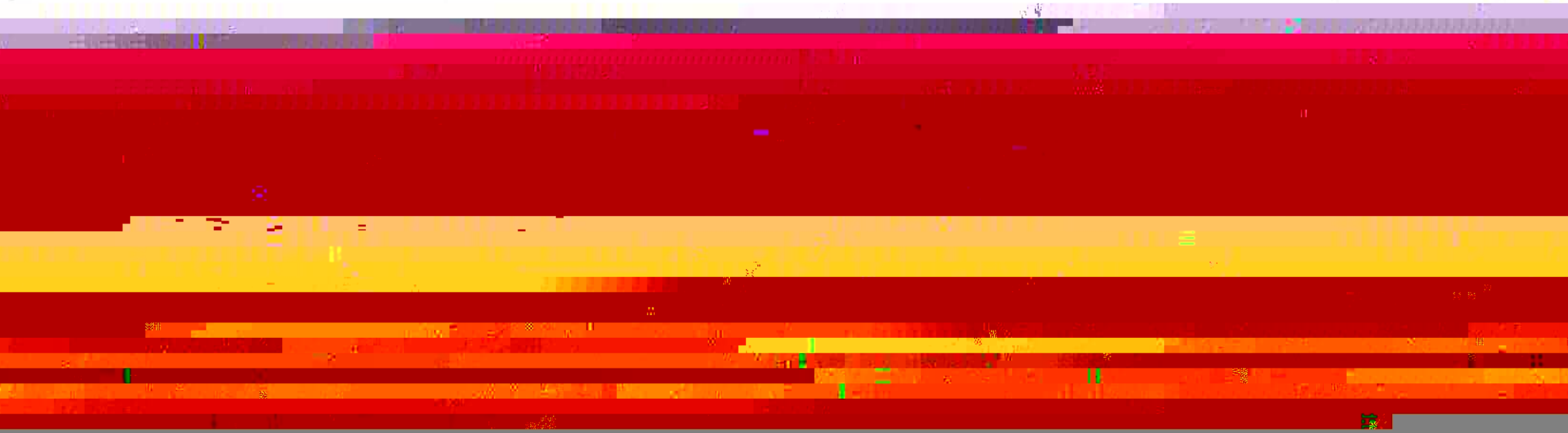
RESPONSE OF THERMOLUMINESCENT DOSIMETERS TO CALIFORNIUM-252 NEUTRONS

in

The Department of Nuclear Engineering

Dedicated to

My Wife, Maida



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rmoluminescent Dosimetry Performed

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nses of Ten Thermoluminescent Dosimeters

e TLD-100 to a 5.5 mg Californium-252

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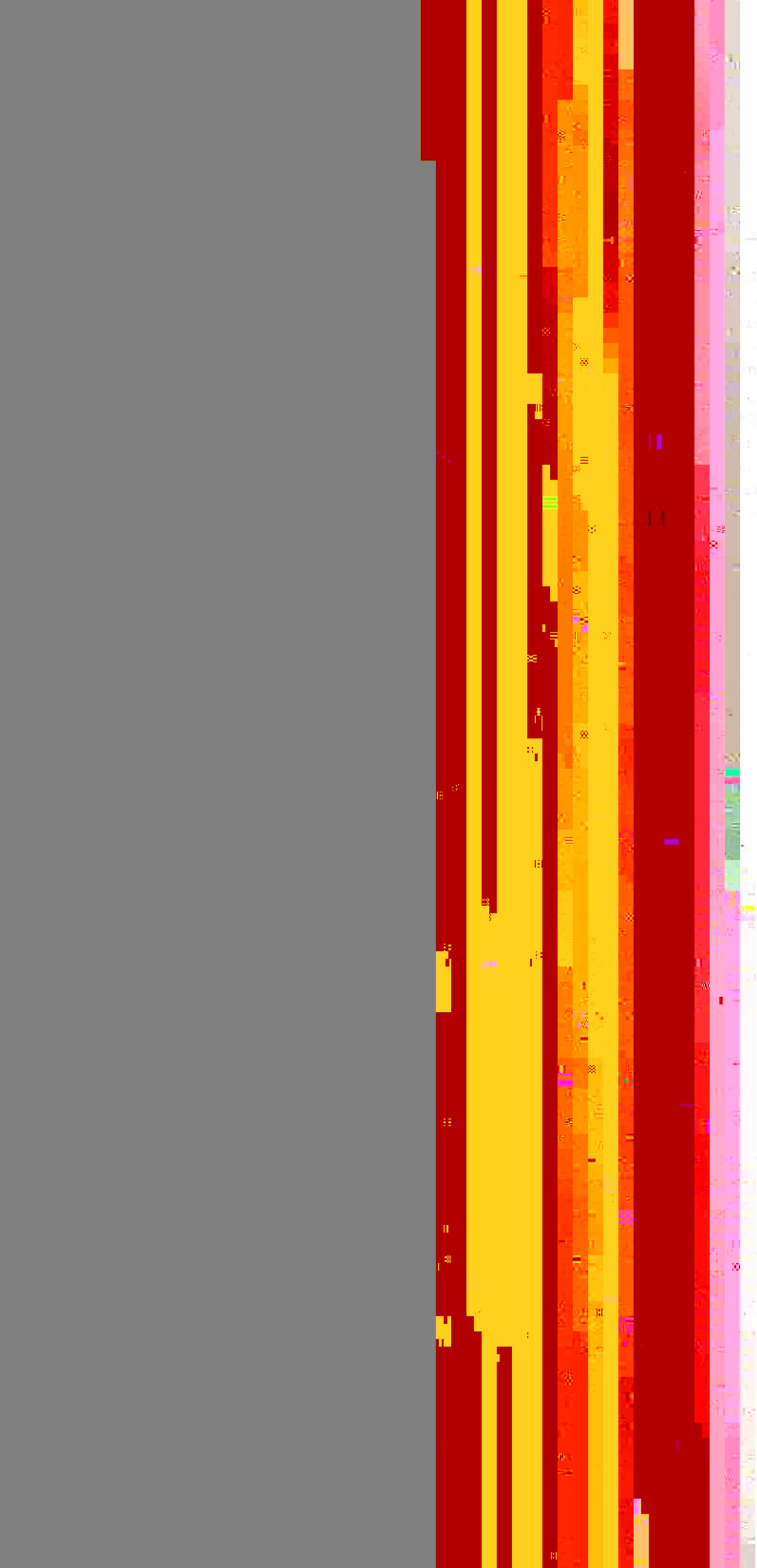
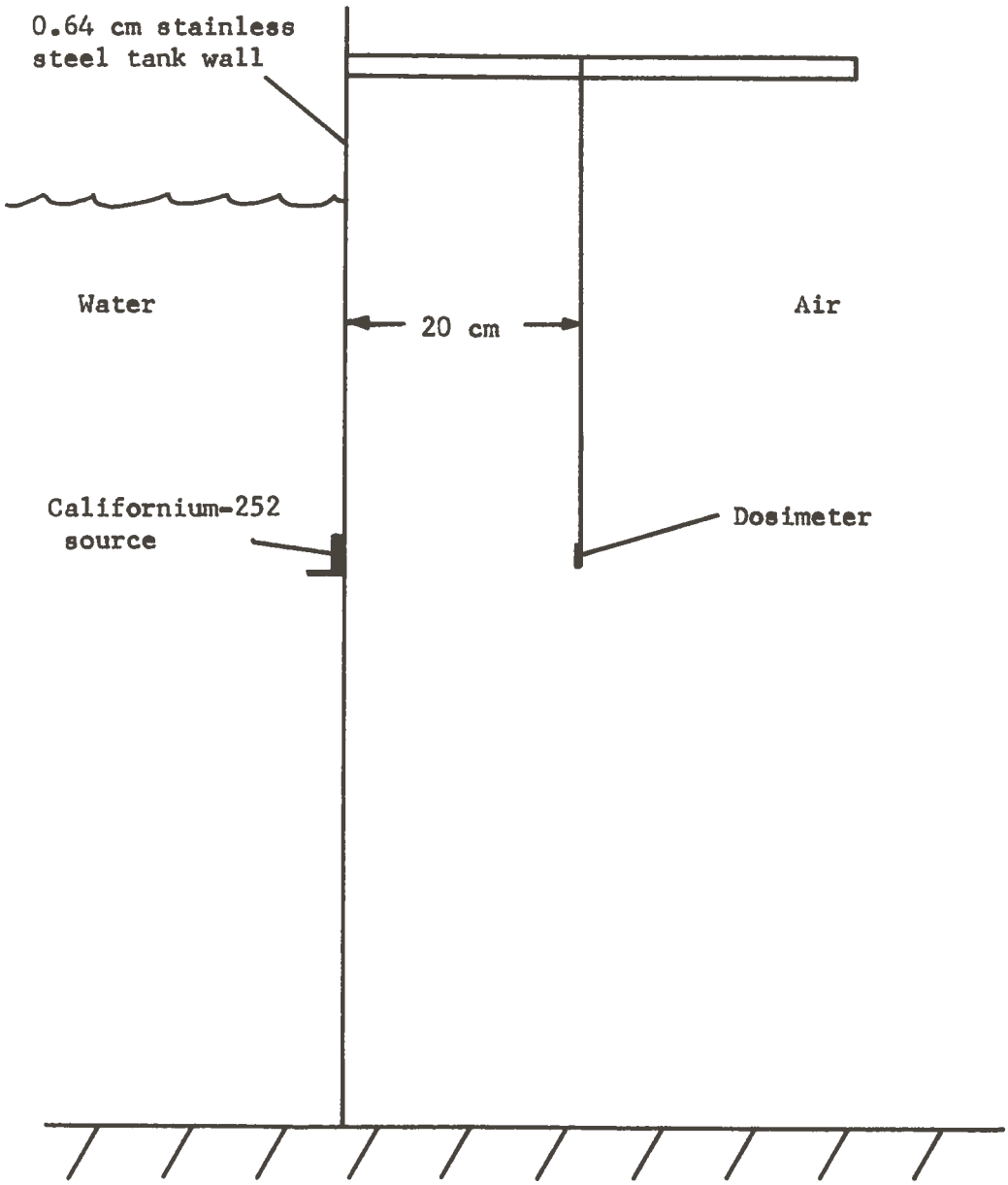


Isotope	^{N}LiF (TLD-100)	^{6}LiF (TLD-600)	^{7}LiF (TLD-700)
^{6}Li	7.5%	95.6%	0.01%
^{7}Li	92.5%	4.4%	99.99%


0.64 cm stainless steel tank wall
Water
20 cm
Air
Californium-252 source
Dosimeter

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$$A = \sigma\phi_f N \left(1 - e^{-\lambda t_a} \right) e^{-\lambda t_d} \qquad \text{[Equation 3-1]}$$

Gamma Dose Rate in rad/hr per mg

Measured	^{252}Cf Shielding Guide
5.25	3.99

Fast Neutron Flux in n-cm^{-2}sec^{-1} per mg

Measured	^{252}Cf Shielding Guide
4.15×10^5	4.66×10^5

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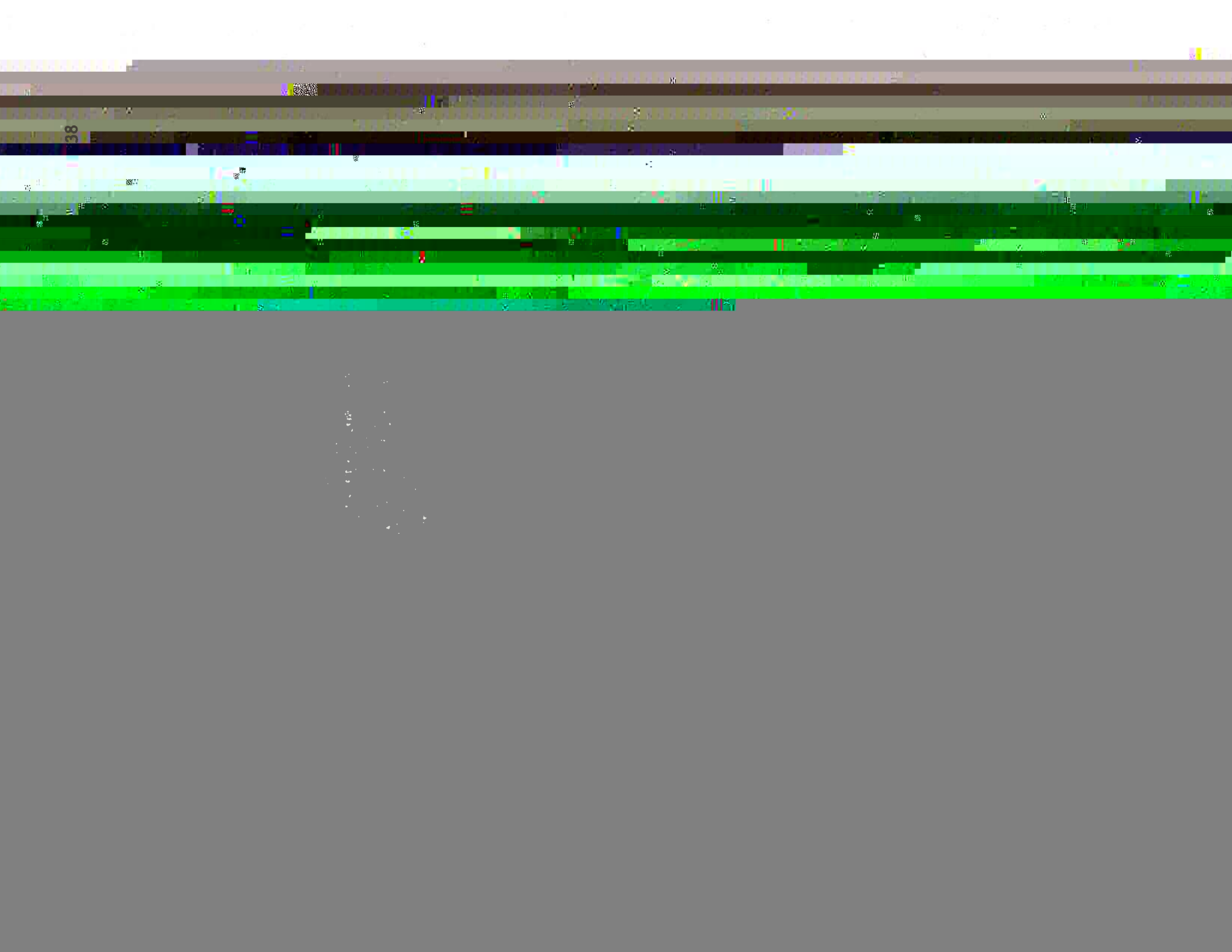

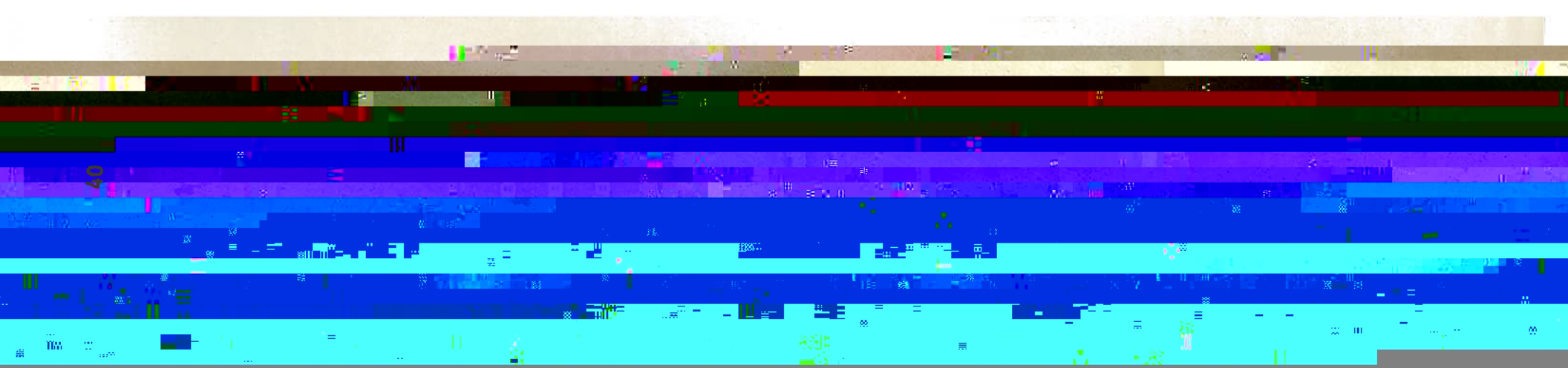

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