73	7.100	H	4.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+03	1.3E+00
34	74	.870	A												3.3E+00
34	76	9.020	A												2.4E+00
34	77	7.580	A												1.2E+00
34	78	23.520	A												4.8E-01
33	72	26.000	H	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	1.8E+00
33	75	100.000	A												3.9E-01
32	70	20.520	A												8.3E-01
32	72	27.430	A												3.1E-01
31	68	68.000	M	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	3.6E-01
31	69	60.400	A												2.2E-01

TARGET Z= 40

PRODUCTS Z	A	HALF LIFE		90	91	92	94	96	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
41	88	21.000	M	2.8E+05	2.0E+05	1.4E+05	7.0E+04	3.2E+04	0.	0.	0.	0.	0.	2.0E+05	2.9E+01
41	89	1.900	H	0.	7.5E+05	5.3E+05	2.7E+05	1.3E+05	0.	0.	0.	0.	0.	2.3E+05	3.3E+01
41	90	14.600	H	0.	0.	1.0E+06	5.3E+05	2.6E+05	0.	0.	0.	0.	0.	2.8E+05	6.0E+01
41	93	100.000	A												1.7E+00
40	84	16.000	M	8.8E+03	6.0E+03	4.0E+03	1.8E+03	8.3E+02	0.	0.	0.	0.	0.	6.2E+03	9.5E-01
40	85	6.000	M	4.8E+04	3.3E+04	2.2E+04	1.0E+04	4.6E+03	0.	0.	0.	0.	0.	3.4E+04	5.0E+00
40	86	16.500	H	1.3E+05	9.5E+04	6.5E+04	2.9E+04	1.4E+04	0.	0.	0.	0.	0.	9.5E+04	2.1E+01
40	87	1.600	H	7.2E+05	5.1E+05	3.7E+05	1.7E+05	7.7E+04	0.	0.	0.	0.	0.	5.2E+05	7.4E+01
40	88	85.000	D	1.5E+04	1.1E+04	7.7E+03	3.7E+03	1.7E+03	0.	0.	0.	0.	0.	1.1E+04	1.9E+02
40	89	78.400	H	0.	3.3E+05	2.4E+05	1.2E+05	5.5E+04	0.	0.	0.	0.	0.	1.0E+05	7.6E+01
40	90	51.460	A												3.5E+01
40	91	11.230	A												7.5E+00
40	92	17.110	A												3.5E+00
39	82	9.000	M	6.3E+03	4.3E+03	2.9E+03	1.3E+03	6.0E+02	0.	0.	0.	0.	0.	4.4E+03	7.6E-01
39	83	7.400	M	3.4E+04	2.3E+04	1.5E+04	6.9E+03	3.2E+03	0.	0.	0.	0.	0.	2.4E+04	3.8E+00
39	84	42.000	M	1.4E+05	9.7E+04	6.5E+04	3.0E+04	1.4E+04	0.	0.	0.	0.	0.	1.0E+05	1.5E+01
39	85	5.000	H	4.6E+05	3.1E+05	2.1E+05	9.6E+04	4.4E+04	0.	0.	0.	0.	0.	3.2E+05	4.9E+01
39	86	15.000	H	7.1E+05	5.1E+05	3.4E+05	1.6E+05	7.2E+04	0.	0.	0.	0.	0.	5.1E+05	1.1E+02
39	87	80.000	H	1.9E+05	1.3E+05	9.5E+04	4.4E+04	2.0E+04	0.	0.	0.	0.	0.	1.3E+05	1.0E+02
39	88	107.000	D	4.1E+03	3.0E+03	2.1E+03	1.0E+03	4.7E+02	0.	0.	0.	0.	0.	3.0E+03	6.6E+01
39	89	100.000	A												1.0E+01
39	90	64.200	H	0.	0.	1.7E+04	8.6E+03	4.2E+03	0.	0.	0.	0.	0.	4.6E+03	2.9E+00
38	80	1.700	H	4.5E+03	3.0E+03	2.0E+03	9.2E+02	4.2E+02	0.	0.	0.	0.	0.	3.1E+03	6.0E-01
38	81	29.000	M	2.2E+04	1.5E+04	1.0E+04	4.6E+03	2.1E+03	0.	0.	0.	0.	0.	1.6E+04	2.8E+00
38	82	25.000	D	2.5E+03	1.7E+03	1.1E+03	5.1E+02	2.3E+02	0.	0.	0.	0.	0.	1.7E+03	1.1E+01
38	83	33.000	H	1.1E+05	7.3E+04	4.9E+04	2.2E+04	1.0E+04	0.	0.	0.	0.	0.	7.6E+04	3.1E+01
38	84	.560	A												5.1E+01
38	85	65.000	D	4.1E+03	2.8E+03	1.9E+03	8.5E+02	3.9E+02	0.	0.	0.	0.	0.	2.9E+03	3.9E+01
38	86	9.860	A												2.3E+01
38	87	7.020	A												1.1E+01
38	88	82.560	A												4.4E+00
37	79	21.000	M	1.4E+04	9.8E+03	6.6E+03	3.0E+03	1.4E+03	0.	0.	0.	0.	0.	1.0E+04	2.1E+00
37	81	4.700	H	1.4E+05	9.7E+04	6.5E+04	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	1.0E+05	1.9E+01
37	82	75.000	S	1.8E+05	1.2E+05	8.3E+04	3.7E+04	1.7E+04	0.	0.	0.	0.	0.	1.3E+05	2.2E+01
37	83	83.000	D	1.1E+03	7.3E+02	4.9E+02	2.2E+02	1.0E+02	0.	0.	0.	0.	0.	7.6E+02	1.5E+01
37	84	33.000	D	1.5E+03	1.0E+03	6.8E+02	3.1E+02	1.4E+02	0.	0.	0.	0.	0.	1.1E+03	7.8E+00
37	85	72.150	A												3.4E+00
37	87	27.850	A												4.2E-01
36	76	14.800	H	1.4E+03	9.3E+02	6.3E+02	2.9E+02	1.3E+02	0.	0.	0.	0.	0.	9.7E+02	3.4E-01
36	77	1.200	H	9.2E+03	6.2E+03	4.2E+03	1.9E+03	9.0E+02	0.	0.	0.	0.	0.	6.4E+03	1.5E+00
36	78	.350	A												4.7E+00
36	79	34.000	H	2.8E+04	1.9E+04	1.3E+04	5.7E+03	2.6E+03	0.	0.	0.	0.	0.	1.9E+04	1.0E+01
36	80	2.270	A												8.7E+00
36	82	11.560	A												2.5E+00
36	83	11.550	A												1.0E+00
36	84	56.900	A												3.6E-01
35	74	42.000	M	1.3E+03	9.1E+02	6.2E+02	2.9E+02	1.4E+02	0.	0.	0.	0.	0.	9.5E+02	2.5E-01
35	75	1.600	H	5.6E+03	3.8E+03	2.6E+03	1.2E+03	5.6E+02	0.	0.	0.	0.	0.	4.0E+03	1.0E+00
35	76	16.500	H	1.1E+04	7.5E+03	5.1E+03	2.4E+03	1.1E+03	0.	0.	0.	0.	0.	7.8E+03	3.0E+00
35	77	58.000	H	7.2E+03	4.9E+03	3.3E+03	1.5E+03	7.1E+02	0.	0.	0.	0.	0.	5.1E+03	4.6E+00
35	78	6.500	M	2.2E+04	1.5E+04	1.0E+04	4.7E+03	2.2E+03	0.	0.	0.	0.	0.	1.6E+04	3.4E+00
35	79	50.540	A												1.8E+00
35	80	18.000	M	6.1E+03	4.1E+03	2.8E+03	1.3E+03	5.8E+02	0.	0.	0.	0.	0.	4.3E+03	8.2E-01
35	81	49.460	A												3.0E-01
34	73	7.100	H	3.1E+03	2.1E+03	1.4E+03	6.6E+02	3.1E+02	0.	0.	0.	0.	0.	2.2E+03	6.7E-01
34	74	.870	A												1.8E+00
34	76	9.020	A												1.3E+00
34	77	7.580	A												6.3E-01
34	78	23.520	A												2.5E-01
33	72	26.000	H	2.2E+03	1.5E+03	1.0E+03	4.8E+02	2.2E+02	0.	0.	0.	0.	0.	1.5E+03	9.5E-01
33	75	100.000	A												2.1E-01
32	70	20.520	A												4.4E-01

TARGET Z= 41

PRODUCTS Z	A	HALF LIFE		93	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
42	88	27.000	M	4.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	7.1E-01
42	89	7.000	M	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	4.0E+00
42	90	5.700	H	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.9E+01

TARGET Z= 41 (CONTINUED)

42	91	15.500 M	5.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+05	7.7E+01
41	88	21.000 M	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	1.5E+01
41	89	1.900 H	3.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+05	5.5E+01
41	90	14.600 H	7.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+05	1.4E+02
40	84	16.000 M	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	4.9E-01
40	85	6.000 M	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	2.5E+00
40	86	16.500 H	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	1.1E+01
40	87	1.600 H	2.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+05	3.8E+01
40	88	85.000 D	5.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+03	9.8E+01
40	89	78.400 H	1.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	1.3E+02
40	90	51.460 A												9.3E+01
40	91	11.230 A												5.3E+01
39	82	9.000 M	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	3.9E-01
39	83	7.400 M	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	2.0E+00
39	84	42.000 M	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	7.9E+00
39	85	5.000 H	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	2.5E+01
39	86	15.000 H	2.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+05	5.4E+01
39	87	80.000 H	6.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+04	5.2E+01
39	88	107.000 D	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	3.4E+01
39	89	100.000 A												1.8E+01
39	90	64.200 H	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	7.7E+00
38	80	1.700 H	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	3.1E-01
38	81	29.000 M	6.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.9E+03	1.5E+00
38	82	25.000 D	7.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+02	5.5E+00
38	83	33.000 H	3.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+04	1.6E+01
38	84	.560 A												2.6E+01
38	85	65.000 D	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	2.0E+01
38	86	9.860 A												1.2E+01
38	87	7.020 A												5.6E+00
38	88	82.560 A												2.3E+00
37	79	21.000 M	4.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+03	1.1E+00
37	81	4.700 H	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	9.6E+00
37	82	75.000 S	5.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+04	1.1E+01
37	85	72.150 A												1.7E+00
37	87	27.850 A												2.1E-01
36	77	1.200 H	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	7.5E-01
36	78	.350 A												2.4E+00
36	79	34.000 H	8.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+03	5.2E+00
36	80	2.270 A												4.5E+00
36	82	11.560 A												1.3E+00
36	83	11.550 A												5.3E-01
36	84	56.900 A												1.8E-01
35	75	1.600 H	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	5.2E-01
35	76	16.500 H	3.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+03	1.5E+00
35	77	58.000 H	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	2.4E+00
35	78	6.500 M	6.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.9E+03	1.7E+00
35	79	50.540 A												9.5E-01
35	80	18.000 M	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+03	4.2E-01
34	73	7.100 H	9.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+02	3.5E-01
34	74	.870 A												9.0E-01
34	76	9.020 A												6.5E-01
34	77	7.580 A												3.2E-01
32	70	20.520 A												2.2E-01

TARGET Z= 42

PRODUCTS Z	A	HALF LIFE	92	94	95	MONOISOTOPIC TARGET A/MILLICURIES 96	97	98	100	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
43	92	4.100 M	0.	1.2E+05	8.8E+04	6.3E+04	4.5E+04	3.1E+04	1.4E+04	0.	0.	0.	4.8E+04	7.2E+00
43	93	2.700 H	0.	0.	3.7E+05	2.6E+05	1.9E+05	1.3E+05	6.2E+04	0.	0.	0.	1.6E+05	2.4E+01
43	94	4.800 H	0.	0.	0.	8.8E+05	6.3E+05	4.5E+05	2.2E+05	0.	0.	0.	3.4E+05	5.2E+01
43	95	20.000 H	0.	0.	0.	0.	9.8E+05	7.0E+05	3.6E+05	0.	0.	0.	3.0E+05	8.0E+01
43	96	4.300 D	0.	0.	0.	0.	0.	2.9E+05	1.5E+05	0.	0.	0.	8.5E+04	8.6E+01
42	88	27.000 M	6.9E+03	3.4E+03	2.3E+03	1.5E+03	1.0E+03	7.0E+02	3.2E+02	0.	0.	0.	2.3E+03	3.5E-01
42	89	7.000 M	3.9E+04	2.0E+04	1.4E+04	9.3E+03	6.2E+03	4.2E+03	1.9E+03	0.	0.	0.	1.3E+04	2.0E+00
42	90	5.700 H	1.8E+05	9.1E+04	6.5E+04	4.4E+04	3.0E+04	2.0E+04	9.3E+03	0.	0.	0.	6.2E+04	9.7E+00
42	91	15.500 M	0.	3.8E+05	2.7E+05	2.0E+05	1.3E+05	9.0E+04	4.1E+04	0.	0.	0.	1.5E+05	2.2E+01
42	92	15.840 A												7.1E+01
42	94	9.040 A												9.1E+01
42	95	15.720 A												3.7E+01
42	96	16.530 A												1.4E+01
42	97	9.460 A												1.2E+00
42	98	23.780 A												5.1E-01
41	88	21.000 M	1.5E+05	7.1E+04	4.8E+04	3.2E+04	2.2E+04	1.5E+04	6.6E+03	0.	0.	0.	4.7E+04	7.4E+00
41	89	1.900 H	5.4E+05	2.7E+05	1.9E+05	1.3E+05	8.5E+04	5.7E+04	2.6E+04	0.	0.	0.	1.8E+05	2.8E+01
41	90	14.600 H	1.1E+06	5.4E+05	3.9E+05	2.6E+05	1.8E+05	1.2E+05	5.5E+04	0.	0.	0.	3.6E+05	8.0E+01
41	93	100.000 A												3.5E+01
41	95	35.000 D	0.	0.	0.	0.	1.3E+03	9.1E+02	4.6E+02	0.	0.	0.	3.9E+02	3.0E+00
41	96	23.000 H	0.	0.	0.	0.	0.	9.2E+03	4.7E+03	0.	0.	0.	2.7E+03	7.9E-01
40	84	16.000 M	4.1E+03	1.9E+03	1.2E+03	8.4E+02	5.7E+02	3.8E+02	1.8E+02	0.	0.	0.	1.3E+03	2.4E-01
40	85	6.000 M	2.3E+04	1.0E+04	7.0E+03	4.7E+03	3.1E+03	2.1E+03	9.6E+02	0.	0.	0.	7.1E+03	1.3E+00
40	86	16.500 H	6.5E+04	3.0E+04	2.0E+04	1.4E+04	9.1E+03	6.1E+03	2.8E+03	0.	0.	0.	2.1E+04	5.5E+00
40	87	1.600 H	3.7E+05	1.7E+05	1.2E+05	7.8E+04	5.3E+04	3.5E+04	1.6E+04	0.	0.	0.	1.2E+05	1.9E+01
40	88	85.000 D	7.8E+03	3.8E+03	2.6E+03	1.7E+03	1.2E+03	7.9E+02	3.6E+02	0.	0.	0.	2.5E+03	4.9E+01
40	89	78.400 H	2.4E+05	1.2E+05	8.3E+04	5.6E+04	3.8E+04	2.5E+04	1.2E+04	0.	0.	0.	8.0E+04	6.4E+01
40	90	51.460 A												4.7E+01
40	91	11.230 A												1.5E+01
40	92	17.110 A												7.3E+00
40	94	17.400 A												5.4E-01
39	82	9.000 M	2.9E+03	1.3E+03	8.9E+02	6.0E+02	4.1E+02	2.8E+02	1.3E+02	0.	0.	0.	9.2E+02	2.0E-01
39	83	7.400 M	1.5E+04	7.0E+03	4.7E+03	3.2E+03	2.1E+03	1.4E+03	6.7E+02	0.	0.	0.	4.8E+03	9.8E-01
39	84	42.000 M	6.6E+04	3.0E+04	2.0E+04	1.4E+04	9.2E+03	6.2E+03	2.9E+03	0.	0.	0.	2.1E+04	4.0E+00
39	85	5.000 H	2.1E+05	9.8E+04	6.6E+04	4.4E+04	3.0E+04	2.0E+04	9.2E+03	0.	0.	0.	6.8E+04	1.3E+01
39	86	15.000 H	3.5E+05	1.6E+05	1.1E+05	7.3E+04	4.9E+04	3.3E+04	1.5E+04	0.	0.	0.	1.1E+05	2.8E+01
39	87	80.000 H	9.6E+04	4.4E+04	3.0E+04	2.0E+04	1.4E+04	9.1E+03	4.1E+03	0.	0.	0.	3.0E+04	2.6E+01

TARGET Z= 42 (CONTINUED)

39	88	107.000	D	2.1E+03	1.0E+03	7.0E+02	4.7E+02	3.2E+02	2.2E+02	9.8E+01	0.	0.	0.	7.0E+02	1.7E+01
39	89	100.000	A												8.8E+00
39	90	64.200	H	0.	8.7E+03	6.2E+03	4.2E+03	2.9E+03	1.9E+03	8.9E+02	0.	0.	0.	3.3E+03	2.2E+00
39	92	3.530	H	0.	0.	3.4E+03	2.4E+03	1.7E+03	1.2E+03	5.4E+02	0.	0.	0.	1.4E+03	2.2E-01
38	80	1.700	H	2.0E+03	9.3E+02	6.3E+02	4.3E+02	2.9E+02	2.0E+02	9.0E+01	0.	0.	0.	6.4E+02	1.5E-01
38	81	29.000	M	1.0E+04	4.7E+03	3.1E+03	2.1E+03	1.4E+03	9.8E+02	4.6E+02	0.	0.	0.	3.2E+03	7.3E-01
38	83	33.000	H	5.0E+04	2.3E+04	1.5E+04	1.0E+04	6.9E+03	4.7E+03	2.2E+03	0.	0.	0.	1.6E+04	8.0E+00
38	84	.560	A												1.3E+01
38	85	65.000	D	1.9E+03	8.6E+02	5.9E+02	3.9E+02	2.6E+02	1.8E+02	8.1E+01	0.	0.	0.	6.0E+02	1.0E+01
38	86	9.860	A												5.9E+00
38	87	7.020	A												2.8E+00
38	88	82.560	A												1.1E+00
37	79	21.000	M	6.7E+03	3.0E+03	2.1E+03	1.4E+03	9.5E+02	6.5E+02	3.0E+02	0.	0.	0.	2.1E+03	5.3E-01
37	81	4.700	H	6.5E+04	3.0E+04	2.0E+04	1.4E+04	9.2E+03	6.2E+03	2.9E+03	0.	0.	0.	2.1E+04	4.8E+00
37	82	75.000	S	8.4E+04	3.8E+04	2.5E+04	1.7E+04	1.2E+04	7.9E+03	3.6E+03	0.	0.	0.	2.6E+04	5.6E+00
37	85	72.150	A												8.7E-01
36	77	1.200	H	4.2E+03	1.9E+03	1.3E+03	9.1E+02	6.1E+02	4.2E+02	1.9E+02	0.	0.	0.	1.3E+03	3.8E-01
36	78	.350	A												1.2E+00
36	79	34.000	H	1.3E+04	5.8E+03	3.9E+03	2.6E+03	1.8E+03	1.2E+03	5.7E+02	0.	0.	0.	4.0E+03	2.6E+00
36	80	2.270	A												2.2E+00
36	82	11.560	A												6.6E-01
36	83	11.550	A												2.7E-01
35	75	1.600	H	2.6E+03	1.2E+03	8.2E+02	5.7E+02	3.9E+02	2.6E+02	1.2E+02	0.	0.	0.	8.4E+02	2.6E-01
35	76	16.500	H	5.2E+03	2.4E+03	1.6E+03	1.1E+03	7.6E+02	5.3E+02	2.4E+02	0.	0.	0.	1.7E+03	7.6E-01
35	77	58.000	H	3.3E+03	1.5E+03	1.0E+03	7.2E+02	4.8E+02	3.3E+02	1.5E+02	0.	0.	0.	1.1E+03	1.2E+00
35	78	6.500	M	1.0E+04	4.7E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	4.8E+02	0.	0.	0.	3.3E+03	8.7E-01
35	79	50.540	A												4.8E-01
35	80	18.000	M	2.8E+03	1.3E+03	8.6E+02	5.8E+02	3.9E+02	2.7E+02	1.2E+02	0.	0.	0.	8.8E+02	2.1E-01
34	73	7.100	H	1.5E+03	6.7E+02	4.7E+02	3.1E+02	2.1E+02	1.4E+02	7.0E+01	0.	0.	0.	4.7E+02	1.7E-01
34	74	.870	A												4.5E-01
34	76	9.020	A												3.3E-01
34	77	7.580	A												1.6E-01

TARGET Z= 43

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 0	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA

TARGET Z= 44

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 96	98	99	100	101	102	104	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
45	96	11.000	M	0.	4.8E+04	3.5E+04	2.5E+04	1.8E+04	1.2E+04	5.5E+03	0.	0.	0.	1.6E+04	2.5E+00
45	97	33.000	M	0.	0.	1.6E+05	1.2E+05	8.3E+04	5.9E+04	2.7E+04	0.	0.	0.	7.3E+04	1.1E+01
45	98	8.700	M	0.	0.	0.	4.6E+05	3.3E+05	2.3E+05	1.1E+05	0.	0.	0.	2.1E+05	3.2E+01
45	99	16.000	D	0.	0.	0.	0.	4.5E+04	3.2E+04	1.6E+04	0.	0.	0.	2.1E+04	7.7E+01
45	100	21.000	H	0.	0.	0.	0.	0.	1.0E+06	5.3E+05	0.	0.	0.	4.3E+05	1.2E+02
45	102	209.000	D	0.	0.	0.	0.	0.	0.	3.5E+03	0.	0.	0.	6.7E+02	3.2E+01
44	94	53.000	M	7.9E+04	4.0E+04	2.9E+04	1.9E+04	1.3E+04	8.9E+03	4.1E+03	0.	0.	0.	1.7E+04	2.7E+00
44	95	99.000	M	0.	1.8E+05	1.3E+05	9.1E+04	6.2E+04	4.2E+04	1.9E+04	0.	0.	0.	5.8E+04	9.3E+00
44	96	5.510	A												3.5E+01
44	97	2.900	D	0.	0.	3.0E+05	2.1E+05	1.5E+05	1.1E+05	5.0E+04	0.	0.	0.	1.3E+05	9.7E+01
44	98	1.870	A												1.5E+02
44	99	12.720	A												1.1E+02
44	100	12.620	A												4.8E+01
44	101	17.070	A												6.5E+00
44	102	31.610	A												3.2E+00
43	92	4.100	M	6.3E+04	3.1E+04	2.1E+04	1.4E+04	9.5E+03	6.5E+03	2.9E+03	0.	0.	0.	1.2E+04	2.2E+00
43	93	2.700	H	2.7E+05	1.4E+05	9.3E+04	6.3E+04	4.2E+04	2.8E+04	1.3E+04	0.	0.	0.	5.5E+04	9.2E+00
43	94	4.800	H	8.9E+05	4.6E+05	3.3E+05	2.2E+05	1.5E+05	1.0E+05	4.6E+04	0.	0.	0.	1.9E+05	3.2E+01
43	95	20.000	H	0.	7.1E+05	5.1E+05	3.6E+05	2.5E+05	1.7E+05	7.6E+04	0.	0.	0.	2.3E+05	6.5E+01
43	96	4.300	D	0.	2.9E+05	2.1E+05	1.5E+05	1.1E+05	7.2E+04	3.3E+04	0.	0.	0.	9.7E+04	1.0E+02
43	101	14.000	M	0.	0.	0.	0.	0.	0.	1.2E+04	0.	0.	0.	2.3E+03	3.6E-01
42	89	7.000	M	9.4E+03	4.3E+03	2.9E+03	1.9E+03	1.3E+03	8.8E+02	4.0E+02	0.	0.	0.	1.7E+03	3.5E-01
42	90	5.700	H	4.5E+04	2.0E+04	1.4E+04	9.4E+03	6.3E+03	4.2E+03	1.9E+03	0.	0.	0.	8.4E+03	1.7E+00
42	91	15.500	M	2.0E+05	9.1E+04	6.1E+04	4.1E+04	2.8E+04	1.9E+04	8.6E+03	0.	0.	0.	3.7E+04	6.8E+00
42	92	15.840	A												2.1E+01
42	94	9.040	A												5.5E+01
42	95	15.720	A												3.0E+01
42	96	16.530	A												1.7E+01
42	97	9.460	A												7.8E+00
42	98	23.780	A												2.4E+00
42	99	67.000	H	0.	0.	0.	0.	1.9E+03	1.4E+03	7.0E+02	0.	0.	0.	9.0E+02	6.3E-01
41	88	21.000	M	3.2E+04	1.5E+04	9.9E+03	6.7E+03	4.5E+03	3.0E+03	1.4E+03	0.	0.	0.	6.1E+03	1.3E+00
41	89	1.900	H	1.3E+05	5.8E+04	4.0E+04	2.6E+04	1.8E+04	1.2E+04	5.5E+03	0.	0.	0.	2.4E+04	4.8E+00
41	90	14.600	H	2.7E+05	1.2E+05	8.1E+04	5.5E+04	3.7E+04	2.5E+04	1.1E+04	0.	0.	0.	5.0E+04	1.4E+01
41	93	100.000	A												1.4E+01
41	96	23.000	H	0.	0.	6.6E+03	4.7E+03	3.4E+03	2.3E+03	1.0E+03	0.	0.	0.	2.9E+03	8.9E-01
41	97	72.000	M	0.	0.	0.	3.1E+03	2.2E+03	1.6E+03	7.4E+02	0.	0.	0.	1.4E+03	2.2E-01
40	85	6.000	M	4.7E+03	2.1E+03	1.4E+03	9.7E+02	6.6E+02	4.5E+02	2.1E+02	0.	0.	0.	8.8E+02	2.2E-01
40	86	16.500	H	1.4E+04	6.2E+03	4.2E+03	2.8E+03	1.9E+03	1.3E+03	6.0E+02	0.	0.	0.	2.6E+03	9.7E-01
40	87	1.600	H	7.9E+04	3.6E+04	2.4E+04	1.6E+04	1.1E+04	7.4E+03	3.4E+03	0.	0.	0.	1.5E+04	3.3E+00
40	89	78.400	H	5.7E+04	2.6E+04	1.8E+04	1.2E+04	7.9E+03	5.3E+03	2.4E+03	0.	0.	0.	1.1E+04	1.1E+01
40	90	51.460	A												8.2E+00
40	91	11.230	A												4.7E+00
40	92	17.110	A												2.2E+00
40	94	17.400	A												2.5E-01
39	83	7.400	M	3.2E+03	1.5E+03	1.0E+03	6.7E+02	4.6E+02	3.2E+02	1.5E+02	0.	0.	0.	6.1E+02	1.7E-01
39	84	42.000	M	1.4E+04	6.3E+03	4.2E+03	2.9E+03	2.0E+03	1.3E+03	6.1E+02	0.	0.	0.	2.6E+03	7.0E-01

TARGET Z= 44 (CONTINUED)

39	85	5.000	H	4.5E+04	2.0E+04	1.4E+04	9.3E+03	6.3E+03	4.3E+03	2.0E+03	0.	0.	0.	8.4E+03	2.2E+00
39	86	15.000	H	7.4E+04	3.3E+04	2.2E+04	1.5E+04	1.0E+04	6.9E+03	3.2E+03	0.	0.	0.	1.4E+04	4.9E+00
39	87	80.000	H	2.0E+04	9.2E+03	6.2E+03	4.2E+03	2.8E+03	1.9E+03	8.7E+02	0.	0.	0.	3.8E+03	4.6E+00
39	89	100.000	A												1.5E+00
39	90	64.200	H	4.3E+03	2.0E+03	1.3E+03	9.0E+02	6.0E+02	4.0E+02	1.8E+02	0.	0.	0.	8.0E+02	6.7E-01
38	83	33.000	H	1.0E+04	4.7E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	4.7E+02	0.	0.	0.	2.0E+03	1.4E+00
38	84	.560	A												2.3E+00
38	86	9.860	A												1.0E+00
38	87	7.020	A												4.9E-01
38	88	82.560	A												2.0E-01
37	81	4.700	H	1.4E+04	6.3E+03	4.3E+03	2.9E+03	2.0E+03	1.4E+03	6.3E+02	0.	0.	0.	2.6E+03	8.4E-01
37	82	75.000	S	1.7E+04	7.9E+03	5.4E+03	3.7E+03	2.5E+03	1.7E+03	8.1E+02	0.	0.	0.	3.3E+03	9.8E-01
37	85	72.150	A												1.5E-01
36	78	.350	A												2.1E-01
36	79	34.000	H	2.7E+03	1.3E+03	8.4E+02	5.8E+02	4.0E+02	2.7E+02	1.3E+02	0.	0.	0.	5.2E+02	4.6E-01
36	80	2.270	A												4.0E-01

TARGET Z= 45

PRODUCTS Z	A	HALF LIFE		103	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
46	98	17.000	M	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	1.7E+00
46	99	22.000	M	5.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+04	8.2E+00
46	100	3.700	D	3.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	3.4E+01
46	101	8.500	H	6.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+05	1.2E+02
45	96	11.000	M	8.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.2E+03	1.4E+00
45	97	33.000	M	4.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+04	6.6E+00
45	98	8.700	M	1.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	2.6E+01
45	99	16.000	D	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	8.5E+01
45	100	21.000	H	7.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+05	2.1E+02
45	101	3.300	Y	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	2.9E+02
44	94	53.000	M	6.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	1.2E+00
44	95	99.000	M	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	5.2E+00
44	96	5.510	A												1.9E+01
44	97	2.900	D	7.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+04	5.7E+01
44	98	1.870	A												1.2E+02
44	99	12.720	A												1.2E+02
44	100	12.620	A												8.3E+01
44	101	17.070	A												4.7E+01
43	92	4.100	M	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	9.4E-01
43	93	2.700	H	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	4.0E+00
43	94	4.800	H	6.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+04	1.4E+01
43	95	20.000	H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	3.6E+01
43	96	4.300	D	4.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+04	5.7E+01
43	101	14.000	M	1.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	2.6E+00
42	90	5.700	H	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	7.4E-01
42	91	15.500	M	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	2.9E+00
42	92	15.840	A												9.3E+00
42	94	9.040	A												2.4E+01
42	95	15.720	A												1.7E+01
42	96	16.530	A												9.6E+00
42	97	9.460	A												4.6E+00
42	98	23.780	A												1.9E+00
42	99	67.000	H	9.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+02	7.0E-01
41	88	21.000	M	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	5.6E-01
41	89	1.900	H	8.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.1E+03	2.1E+00
41	90	14.600	H	1.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	6.1E+00
41	93	100.000	A												6.0E+00
41	96	23.000	H	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	5.2E-01
40	86	16.500	H	8.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.8E+02	4.2E-01
40	87	1.600	H	5.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.1E+03	1.4E+00
40	89	78.400	H	3.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	4.9E+00
40	90	51.460	A												3.6E+00
40	91	11.230	A												2.0E+00
40	92	17.110	A												9.6E-01
39	84	42.000	M	9.2E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+02	3.0E-01
39	85	5.000	H	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	9.6E-01
39	86	15.000	H	4.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+03	2.1E+00
39	87	80.000	H	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	2.0E+00
39	89	100.000	A												6.7E-01
38	84	.560	A												9.9E-01
38	86	9.860	A												4.5E-01
37	81	4.700	H	9.5E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.5E+02	3.6E-01
37	82	75.000	S	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	4.2E-01

TARGET Z= 46

PRODUCTS Z	A	HALF LIFE		102	104	105	106	108	110	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
47	100	9.000	M	1.7E+04	8.7E+03	6.2E+03	4.2E+03	1.9E+03	8.9E+02	0.	0.	0.	0.	4.3E+03	7.0E-01
47	101	14.000	M	0.	4.5E+04	3.2E+04	2.3E+04	1.1E+04	4.8E+03	0.	0.	0.	0.	2.2E+04	3.5E+00
47	102	13.000	M	0.	2.0E+05	1.4E+05	1.0E+05	5.0E+04	2.3E+04	0.	0.	0.	0.	9.7E+04	1.6E+01
47	103	1.100	H	0.	0.	5.4E+05	3.8E+05	2.0E+05	9.0E+04	0.	0.	0.	0.	2.9E+05	4.6E+01
47	104	67.000	M	0.	0.	0.	1.2E+06	6.0E+05	2.9E+05	0.	0.	0.	0.	5.2E+05	8.4E+01
47	105	40.000	D	0.	0.	0.	0.	2.5E+04	1.3E+04	0.	0.	0.	0.	8.2E+03	7.8E+01
47	106	24.000	M	0.	0.	0.	0.	1.8E+06	9.4E+05	0.	0.	0.	0.	6.1E+05	1.0E+02
47	107	51.820	A												1.5E+01
47	108	2.400	M	0.	0.	0.	0.	0.	4.6E+05	0.	0.	0.	0.	5.7E+04	9.4E+00
46	98	17.000	M	1.5E+04	7.3E+03	4.9E+03	3.3E+03	1.5E+03	6.8E+02	0.	0.	0.	0.	3.4E+03	6.1E-01

TARGET Z= 46 (CONTINUED)

46	99	22.000	M	7.4E+04	3.8E+04	2.6E+04	1.7E+04	7.9E+03	3.6E+03	0.	0.	0.	0.	1.8E+04	3.0E+00
46	100	3.700	D	5.3E+04	2.7E+04	1.9E+04	1.3E+04	6.0E+03	2.7E+03	0.	0.	0.	0.	1.3E+04	1.3E+01
46	101	8.500	H	0.	4.7E+05	3.4E+05	2.4E+05	1.1E+05	5.0E+04	0.	0.	0.	0.	2.3E+05	4.3E+01
46	102	.960	A												1.2E+02
46	103	17.000	D	0.	0.	8.7E+04	6.2E+04	3.2E+04	1.5E+04	0.	0.	0.	0.	4.6E+04	1.9E+02
46	104	10.970	A												1.0E+02
46	105	22.230	A												2.8E+01
46	106	27.330	A												1.6E+01
46	108	26.710	A												6.5E-01
45	96	11.000	M	1.2E+04	5.5E+03	3.7E+03	2.5E+03	1.1E+03	5.2E+02	0.	0.	0.	0.	2.6E+03	5.7E-01
45	97	33.000	M	6.0E+04	2.8E+04	1.9E+04	1.2E+04	5.7E+03	2.6E+03	0.	0.	0.	0.	1.3E+04	2.5E+00
45	98	8.700	M	2.4E+05	1.1E+05	7.8E+04	5.2E+04	2.4E+04	1.1E+04	0.	0.	0.	0.	5.4E+04	9.7E+00
45	99	16.000	D	3.2E+04	1.7E+04	1.1E+04	7.6E+03	3.5E+03	1.6E+03	0.	0.	0.	0.	7.7E+03	3.1E+01
45	100	21.000	H	1.0E+06	5.3E+05	3.8E+05	2.6E+05	1.2E+05	5.4E+04	0.	0.	0.	0.	2.6E+05	7.8E+01
45	102	209.000	D	0.	3.5E+03	2.5E+03	1.8E+03	8.8E+02	4.0E+02	0.	0.	0.	0.	1.7E+03	8.3E+01
45	103	100.000	A												4.1E+01
45	105	36.000	H	0.	0.	0.	0.	1.5E+04	7.8E+03	0.	0.	0.	0.	5.1E+03	2.3E+00
44	94	53.000	M	9.0E+03	4.1E+03	2.7E+03	1.8E+03	8.4E+02	3.9E+02	0.	0.	0.	0.	1.9E+03	4.3E-01
44	95	99.000	M	4.2E+04	1.9E+04	1.3E+04	8.7E+03	4.0E+03	1.8E+03	0.	0.	0.	0.	9.0E+03	1.9E+00
44	96	5.510	A												7.1E+00
44	97	2.900	D	1.1E+05	5.0E+04	3.4E+04	2.3E+04	1.0E+04	4.7E+03	0.	0.	0.	0.	2.4E+04	2.1E+01
44	98	1.870	A												4.5E+01
44	99	12.720	A												4.4E+01
44	100	12.620	A												3.1E+01
44	101	17.070	A												1.7E+01
44	102	31.610	A												8.2E+00
44	104	18.580	A												6.1E-01
43	92	4.100	M	6.5E+03	2.9E+03	2.0E+03	1.3E+03	6.1E+02	2.8E+02	0.	0.	0.	0.	1.4E+03	3.5E-01
43	93	2.700	H	2.9E+04	1.3E+04	8.8E+03	6.0E+03	2.7E+03	1.2E+03	0.	0.	0.	0.	6.1E+03	1.5E+00
43	94	4.800	H	1.0E+05	4.7E+04	3.1E+04	2.1E+04	9.6E+03	4.4E+03	0.	0.	0.	0.	2.2E+04	5.1E+00
43	95	20.000	H	1.7E+05	7.6E+04	5.2E+04	3.5E+04	1.6E+04	7.2E+03	0.	0.	0.	0.	3.6E+04	1.4E+01
43	96	4.300	D	7.3E+04	3.3E+04	2.2E+04	1.5E+04	6.9E+03	3.1E+03	0.	0.	0.	0.	1.6E+04	2.1E+01
43	101	14.000	M	0.	1.2E+04	8.7E+03	6.2E+03	2.8E+03	1.3E+03	0.	0.	0.	0.	5.8E+03	9.4E-01
42	90	5.700	H	4.3E+03	1.9E+03	1.3E+03	8.9E+02	4.1E+02	1.9E+02	0.	0.	0.	0.	9.1E+02	2.7E-01
42	91	15.500	M	1.9E+04	8.7E+03	5.8E+03	3.9E+03	1.8E+03	8.5E+02	0.	0.	0.	0.	4.0E+03	1.1E+00
42	92	15.840	A												3.5E+00
42	94	9.040	A												8.9E+00
42	95	15.720	A												6.3E+00
42	96	16.530	A												3.6E+00
42	97	9.460	A												1.7E+00
42	98	23.780	A												7.0E-01
41	88	21.000	M	3.1E+03	1.4E+03	9.6E+02	6.5E+02	3.0E+02	1.4E+02	0.	0.	0.	0.	6.7E+02	2.1E-01
41	89	1.900	H	1.2E+04	5.5E+03	3.8E+03	2.5E+03	1.2E+03	5.5E+02	0.	0.	0.	0.	2.6E+03	7.8E-01
41	90	14.600	H	2.5E+04	1.1E+04	7.7E+03	5.3E+03	2.4E+03	1.1E+03	0.	0.	0.	0.	5.4E+03	2.2E+00
41	93	100.000	A												2.2E+00
40	87	1.600	H	7.5E+03	3.4E+03	2.3E+03	1.6E+03	7.4E+02	3.4E+02	0.	0.	0.	0.	1.6E+03	5.4E-01
40	89	78.400	H	5.4E+03	2.4E+03	1.7E+03	1.1E+03	5.3E+02	2.4E+02	0.	0.	0.	0.	1.2E+03	1.8E+00
40	90	51.460	A												1.3E+00
40	91	11.230	A												7.5E-01
40	92	17.110	A												3.6E-01
39	85	5.000	H	4.3E+03	2.0E+03	1.3E+03	9.3E+02	4.3E+02	2.0E+02	0.	0.	0.	0.	9.5E+02	3.6E-01
39	86	15.000	H	7.0E+03	3.2E+03	2.2E+03	1.5E+03	7.1E+02	3.3E+02	0.	0.	0.	0.	1.5E+03	7.9E-01
39	89	100.000	A												2.5E-01
38	84	.560	A												3.7E-01

TARGET Z= 47

PRODUCTS Z	A	HALF LIFE		107	109	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
						MONOISOTOPIC TARGET A? MILLICURIES									
48	102	30.000	M	3.6E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	4.4E-01
48	103	10.000	M	1.9E+04	9.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	2.4E+00
48	104	57.000	M	9.0E+04	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.9E+04	1.1E+01
48	105	55.000	M	3.6E+05	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+05	4.4E+01
48	106	1.220	A												4.9E+01
48	107	6.500	H	0.	1.5E+06	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+05	1.3E+02
47	100	9.000	M	2.9E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	3.9E-01
47	101	14.000	M	1.6E+04	7.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	2.0E+00
47	102	13.000	M	7.3E+04	3.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+04	9.0E+00
47	103	1.100	H	2.7E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	3.4E+01
47	104	67.000	M	8.5E+05	4.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	1.0E+02
47	105	40.000	D	3.5E+04	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	2.5E+02
47	106	24.000	M	0.	1.3E+06	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	1.0E+02
47	107	51.820	A												8.2E+01
46	98	17.000	M	2.2E+03	1.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	3.4E-01
46	99	22.000	M	1.2E+04	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.6E+03	1.7E+00
46	100	3.700	D	8.9E+03	4.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+03	7.1E+00
46	101	8.500	H	1.7E+05	7.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	2.5E+01
46	102	.960	A												6.9E+01
46	103	17.000	D	4.5E+04	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	1.4E+02
46	104	10.970	A												1.3E+02
46	105	22.230	A												8.8E+01
46	106	27.330	A												1.7E+01
45	96	11.000	M	1.7E+03	7.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	2.9E-01
45	97	33.000	M	8.5E+03	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.3E+03	1.4E+00
45	98	8.700	M	3.5E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	5.4E+00
45	99	16.000	D	5.1E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+03	1.7E+01
45	100	21.000	H	1.8E+05	8.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	4.4E+01
45	102	209.000	D	1.3E+03	6.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+02	4.8E+01
45	103	100.000	A												3.0E+01
45	105	36.000	H	2.2E+04	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	7.2E+00
45	107	21.700	M	0.	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	3.5E-01
44	95	99.000	M	5.9E+03	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+03	1.1E+00
44	96	5.510	A												4.0E+00
44	97	2.900	D	1.6E+04	7.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	1.2E+01
44	98	1.870	A												2.5E+01

TARGET Z= 47 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	106	108	110	111	112	113	114	116	O	O	NATURAL MILLI CURIES	AVG SIGMA
44	99	12.720 A												2.5E+01
44	100	12.620 A												1.7E+01
44	101	17.070 A												9.8E+00
44	102	31.610 A												4.7E+00
44	104	18.580 A												7.6E-01
43	93	2.700 H	4.0E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+03	8.2E-01
43	94	4.800 H	1.4E+04	6.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	2.8E+00
43	95	20.000 H	2.3E+04	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+04	7.5E+00
43	96	4.300 D	1.0E+04	4.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+03	1.2E+01
43	101	14.000 M	4.2E+03	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+03	5.4E-01
42	91	15.500 M	2.7E+03	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	6.1E-01
42	92	15.840 A												1.9E+00
42	94	9.040 A												4.9E+00
42	95	15.720 A												3.5E+00
42	96	16.530 A												2.0E+00
42	97	9.460 A												9.5E-01
42	98	23.780 A												3.9E-01
41	89	1.900 H	1.7E+03	8.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	4.3E-01
41	90	14.600 H	3.6E+03	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	1.3E+00
41	93	100.000 A												1.2E+00
40	87	1.600 H	1.1E+03	5.2E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.1E+02	3.0E-01
40	90	51.460 A												7.3E-01
40	91	11.230 A												4.2E-01
39	86	15.000 H	1.0E+03	4.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+02	4.4E-01

TARGET Z= 48

PRODUCTS Z	A	HALF LIFE	106	108	110	111	112	113	114	116	O	O	NATURAL MILLI CURIES	AVG SIGMA
49	106	5.300 M	0.	7.7E+04	3.9E+04	2.8E+04	1.9E+04	1.3E+04	8.7E+03	4.0E+03	0.	0.	1.8E+04	3.1E+00
49	107	32.000 M	0.	0.	1.7E+05	1.2E+05	8.5E+04	5.8E+04	3.9E+04	1.8E+04	0.	0.	7.5E+04	1.3E+01
49	108	58.000 M	0.	0.	6.0E+05	4.3E+05	3.0E+05	2.2E+05	1.5E+05	6.7E+04	0.	0.	2.7E+05	4.4E+01
49	109	4.300 H	0.	0.	0.	1.2E+06	8.8E+05	6.3E+05	4.5E+05	2.1E+05	0.	0.	5.9E+05	1.0E+02
49	110	66.000 M	0.	0.	0.	0.	2.1E+06	1.5E+06	1.1E+06	5.1E+05	0.	0.	1.0E+06	1.7E+02
49	111	2.810 D	0.	0.	0.	0.	0.	4.0E+05	2.9E+05	1.5E+05	0.	0.	1.5E+05	1.1E+02
49	112	14.000 M	0.	0.	0.	0.	0.	0.	1.0E+06	5.3E+05	0.	0.	3.5E+05	5.9E+01
49	113	4.280 A												4.6E+00
49	114	72.000 S	0.	0.	0.	0.	0.	0.	0.	1.9E+05	0.	0.	1.5E+04	2.5E+00
48	103	10.000 M	2.7E+04	1.4E+04	6.4E+03	4.3E+03	2.9E+03	2.0E+03	1.3E+03	6.0E+02	0.	0.	3.1E+03	6.1E-01
48	104	57.000 M	1.3E+05	6.5E+04	3.1E+04	2.1E+04	1.4E+04	9.6E+03	6.6E+03	2.9E+03	0.	0.	1.5E+04	2.9E+00
48	105	55.000 M	0.	2.6E+05	1.3E+05	9.0E+04	6.1E+04	4.1E+04	2.7E+04	1.2E+04	0.	0.	5.8E+04	1.1E+01
48	106	1.220 A												3.5E+01
48	107	6.500 H	0.	0.	1.1E+06	7.8E+05	5.6E+05	3.8E+05	2.6E+05	1.2E+05	0.	0.	4.9E+05	9.1E+01
48	108	.880 A												1.7E+02
48	109	453.000 D	0.	0.	0.	2.2E+03	1.6E+03	1.1E+03	7.9E+02	3.7E+02	0.	0.	1.0E+03	1.1E+02
48	110	12.390 A												6.0E+01
48	111	12.750 A												1.8E+01
48	112	24.070 A												6.1E+00
48	113	12.260 A												3.3E-01
47	101	14.000 M	2.3E+04	1.1E+04	4.9E+03	3.3E+03	2.2E+03	1.5E+03	1.0E+03	4.5E+02	0.	0.	2.4E+03	5.2E-01
47	102	13.000 M	1.0E+05	5.0E+04	2.3E+04	1.5E+04	1.0E+04	7.0E+03	4.7E+03	2.1E+03	0.	0.	1.1E+04	2.3E+00
47	103	1.100 H	3.9E+05	2.0E+05	9.1E+04	6.1E+04	4.1E+04	2.8E+04	1.9E+04	8.5E+03	0.	0.	4.4E+04	8.7E+00
47	104	67.000 M	1.2E+06	6.1E+05	2.9E+05	2.0E+05	1.3E+05	9.0E+04	6.2E+04	2.8E+04	0.	0.	1.4E+05	2.7E+01
47	105	40.000 D	0.	2.5E+04	1.3E+04	8.6E+03	5.8E+03	3.9E+03	2.6E+03	1.2E+03	0.	0.	5.6E+03	5.9E+01
47	106	24.000 M	0.	1.9E+06	9.5E+05	6.8E+05	4.6E+05	3.1E+05	2.1E+05	9.6E+04	0.	0.	4.3E+05	7.6E+01
47	107	51.820 A												5.7E+01
47	108	2.400 M	0.	0.	4.7E+05	3.4E+05	2.4E+05	1.7E+05	1.2E+05	5.3E+04	0.	0.	2.2E+05	3.6E+01
47	109	48.180 A												1.4E+01
47	112	3.200 H	0.	0.	0.	0.	0.	0.	4.8E+03	2.4E+03	0.	0.	1.6E+03	2.7E-01
46	99	22.000 M	1.8E+04	7.9E+03	3.6E+03	2.4E+03	1.6E+03	1.1E+03	7.4E+02	3.4E+02	0.	0.	1.8E+03	4.4E-01
46	100	3.700 D	1.3E+04	6.0E+03	2.8E+03	1.8E+03	1.2E+03	8.4E+02	5.6E+02	2.6E+02	0.	0.	1.4E+03	1.8E+00
46	101	8.500 H	2.4E+05	1.1E+05	5.1E+04	3.5E+04	2.3E+04	1.6E+04	1.1E+04	4.8E+03	0.	0.	2.5E+04	6.4E+00
46	102	.960 A												1.8E+01
46	103	17.000 D	6.3E+04	3.2E+04	1.5E+04	9.9E+03	6.7E+03	4.5E+03	3.0E+03	1.4E+03	0.	0.	7.2E+03	3.5E+01
46	104	10.970 A												3.3E+01
46	105	22.230 A												2.1E+01
46	106	27.330 A												1.2E+01
46	108	26.710 A												2.5E+00
46	109	13.500 H	0.	0.	0.	6.4E+03	4.6E+03	3.3E+03	2.3E+03	1.1E+03	0.	0.	3.1E+03	7.2E-01
46	110	11.810 A												1.9E-01
45	97	33.000 M	1.3E+04	5.7E+03	2.6E+03	1.8E+03	1.2E+03	8.1E+02	5.4E+02	2.6E+02	0.	0.	1.3E+03	3.5E-01
45	98	8.700 M	5.3E+04	2.4E+04	1.1E+04	7.4E+03	4.9E+03	3.3E+03	2.3E+03	1.0E+03	0.	0.	5.4E+03	1.4E+00
45	100	21.000 H	2.6E+05	1.2E+05	5.5E+04	3.6E+04	2.5E+04	1.7E+04	1.1E+04	5.1E+03	0.	0.	2.7E+04	1.1E+01
45	103	100.000 A												7.8E+00
45	105	36.000 H	0.	1.6E+04	7.9E+03	5.4E+03	3.6E+03	2.5E+03	1.7E+03	7.5E+02	0.	0.	3.5E+03	1.7E+00
45	107	21.700 M	0.	0.	3.2E+03	2.3E+03	1.6E+03	1.1E+03	7.4E+02	3.4E+02	0.	0.	1.4E+03	2.4E-01
44	96	5.510 A												1.0E+00
44	97	2.900 D	2.3E+04	1.1E+04	4.8E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	4.7E+02	0.	0.	2.4E+03	3.1E+00
44	98	1.870 A												6.5E+00
44	99	12.720 A												6.4E+00
44	100	12.620 A												4.5E+00
44	101	17.070 A												2.5E+00
44	102	31.610 A												1.2E+00
44	104	18.580 A												1.8E-01
43	94	4.800 H	2.1E+04	9.6E+03	4.4E+03	3.0E+03	2.0E+03	1.4E+03	9.4E+02	4.5E+02	0.	0.	2.2E+03	7.3E-01
43	95	20.000 H	3.5E+04	1.6E+04	7.2E+03	4.9E+03	3.3E+03	2.3E+03	1.6E+03	7.2E+02	0.	0.	3.6E+03	2.0E+00
43	96	4.300 D	1.5E+04	6.9E+03	3.2E+03	2.1E+03	1.5E+03	9.8E+02	6.7E+02	3.1E+02	0.	0.	1.6E+03	3.1E+00
42	92	15.840 A												5.0E-01
42	94	9.040 A												1.3E+00
42	95	15.720 A												9.1E-01
42	96	16.530 A												5.1E-01
42	97	9.460 A												2.4E-01
41	93	100.000 A												3.2E-01
40	90	51.460 A												1.9E-01

TARGET Z= 49

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 113	115	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
50	108	9.000 M	1.7E+04	7.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+03	1.5E+00
50	109	18.000 M	7.4E+04	3.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	6.7E+00
50	110	4.000 H	2.8E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	2.6E+01
50	111	35.000 M	9.2E+05	4.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+05	8.3E+01
50	112	.960 A												2.0E+02
50	113	118.000 D	0.	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	3.6E+02
49	106	5.300 M	1.3E+04	5.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.2E+03	1.3E+00
49	107	32.000 M	5.8E+04	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	5.5E+00
49	108	58.000 M	2.2E+05	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	2.0E+01
49	109	4.300 H	6.3E+05	3.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+05	5.8E+01
49	110	66.000 M	1.5E+06	7.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.9E+05	1.3E+02
49	111	2.810 D	4.0E+05	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	1.7E+02
49	112	14.000 M	0.	7.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.1E+05	1.2E+02
49	113	4.280 A												7.8E+01
48	104	57.000 M	9.7E+03	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	1.1E+00
48	105	55.000 M	4.1E+04	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	4.3E+00
48	106	1.220 A												1.4E+01
48	107	6.500 H	3.8E+05	1.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	3.9E+01
48	108	.880 A												7.2E+01
48	110	12.390 A												4.6E+01
48	111	12.750 A												2.7E+01
48	112	24.070 A												1.3E+01
48	113	12.260 A												5.6E+00
47	102	13.000 M	7.0E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	8.8E-01
47	103	1.100 H	2.8E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	3.3E+00
47	104	67.000 M	9.1E+04	4.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+04	1.0E+01
47	105	40.000 D	3.9E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+03	2.4E+01
47	106	24.000 M	3.1E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	3.1E+01
47	107	51.820 A												2.5E+01
47	108	2.400 M	1.7E+05	7.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.3E+04	1.5E+01
47	109	48.180 A												8.3E+00
47	111	7.500 D	1.6E+03	8.1E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.4E+02	1.6E+00
47	112	3.200 H	0.	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+03	5.6E-01
46	101	8.500 H	1.6E+04	7.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+03	2.4E+00
46	102	.960 A												6.8E+00
46	103	17.000 D	4.6E+03	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	1.3E+01
46	104	10.970 A												1.2E+01
46	105	22.230 A												8.7E+00
46	106	27.330 A												5.0E+00
46	108	26.710 A												1.1E+00
46	109	13.500 H	3.3E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	4.2E-01
45	98	8.700 M	3.4E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	5.3E-01
45	100	21.000 H	1.7E+04	7.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+03	4.3E+00
45	103	100.000 A												2.9E+00
45	105	36.000 H	2.5E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	7.1E-01
44	96	5.510 A												3.9E-01
44	98	1.870 A												2.5E+00
44	99	12.720 A												2.4E+00
44	100	12.620 A												1.7E+00
44	101	17.070 A												9.6E-01
44	102	31.610 A												4.7E-01
43	95	20.000 H	2.3E+03	1.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	7.4E-01
42	94	9.040 A												4.9E-01

TARGET Z= 50

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 112	114	115	116	117	118	119	120	122	124	NATURAL MILLI CURIES	AVG SIGMA
51	113	7.000 M	0.	0.	6.4E+05	4.5E+05	3.2E+05	2.3E+05	1.6E+05	1.1E+05	4.8E+04	2.2E+04	2.0E+05	3.5E+01
51	114	3.400 M	0.	0.	0.	1.3E+06	9.3E+05	6.7E+05	4.8E+05	3.2E+05	1.5E+05	6.8E+04	5.7E+05	1.0E+02
51	115	31.000 M	0.	0.	0.	0.	2.1E+06	1.5E+06	1.1E+06	7.7E+05	3.5E+05	1.6E+05	8.9E+05	1.6E+02
51	116	15.000 M	0.	0.	0.	0.	0.	1.9E+06	1.3E+06	9.6E+05	4.7E+05	2.1E+05	9.2E+05	1.6E+02
51	117	2.800 H	0.	0.	0.	0.	0.	0.	1.1E+06	7.7E+05	3.9E+05	1.8E+05	3.8E+05	6.7E+01
51	118	5.100 H	0.	0.	0.	0.	0.	0.	0.	4.9E+05	2.5E+05	1.2E+05	1.8E+05	3.3E+01
51	119	38.000 H	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+04	2.7E+04	4.2E+03	2.1E+00
51	120	15.900 M	0.	0.	0.	0.	0.	0.	0.	0.	7.3E+04	3.7E+04	5.9E+03	1.1E+00
51	121	57.250 A												1.9E-01
50	108	9.000 M	2.3E+04	1.1E+04	7.7E+03	5.2E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	4.9E+02	2.2E+02	2.4E+03	5.2E-01
50	109	18.000 M	1.0E+05	5.3E+04	3.6E+04	2.4E+04	1.6E+04	1.1E+04	7.6E+03	5.0E+03	2.3E+03	1.0E+03	1.1E+04	2.3E+00
50	110	4.000 H	3.9E+05	2.0E+05	1.4E+05	9.8E+04	6.6E+04	4.4E+04	3.0E+04	2.0E+04	9.2E+03	4.2E+03	4.5E+04	8.9E+00
50	111	35.000 M	0.	6.6E+05	4.7E+05	3.4E+05	2.3E+05	1.5E+05	1.0E+05	7.0E+04	3.2E+04	1.4E+04	1.4E+05	2.7E+01
50	112	.960 A												7.0E+01
50	113	118.000 D	0.	0.	1.3E+04	9.2E+03	6.6E+03	4.7E+03	3.2E+03	2.2E+03	9.8E+02	4.5E+02	4.0E+03	1.2E+02
50	114	.660 A												1.1E+02
50	115	.350 A												5.5E+01
50	116	14.300 A												2.7E+01
50	117	7.610 A												7.3E+00
50	118	24.030 A												2.6E+00
49	106	5.300 M	1.9E+04	8.8E+03	5.9E+03	4.0E+03	2.7E+03	1.8E+03	1.2E+03	8.2E+02	3.8E+02	1.7E+02	1.9E+03	4.5E-01
49	107	32.000 M	8.6E+04	3.9E+04	2.6E+04	1.8E+04	1.2E+04	8.1E+03	5.5E+03	3.7E+03	1.7E+03	7.7E+02	8.3E+03	1.9E+00
49	108	58.000 M	3.1E+05	1.5E+05	1.0E+05	6.8E+04	4.6E+04	3.1E+04	2.1E+04	1.4E+04	6.4E+03	2.9E+03	3.1E+04	6.8E+00
49	109	4.300 H	8.9E+05	4.5E+05	3.1E+05	2.1E+05	1.4E+05	9.5E+04	6.4E+04	4.3E+04	2.0E+04	8.9E+03	9.6E+04	2.0E+01
49	110	66.000 M	2.1E+06	1.1E+06	7.6E+05	5.2E+05	3.5E+05	2.4E+05	1.6E+05	1.1E+05	4.9E+04	2.2E+04	2.4E+05	4.4E+01
49	111	2.810 D	0.	2.9E+05	2.1E+05	1.5E+05	1.0E+05	6.8E+04	4.6E+04	3.1E+04	1.4E+04	6.4E+03	6.2E+04	5.4E+01
49	112	14.000 M	0.	1.1E+06	7.5E+05	5.4E+05	3.8E+05	2.6E+05	1.8E+05	1.2E+05	5.4E+04	2.4E+04	2.3E+05	4.3E+01
49	113	4.280 A												2.7E+01
49	114	72.000 S	0.	0.	0.	1.9E+05	1.3E+05	9.6E+04	6.9E+04	4.7E+04	2.1E+04	9.8E+03	8.2E+04	1.4E+01
49	115	95.720 A												4.8E+00
49	117	45.000 M	0.	0.	0.	0.	0.	0.	5.6E+03	4.0E+03	2.0E+03	9.4E+02	2.0E+03	3.5E-01
48	104	57.000 M	1.4E+04	6.6E+03	4.4E+03	3.0E+03	2.0E+03	1.4E+03	9.1E+02	6.2E+02	2.9E+02	1.3E+02	1.4E+03	3.8E-01
48	105	55.000 M	6.1E+04	2.8E+04	1.9E+04	1.3E+04	8.5E+03	5.7E+03	3.8E+03	2.6E+03	1.2E+03	5.6E+02	5.8E+03	1.5E+00

TARGET Z= 50 (CONTINUED)

48	106	1.220	A										5.0E+00
48	107	6.500	H	5.6E+05	2.6E+05	1.7E+05	1.2E+05	8.0E+04	5.3E+04	3.6E+04	2.4E+04	1.1E+04	5.1E+03	5.4E+04	1.3E+01
48	108	.880	A												2.5E+01
48	110	12.390	A												1.6E+01
48	111	12.750	A												8.7E+00
48	112	24.070	A												4.4E+00
48	113	12.260	A												1.9E+00
48	114	28.860	A												7.7E-01
47	102	13.000	M	1.1E+04	4.8E+03	3.2E+03	2.2E+03	1.5E+03	9.9E+02	6.7E+02	4.6E+02	2.1E+02	1.0E+02	1.0E+03	3.1E-01
47	103	1.100	H	4.2E+04	1.9E+04	1.3E+04	8.6E+03	5.8E+03	3.9E+03	2.7E+03	1.8E+03	8.4E+02	3.9E+02	4.0E+03	1.1E+00
47	104	67.000	M	1.4E+05	6.2E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	8.5E+03	5.8E+03	2.7E+03	1.2E+03	1.3E+04	3.5E+00
47	106	24.000	M	4.7E+05	2.1E+05	1.4E+05	9.7E+04	6.5E+04	4.4E+04	2.9E+04	2.0E+04	9.1E+03	4.2E+03	4.5E+04	1.1E+01
47	107	51.820	A												8.5E+00
47	108	2.400	M	2.4E+05	1.2E+05	7.9E+04	5.3E+04	3.6E+04	2.4E+04	1.6E+04	1.1E+04	5.0E+03	2.3E+03	2.5E+04	5.4E+00
47	109	48.180	A												2.9E+00
47	112	3.200	H	0.	0.	3.4E+03	2.5E+03	1.8E+03	1.2E+03	8.1E+02	5.4E+02	2.5E+02	1.1E+02	1.0E+03	1.9E-01
46	101	8.500	H	2.3E+04	1.1E+04	7.2E+03	4.8E+03	3.3E+03	2.2E+03	1.5E+03	1.0E+03	4.8E+02	2.2E+02	2.3E+03	8.4E-01
46	102	.960	A												2.4E+00
46	104	10.970	A												4.3E+00
46	105	22.230	A												3.0E+00
46	106	27.330	A												1.7E+00
46	108	26.710	A												3.7E-01
45	100	21.000	H	2.5E+04	1.1E+04	7.6E+03	5.2E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	5.3E+02	2.4E+02	2.4E+03	1.5E+00
45	103	100.000	A												1.0E+00
44	98	1.870	A												8.6E-01
44	99	12.720	A												8.4E-01
44	100	12.620	A												5.9E-01
44	101	17.070	A												3.3E-01
44	102	31.610	A												1.6E-01
42	94	9.040	A												1.7E-01

TARGET Z= 51

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 121	123	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
52	114	16.000	M	2.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	4.1E+00
52	115	6.000	M	1.0E+05	4.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+04	1.5E+01
52	116	2.500	H	3.4E+05	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	4.8E+01
52	117	1.100	M	8.8E+05	4.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	6.9E+05	1.2E+02
52	118	6.000	D	1.7E+05	8.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	2.2E+02
52	119	16.000	H	9.7E+05	5.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.7E+05	2.1E+02
52	120	.089	A												4.4E+01
52	121	17.000	D	0.	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	2.7E+01
51	113	7.000	M	7.2E+04	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+04	1.2E+01
51	114	3.400	M	2.2E+05	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	3.4E+01
51	115	31.000	M	5.3E+05	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+05	7.7E+01
51	116	15.000	M	6.9E+05	3.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	5.3E+05	9.6E+01
51	117	2.800	H	5.5E+05	2.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	7.8E+01
51	118	5.100	H	3.5E+05	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+05	5.1E+01
51	119	38.000	H	7.3E+04	3.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+04	2.9E+01
51	120	15.900	M	0.	5.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	4.1E+00
51	121	57.250	A												1.8E+00
50	109	18.000	M	3.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	7.1E-01
50	110	4.000	H	1.4E+04	6.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	2.7E+00
50	111	35.000	M	4.8E+04	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+04	8.8E+00
50	112	.960	A												2.3E+01
50	113	118.000	D	1.5E+03	6.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	4.1E+01
50	114	.660	A												3.8E+01
50	115	.350	A												2.7E+01
50	116	14.300	A												1.6E+01
50	117	7.610	A												8.4E+00
50	118	24.030	A												3.9E+00
50	119	8.580	A												1.6E+00
49	107	32.000	M	2.5E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+03	5.8E-01
49	108	58.000	M	9.5E+03	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.3E+03	2.1E+00
49	109	4.300	H	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	6.2E+00
49	110	66.000	M	7.3E+04	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+04	1.4E+01
49	111	2.810	D	2.1E+04	9.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	1.8E+01
49	112	14.000	M	8.0E+04	3.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.1E+04	1.4E+01
49	113	4.280	A												9.0E+00
49	114	72.000	S	3.2E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	4.9E+00
49	115	95.720	A												2.4E+00
49	117	45.000	M	2.9E+03	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	4.0E-01
48	105	55.000	M	1.8E+03	8.2E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	4.6E-01
48	106	1.220	A												1.5E+00
48	107	6.500	H	1.6E+04	7.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	4.1E+00
48	108	.880	A												7.6E+00
48	110	12.390	A												4.9E+00
48	111	12.750	A												2.9E+00
48	112	24.070	A												1.4E+00
48	113	12.260	A												6.5E-01
48	114	28.860	A												2.6E-01
47	103	1.100	H	1.2E+03	5.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.4E+02	3.5E-01
47	104	67.000	M	4.0E+03	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+03	1.1E+00
47	106	24.000	M	1.3E+04	6.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	3.3E+00
47	107	51.820	A												2.6E+00
47	108	2.400	M	7.5E+03	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+03	1.6E+00
47	109	48.180	A												8.8E-01
46	102	.960	A												7.2E-01
46	104	10.970	A												1.3E+00
46	105	22.230	A												9.2E-01
46	106	27.330	A												5.3E-01
45	103	100.000	A												3.1E-01
44	98	1.870	A												2.6E-01
44	99	12.720	A												2.6E-01

TARGET Z= 52

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 120	122	123	124	125	126	128	130	0	0	NATURAL MILLI CURIES	AVG SIGMA
53	117	7.000 M	1.9E+05	9.8E+04	6.7E+04	4.5E+04	3.0E+04	2.0E+04	9.3E+03	4.2E+03	0.	0.	7.3E+04	1.4E+01
53	118	14.000 M	6.5E+05	3.3E+05	2.4E+05	1.6E+05	1.1E+05	7.4E+04	3.4E+04	1.5E+04	0.	0.	2.6E+05	4.8E+01
53	119	20.000 M	0.	9.4E+05	6.7E+05	4.8E+05	3.3E+05	2.2E+05	1.0E+05	4.6E+04	0.	0.	7.5E+05	1.4E+02
53	120	1.400 H	0.	2.1E+06	1.5E+06	1.1E+06	7.8E+05	5.3E+05	2.4E+05	1.1E+05	0.	0.	1.7E+06	3.1E+02
53	121	2.000 H	0.	0.	2.0E+06	1.4E+06	1.0E+06	7.2E+05	3.3E+05	1.5E+05	0.	0.	2.1E+06	3.9E+02
53	122	3.500 M	0.	0.	0.	1.2E+06	8.3E+05	5.9E+05	2.9E+05	1.3E+05	0.	0.	3.6E+05	6.8E+01
53	123	13.000 H	0.	0.	0.	0.	4.1E+05	2.9E+05	1.5E+05	6.9E+04	0.	0.	1.5E+05	4.0E+01
53	124	4.200 D	0.	0.	0.	0.	0.	3.6E+04	1.8E+04	8.9E+03	0.	0.	1.6E+04	1.9E+01
53	127	100.000 A												4.2E-01
52	114	16.000 M	4.0E+04	1.8E+04	1.2E+04	8.3E+03	5.5E+03	3.7E+03	1.7E+03	7.8E+02	0.	0.	1.3E+04	3.1E+00
52	115	6.000 M	1.5E+05	7.1E+04	4.8E+04	3.2E+04	2.2E+04	1.5E+04	6.7E+03	3.0E+03	0.	0.	5.3E+04	1.1E+01
52	116	2.500 H	4.8E+05	2.4E+05	1.6E+05	1.1E+05	7.2E+04	4.9E+04	2.2E+04	1.0E+04	0.	0.	1.7E+05	3.6E+01
52	117	1.100 M	1.2E+06	6.4E+05	4.3E+05	2.9E+05	2.0E+05	1.3E+05	6.0E+04	2.8E+04	0.	0.	4.8E+05	9.3E+01
52	118	6.000 D	2.5E+05	1.3E+05	9.0E+04	6.1E+04	4.1E+04	2.8E+04	1.3E+04	5.8E+03	0.	0.	9.9E+04	1.7E+02
52	119	16.000 H	0.	7.0E+05	5.0E+05	3.6E+05	2.4E+05	1.6E+05	7.5E+04	3.4E+04	0.	0.	5.5E+05	1.6E+02
52	120	.089 A												1.2E+02
52	121	17.000 D	0.	0.	1.4E+04	1.0E+04	7.1E+03	5.1E+03	2.3E+03	1.1E+03	0.	0.	1.5E+04	6.9E+01
52	122	2.460 A												7.9E+00
52	123	90.870 A												3.3E+00
52	124	4.610 A												1.2E+00
51	113	7.000 M	1.1E+05	4.9E+04	3.3E+04	2.2E+04	1.5E+04	1.0E+04	4.6E+03	2.1E+03	0.	0.	3.6E+04	8.9E+00
51	114	3.400 M	3.3E+05	1.5E+05	1.0E+05	6.9E+04	4.6E+04	3.1E+04	1.4E+04	6.5E+03	0.	0.	1.1E+05	2.6E+01
51	115	31.000 M	7.8E+05	3.6E+05	2.4E+05	1.6E+05	1.1E+05	7.4E+04	3.4E+04	1.5E+04	0.	0.	2.6E+05	5.8E+01
51	116	15.000 M	9.7E+05	4.7E+05	3.2E+05	2.1E+05	1.4E+05	9.9E+04	4.4E+04	2.0E+04	0.	0.	3.5E+05	7.2E+01
51	117	2.800 H	7.8E+05	4.0E+05	2.7E+05	1.8E+05	1.2E+05	8.3E+04	3.8E+04	1.7E+04	0.	0.	3.0E+05	5.8E+01
51	118	5.100 H	4.9E+05	2.5E+05	1.8E+05	1.2E+05	8.3E+04	5.6E+04	2.6E+04	1.2E+04	0.	0.	2.0E+05	3.8E+01
51	119	38.000 H	0.	5.3E+04	3.8E+04	2.7E+04	1.8E+04	1.2E+04	5.6E+03	2.6E+03	0.	0.	4.2E+04	2.2E+01
51	120	15.900 M	0.	7.4E+04	5.3E+04	3.8E+04	2.7E+04	1.8E+04	8.4E+03	3.9E+03	0.	0.	5.9E+04	1.1E+01
51	121	57.250 A												4.7E+00
50	110	4.000 H	2.1E+04	9.3E+03	6.3E+03	4.2E+03	2.8E+03	1.9E+03	9.0E+02	4.1E+02	0.	0.	6.9E+03	2.0E+00
50	111	35.000 M	7.1E+04	3.2E+04	2.2E+04	1.5E+04	9.9E+03	6.7E+03	3.1E+03	1.4E+03	0.	0.	2.4E+04	6.6E+00
50	112	.960 A												1.7E+01
50	114	.660 A												2.8E+01
50	115	.350 A												2.0E+01
50	116	14.300 A												1.2E+01
50	117	7.610 A												6.3E+00
50	118	24.030 A												2.9E+00
50	119	8.580 A												1.2E+00
50	120	32.850 A												4.7E-01
49	108	58.000 M	1.4E+04	6.4E+03	4.3E+03	3.0E+03	2.0E+03	1.4E+03	6.3E+02	3.0E+02	0.	0.	4.8E+03	1.6E+00
49	109	4.300 H	4.3E+04	2.0E+04	1.3E+04	9.0E+03	6.1E+03	4.1E+03	1.9E+03	9.0E+02	0.	0.	1.5E+04	4.6E+00
49	110	66.000 M	1.1E+05	4.9E+04	3.3E+04	2.2E+04	1.5E+04	1.0E+04	4.8E+03	2.2E+03	0.	0.	3.7E+04	1.1E+01
49	111	2.810 D	3.1E+04	1.4E+04	9.6E+03	6.5E+03	4.4E+03	2.9E+03	1.4E+03	6.4E+02	0.	0.	1.1E+04	1.3E+01
49	112	14.000 M	1.2E+05	5.5E+04	3.7E+04	2.5E+04	1.7E+04	1.1E+04	5.2E+03	2.4E+03	0.	0.	4.0E+04	1.0E+01
49	113	4.280 A												6.7E+00
49	114	72.000 S	4.7E+04	2.1E+04	1.5E+04	9.9E+03	6.6E+03	4.4E+03	2.0E+03	9.3E+02	0.	0.	1.6E+04	3.7E+00
49	115	95.720 A												1.8E+00
48	106	1.220 A												1.2E+00
48	107	6.500 H	2.4E+04	1.1E+04	7.6E+03	5.1E+03	3.5E+03	2.4E+03	1.1E+03	5.2E+02	0.	0.	8.3E+03	3.1E+00
48	108	.880 A												5.7E+00
48	110	12.390 A												3.7E+00
48	111	12.750 A												2.1E+00
48	112	24.070 A												1.1E+00
48	113	12.260 A												4.9E-01
47	106	24.000 M	2.0E+04	9.2E+03	6.2E+03	4.3E+03	2.9E+03	2.0E+03	9.4E+02	4.3E+02	0.	0.	6.9E+03	2.5E+00
47	107	51.820 A												2.0E+00
47	108	2.400 M	1.1E+04	5.1E+03	3.4E+03	2.3E+03	1.6E+03	1.1E+03	4.9E+02	2.4E+02	0.	0.	3.8E+03	1.2E+00
47	109	48.180 A												6.6E-01
46	102	.960 A												5.4E-01
46	104	10.970 A												9.9E-01
46	105	22.230 A												6.9E-01
46	106	27.330 A												4.0E-01

TARGET Z= 53

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 127	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
54	118	6.000 M	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+03	9.6E-01
54	119	6.000 M	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	4.0E+00
54	120	41.000 M	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+04	1.5E+01
54	121	39.000 M	2.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+05	4.5E+01
54	122	19.000 H	3.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+05	1.2E+02
54	123	2.000 H	1.2E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+06	2.2E+02
54	124	.096 A												2.1E+02
54	125	17.000 H	5.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+05	1.6E+02
53	117	7.000 M	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	3.4E+00
53	118	14.000 M	5.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.0E+04	1.1E+01
53	119	20.000 M	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	3.2E+01
53	120	1.400 H	3.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+05	7.3E+01
53	121	2.000 H	4.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+05	9.4E+01
53	122	3.500 M	4.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	7.8E+01
53	123	13.000 H	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	5.3E+01
53	124	4.200 D	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+04	3.1E+01
52	114	16.000 M	2.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+03	7.3E-01

TARGET Z= 53 (CONTINUED)

52	115	6.000 M	9.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+03	2.7E+00
52	116	2.500 H	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	8.5E+00
52	117	1.100 M	9.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.1E+04	2.2E+01
52	118	6.000 D	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	4.0E+01
52	119	16.000 H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	3.7E+01
52	120	.089 A												2.7E+01
52	121	17.000 D	3.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+03	1.7E+01
52	122	2.460 A												9.1E+00
52	123	90.870 A												4.4E+00
52	124	4.610 A												1.9E+00
52	125	6.990 A												7.6E-01
51	113	7.000 M	6.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+03	2.1E+00
51	114	3.400 M	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	6.0E+00
51	115	31.000 M	5.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.0E+04	1.4E+01
51	116	15.000 M	6.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+04	1.7E+01
51	117	2.800 H	5.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+04	1.4E+01
51	118	5.100 H	3.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	9.0E+00
51	119	38.000 H	8.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.4E+03	5.1E+00
51	120	15.900 M	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	2.5E+00
51	121	57.250 A												1.1E+00
50	110	4.000 H	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	4.8E-01
50	111	35.000 M	4.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	1.5E+00
50	112	.960 A												4.0E+00
50	114	.660 A												6.7E+00
50	115	.350 A												4.8E+00
50	116	14.300 A												2.9E+00
50	117	7.610 A												1.5E+00
50	118	24.030 A												6.9E-01
50	119	8.580 A												2.9E-01
49	109	4.300 H	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	1.1E+00
49	110	66.000 M	7.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.0E+03	2.5E+00
49	111	2.810 D	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	3.1E+00
49	112	14.000 M	7.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+03	2.5E+00
49	113	4.280 A												1.6E+00
49	114	72.000 S	3.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+03	8.7E-01
49	115	95.720 A												4.2E-01
48	106	1.220 A												2.7E-01
48	107	6.500 H	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	7.3E-01
48	108	.880 A												1.3E+00
48	110	12.390 A												8.6E-01
48	111	12.750 A												5.1E-01
48	112	24.070 A												2.6E-01
47	106	24.000 M	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	5.9E-01
47	107	51.820 A												4.6E-01
46	104	10.970 A												2.3E-01

TARGET Z= 54

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 124	126	128	129	130	131	132	134	136	0	NATURAL MILLI CURIES	AVG SIGMA
55	123	8.000 M	0.	4.6E+05	2.3E+05	1.6E+05	1.1E+05	7.3E+04	4.9E+04	2.2E+04	1.0E+04	0.	8.2E+04	1.7E+01
55	125	45.000 M	0.	0.	1.5E+06	1.1E+06	7.7E+05	5.2E+05	3.5E+05	1.6E+05	7.3E+04	0.	5.7E+05	1.1E+02
55	126	1.600 M	0.	0.	2.1E+06	1.5E+06	1.1E+06	7.6E+05	5.2E+05	2.4E+05	1.1E+05	0.	8.1E+05	1.5E+02
55	127	6.200 H	0.	0.	0.	1.2E+06	8.6E+05	6.1E+05	4.4E+05	2.0E+05	9.1E+04	0.	6.2E+05	1.3E+02
55	128	3.000 M	0.	0.	0.	0.	6.5E+05	4.6E+05	3.3E+05	1.6E+05	7.3E+04	0.	2.4E+05	4.5E+01
55	129	32.000 H	0.	0.	0.	0.	0.	1.1E+05	8.2E+04	4.2E+04	1.9E+04	0.	5.3E+04	2.5E+01
55	130	30.000 M	0.	0.	0.	0.	0.	0.	1.1E+05	5.6E+04	2.7E+04	0.	3.8E+04	7.3E+00
54	118	6.000 M	1.4E+04	6.3E+03	2.9E+03	1.9E+03	1.3E+03	8.8E+02	5.9E+02	2.7E+02	1.3E+02	0.	1.0E+03	2.8E-01
54	119	6.000 M	6.0E+04	2.8E+04	1.3E+04	8.6E+03	5.7E+03	3.9E+03	2.6E+03	1.2E+03	5.5E+02	0.	4.5E+03	1.2E+00
54	120	41.000 M	2.2E+05	1.1E+05	4.9E+04	3.3E+04	2.2E+04	1.5E+04	1.0E+04	4.6E+03	2.1E+03	0.	1.7E+04	4.3E+00
54	121	39.000 M	6.8E+05	3.5E+05	1.6E+05	1.1E+05	7.2E+04	4.9E+04	3.3E+04	1.5E+04	6.8E+03	0.	5.6E+04	1.3E+01
54	122	19.000 H	1.0E+06	5.2E+05	2.5E+05	1.7E+05	1.1E+05	7.7E+04	5.3E+04	2.4E+04	1.1E+04	0.	8.9E+04	3.4E+01
54	123	2.000 H	0.	1.7E+06	8.5E+05	5.8E+05	3.9E+05	2.6E+05	1.8E+05	8.1E+04	3.7E+04	0.	3.0E+05	6.3E+01
54	124	.096 A												6.1E+01
54	125	17.000 H	0.	0.	3.9E+05	2.8E+05	2.0E+05	1.4E+05	9.2E+04	4.2E+04	1.9E+04	0.	1.5E+05	4.6E+01
54	126	.090 A												3.0E+01
54	127	36.400 D	0.	0.	0.	3.0E+03	2.2E+03	1.6E+03	1.1E+03	5.1E+02	2.3E+02	0.	1.6E+03	1.6E+01
54	128	1.920 A												4.0E+00
54	129	26.440 A												1.6E+00
54	130	4.080 A												3.7E-01
53	117	7.000 M	4.5E+04	2.1E+04	9.4E+03	6.3E+03	4.3E+03	2.9E+03	1.9E+03	8.9E+02	4.2E+02	0.	3.3E+03	9.8E-01
53	118	14.000 M	1.6E+05	7.4E+04	3.4E+04	2.3E+04	1.5E+04	1.0E+04	7.0E+03	3.2E+03	1.5E+03	0.	1.2E+04	3.3E+00
53	119	20.000 M	4.9E+05	2.2E+05	1.0E+05	6.9E+04	4.6E+04	3.1E+04	2.1E+04	9.6E+03	4.4E+03	0.	3.6E+04	9.4E+00
53	120	1.400 H	1.1E+06	5.3E+05	2.4E+05	1.6E+05	1.1E+05	7.4E+04	5.0E+04	2.3E+04	1.1E+04	0.	8.6E+04	2.1E+01
53	121	2.000 H	1.4E+06	7.2E+05	3.3E+05	2.2E+05	1.5E+05	1.0E+05	6.9E+04	3.1E+04	1.4E+04	0.	1.2E+05	2.8E+01
53	122	3.500 M	1.2E+06	6.0E+05	2.9E+05	2.0E+05	1.3E+05	9.0E+04	6.1E+04	2.7E+04	1.2E+04	0.	1.0E+05	2.3E+01
53	123	13.000 H	0.	2.9E+05	1.5E+05	1.0E+05	6.9E+04	4.7E+04	3.1E+04	1.4E+04	6.5E+03	0.	5.3E+04	1.5E+01
53	124	4.200 D	0.	3.6E+04	1.9E+04	1.3E+04	9.0E+03	6.1E+03	4.1E+03	1.9E+03	8.5E+02	0.	6.9E+03	9.0E+00
53	127	100.000 A												8.8E-01
53	128	25.000 M	0.	0.	0.	0.	2.5E+03	1.8E+03	1.3E+03	6.3E+02	2.8E+02	0.	9.2E+02	1.8E-01
52	115	6.000 M	3.3E+04	1.5E+04	6.7E+03	4.5E+03	3.1E+03	2.1E+03	1.4E+03	6.6E+02	3.1E+02	0.	2.4E+03	7.9E-01
52	116	2.500 H	1.1E+05	5.0E+04	2.2E+04	1.5E+04	1.0E+04	6.9E+03	4.7E+03	2.2E+03	9.9E+02	0.	7.9E+03	2.5E+00
52	117	1.100 M	3.0E+05	1.3E+05	6.1E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	5.8E+03	2.7E+03	0.	2.2E+04	6.4E+00
52	118	6.000 D	6.2E+04	2.8E+04	1.3E+04	8.6E+03	5.8E+03	3.9E+03	2.6E+03	1.2E+03	5.6E+02	0.	4.5E+03	1.2E+01
52	119	16.000 H	3.6E+05	1.7E+05	7.5E+04	5.1E+04	3.4E+04	2.3E+04	1.6E+04	7.1E+03	3.3E+03	0.	2.7E+04	1.1E+01
52	120	.089 A												7.9E+00
52	121	17.000 D	1.0E+04	5.2E+03	2.4E+03	1.6E+03	1.1E+03	7.3E+02	4.9E+02	2.2E+02	1.0E+02	0.	8.4E+02	4.9E+00
52	122	2.460 A												2.6E+00
52	123	90.870 A												1.3E+00
52	124	4.610 A												5.5E-01
52	125	6.990 A												2.2E-01
51	113	7.000 M	2.2E+04	1.0E+04	4.6E+03	3.2E+03	2.1E+03	1.5E+03	1.0E+03	4.6E+02	2.2E+02	0.	1.7E+03	6.1E-01
51	114	3.400 M	6.9E+04	3.1E+04	1.4E+04	9.6E+03	6.5E+03	4.4E+03	3.0E+03	1.4E+03	6.6E+02	0.	5.1E+03	1.8E+00
51	115	31.000 M	1.6E+05	7.5E+04	3.4E+04	2.3E+04	1.5E+04	1.1E+04	7.1E+03	3.3E+03	1.5E+03	0.	1.2E+04	4.0E+00
51	116	15.000 M	2.2E+05	1.0E+05	4.5E+04	3.0E+04	2.0E+04	1.4E+04	9.4E+03	4.3E+03	2.0E+03	0.	1.6E+04	5.0E+00

TARGET Z= 54 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 133	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
51	117	2.800 M	1.8E+05	8.4E+04	3.8E+04	2.6E+04	1.7E+04	1.2E+04	7.9E+03	3.6E+03	1.7E+03	0.	1.3E+04	4.0E+00
51	118	5.100 H	1.2E+05	5.6E+04	2.6E+04	1.7E+04	1.2E+04	7.9E+03	5.3E+03	2.4E+03	1.1E+03	0.	9.1E+03	2.4E+00
51	119	38.000 H	2.7E+04	1.2E+04	5.7E+03	3.9E+03	2.6E+03	1.7E+03	1.2E+03	5.3E+02	2.5E+02	0.	2.0E+03	1.5E+00
51	120	15.900 M	3.8E+04	1.9E+04	8.5E+03	5.7E+03	3.9E+03	2.6E+03	1.7E+03	8.0E+02	3.7E+02	0.	3.0E+03	7.4E-01
51	121	57.250 A												3.3E-01
50	111	35.000 M	1.5E+04	6.7E+03	3.1E+03	2.1E+03	1.5E+03	9.7E+02	6.7E+02	3.1E+02	1.5E+02	0.	1.1E+03	4.5E-01
50	112	.960 A												1.2E+00
50	114	.660 A												1.9E+00
50	115	.350 A												1.4E+00
50	116	14.300 A												8.3E-01
50	117	7.610 A												4.3E-01
50	118	24.030 A												2.0E-01
49	110	66.000 M	2.3E+04	1.0E+04	4.8E+03	3.3E+03	2.2E+03	1.5E+03	1.1E+03	4.9E+02	2.3E+02	0.	1.7E+03	7.3E-01
49	112	14.000 M	2.5E+04	1.1E+04	5.2E+03	3.5E+03	2.4E+03	1.7E+03	1.1E+03	5.3E+02	2.4E+02	0.	1.9E+03	7.2E-01
49	113	4.280 A												4.6E-01
48	108	.880 A												3.9E-01
48	110	12.390 A												2.5E-01

TARGET Z= 55

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 133	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
56	123	2.000 M	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	7.2E-01
56	125	6.500 M	4.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+04	1.1E+01
56	126	97.000 M	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	3.2E+01
56	127	10.000 M	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	8.3E+01
56	128	2.400 D	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	1.6E+02
56	129	2.200 H	9.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.0E+05	1.7E+02
56	130	.101 A												1.4E+02
56	131	11.600 D	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	9.1E+01
55	123	8.000 M	3.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+04	8.3E+00
55	125	45.000 M	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+05	5.4E+01
55	126	1.600 M	3.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+05	7.4E+01
55	127	6.200 H	3.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+05	6.4E+01
55	128	3.000 M	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+05	4.5E+01
55	129	32.000 H	5.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+04	2.8E+01
55	130	30.000 M	7.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.9E+04	1.5E+01
55	131	9.700 D	2.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	7.3E+00
54	119	6.000 M	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	5.6E-01
54	120	41.000 M	6.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+03	2.0E+00
54	121	39.000 M	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	6.3E+00
54	122	19.000 H	3.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+04	1.6E+01
54	123	2.000 H	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	3.0E+01
54	124	.096 A												3.0E+01
54	125	17.000 H	6.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.2E+04	2.2E+01
54	126	.090 A												1.4E+01
54	128	1.920 A												4.0E+00
54	129	26.440 A												1.8E+00
54	130	4.080 A												7.7E-01
54	131	21.180 A												3.0E-01
53	117	7.000 M	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	4.7E-01
53	118	14.000 M	4.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+03	1.6E+00
53	119	20.000 M	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	4.5E+00
53	120	1.400 H	3.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+04	1.0E+01
53	121	2.000 H	4.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+04	1.3E+01
53	122	3.500 M	4.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+04	1.1E+01
53	123	13.000 H	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	7.4E+00
53	124	4.200 D	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	4.3E+00
53	127	100.000 A												4.5E-01
53	128	25.000 M	9.2E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+02	1.8E-01
52	115	6.000 M	9.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+02	3.8E-01
52	116	2.500 H	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	1.2E+00
52	117	1.100 M	8.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+03	3.0E+00
52	118	6.000 D	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	5.5E+00
52	119	16.000 H	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	5.2E+00
52	120	.089 A												3.8E+00
52	122	2.460 A												1.3E+00
52	123	90.870 A												6.1E-01
52	124	4.610 A												2.7E-01
51	114	3.400 M	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	8.4E-01
51	115	31.000 M	4.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+03	1.9E+00
51	116	15.000 M	6.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+03	2.4E+00
51	117	2.800 H	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	1.9E+00
51	118	5.100 H	3.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	1.3E+00
51	120	15.900 M	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	3.6E-01
50	112	.960 A												5.6E-01
50	114	.660 A												9.3E-01
50	115	.350 A												6.6E-01
50	116	14.300 A												4.0E-01
50	117	7.610 A												2.1E-01
49	113	4.280 A												2.2E-01
48	108	.880 A												1.9E-01

TARGET Z= 56

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 130	132	134	135	136	137	138	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
57	125	1.000 M	1.1E+04	5.2E+03	2.3E+03	1.6E+03	1.1E+03	7.2E+02	4.8E+02	0.	0.	0.	6.9E+02	2.0E-01
57	126	1.000 M	4.8E+04	2.4E+04	1.1E+04	7.2E+03	4.9E+03	3.3E+03	2.2E+03	0.	0.	0.	3.1E+03	8.4E-01

TARGET Z= 56 (CONTINUED)

57	127	3.500	M	1.8E+05	9.4E+04	4.3E+04	2.9E+04	2.0E+04	1.3E+04	8.9E+03	0.	0.	0.	1.3E+04	3.2E+00
57	128	4.600	M	6.1E+05	3.1E+05	1.5E+05	1.0E+05	6.9E+04	4.6E+04	3.2E+04	0.	0.	0.	4.4E+04	1.1E+01
57	129	10.000	M	0.	8.8E+05	4.5E+05	3.1E+05	2.1E+05	1.4E+05	9.4E+04	0.	0.	0.	1.3E+05	3.0E+01
57	130	9.000	M	0.	2.1E+06	1.0E+06	7.5E+05	5.1E+05	3.4E+05	2.3E+05	0.	0.	0.	3.2E+05	6.9E+01
57	131	61.000	M	0.	0.	1.6E+06	1.1E+06	8.2E+05	5.5E+05	3.7E+05	0.	0.	0.	5.1E+05	1.1E+02
57	132	4.800	H	0.	0.	1.4E+06	1.0E+06	7.2E+05	5.1E+05	3.5E+05	0.	0.	0.	4.6E+05	9.6E+01
57	133	4.000	H	0.	0.	0.	7.6E+05	5.4E+05	3.9E+05	2.8E+05	0.	0.	0.	3.3E+05	6.6E+01
57	134	6.500	M	0.	0.	0.	0.	3.5E+05	2.5E+05	1.8E+05	0.	0.	0.	1.8E+05	3.6E+01
57	135	19.400	H	0.	0.	0.	0.	0.	8.2E+04	5.8E+04	0.	0.	0.	5.1E+04	1.7E+01
57	136	9.500	M	0.	0.	0.	0.	0.	0.	5.2E+04	0.	0.	0.	3.7E+04	7.3E+00
56	123	2.000	M	9.4E+03	4.3E+03	1.9E+03	1.3E+03	8.8E+02	5.9E+02	4.0E+02	0.	0.	0.	5.7E+02	1.8E-01
56	125	6.500	M	1.5E+05	7.0E+04	3.2E+04	2.2E+04	1.4E+04	9.7E+03	6.6E+03	0.	0.	0.	9.3E+03	2.7E+00
56	126	97.000	M	4.7E+05	2.3E+05	1.0E+05	7.0E+04	4.8E+04	3.2E+04	2.1E+04	0.	0.	0.	3.0E+04	8.2E+00
56	127	10.000	M	1.2E+06	6.2E+05	2.8E+05	1.9E+05	1.3E+05	8.8E+04	5.8E+04	0.	0.	0.	8.3E+04	2.1E+01
56	128	2.400	D	6.0E+05	3.1E+05	1.5E+05	1.0E+05	6.8E+04	4.6E+04	3.1E+04	0.	0.	0.	4.4E+04	4.2E+01
56	129	2.200	H	0.	1.3E+06	6.5E+05	4.4E+05	3.0E+05	2.0E+05	1.4E+05	0.	0.	0.	1.9E+05	4.3E+01
56	130	.101	A												3.4E+01
56	131	11.600	D	0.	0.	2.0E+04	1.4E+04	1.0E+04	6.9E+03	4.7E+03	0.	0.	0.	6.3E+03	2.3E+01
56	132	.097	A												1.3E+01
56	134	2.420	A												2.6E+00
56	135	6.590	A												9.9E-01
56	136	7.810	A												3.3E-01
55	123	8.000	M	1.1E+05	4.9E+04	2.2E+04	1.5E+04	1.0E+04	6.9E+03	4.6E+03	0.	0.	0.	6.6E+03	2.1E+00
55	125	45.000	M	7.8E+05	3.6E+05	1.6E+05	1.1E+05	7.4E+04	5.0E+04	3.4E+04	0.	0.	0.	4.8E+04	1.4E+01
55	126	1.600	M	1.1E+06	5.2E+05	2.4E+05	1.6E+05	1.1E+05	7.3E+04	4.9E+04	0.	0.	0.	7.0E+04	1.9E+01
55	127	6.200	H	8.6E+05	4.4E+05	2.0E+05	1.4E+05	9.2E+04	6.3E+04	4.2E+04	0.	0.	0.	5.9E+04	1.6E+01
55	128	3.000	M	6.6E+05	3.3E+05	1.6E+05	1.1E+05	7.4E+04	5.0E+04	3.4E+04	0.	0.	0.	4.8E+04	1.1E+01
55	129	32.000	H	0.	8.3E+04	4.2E+04	2.9E+04	1.9E+04	1.3E+04	8.8E+03	0.	0.	0.	1.2E+04	6.9E+00
55	130	30.000	M	0.	1.1E+05	5.6E+04	4.0E+04	2.7E+04	1.9E+04	1.2E+04	0.	0.	0.	1.7E+04	3.7E+00
55	131	9.700	D	0.	0.	1.9E+03	1.4E+03	9.7E+02	6.6E+02	4.5E+02	0.	0.	0.	6.0E+02	1.8E+00
55	133	100.000	A												3.1E-01
54	120	41.000	M	2.3E+04	1.0E+04	4.6E+03	3.1E+03	2.1E+03	1.4E+03	9.8E+02	0.	0.	0.	1.4E+03	5.1E-01
54	121	39.000	M	7.3E+04	3.3E+04	1.5E+04	1.0E+04	6.9E+03	4.7E+03	3.2E+03	0.	0.	0.	4.5E+03	1.6E+00
54	122	19.000	H	1.2E+05	5.3E+04	2.4E+04	1.6E+04	1.1E+04	7.3E+03	5.0E+03	0.	0.	0.	7.0E+03	4.1E+00
54	123	2.000	H	3.9E+05	1.8E+05	8.1E+04	5.5E+04	3.7E+04	2.5E+04	1.7E+04	0.	0.	0.	2.4E+04	7.6E+00
54	124	.096	A												7.5E+00
54	125	17.000	H	2.0E+05	9.3E+04	4.2E+04	2.9E+04	1.9E+04	1.3E+04	8.7E+03	0.	0.	0.	1.2E+04	5.7E+00
54	126	.090	A												3.6E+00
54	128	1.920	A												1.0E+00
54	129	26.440	A												4.6E-01
54	130	4.080	A												1.9E-01
53	118	14.000	M	1.5E+04	7.0E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	6.9E+02	0.	0.	0.	9.7E+02	4.0E-01
53	119	20.000	M	4.7E+04	2.1E+04	9.7E+03	6.6E+03	4.4E+03	3.0E+03	2.1E+03	0.	0.	0.	2.9E+03	1.1E+00
53	120	1.400	H	1.1E+05	5.1E+04	2.3E+04	1.6E+04	1.1E+04	7.2E+03	4.9E+03	0.	0.	0.	6.9E+03	2.6E+00
53	121	2.000	H	1.5E+05	6.9E+04	3.2E+04	2.1E+04	1.4E+04	9.8E+03	6.6E+03	0.	0.	0.	9.3E+03	3.3E+00
53	122	3.500	M	1.3E+05	6.2E+04	2.8E+04	1.9E+04	1.3E+04	8.5E+03	5.8E+03	0.	0.	0.	8.2E+03	2.8E+00
53	123	13.000	H	7.0E+04	3.2E+04	1.4E+04	9.7E+03	6.6E+03	4.4E+03	3.0E+03	0.	0.	0.	4.2E+03	1.9E+00
53	124	4.200	D	9.1E+03	4.2E+03	1.9E+03	1.3E+03	8.6E+02	5.8E+02	3.9E+02	0.	0.	0.	5.5E+02	1.1E+00
53	127	100.000	A												1.1E-01
52	116	2.500	H	1.0E+04	4.7E+03	2.2E+03	1.5E+03	1.0E+03	6.9E+02	4.8E+02	0.	0.	0.	6.7E+02	3.0E-01
52	117	1.100	M	2.8E+04	1.3E+04	5.9E+03	4.0E+03	2.8E+03	1.8E+03	1.3E+03	0.	0.	0.	1.8E+03	7.7E-01
52	119	16.000	H	3.5E+04	1.6E+04	7.2E+03	4.9E+03	3.3E+03	2.3E+03	1.5E+03	0.	0.	0.	2.2E+03	1.3E+00
52	120	.089	A												9.6E-01
52	122	2.460	A												3.2E-01
52	123	90.870	A												1.5E-01
51	115	31.000	M	1.6E+04	7.2E+03	3.4E+03	2.3E+03	1.6E+03	1.1E+03	7.2E+02	0.	0.	0.	1.0E+03	4.8E-01
51	116	15.000	M	2.1E+04	9.5E+03	4.4E+03	3.0E+03	2.0E+03	1.4E+03	9.6E+02	0.	0.	0.	1.3E+03	6.0E-01
51	117	2.800	H	1.8E+04	8.0E+03	3.7E+03	2.5E+03	1.7E+03	1.2E+03	7.9E+02	0.	0.	0.	1.1E+03	4.8E-01
51	118	5.100	H	1.2E+04	5.4E+03	2.5E+03	1.7E+03	1.1E+03	7.8E+02	5.2E+02	0.	0.	0.	7.3E+02	3.2E-01
50	112	.960	A												1.4E-01
50	114	.660	A												2.4E-01
50	115	.350	A												1.7E-01

TARGET Z= 57

PRODUCTS Z	A	HALF LIFE		138	139	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
58	129	13.000	M	1.2E+04	7.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.9E+03	2.0E+00
58	130	30.000	M	4.4E+04	3.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+04	7.3E+00
58	131	30.000	M	1.4E+05	9.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+04	2.2E+01
58	132	4.200	H	3.9E+05	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	5.8E+01
58	133	6.300	H	8.0E+05	5.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+05	1.2E+02
58	134	72.000	H	2.1E+05	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	1.4E+02
58	135	18.000	H	5.0E+05	3.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+05	1.2E+02
58	136	.193	A												8.2E+01
58	137	9.000	H	0.	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	5.1E+01
57	126	1.000	M	2.2E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	4.6E-01
57	127	3.500	M	8.9E+03	6.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	1.8E+00
57	128	4.600	M	3.2E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	5.9E+00
57	129	10.000	M	9.5E+04	6.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+04	1.7E+01
57	130	9.000	M	2.3E+05	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	3.9E+01
57	131	61.000	M	3.8E+05	2.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+05	5.9E+01
57	132	4.800	H	3.5E+05	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+05	5.3E+01
57	133	4.000	H	2.8E+05	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	4.0E+01
57	134	6.500	M	1.8E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	2.5E+01
57	135	19.400	H	5.9E+04	4.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+04	1.4E+01
57	136	9.500	M	5.2E+04	3.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+04	7.3E+00
56	125	6.500	M	6.6E+03	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+03	1.5E+00
56	126	97.000	M	2.2E+04	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	4.5E+00
56	127	10.000	M	5.9E+04	4.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+04	1.2E+01
56	128	2.400	D	3.1E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	2.3E+01
56	129	2.200	H	1.4E+05	9.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.3E+04	2.4E+01
56	130	.101	A												1.9E+01
56	131	11.600	D	4.7E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	1.3E+01
56	132	.097	A												7.4E+00

TARGET Z= 57 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 136	138	140	142	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
56	134	2.420 A												1.9E+00
56	135	6.590 A												8.1E-01
56	136	7.810 A												3.3E-01
55	123	8.000 M	4.7E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	1.2E+00
55	125	45.000 M	3.4E+04	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	7.5E+00
55	126	1.600 M	4.9E+04	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	1.0E+01
55	127	6.200 H	4.2E+04	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	8.9E+00
55	128	3.000 M	3.4E+04	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+04	6.3E+00
55	129	32.000 H	8.9E+03	6.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	3.8E+00
55	130	30.000 M	1.3E+04	8.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+03	2.1E+00
55	133	100.000 A												1.9E-01
54	120	41.000 M	9.8E+02	6.7E+02	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+02	2.8E-01
54	121	39.000 M	3.2E+03	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	8.8E-01
54	122	19.000 H	5.0E+03	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	2.2E+00
54	123	2.000 H	1.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	4.2E+00
54	124	.096 A												4.1E+00
54	125	17.000 H	8.8E+03	5.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+03	3.1E+00
54	126	.090 A												2.0E+00
54	128	1.920 A												5.6E-01
54	129	26.440 A												2.6E-01
53	119	20.000 M	2.1E+03	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	6.3E-01
53	120	1.400 H	4.9E+03	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	1.4E+00
53	121	2.000 H	6.6E+03	4.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+03	1.8E+00
53	122	3.500 M	5.8E+03	3.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+03	1.5E+00
53	123	13.000 H	3.0E+03	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	1.0E+00
52	117	1.100 M	1.3E+03	8.9E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.9E+02	4.2E-01
52	119	16.000 H	1.6E+03	1.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+03	7.2E-01
52	120	.089 A												5.3E-01
52	122	2.460 A												1.8E-01
51	116	15.000 M	9.7E+02	6.5E+02	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+02	3.3E-01
51	117	2.800 H	8.0E+02	5.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+02	2.7E-01

TARGET Z= 58

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 136	138	140	142	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
59	134	17.000 M	1.1E+06	5.8E+05	2.8E+05	1.3E+05	0.	0.	0.	0.	0.	0.	2.7E+05	5.6E+01
59	135	22.000 M	0.	1.4E+06	7.1E+05	3.3E+05	0.	0.	0.	0.	0.	0.	6.7E+05	1.3E+02
59	136	13.500 M	0.	2.4E+06	1.2E+06	5.9E+05	0.	0.	0.	0.	0.	0.	1.2E+06	2.3E+02
59	137	70.000 M	0.	0.	1.2E+06	6.1E+05	0.	0.	0.	0.	0.	0.	1.1E+06	2.2E+02
59	138	2.000 H	0.	0.	9.3E+05	4.7E+05	0.	0.	0.	0.	0.	0.	8.7E+05	1.7E+02
59	139	4.500 H	0.	0.	0.	3.1E+05	0.	0.	0.	0.	0.	0.	3.5E+04	7.1E+00
59	140	3.400 M	0.	0.	0.	1.9E+05	0.	0.	0.	0.	0.	0.	2.1E+04	4.3E+00
58	129	13.000 M	2.6E+04	1.2E+04	5.3E+03	2.4E+03	0.	0.	0.	0.	0.	0.	5.0E+03	1.4E+00
58	130	30.000 M	9.7E+04	4.4E+04	2.0E+04	9.1E+03	0.	0.	0.	0.	0.	0.	1.9E+04	5.0E+00
58	131	30.000 M	3.1E+05	1.4E+05	6.5E+04	3.0E+04	0.	0.	0.	0.	0.	0.	6.2E+04	1.5E+01
58	132	4.200 H	8.0E+05	3.9E+05	1.8E+05	8.1E+04	0.	0.	0.	0.	0.	0.	1.7E+05	4.0E+01
58	133	6.300 H	1.6E+06	8.0E+05	3.7E+05	1.7E+05	0.	0.	0.	0.	0.	0.	3.5E+05	8.3E+01
58	134	72.000 H	4.1E+05	2.1E+05	1.0E+05	4.6E+04	0.	0.	0.	0.	0.	0.	9.5E+04	9.6E+01
58	135	18.000 H	0.	5.1E+05	2.6E+05	1.2E+05	0.	0.	0.	0.	0.	0.	2.4E+05	8.0E+01
58	136	.193 A												5.6E+01
58	137	9.000 H	0.	0.	1.6E+05	7.9E+04	0.	0.	0.	0.	0.	0.	1.5E+05	3.4E+01
58	138	.250 A												1.9E+01
58	140	88.480 A												2.7E-01
57	127	3.500 M	2.0E+04	9.0E+03	4.1E+03	1.9E+03	0.	0.	0.	0.	0.	0.	3.9E+03	1.2E+00
57	128	4.600 M	7.0E+04	3.2E+04	1.4E+04	6.5E+03	0.	0.	0.	0.	0.	0.	1.4E+04	4.0E+00
57	129	10.000 M	2.1E+05	9.5E+04	4.3E+04	2.0E+04	0.	0.	0.	0.	0.	0.	4.1E+04	1.1E+01
57	130	9.000 M	5.1E+05	2.3E+05	1.1E+05	4.8E+04	0.	0.	0.	0.	0.	0.	1.0E+05	2.8E+01
57	131	61.000 M	8.2E+05	3.8E+05	1.7E+05	7.8E+04	0.	0.	0.	0.	0.	0.	1.6E+05	4.0E+01
57	132	4.800 H	7.2E+05	3.5E+05	1.6E+05	7.3E+04	0.	0.	0.	0.	0.	0.	1.5E+05	3.7E+01
57	133	4.000 H	5.4E+05	2.8E+05	1.3E+05	5.8E+04	0.	0.	0.	0.	0.	0.	1.2E+05	2.7E+01
57	134	6.500 M	3.5E+05	1.8E+05	8.8E+04	4.0E+04	0.	0.	0.	0.	0.	0.	8.3E+04	1.7E+01
57	135	19.400 H	0.	5.9E+04	3.0E+04	1.4E+04	0.	0.	0.	0.	0.	0.	2.8E+04	9.7E+00
57	136	9.500 M	0.	5.2E+04	2.7E+04	1.3E+04	0.	0.	0.	0.	0.	0.	2.5E+04	5.0E+00
57	138	.089 A												1.0E+00
56	125	6.500 M	1.5E+04	6.6E+03	3.0E+03	1.4E+03	0.	0.	0.	0.	0.	0.	2.9E+03	1.0E+00
56	126	97.000 M	4.8E+04	2.2E+04	9.8E+03	4.5E+03	0.	0.	0.	0.	0.	0.	9.3E+03	3.1E+00
56	127	10.000 M	1.3E+05	5.9E+04	2.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	2.5E+04	7.9E+00
56	128	2.400 D	6.8E+04	3.1E+04	1.4E+04	6.4E+03	0.	0.	0.	0.	0.	0.	1.3E+04	1.6E+01
56	129	2.200 H	3.0E+05	1.4E+05	6.2E+04	2.8E+04	0.	0.	0.	0.	0.	0.	5.9E+04	1.6E+01
56	130	.101 A												1.3E+01
56	131	11.600 D	1.0E+04	4.7E+03	2.1E+03	9.7E+02	0.	0.	0.	0.	0.	0.	2.0E+03	8.7E+00
56	132	.097 A												5.1E+00
56	134	2.420 A												1.3E+00
56	135	6.590 A												5.5E-01
55	123	8.000 M	1.0E+04	4.7E+03	2.2E+03	1.0E+03	0.	0.	0.	0.	0.	0.	2.1E+03	7.9E-01
55	125	45.000 M	7.4E+04	3.4E+04	1.5E+04	7.1E+03	0.	0.	0.	0.	0.	0.	1.5E+04	5.1E+00
55	126	1.600 M	1.1E+05	5.0E+04	2.3E+04	1.0E+04	0.	0.	0.	0.	0.	0.	2.1E+04	7.1E+00
55	127	6.200 H	9.3E+04	4.2E+04	1.9E+04	8.7E+03	0.	0.	0.	0.	0.	0.	1.8E+04	6.1E+00
55	128	3.000 M	7.5E+04	3.4E+04	1.5E+04	7.0E+03	0.	0.	0.	0.	0.	0.	1.5E+04	4.3E+00
55	129	32.000 H	2.0E+04	8.9E+03	4.0E+03	1.8E+03	0.	0.	0.	0.	0.	0.	3.8E+03	2.6E+00
55	130	30.000 M	2.8E+04	1.3E+04	5.8E+03	2.6E+03	0.	0.	0.	0.	0.	0.	5.5E+03	1.4E+00
54	121	39.000 M	6.9E+03	3.2E+03	1.5E+03	6.9E+02	0.	0.	0.	0.	0.	0.	1.4E+03	6.0E-01
54	122	19.000 H	1.1E+04	5.0E+03	2.3E+03	1.1E+03	0.	0.	0.	0.	0.	0.	2.2E+03	1.5E+00
54	123	2.000 H	3.7E+04	1.7E+04	7.8E+03	3.7E+03	0.	0.	0.	0.	0.	0.	7.4E+03	2.9E+00
54	124	.096 A												2.8E+00
54	125	17.000 H	1.9E+04	8.8E+03	4.0E+03	1.8E+03	0.	0.	0.	0.	0.	0.	3.8E+03	2.1E+00
54	126	.090 A												1.4E+00
54	128	1.920 A												3.9E-01
53	120	1.400 H	1.1E+04	4.9E+03	2.3E+03	1.1E+03	0.	0.	0.	0.	0.	0.	2.2E+03	9.7E-01
53	121	2.000 H	1.4E+04	6.7E+03	3.1E+03	1.4E+03	0.	0.	0.	0.	0.	0.	3.0E+03	1.3E+00
53	122	3.500 M	1.3E+04	5.8E+03	2.7E+03	1.2E+03	0.	0.	0.	0.	0.	0.	2.6E+03	1.0E+00
53	123	13.000 H	6.6E+03	3.0E+03	1.4E+03	6.5E+02	0.	0.	0.	0.	0.	0.	1.3E+03	7.1E-01
52	120	.089 A												3.6E-01

TARGET Z= 59

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 141	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
60	137	55.000 M	7.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+05	1.5E+02
60	138	5.000 H	1.6E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+06	3.2E+02
60	139	5.200 H	2.1E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+06	4.3E+02
59	134	17.000 M	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	4.2E+01
59	135	22.000 M	4.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.8E+05	1.0E+02
59	136	13.500 M	8.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.8E+05	1.7E+02
59	137	70.000 M	8.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+05	1.7E+02
59	138	2.000 H	6.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+05	1.3E+02
59	139	4.500 H	4.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+05	8.8E+01
58	129	13.000 M	3.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	1.1E+00
58	130	30.000 M	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	3.8E+00
58	131	30.000 M	4.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+04	1.2E+01
58	132	4.200 H	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	3.0E+01
58	133	6.300 H	2.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+05	6.2E+01
58	134	72.000 H	6.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+04	7.3E+01
58	135	18.000 H	1.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	6.1E+01
58	136	.193 A												4.3E+01
58	137	9.000 H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	2.6E+01
58	138	.250 A												1.4E+01
57	127	3.500 M	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	9.1E-01
57	128	4.600 M	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+03	3.0E+00
57	129	10.000 M	2.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+04	8.6E+00
57	130	9.000 M	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+04	2.0E+01
57	131	61.000 M	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	3.0E+01
57	132	4.800 H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	2.8E+01
57	133	4.000 H	8.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.6E+04	2.0E+01
57	134	6.500 M	6.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+04	1.3E+01
57	135	19.400 H	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	7.4E+00
57	136	9.500 M	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	3.8E+00
57	138	.089 A												7.6E-01
56	126	97.000 M	6.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+03	2.3E+00
56	127	10.000 M	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+04	6.0E+00
56	128	2.400 D	9.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.5E+03	1.2E+01
56	129	2.200 H	4.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+04	1.2E+01
56	130	.101 A												9.8E+00
56	132	.097 A												3.8E+00
56	134	2.420 A												9.6E-01
55	125	45.000 M	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	3.9E+00
55	126	1.600 M	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	5.3E+00
55	127	6.200 H	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	4.6E+00
55	128	3.000 M	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	3.3E+00
55	129	32.000 H	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	2.0E+00
55	130	30.000 M	3.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+03	1.1E+00
54	123	2.000 H	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	2.2E+00
54	124	.096 A												2.1E+00
54	125	17.000 H	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	1.6E+00
54	126	.090 A												1.0E+00
53	121	2.000 H	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	9.5E-01

TARGET Z= 60

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 142	143	144	145	146	148	150	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
61	140	6.000 M	1.8E+06	1.3E+06	9.1E+05	6.5E+05	4.4E+05	2.0E+05	9.2E+04	0.	0.	0.	1.0E+06	2.0E+02
61	141	22.000 M	0.	2.5E+06	1.8E+06	1.3E+06	9.0E+05	4.1E+05	1.9E+05	0.	0.	0.	1.0E+06	2.1E+02
60	137	55.000 M	5.3E+05	3.6E+05	2.4E+05	1.6E+05	1.1E+05	5.0E+04	2.3E+04	0.	0.	0.	2.8E+05	6.0E+01
60	138	5.000 H	1.1E+06	8.0E+05	5.4E+05	3.7E+05	2.5E+05	1.1E+05	5.1E+04	0.	0.	0.	6.1E+05	1.3E+02
60	139	5.200 H	1.5E+06	1.1E+06	7.7E+05	5.2E+05	3.5E+05	1.6E+05	7.2E+04	0.	0.	0.	8.3E+05	1.8E+02
60	140	3.300 D	2.6E+05	1.9E+05	1.3E+05	9.6E+04	6.5E+04	3.0E+04	1.4E+04	0.	0.	0.	1.5E+05	1.6E+02
60	141	2.500 H	0.	7.4E+05	5.3E+05	3.8E+05	2.7E+05	1.2E+05	5.6E+04	0.	0.	0.	3.0E+05	6.1E+01
60	142	27.110 A												2.8E+01
60	143	12.170 A												6.9E+00
60	144	23.850 A												2.4E+00
60	145	8.300 A												2.4E-01
59	134	17.000 M	1.3E+05	8.7E+04	6.0E+04	4.0E+04	2.7E+04	1.2E+04	5.6E+03	0.	0.	0.	6.8E+04	1.7E+01
59	135	22.000 M	3.3E+05	2.2E+05	1.5E+05	1.0E+05	6.8E+04	3.1E+04	1.4E+04	0.	0.	0.	1.7E+05	4.1E+01
59	136	13.500 M	6.0E+05	4.0E+05	2.7E+05	1.8E+05	1.2E+05	5.6E+04	2.5E+04	0.	0.	0.	3.2E+05	7.1E+01
59	137	70.000 M	6.1E+05	4.2E+05	2.8E+05	1.9E+05	1.3E+05	5.8E+04	2.6E+04	0.	0.	0.	3.2E+05	6.9E+01
59	138	2.000 H	4.8E+05	3.4E+05	2.3E+05	1.6E+05	1.1E+05	4.8E+04	2.2E+04	0.	0.	0.	2.6E+05	5.4E+01
59	139	4.500 H	3.1E+05	2.2E+05	1.6E+05	1.1E+05	7.3E+04	3.3E+04	1.5E+04	0.	0.	0.	1.7E+05	3.6E+01
59	140	3.400 M	1.9E+05	1.4E+05	9.8E+04	7.0E+04	4.7E+04	2.2E+04	9.9E+03	0.	0.	0.	1.1E+05	2.1E+01
59	141	100.000 A												6.1E+00
59	142	19.200 H	0.	0.	1.5E+04	1.1E+04	7.6E+03	3.7E+03	1.7E+03	0.	0.	0.	6.1E+03	2.1E+00
58	129	13.000 M	2.4E+03	1.6E+03	1.1E+03	7.5E+02	5.1E+02	2.4E+02	1.1E+02	0.	0.	0.	1.3E+03	4.3E-01
58	130	30.000 M	9.1E+03	6.2E+03	4.2E+03	2.8E+03	1.9E+03	8.8E+02	4.0E+02	0.	0.	0.	4.8E+03	1.5E+00
58	131	30.000 M	3.0E+04	2.0E+04	1.4E+04	9.1E+03	6.2E+03	2.8E+03	1.3E+03	0.	0.	0.	1.6E+04	4.7E+00
58	132	4.200 H	8.2E+04	5.5E+04	3.7E+04	2.5E+04	1.7E+04	7.7E+03	3.5E+03	0.	0.	0.	4.3E+04	1.2E+01
58	133	6.300 H	1.7E+05	1.1E+05	7.6E+04	5.1E+04	3.5E+04	1.6E+04	7.2E+03	0.	0.	0.	8.9E+04	2.5E+01
58	134	72.000 H	4.6E+04	3.1E+04	2.1E+04	1.4E+04	9.5E+03	4.3E+03	2.0E+03	0.	0.	0.	2.4E+04	3.0E+01
58	135	18.000 H	1.2E+05	8.0E+04	5.4E+04	3.7E+04	2.5E+04	1.1E+04	5.1E+03	0.	0.	0.	6.3E+04	2.5E+01
58	136	.193 A												1.7E+01
58	137	9.000 H	8.0E+04	5.4E+04	3.7E+04	2.5E+04	1.7E+04	7.6E+03	3.4E+03	0.	0.	0.	4.2E+04	1.1E+01
58	138	.250 A												5.9E+00
58	140	88.480 A												1.4E+00
57	128	4.600 M	6.6E+03	4.4E+03	3.0E+03	2.0E+03	1.4E+03	6.4E+02	3.1E+02	0.	0.	0.	3.5E+03	1.2E+00
57	129	10.000 M	2.0E+04	1.3E+04	9.0E+03	6.1E+03	4.1E+03	1.9E+03	8.9E+02	0.	0.	0.	1.0E+04	3.5E+00
57	130	9.000 M	4.9E+04	3.3E+04	2.2E+04	1.5E+04	1.0E+04	4.7E+03	2.1E+03	0.	0.	0.	2.6E+04	8.1E+00
57	131	61.000 M	7.9E+04	5.3E+04	3.6E+04	2.4E+04	1.6E+04	7.5E+03	3.5E+03	0.	0.	0.	4.1E+04	1.2E+01
57	132	4.800 H	7.4E+04	4.9E+04	3.3E+04	2.2E+04	1.5E+04	7.0E+03	3.2E+03	0.	0.	0.	3.9E+04	1.1E+01
57	133	4.000 H	5.9E+04	4.0E+04	2.7E+04	1.8E+04	1.2E+04	5.5E+03	2.5E+03	0.	0.	0.	3.1E+04	8.3E+00
57	134	6.500 M	4.0E+04	2.7E+04	1.8E+04	1.2E+04	8.3E+03	3.8E+03	1.7E+03	0.	0.	0.	2.1E+04	5.3E+00

TARGET Z= 60 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES										NATURAL MILLI CURIES	AVG SIGMA
57	135	19.400 H	1.4E+04	9.4E+03	6.3E+03	4.3E+03	2.9E+03	1.3E+03	5.9E+02	0.	0.	0.	7.3E+03	3.0E+00
57	136	9.500 M	1.3E+04	8.8E+03	6.0E+03	4.0E+03	2.7E+03	1.2E+03	5.6E+02	0.	0.	0.	6.9E+03	1.5E+00
57	138	.089 A												3.1E-01
56	126	97.000 M	4.6E+03	3.1E+03	2.1E+03	1.4E+03	9.6E+02	4.6E+02	2.1E+02	0.	0.	0.	2.4E+03	9.5E-01
56	127	10.000 M	1.2E+04	8.4E+03	5.6E+03	3.9E+03	2.7E+03	1.2E+03	5.7E+02	0.	0.	0.	6.5E+03	2.4E+00
56	128	2.400 D	6.4E+03	4.3E+03	3.0E+03	2.0E+03	1.4E+03	6.3E+02	3.0E+02	0.	0.	0.	3.4E+03	4.8E+00
56	129	2.200 H	2.8E+04	1.9E+04	1.3E+04	8.8E+03	5.9E+03	2.8E+03	1.3E+03	0.	0.	0.	1.5E+04	5.0E+00
56	130	.101 A												4.0E+00
56	132	.097 A												1.6E+00
56	134	2.420 A												3.9E-01
55	125	45.000 M	7.1E+03	4.9E+03	3.4E+03	2.2E+03	1.5E+03	7.2E+02	3.3E+02	0.	0.	0.	3.8E+03	1.6E+00
55	126	1.600 M	1.0E+04	7.1E+03	4.8E+03	3.3E+03	2.2E+03	1.1E+03	4.9E+02	0.	0.	0.	5.5E+03	2.2E+00
55	127	6.200 H	8.8E+03	6.0E+03	4.0E+03	2.8E+03	1.9E+03	8.8E+02	4.1E+02	0.	0.	0.	4.7E+03	1.9E+00
55	128	3.000 M	7.1E+03	4.8E+03	3.3E+03	2.2E+03	1.5E+03	6.9E+02	3.3E+02	0.	0.	0.	3.7E+03	1.3E+00
55	130	30.000 M	2.6E+03	1.8E+03	1.2E+03	8.0E+02	5.5E+02	2.5E+02	1.2E+02	0.	0.	0.	1.4E+03	4.4E-01
54	123	2.000 H	3.7E+03	2.5E+03	1.7E+03	1.2E+03	7.9E+02	3.7E+02	1.8E+02	0.	0.	0.	2.0E+03	8.9E-01
54	124	.096 A												8.7E-01
54	126	.090 A												4.2E-01

TARGET Z= 61

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 0	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA

TARGET Z= 62

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 144	147	148	149	150	152	154	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
63	143	2.300 M	0.	2.1E+05	1.5E+05	1.0E+05	6.9E+04	3.1E+04	1.4E+04	0.	0.	0.	7.8E+04	1.7E+01
63	145	5.900 D	0.	1.8E+05	1.3E+05	8.9E+04	6.4E+04	2.9E+04	1.3E+04	0.	0.	0.	6.7E+04	1.3E+02
63	146	4.600 D	0.	0.	3.3E+05	2.4E+05	1.7E+05	8.2E+04	3.7E+04	0.	0.	0.	1.1E+05	1.7E+02
63	147	24.000 D	0.	0.	0.	6.3E+04	4.5E+04	2.3E+04	1.1E+04	0.	0.	0.	2.1E+04	1.5E+02
63	148	54.000 D	0.	0.	0.	0.	1.8E+04	9.2E+03	4.5E+03	0.	0.	0.	4.9E+03	8.1E+01
63	149	106.000 D	0.	0.	0.	0.	0.	3.6E+03	1.8E+03	0.	0.	0.	1.4E+03	4.5E+01
63	151	47.820 A												5.5E+00
62	141	20.000 D	1.6E+04	5.6E+03	3.8E+03	2.6E+03	1.7E+03	7.8E+02	3.6E+02	0.	0.	0.	2.5E+03	1.7E+01
62	142	72.000 M	1.3E+06	4.7E+05	3.2E+05	2.2E+05	1.5E+05	6.7E+04	3.0E+04	0.	0.	0.	2.1E+05	4.6E+01
62	143	9.000 M	0.	1.1E+06	7.7E+05	5.2E+05	3.5E+05	1.6E+05	7.2E+04	0.	0.	0.	4.0E+05	8.7E+01
62	144	3.090 A												1.4E+02
62	145	340.000 D	0.	3.4E+03	2.4E+03	1.7E+03	1.2E+03	5.7E+02	2.6E+02	0.	0.	0.	1.3E+03	1.3E+02
62	147	14.970 A												3.2E+01
62	148	11.240 A												1.2E+01
62	149	13.830 A												4.7E+00
62	150	7.440 A												2.4E+00
61	140	6.000 M	9.2E+05	3.0E+05	2.0E+05	1.4E+05	9.3E+04	4.2E+04	1.9E+04	0.	0.	0.	1.4E+05	3.3E+01
61	141	22.000 M	1.8E+06	6.2E+05	4.2E+05	2.8E+05	1.9E+05	8.6E+04	3.9E+04	0.	0.	0.	2.7E+05	6.3E+01
61	143	265.000 D	0.	1.5E+03	1.1E+03	7.5E+02	5.0E+02	2.3E+02	1.0E+02	0.	0.	0.	5.7E+02	4.8E+01
61	148	5.400 D	0.	0.	0.	0.	1.6E+03	8.3E+02	4.0E+02	0.	0.	0.	4.4E+02	7.7E-01
60	137	55.000 M	2.5E+05	7.6E+04	5.1E+04	3.4E+04	2.3E+04	1.0E+04	4.8E+03	0.	0.	0.	3.4E+04	9.7E+00
60	138	5.000 H	5.5E+05	1.7E+05	1.1E+05	7.6E+04	5.1E+04	2.3E+04	1.1E+04	0.	0.	0.	7.6E+04	2.1E+01
60	139	5.200 H	7.7E+05	2.4E+05	1.6E+05	1.1E+05	7.3E+04	3.3E+04	1.5E+04	0.	0.	0.	1.1E+05	2.9E+01
60	140	3.300 D	1.4E+05	4.5E+04	3.0E+04	2.0E+04	1.4E+04	6.2E+03	2.8E+03	0.	0.	0.	2.0E+04	2.5E+01
60	141	2.500 H	5.3E+05	1.8E+05	1.2E+05	8.4E+04	5.6E+04	2.6E+04	1.2E+04	0.	0.	0.	8.2E+04	1.9E+01
60	142	27.110 A												1.2E+01
60	143	12.170 A												5.9E+00
60	144	23.850 A												3.1E+00
60	145	8.300 A												1.5E+00
60	146	17.220 A												4.3E-01
59	134	17.000 M	6.0E+04	1.8E+04	1.2E+04	8.3E+03	5.6E+03	2.6E+03	1.2E+03	0.	0.	0.	8.3E+03	2.8E+00
59	135	22.000 M	1.5E+05	4.6E+04	3.1E+04	2.1E+04	1.4E+04	6.5E+03	3.0E+03	0.	0.	0.	2.1E+04	6.7E+00
59	136	13.500 M	2.8E+05	8.4E+04	5.7E+04	3.8E+04	2.6E+04	1.2E+04	5.4E+03	0.	0.	0.	3.8E+04	1.1E+01
59	137	70.000 M	2.8E+05	8.8E+04	5.8E+04	3.9E+04	2.7E+04	1.2E+04	5.5E+03	0.	0.	0.	4.0E+04	1.1E+01
59	138	2.000 H	2.3E+05	7.2E+04	4.9E+04	3.3E+04	2.2E+04	1.0E+04	4.6E+03	0.	0.	0.	3.3E+04	8.7E+00
59	139	4.500 H	1.6E+05	5.0E+04	3.4E+04	2.3E+04	1.5E+04	6.9E+03	3.1E+03	0.	0.	0.	2.3E+04	5.9E+00
59	140	3.400 M	9.9E+04	3.2E+04	2.2E+04	1.5E+04	1.0E+04	4.5E+03	2.0E+03	0.	0.	0.	1.4E+04	3.5E+00
59	141	100.000 A												1.9E+00
59	142	19.200 H	0.	5.5E+03	3.8E+03	2.5E+03	1.7E+03	7.8E+02	3.5E+02	0.	0.	0.	2.0E+03	7.7E-01
58	130	30.000 M	4.2E+03	1.3E+03	8.9E+02	6.1E+02	4.1E+02	2.0E+02	9.0E+01	0.	0.	0.	6.0E+02	2.5E-01
58	131	30.000 M	1.4E+04	4.2E+03	2.9E+03	2.0E+03	1.3E+03	6.2E+02	2.9E+02	0.	0.	0.	1.9E+03	7.7E-01
58	132	4.200 H	3.7E+04	1.1E+04	7.7E+03	5.2E+03	3.6E+03	1.6E+03	7.9E+02	0.	0.	0.	5.2E+03	2.0E+00
58	133	6.300 H	7.7E+04	2.4E+04	1.6E+04	1.1E+04	7.3E+03	3.4E+03	1.6E+03	0.	0.	0.	1.1E+04	4.1E+00
58	134	72.000 H	2.1E+04	6.5E+03	4.4E+03	2.9E+03	2.0E+03	9.2E+02	4.2E+02	0.	0.	0.	3.0E+03	4.8E+00
58	135	18.000 H	5.5E+04	1.7E+04	1.1E+04	7.6E+03	5.1E+03	2.4E+03	1.1E+03	0.	0.	0.	7.6E+03	4.0E+00
58	136	.193 A												2.8E+00
58	137	9.000 H	3.7E+04	1.1E+04	7.6E+03	5.1E+03	3.5E+03	1.6E+03	7.2E+02	0.	0.	0.	5.2E+03	1.7E+00
58	138	.250 A												9.6E-01
58	140	88.480 A												2.2E-01
57	128	4.600 M	3.1E+03	9.7E+02	6.5E+02	4.5E+02	3.1E+02	1.4E+02	6.7E+01	0.	0.	0.	4.4E+02	2.0E-01
57	129	10.000 M	9.1E+03	2.8E+03	2.0E+03	1.3E+03	9.0E+02	4.2E+02	1.9E+02	0.	0.	0.	1.3E+03	5.7E-01
57	130	9.000 M	2.2E+04	6.9E+03	4.7E+03	3.2E+03	2.2E+03	1.0E+03	4.8E+02	0.	0.	0.	3.2E+03	1.3E+00
57	131	61.000 M	3.6E+04	1.1E+04	7.5E+03	5.1E+03	3.5E+03	1.6E+03	7.6E+02	0.	0.	0.	5.1E+03	2.0E+00
57	132	4.800 H	3.4E+04	1.0E+04	7.0E+03	4.7E+03	3.2E+03	1.5E+03	7.1E+02	0.	0.	0.	4.7E+03	1.8E+00
57	133	4.000 H	2.7E+04	8.2E+03	5.5E+03	3.8E+03	2.5E+03	1.2E+03	5.5E+02	0.	0.	0.	3.8E+03	1.4E+00
57	134	6.500 M	1.9E+04	5.7E+03	3.8E+03	2.6E+03	1.7E+03	8.1E+02	3.7E+02	0.	0.	0.	2.6E+03	8.7E-01
57	135	19.400 H	6.4E+03	1.9E+03	1.3E+03	8.9E+02	6.0E+02	2.7E+02	1.3E+02	0.	0.	0.	8.9E+02	4.9E-01
57	136	9.500 M	6.0E+03	1.8E+03	1.2E+03	8.4E+02	5.6E+02	2.6E+02	1.2E+02	0.	0.	0.	8.4E+02	2.5E-01
56	127	10.000 M	5.7E+03	1.8E+03	1.2E+03	8.6E+02	5.7E+02	2.7E+02	1.3E+02	0.	0.	0.	8.3E+02	4.0E-01
56	128	2.400 D	3.0E+03	9.5E+02	6.3E+02	4.4E+02	3.0E+02	1.4E+02	6.6E+01	0.	0.	0.	4.3E+02	7.8E-01
56	129	2.200 H	1.3E+04	4.1E+03	2.8E+03	1.9E+03	1.3E+03	6.0E+02	2.8E+02	0.	0.	0.	1.9E+03	8.2E-01

TARGET Z= 62 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	151	153	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
56	130	.101 A												6.5E-01
56	132	.097 A												2.5E-01
55	125	45.000 M	3.4E+03	1.1E+03	7.2E+02	5.0E+02	3.4E+02	1.6E+02	7.7E+01	0.	0.	0.	4.9E+02	2.6E-01
55	126	1.600 M	4.9E+03	1.5E+03	1.1E+03	7.2E+02	4.9E+02	2.3E+02	1.1E+02	0.	0.	0.	7.1E+02	3.5E-01
55	127	6.200 H	4.1E+03	1.3E+03	8.8E+02	6.1E+02	4.1E+02	1.9E+02	9.2E+01	0.	0.	0.	5.9E+02	3.0E-01
55	128	3.000 M	3.3E+03	1.0E+03	6.9E+02	4.8E+02	3.3E+02	1.5E+02	7.2E+01	0.	0.	0.	4.7E+02	2.2E-01

TARGET Z= 63

PRODUCTS Z	A	HALF LIFE	151	153	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
64	145	25.000 M	6.0E+04	2.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+04	9.7E+00
64	146	48.000 D	2.9E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	3.1E+01
64	147	25.000 H	2.7E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	8.7E+01
64	149	9.000 D	1.9E+05	9.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	3.9E+02
64	151	120.000 D	0.	6.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	1.3E+02
63	143	2.300 M	4.6E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	8.5E+00
63	145	5.900 D	4.4E+04	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+04	6.4E+01
63	146	4.600 D	1.2E+05	5.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+04	1.3E+02
63	147	24.000 D	3.2E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	1.8E+02
63	148	54.000 D	1.3E+04	6.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+03	1.6E+02
63	149	106.000 D	5.0E+03	2.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+03	1.2E+02
63	151	47.820 A												1.7E+01
62	141	20.000 D	1.2E+03	5.3E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.4E+02	7.0E+00
62	142	72.000 M	9.9E+04	4.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.0E+04	1.9E+01
62	143	9.000 M	2.4E+05	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	4.4E+01
62	144	3.090 A												7.0E+01
62	145	340.000 D	8.4E+02	3.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+02	6.7E+01
62	147	14.970 A												3.7E+01
62	148	11.240 A												2.2E+01
62	149	13.830 A												1.3E+01
62	150	7.440 A												2.3E+00
61	140	6.000 M	6.2E+04	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	1.4E+01
61	141	22.000 M	1.3E+05	5.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.2E+04	2.6E+01
61	143	265.000 D	3.4E+02	1.6E+02	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+02	2.4E+01
61	148	5.400 D	1.2E+03	6.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+02	1.5E+00
61	149	53.000 H	1.2E+03	6.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+02	6.7E-01
60	137	55.000 M	1.6E+04	7.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	4.1E+00
60	138	5.000 H	3.5E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+04	8.8E+00
60	139	5.200 H	4.9E+04	2.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+04	1.2E+01
60	140	3.300 D	9.2E+03	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+03	1.1E+01
60	141	2.500 H	3.9E+04	1.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+04	7.8E+00
60	142	27.110 A												5.1E+00
60	143	12.170 A												3.0E+00
60	144	23.850 A												1.6E+00
60	145	8.300 A												7.6E-01
59	134	17.000 M	3.8E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	1.2E+00
59	135	22.000 M	9.6E+03	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.9E+03	2.8E+00
59	136	13.500 M	1.7E+04	8.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	4.8E+00
59	137	70.000 M	1.8E+04	8.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	4.6E+00
59	138	2.000 H	1.5E+04	6.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	3.6E+00
59	139	4.500 H	1.0E+04	4.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+03	2.4E+00
59	140	3.400 M	6.7E+03	3.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.8E+03	1.5E+00
59	141	100.000 A												7.8E-01
58	132	4.200 H	2.5E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	8.3E-01
58	133	6.300 H	5.0E+03	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+03	1.7E+00
58	134	72.000 H	1.4E+03	6.4E+02	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+02	2.0E+00
58	135	18.000 H	3.5E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+03	1.7E+00
58	136	.193 A												1.2E+00
58	137	9.000 H	2.3E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	7.2E-01
58	138	.250 A												4.0E-01
57	130	9.000 M	1.5E+03	7.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	5.5E-01
57	131	61.000 M	2.4E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	8.4E-01
57	132	4.800 H	2.2E+03	1.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	7.6E-01
57	133	4.000 H	1.7E+03	8.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	5.6E-01

TARGET Z= 64

PRODUCTS Z	A	HALF LIFE	152	154	155	156	157	158	160	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
			MONOISOTOPIC TARGET A/MILLICURIES											
65	147	24.000 M	4.9E+04	2.3E+04	1.5E+04	1.0E+04	7.0E+03	4.7E+03	2.1E+03	0.	0.	0.	7.6E+03	2.1E+00
65	148	70.000 M	1.7E+05	8.2E+04	5.5E+04	3.7E+04	2.5E+04	1.7E+04	7.6E+03	0.	0.	0.	2.7E+04	7.0E+00
65	149	4.100 H	5.0E+05	2.6E+05	1.7E+05	1.2E+05	7.9E+04	5.3E+04	2.4E+04	0.	0.	0.	8.6E+04	2.1E+01
65	150	3.100 H	1.3E+06	6.8E+05	4.9E+05	3.3E+05	2.2E+05	1.5E+05	6.9E+04	0.	0.	0.	2.4E+05	5.6E+01
65	151	18.000 H	0.	9.3E+05	6.6E+05	4.7E+05	3.2E+05	2.2E+05	9.8E+04	0.	0.	0.	3.4E+05	1.2E+02
65	152	18.000 H	0.	1.5E+06	1.1E+06	7.7E+05	5.5E+05	3.7E+05	1.7E+05	0.	0.	0.	5.6E+05	2.0E+02
65	153	2.600 D	0.	0.	4.1E+05	2.9E+05	2.1E+05	1.5E+05	6.9E+04	0.	0.	0.	2.0E+05	1.9E+02
65	154	21.000 H	0.	0.	0.	5.6E+05	4.0E+05	2.9E+05	1.4E+05	0.	0.	0.	2.8E+05	1.1E+02
65	155	5.600 D	0.	0.	0.	0.	6.1E+04	4.3E+04	2.2E+04	0.	0.	0.	2.5E+04	4.7E+01
65	156	5.400 D	0.	0.	0.	0.	0.	2.9E+04	1.5E+04	0.	0.	0.	1.0E+04	1.9E+01
64	145	25.000 M	4.1E+04	1.8E+04	1.3E+04	8.3E+03	5.6E+03	3.8E+03	1.7E+03	0.	0.	0.	6.2E+03	1.9E+00
64	147	25.000 H	2.0E+05	9.0E+04	6.0E+04	4.1E+04	2.8E+04	1.8E+04	8.4E+03	0.	0.	0.	3.0E+04	1.7E+01
64	149	9.000 D	1.4E+05	6.9E+04	4.7E+04	3.2E+04	2.1E+04	1.4E+04	6.5E+03	0.	0.	0.	2.3E+04	7.6E+01
64	151	120.000 D	0.	5.0E+03	3.6E+03	2.5E+03	1.7E+03	1.2E+03	5.3E+02	0.	0.	0.	1.8E+03	7.0E+01
64	152	.200 A												5.1E+01
64	154	2.150 A												1.3E+01
64	155	14.730 A												4.3E+00
64	156	20.470 A												1.4E+00
64	157	15.680 A												2.0E-01

TARGET Z= 64 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 159	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
63	143	2.300 M	3.1E+04	1.4E+04	9.6E+03	6.5E+03	4.4E+03	2.9E+03	1.4E+03	0.	0.	0.	4.8E+03	1.6E+00
63	145	5.900 D	3.0E+04	1.3E+04	9.1E+03	6.1E+03	4.1E+03	2.8E+03	1.3E+03	0.	0.	0.	4.5E+03	1.2E+01
63	146	4.600 D	8.3E+04	3.8E+04	2.5E+04	1.7E+04	1.1E+04	7.7E+03	3.5E+03	0.	0.	0.	1.3E+04	2.6E+01
63	147	24.000 D	2.3E+04	1.1E+04	7.1E+03	4.8E+03	3.3E+03	2.2E+03	9.9E+02	0.	0.	0.	3.6E+03	3.4E+01
63	148	54.000 D	9.3E+03	4.5E+03	3.0E+03	2.1E+03	1.4E+03	9.4E+02	4.2E+02	0.	0.	0.	1.5E+03	3.0E+01
63	149	106.000 D	3.6E+03	1.8E+03	1.2E+03	8.4E+02	5.7E+02	3.8E+02	1.7E+02	0.	0.	0.	6.2E+02	2.3E+01
63	151	47.820 A												9.2E+00
63	153	52.180 A												2.4E+00
62	142	72.000 M	6.8E+04	3.0E+04	2.0E+04	1.4E+04	9.3E+03	6.3E+03	2.9E+03	0.	0.	0.	1.0E+04	3.7E+00
62	143	9.000 M	1.6E+05	7.3E+04	4.9E+04	3.3E+04	2.2E+04	1.5E+04	6.9E+03	0.	0.	0.	2.5E+04	8.4E+00
62	144	3.090 A												1.4E+01
62	147	14.970 A												7.1E+00
62	148	11.240 A												4.4E+00
62	149	13.830 A												2.4E+00
62	150	7.440 A												1.2E+00
62	152	26.720 A												2.6E-01
61	140	6.000 M	4.2E+04	1.9E+04	1.3E+04	8.8E+03	5.9E+03	4.0E+03	1.9E+03	0.	0.	0.	6.5E+03	2.6E+00
61	141	22.000 M	8.7E+04	3.9E+04	2.7E+04	1.8E+04	1.2E+04	8.2E+03	3.9E+03	0.	0.	0.	1.3E+04	5.1E+00
60	137	55.000 M	1.1E+04	4.9E+03	3.3E+03	2.3E+03	1.5E+03	1.1E+03	4.9E+02	0.	0.	0.	1.7E+03	7.9E-01
60	138	5.000 H	2.3E+04	1.1E+04	7.3E+03	5.0E+03	3.4E+03	2.3E+03	1.1E+03	0.	0.	0.	3.7E+03	1.7E+00
60	139	5.200 H	3.4E+04	1.5E+04	1.0E+04	7.0E+03	4.8E+03	3.3E+03	1.5E+03	0.	0.	0.	5.2E+03	2.3E+00
60	140	3.300 D	6.2E+03	2.8E+03	1.9E+03	1.3E+03	8.8E+02	6.0E+02	2.7E+02	0.	0.	0.	9.6E+02	2.0E+00
60	141	2.500 H	2.6E+04	1.2E+04	7.9E+03	5.3E+03	3.6E+03	2.4E+03	1.1E+03	0.	0.	0.	4.0E+03	1.5E+00
60	142	27.110 A												9.9E-01
60	143	12.170 A												5.7E-01
60	144	23.850 A												3.0E-01
59	135	22.000 M	6.5E+03	3.1E+03	2.0E+03	1.4E+03	9.8E+02	6.6E+02	3.0E+02	0.	0.	0.	1.0E+03	5.4E-01
59	136	13.500 M	1.2E+04	5.5E+03	3.8E+03	2.5E+03	1.7E+03	1.2E+03	5.5E+02	0.	0.	0.	1.9E+03	9.3E-01
59	137	70.000 M	1.2E+04	5.6E+03	3.8E+03	2.6E+03	1.8E+03	1.2E+03	5.6E+02	0.	0.	0.	1.9E+03	9.0E-01
59	138	2.000 H	1.0E+04	4.6E+03	3.1E+03	2.1E+03	1.5E+03	9.8E+02	4.7E+02	0.	0.	0.	1.6E+03	7.0E-01
59	139	4.500 H	7.0E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	6.8E+02	3.2E+02	0.	0.	0.	1.1E+03	4.7E-01
59	140	3.400 M	4.5E+03	2.1E+03	1.4E+03	9.4E+02	6.4E+02	4.3E+02	2.0E+02	0.	0.	0.	7.0E+02	2.8E-01
58	136	.193 A												2.3E-01

TARGET Z= 65

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 159	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
66	149	15.000 M	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+03	1.1E+00
66	150	7.400 M	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	3.8E+00
66	151	18.000 M	4.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+04	1.2E+01
66	152	2.400 H	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	3.6E+01
66	153	6.000 H	3.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+05	9.0E+01
66	155	10.000 H	9.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+05	2.6E+02
66	156	.052 A												2.4E+02
66	157	8.500 H	7.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+05	1.9E+02
65	147	24.000 M	3.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+03	1.0E+00
65	148	70.000 M	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	3.5E+00
65	149	4.100 H	3.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+04	1.0E+01
65	150	3.100 H	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	2.8E+01
65	151	18.000 H	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+05	6.2E+01
65	152	18.000 H	2.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+05	1.0E+02
65	153	2.600 D	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	9.9E+01
65	154	21.000 H	2.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	8.1E+01
65	155	5.600 D	3.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+04	5.8E+01
65	156	5.400 D	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	3.7E+01
64	145	25.000 M	2.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	9.3E-01
64	147	25.000 H	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	8.3E+00
64	149	9.000 D	9.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+03	3.8E+01
64	152	.200 A												2.6E+01
64	154	2.150 A												9.9E+00
64	155	14.730 A												5.4E+00
64	156	20.470 A												2.7E+00
64	157	15.680 A												1.3E+00
63	143	2.300 M	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	8.1E-01
63	145	5.900 D	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+03	6.1E+00
63	146	4.600 D	5.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+03	1.3E+01
63	147	24.000 D	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	1.7E+01
63	151	47.820 A												4.6E+00
63	153	52.180 A												1.3E+00
62	142	72.000 M	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	1.8E+00
62	143	9.000 M	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	4.2E+00
62	144	3.090 A												6.7E+00
62	147	14.970 A												3.5E+00
62	148	11.240 A												2.1E+00
62	149	13.830 A												1.2E+00
62	150	7.440 A												6.1E-01
61	140	6.000 M	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	1.3E+00
61	141	22.000 M	5.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+03	2.5E+00
60	138	5.000 H	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	8.4E-01
60	139	5.200 H	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	1.1E+00
60	141	2.500 H	1.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	7.5E-01
60	142	27.110 A												4.9E-01
60	143	12.170 A												2.8E-01

TARGET Z= 66

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 156	158	160	161	162	163	164	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
67	153	9.000 M	1.8E+05	9.2E+04	4.2E+04	2.8E+04	1.9E+04	1.3E+04	8.7E+03	0.	0.	0.	1.7E+04	4.7E+00

TARGET Z= 66 (CONTINUED)

67	154	7.000	M	5.6E+05	2.8E+05	1.4E+05	9.3E+04	6.3E+04	4.2E+04	2.9E+04	0.	0.	0.	5.6E+04	1.5E+01
67	155	46.000	M	0.	7.8E+05	4.0E+05	2.7E+05	1.8E+05	1.2E+05	8.3E+04	0.	0.	0.	1.6E+05	4.0E+01
67	156	57.000	M	0.	1.9E+06	9.5E+05	6.8E+05	4.6E+05	3.1E+05	2.1E+05	0.	0.	0.	4.0E+05	9.4E+01
67	157	18.000	M	0.	0.	1.8E+06	1.3E+06	9.4E+05	6.4E+05	4.3E+05	0.	0.	0.	8.1E+05	1.8E+02
67	158	10.900	M	0.	0.	2.2E+06	1.5E+06	1.1E+06	7.9E+05	5.4E+05	0.	0.	0.	9.7E+05	2.1E+02
67	159	33.000	M	0.	0.	0.	1.4E+06	9.8E+05	7.0E+05	5.0E+05	0.	0.	0.	8.2E+05	1.8E+02
67	160	25.600	M	0.	0.	0.	0.	7.5E+05	5.4E+05	3.8E+05	0.	0.	0.	4.3E+05	9.5E+01
67	161	2.500	H	0.	0.	0.	0.	0.	3.7E+05	2.6E+05	0.	0.	0.	1.7E+05	3.7E+01
67	162	15.000	M	0.	0.	0.	0.	0.	0.	1.6E+05	0.	0.	0.	4.6E+04	1.0E+01
66	149	15.000	M	1.2E+04	5.5E+03	2.5E+03	1.7E+03	1.1E+03	7.7E+02	5.2E+02	0.	0.	0.	1.0E+03	3.5E-01
66	150	7.400	M	4.7E+04	2.1E+04	9.7E+03	6.5E+03	4.4E+03	3.0E+03	2.0E+03	0.	0.	0.	3.9E+03	1.3E+00
66	151	18.000	M	1.6E+05	7.3E+04	3.3E+04	2.3E+04	1.5E+04	1.0E+04	6.9E+03	0.	0.	0.	1.3E+04	4.1E+00
66	152	2.400	H	4.6E+05	2.2E+05	1.0E+05	6.8E+04	4.6E+04	3.1E+04	2.1E+04	0.	0.	0.	4.1E+04	1.2E+01
66	153	6.000	H	1.1E+06	5.5E+05	2.5E+05	1.7E+05	1.1E+05	7.8E+04	5.2E+04	0.	0.	0.	1.0E+05	3.0E+01
66	155	10.000	H	0.	1.4E+06	6.9E+05	4.7E+05	3.2E+05	2.1E+05	1.4E+05	0.	0.	0.	2.8E+05	8.5E+01
66	156	.052	A												7.9E+01
66	157	8.500	H	0.	0.	5.4E+05	3.8E+05	2.7E+05	1.9E+05	1.3E+05	0.	0.	0.	2.4E+05	6.2E+01
66	158	.090	A												4.3E+01
66	160	2.290	A												1.0E+01
66	161	18.880	A												3.1E+00
66	162	25.530	A												7.0E-01
65	148	70.000	M	3.7E+04	1.7E+04	7.7E+03	5.2E+03	3.5E+03	2.4E+03	1.6E+03	0.	0.	0.	3.1E+03	1.1E+00
65	149	4.100	H	1.2E+05	5.4E+04	2.4E+04	1.6E+04	1.1E+04	7.4E+03	5.0E+03	0.	0.	0.	9.8E+03	3.5E+00
65	150	3.100	H	3.3E+05	1.5E+05	7.0E+04	4.6E+04	3.1E+04	2.1E+04	1.4E+04	0.	0.	0.	2.8E+04	9.2E+00
65	151	18.000	H	4.8E+05	2.2E+05	9.9E+04	6.8E+04	4.5E+04	3.0E+04	2.1E+04	0.	0.	0.	4.0E+04	2.1E+01
65	152	18.000	H	7.7E+05	3.8E+05	1.7E+05	1.2E+05	7.8E+04	5.2E+04	3.5E+04	0.	0.	0.	6.9E+04	3.3E+01
65	153	2.600	D	3.0E+05	1.5E+05	6.9E+04	4.7E+04	3.2E+04	2.1E+04	1.4E+04	0.	0.	0.	2.8E+04	3.3E+01
65	154	21.000	H	5.7E+05	2.9E+05	1.4E+05	9.5E+04	6.4E+04	4.3E+04	2.9E+04	0.	0.	0.	5.7E+04	2.7E+01
65	155	5.600	D	0.	4.4E+04	2.2E+04	1.5E+04	1.0E+04	6.9E+03	4.7E+03	0.	0.	0.	9.0E+03	1.9E+01
65	156	5.400	D	0.	2.9E+04	1.5E+04	1.1E+04	7.2E+03	4.9E+03	3.3E+03	0.	0.	0.	6.3E+03	1.2E+01
65	159	100.000	A												1.8E+00
64	147	25.000	H	4.1E+04	1.9E+04	8.4E+03	5.7E+03	3.8E+03	2.6E+03	1.8E+03	0.	0.	0.	3.4E+03	2.7E+00
64	149	9.000	D	3.2E+04	1.5E+04	6.6E+03	4.4E+03	3.0E+03	2.0E+03	1.4E+03	0.	0.	0.	2.7E+03	1.2E+01
64	152	.200	A												8.5E+00
64	154	2.150	A												3.3E+00
64	155	14.730	A												1.8E+00
64	156	20.470	A												8.9E-01
64	157	15.680	A												4.2E-01
63	146	4.600	D	1.7E+04	7.8E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	7.5E+02	0.	0.	0.	1.4E+03	4.2E+00
63	151	47.820	A												1.5E+00
63	153	52.180	A												4.2E-01
62	142	72.000	M	1.4E+04	6.4E+03	2.9E+03	2.0E+03	1.4E+03	9.3E+02	6.5E+02	0.	0.	0.	1.2E+03	6.1E-01
62	143	9.000	M	3.4E+04	1.5E+04	7.0E+03	4.8E+03	3.3E+03	2.2E+03	1.5E+03	0.	0.	0.	2.9E+03	1.4E+00
62	144	3.090	A												2.2E+00
62	147	14.970	A												1.2E+00
62	148	11.240	A												7.1E-01
62	149	13.830	A												4.0E-01
61	141	22.000	M	1.8E+04	8.3E+03	3.9E+03	2.6E+03	1.8E+03	1.3E+03	8.4E+02	0.	0.	0.	1.6E+03	8.3E-01

TARGET Z= 67

PRODUCTS Z	A	HALF LIFE		165	0	0	0	0	0	0	0	0	0	MONOISOTOPIC TARGET A/MILLICURIES NATURAL MILLI CURIES	AVG SIGMA
68	154	4.500	M	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	5.7E-01
68	156	12.000	M	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+04	6.9E+00
68	157	24.000	M	7.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.9E+04	2.1E+01
68	158	2.400	H	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	5.4E+01
68	159	1.000	H	5.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+05	1.2E+02
68	160	29.000	H	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	2.1E+02
68	161	3.100	H	1.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+06	2.2E+02
68	162	.136	A												1.9E+02
68	163	75.000	M	6.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+05	1.4E+02
67	153	9.000	M	5.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+03	2.0E+00
67	154	7.000	M	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	6.1E+00
67	155	46.000	M	5.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+04	1.7E+01
67	156	57.000	M	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	4.0E+01
67	157	18.000	M	2.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+05	7.7E+01
67	158	10.900	M	3.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+05	9.0E+01
67	159	33.000	M	3.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+05	8.0E+01
67	160	25.600	M	2.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+05	6.1E+01
67	161	2.500	H	1.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	4.2E+01
67	162	15.000	M	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	2.6E+01
66	150	7.400	M	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+03	5.3E-01
66	151	18.000	M	4.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+03	1.7E+00
66	152	2.400	H	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	5.0E+00
66	153	6.000	H	3.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+04	1.2E+01
66	155	10.000	H	9.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.9E+04	3.6E+01
66	156	.052	A												3.3E+01
66	157	8.500	H	8.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.5E+04	2.6E+01
66	158	.090	A												1.8E+01
66	160	2.290	A												6.6E+00
66	161	18.880	A												3.5E+00
66	162	25.530	A												1.8E+00
66	163	24.970	A												8.3E-01
65	148	70.000	M	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	4.8E-01
65	149	4.100	H	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	1.5E+00
65	150	3.100	H	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+03	3.8E+00
65	151	18.000	H	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	8.6E+00
65	152	18.000	H	2.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	1.4E+01
65	153	2.600	D	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+03	1.4E+01
65	154	21.000	H	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	1.1E+01
65	155	5.600	D	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+03	8.0E+00
65	156	5.400	D	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	5.1E+00
65	159	100.000	A												8.1E-01
64	147	25.000	H	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+03	1.1E+00

TARGET Z= 67 (CONTINUED)

PRODUCTS Z	A	HALF LIFE											NATURAL MILLI CURIES	AVG SIGMA
64	152	.200	A											3.5E+00
64	154	2.150	A											1.4E+00
64	155	14.730	A											7.4E-01
64	156	20.470	A											3.7E-01
63	151	47.820	A											6.3E-01
62	143	9.000	M	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	5.8E-01
62	144	3.090	A											9.3E-01
62	147	14.970	A											4.8E-01
62	148	11.240	A											3.0E-01

TARGET Z= 68

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 162	164	166	167	168	170	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
69	161	30.000	M	0.	1.1E+06	5.6E+05	3.8E+05	2.6E+05	1.2E+05	0.	0.	0.	0.	3.8E+05	8.8E+01
69	162	22.000	M	0.	2.3E+06	1.2E+06	8.5E+05	5.8E+05	2.6E+05	0.	0.	0.	0.	8.2E+05	1.9E+02
69	163	1.800	H	0.	0.	1.8E+06	1.3E+06	9.3E+05	4.3E+05	0.	0.	0.	0.	1.2E+06	2.8E+02
69	164	1.900	M	0.	0.	1.8E+06	1.3E+06	9.2E+05	4.5E+05	0.	0.	0.	0.	1.2E+06	2.7E+02
69	165	29.000	H	0.	0.	0.	4.7E+05	3.4E+05	1.7E+05	0.	0.	0.	0.	2.2E+05	1.2E+02
69	166	7.700	H	0.	0.	0.	0.	5.0E+05	2.6E+05	0.	0.	0.	0.	1.8E+05	4.5E+01
69	167	9.600	D	0.	0.	0.	0.	0.	1.3E+04	0.	0.	0.	0.	2.0E+03	6.7E+00
68	156	12.000	M	8.2E+04	3.7E+04	1.7E+04	1.1E+04	7.7E+03	3.5E+03	0.	0.	0.	0.	1.2E+04	3.6E+00
68	157	24.000	M	2.6E+05	1.2E+05	5.3E+04	3.6E+04	2.4E+04	1.1E+04	0.	0.	0.	0.	3.6E+04	1.1E+01
68	158	2.400	H	6.7E+05	3.3E+05	1.5E+05	1.0E+05	6.8E+04	3.1E+04	0.	0.	0.	0.	1.0E+05	2.8E+01
68	159	1.000	H	1.5E+06	7.7E+05	3.5E+05	2.4E+05	1.6E+05	7.3E+04	0.	0.	0.	0.	2.4E+05	6.2E+01
68	160	29.000	H	1.2E+06	5.9E+05	2.9E+05	1.9E+05	1.3E+05	6.0E+04	0.	0.	0.	0.	1.9E+05	1.1E+02
68	161	3.100	H	0.	1.4E+06	7.2E+05	4.9E+05	3.3E+05	1.5E+05	0.	0.	0.	0.	4.9E+05	1.1E+02
68	162	.136	A												9.8E+01
68	163	75.000	M	0.	0.	4.7E+05	3.3E+05	2.4E+05	1.1E+05	0.	0.	0.	0.	3.1E+05	7.0E+01
68	164	1.560	A												4.7E+01
68	165	10.360	H	0.	0.	0.	1.1E+05	7.9E+04	4.0E+04	0.	0.	0.	0.	5.3E+04	1.5E+01
68	166	33.410	A												4.4E+00
68	167	22.940	A												5.3E-01
67	153	9.000	M	1.9E+04	8.8E+03	4.0E+03	2.7E+03	1.8E+03	8.4E+02	0.	0.	0.	0.	2.7E+03	1.0E+00
67	154	7.000	M	6.3E+04	2.9E+04	1.3E+04	8.9E+03	6.0E+03	2.7E+03	0.	0.	0.	0.	8.9E+03	3.1E+00
67	155	46.000	M	1.8E+05	8.4E+04	3.8E+04	2.6E+04	1.7E+04	7.9E+03	0.	0.	0.	0.	2.6E+04	8.5E+00
67	156	57.000	M	4.6E+05	2.1E+05	9.7E+04	6.5E+04	4.4E+04	2.0E+04	0.	0.	0.	0.	6.6E+04	2.0E+01
67	157	18.000	M	9.5E+05	4.4E+05	2.0E+05	1.3E+05	9.0E+04	4.1E+04	0.	0.	0.	0.	1.4E+05	3.9E+01
67	158	10.900	M	1.1E+06	5.4E+05	2.5E+05	1.7E+05	1.1E+05	5.1E+04	0.	0.	0.	0.	1.7E+05	4.6E+01
67	159	33.000	M	9.9E+05	5.0E+05	2.3E+05	1.6E+05	1.1E+05	4.8E+04	0.	0.	0.	0.	1.6E+05	4.1E+01
67	160	25.600	M	7.6E+05	3.9E+05	1.9E+05	1.3E+05	8.6E+04	3.9E+04	0.	0.	0.	0.	1.3E+05	3.1E+01
67	161	2.500	H	0.	2.6E+05	1.4E+05	9.2E+04	6.2E+04	2.8E+04	0.	0.	0.	0.	9.1E+04	2.1E+01
67	162	15.000	M	0.	1.6E+05	8.4E+04	6.0E+04	4.1E+04	1.9E+04	0.	0.	0.	0.	5.8E+04	1.3E+01
67	165	100.000	A												9.8E-01
66	151	18.000	M	1.5E+04	6.9E+03	3.1E+03	2.1E+03	1.4E+03	6.8E+02	0.	0.	0.	0.	2.2E+03	8.9E-01
66	152	2.400	H	4.7E+04	2.1E+04	9.6E+03	6.5E+03	4.4E+03	2.0E+03	0.	0.	0.	0.	6.5E+03	2.6E+00
66	153	6.000	H	1.2E+05	5.2E+04	2.4E+04	1.6E+04	1.1E+04	5.0E+03	0.	0.	0.	0.	1.6E+04	6.4E+00
66	155	10.000	H	3.2E+05	1.5E+05	6.6E+04	4.5E+04	3.0E+04	1.4E+04	0.	0.	0.	0.	4.5E+04	1.8E+01
66	156	.052	A												1.7E+01
66	157	8.500	H	2.8E+05	1.3E+05	5.8E+04	3.9E+04	2.6E+04	1.2E+04	0.	0.	0.	0.	3.9E+04	1.3E+01
66	158	.090	A												9.3E+00
66	160	2.290	A												3.4E+00
66	161	18.880	A												1.8E+00
66	162	25.530	A												9.0E-01
66	163	24.970	A												4.0E-01
65	149	4.100	H	1.1E+04	5.1E+03	2.3E+03	1.6E+03	1.1E+03	5.1E+02	0.	0.	0.	0.	1.6E+03	7.4E-01
65	150	3.100	H	3.2E+04	1.4E+04	6.6E+03	4.5E+03	3.1E+03	1.4E+03	0.	0.	0.	0.	4.5E+03	2.0E+00
65	151	18.000	H	4.5E+04	2.1E+04	9.4E+03	6.4E+03	4.3E+03	2.0E+03	0.	0.	0.	0.	6.5E+03	4.4E+00
65	152	18.000	H	7.9E+04	3.6E+04	1.6E+04	1.1E+04	7.5E+03	3.4E+03	0.	0.	0.	0.	1.1E+04	7.1E+00
65	153	2.600	D	3.2E+04	1.4E+04	6.6E+03	4.4E+03	3.0E+03	1.4E+03	0.	0.	0.	0.	4.5E+03	7.0E+00
65	154	21.000	H	6.4E+04	3.0E+04	1.3E+04	9.0E+03	6.0E+03	2.8E+03	0.	0.	0.	0.	9.1E+03	5.7E+00
65	155	5.600	D	1.0E+04	4.7E+03	2.1E+03	1.4E+03	9.7E+02	4.4E+02	0.	0.	0.	0.	1.5E+03	4.1E+00
65	159	100.000	A												4.1E-01
64	152	.200	A												1.8E+00
64	154	2.150	A												7.0E-01
64	155	14.730	A												3.8E-01
63	151	47.820	A												3.2E-01
62	144	3.090	A												4.7E-01

TARGET Z= 69

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 169	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
70	162	24.000	M	8.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.7E+04	2.2E+01
70	164	75.000	M	6.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	1.4E+02
70	165	10.000	M	1.3E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+06	2.9E+02
70	166	58.000	H	4.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	3.9E+02
70	167	18.000	M	1.7E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+06	3.7E+02
69	161	30.000	M	1.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	4.6E+01
69	162	22.000	M	3.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+05	9.9E+01
69	163	1.800	H	6.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	1.5E+02
69	164	1.900	M	6.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+05	1.5E+02
69	165	29.000	H	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+05	1.2E+02
69	166	7.700	H	3.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+05	9.2E+01
69	167	9.600	D	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	6.1E+01
68	156	12.000	M	5.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+03	1.9E+00
68	157	24.000	M	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	5.5E+00
68	158	2.400	H	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+04	1.4E+01
68	159	1.000	H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	3.3E+01

TARGET Z= 69 (CONTINUED)

68	160	29.000 H	8.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.9E+04	5.7E+01
68	161	3.100 H	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	6.0E+01
68	162	.136 A											5.1E+01
68	163	75.000 M	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	3.9E+01
68	164	1.560 A											2.6E+01
68	165	10.360 H	5.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+04	1.6E+01
68	166	33.410 A											9.1E+00
68	167	22.940 A											4.8E+00
67	154	7.000 M	4.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+03	1.6E+00
67	155	46.000 M	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	4.5E+00
67	156	57.000 M	3.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+04	1.1E+01
67	157	18.000 M	6.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.1E+04	2.1E+01
67	158	10.900 M	7.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+04	2.4E+01
67	159	33.000 M	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+04	2.1E+01
67	160	25.600 M	5.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+04	1.6E+01
67	161	2.500 H	4.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+04	1.1E+01
67	162	15.000 M	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	7.0E+00
67	165	100.000 A											1.1E+00
66	152	2.400 H	3.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+03	1.3E+00
66	153	6.000 H	7.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+03	3.3E+00
66	155	10.000 H	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	9.5E+00
66	156	.052 A											8.9E+00
66	157	8.500 H	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+04	7.0E+00
66	158	.090 A											4.9E+00
66	160	2.290 A											1.8E+00
66	161	18.880 A											9.5E-01
66	162	25.530 A											4.7E-01
65	150	3.100 H	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	1.0E+00
65	151	18.000 H	3.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.0E+03	2.3E+00
65	152	18.000 H	5.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.1E+03	3.7E+00
65	153	2.600 D	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	3.7E+00
65	154	21.000 H	4.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+03	3.0E+00
64	152	.200 A											9.5E-01

TARGET Z= 70

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 168	170	171	172	173	174	176	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
71	167	55.000 M	0.	1.4E+06	1.0E+06	7.1E+05	4.8E+05	3.3E+05	1.5E+05	0.	0.	0.	5.4E+05	1.3E+02
71	168	2.000 H	0.	2.7E+06	1.9E+06	1.4E+06	9.8E+05	6.7E+05	3.0E+05	0.	0.	0.	1.1E+06	2.5E+02
71	169	1.500 D	0.	0.	8.6E+05	6.1E+05	4.4E+05	3.1E+05	1.4E+05	0.	0.	0.	4.4E+05	2.8E+02
71	170	2.000 D	0.	0.	0.	4.5E+05	3.2E+05	2.3E+05	1.1E+05	0.	0.	0.	2.4E+05	1.8E+02
71	171	8.200 D	0.	0.	0.	0.	7.0E+04	5.0E+04	2.6E+04	0.	0.	0.	3.1E+04	8.8E+01
71	172	6.700 D	0.	0.	0.	0.	0.	4.4E+04	2.2E+04	0.	0.	0.	1.7E+04	4.0E+01
70	162	24.000 M	1.3E+05	5.9E+04	4.0E+04	2.7E+04	1.8E+04	1.2E+04	5.5E+03	0.	0.	0.	2.1E+04	6.4E+00
70	164	75.000 M	8.9E+05	4.3E+05	2.9E+05	2.0E+05	1.3E+05	9.1E+04	4.1E+04	0.	0.	0.	1.5E+05	4.2E+01
70	165	10.000 M	1.8E+06	9.3E+05	6.3E+05	4.3E+05	2.9E+05	1.9E+05	8.8E+04	0.	0.	0.	3.3E+05	8.6E+01
70	166	58.000 H	6.1E+05	3.1E+05	2.2E+05	1.5E+05	1.0E+05	6.9E+04	3.2E+04	0.	0.	0.	1.2E+05	1.2E+02
70	167	18.000 M	0.	1.2E+06	8.5E+05	6.1E+05	4.1E+05	2.8E+05	1.3E+05	0.	0.	0.	4.6E+05	1.1E+02
70	168	.135 A												8.9E+01
70	169	32.000 D	0.	0.	1.1E+04	7.7E+03	5.5E+03	3.9E+03	1.8E+03	0.	0.	0.	5.6E+03	6.0E+01
70	170	3.030 A												2.9E+01
70	171	14.310 A												1.0E+01
70	172	21.820 A												3.7E+00
70	173	16.130 A												3.4E-01
69	161	30.000 M	2.6E+05	1.2E+05	8.0E+04	5.3E+04	3.6E+04	2.4E+04	1.1E+04	0.	0.	0.	4.2E+04	1.4E+01
69	162	22.000 M	5.8E+05	2.7E+05	1.8E+05	1.2E+05	8.1E+04	5.5E+04	2.5E+04	0.	0.	0.	9.4E+04	2.9E+01
69	163	1.800 H	9.4E+05	4.3E+05	2.9E+05	2.0E+05	1.3E+05	8.9E+04	4.1E+04	0.	0.	0.	1.5E+05	4.5E+01
69	164	1.900 M	9.3E+05	4.5E+05	3.1E+05	2.1E+05	1.4E+05	9.5E+04	4.2E+04	0.	0.	0.	1.6E+05	4.4E+01
69	165	29.000 H	3.4E+05	1.7E+05	1.2E+05	8.0E+04	5.4E+04	3.6E+04	1.6E+04	0.	0.	0.	6.2E+04	3.7E+01
69	166	7.700 H	5.1E+05	2.6E+05	1.9E+05	1.3E+05	8.5E+04	5.7E+04	2.6E+04	0.	0.	0.	9.7E+04	2.7E+01
69	167	9.600 D	0.	1.4E+04	9.7E+03	6.9E+03	4.7E+03	3.2E+03	1.4E+03	0.	0.	0.	5.3E+03	1.8E+01
69	169	100.000 A												5.8E+00
68	156	12.000 M	7.7E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	7.5E+02	3.4E+02	0.	0.	0.	1.3E+03	5.5E-01
68	157	24.000 M	2.4E+04	1.1E+04	7.5E+03	5.1E+03	3.4E+03	2.3E+03	1.1E+03	0.	0.	0.	4.0E+03	1.6E+00
68	158	2.400 H	6.9E+04	3.1E+04	2.1E+04	1.4E+04	9.5E+03	6.5E+03	3.0E+03	0.	0.	0.	1.1E+04	4.3E+00
68	159	1.000 H	1.6E+05	7.4E+04	5.0E+04	3.4E+04	2.3E+04	1.5E+04	7.0E+03	0.	0.	0.	2.6E+04	9.6E+00
68	160	29.000 H	1.3E+05	6.1E+04	4.0E+04	2.7E+04	1.8E+04	1.2E+04	5.7E+03	0.	0.	0.	2.1E+04	1.7E+01
68	161	3.100 H	3.3E+05	1.5E+05	1.0E+05	6.9E+04	4.6E+04	3.1E+04	1.4E+04	0.	0.	0.	5.4E+04	1.8E+01
68	162	.136 A												1.5E+01
68	163	75.000 M	2.4E+05	1.1E+05	7.4E+04	5.0E+04	3.4E+04	2.3E+04	1.0E+04	0.	0.	0.	3.9E+04	1.1E+01
68	164	1.560 A												7.7E+00
68	165	10.360 H	8.0E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	8.5E+03	3.9E+03	0.	0.	0.	1.5E+04	4.7E+00
68	166	33.410 A												2.7E+00
68	167	22.940 A												1.4E+00
68	168	27.070 A												7.1E-01
67	155	46.000 M	1.8E+04	8.0E+03	5.4E+03	3.7E+03	2.5E+03	1.7E+03	8.0E+02	0.	0.	0.	2.9E+03	1.3E+00
67	156	57.000 M	4.4E+04	2.0E+04	1.4E+04	9.2E+03	6.2E+03	4.3E+03	2.0E+03	0.	0.	0.	7.2E+03	3.1E+00
67	157	18.000 M	9.1E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	8.6E+03	4.1E+03	0.	0.	0.	1.5E+04	6.0E+00
67	158	10.900 M	1.1E+05	5.1E+04	3.5E+04	2.3E+04	1.6E+04	1.1E+04	4.9E+03	0.	0.	0.	1.8E+04	7.1E+00
67	159	33.000 M	1.1E+05	4.8E+04	3.2E+04	2.2E+04	1.5E+04	1.0E+04	4.6E+03	0.	0.	0.	1.7E+04	6.3E+00
67	160	25.600 M	8.6E+04	4.0E+04	2.6E+04	1.8E+04	1.2E+04	8.1E+03	3.7E+03	0.	0.	0.	1.4E+04	4.8E+00
67	161	2.500 H	6.3E+04	2.8E+04	1.9E+04	1.3E+04	8.7E+03	5.9E+03	2.7E+03	0.	0.	0.	1.0E+04	3.3E+00
67	162	15.000 M	4.1E+04	1.9E+04	1.3E+04	8.6E+03	5.8E+03	3.9E+03	1.8E+03	0.	0.	0.	6.7E+03	2.1E+00
67	165	100.000 A												3.1E-01
66	153	6.000 H	1.1E+04	5.1E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	5.1E+02	0.	0.	0.	1.8E+03	9.8E-01
66	155	10.000 H	3.0E+04	1.4E+04	9.4E+03	6.4E+03	4.4E+03	3.0E+03	1.4E+03	0.	0.	0.	5.0E+03	2.8E+00
66	156	.052 A												2.6E+00
66	157	8.500 H	2.7E+04	1.2E+04	8.1E+03	5.5E+03	3.7E+03	2.5E+03	1.2E+03	0.	0.	0.	4.3E+03	2.1E+00
66	158	.090 A												1.4E+00
66	160	2.290 A												5.2E-01
66	161	18.880 A												2.8E-01
65	152	18.000 H	7.5E+03	3.5E+03	2.4E+03	1.6E+03	1.1E+03	7.7E+02	3.5E+02	0.	0.	0.	1.3E+03	1.1E+00
64	152	.200 A												2.8E-01

TARGET Z= 71

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 175	176	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
72	168	22.000 M	1.2E+05	8.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	3.2E+01
72	169	1.500 H	3.4E+05	2.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+05	8.1E+01
72	170	12.000 H	5.9E+05	4.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+05	1.8E+02
72	171	14.000 H	9.9E+05	7.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+05	3.3E+02
72	173	24.000 H	7.0E+05	5.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.0E+05	3.2E+02
72	174	.180 A												4.8E+00
71	167	55.000 M	2.2E+05	1.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	6.0E+01
71	168	2.000 H	4.5E+05	3.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.5E+05	1.2E+02
71	169	1.500 D	2.1E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+05	1.4E+02
71	170	2.000 D	1.6E+05	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	1.3E+02
71	171	8.200 D	3.6E+04	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+04	1.0E+02
71	172	6.700 D	3.2E+04	2.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.1E+04	7.4E+01
70	162	24.000 M	8.2E 03	5.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.1E+03	3.0E+00
70	164	75.000 M	6.1E+04	4.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+04	2.0E+01
70	165	10.000 M	1.3E+05	8.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	4.0E+01
70	166	58.000 H	4.7E+04	3.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+04	5.4E+01
70	167	18.000 M	1.9E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+05	5.1E+01
70	168	.135 A												4.2E+01
70	169	32.000 D	2.7E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	3.0E+01
70	170	3.030 A												2.0E+01
70	171	14.310 A												1.2E+01
70	172	21.820 A												6.9E+00
70	173	16.130 A												3.7E+00
69	161	30.000 M	1.6E+04	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	6.3E+00
69	162	22.000 M	3.7E+04	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+04	1.4E+01
69	163	1.800 H	6.0E+04	4.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+04	2.1E+01
69	164	1.900 M	6.3E+04	4.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.3E+04	2.1E+01
69	165	29.000 H	2.5E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	1.7E+01
69	166	7.700 H	3.9E+04	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	1.3E+01
69	167	9.600 D	2.2E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	8.4E+00
69	169	100.000 A												2.9E+00
68	157	24.000 M	1.6E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	7.6E-01
68	158	2.400 H	4.4E+03	3.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	2.0E+00
68	159	1.000 H	1.0E+04	7.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+04	4.5E+00
68	160	29.000 H	8.4E+03	5.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	8.3E+03	7.9E+00
68	161	3.100 H	2.1E+04	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	8.2E+00
68	162	.136 A												7.1E+00
68	163	75.000 M	1.5E+04	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	5.3E+00
68	164	1.560 A												3.6E+00
68	165	10.360 H	5.8E+03	3.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+03	2.2E+00
68	166	33.410 A												1.3E+00
68	167	22.940 A												6.6E-01
67	155	46.000 M	1.2E+03	8.0E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+03	6.1E-01
67	156	57.000 M	2.9E+03	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	1.5E+00
67	157	18.000 M	5.9E+03	4.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+03	2.8E+00
67	158	10.900 M	7.3E+03	5.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+03	3.3E+00
67	159	33.000 M	6.8E+03	4.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+03	2.9E+00
67	160	25.600 M	5.5E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	2.2E+00
67	161	2.500 H	4.0E+03	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+03	1.5E+00
67	162	15.000 M	2.6E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	9.6E-01
66	155	10.000 H	2.0E+03	1.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+03	1.3E+00
66	156	.052 A												1.2E+00
66	157	8.500 H	1.7E+03	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+03	9.6E-01
66	158	.090 A												6.7E-01

TARGET Z= 72

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 174	176	177	178	179	180	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
73	172	44.000 M	1.5E+06	7.8E+05	5.6E+05	3.8E+05	2.5E+05	1.7E+05	0.	0.	0.	0.	3.4E+05	8.5E+01
73	173	2.500 H	0.	1.7E+06	1.2E+06	8.5E+05	5.8E+05	3.9E+05	0.	0.	0.	0.	7.5E+05	1.8E+02
73	174	1.300 H	0.	2.8E+06	2.0E+06	1.4E+06	1.0E+06	6.9E+05	0.	0.	0.	0.	1.3E+06	3.0E+02
73	175	10.500 H	0.	0.	1.6E+06	1.2E+06	8.4E+05	6.0E+05	0.	0.	0.	0.	9.5E+05	2.8E+02
73	176	8.000 H	0.	0.	0.	1.1E+06	8.2E+05	5.8E+05	0.	0.	0.	0.	6.3E+05	1.7E+02
73	177	56.400 H	0.	0.	0.	0.	1.9E+05	1.3E+05	0.	0.	0.	0.	7.3E+04	6.7E+01
73	178	2.200 H	0.	0.	0.	0.	0.	3.7E+05	0.	0.	0.	0.	1.3E+05	3.1E+01
72	168	22.000 M	1.8E+05	8.4E+04	5.7E+04	3.9E+04	2.6E+04	1.7E+04	0.	0.	0.	0.	3.5E+04	1.1E+01
72	169	1.500 H	5.0E+05	2.3E+05	1.5E+05	1.0E+05	7.0E+04	4.7E+04	0.	0.	0.	0.	9.5E+04	2.8E+01
72	170	12.000 H	8.3E+05	4.0E+05	2.7E+05	1.8E+05	1.2E+05	8.4E+04	0.	0.	0.	0.	1.7E+05	6.2E+01
72	171	14.000 H	1.4E+06	7.1E+05	4.8E+05	3.3E+05	2.2E+05	1.5E+05	0.	0.	0.	0.	3.0E+05	1.1E+02
72	173	24.000 H	0.	5.0E+05	3.6E+05	2.6E+05	1.8E+05	1.2E+05	0.	0.	0.	0.	2.3E+05	1.1E+02
72	174	.180 A												8.6E+01
72	175	70.000 D	0.	0.	4.0E+03	2.9E+03	2.0E+03	1.5E+03	0.	0.	0.	0.	2.3E+03	5.5E+01
72	176	5.200 A												2.5E+01
72	177	18.500 A												7.6E+00
72	178	27.140 A												2.8E+00
71	167	55.000 M	3.3E+05	1.5E+05	1.0E+05	6.8E+04	4.6E+04	3.1E+04	0.	0.	0.	0.	6.3E+04	2.1E+01
71	168	2.000 H	6.7E+05	3.1E+05	2.1E+05	1.4E+05	9.3E+04	6.3E+04	0.	0.	0.	0.	1.3E+05	3.9E+01
71	169	1.500 D	3.2E+05	1.4E+05	9.7E+04	6.6E+04	4.5E+04	3.0E+04	0.	0.	0.	0.	6.0E+04	4.8E+01
71	170	2.000 D	2.3E+05	1.1E+05	7.5E+04	5.1E+04	3.4E+04	2.3E+04	0.	0.	0.	0.	4.7E+04	4.4E+01
71	171	8.200 D	5.1E+04	2.6E+04	1.8E+04	1.2E+04	8.0E+03	5.4E+03	0.	0.	0.	0.	1.1E+04	3.5E+01
71	172	6.700 D	4.4E+04	2.3E+04	1.6E+04	1.1E+04	7.4E+03	5.0E+03	0.	0.	0.	0.	1.0E+04	2.5E+01
71	175	97.410 A												5.0E+00
71	176	2.590 A												1.8E+00
70	162	24.000 M	1.2E+04	5.5E+03	3.7E+03	2.6E+03	1.7E+03	1.2E+03	0.	0.	0.	0.	2.3E+03	1.0E+00
70	164	75.000 M	9.2E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	8.6E+03	0.	0.	0.	0.	1.7E+04	6.7E+00
70	165	10.000 M	1.9E+05	8.8E+04	6.0E+04	4.0E+04	2.7E+04	1.8E+04	0.	0.	0.	0.	3.7E+04	1.4E+01
70	166	58.000 H	7.0E+04	3.2E+04	2.1E+04	1.4E+04	9.7E+03	6.5E+03	0.	0.	0.	0.	1.3E+04	1.8E+01
70	167	18.000 M	2.8E+05	1.3E+05	8.7E+04	5.8E+04	3.9E+04	2.6E+04	0.	0.	0.	0.	5.3E+04	1.7E+01
70	168	.135 A												1.4E+01
70	170	3.030 A												6.8E+00

TARGET Z= 72 (CONTINUED)

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 180	181	182	183	184	186	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
70	171	14.310 A													4.2E+00
70	172	21.820 A													2.4E+00
70	173	16.130 A													1.2E+00
70	174	31.840 A													6.2E-01
69	161	30.000 M	2.4E+04	1.1E+04	7.6E+03	5.1E+03	3.5E+03	2.4E+03	0.	0.	0.	0.	4.7E+03	2.2E+00	
69	162	22.000 M	5.5E+04	2.5E+04	1.7E+04	1.2E+04	7.8E+03	5.3E+03	0.	0.	0.	0.	1.1E+04	4.6E+00	
69	163	1.800 H	9.0E+04	4.1E+04	2.8E+04	1.9E+04	1.3E+04	8.6E+03	0.	0.	0.	0.	1.7E+04	7.1E+00	
69	164	1.900 M	9.5E+04	4.3E+04	2.9E+04	1.9E+04	1.3E+04	9.0E+03	0.	0.	0.	0.	1.8E+04	7.0E+00	
69	165	29.000 H	3.6E+04	1.7E+04	1.1E+04	7.5E+03	5.1E+03	3.4E+03	0.	0.	0.	0.	6.9E+03	5.8E+00	
69	166	7.700 H	5.8E+04	2.6E+04	1.8E+04	1.2E+04	8.0E+03	5.4E+03	0.	0.	0.	0.	1.1E+04	4.3E+00	
69	169	100.000 A													1.0E+00
68	158	2.400 H	6.5E+03	3.0E+03	2.1E+03	1.4E+03	9.5E+02	6.6E+02	0.	0.	0.	0.	1.3E+03	6.8E-01	
68	159	1.000 H	1.5E+04	7.1E+03	4.8E+03	3.3E+03	2.2E+03	1.5E+03	0.	0.	0.	0.	3.0E+03	1.5E+00	
68	160	29.000 H	1.2E+04	5.7E+03	3.9E+03	2.7E+03	1.8E+03	1.2E+03	0.	0.	0.	0.	2.4E+03	2.7E+00	
68	161	3.100 H	3.2E+04	1.4E+04	9.8E+03	6.6E+03	4.5E+03	3.1E+03	0.	0.	0.	0.	6.1E+03	2.8E+00	
68	162	.136 A													2.4E+00
68	163	75.000 M	2.3E+04	1.0E+04	7.0E+03	4.7E+03	3.2E+03	2.2E+03	0.	0.	0.	0.	4.4E+03	1.8E+00	
68	164	1.560 A													1.2E+00
68	165	10.360 H	8.6E+03	3.9E+03	2.6E+03	1.8E+03	1.2E+03	8.1E+02	0.	0.	0.	0.	1.6E+03	7.5E-01	
68	166	33.410 A													4.3E-01
67	157	18.000 M	8.7E+03	4.1E+03	2.7E+03	1.9E+03	1.3E+03	8.8E+02	0.	0.	0.	0.	1.7E+03	9.6E-01	
67	158	10.900 M	1.1E+04	5.0E+03	3.4E+03	2.3E+03	1.6E+03	1.1E+03	0.	0.	0.	0.	2.1E+03	1.1E+00	
67	159	33.000 M	1.0E+04	4.6E+03	3.2E+03	2.2E+03	1.5E+03	1.0E+03	0.	0.	0.	0.	2.0E+03	1.0E+00	
67	160	25.600 M	8.2E+03	3.8E+03	2.5E+03	1.7E+03	1.2E+03	8.0E+02	0.	0.	0.	0.	1.6E+03	7.7E-01	
66	156	.052 A													4.2E-01

TARGET Z= 73

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 180	181	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
74	174	29.000 M	2.4E+05	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+05	4.3E+01	
74	175	1.500 H	6.1E+05	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	1.0E+02	
74	176	2.500 H	1.3E+06	9.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	9.1E+05	2.2E+02	
74	177	2.200 H	1.9E+06	1.4E+06	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+06	3.3E+02	
74	178	22.000 D	6.1E+04	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+04	3.3E+02	
74	179	38.000 M	0.	1.2E+06	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+06	2.9E+02	
73	172	44.000 M	1.7E+05	1.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	3.5E+01	
73	173	2.500 H	3.9E+05	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	7.4E+01	
73	174	1.300 H	6.9E+05	4.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.7E+05	1.2E+02	
73	175	10.500 H	6.0E+05	4.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+05	1.3E+02	
73	176	8.000 H	5.9E+05	4.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+05	1.1E+02	
73	177	56.400 H	1.3E+05	9.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+04	8.9E+01	
73	178	2.200 H	3.7E+05	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+05	6.3E+01	
72	168	22.000 M	1.7E+04	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	4.4E+00	
72	169	1.500 H	4.7E+04	3.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+04	1.1E+01	
72	170	12.000 H	8.4E+04	5.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+04	2.5E+01	
72	171	14.000 H	1.5E+05	1.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.0E+05	4.5E+01	
72	173	24.000 H	1.2E+05	8.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.0E+04	4.5E+01	
72	174	.180 A												3.5E+01	
72	176	5.200 A												1.6E+01	
72	177	18.500 A												1.0E+01	
72	178	27.140 A												5.7E+00	
72	179	13.750 A												3.0E+00	
71	167	55.000 M	3.1E+04	2.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	8.3E+00	
71	168	2.000 H	6.3E+04	4.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+04	1.6E+01	
71	169	1.500 D	3.0E+04	2.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+04	1.9E+01	
71	170	2.000 D	2.3E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	1.8E+01	
71	171	8.200 D	5.4E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+03	1.4E+01	
71	172	6.700 D	5.0E+03	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	1.0E+01	
71	175	97.410 A												2.3E+00	
71	176	2.590 A												1.2E+00	
70	164	75.000 M	8.6E+03	5.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+03	2.7E+00	
70	165	10.000 M	1.8E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	5.5E+00	
70	166	58.000 H	6.5E+03	4.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+03	7.5E+00	
70	167	18.000 M	2.6E+04	1.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+04	7.1E+00	
70	168	.135 A												5.8E+00	
70	170	3.030 A												2.8E+00	
70	171	14.310 A												1.7E+00	
70	172	21.820 A												9.6E-01	
70	173	16.130 A												5.1E-01	
69	161	30.000 M	2.4E+03	1.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	8.8E-01	
69	162	22.000 M	5.4E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+03	1.9E+00	
69	163	1.800 H	8.6E+03	5.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+03	2.9E+00	
69	164	1.900 M	9.0E+03	6.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.1E+03	2.8E+00	
69	165	29.000 H	3.4E+03	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	2.4E+00	
69	166	7.700 H	5.4E+03	3.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+03	1.7E+00	
69	169	100.000 A												4.0E-01	
68	161	3.100 H	3.1E+03	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	1.1E+00	
68	162	.136 A												9.8E-01	
68	163	75.000 M	2.2E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+03	7.4E-01	
68	164	1.560 A												5.0E-01	

TARGET Z= 74

PRODUCTS Z	A	HALF LIFE	MONOISOTOPIC TARGET A/MILLICURIES 180	182	183	184	186	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
75	177	17.000 M	7.9E+05	4.0E+05	2.7E+05	1.8E+05	8.4E+04	0.	0.	0.	0.	0.	2.3E+05	5.7E+01
75	178	15.000 M	1.8E+06	9.4E+05	6.7E+05	4.6E+05	2.1E+05	0.	0.	0.	0.	0.	5.4E+05	1.3E+02
75	179	19.700 M	0.	1.9E+06	1.3E+06	9.6E+05	4.4E+05	0.	0.	0.	0.	0.	1.1E+06	2.7E+02

TARGET Z= 74 (CONTINUED)

75	180	2.400	M	0.	2.7E+06	1.9E+06	1.4E+06	6.6E+05	0.	0.	0.	0.	0.	1.6E+06	3.8E+02
75	181	19.000	H	0.	0.	1.1E+06	7.9E+05	4.0E+05	0.	0.	0.	0.	0.	5.1E+05	2.1E+02
75	182	64.000	H	0.	0.	0.	2.7E+05	1.4E+05	0.	0.	0.	0.	0.	1.2E+05	1.3E+02
75	184	38.000	D	0.	0.	0.	0.	5.8E+03	0.	0.	0.	0.	0.	1.7E+03	2.2E+01
74	174	29.000	M	2.4E+05	1.1E+05	7.5E+04	5.1E+04	2.3E+04	0.	0.	0.	0.	0.	6.2E+04	1.9E+01
74	175	1.500	H	6.2E+05	2.8E+05	1.9E+05	1.3E+05	5.8E+04	0.	0.	0.	0.	0.	1.6E+05	4.5E+01
74	176	2.500	H	1.3E+06	6.2E+05	4.2E+05	2.8E+05	1.3E+05	0.	0.	0.	0.	0.	3.5E+05	9.3E+01
74	177	2.200	H	1.9E+06	1.0E+06	6.8E+05	4.6E+05	2.1E+05	0.	0.	0.	0.	0.	5.6E+05	1.4E+02
74	178	22.000	D	6.1E+04	3.1E+04	2.2E+04	1.5E+04	6.9E+03	0.	0.	0.	0.	0.	1.8E+04	1.4E+02
74	179	38.000	M	0.	8.8E+05	6.3E+05	4.5E+05	2.1E+05	0.	0.	0.	0.	0.	5.2E+05	1.2E+02
74	180	.140	A												9.7E+01
74	182	26.410	A												1.7E+01
74	183	14.400	A												3.5E+00
74	184	30.640	A												2.0E+00
73	172	44.000	M	1.7E+05	7.9E+04	5.3E+04	3.6E+04	1.6E+04	0.	0.	0.	0.	0.	4.4E+04	1.5E+01
73	173	2.500	H	3.9E+05	1.8E+05	1.2E+05	8.1E+04	3.7E+04	0.	0.	0.	0.	0.	1.0E+05	3.2E+01
73	174	1.300	H	6.9E+05	3.1E+05	2.1E+05	1.4E+05	6.5E+04	0.	0.	0.	0.	0.	1.8E+05	5.3E+01
73	175	10.500	H	6.1E+05	2.8E+05	1.9E+05	1.3E+05	5.7E+04	0.	0.	0.	0.	0.	1.6E+05	5.6E+01
73	176	8.000	H	5.9E+05	2.9E+05	1.9E+05	1.3E+05	6.0E+04	0.	0.	0.	0.	0.	1.6E+05	4.9E+01
73	177	56.400	H	1.3E+05	6.9E+04	4.7E+04	3.1E+04	1.4E+04	0.	0.	0.	0.	0.	3.9E+04	3.8E+01
73	178	2.200	H	3.7E+05	1.9E+05	1.4E+05	9.2E+04	4.2E+04	0.	0.	0.	0.	0.	1.1E+05	2.7E+01
73	180	.012	A												1.1E+01
73	181	99.990	A												3.4E+00
72	168	22.000	M	1.7E+04	7.9E+03	5.4E+03	3.7E+03	1.7E+03	0.	0.	0.	0.	0.	4.5E+03	1.9E+00
72	169	1.500	H	4.7E+04	2.2E+04	1.4E+04	9.8E+03	4.5E+03	0.	0.	0.	0.	0.	1.2E+04	4.9E+00
72	170	12.000	H	8.5E+04	3.8E+04	2.6E+04	1.7E+04	7.9E+03	0.	0.	0.	0.	0.	2.1E+04	1.1E+01
72	171	14.000	H	1.5E+05	6.7E+04	4.5E+04	3.1E+04	1.4E+04	0.	0.	0.	0.	0.	3.8E+04	2.0E+01
72	173	24.000	H	1.2E+05	5.4E+04	3.7E+04	2.5E+04	1.1E+04	0.	0.	0.	0.	0.	3.0E+04	1.9E+01
72	174	.180	A												1.5E+01
72	176	5.200	A												7.1E+00
72	177	18.500	A												4.3E+00
72	178	27.140	A												2.5E+00
72	179	13.750	A												1.3E+00
72	180	35.240	A												6.6E-01
71	167	55.000	M	3.1E+04	1.4E+04	9.7E+03	6.5E+03	3.1E+03	0.	0.	0.	0.	0.	8.0E+03	3.6E+00
71	168	2.000	H	6.3E+04	2.9E+04	1.9E+04	1.3E+04	6.1E+03	0.	0.	0.	0.	0.	1.6E+04	6.9E+00
71	169	1.500	D	3.0E+04	1.4E+04	9.2E+03	6.2E+03	2.9E+03	0.	0.	0.	0.	0.	7.7E+03	8.4E+00
71	170	2.000	D	2.3E+04	1.1E+04	7.1E+03	4.8E+03	2.2E+03	0.	0.	0.	0.	0.	5.9E+03	7.7E+00
71	175	97.410	A												1.0E+00
71	176	2.590	A												5.3E-01
70	164	75.000	M	8.7E+03	4.0E+03	2.8E+03	1.8E+03	8.8E+02	0.	0.	0.	0.	0.	2.3E+03	1.2E+00
70	165	10.000	M	1.8E+04	8.5E+03	5.8E+03	4.0E+03	1.8E+03	0.	0.	0.	0.	0.	4.8E+03	2.4E+00
70	166	58.000	H	6.6E+03	3.0E+03	2.0E+03	1.4E+03	6.4E+02	0.	0.	0.	0.	0.	1.7E+03	3.2E+00
70	167	18.000	M	2.7E+04	1.2E+04	8.2E+03	5.6E+03	2.6E+03	0.	0.	0.	0.	0.	6.8E+03	3.1E+00
70	168	.135	A												2.5E+00
70	170	3.030	A												1.2E+00
70	171	14.310	A												7.3E-01
70	172	21.820	A												4.1E-01
69	163	1.800	H	8.6E+03	4.1E+03	2.7E+03	1.9E+03	8.7E+02	0.	0.	0.	0.	0.	2.3E+03	1.2E+00
69	164	1.900	M	9.0E+03	4.2E+03	2.9E+03	1.9E+03	9.2E+02	0.	0.	0.	0.	0.	2.4E+03	1.2E+00
68	162	.136	A												4.2E-01

TARGET Z= 75

PRODUCTS Z	A	HALF LIFE		185	187	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
							MONOISOTOPIC TARGET A/MILLICURIES								
76	180	22.000	M	4.4E+05	2.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+05	7.4E+01
76	181	105.000	M	1.0E+06	4.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+05	1.7E+02
76	182	21.000	H	1.1E+06	5.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.4E+05	3.3E+02
76	183	14.000	H	1.8E+06	9.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+06	4.3E+02
76	184	.018	A												2.0E+02
76	185	94.000	D	0.	8.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.1E+03	1.7E+02
75	177	17.000	M	1.2E+05	5.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	8.2E+04	2.5E+01
75	178	15.000	M	3.1E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	5.7E+01
75	179	19.700	M	6.5E+05	3.0E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+05	1.1E+02
75	180	2.400	M	9.7E+05	4.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	6.4E+05	1.6E+02
75	181	19.000	H	5.6E+05	2.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+05	1.6E+02
75	182	64.000	H	1.9E+05	9.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	1.4E+02
75	183	70.000	D	6.3E+03	3.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+03	1.1E+02
75	184	38.000	D	0.	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+03	3.5E+01
75	185	37.070	A												2.3E+01
74	174	29.000	M	3.4E+04	1.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+04	8.0E+00
74	175	1.500	H	8.8E+04	3.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.7E+04	1.9E+01
74	176	2.500	H	1.9E+05	8.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+05	4.0E+01
74	177	2.200	H	3.1E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	6.1E+01
74	178	22.000	D	1.0E+04	4.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.8E+03	6.2E+01
74	179	38.000	M	3.1E+05	1.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+05	5.4E+01
74	180	.140	A												4.2E+01
74	182	26.410	A												1.9E+01
74	183	14.400	A												1.2E+01
74	184	30.640	A												3.1E+00
73	172	44.000	M	2.4E+04	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+04	6.4E+00
73	173	2.500	H	5.5E+04	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.6E+04	1.4E+01
73	174	1.300	H	9.7E+04	4.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.3E+04	2.3E+01
73	175	10.500	H	8.6E+04	3.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+04	2.4E+01
73	176	8.000	H	8.8E+04	4.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	5.8E+04	2.1E+01
73	177	56.400	H	2.1E+04	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	1.6E+01
73	178	2.200	H	6.3E+04	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+04	1.2E+01
73	180	.012	A												4.6E+00
73	181	99.990	A												2.6E+00
72	168	22.000	M	2.5E+03	1.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	8.2E-01
72	169	1.500	H	6.7E+03	3.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.4E+03	2.1E+00
72	170	12.000	H	1.2E+04	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.7E+03	4.6E+00
72	171	14.000	H	2.1E+04	9.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	8.4E+00
72	173	24.000	H	1.7E+04	7.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	8.3E+00

TARGET Z= 75 (CONTINUED)

72	174	.180	A											6.5E+00
72	176	5.200	A											3.0E+00
72	177	18.500	A											1.8E+00
72	178	27.140	A											1.0E+00
72	179	13.750	A											5.6E-01
71	167	55.000	M	4.5E+03	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	1.5E+00
71	168	2.000	H	9.0E+03	4.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	3.0E+00
71	169	1.500	D	4.3E+03	2.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	3.6E+00
71	170	2.000	D	3.2E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	3.3E+00
70	165	10.000	M	2.7E+03	1.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+03	1.0E+00
70	167	18.000	M	3.8E+03	1.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.5E+03	1.3E+00
70	168	.135	A												1.1E+00
70	170	3.030	A												5.1E-01

TARGET Z= 76

PRODUCTS Z	A	HALF LIFE		184	186	187	188	189	190	192	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
77	182	15.000	M	7.4E+05	3.8E+05	2.7E+05	1.8E+05	1.2E+05	8.3E+04	3.8E+04	0.	0.	0.	9.2E+04	2.5E+01
77	183	58.000	M	0.	9.4E+05	6.8E+05	4.8E+05	3.3E+05	2.2E+05	1.0E+05	0.	0.	0.	2.4E+05	6.4E+01
77	184	3.200	H	0.	2.1E+06	1.5E+06	1.1E+06	7.6E+05	5.2E+05	2.3E+05	0.	0.	0.	5.5E+05	1.4E+02
77	185	14.000	H	0.	0.	2.0E+06	1.4E+06	1.0E+06	7.2E+05	3.3E+05	0.	0.	0.	7.0E+05	2.5E+02
77	186	15.000	H	0.	0.	0.	1.7E+06	1.2E+06	8.7E+05	4.2E+05	0.	0.	0.	8.3E+05	3.0E+02
77	187	11.000	H	0.	0.	0.	0.	1.4E+06	9.8E+05	5.0E+05	0.	0.	0.	6.9E+05	2.2E+02
77	188	41.000	H	0.	0.	0.	0.	0.	3.6E+05	1.8E+05	0.	0.	0.	1.7E+05	1.2E+02
77	189	13.300	D	0.	0.	0.	0.	0.	0.	2.1E+04	0.	0.	0.	8.8E+03	4.3E+01
77	190	12.000	D	0.	0.	0.	0.	0.	0.	1.7E+04	0.	0.	0.	6.9E+03	3.0E+01
76	180	22.000	M	6.2E+05	3.0E+05	2.0E+05	1.4E+05	9.3E+04	6.3E+04	2.8E+04	0.	0.	0.	6.9E+04	2.2E+01
76	181	105.000	M	1.4E+06	7.2E+05	4.9E+05	3.3E+05	2.2E+05	1.5E+05	6.8E+04	0.	0.	0.	1.7E+05	4.9E+01
76	182	21.000	H	1.5E+06	7.7E+05	5.5E+05	3.7E+05	2.5E+05	1.7E+05	7.8E+04	0.	0.	0.	1.9E+05	9.5E+01
76	183	14.000	H	0.	1.3E+06	9.3E+05	6.6E+05	4.5E+05	3.0E+05	1.4E+05	0.	0.	0.	3.3E+05	1.3E+02
76	184	.018	A												1.2E+02
76	185	94.000	D	0.	0.	8.2E+03	5.8E+03	4.2E+03	3.0E+03	1.4E+03	0.	0.	0.	2.9E+03	9.9E+01
76	186	1.590	A												7.3E+01
76	187	1.640	A												3.8E+01
76	188	13.300	A												1.7E+01
76	189	16.100	A												4.6E+00
76	190	26.400	A												2.7E+00
75	177	17.000	M	1.9E+05	8.4E+04	5.7E+04	3.8E+04	2.6E+04	1.7E+04	7.9E+03	0.	0.	0.	1.9E+04	7.2E+00
75	178	15.000	M	4.6E+05	2.1E+05	1.4E+05	9.6E+04	6.4E+04	4.3E+04	1.9E+04	0.	0.	0.	4.8E+04	1.7E+01
75	179	19.700	M	9.7E+05	4.4E+05	3.0E+05	2.0E+05	1.4E+05	9.1E+04	4.1E+04	0.	0.	0.	1.0E+05	3.3E+01
75	180	2.400	M	1.4E+06	6.6E+05	4.5E+05	3.0E+05	2.0E+05	1.4E+05	6.2E+04	0.	0.	0.	1.5E+05	4.7E+01
75	181	19.000	H	7.9E+05	4.1E+05	2.8E+05	1.9E+05	1.3E+05	8.4E+04	3.8E+04	0.	0.	0.	9.3E+04	4.7E+01
75	182	64.000	H	2.7E+05	1.4E+05	9.8E+04	6.6E+04	4.5E+04	3.0E+04	1.4E+04	0.	0.	0.	3.3E+04	4.0E+01
75	183	70.000	D	0.	4.5E+03	3.2E+03	2.3E+03	1.6E+03	1.1E+03	4.8E+02	0.	0.	0.	1.2E+03	3.1E+01
75	184	38.000	D	0.	5.9E+03	4.2E+03	3.0E+03	2.1E+03	1.5E+03	6.6E+02	0.	0.	0.	1.6E+03	2.2E+01
75	185	37.070	A												1.4E+01
75	186	90.000	H	0.	0.	0.	1.1E+04	8.0E+03	5.7E+03	2.8E+03	0.	0.	0.	5.4E+03	7.9E+00
75	187	62.930	A												3.3E+00
75	188	16.800	H	0.	0.	0.	0.	0.	6.6E+03	3.4E+03	0.	0.	0.	3.2E+03	1.2E+00
74	174	29.000	M	5.1E+04	2.3E+04	1.6E+04	1.0E+04	7.1E+03	4.8E+03	2.2E+03	0.	0.	0.	5.3E+03	2.3E+00
74	175	1.500	H	1.3E+05	5.9E+04	4.0E+04	2.7E+04	1.8E+04	1.2E+04	5.6E+03	0.	0.	0.	1.3E+04	5.6E+00
74	176	2.500	H	2.8E+05	1.3E+05	8.7E+04	5.8E+04	3.9E+04	2.7E+04	1.2E+04	0.	0.	0.	2.9E+04	1.2E+01
74	177	2.200	H	4.6E+05	2.1E+05	1.4E+05	9.5E+04	6.4E+04	4.3E+04	2.0E+04	0.	0.	0.	4.8E+04	1.8E+01
74	178	22.000	D	1.5E+04	7.0E+03	4.7E+03	3.2E+03	2.1E+03	1.4E+03	6.5E+02	0.	0.	0.	1.6E+03	1.8E+01
74	179	38.000	M	4.5E+05	2.1E+05	1.4E+05	9.4E+04	6.4E+04	4.3E+04	1.9E+04	0.	0.	0.	4.7E+04	1.6E+01
74	180	.140	A												1.2E+01
74	182	26.410	A												5.6E+00
74	183	14.400	A												3.4E+00
74	184	30.640	A												1.9E+00
74	186	28.410	A												4.9E-01
73	172	44.000	M	3.6E+04	1.6E+04	1.1E+04	7.5E+03	5.1E+03	3.5E+03	1.6E+03	0.	0.	0.	3.8E+03	1.9E+00
73	173	2.500	H	8.2E+04	3.7E+04	2.5E+04	1.7E+04	1.1E+04	7.7E+03	3.6E+03	0.	0.	0.	8.6E+03	4.0E+00
73	174	1.300	H	1.5E+05	6.5E+04	4.4E+04	3.0E+04	2.0E+04	1.4E+04	6.3E+03	0.	0.	0.	1.5E+04	6.6E+00
73	175	10.500	H	1.3E+05	5.8E+04	3.9E+04	2.6E+04	1.8E+04	1.2E+04	5.5E+03	0.	0.	0.	1.3E+04	6.9E+00
73	176	8.000	H	1.3E+05	6.0E+04	4.0E+04	2.7E+04	1.8E+04	1.2E+04	5.6E+03	0.	0.	0.	1.4E+04	6.1E+00
73	177	56.400	H	3.2E+04	1.4E+04	9.8E+03	6.5E+03	4.4E+03	3.0E+03	1.3E+03	0.	0.	0.	3.3E+03	4.8E+00
73	178	2.200	H	9.3E+04	4.2E+04	2.9E+04	1.9E+04	1.3E+04	8.7E+03	4.0E+03	0.	0.	0.	9.7E+03	3.4E+00
73	180	.012	A												1.3E+00
73	181	99.990	A												7.6E-01
72	169	1.500	H	9.9E+03	4.5E+03	3.1E+03	2.1E+03	1.4E+03	9.8E+02	4.6E+02	0.	0.	0.	1.1E+03	6.1E-01
72	170	12.000	H	1.7E+04	8.0E+03	5.4E+03	3.7E+03	2.5E+03	1.7E+03	8.1E+02	0.	0.	0.	1.9E+03	1.3E+00
72	171	14.000	H	3.1E+04	1.4E+04	9.6E+03	6.5E+03	4.4E+03	3.0E+03	1.4E+03	0.	0.	0.	3.3E+03	2.4E+00
72	173	24.000	H	2.5E+04	1.1E+04	7.6E+03	5.1E+03	3.5E+03	2.3E+03	1.1E+03	0.	0.	0.	2.6E+03	2.4E+00
72	174	.180	A												1.9E+00
72	176	5.200	A												8.9E-01
72	177	18.500	A												5.4E-01
72	178	27.140	A												3.1E-01
71	168	2.000	H	1.3E+04	6.2E+03	4.2E+03	2.8E+03	2.0E+03	1.4E+03	6.2E+02	0.	0.	0.	1.5E+03	8.6E-01
70	168	.135	A												3.1E-01

TARGET Z= 77

PRODUCTS Z	A	HALF LIFE		191	193	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
				MONOISOTOPIC TARGET A/MILLICURIES											
78	182	3.000	M	6.4E+03	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	4.2E+03	1.4E+00
78	183	6.000	M	2.2E+04	1.0E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	4.4E+00
78	184	20.000	M	7.0E+04	3.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+04	1.3E+01
78	185	1.000	H	2.0E+05	9.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+05	3.6E+01

TARGET Z= 77 (CONTINUED)

78	186	2.000	H	5.2E+05	2.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+05	8.8E+01
78	187	2.100	H	1.1E+06	5.5E+05	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+05	1.9E+02
78	188	10.000	D	1.4E+05	7.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.6E+04	3.5E+02
78	189	10.900	H	2.0E+06	1.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+06	4.3E+02
78	190	.013	A												1.9E+02
78	191	3.000	D	0.	2.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	1.6E+02
77	182	15.000	M	5.6E+04	2.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.7E+04	1.2E+01
77	183	58.000	M	1.5E+05	6.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	9.8E+04	3.0E+01
77	184	3.200	H	3.5E+05	1.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+05	6.7E+01
77	185	14.000	H	4.9E+05	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	3.2E+05	1.3E+02
77	186	15.000	H	6.3E+05	2.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.1E+05	1.6E+02
77	187	11.000	H	7.0E+05	3.4E+05	0.	0.	0.	0.	0.	0.	0.	0.	4.8E+05	1.5E+02
77	188	41.000	H	2.6E+05	1.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	1.8E+05	1.3E+02
77	189	13.300	D	3.0E+04	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+04	1.0E+02
77	190	12.000	D	0.	1.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+03	3.3E+01
77	191	37.300	A												2.2E+01
76	180	22.000	M	4.2E+04	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+04	1.0E+01
76	181	105.000	M	1.0E+05	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.7E+04	2.3E+01
76	182	21.000	H	1.1E+05	5.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	7.5E+04	4.5E+01
76	183	14.000	H	2.1E+05	9.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+05	6.0E+01
76	184	.018	A												5.8E+01
76	186	1.590	A												3.8E+01
76	187	1.640	A												2.7E+01
76	188	13.300	A												1.8E+01
76	189	16.100	A												1.1E+01
76	190	26.400	A												2.9E+00
75	177	17.000	M	1.2E+04	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	7.7E+03	3.4E+00
75	178	15.000	M	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	7.9E+00
75	179	19.700	M	6.2E+04	2.8E+04	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+04	1.6E+01
75	180	2.400	M	9.3E+04	4.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	6.1E+04	2.2E+01
75	181	19.000	H	5.8E+04	2.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+04	2.2E+01
75	182	64.000	H	2.0E+04	9.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.3E+04	1.9E+01
75	185	37.070	A												6.8E+00
75	186	90.000	H	4.1E+03	1.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+03	4.1E+00
75	187	62.930	A												2.4E+00
75	188	16.800	H	4.8E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+03	1.3E+00
74	174	29.000	M	3.3E+03	1.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	1.1E+00
74	175	1.500	H	8.3E+03	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+03	2.6E+00
74	176	2.500	H	1.8E+04	8.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+04	5.5E+00
74	177	2.200	H	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	8.4E+00
74	179	38.000	M	2.9E+04	1.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	7.4E+00
74	180	.140	A												5.7E+00
74	182	26.410	A												2.6E+00
74	183	14.400	A												1.6E+00
74	184	30.640	A												9.2E-01
73	172	44.000	M	2.4E+03	1.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	1.6E+03	8.8E-01
73	173	2.500	H	5.3E+03	2.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.5E+03	1.9E+00
73	174	1.300	H	9.2E+03	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	6.2E+03	3.1E+00
73	175	10.500	H	8.2E+03	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	3.3E+00
73	176	8.000	H	8.3E+03	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	5.5E+03	2.9E+00
73	178	2.200	H	5.9E+03	2.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+03	1.6E+00
73	180	.012	A												6.3E-01
72	171	14.000	H	2.0E+03	9.8E+02	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+03	1.2E+00
72	174	.180	A												9.0E-01

TARGET Z= 78

PRODUCTS Z	A	HALF LIFE		MONOISOTOPIC TARGET A/MILLICURIES 190	192	194	195	196	198	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
79	185	4.330	M	3.5E+04	1.6E+04	7.3E+03	5.0E+03	3.3E+03	1.5E+03	0.	0.	0.	0.	5.2E+03	1.7E+00
79	186	12.000	M	1.1E+05	5.4E+04	2.5E+04	1.7E+04	1.1E+04	5.1E+03	0.	0.	0.	0.	1.7E+04	5.3E+00
79	187	8.000	M	3.3E+05	1.7E+05	7.7E+04	5.1E+04	3.5E+04	1.6E+04	0.	0.	0.	0.	5.4E+04	1.6E+01
79	188	8.000	M	8.7E+05	4.5E+05	2.2E+05	1.5E+05	9.8E+04	4.5E+04	0.	0.	0.	0.	1.5E+05	4.2E+01
79	189	38.000	M	0.	1.1E+06	5.5E+05	3.7E+05	2.5E+05	1.1E+05	0.	0.	0.	0.	3.9E+05	1.0E+02
79	190	43.000	M	0.	2.3E+06	1.2E+06	8.4E+05	5.7E+05	2.6E+05	0.	0.	0.	0.	8.5E+05	2.1E+02
79	191	3.200	H	0.	0.	2.1E+06	1.5E+06	1.1E+06	4.9E+05	0.	0.	0.	0.	1.5E+06	3.8E+02
79	192	5.000	H	0.	0.	2.4E+06	1.7E+06	1.2E+06	5.9E+05	0.	0.	0.	0.	1.7E+06	4.4E+02
79	193	18.000	H	0.	0.	0.	1.0E+06	7.3E+05	3.7E+05	0.	0.	0.	0.	5.6E+05	2.3E+02
79	194	39.000	H	0.	0.	0.	0.	3.6E+05	1.8E+05	0.	0.	0.	0.	1.0E+05	7.5E+01
79	196	6.200	D	0.	0.	0.	0.	0.	3.1E+04	0.	0.	0.	0.	2.2E+03	5.4E+00
78	183	6.000	M	3.3E+04	1.5E+04	6.8E+03	4.5E+03	3.1E+03	1.4E+03	0.	0.	0.	0.	4.7E+03	1.7E+00
78	184	20.000	M	1.0E+05	4.7E+04	2.2E+04	1.4E+04	9.7E+03	4.4E+03	0.	0.	0.	0.	1.5E+04	5.2E+00
78	185	1.000	H	3.0E+05	1.4E+05	6.2E+04	4.2E+04	2.8E+04	1.3E+04	0.	0.	0.	0.	4.3E+04	1.4E+01
78	186	2.000	H	7.3E+05	3.5E+05	1.6E+05	1.1E+05	7.3E+04	3.3E+04	0.	0.	0.	0.	1.1E+05	3.5E+01
78	187	2.100	H	1.6E+06	8.1E+05	3.7E+05	2.5E+05	1.7E+05	7.6E+04	0.	0.	0.	0.	2.6E+05	7.5E+01
78	188	10.000	D	2.0E+05	1.0E+05	4.8E+04	3.3E+04	2.2E+04	1.0E+04	0.	0.	0.	0.	3.4E+04	1.4E+02
78	189	10.900	H	0.	1.4E+06	7.2E+05	4.9E+05	3.3E+05	1.5E+05	0.	0.	0.	0.	5.1E+05	1.7E+02
78	190	.013	A												1.6E+02
78	191	3.000	D	0.	0.	1.5E+05	1.1E+05	7.9E+04	3.6E+04	0.	0.	0.	0.	1.1E+05	1.3E+02
78	192	.780	A												1.0E+02
78	194	32.900	A												1.0E+01
78	195	33.800	A												8.2E-01
78	196	25.300	A												4.8E-01
77	182	15.000	M	8.4E+04	3.8E+04	1.7E+04	1.2E+04	7.8E+03	3.6E+03	0.	0.	0.	0.	1.2E+04	4.7E+00
77	183	58.000	M	2.2E+05	1.0E+05	4.6E+04	3.1E+04	2.1E+04	9.4E+03	0.	0.	0.	0.	3.2E+04	1.2E+01
77	184	3.200	H	5.2E+05	2.4E+05	1.1E+05	7.2E+04	4.9E+04	2.2E+04	0.	0.	0.	0.	7.6E+04	2.6E+01
77	185	14.000	H	7.2E+05	3.3E+05	1.5E+05	1.0E+05	6.8E+04	3.1E+04	0.	0.	0.	0.	1.1E+05	5.0E+01
77	186	15.000	H	8.8E+05	4.3E+05	1.9E+05	1.3E+05	8.9E+04	4.0E+04	0.	0.	0.	0.	1.4E+05	6.2E+01
77	187	11.000	H	9.9E+05	5.1E+05	2.3E+05	1.6E+05	1.0E+05	4.7E+04	0.	0.	0.	0.	1.6E+05	6.0E+01
77	188	41.000	H	3.6E+05	1.8E+05	8.9E+04	6.0E+04	4.0E+04	1.9E+04	0.	0.	0.	0.	6.2E+04	5.1E+01
77	189	13.300	D	0.	2.1E+04	1.1E+04	7.4E+03	5.0E+03	2.3E+03	0.	0.	0.	0.	7.7E+03	3.9E+01
77	190	12.000	D	0.	1.7E+04	8.6E+03	6.1E+03	4.2E+03	1.9E+03	0.	0.	0.	0.	6.2E+03	2.8E+01
77	191	37.300	A												1.8E+01
77	193	62.700	A												3.5E+00
77	194	19.000	H	0.	0.	0.	0.	6.0E+03	3.1E+03	0.	0.	0.	0.	1.7E+03	7.5E-01

TARGET Z= 78 (C@NTINUED)

76	180	22.000 M	6.4E+04	2.8E+04	1.3E+04	8.7E+03	5.9E+03	2.7E+03	0.	0.	0.	0.	9.1E+03	4.0E+00
76	181	105.000 M	1.5E+05	6.9E+04	3.1E+04	2.1E+04	1.4E+04	6.5E+03	0.	0.	0.	0.	2.2E+04	9.1E+00
76	182	21.000 H	1.7E+05	7.8E+04	3.5E+04	2.4E+04	1.6E+04	7.3E+03	0.	0.	0.	0.	2.5E+04	1.8E+01
76	183	14.000 H	3.1E+05	1.4E+05	6.3E+04	4.2E+04	2.9E+04	1.3E+04	0.	0.	0.	0.	4.4E+04	2.3E+01
76	184	.018 A												2.3E+01
76	186	1.590 A												1.5E+01
76	187	1.640 A												1.1E+01
76	188	13.300 A												6.9E+00
76	189	16.100 A												4.3E+00
76	190	26.400 A												2.5E+00
76	192	41.000 A												6.9E-01
75	177	17.000 M	1.8E+04	7.9E+03	3.7E+03	2.5E+03	1.7E+03	7.9E+02	0.	0.	0.	0.	2.6E+03	1.3E+00
75	178	15.000 M	4.3E+04	2.0E+04	9.0E+03	6.1E+03	4.2E+03	1.9E+03	0.	0.	0.	0.	6.4E+03	3.1E+00
75	179	19.700 M	9.2E+04	4.2E+04	1.9E+04	1.3E+04	8.7E+03	4.1E+03	0.	0.	0.	0.	1.3E+04	6.2E+00
75	180	2.400 M	1.4E+05	6.3E+04	2.8E+04	1.9E+04	1.3E+04	6.0E+03	0.	0.	0.	0.	2.0E+04	8.7E+00
75	181	19.000 H	8.5E+04	3.8E+04	1.7E+04	1.2E+04	7.9E+03	3.7E+03	0.	0.	0.	0.	1.2E+04	8.7E+00
75	182	64.000 H	3.0E+04	1.4E+04	6.2E+03	4.2E+03	2.8E+03	1.3E+03	0.	0.	0.	0.	4.4E+03	7.5E+00
75	185	37.070 A												2.7E+00
75	187	62.930 A												9.3E-01
74	175	1.500 H	1.2E+04	5.6E+03	2.6E+03	1.8E+03	1.2E+03	5.7E+02	0.	0.	0.	0.	1.9E+03	1.0E+00
74	176	2.500 H	2.7E+04	1.2E+04	5.7E+03	3.9E+03	2.6E+03	1.2E+03	0.	0.	0.	0.	4.0E+03	2.1E+00
74	177	2.200 H	4.3E+04	2.0E+04	9.1E+03	6.2E+03	4.3E+03	2.0E+03	0.	0.	0.	0.	6.4E+03	3.3E+00
74	179	38.000 M	4.3E+04	2.0E+04	8.9E+03	6.1E+03	4.1E+03	1.9E+03	0.	0.	0.	0.	6.3E+03	2.9E+00
74	180	.140 A												2.2E+00
74	182	26.410 A												1.0E+00
74	183	14.400 A												6.3E-01
73	174	1.300 H	1.4E+04	6.3E+03	2.9E+03	2.0E+03	1.4E+03	6.4E+02	0.	0.	0.	0.	2.1E+03	1.2E+00
73	175	10.500 H	1.2E+04	5.5E+03	2.6E+03	1.7E+03	1.2E+03	5.6E+02	0.	0.	0.	0.	1.8E+03	1.3E+00
73	176	8.000 H	1.2E+04	5.7E+03	2.6E+03	1.8E+03	1.2E+03	5.8E+02	0.	0.	0.	0.	1.9E+03	1.1E+00

TARGET Z= 79

PR@DUCTS Z	A	HALF LIFE		M@N@IS@T@PIC TARGET A/MILLICURIES 197	0	0	0	0	0	0	0	0	0	NATURAL MILLI CURIES	AVG SIGMA
80	187	3.000	M	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	7.7E-01
80	188	3.000	M	8.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.2E+03	2.6E+00
80	189	9.300	M	2.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+04	8.1E+00
80	190	20.000	M	8.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.3E+04	2.3E+01
80	191	57.000	M	2.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+05	6.1E+01
80	192	4.900	H	5.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.6E+05	1.4E+02
80	193	3.500	H	1.2E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.2E+06	3.0E+02
80	194	700.000	D	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	5.4E+02
80	195	9.500	H	2.0E+06	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.0E+06	6.2E+02
79	185	4.330	M	2.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.3E+03	8.5E-01
79	186	12.000	M	7.6E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.6E+03	2.7E+00
79	187	8.000	M	2.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.4E+04	7.8E+00
79	188	8.000	M	6.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.6E+04	2.1E+01
79	189	38.000	M	1.7E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.7E+05	5.0E+01
79	190	43.000	M	3.9E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.9E+05	1.1E+02
79	191	3.200	H	7.3E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.3E+05	1.9E+02
79	192	5.000	H	8.8E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.8E+05	2.3E+02
79	193	18.000	H	5.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.2E+05	2.2E+02
79	194	39.000	H	2.6E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.6E+05	1.8E+02
79	195	183.000	D	2.2E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+03	1.4E+02
78	183	6.000	M	2.1E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.1E+03	8.8E-01
78	184	20.000	M	6.5E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.5E+03	2.6E+00
78	185	1.000	H	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	7.1E+00
78	186	2.000	H	4.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.9E+04	1.7E+01
78	187	2.100	H	1.1E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+05	3.8E+01
78	188	10.000	D	1.5E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.5E+04	7.0E+01
78	189	10.900	H	2.2E+05	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.2E+05	8.5E+01
78	190	.013	A												8.1E+01
78	191	3.000	D	5.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+04	6.9E+01
78	192	.780	A												5.3E+01
78	194	32.900	A												2.5E+01
78	195	33.800	A												1.6E+01
77	182	15.000	M	5.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.3E+03	2.4E+00
77	183	58.000	M	1.4E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.4E+04	5.9E+00
77	184	3.200	H	3.3E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.3E+04	1.3E+01
77	185	14.000	H	4.6E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.6E+04	2.5E+01
77	186	15.000	H	5.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.9E+04	3.1E+01
77	187	11.000	H	7.2E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	7.2E+04	3.0E+01
77	188	41.000	H	2.7E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.7E+04	2.6E+01
77	189	13.300	D	3.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.4E+03	2.0E+01
77	190	12.000	D	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	1.4E+01
77	191	37.300	A												9.3E+00
77	193	62.700	A												3.3E+00
77	194	19.000	H	4.3E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.3E+03	1.8E+00
77	195	4.200	H	3.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	3.8E+03	9.8E-01
76	180	22.000	M	4.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.0E+03	2.0E+00
76	181	105.000	M	9.7E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	9.7E+03	4.6E+00
76	182	21.000	H	1.1E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.1E+04	8.8E+00
76	183	14.000	H	1.9E+04	0.	0.	0.	0.	0.	0.	0.	0.	0.	1.9E+04	1.2E+01
76	184	.018	A												1.1E+01
76	186	1.590	A												7.5E+00
76	187	1.640	A												5.3E+00
76	188	13.300	A												3.5E+00
76	189	16.100	A												2.1E+00
76	190	26.400	A												1.2E+00
75	178	15.000	M	2.9E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.9E+03	1.6E+00
75	179	19.700	M	6.0E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.0E+03	3.1E+00
75	180	2.400	M	8.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	8.8E+03	4.4E+00
75	181	19.000	H	5.4E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	5.4E+03	4.4E+00
75	185	37.070	A												1.3E+00
74	177	2.200	H	2.8E+03	0.	0.	0.	0.	0.	0.	0.	0.	0.	2.8E+03	1.6E+00