



National  
Intelligence  
Estimate

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APPROVED FOR RELEASE  
DATE: APR 2004

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**Iraq's Continuing Programs  
for Weapons of Mass Destruction**

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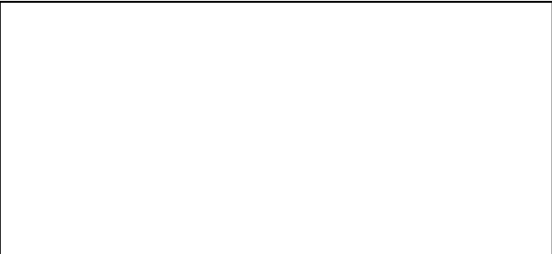
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October 2002



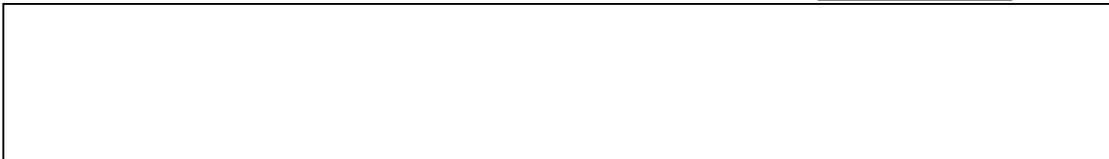
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[ ] Errata sheet for NIE 2002-16HC, October 2002: *Iraq's Continuing Programs for Weapons of Mass Destruction*

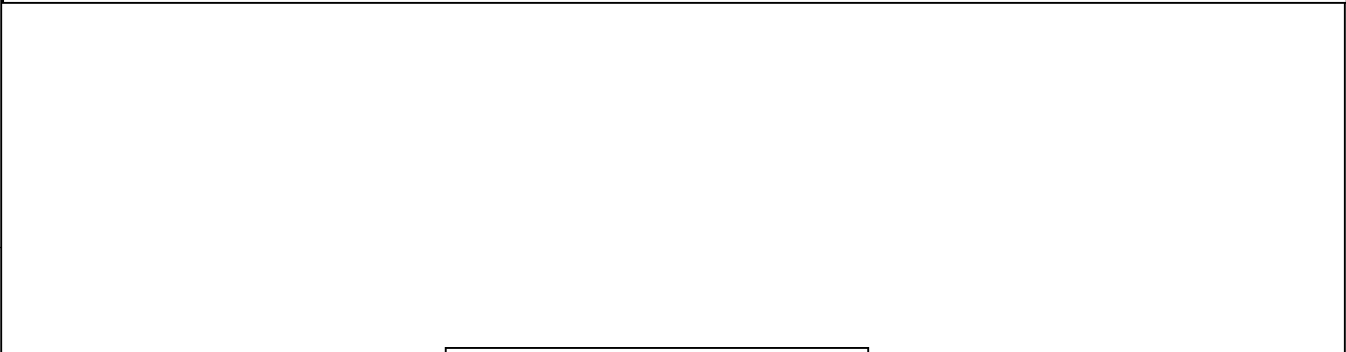
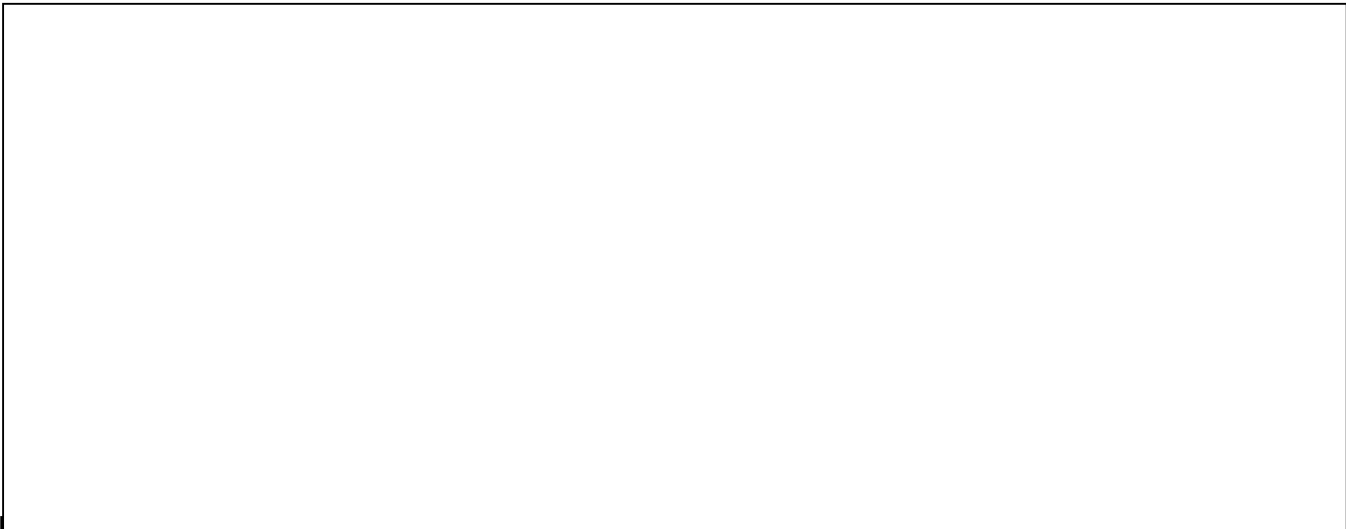
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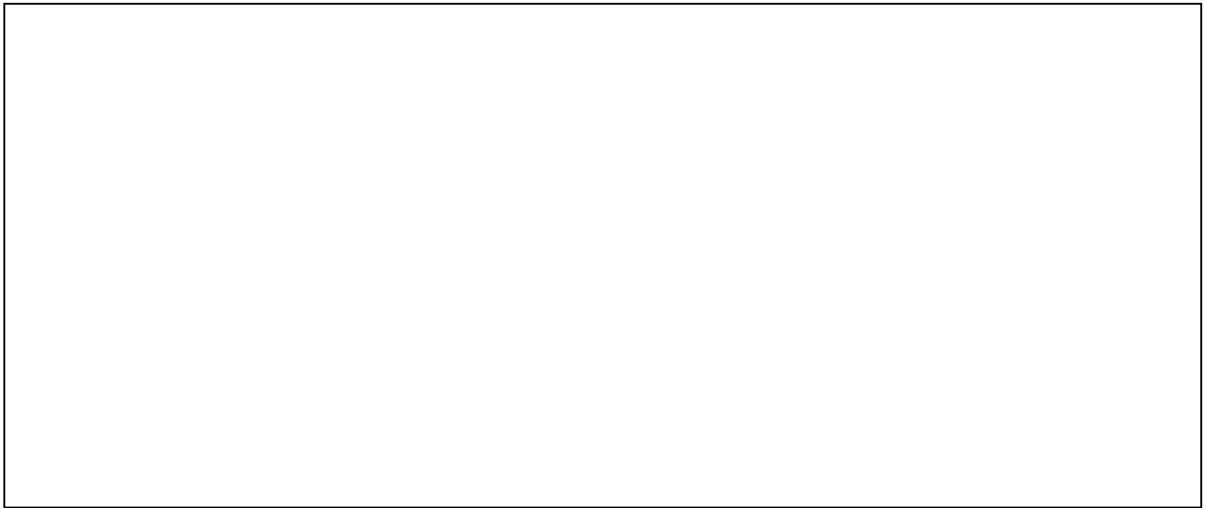
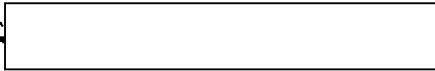
- Baghdad has mobile facilities for producing bacterial and toxin BW agents; these facilities can evade detection and are highly survivable. Within three to six months these units probably could produce an amount of agent equal to the total that Iraq produced in the years prior to the Gulf war.



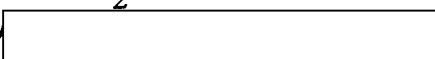
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NIE 2002-16HC

[redacted] **Iraq's Continuing Programs  
for Weapons of Mass Destruction**

**(U) This Estimate was approved for publication by the National Foreign Intelligence Board under the authority of the Director of Central Intelligence.**

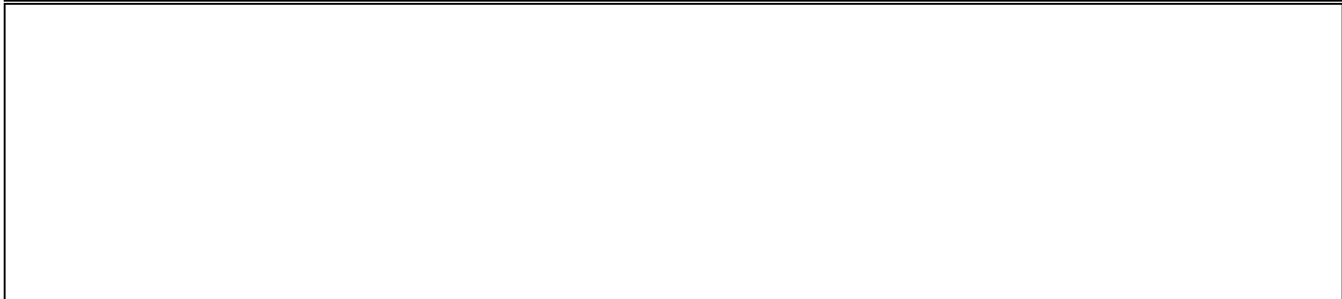
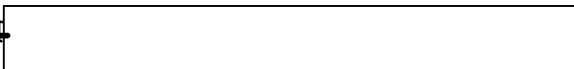
*(U) Prepared under the auspices of Robert D Walpole, National Intelligence Officer (NIO) for Strategic and Nuclear Programs; with assistance from Paul Pillar, NIO for the Near East and South Asia; Lawrence K. Gershwin, NIO for Science and Technology; and Major General John R. Landry, NIO for Conventional Military Issues.*

*(U) Inquiries may be directed to the NIO for Strategic and Nuclear Programs [redacted]*

October 2002

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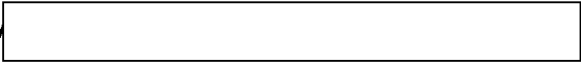
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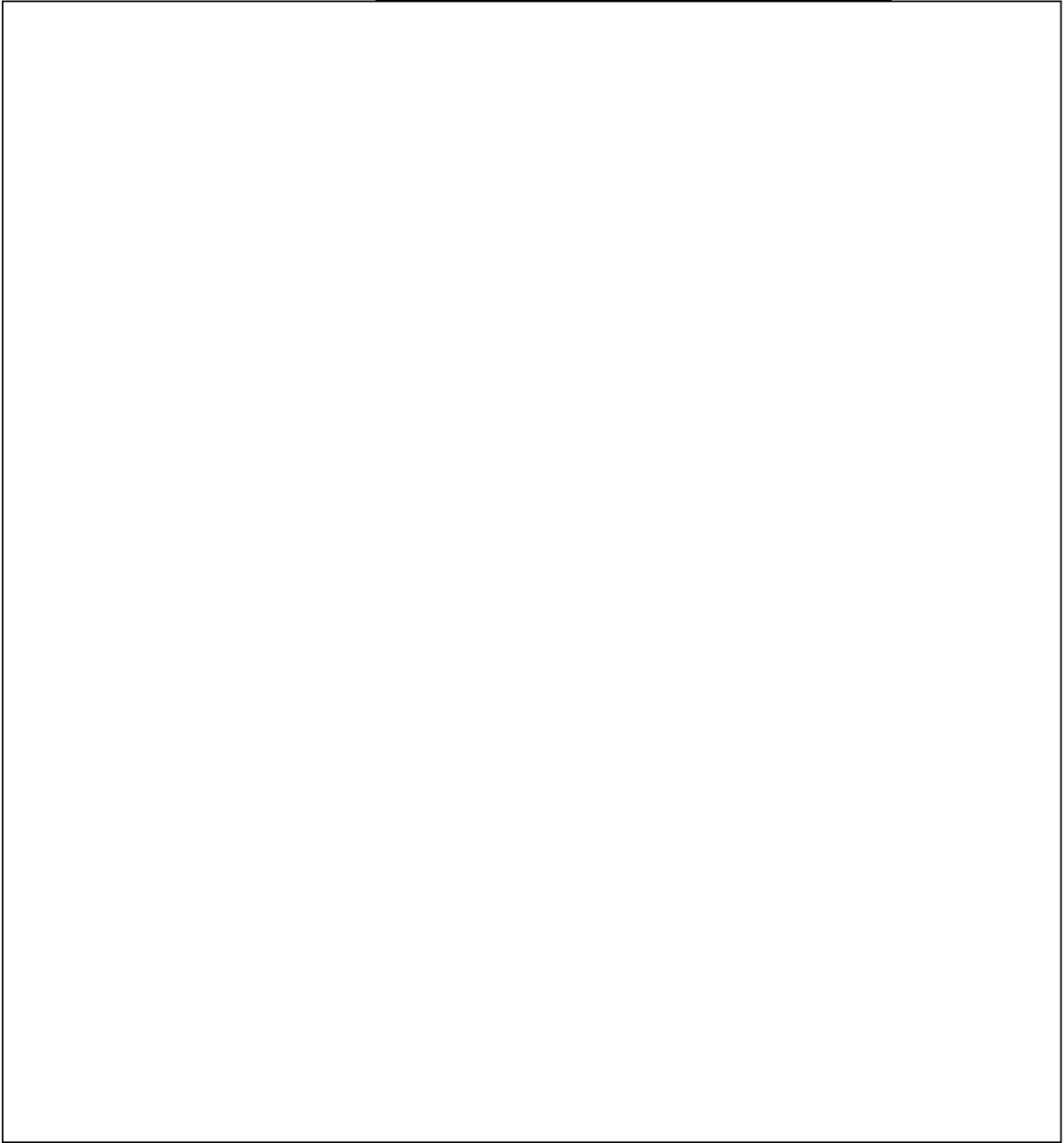
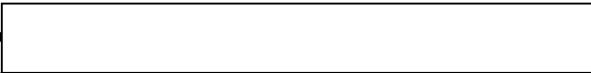
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## Key Judgments

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### [redacted] Iraq's Continuing Programs for Weapons of Mass Destruction

[redacted] We judge that Iraq has continued its weapons of mass destruction (WMD) programs in defiance of UN resolutions and restrictions. Baghdad has chemical and biological weapons as well as missiles with ranges in excess of UN restrictions; if left unchecked, it probably will have a nuclear weapon during this decade. (See INR alternative view at the end of these Key Judgments.)

[redacted] We judge that we are seeing only a portion of Iraq's WMD efforts, owing to Baghdad's vigorous denial and deception efforts. Revelations after the Gulf war starkly demonstrate the extensive efforts undertaken by Iraq to deny information. We lack specific information on many key aspects of Iraq's WMD programs.

[redacted] Since inspections ended in 1998, Iraq has maintained its chemical weapons effort, energized its missile program, and invested more heavily in biological weapons; in the view of most agencies, Baghdad is reconstituting its nuclear weapons program.

- Iraq's growing ability to sell oil illicitly increases Baghdad's capabilities to finance WMD programs; annual earnings in cash and goods have more than quadrupled, from \$580 million in 1998 to about \$3 billion this year.
- Iraq has largely rebuilt missile and biological weapons facilities damaged during Operation Desert Fox and has expanded its chemical and biological infrastructure under the cover of civilian production.
- Baghdad has exceeded UN range limits of 150 km with its ballistic missiles and is working with unmanned aerial vehicles (UAVs), which allow for a more lethal means to deliver biological and, less likely, chemical warfare agents.
- Although we assess that Saddam does not *yet* have nuclear weapons or sufficient material to make any, he remains intent on acquiring them. Most agencies assess that Baghdad started reconstituting its nuclear program about the time that UNSCOM inspectors departed—December 1998.

[redacted] How quickly Iraq will obtain its first nuclear weapon depends on when it acquires sufficient weapons-grade fissile material.

- If Baghdad acquires sufficient fissile material from abroad it could make a nuclear weapon within several months to a year.

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- Without such material from abroad, Iraq probably would not be able to make a weapon until 2007 to 2009, owing to inexperience in building and operating centrifuge facilities to produce highly enriched uranium and challenges in procuring the necessary equipment and expertise.
  - Most agencies believe that Saddam's personal interest in and Iraq's aggressive attempts to obtain high-strength aluminum tubes for centrifuge rotors—as well as Iraq's attempts to acquire magnets, high-speed balancing machines, and machine tools—provide compelling evidence that Saddam is reconstituting a uranium enrichment effort for Baghdad's nuclear weapons program. (DOE agrees that reconstitution of the nuclear program is underway but assesses that the tubes probably are not part of the program.)
  - Iraq's efforts to re-establish and enhance its cadre of weapons personnel as well as activities at several suspect nuclear sites further indicate that reconstitution is underway.
  - All agencies agree that about 25,000 centrifuges based on tubes of the size Iraq is trying to acquire would be capable of producing approximately two weapons' worth of highly enriched uranium per year.
- In a much less likely scenario, Baghdad could make enough fissile material for a nuclear weapon by 2005 to 2007 if it obtains suitable centrifuge tubes this year and has all the other materials and technological expertise necessary to build production-scale uranium enrichment facilities.

[REDACTED] **We assess that Baghdad has begun renewed production of mustard, sarin, GF (cyclosarin), and VX; its capability probably is more limited now than it was at the time of the Gulf war, although VX production and agent storage life probably have been improved.**

- An array of clandestine reporting reveals that Baghdad has procured covertly the types and quantities of chemicals and equipment sufficient to allow limited CW agent production hidden within Iraq's legitimate chemical industry.
- Although we have little specific information on Iraq's CW stockpile, Saddam probably has stocked at least 100 metric tons (MT) and possibly as much as 500 MT of CW agents—much of it added in the last year.
- The Iraqis have experience in manufacturing CW bombs, artillery rockets, and projectiles. We assess that they possess CW bulk fills for SRBM warheads, including for a limited number of covertly stored Scuds, possibly a few with extended ranges.

[REDACTED] **We judge that all key aspects—R&D, production, and weaponization—of Iraq's offensive BW program are active and that most elements are larger and more advanced than they were before the Gulf war.**

- We judge Iraq has some lethal and incapacitating BW agents and is capable of quickly producing and weaponizing a variety of such agents, including anthrax, for delivery by bombs, missiles, aerial sprayers, and covert operatives.

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- Chances are even that smallpox is part of Iraq's offensive BW program.
- Baghdad probably has developed genetically engineered BW agents.
- Baghdad has established a large-scale, redundant, and concealed BW agent production capability.

- [redacted]

[redacted] **Iraq maintains a small missile force and several development programs, including for a UAV probably intended to deliver biological warfare agents.**

- Gaps in Iraqi accounting to UNSCOM suggest that Saddam retains a covert force of up to a few dozen Scud-variant SRBMs with ranges of 650 to 900 km.
- Iraq is deploying its new al-Samoud and Ababil-100 SRBMs, which are capable of flying beyond the UN-authorized 150-km range limit; Iraq has tested an al-Samoud variant beyond 150 km—perhaps as far as 300 km.
- Baghdad's UAVs could threaten Iraq's neighbors, US forces in the Persian Gulf, *and if brought close to, or into, the United States, the US Homeland.*
  - An Iraqi UAV procurement network attempted to procure commercially available route planning software and an associated topographic database that would be able to support targeting of the United States, according to analysis of special intelligence.
  - The Director, Intelligence, Surveillance, and Reconnaissance, US Air Force, does not agree that Iraq is developing UAVs *primarily* intended to be delivery platforms for chemical and biological warfare (CBW) agents. The small size of Iraq's new UAV strongly suggests a primary role of reconnaissance, although CBW delivery is an inherent capability.
- Iraq is developing medium-range ballistic missile capabilities, largely through foreign assistance in building specialized facilities, including a test stand for engines more powerful than those in its current missile force.

[redacted] **We have low confidence in our ability to assess when Saddam would use WMD.**

- Saddam could decide to use chemical and biological warfare (CBW) preemptively against US forces, friends, and allies in the region in an attempt to disrupt US war preparations and undermine the political will of the Coalition.

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- Saddam might use CBW after an initial advance into Iraqi territory, but early use of WMD could foreclose diplomatic options for stalling the US advance.
- He probably would use CBW when he perceived he irretrievably had lost control of the military and security situation, but we are unlikely to know when Saddam reaches that point.
- We judge that Saddam would be more likely to use chemical weapons than biological weapons on the battlefield.
- Saddam historically has maintained tight control over the use of WMD; however, he probably has provided contingency instructions to his commanders to use CBW in specific circumstances.

[redacted] **Baghdad for now appears to be drawing a line short of conducting terrorist attacks with conventional or CBW against the United States, fearing that exposure of Iraqi involvement would provide Washington a stronger cause for making war.**

[redacted] **Iraq probably would attempt clandestine attacks against the US Homeland if Baghdad feared an attack that threatened the survival of the regime were imminent or unavoidable, or possibly for revenge. Such attacks—more likely with biological than chemical agents—probably would be carried out by special forces or intelligence operatives.**

- The Iraqi Intelligence Service (IIS) probably has been directed to conduct clandestine attacks against US and Allied interests in the Middle East in the event the United States takes action against Iraq. The IIS probably would be the primary means by which Iraq would attempt to conduct any CBW attacks on the US Homeland, although we have no specific intelligence information that Saddam's regime has directed attacks against US territory.

[redacted] **Saddam, if sufficiently desperate, might decide that only an organization such as al-Qa'ida—with worldwide reach and extensive terrorist infrastructure, and already engaged in a life-or-death struggle against the United States—could perpetrate the type of terrorist attack that he would hope to conduct.**

- In such circumstances, he might decide that the extreme step of assisting the Islamist terrorists in conducting a CBW attack against the United States would be his last chance to exact vengeance by taking a large number of victims with him.

[redacted] **State/INR Alternative View of Iraq's Nuclear Program**

[redacted] The Assistant Secretary of State for Intelligence and Research (INR) believes that Saddam continues to want nuclear weapons and that available evidence indicates that Baghdad is pursuing at least a limited effort to maintain and acquire nuclear weapon-related capabilities. The activities we have detected do not, however, add up to a compelling case that Iraq is currently pursuing what INR would consider to be an integrated and comprehensive approach to  
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(continued ...) [redacted] **State/INR Alternative View**

acquire nuclear weapons. Iraq may be doing so, but INR considers the available evidence inadequate to support such a judgment. Lacking persuasive evidence that Baghdad has launched a coherent effort to reconstitute its nuclear weapons program, INR is unwilling to speculate that such an effort began soon after the departure of UN inspectors or to project a timeline for the completion of activities it does not now see happening. As a result, INR is unable to predict when Iraq could acquire a nuclear device or weapon.

[redacted] In INR's view Iraq's efforts to acquire aluminum tubes is central to the argument that Baghdad is reconstituting its nuclear weapons program, but INR is not persuaded that the tubes in question are intended for use as centrifuge rotors. INR accepts the judgment of technical experts at the U.S. Department of Energy (DOE) who have concluded that the tubes Iraq seeks to acquire are poorly suited for use in gas centrifuges to be used for uranium enrichment and finds unpersuasive the arguments advanced by others to make the case that they are intended for that purpose. INR considers it far more likely that the tubes are intended for another purpose, most likely the production of artillery rockets. The very large quantities being sought, the way the tubes were tested by the Iraqis, and the atypical lack of attention to operational security in the procurement efforts are among the factors, in addition to the DOE assessment, that lead INR to conclude that the tubes are not intended for use in Iraq's nuclear weapon program.

**(U) Confidence Levels for Selected Key Judgments in This Estimate**

[redacted] **High Confidence:**

- Iraq is continuing, and in some areas expanding, its chemical, biological, nuclear and missile programs contrary to UN resolutions.
- We are not detecting portions of these weapons programs.
- Iraq possesses proscribed chemical and biological weapons and missiles.
- Iraq could make a nuclear weapon in months to a year once it acquires sufficient weapons-grade fissile material.

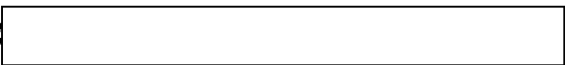
[redacted] **Moderate Confidence:**

- Iraq does not yet have a nuclear weapon or sufficient material to make one but is likely to have a weapon by 2007 to 2009. (See INR alternative view, page 84).

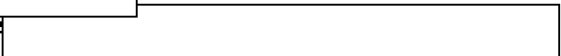
[redacted] **Low Confidence:**

- When Saddam would use weapons of mass destruction.
- Whether Saddam would engage in clandestine attacks against the US Homeland.
- Whether in desperation Saddam would share chemical or biological weapons with al-Qa'ida.

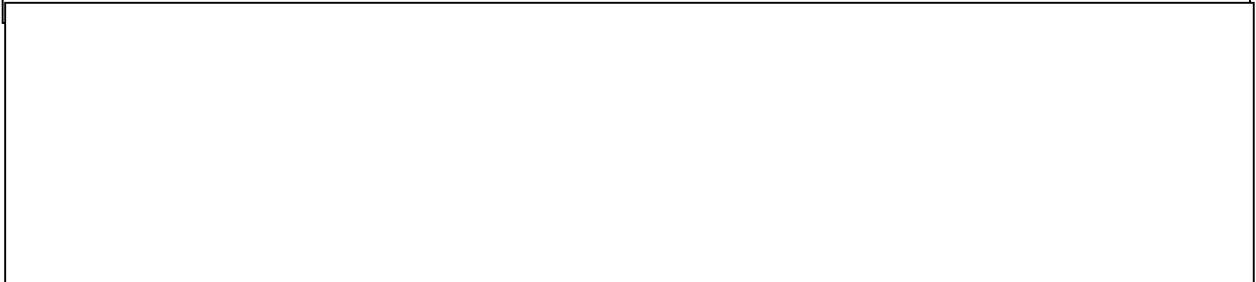
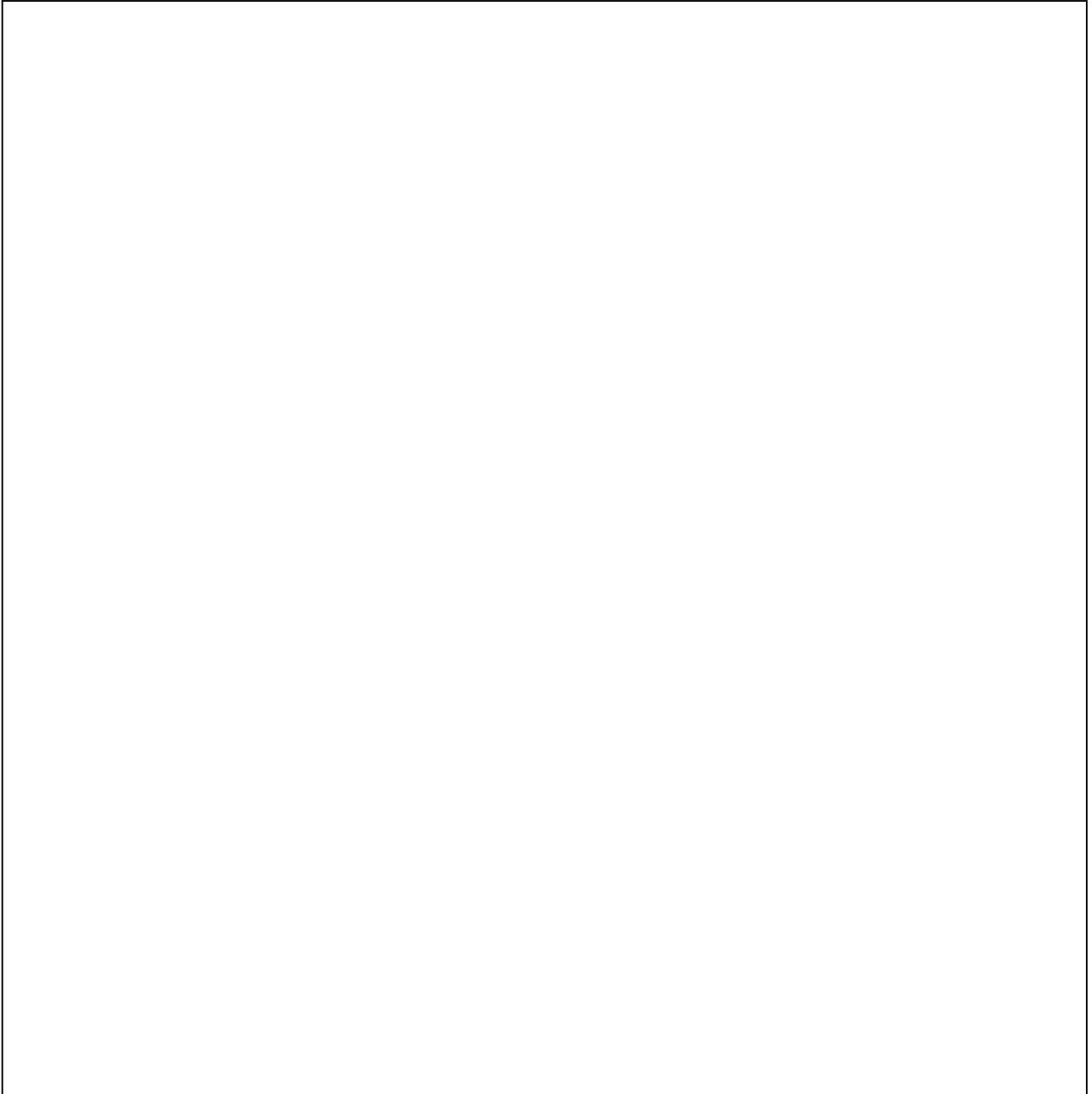
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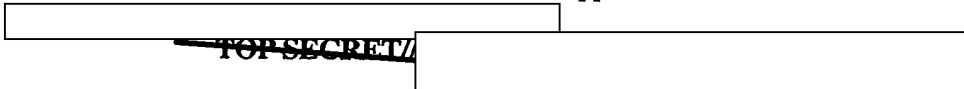
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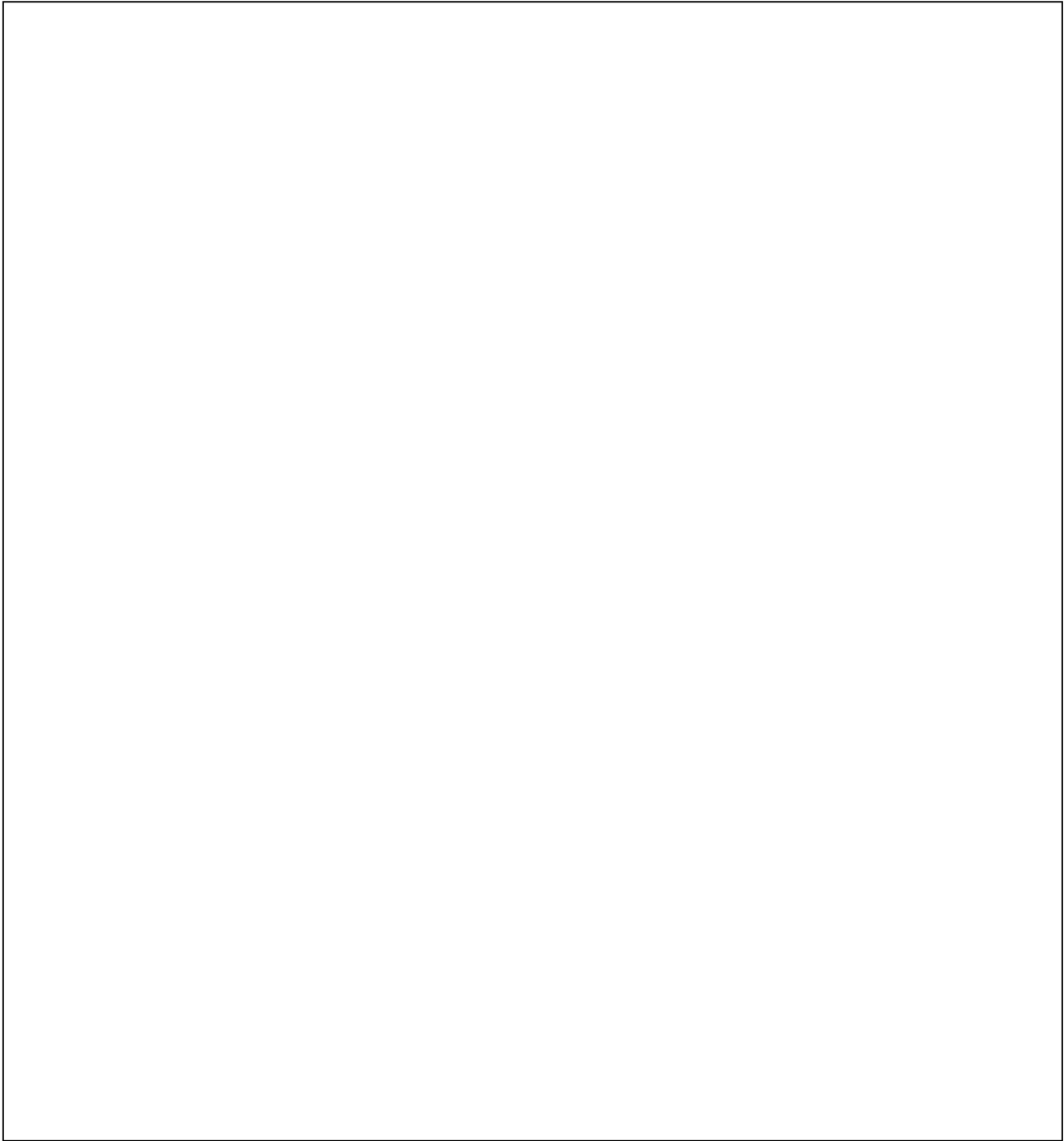
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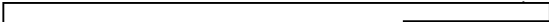
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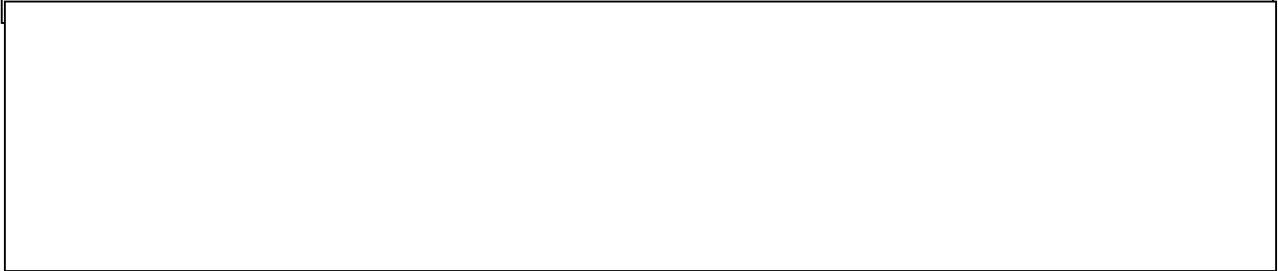
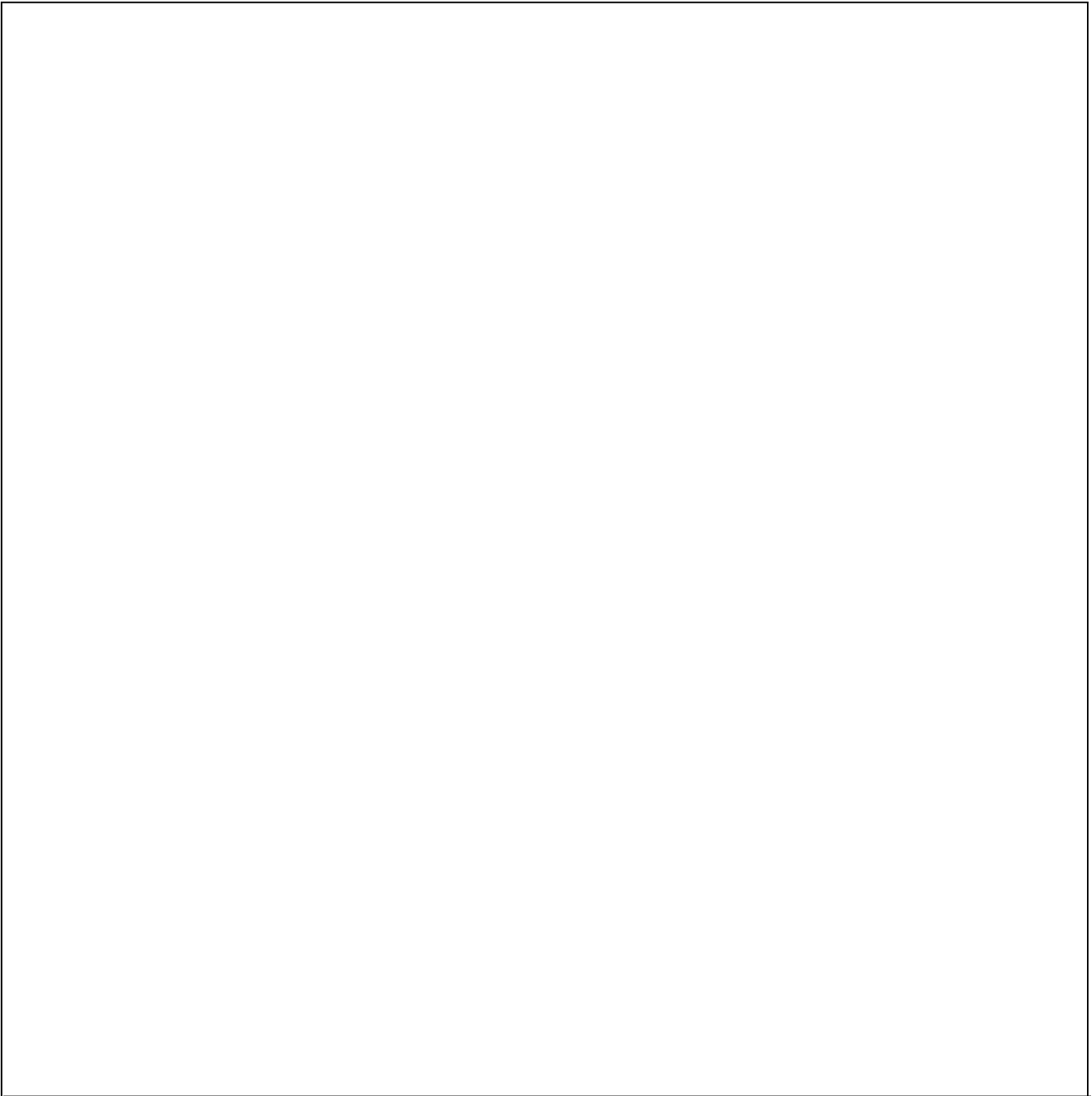


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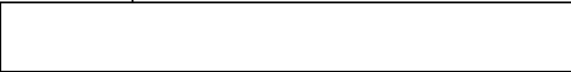




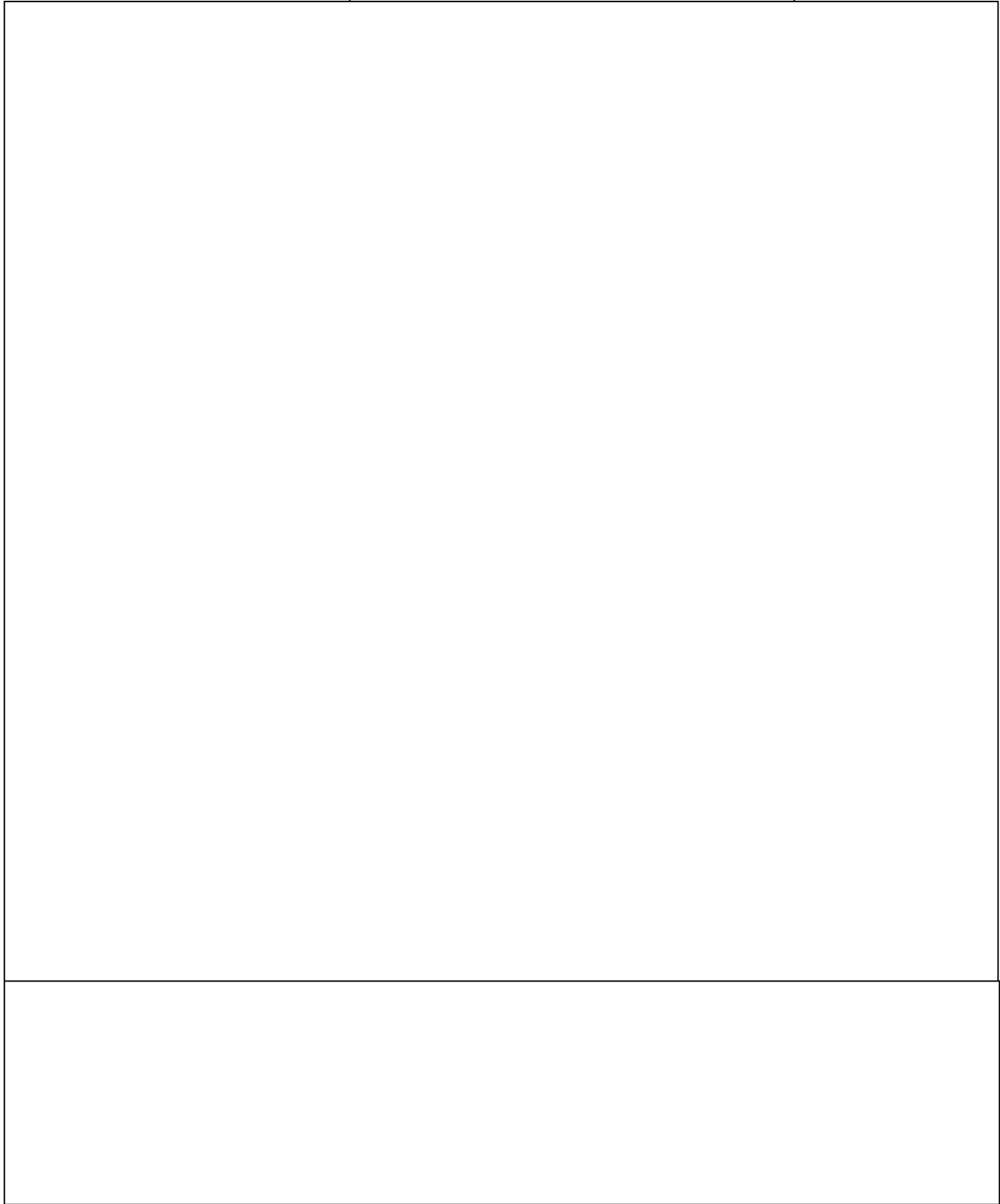
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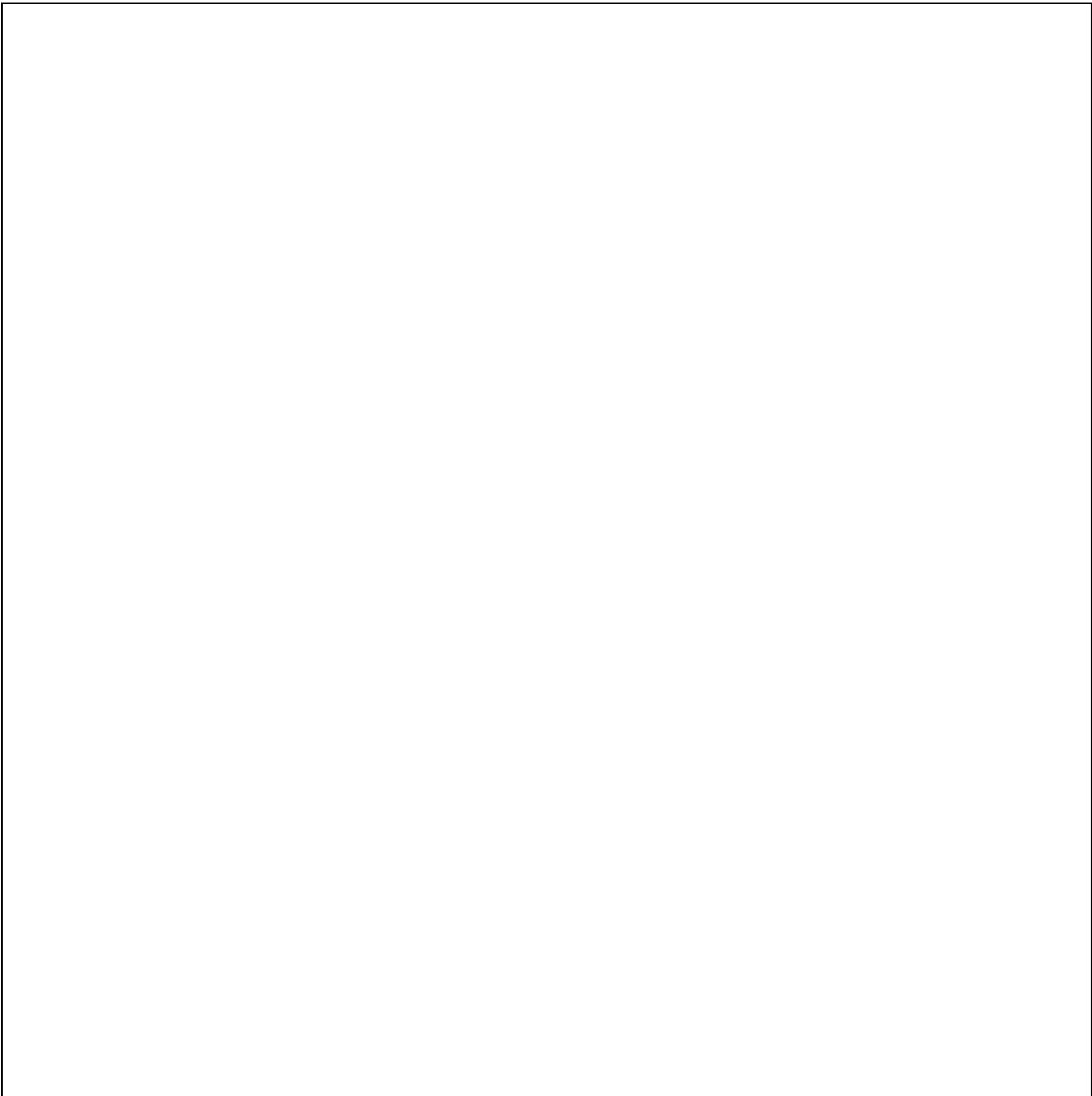


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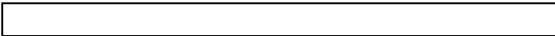
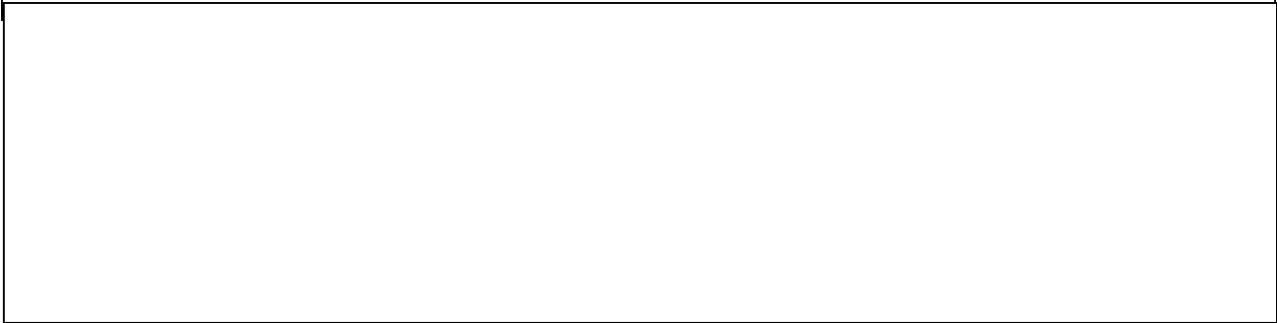
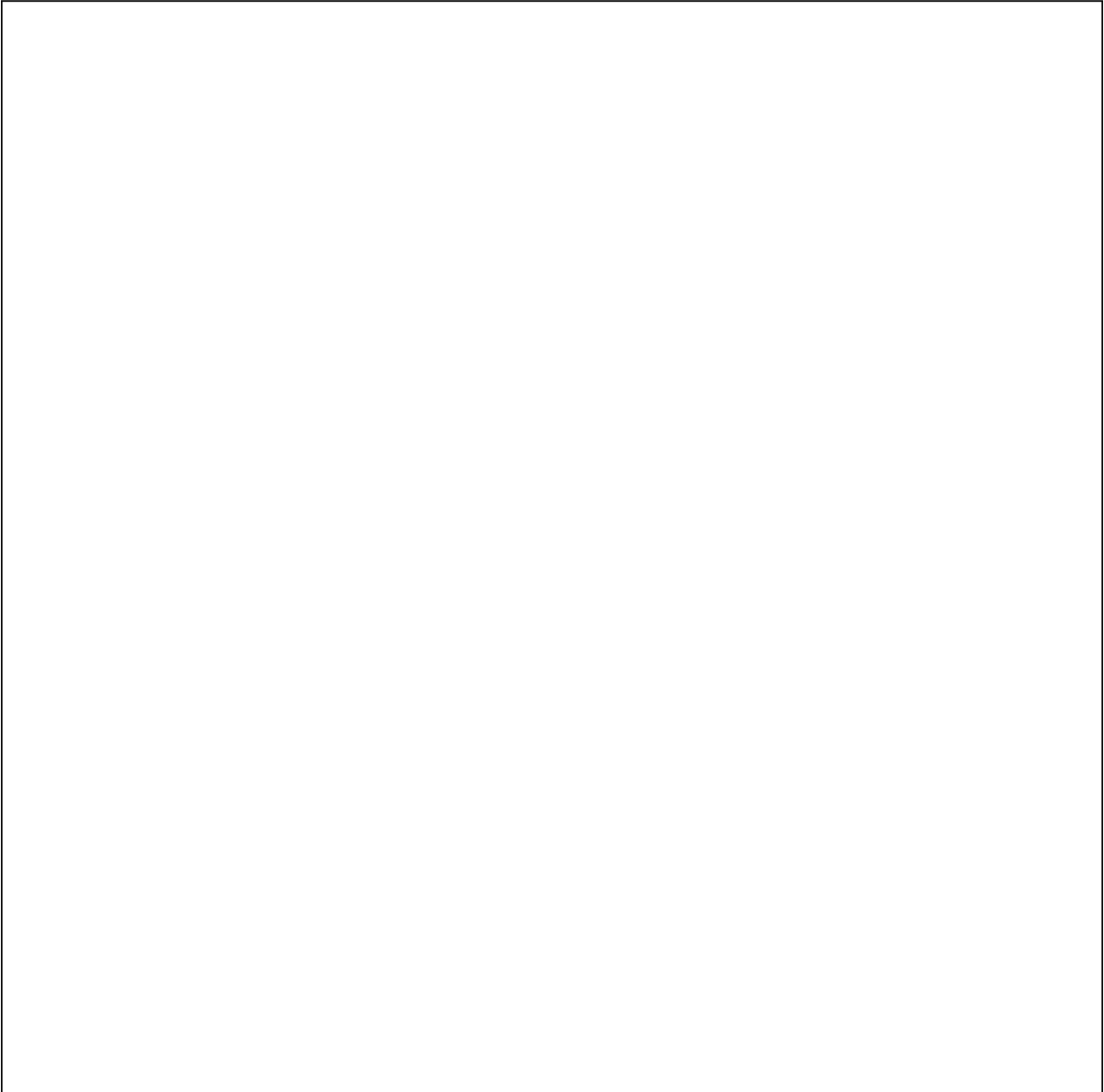
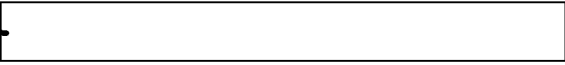
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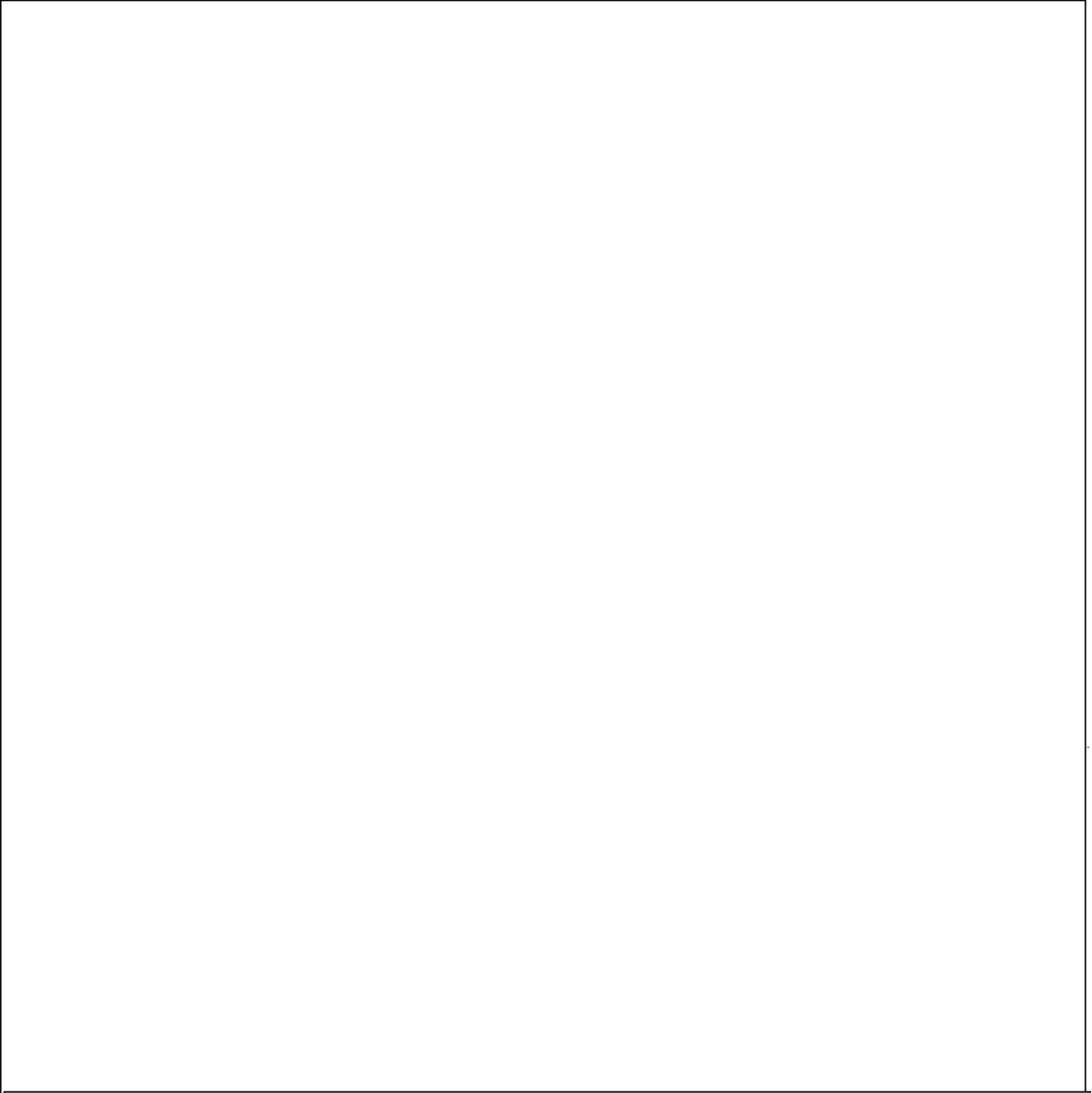
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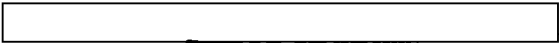
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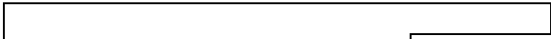
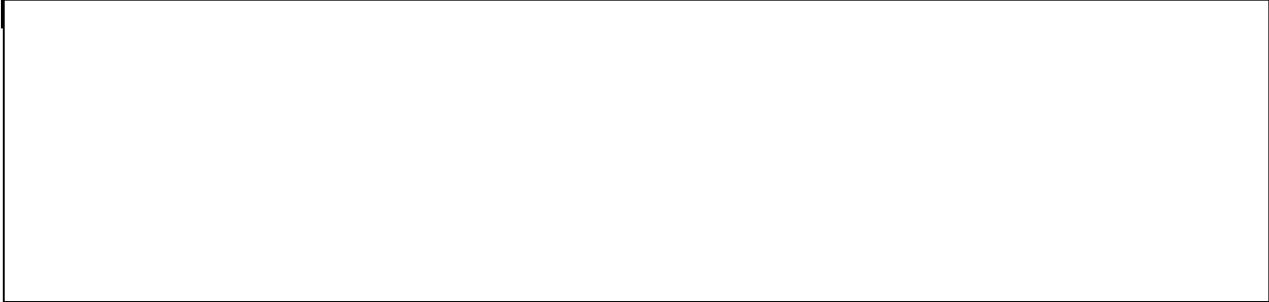
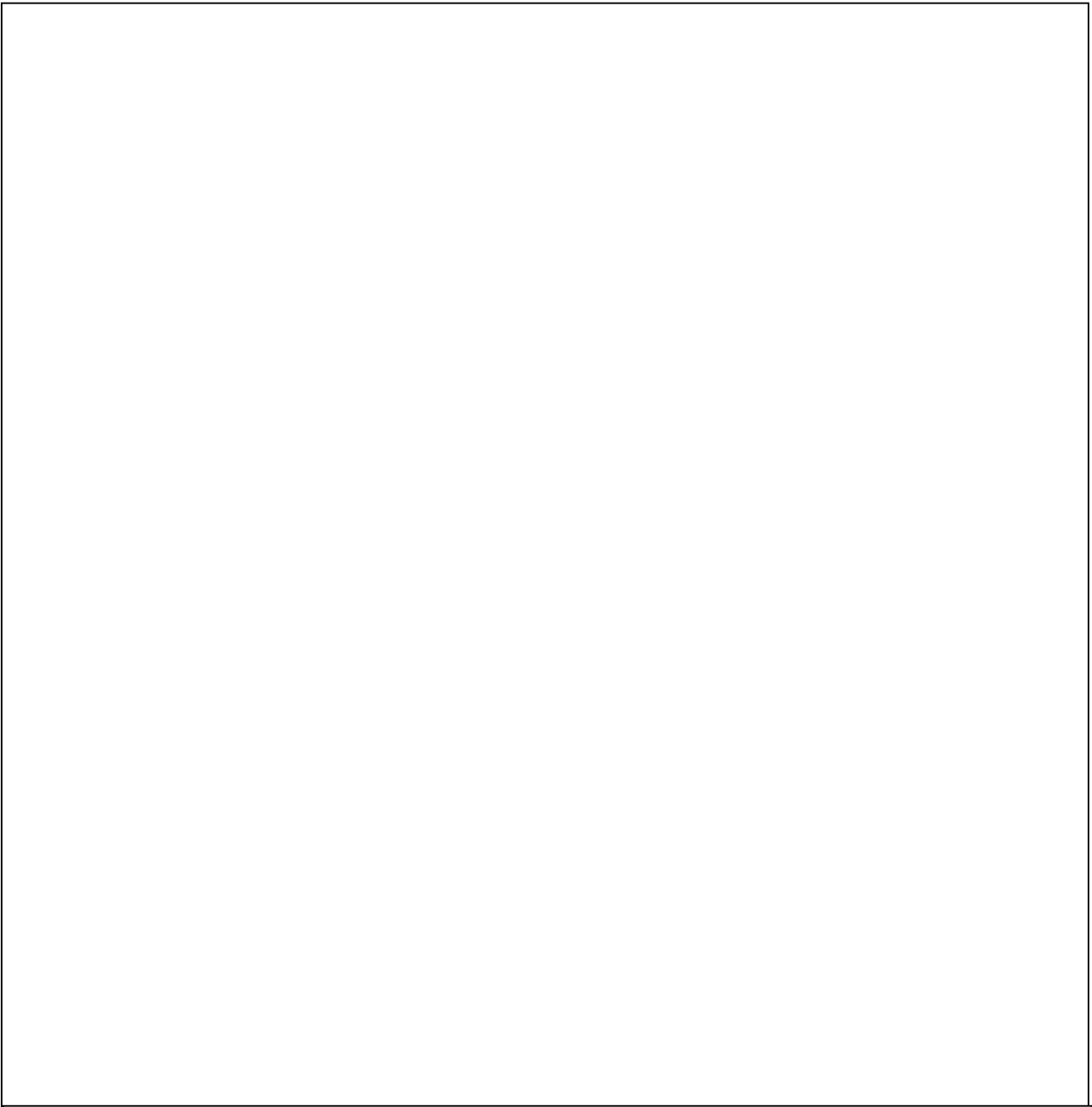


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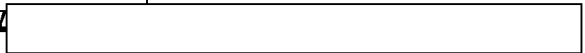




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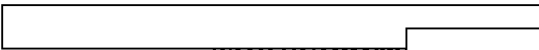
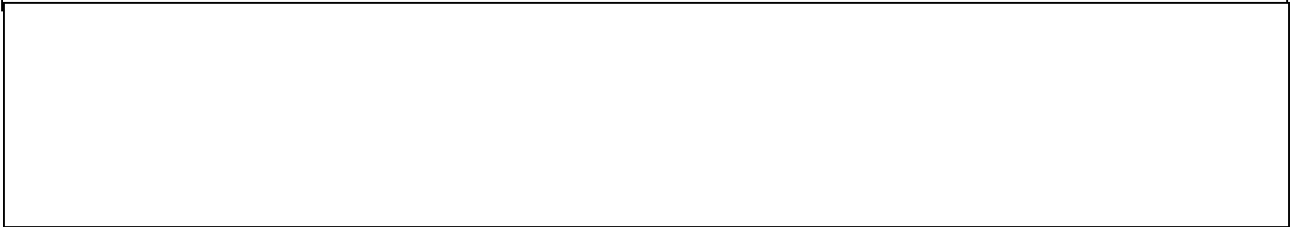
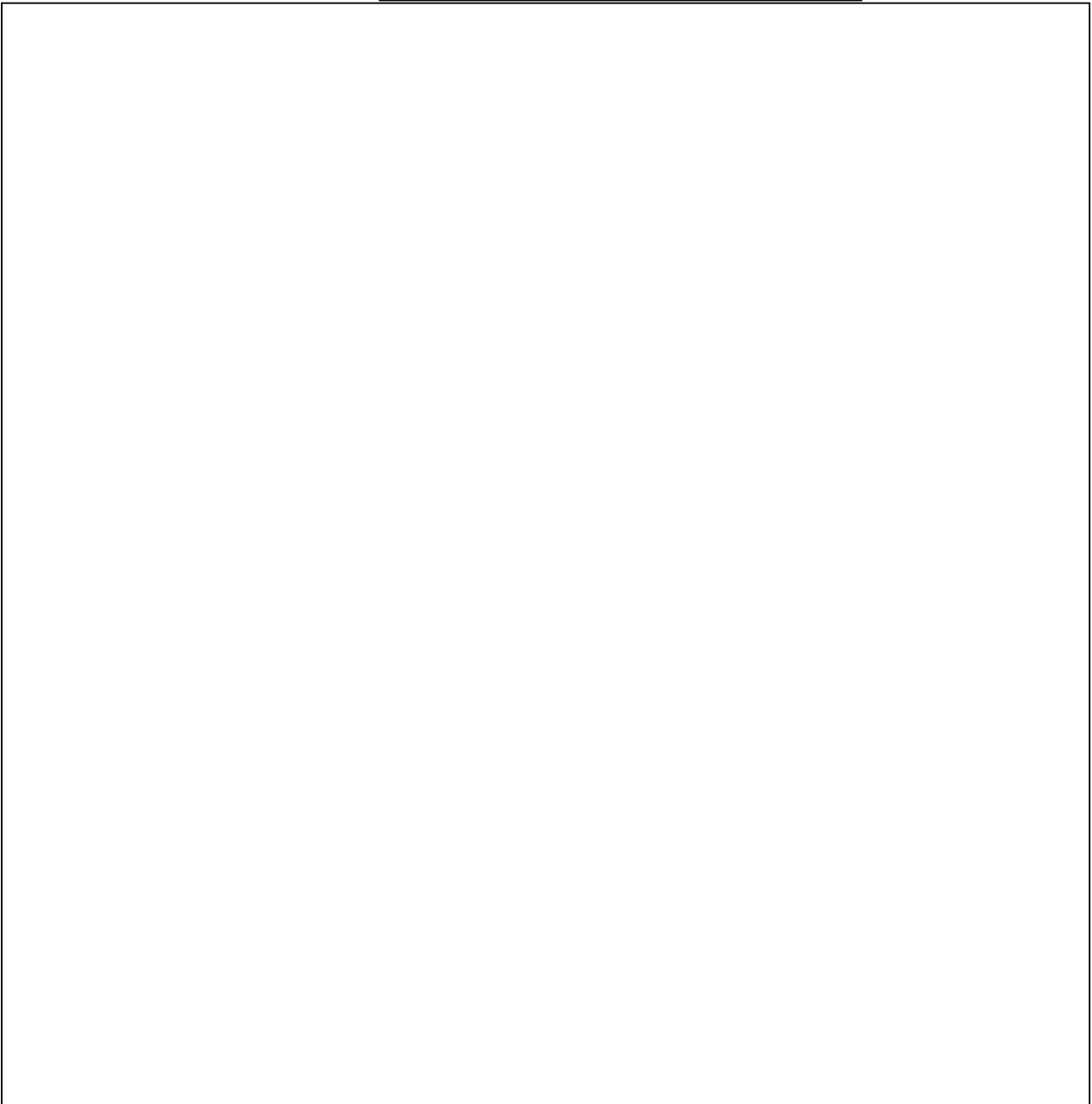
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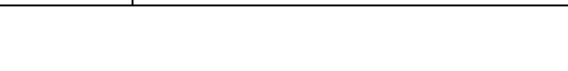
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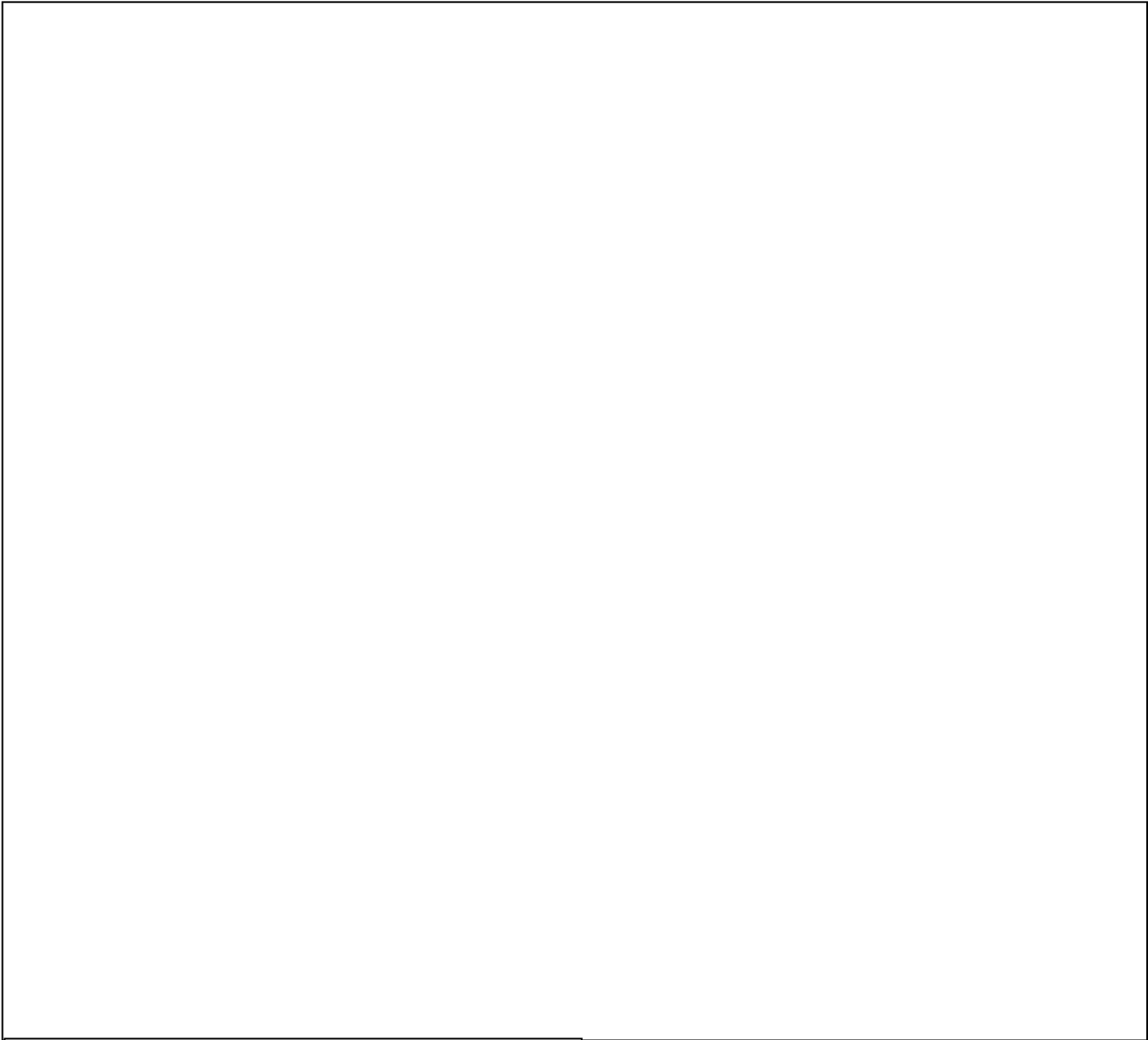
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**Uranium Acquisition.** Iraq retains approximately two-and-a-half tons of 2.5 percent enriched uranium oxide, which the IAEA permits. This low-enriched material could be used as feed material to produce enough HEU for about two nuclear weapons. The use of enriched feed material also would reduce the initial number of centrifuges that Baghdad would need by about half. Iraq could divert this material—the IAEA inspects it only once a year—and enrich it to weapons

grade before a subsequent inspection discovered it was missing. The IAEA last inspected this material in late January 2002.

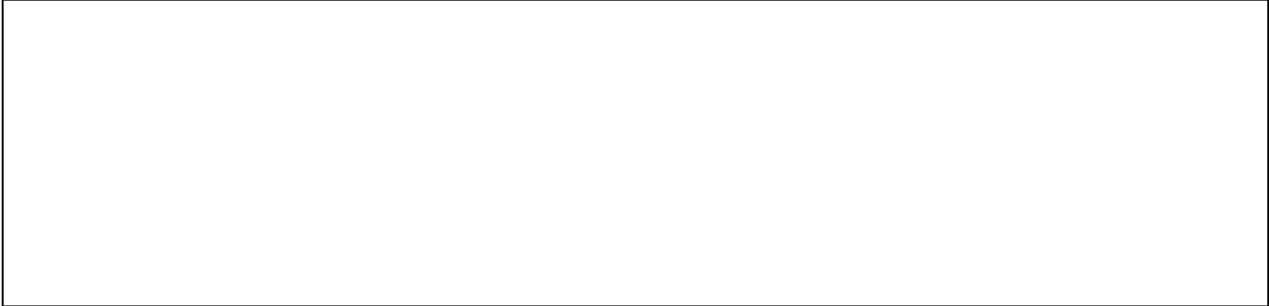
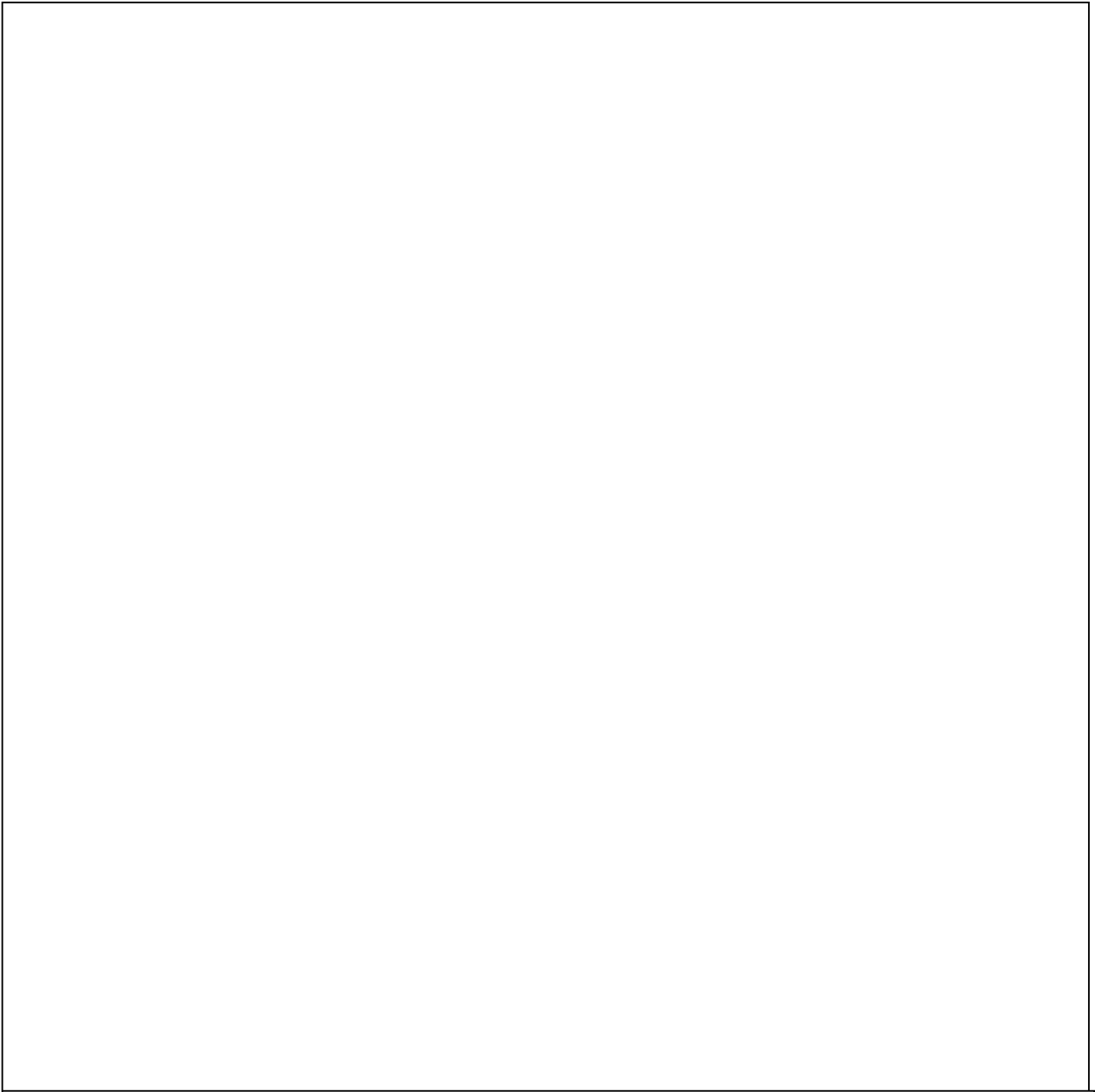
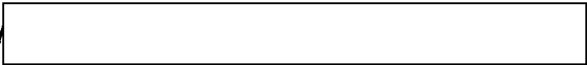
[redacted] Iraq has about 550 metric tons of yellowcake<sup>1</sup> and low-enriched uranium at Tuwaitha, which is inspected annually by the IAEA. Iraq also began vigorously trying to procure uranium ore and yellowcake; acquiring either would shorten the time Baghdad needs to produce nuclear weapons.

- A foreign government service reported that as of early 2001, Niger planned to send several tons of "pure uranium" (probably yellowcake) to Iraq. As of early 2001, Niger and Iraq reportedly were still working out arrangements for this deal, which could be for up to 500 tons of yellowcake. We do not know the status of this arrangement.
- Reports indicate Iraq also has sought uranium ore from Somalia and possibly the Democratic Republic of the Congo.

[redacted] We cannot confirm whether Iraq succeeded in acquiring uranium ore and/or yellowcake from these sources. Reports suggest Iraq is shifting from domestic mining and milling of uranium to foreign acquisition. Iraq possesses significant phosphate deposits, from which uranium had been chemically extracted before Operation Desert Storm. Intelligence information on whether nuclear-related phosphate mining and/or processing has been reestablished is inconclusive, however.

<sup>1</sup> (U) A refined form of natural uranium.

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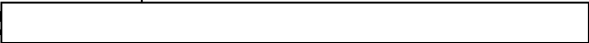


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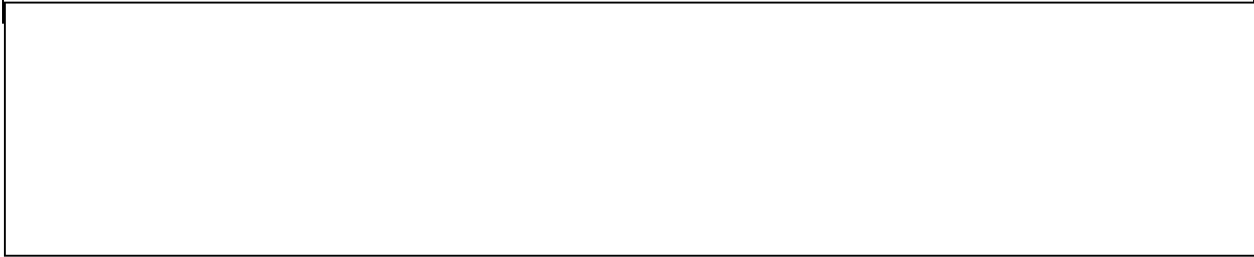
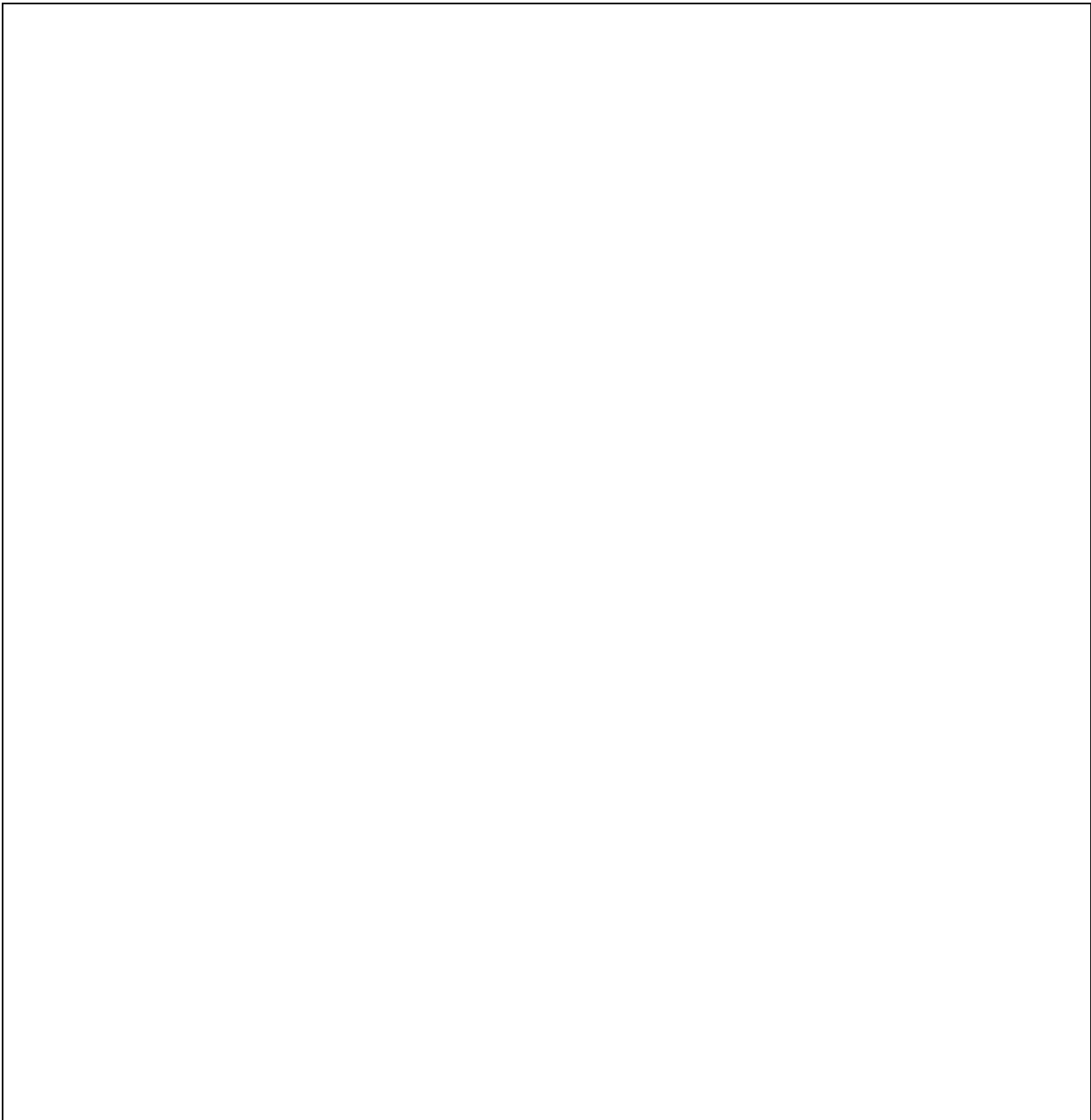


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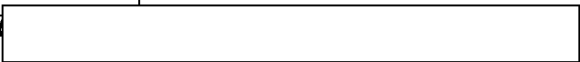




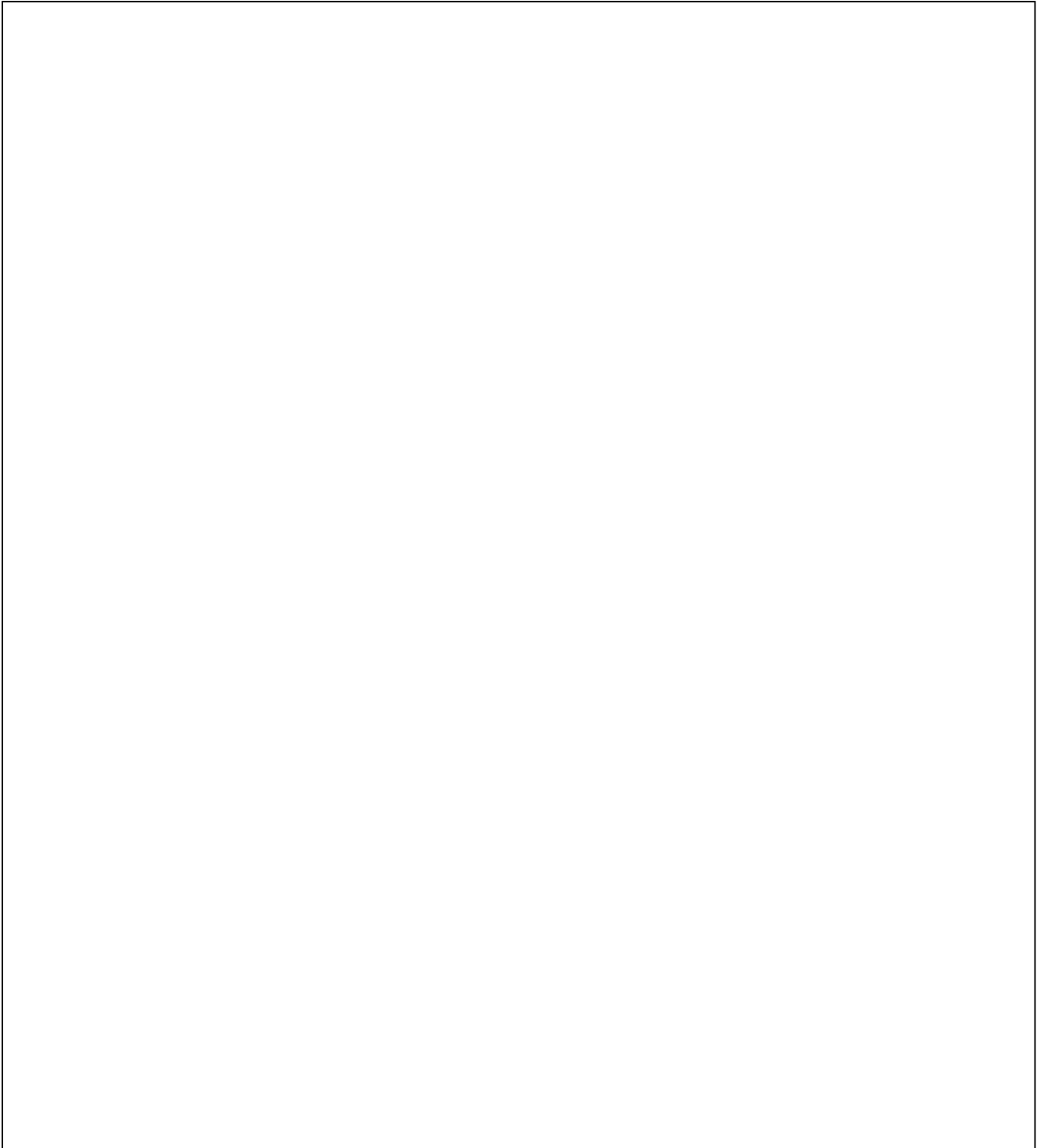
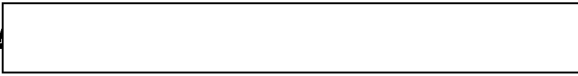
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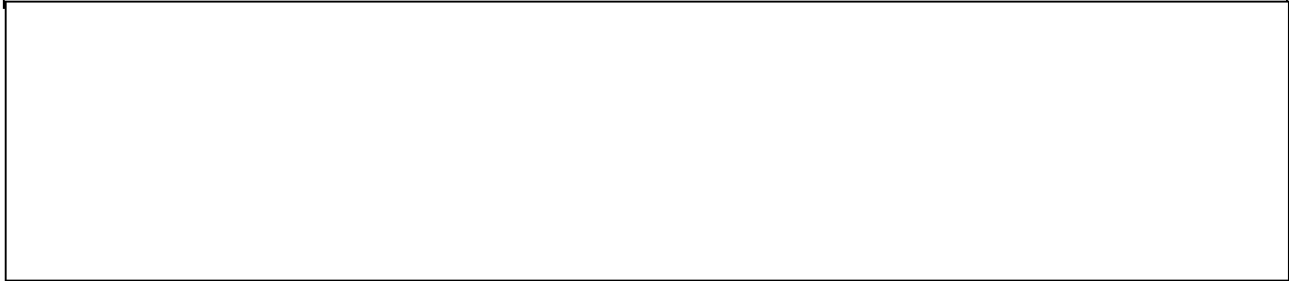
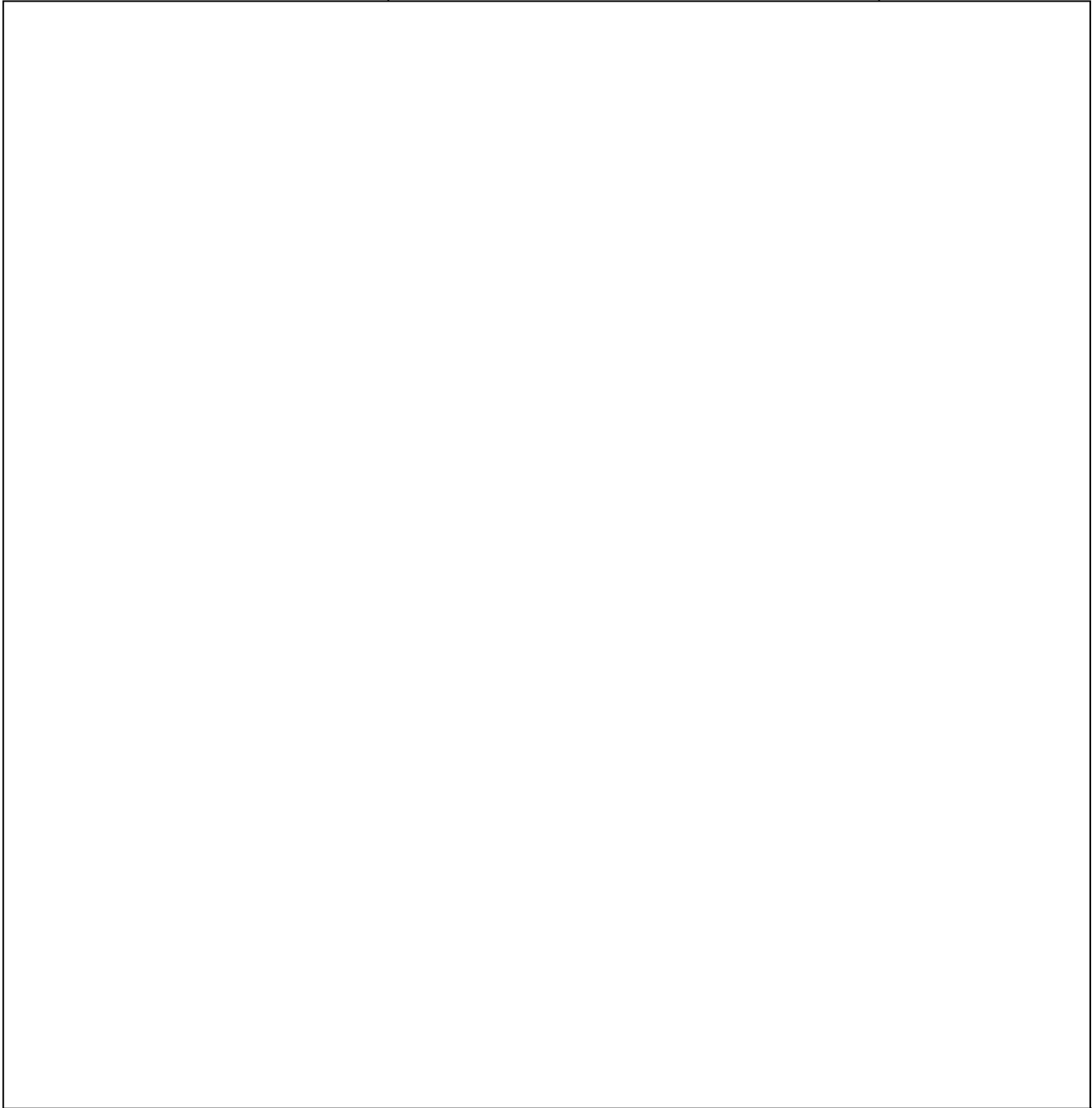
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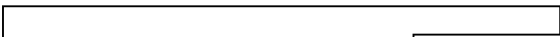
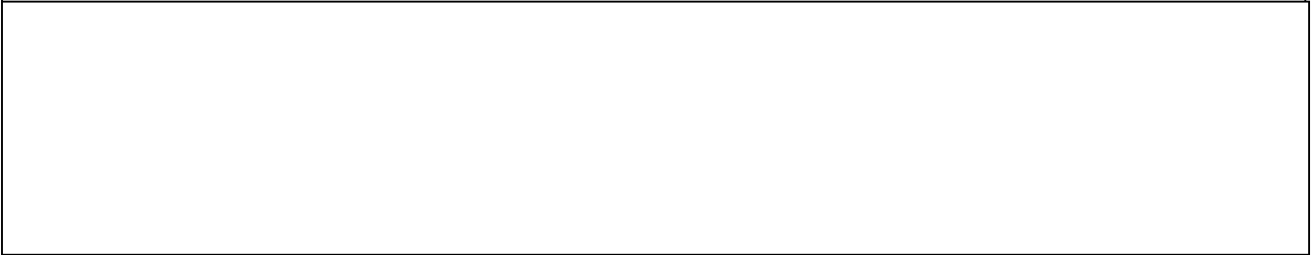


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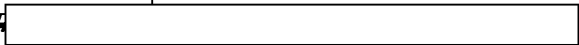
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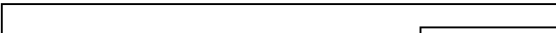
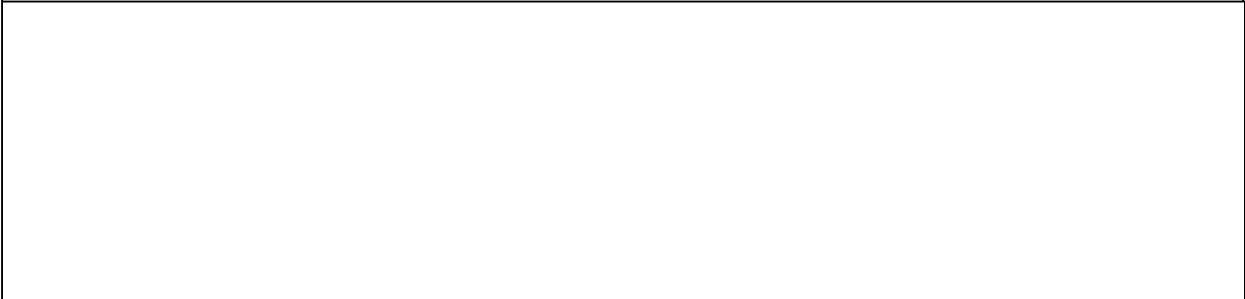
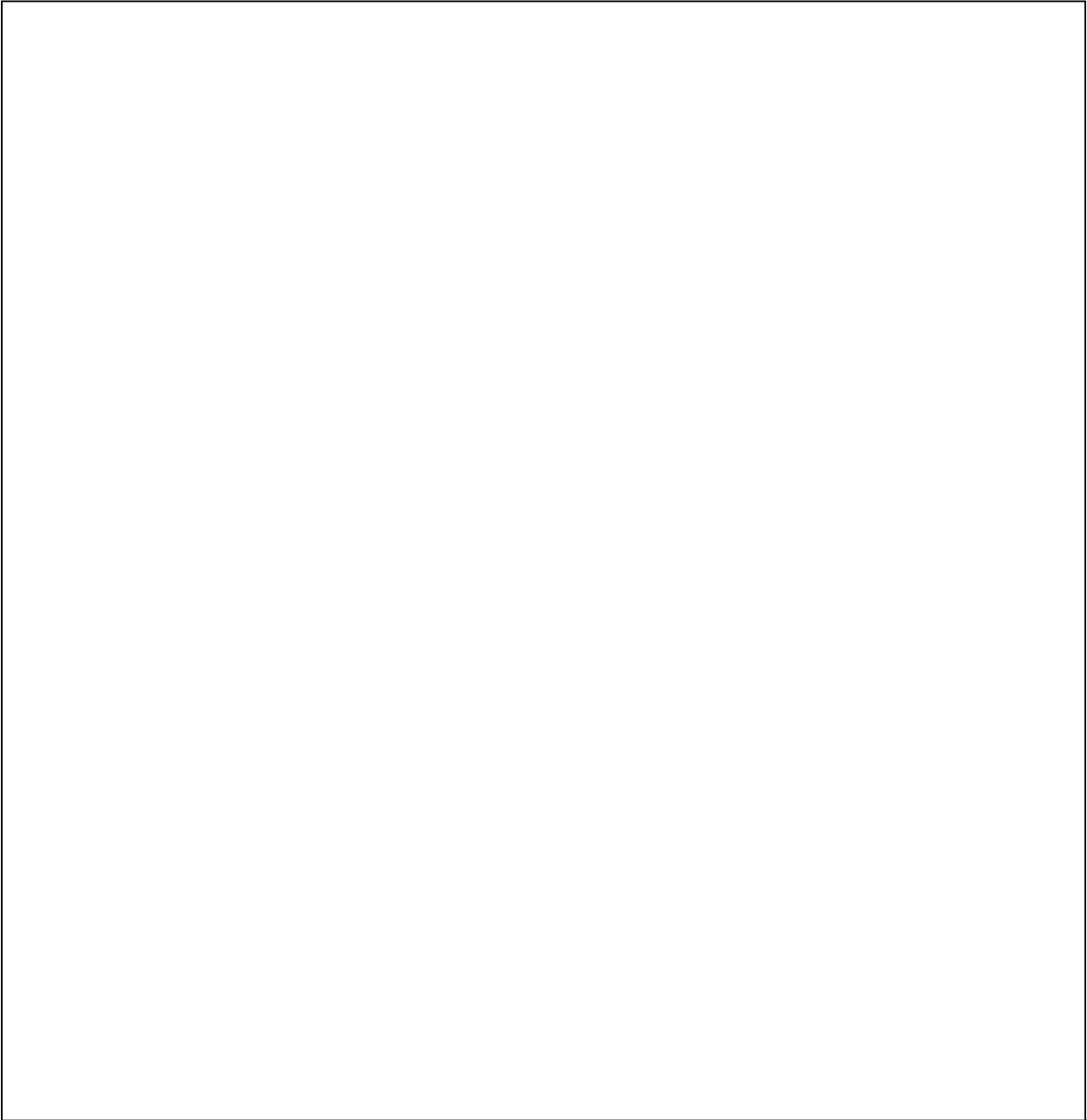
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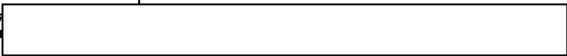
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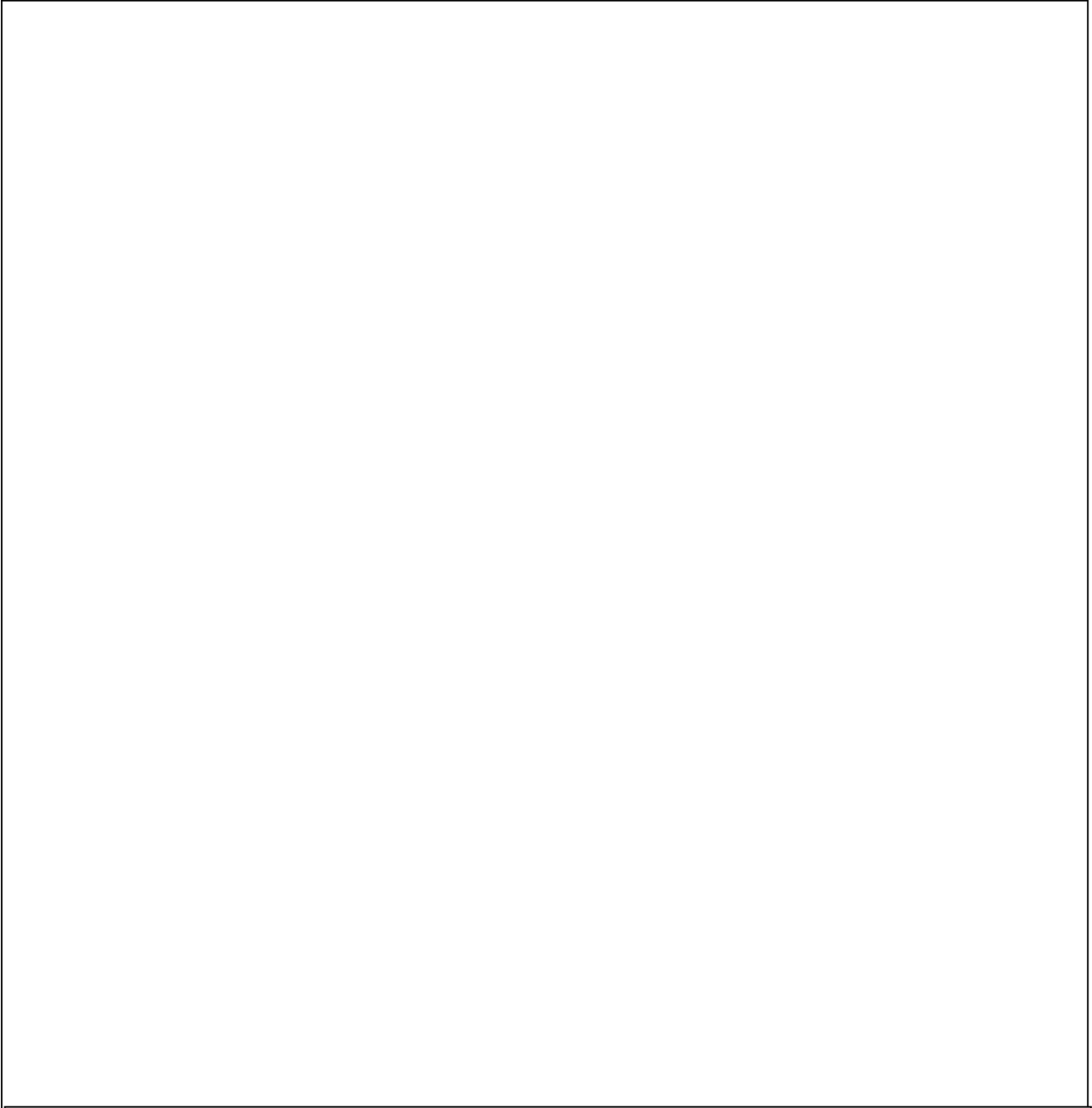
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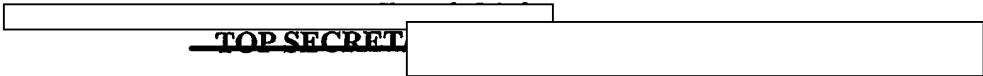
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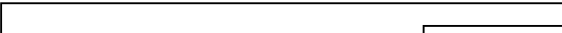
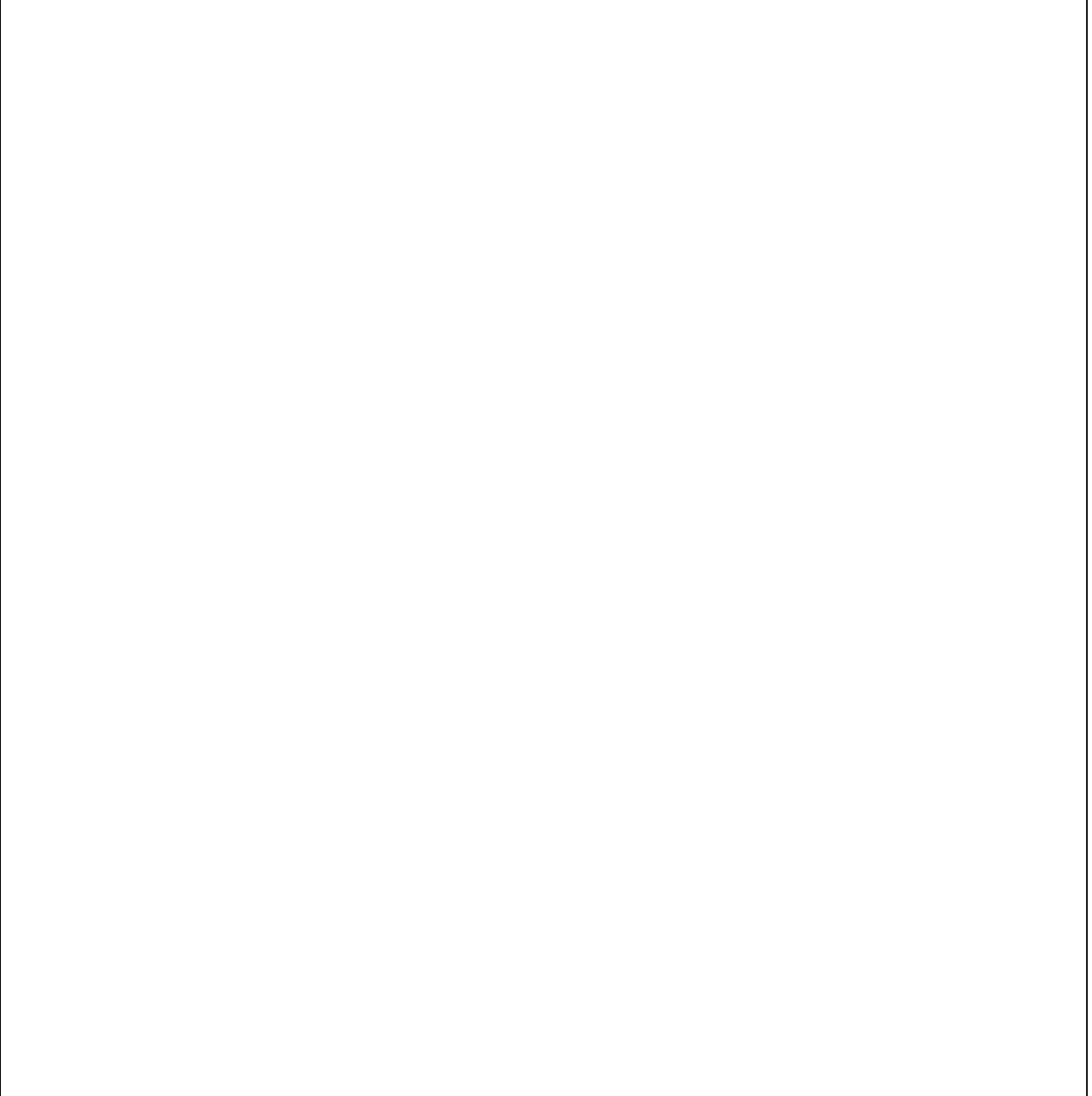
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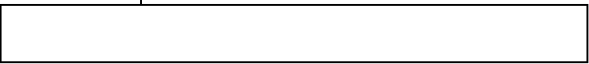
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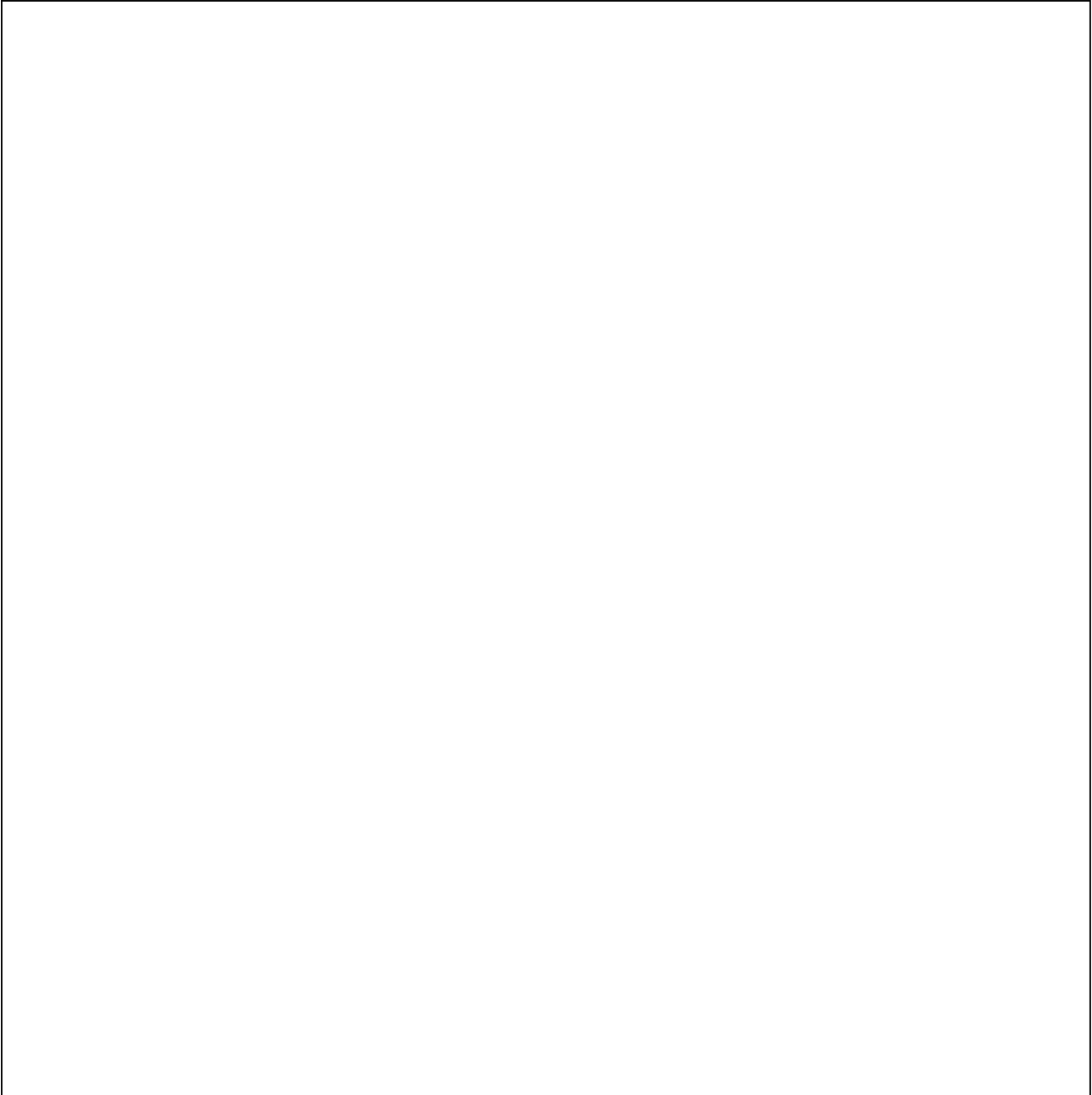
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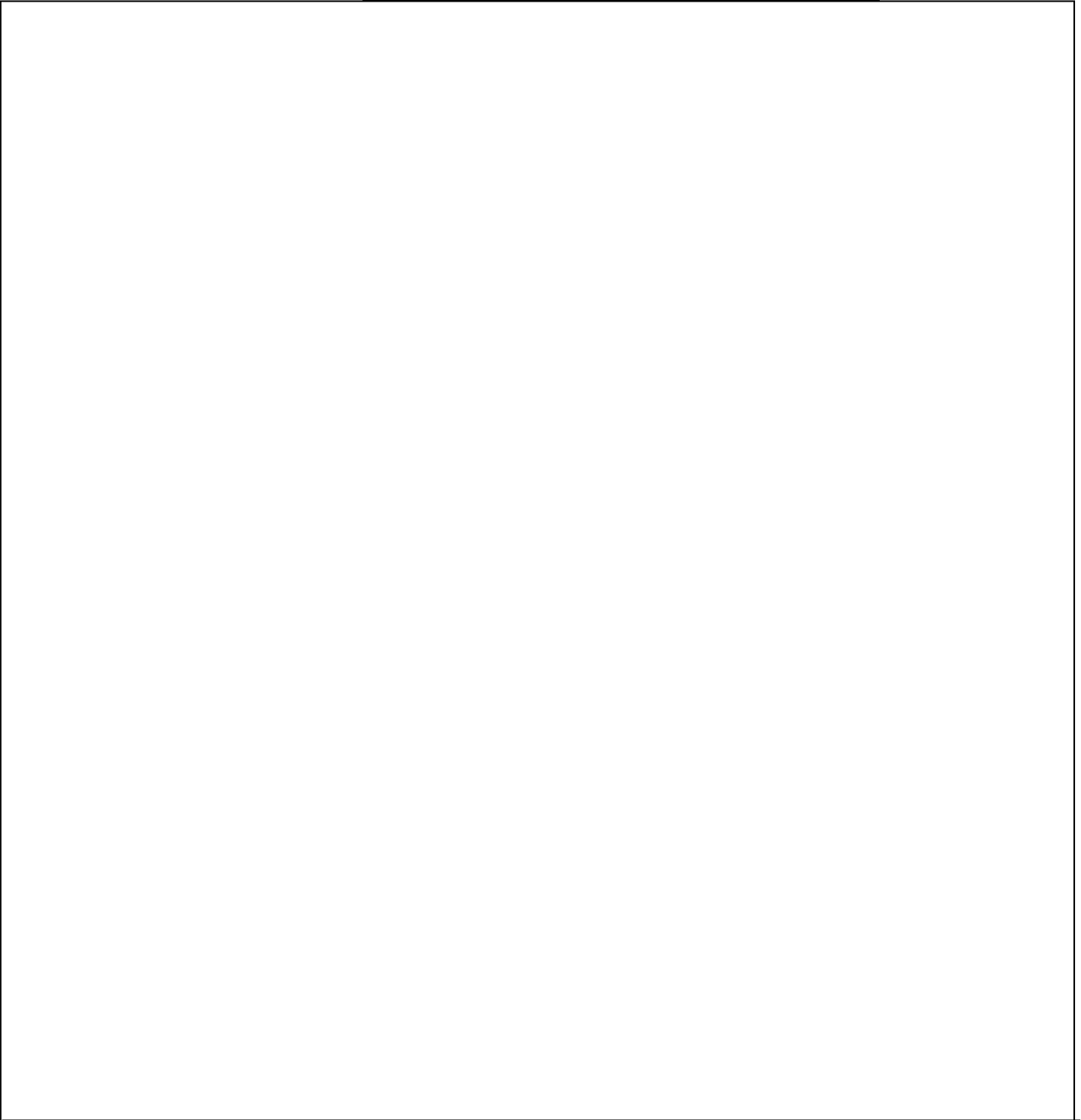
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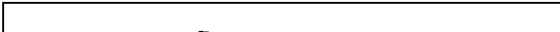
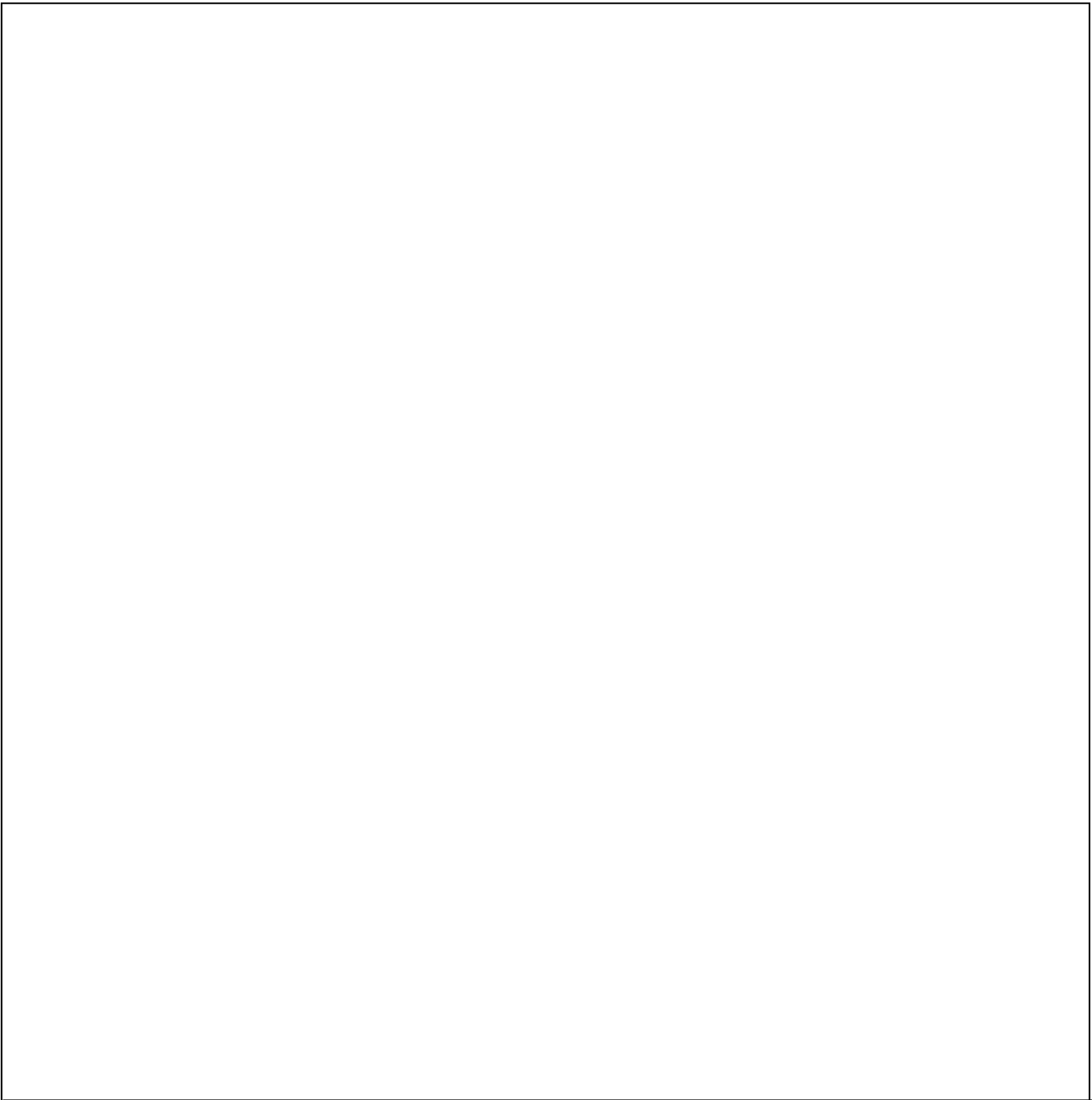
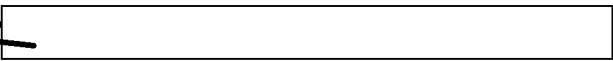


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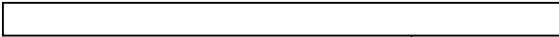
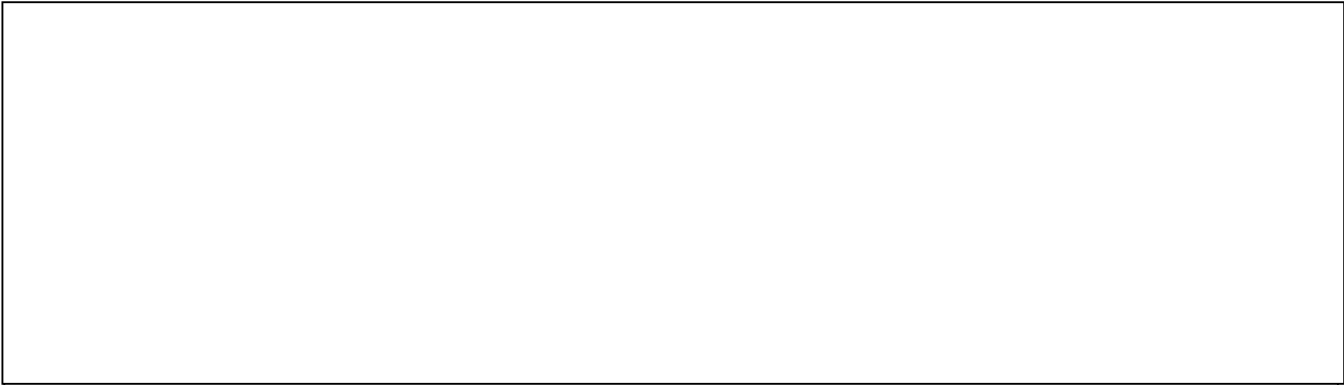
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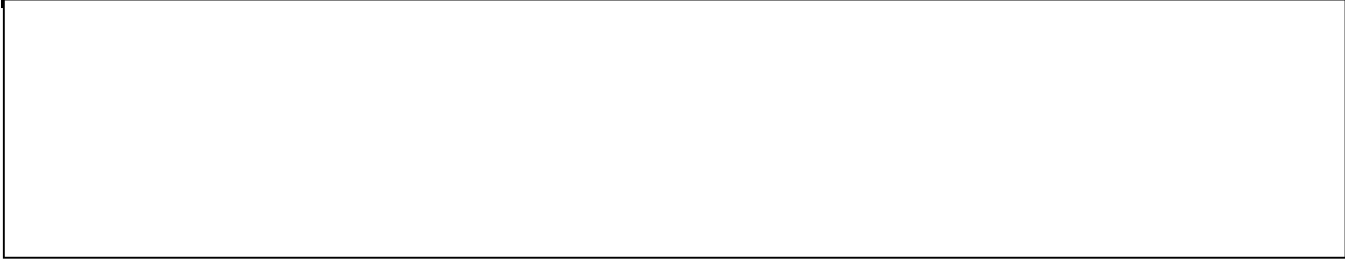
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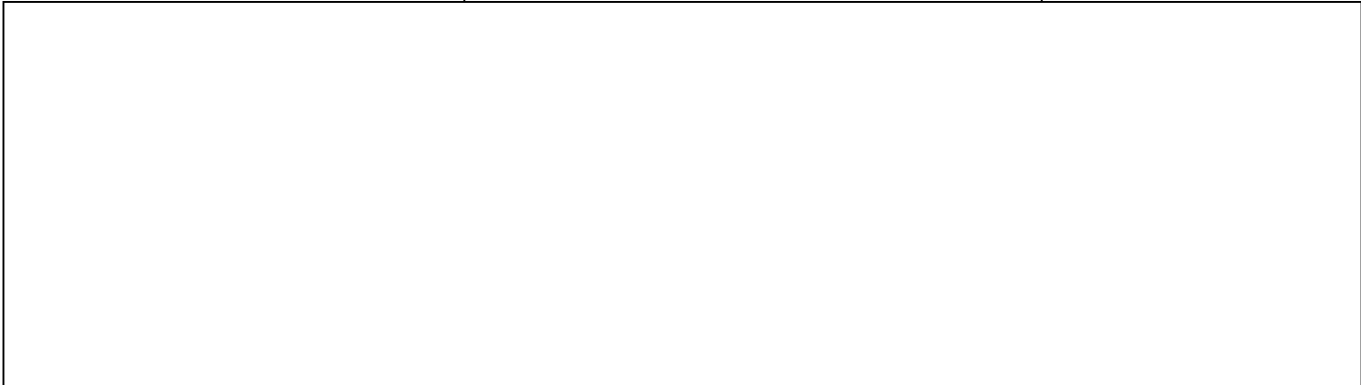


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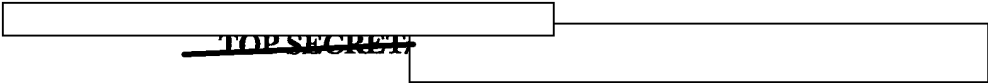


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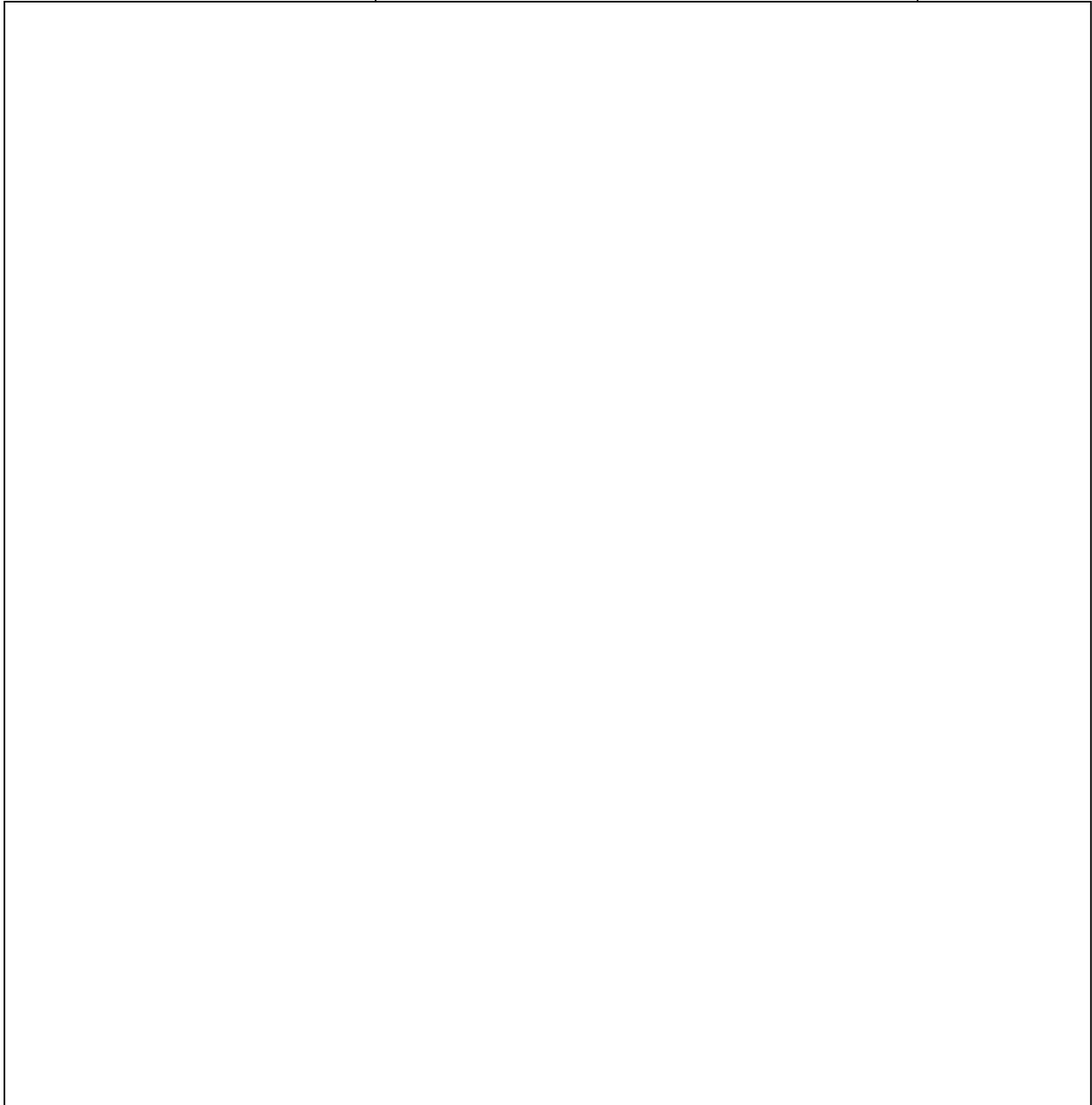
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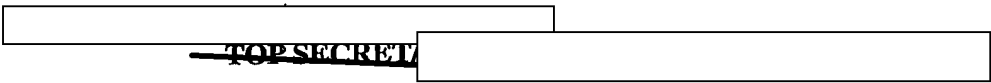
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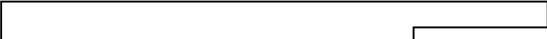
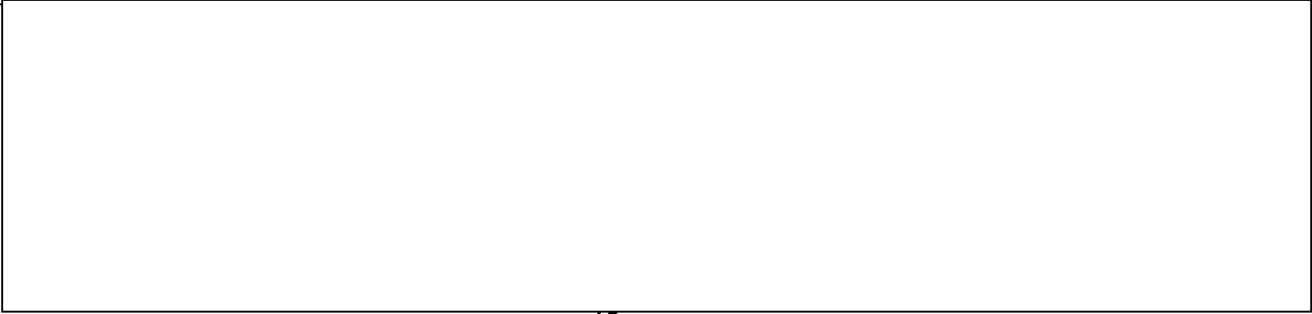
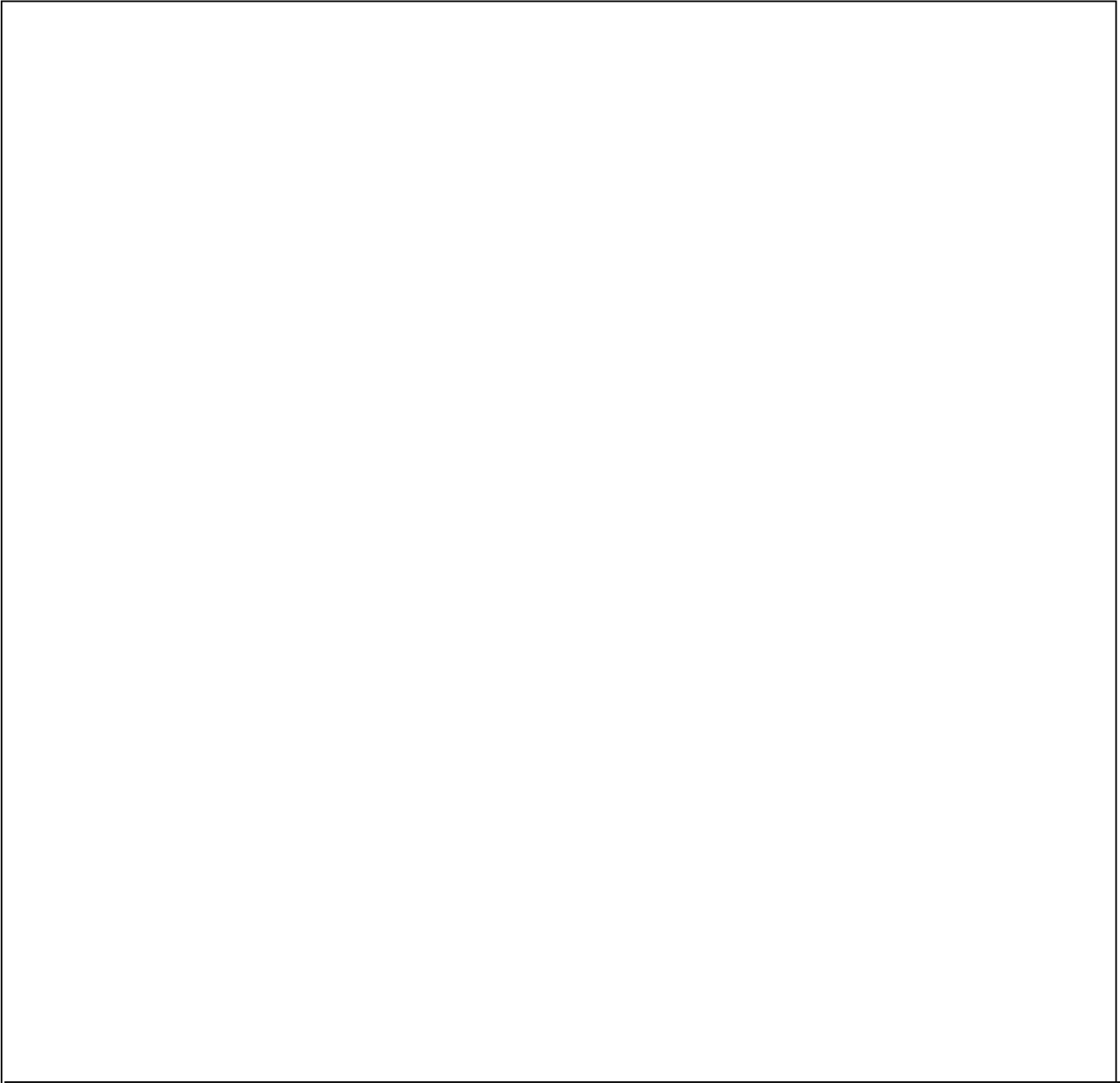


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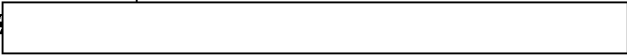




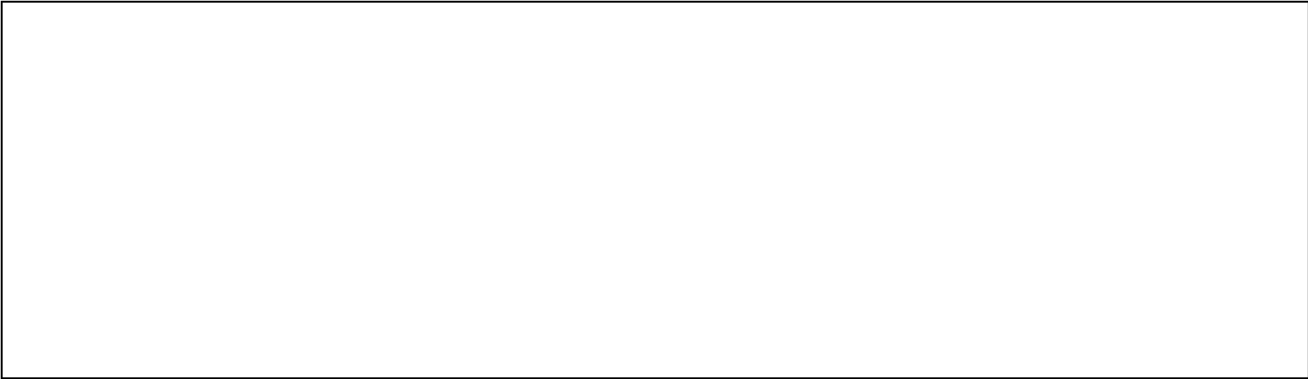
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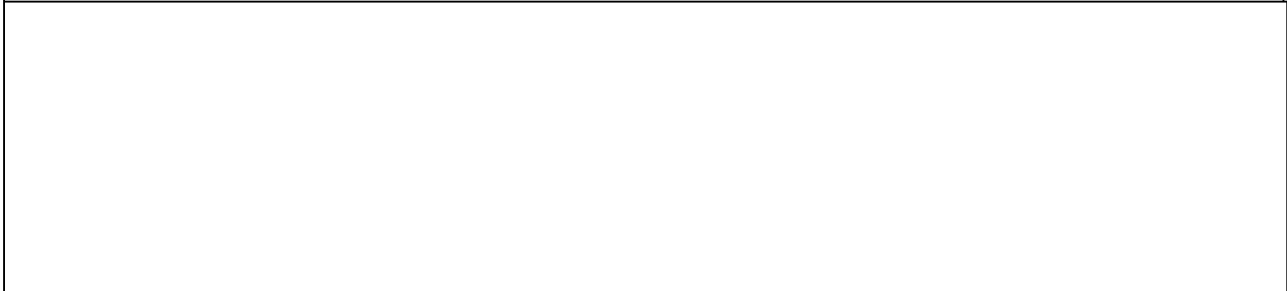
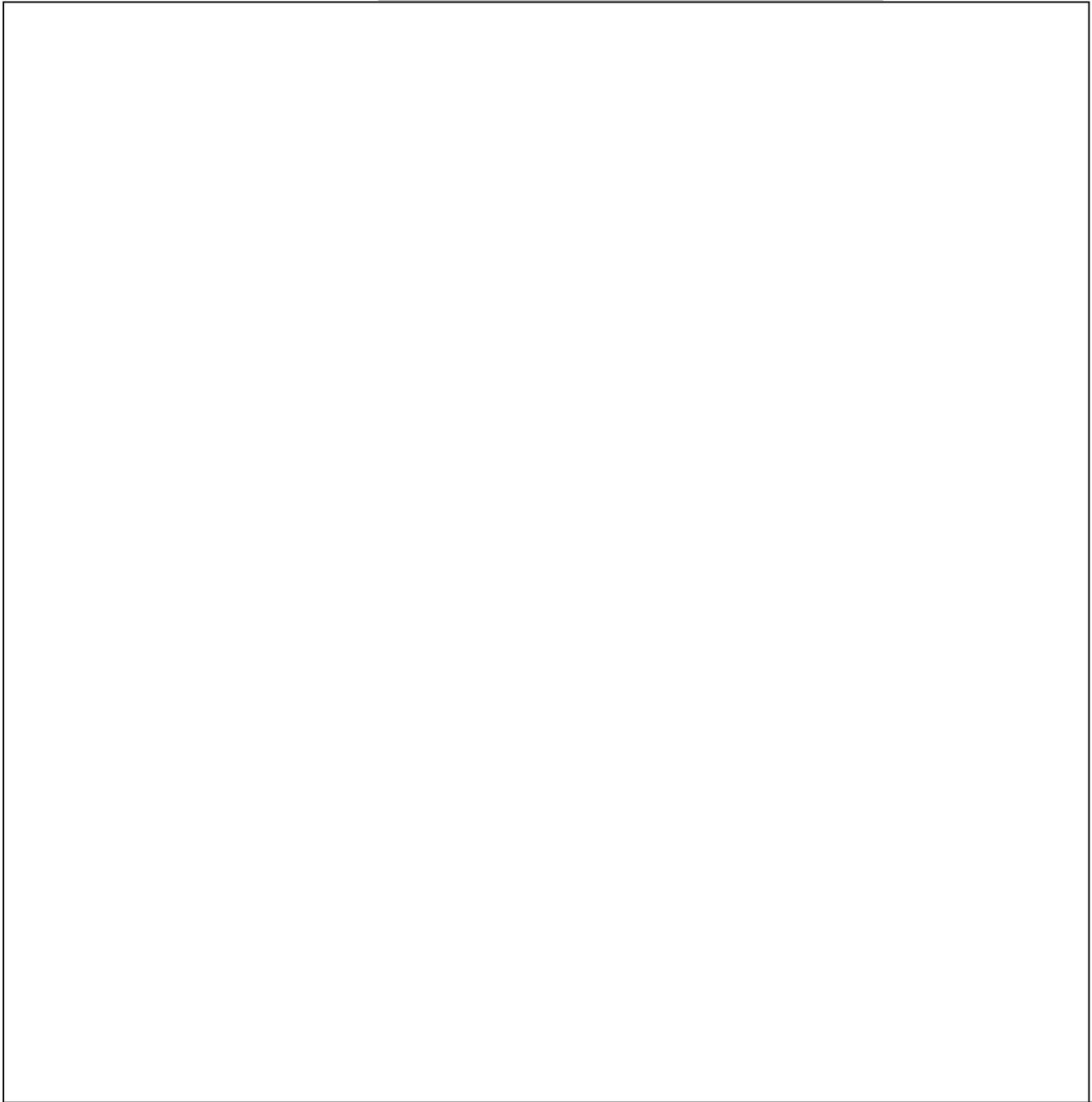
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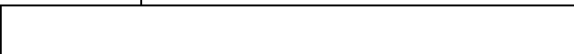
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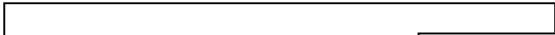
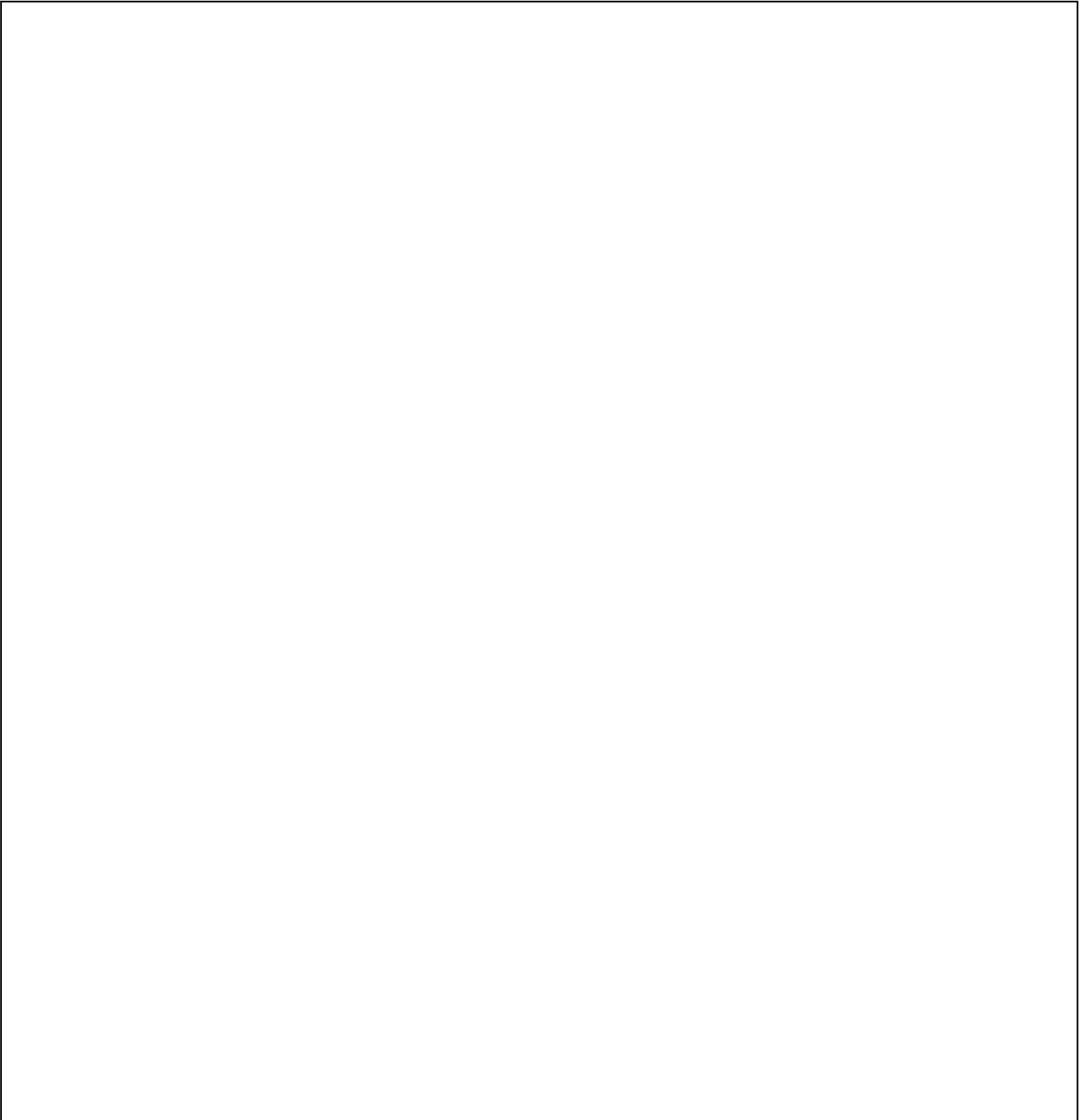
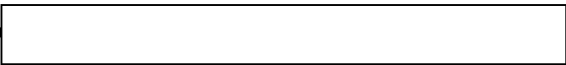
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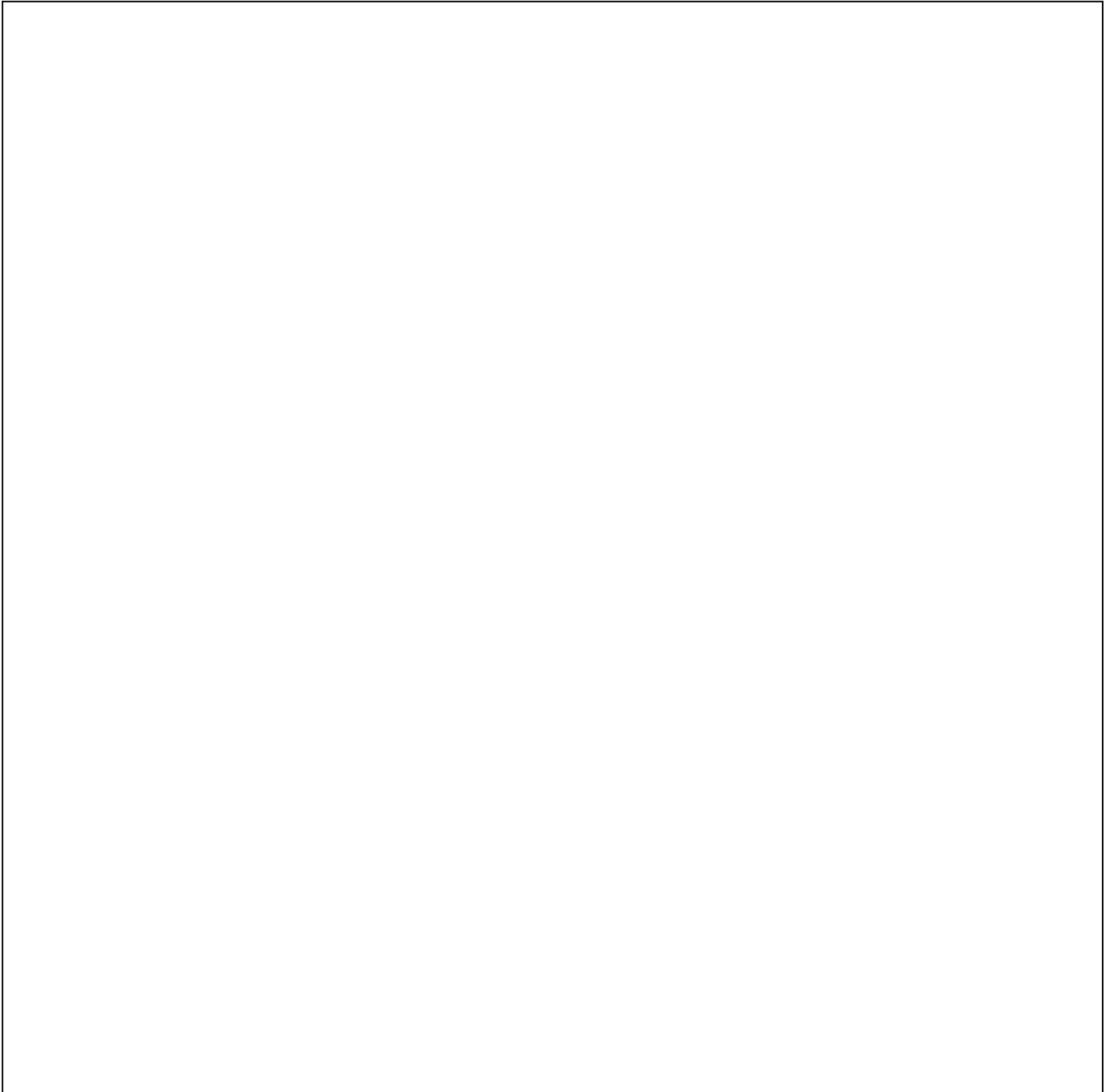
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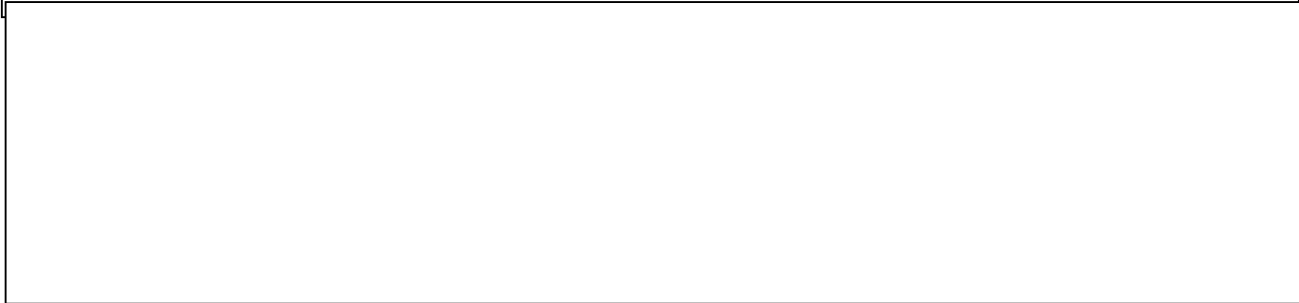


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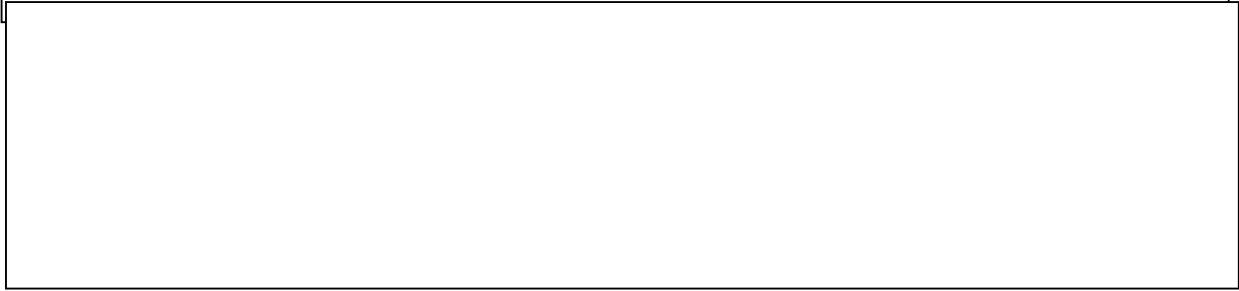
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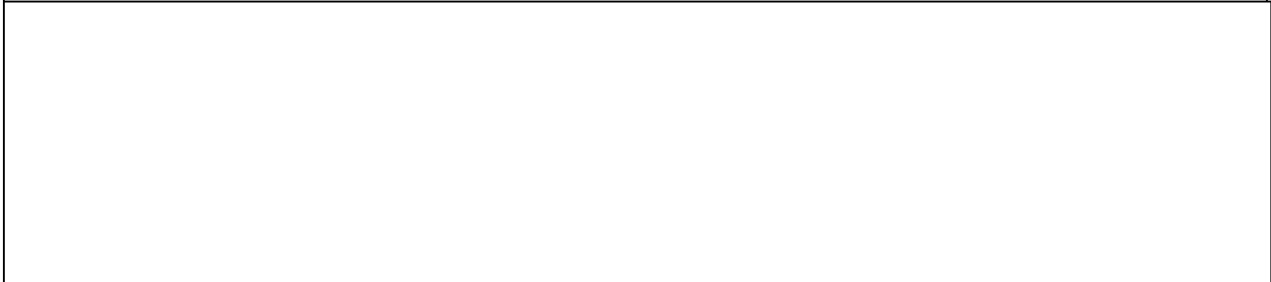
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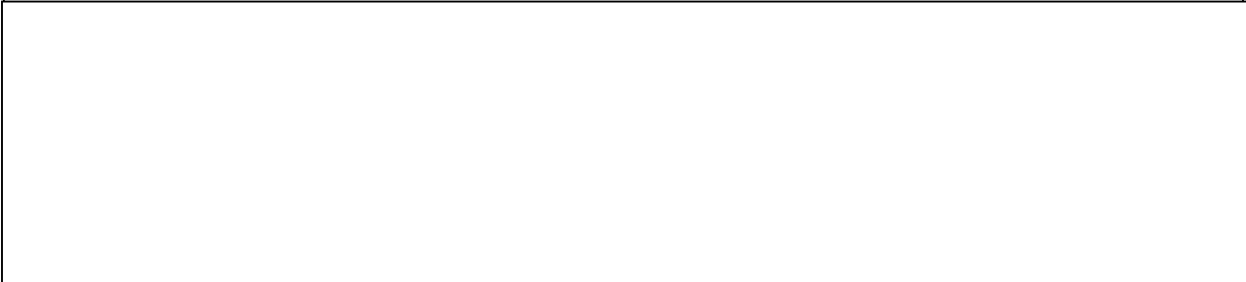
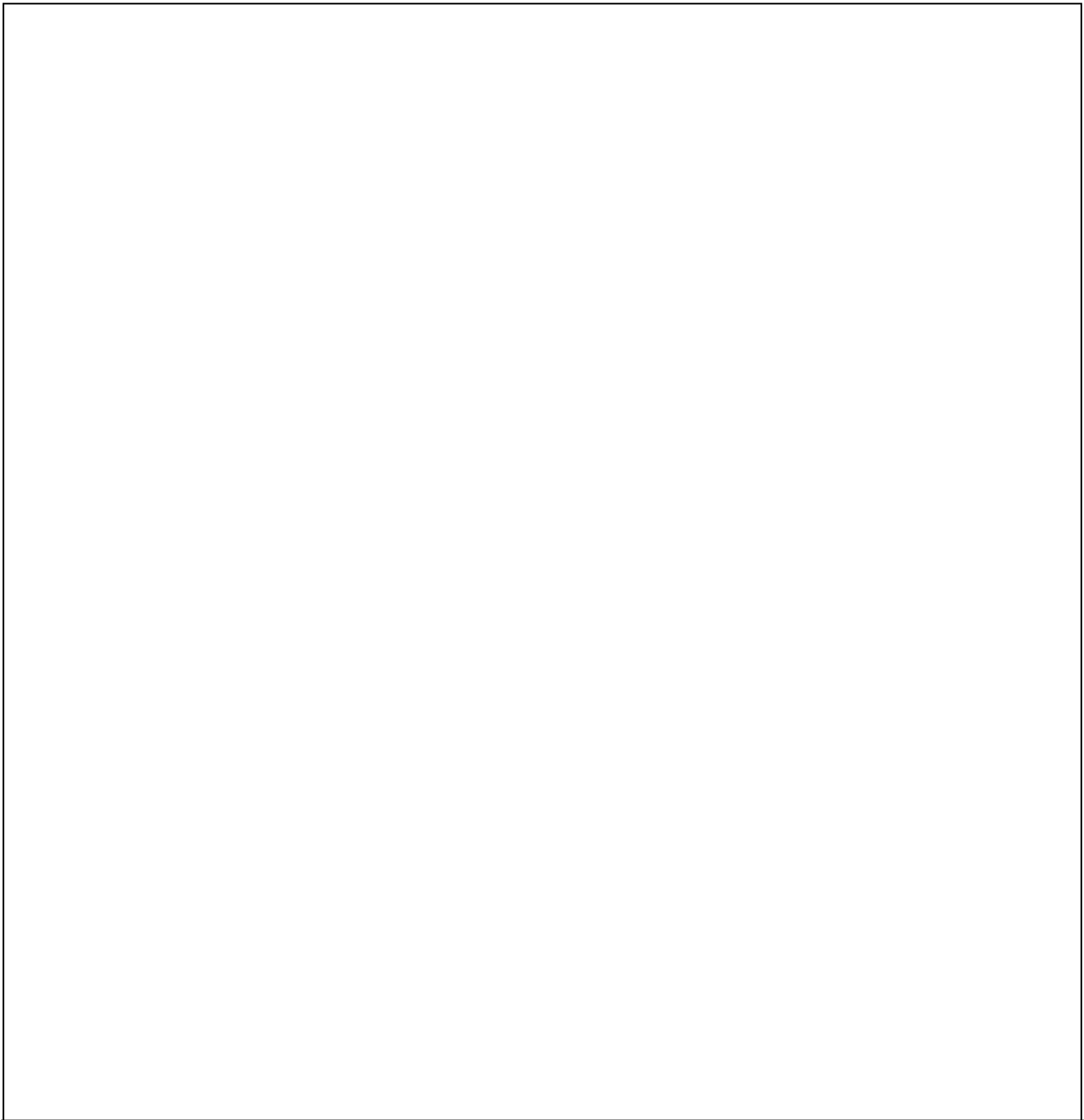


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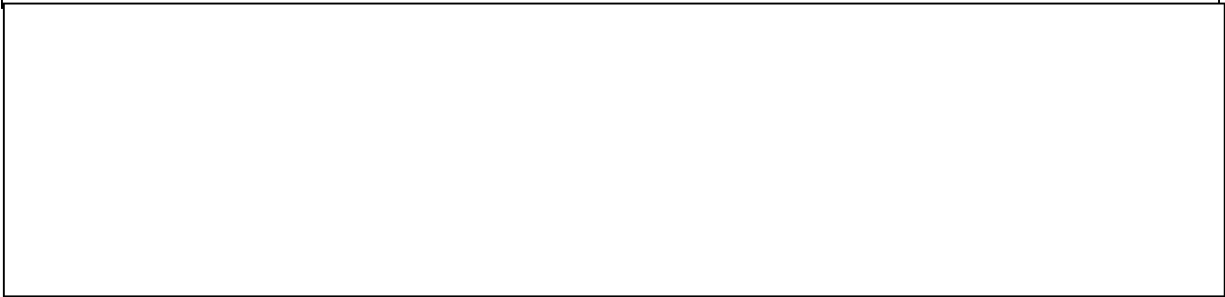
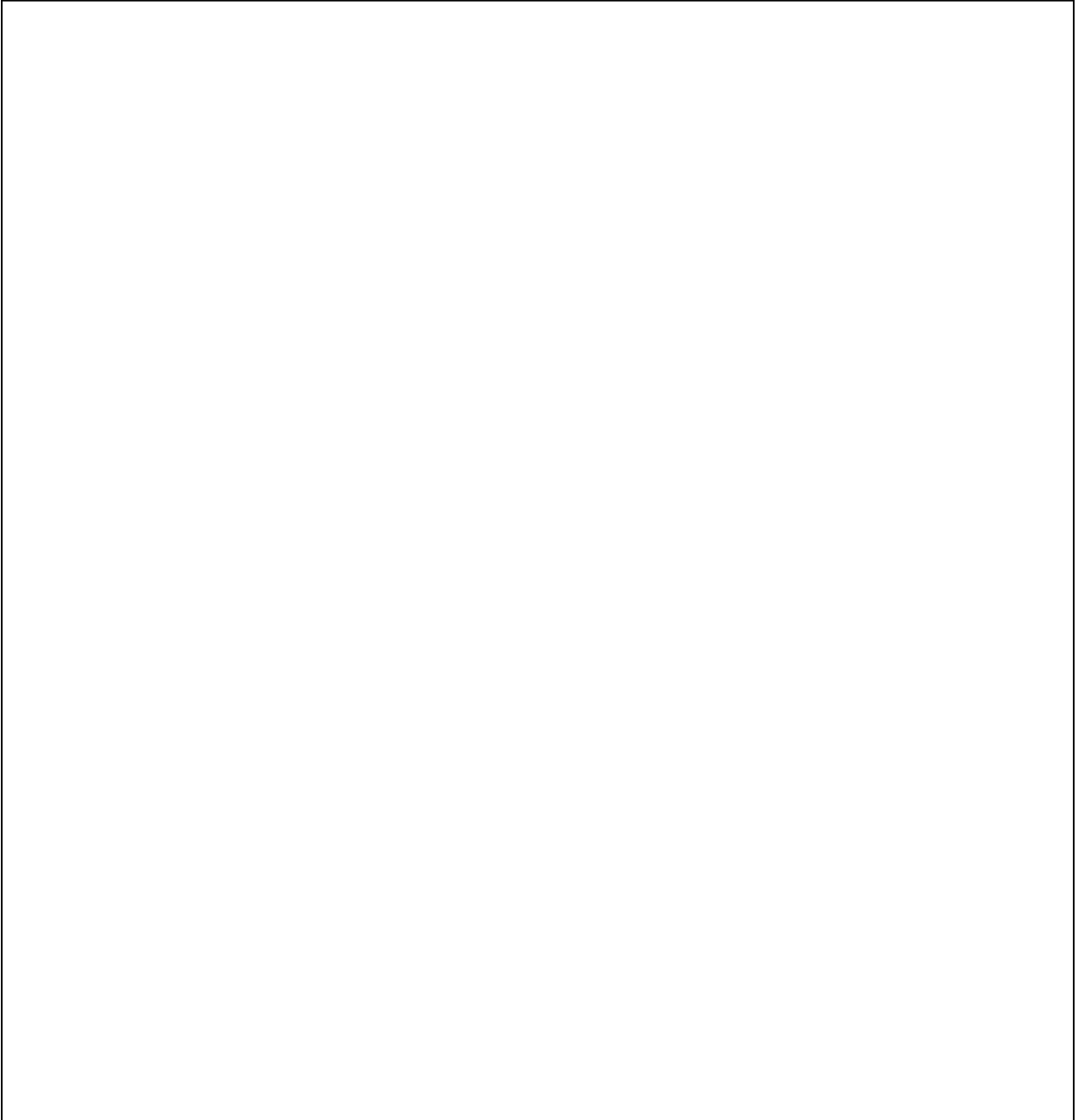
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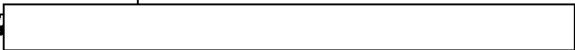


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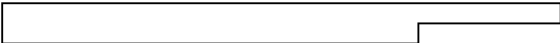
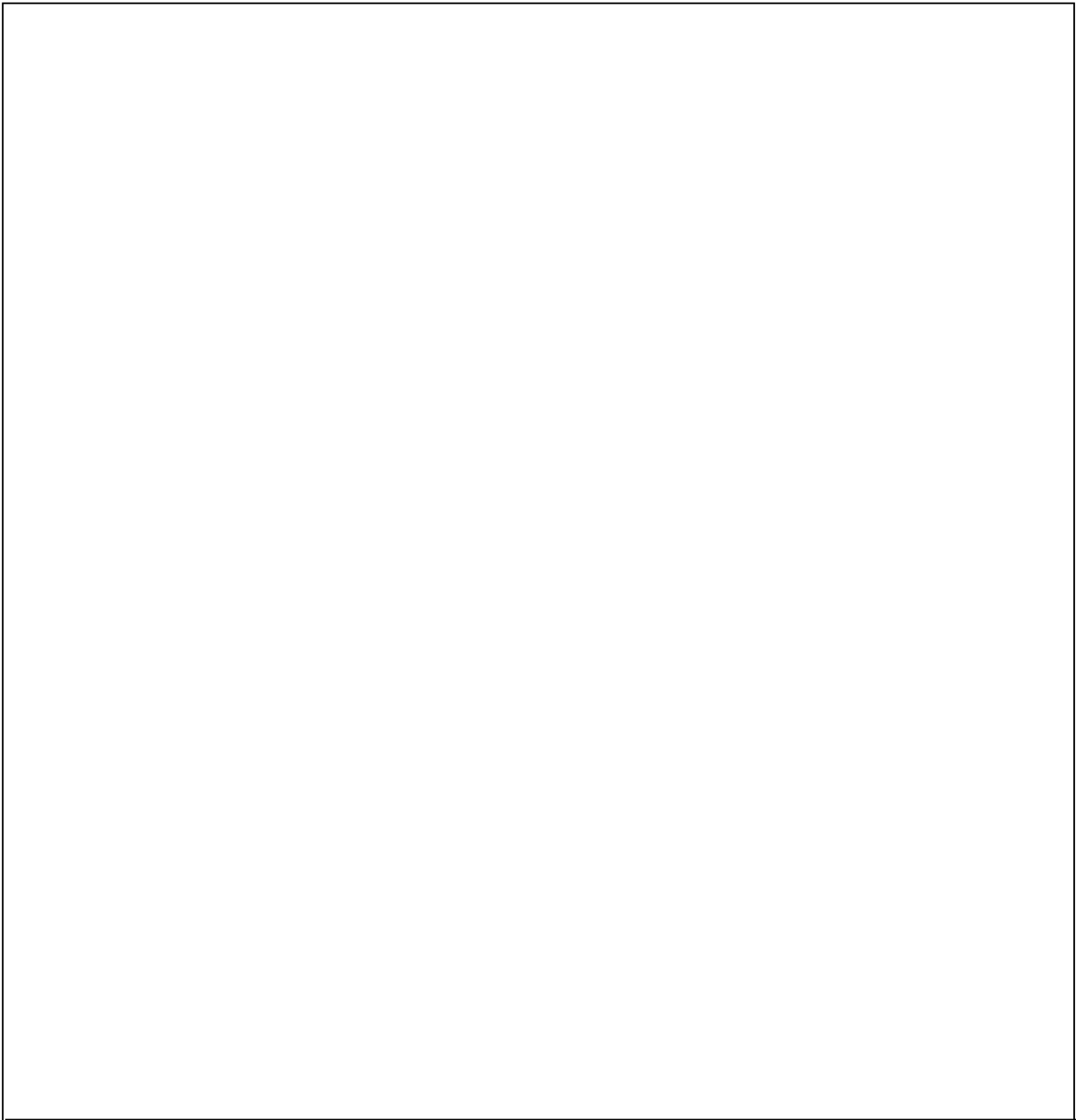
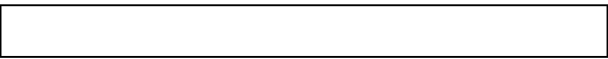
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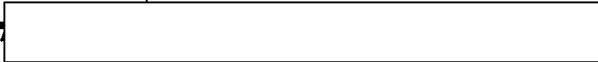
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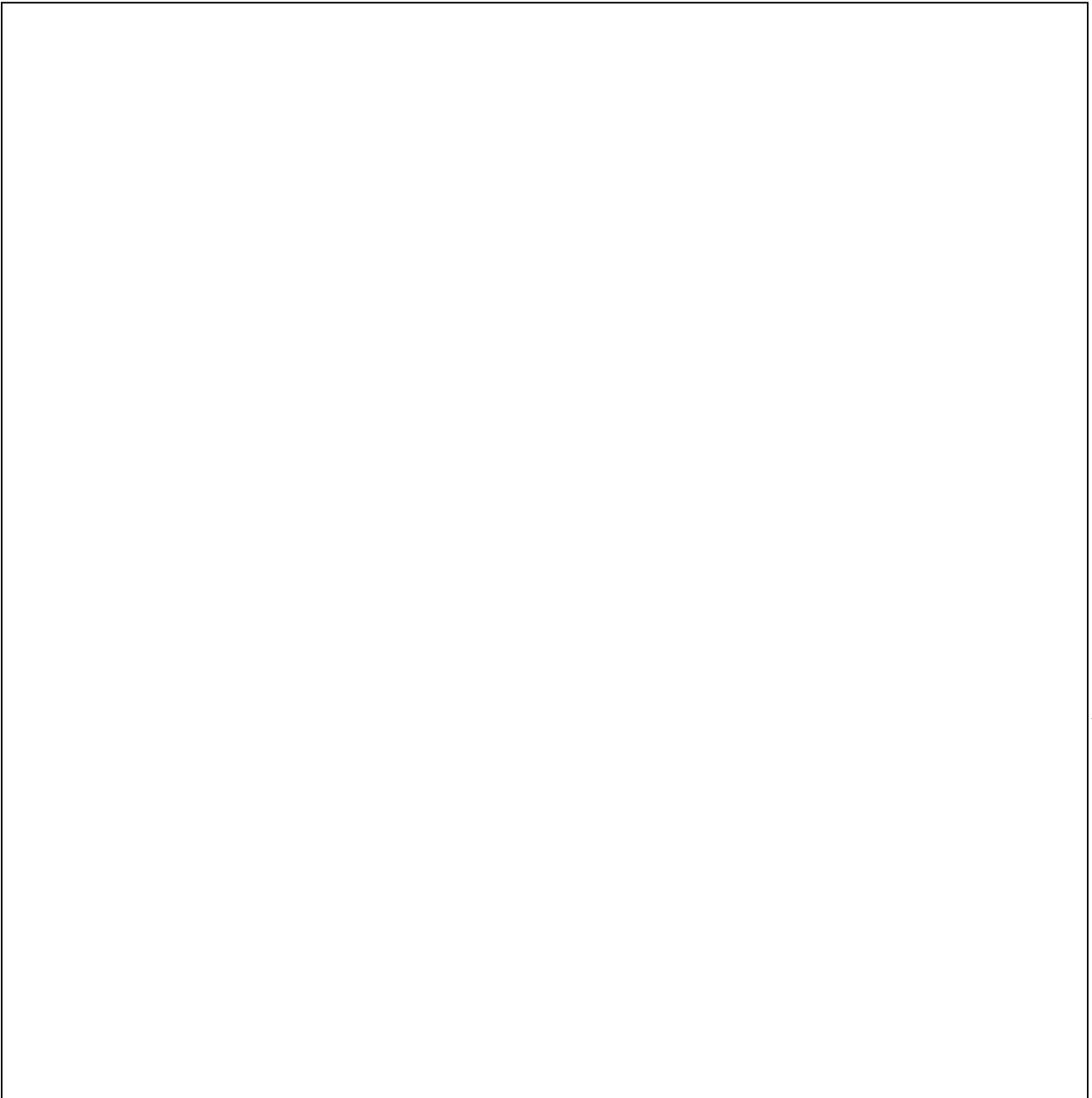
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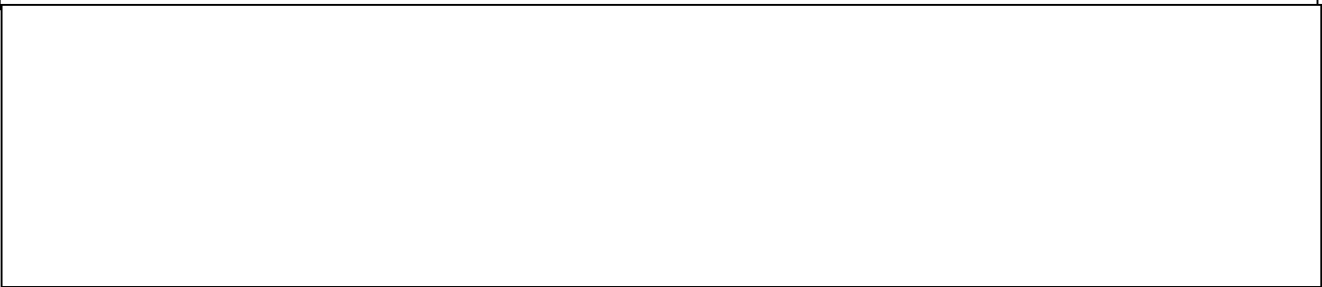
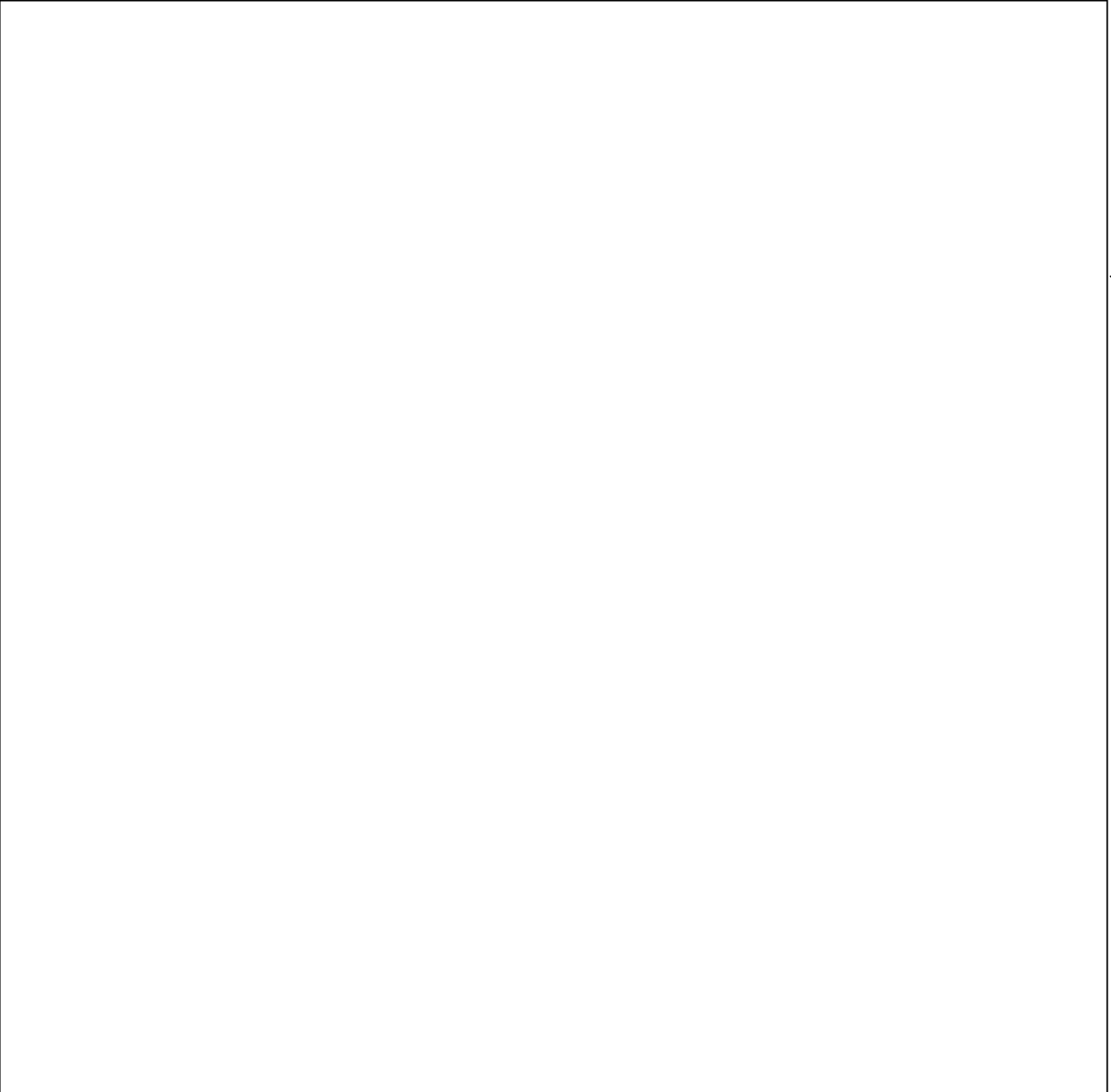


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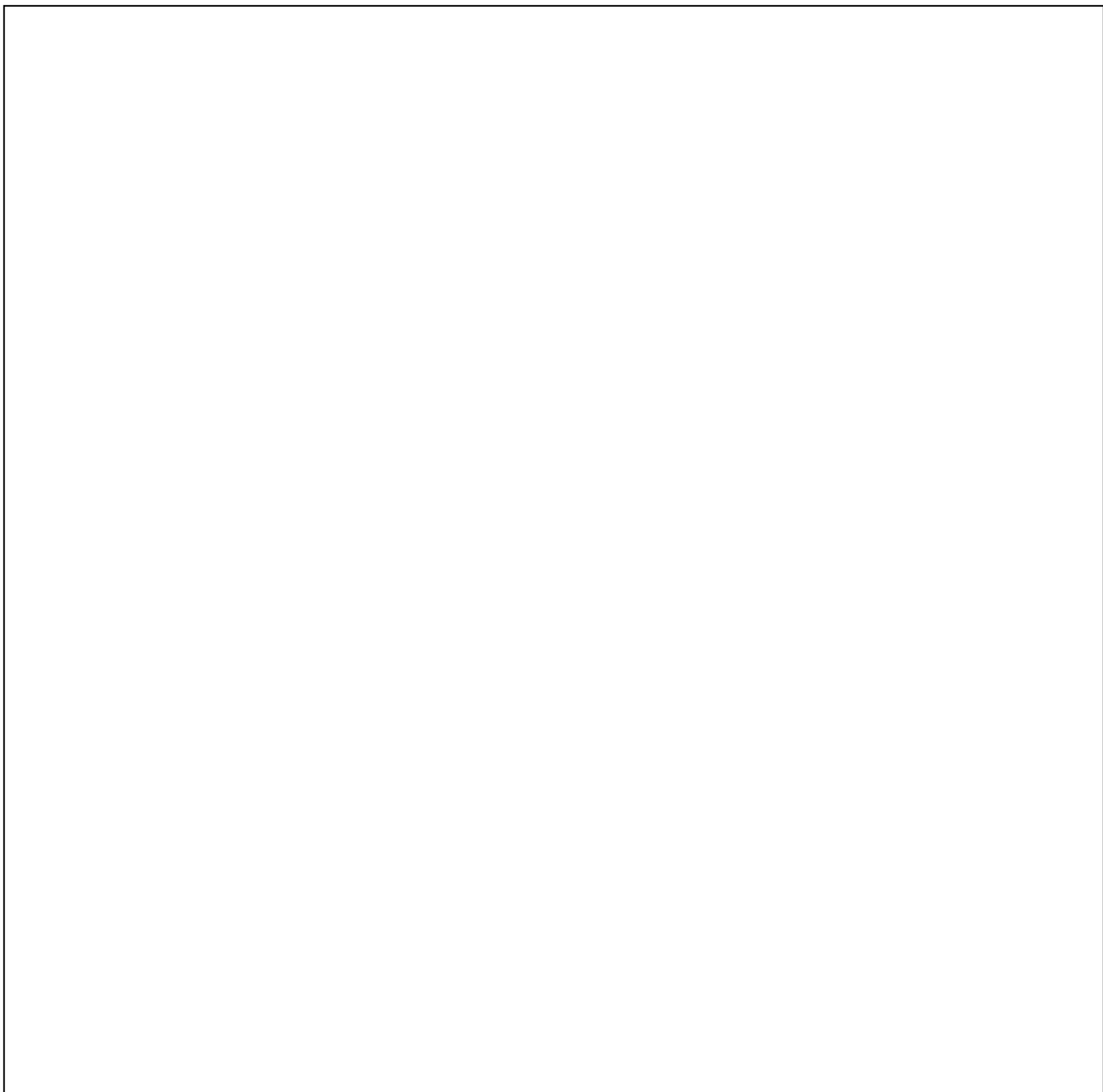
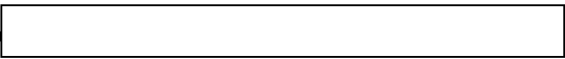
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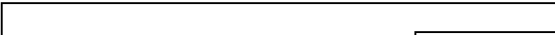
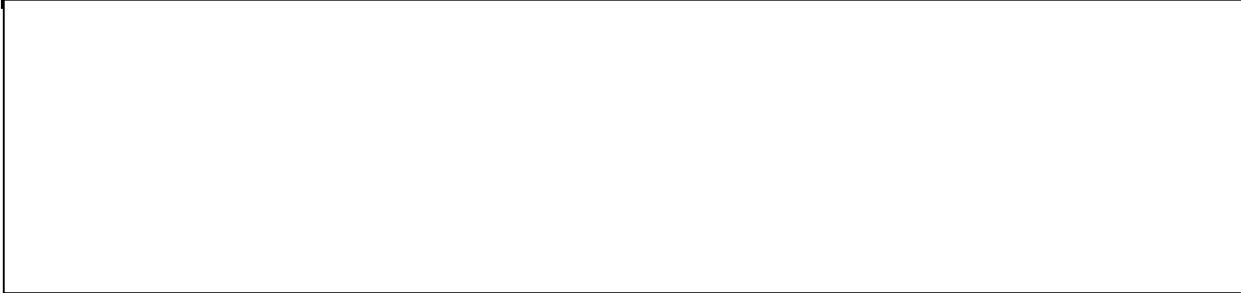
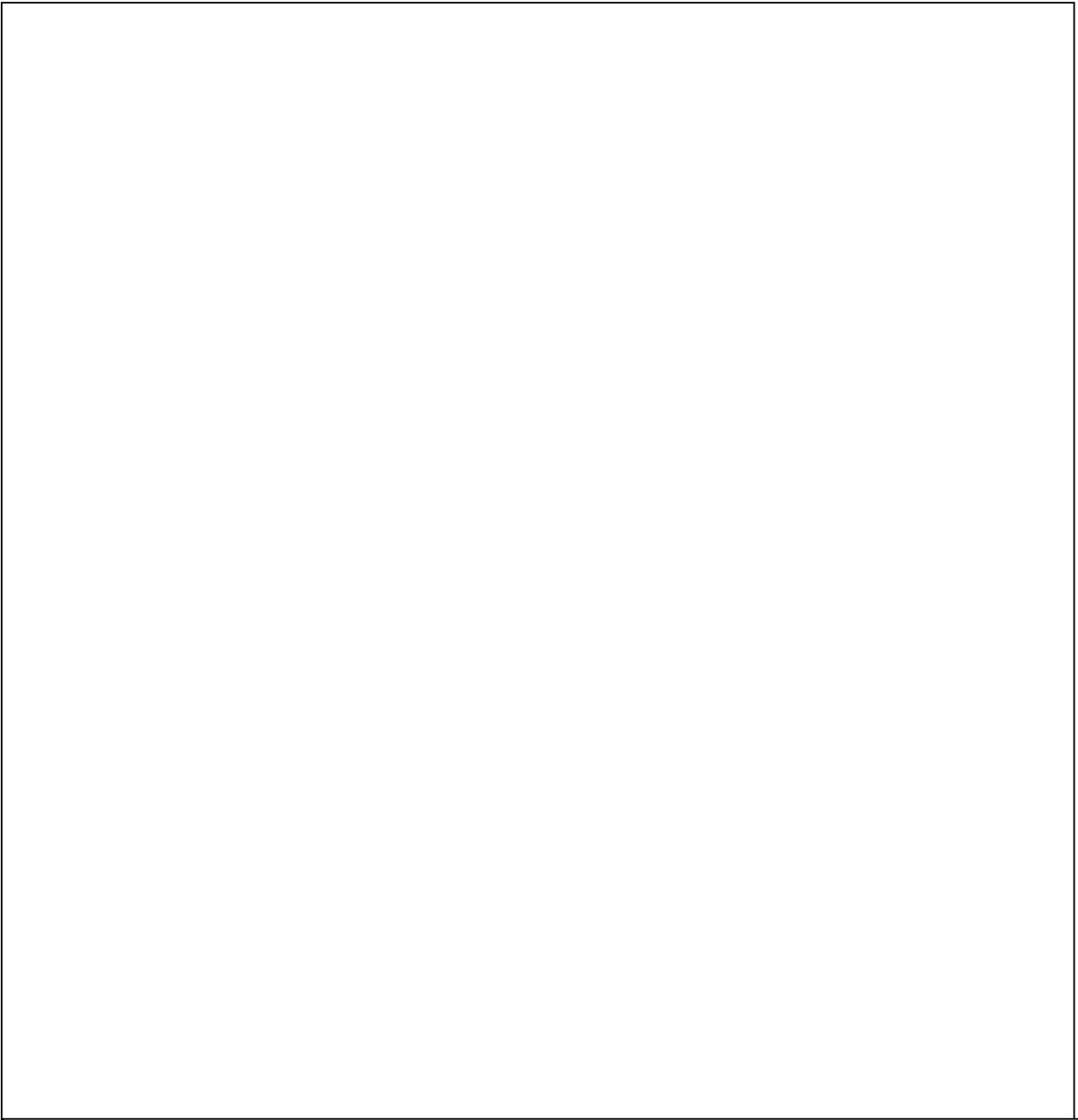


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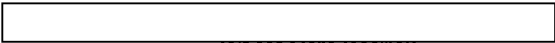
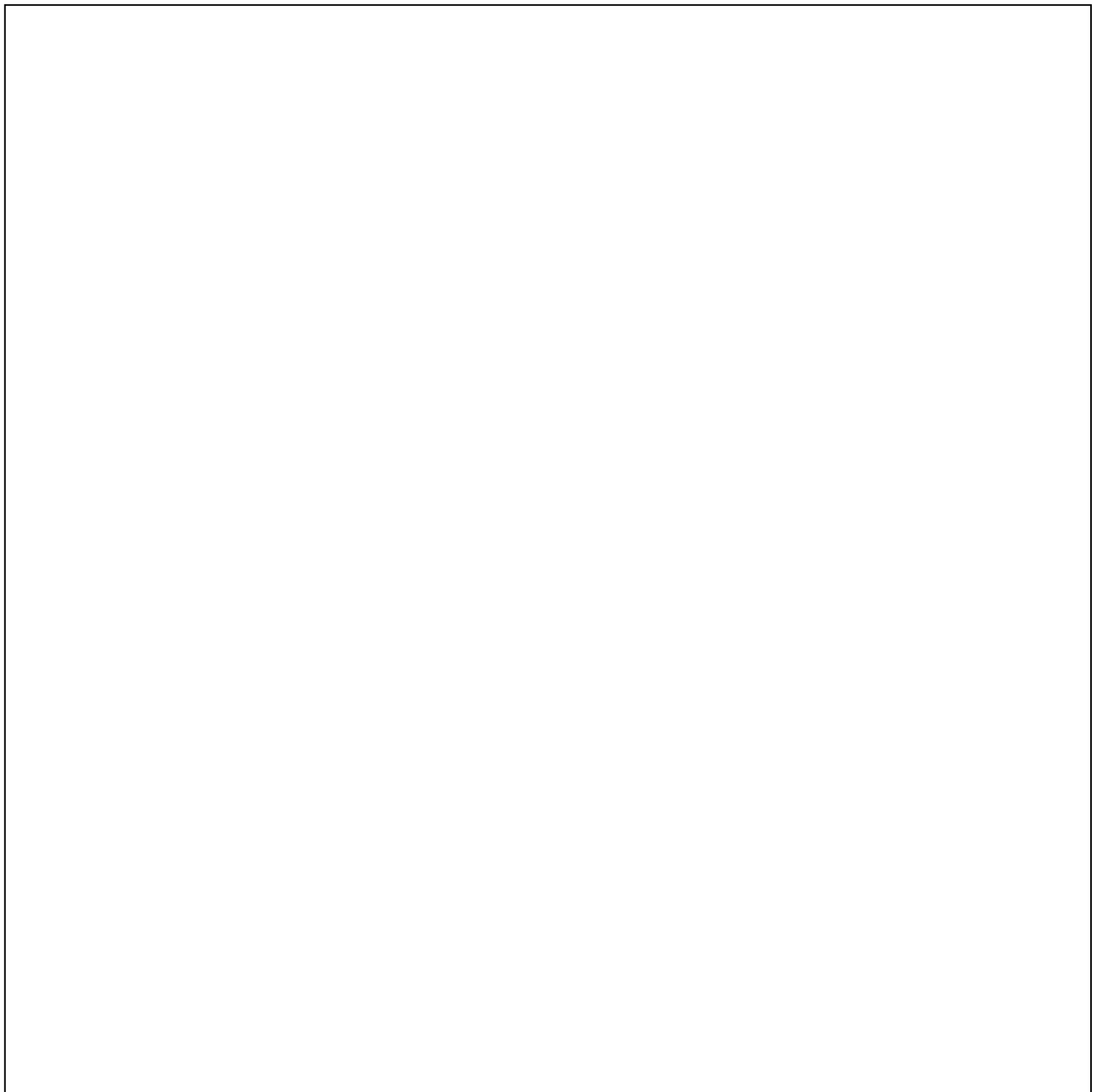
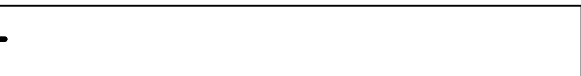
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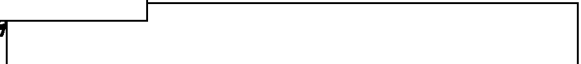
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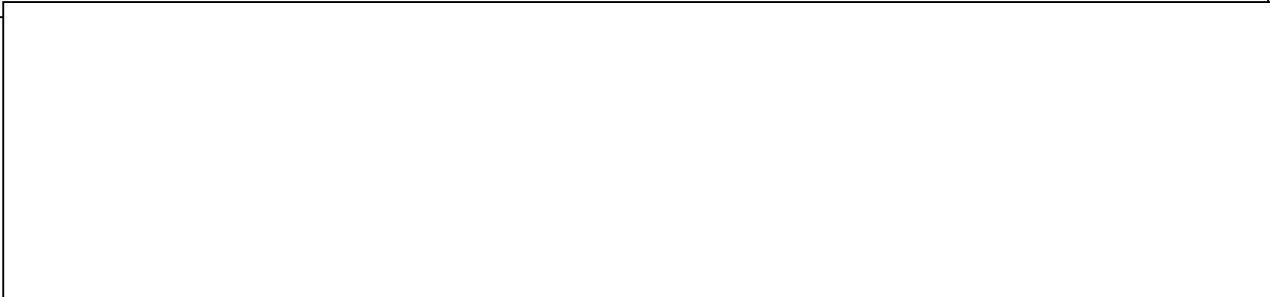
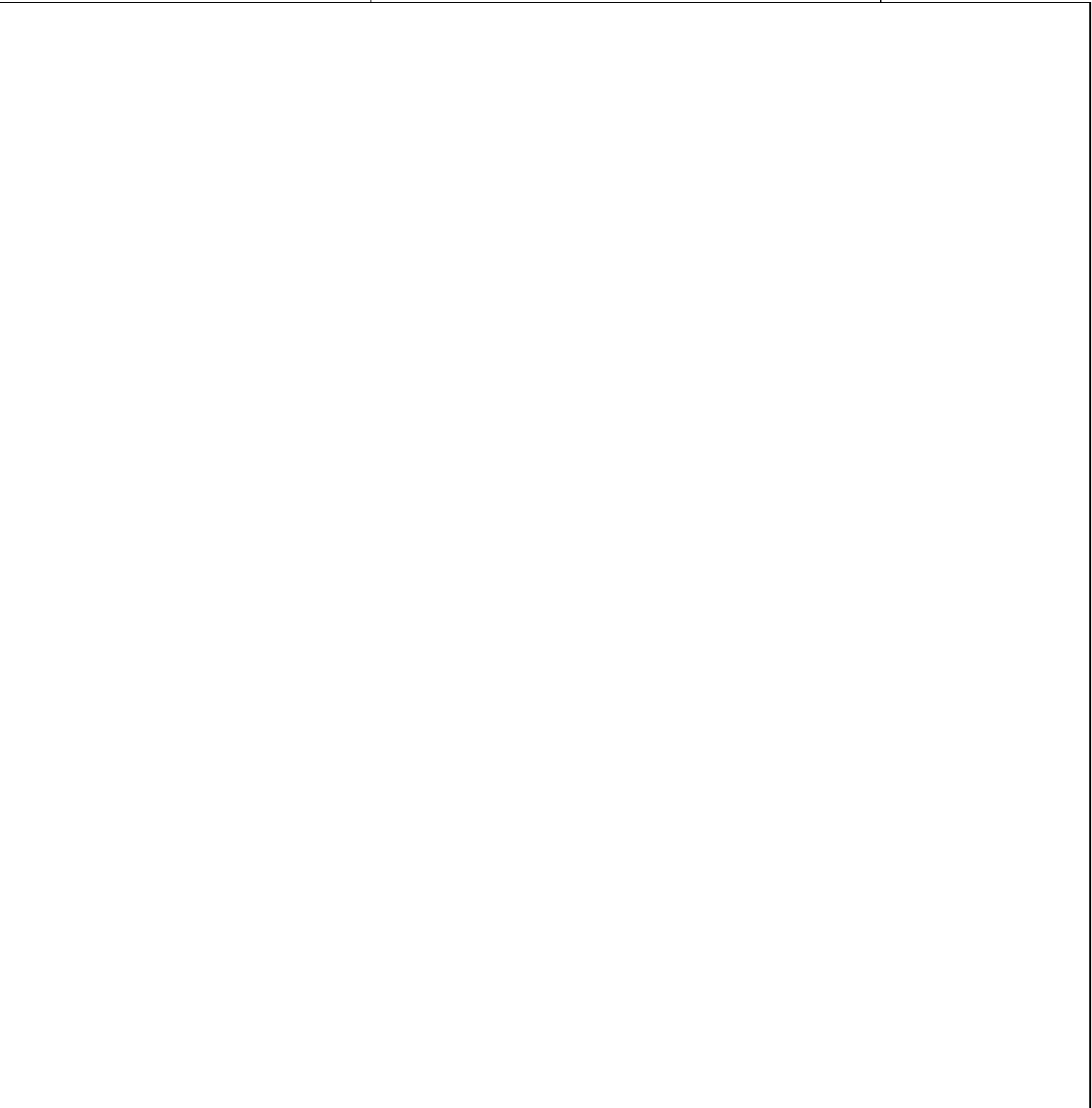
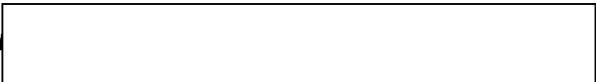
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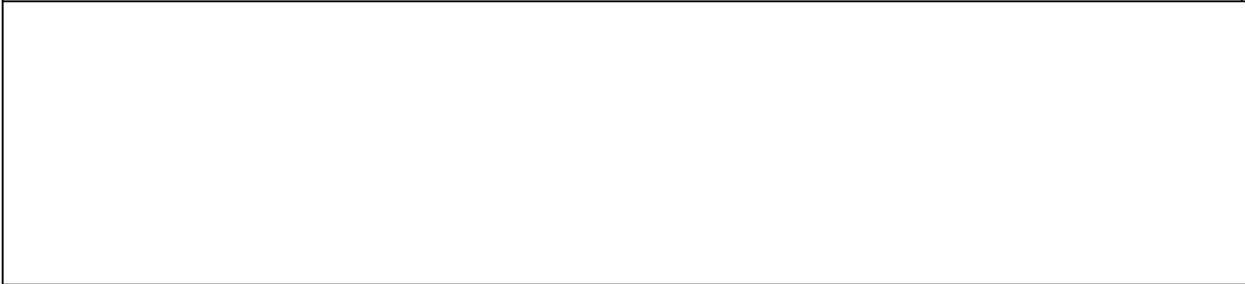
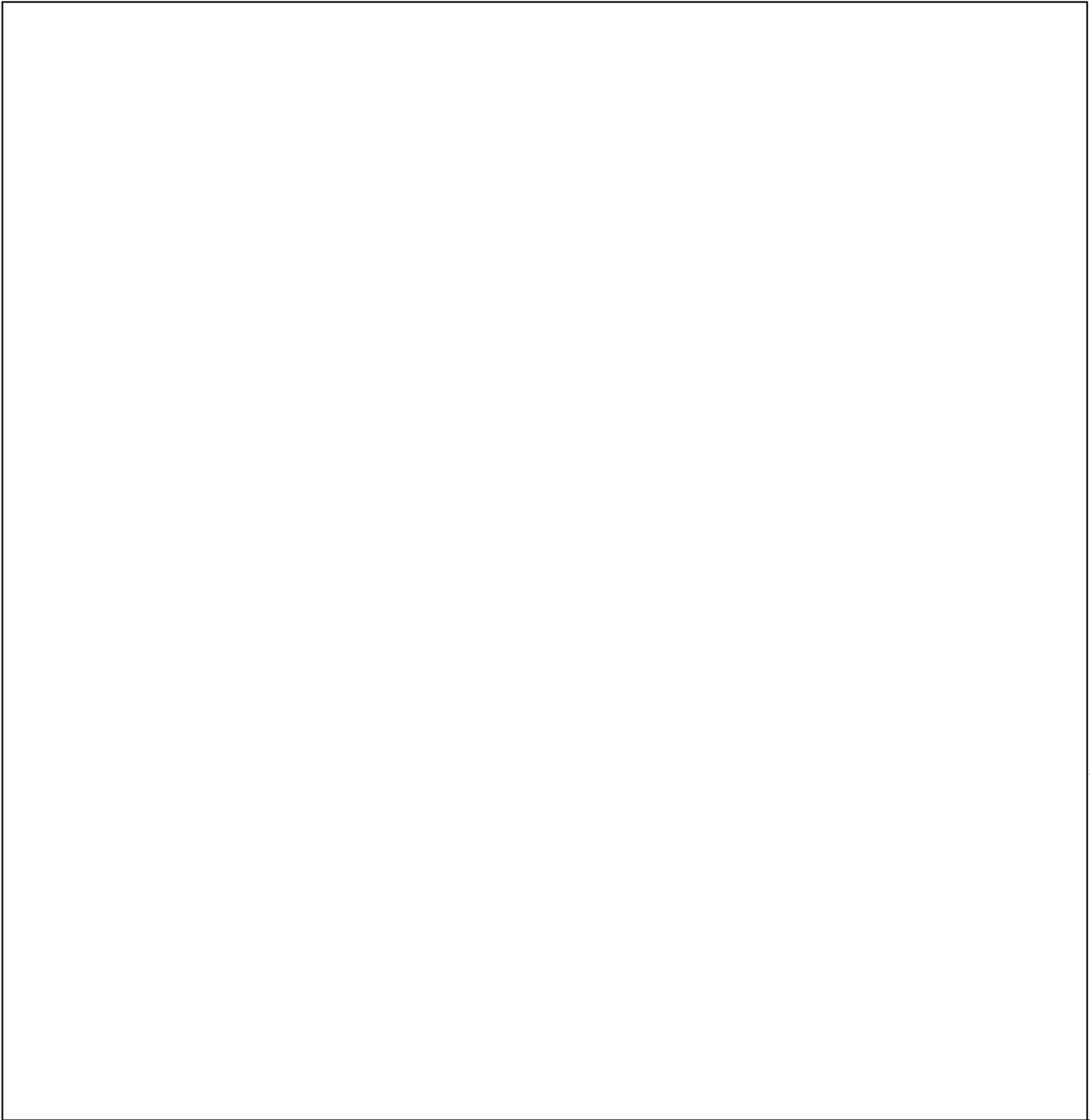
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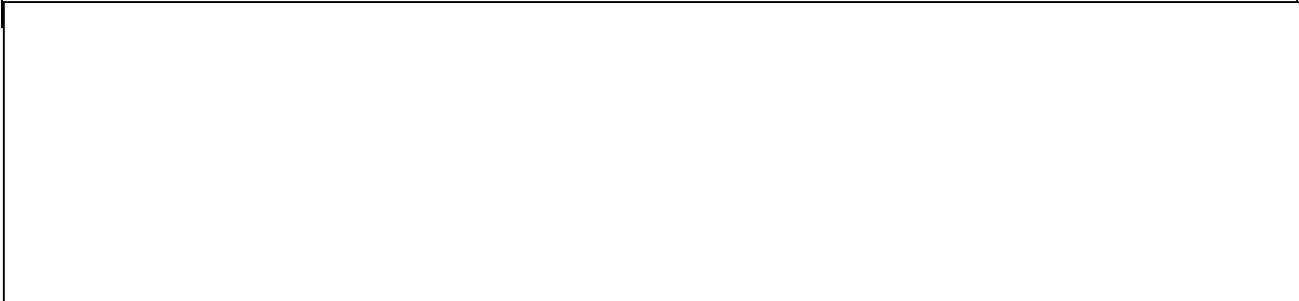
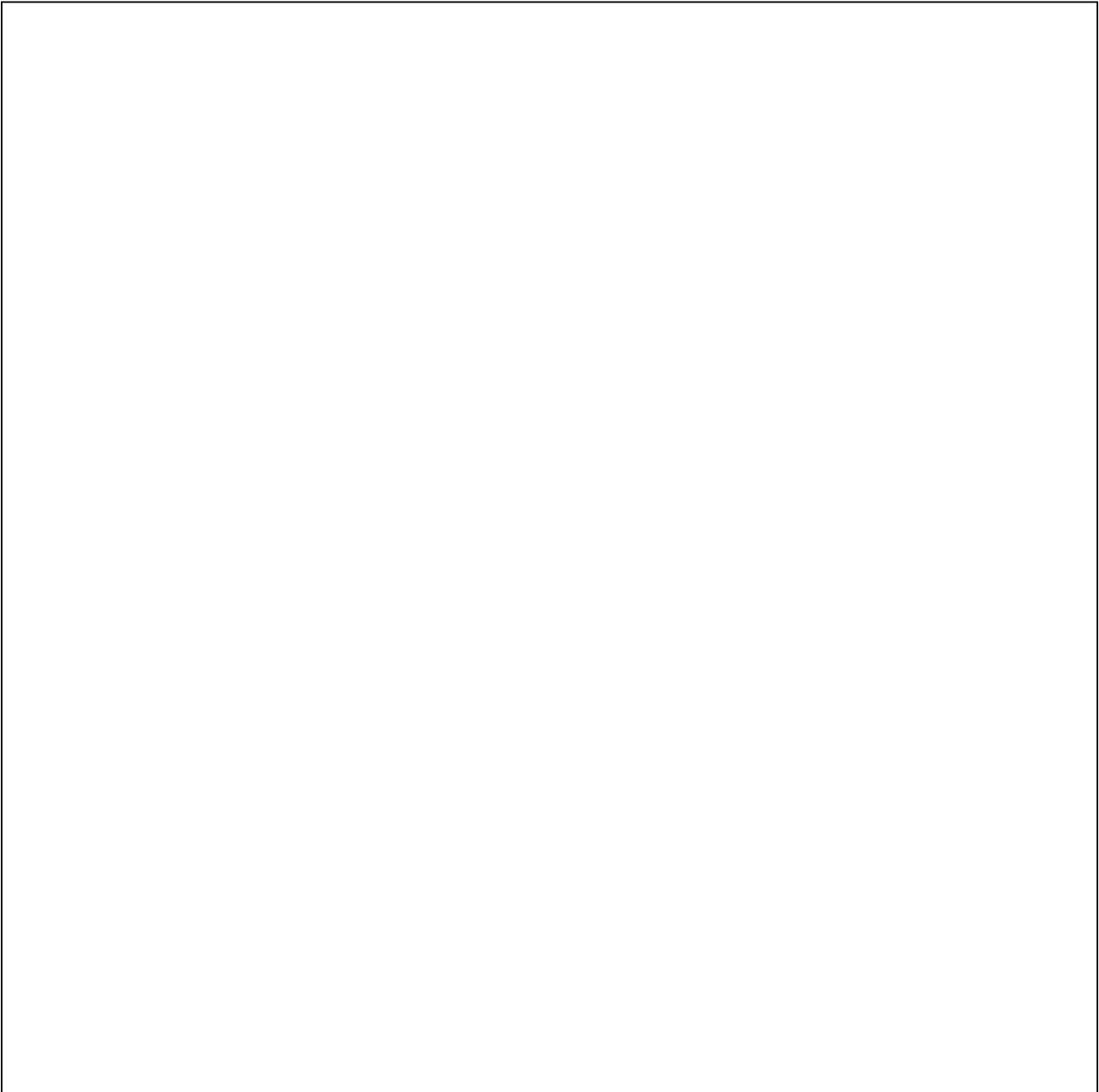


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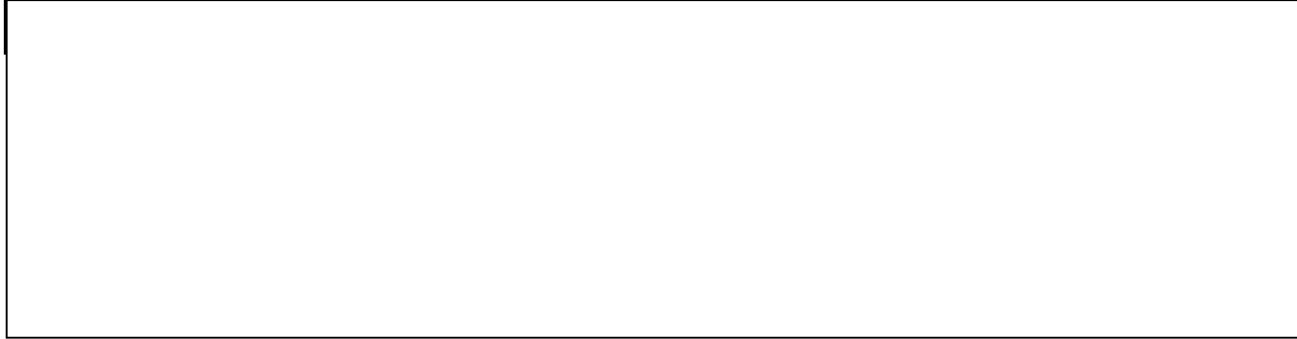
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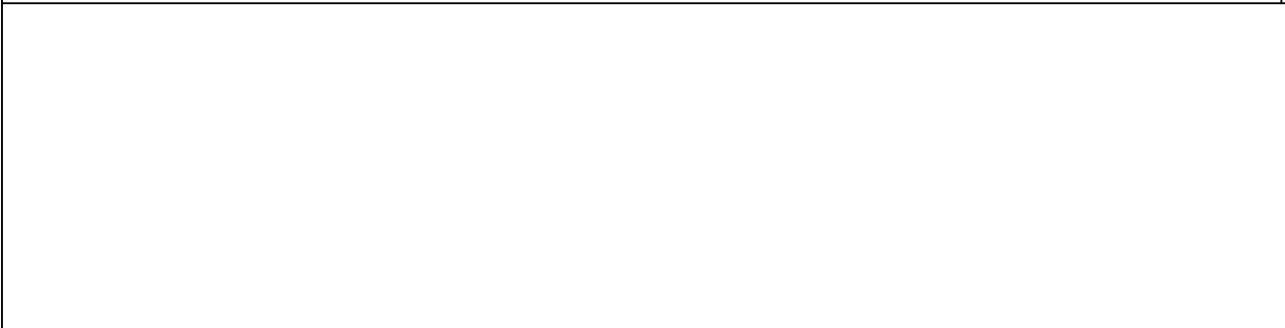
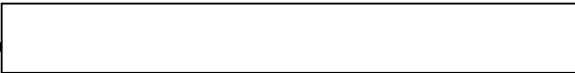
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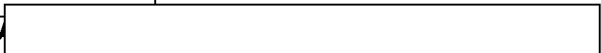
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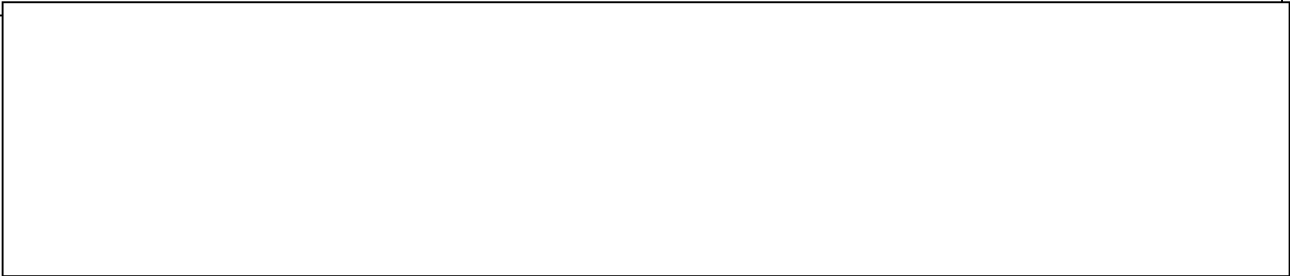
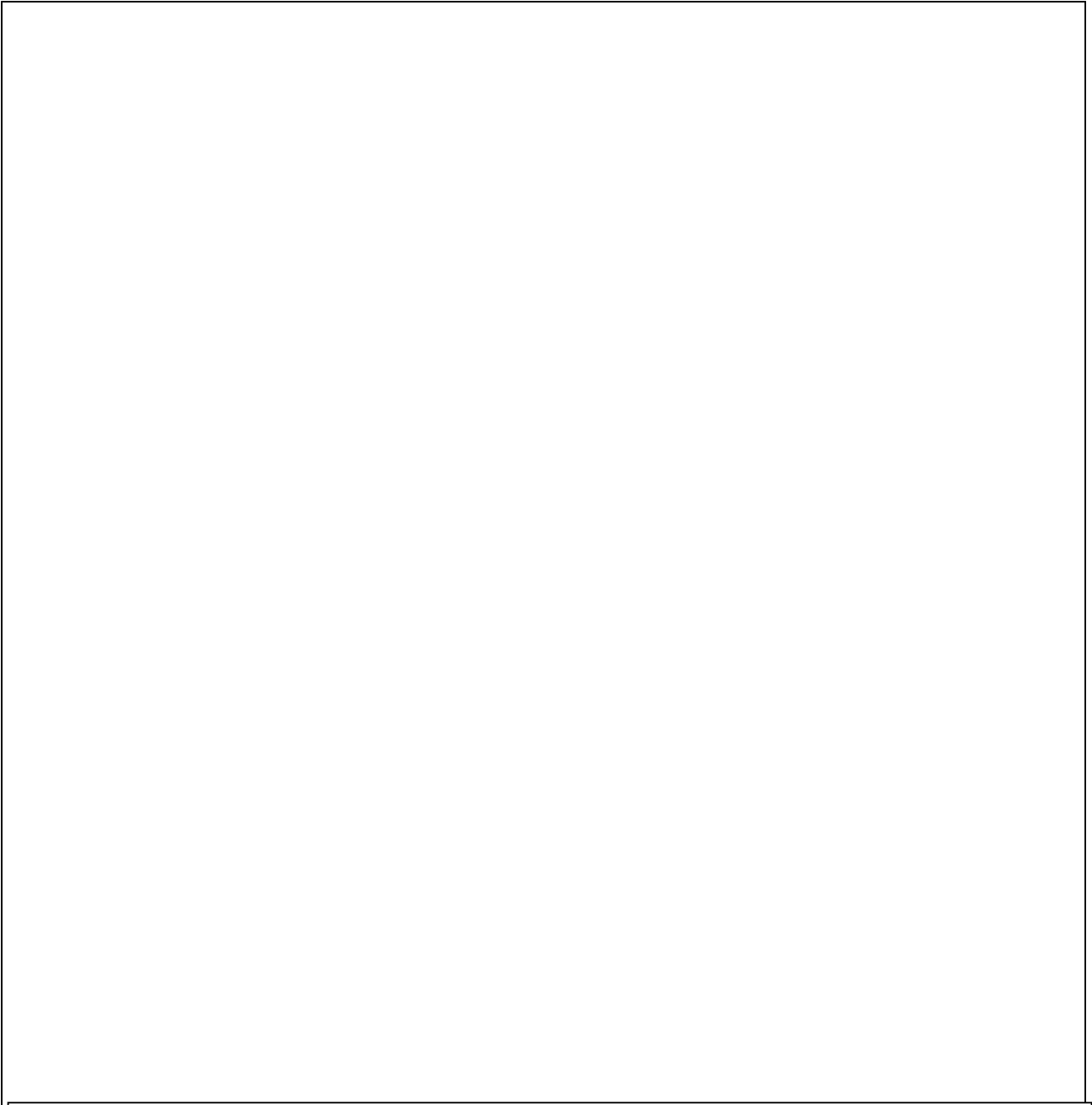
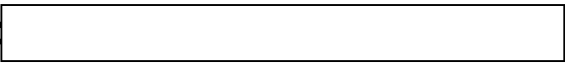


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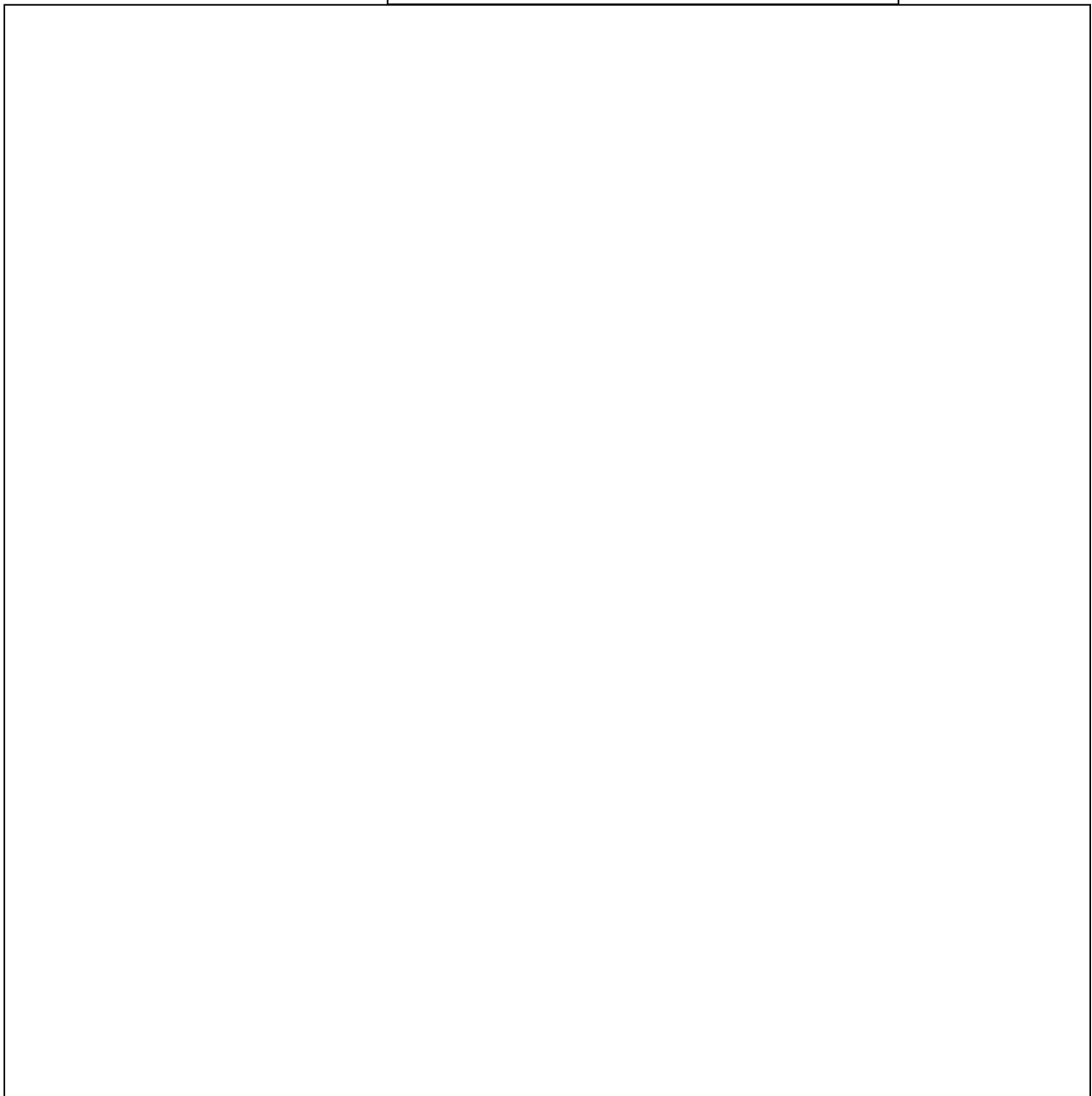
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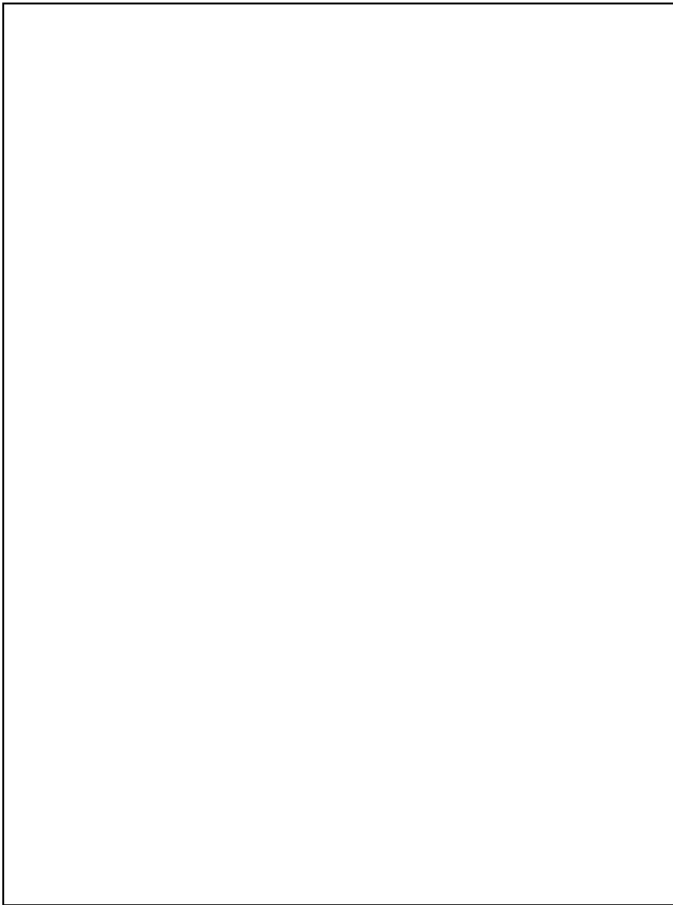


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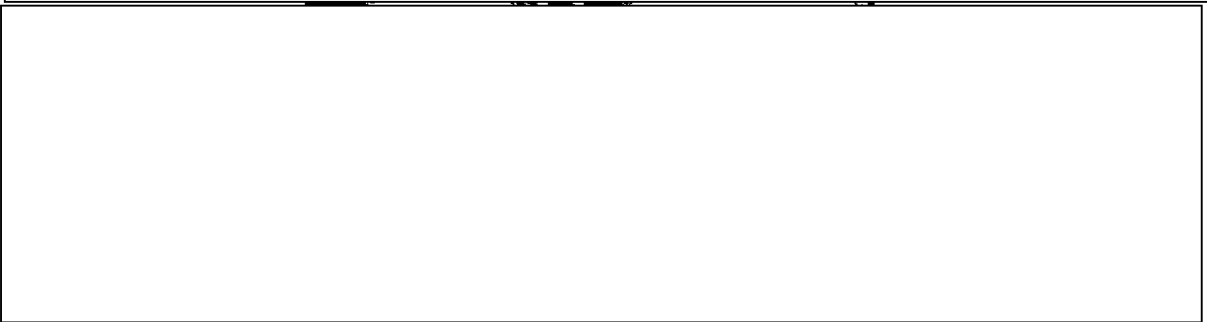
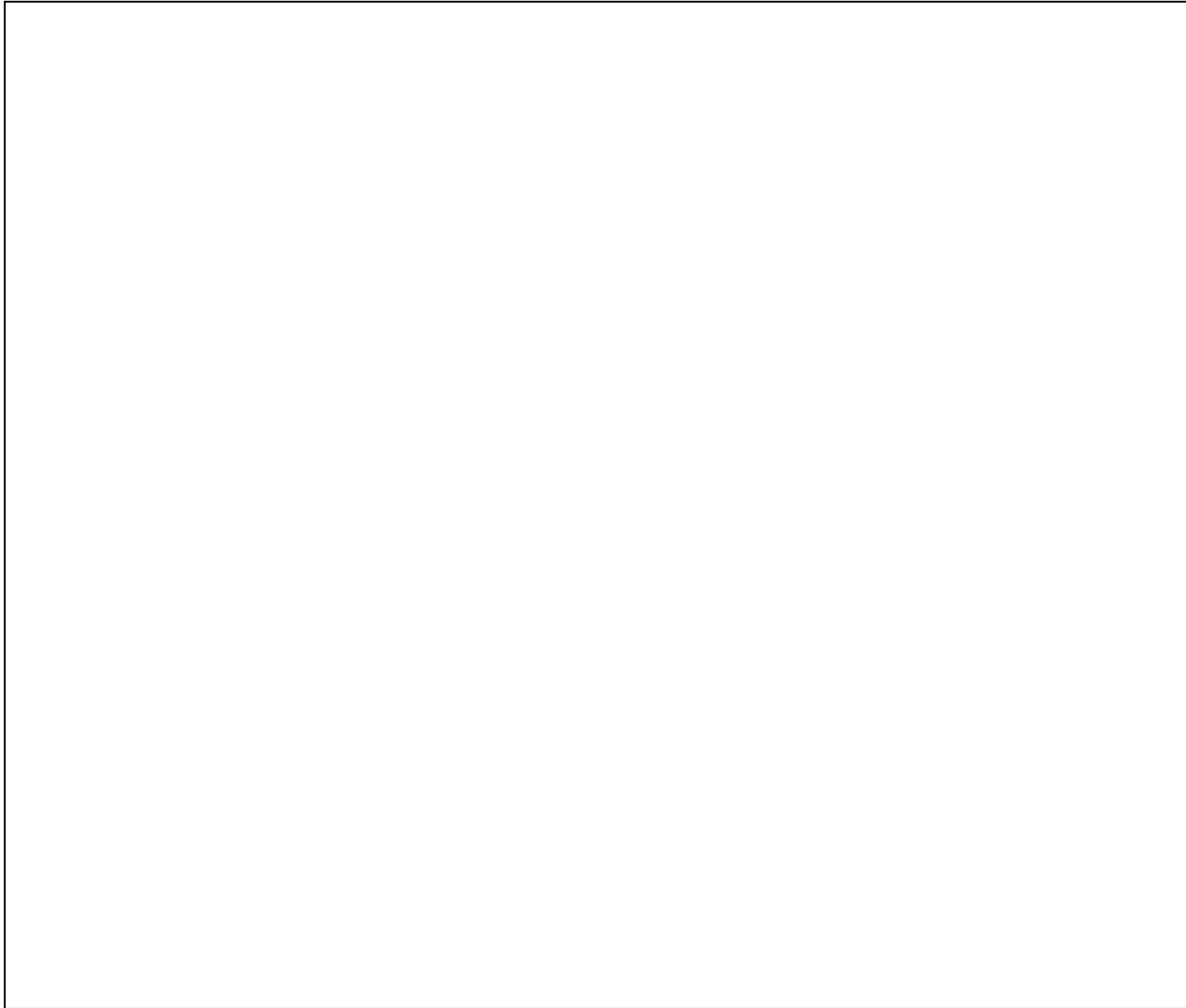


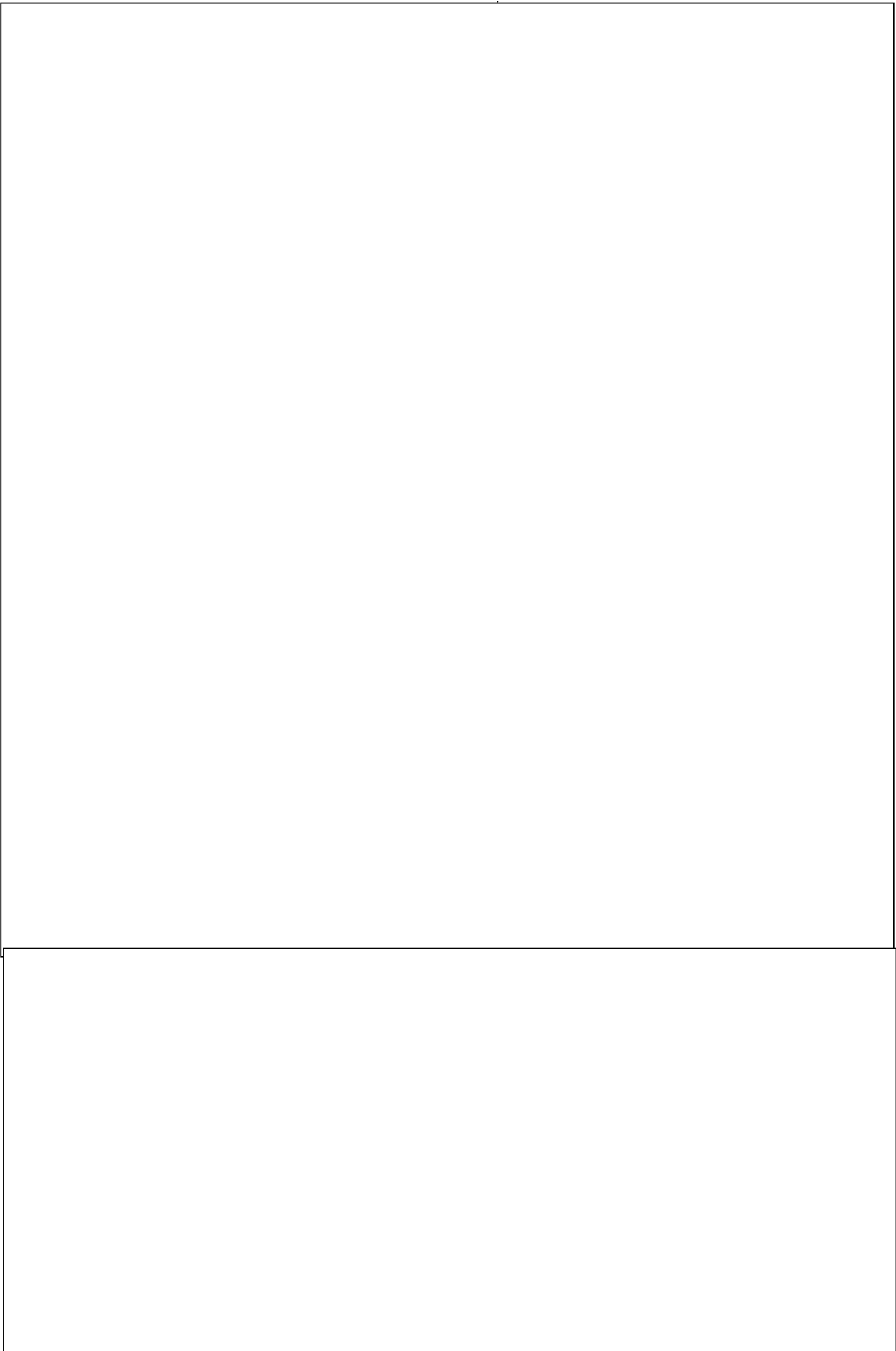
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**(U) Annex A**

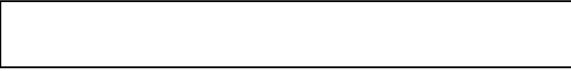
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**(U) Iraq's Attempts to Acquire Aluminum Tubes**





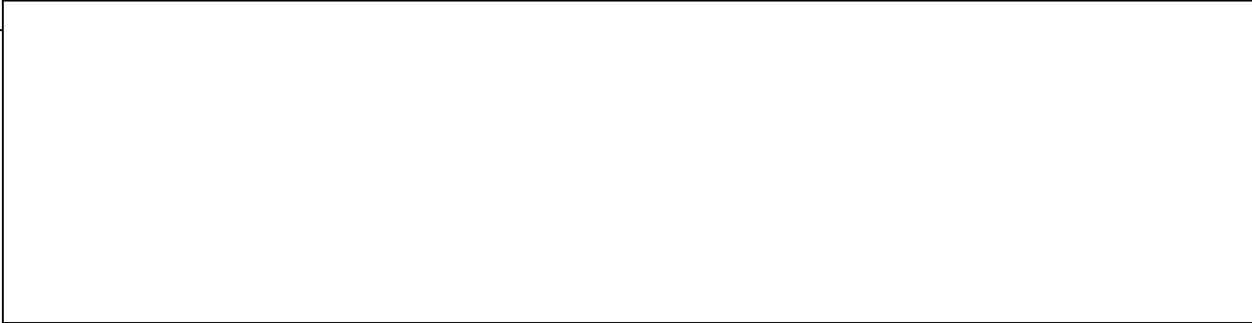
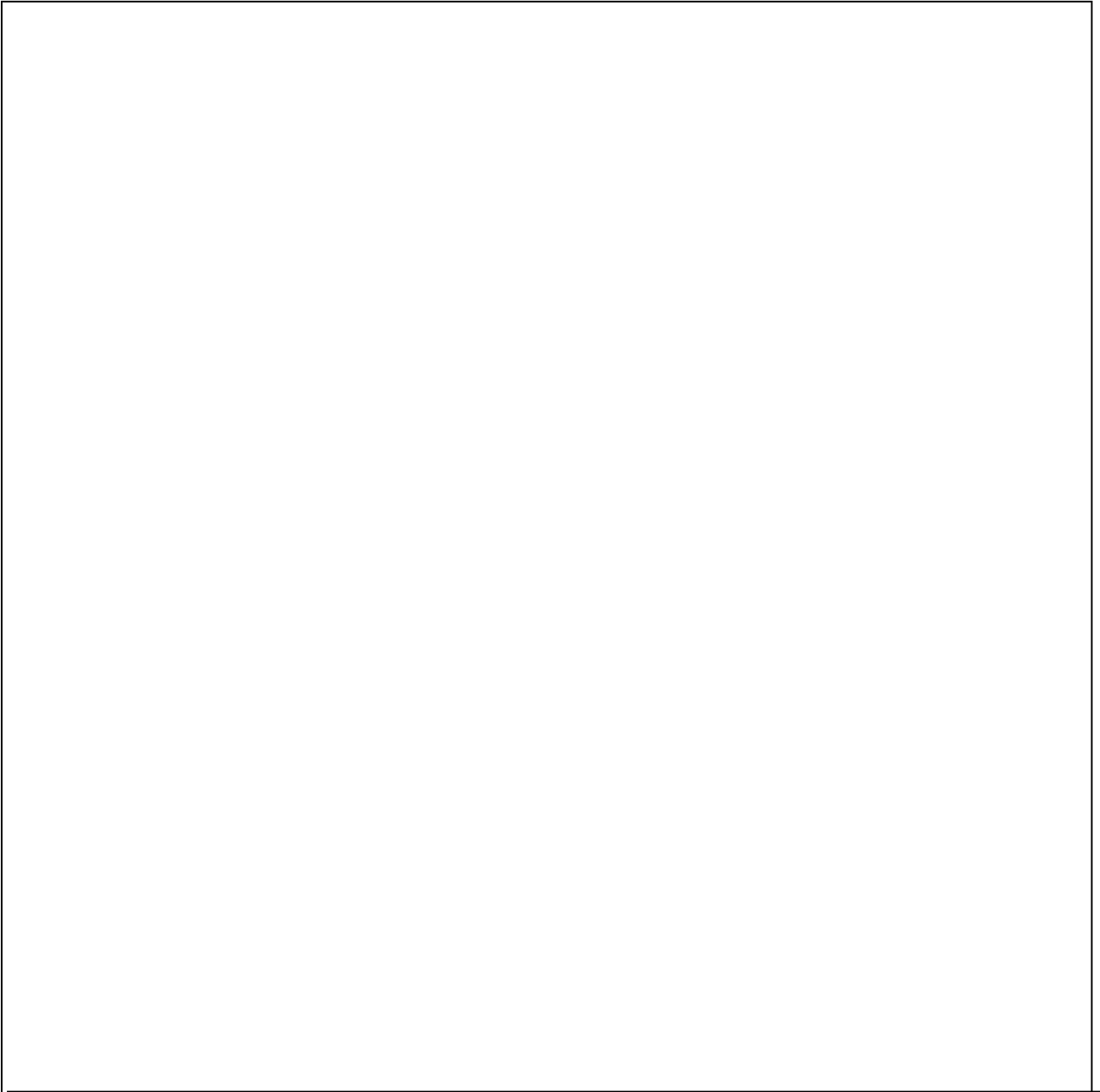
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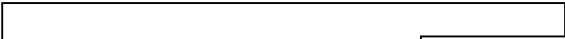
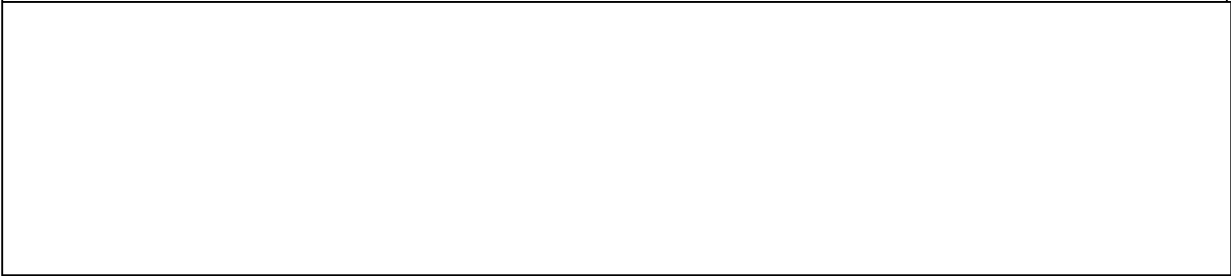
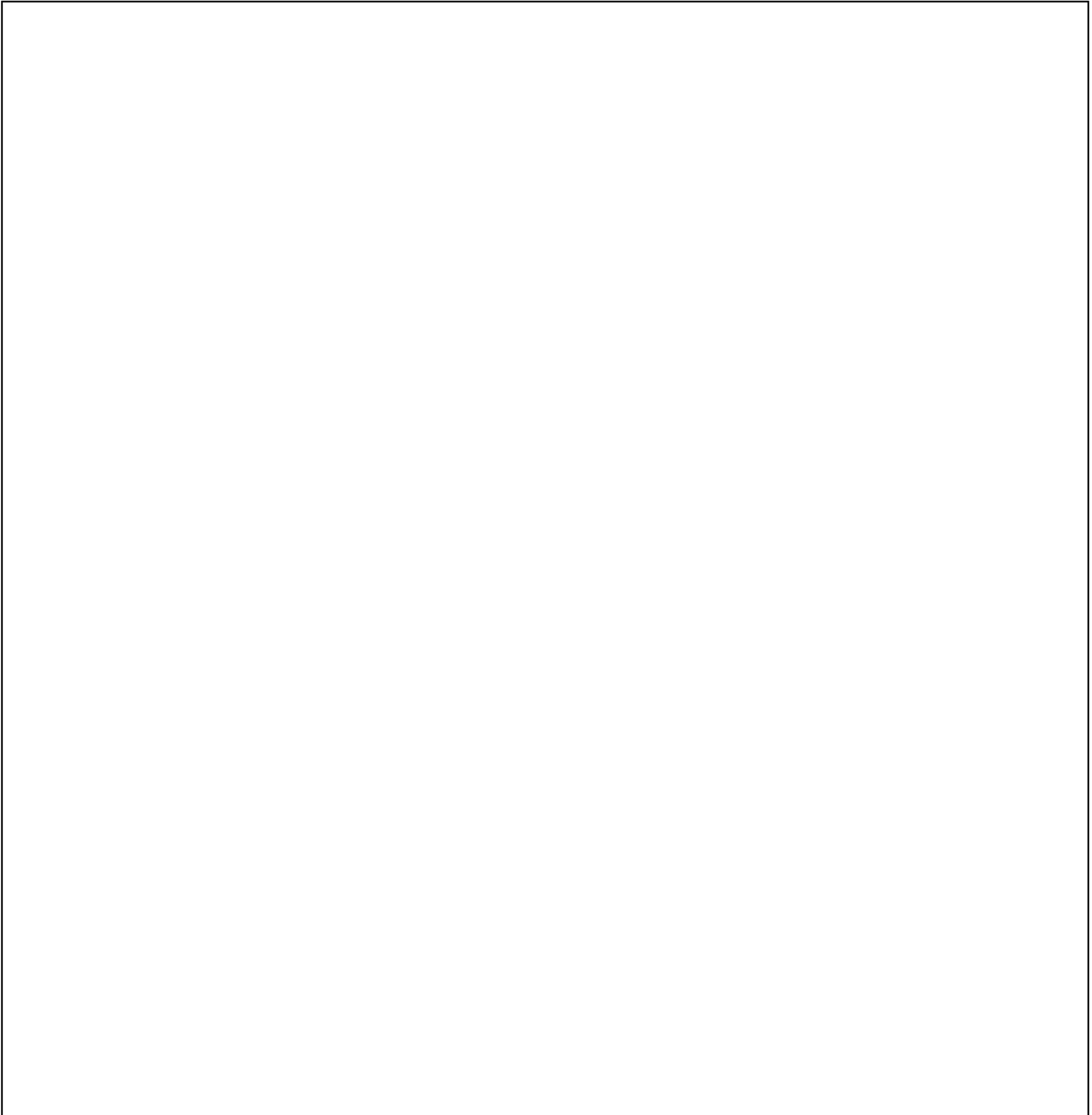
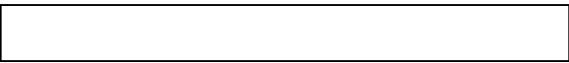


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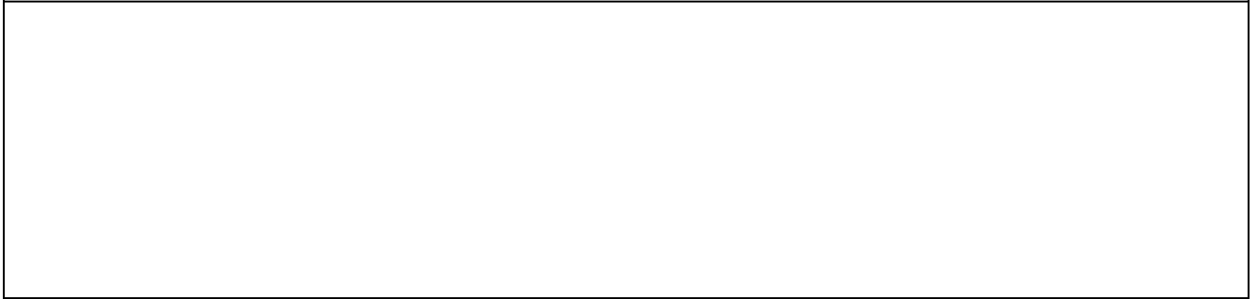
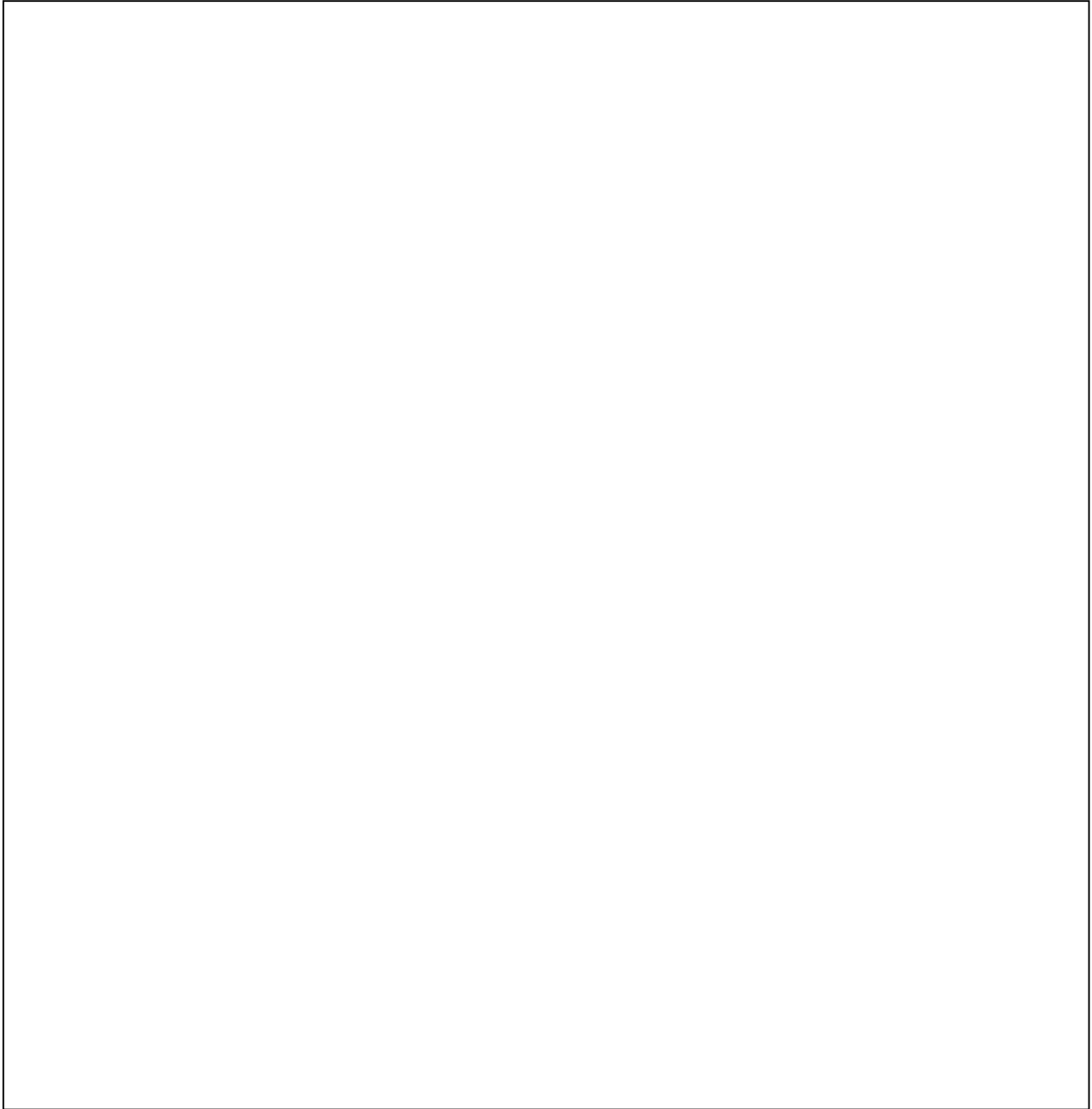


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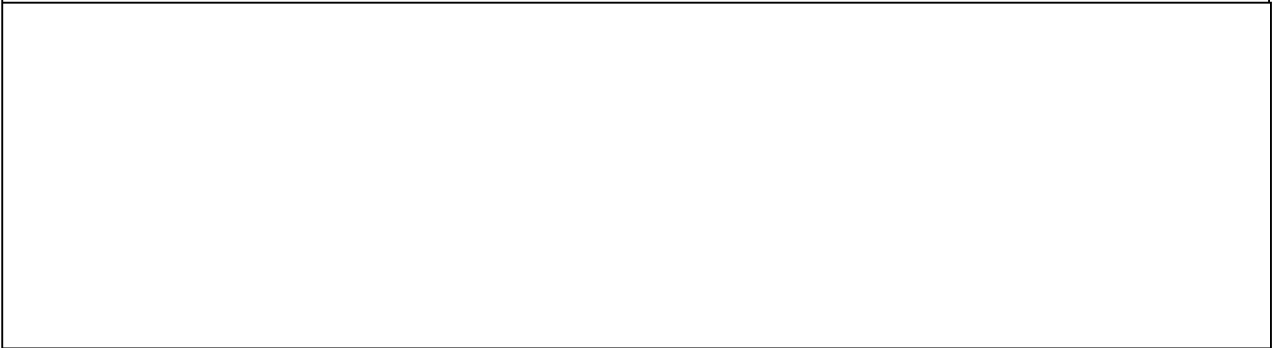
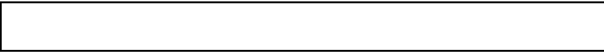


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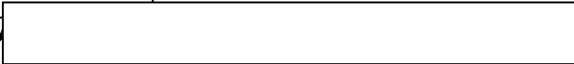


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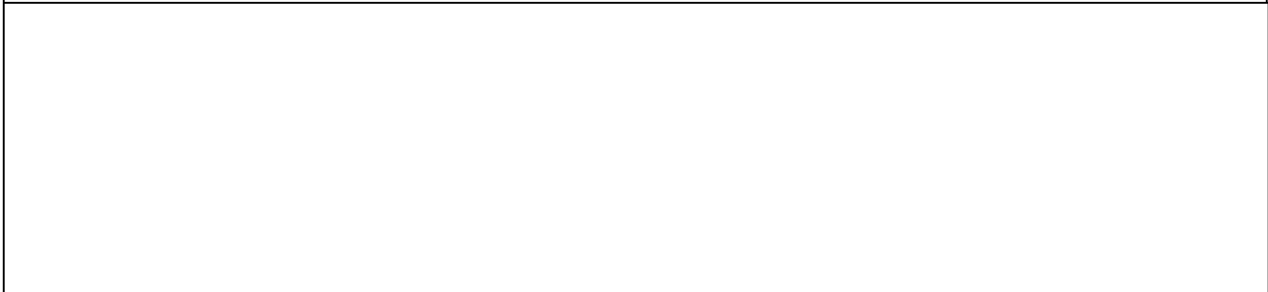
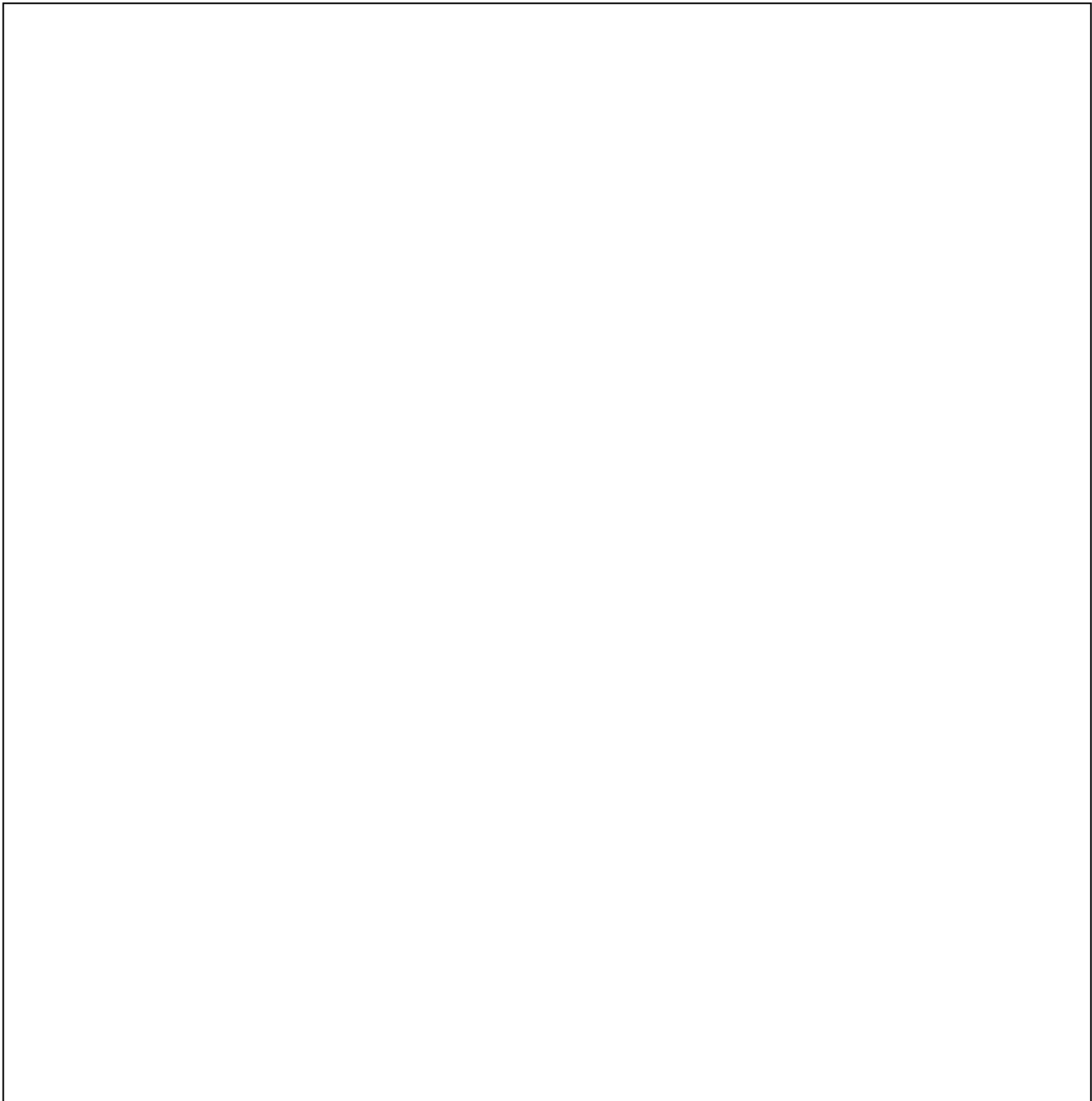
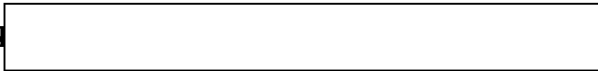
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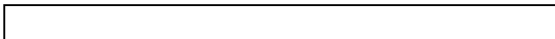
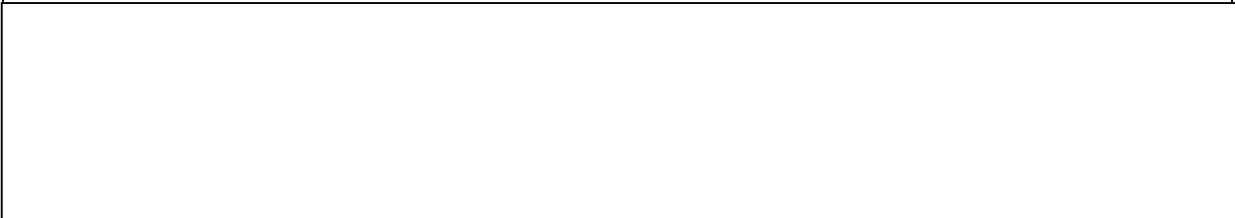
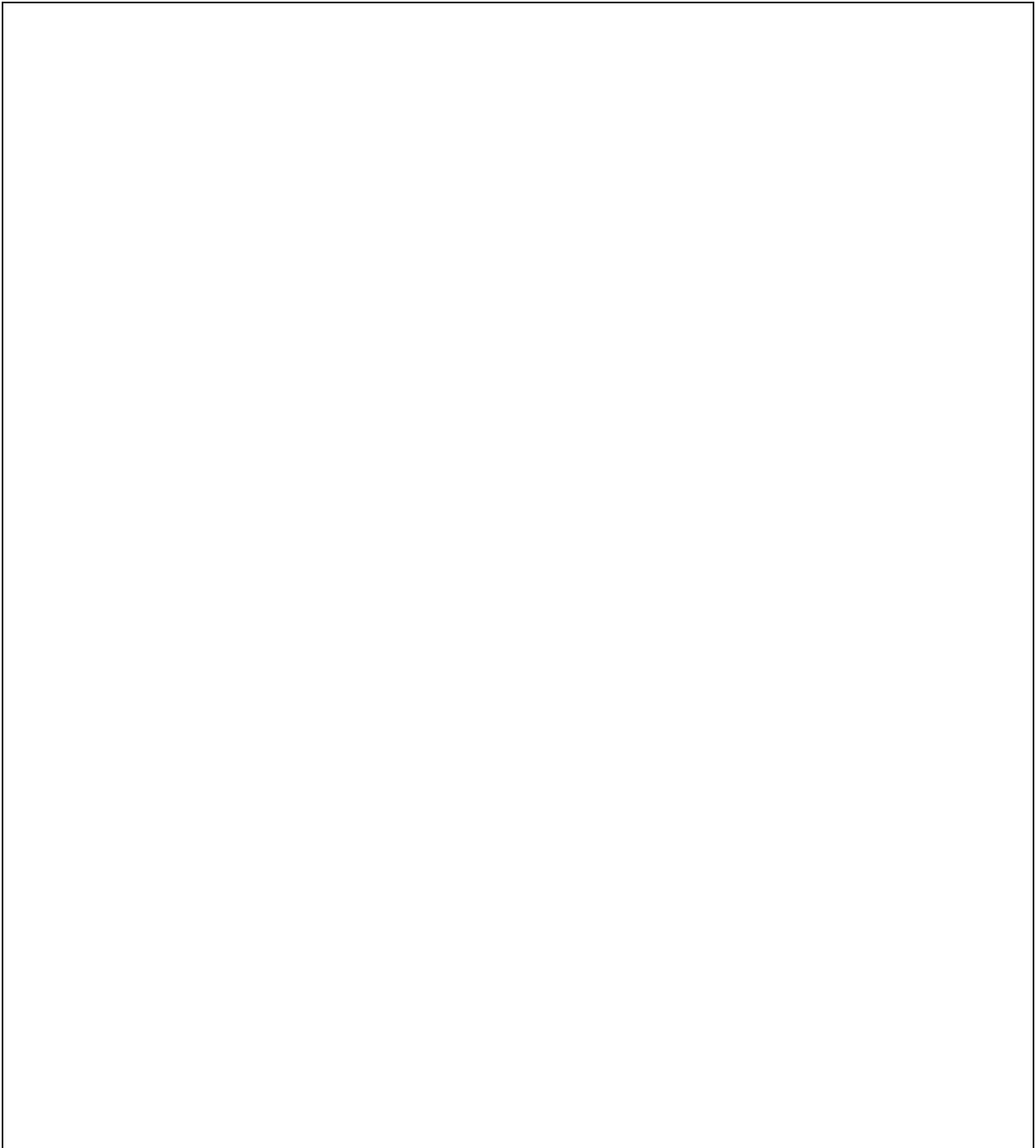
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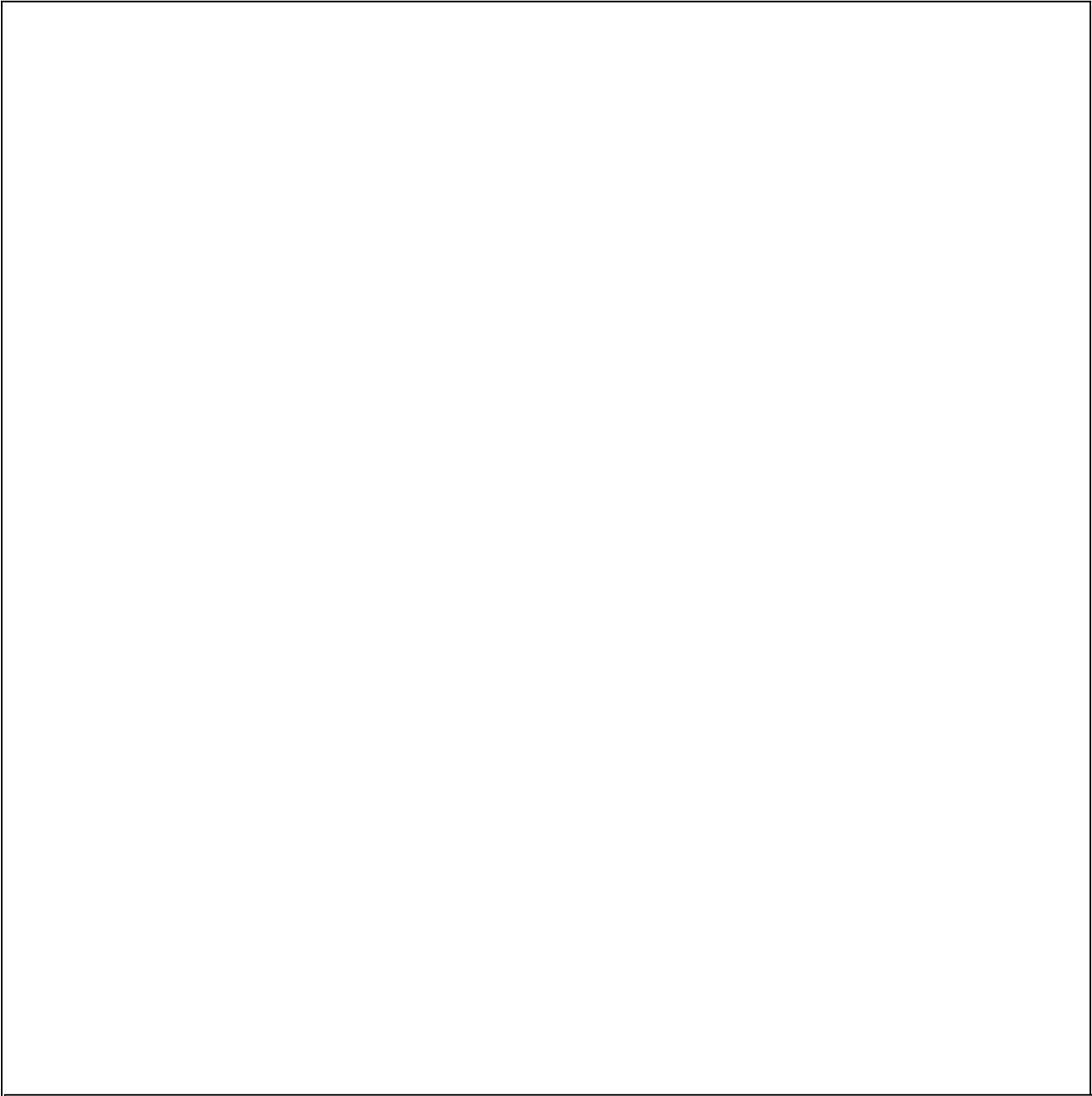
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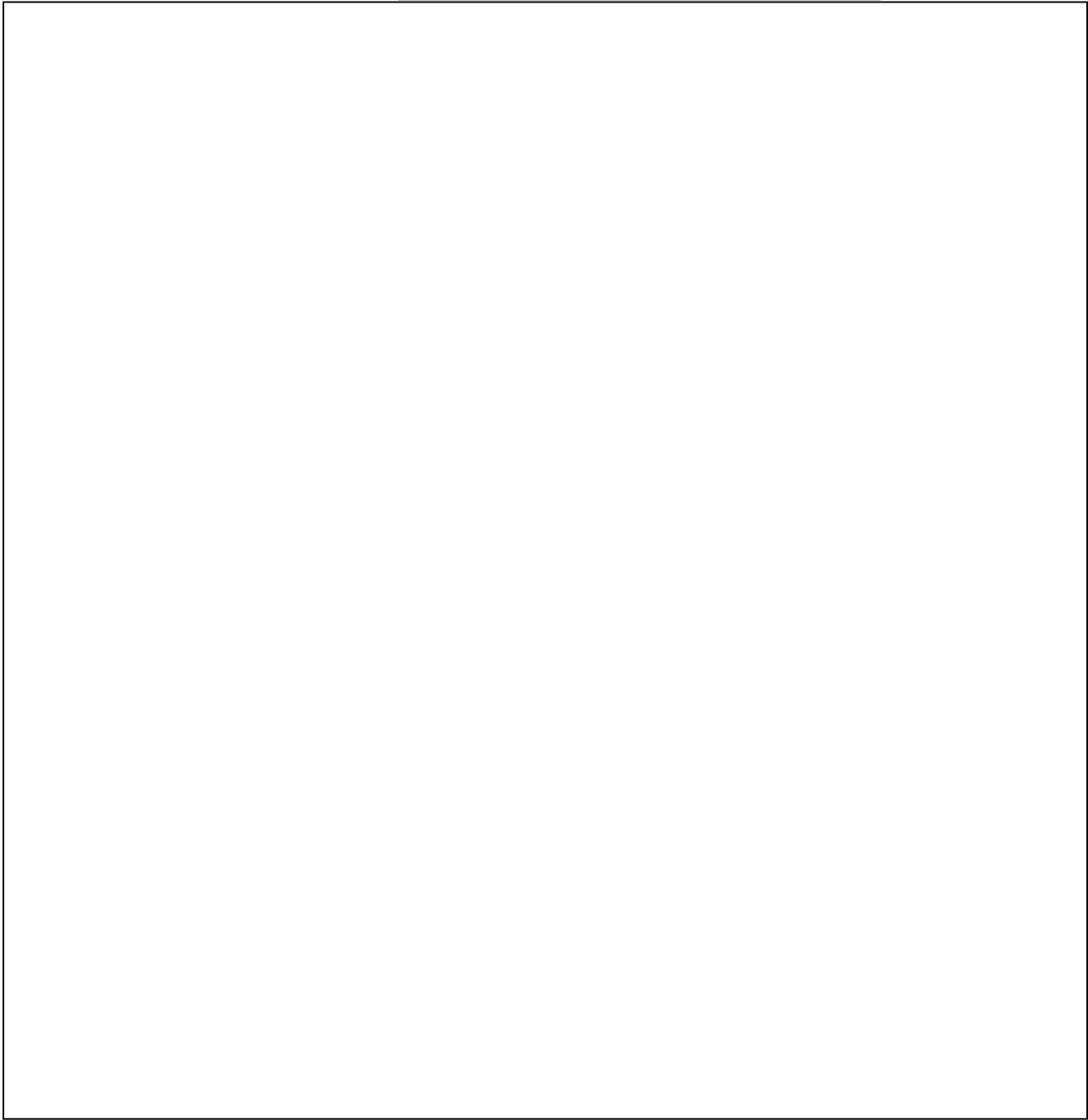


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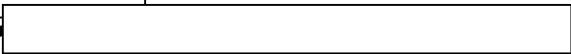
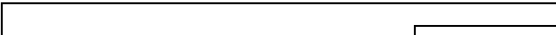


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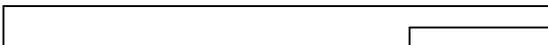
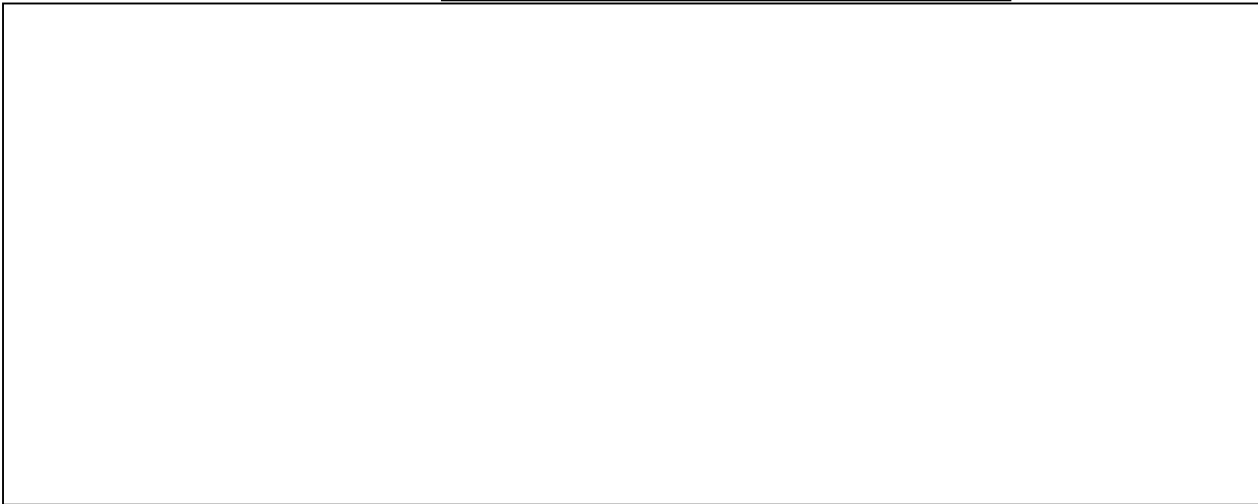
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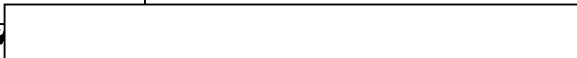
[redacted] **INR's Alternative View: Iraq's Attempts to Acquire Aluminum Tubes**

[redacted] Some of the specialized but dual-use items being sought are, by all indications, bound for Iraq's missile program. Other cases are ambiguous, such as that of a planned magnet-production line whose suitability for centrifuge operations remains unknown. Some efforts involve non-controlled industrial material and equipment—including a variety of machine tools—and are troubling because they would help establish the infrastructure for a renewed nuclear program. But such efforts (which began well before the inspectors departed) are not clearly linked to a nuclear end-use. Finally, the claims of Iraqi pursuit of natural uranium in Africa are, in INR's assessment, highly dubious.

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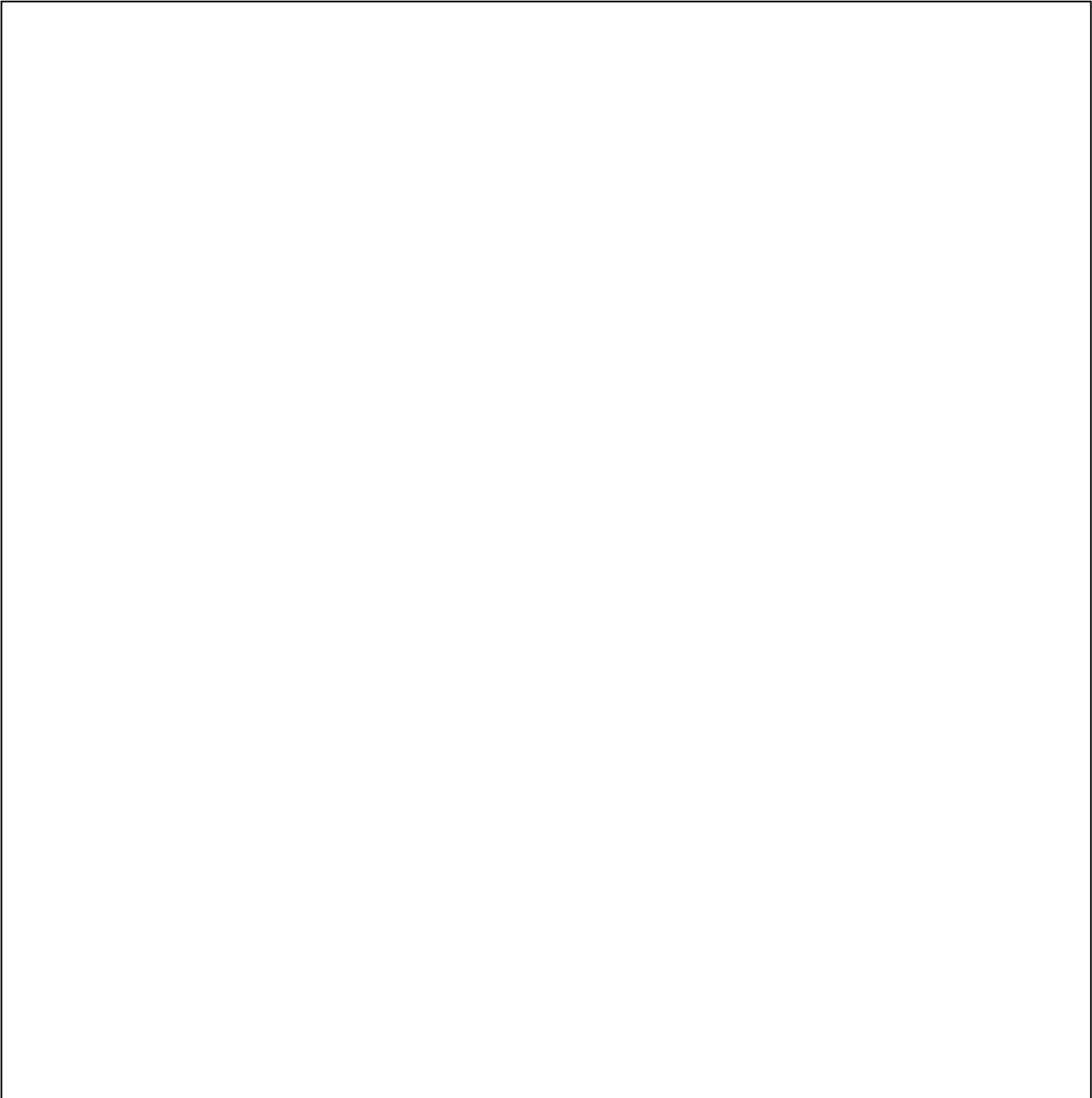


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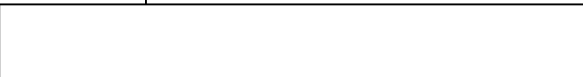




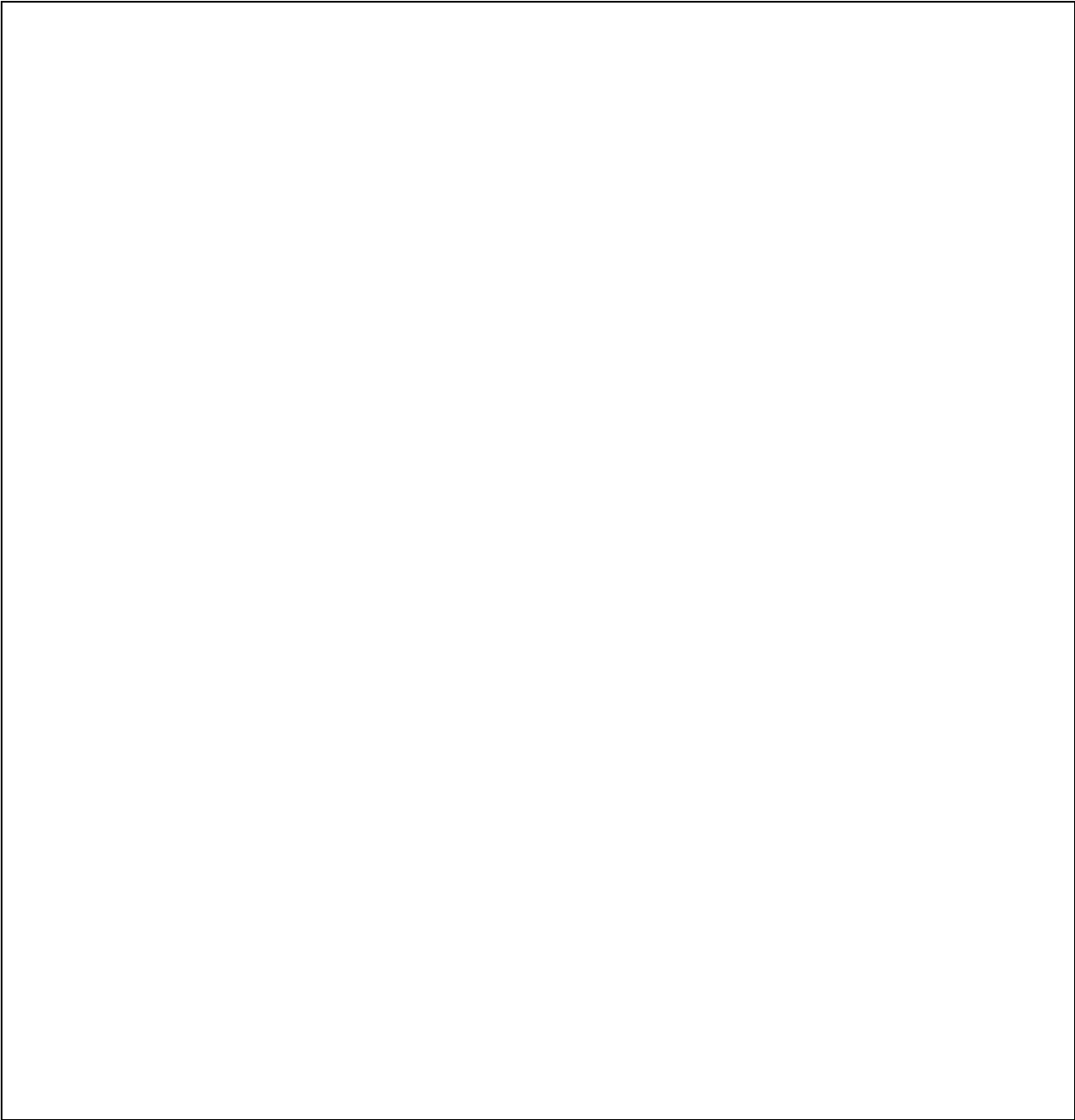
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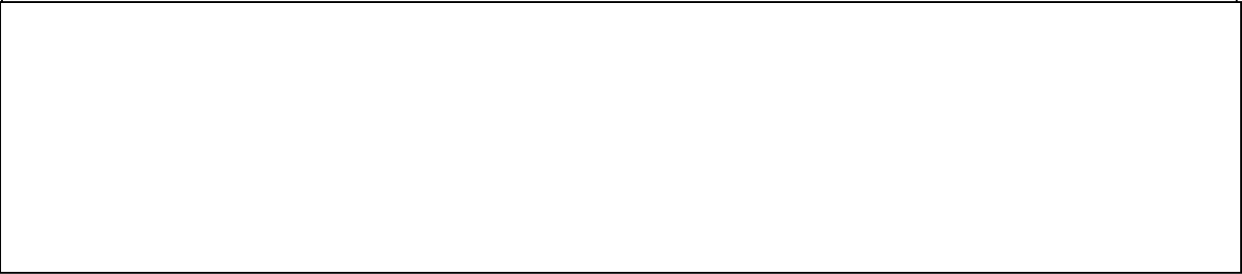
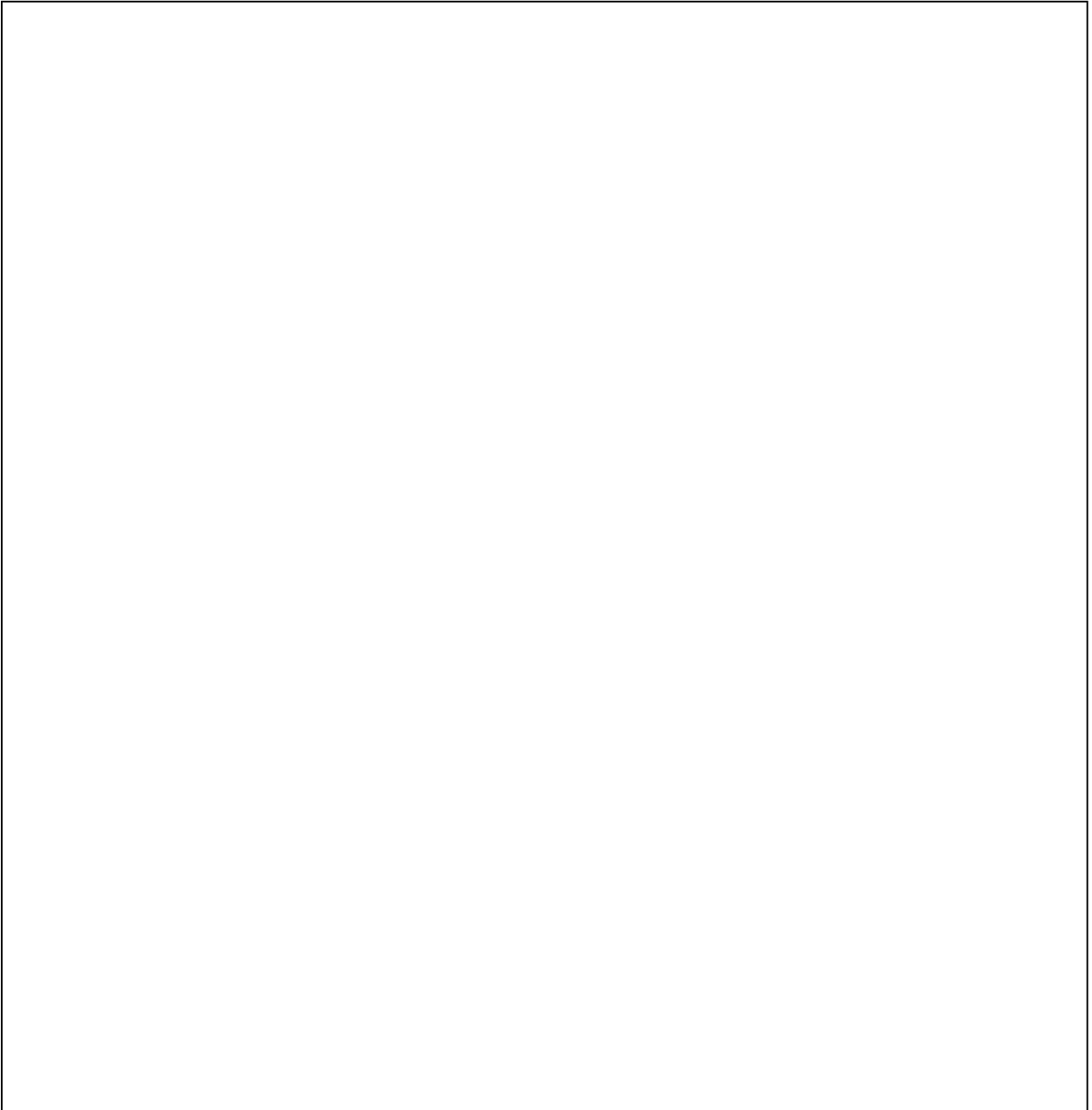
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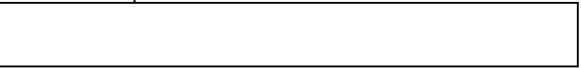
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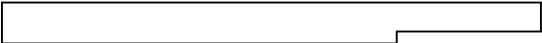
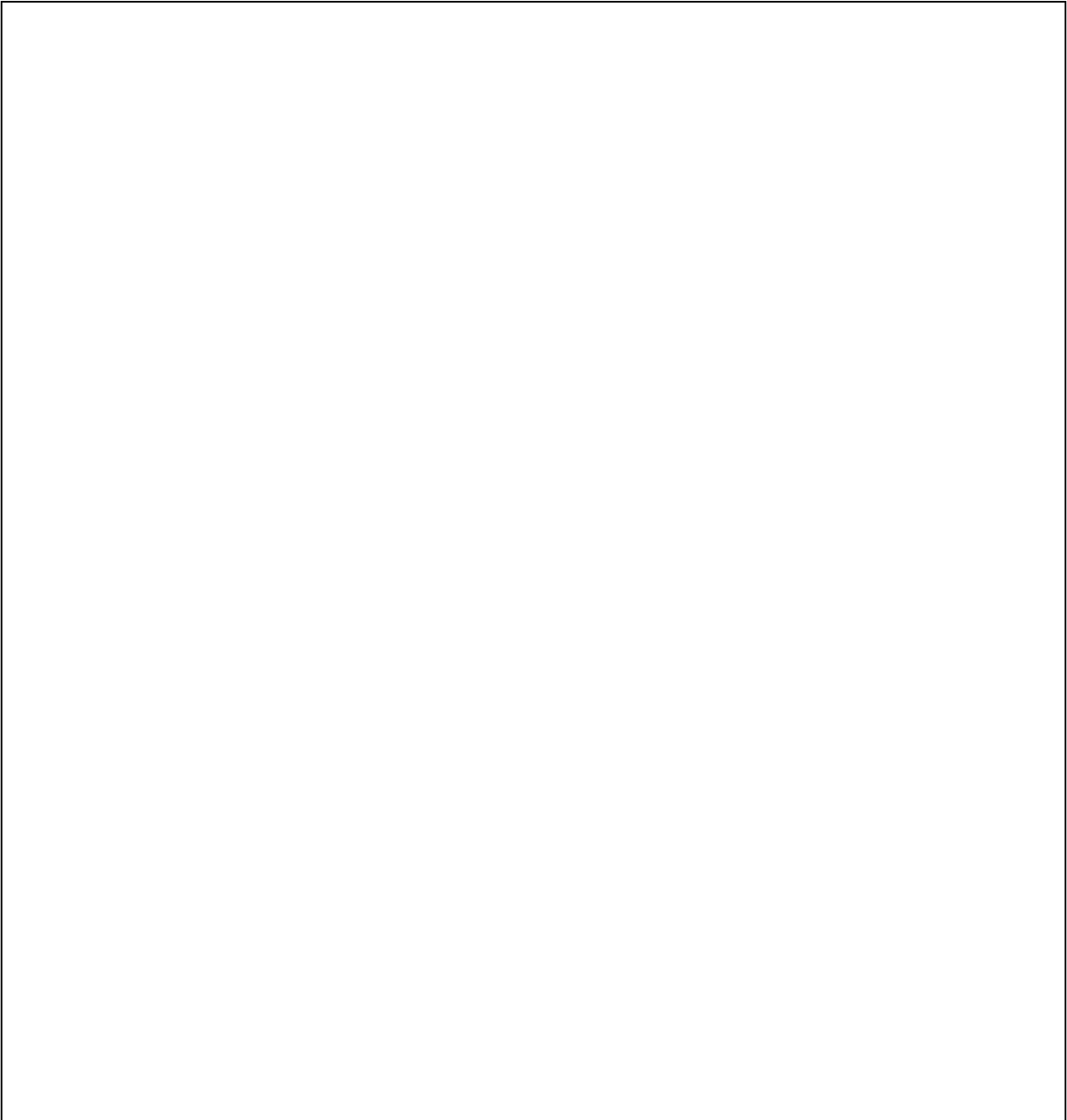
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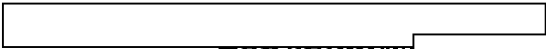
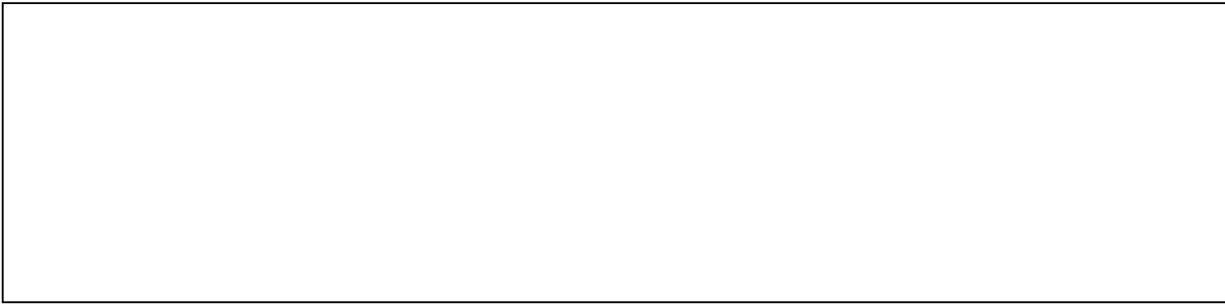
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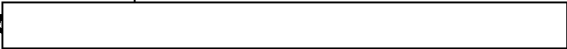
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The National Intelligence Council

**The National Intelligence Council (NIC) manages the Intelligence Community's estimative process, incorporating the best available expertise inside and outside the government. It reports to the Director of Central Intelligence in his capacity as head of the US Intelligence Community and speaks authoritatively on substantive issues for the Community as a whole.**

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*Unclassified*

**National Security  
Information**

~~Unauthorized Disclosure  
Subject to Criminal Sanctions~~

**Information available as of 1 October 2002 was used in  
the preparation of this National Intelligence Estimate**

**The following intelligence organizations participated  
in the preparation of this Estimate:**

The Central Intelligence Agency

The Defense Intelligence Agency

The National Security Agency

National Imaging and Mapping Agency

The Bureau of Intelligence and Research,  
Department of State

The Department of Energy

**Also participating:**

The Deputy Chief of Staff for Intelligence,  
Department of the Army

The Director of Naval Intelligence,  
Department of the Navy

The Director, Intelligence, Surveillance, and Reconnaissance,  
Department of the US Air Force

The Director of Intelligence, Headquarters,  
Marine Corps

**This Estimate was approved for publication by the National  
Foreign Intelligence Board under the authority of the  
Director of Central Intelligence.**

