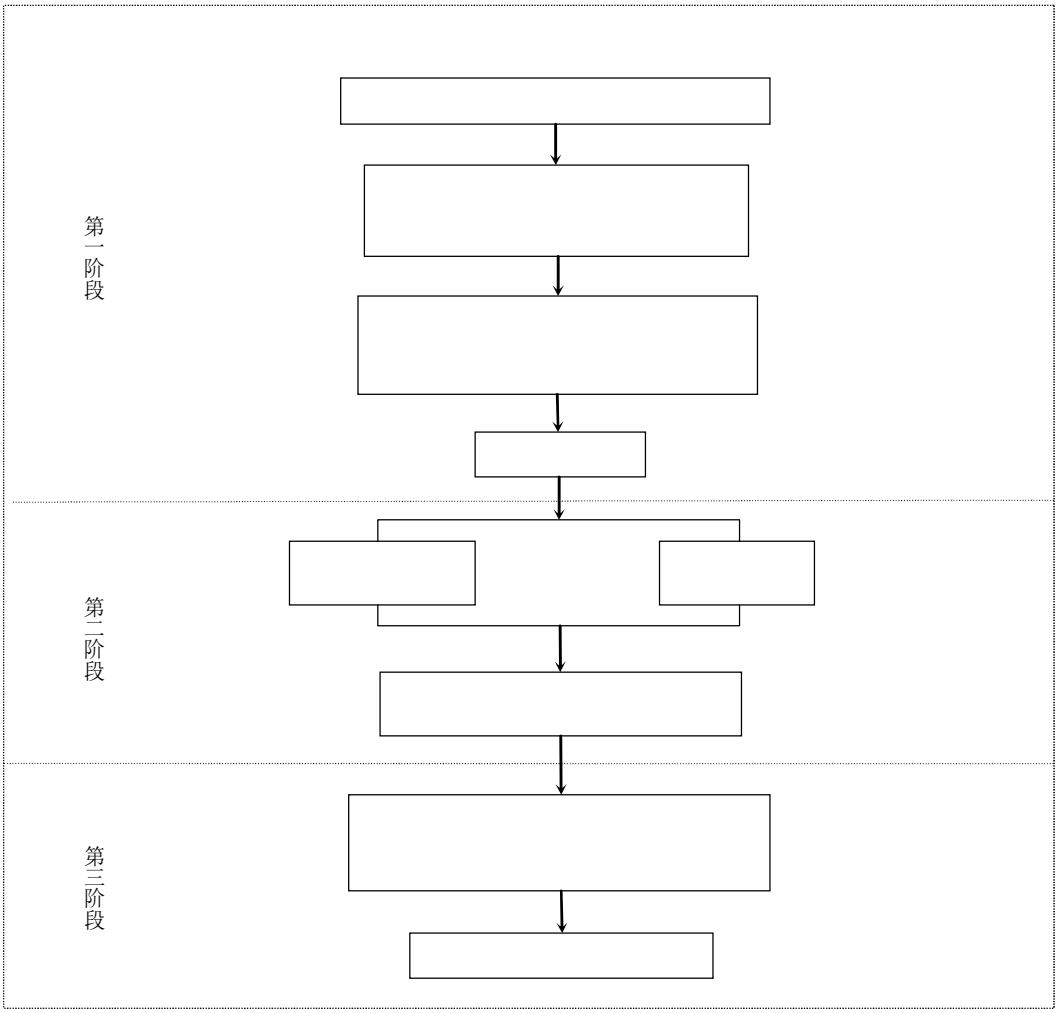
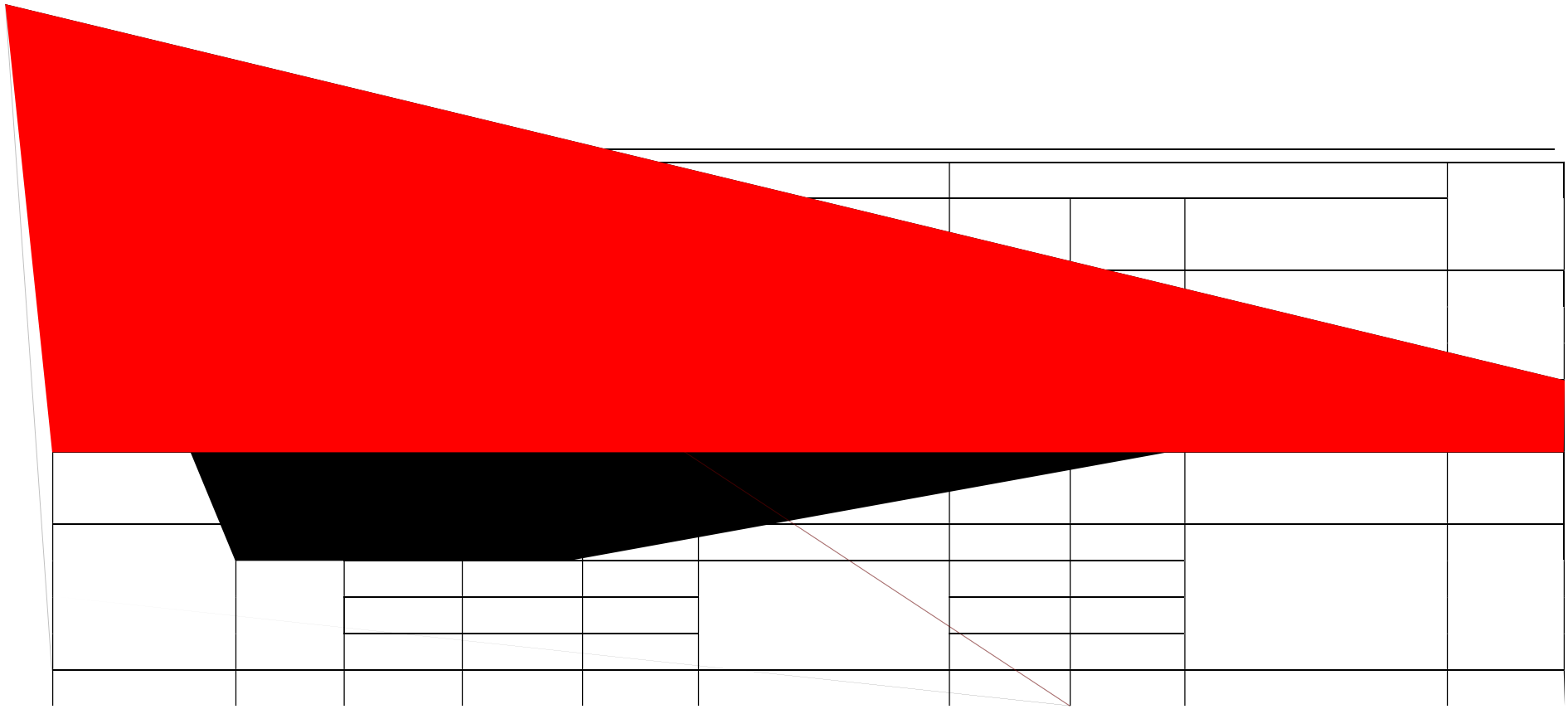
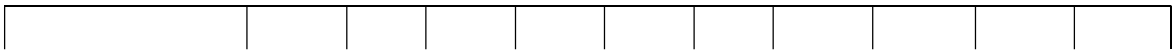
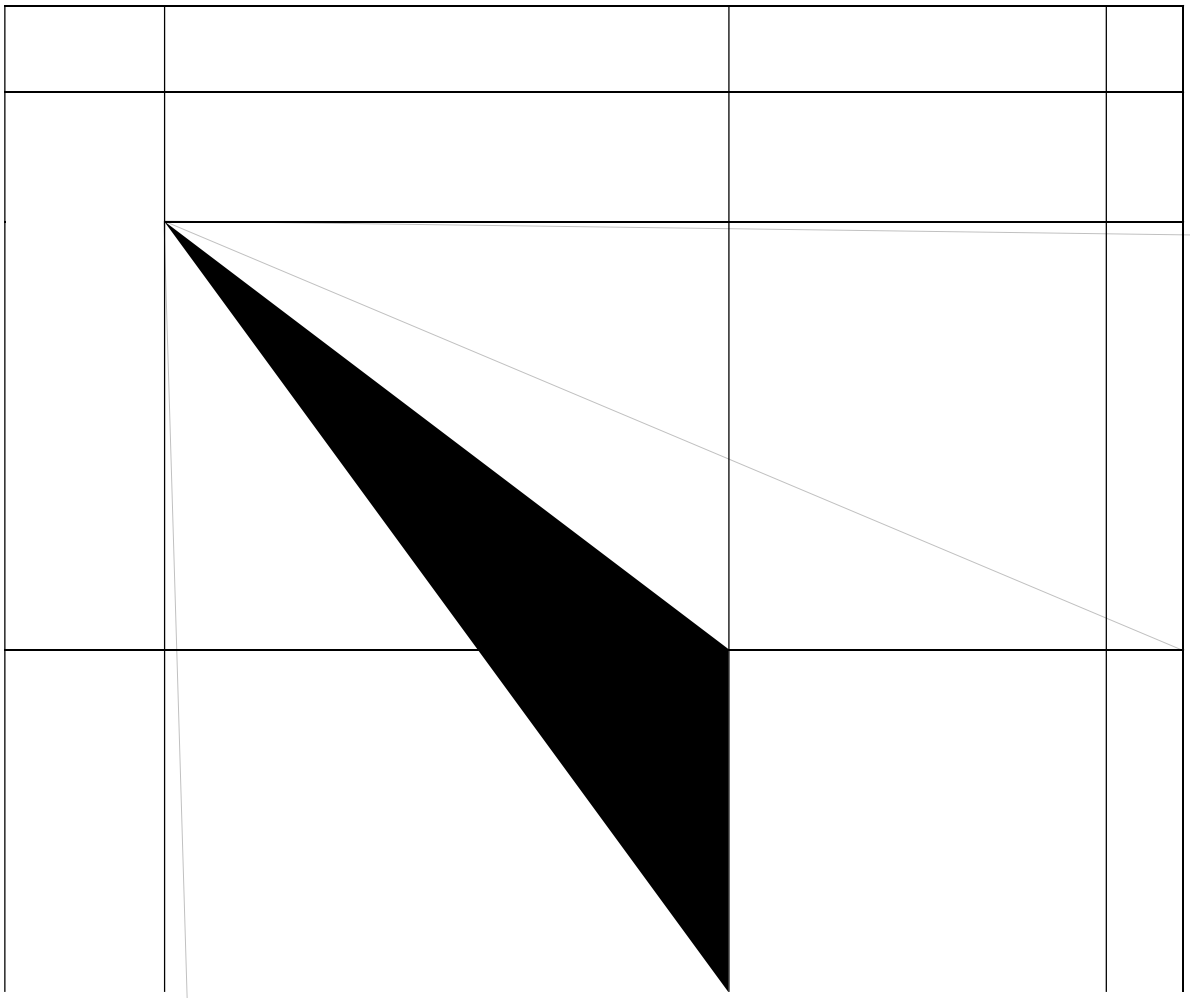

第一阶段
第二阶段
第三阶段







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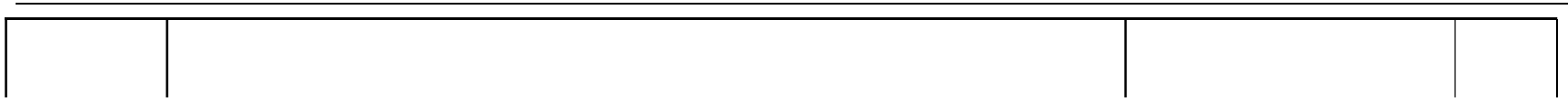
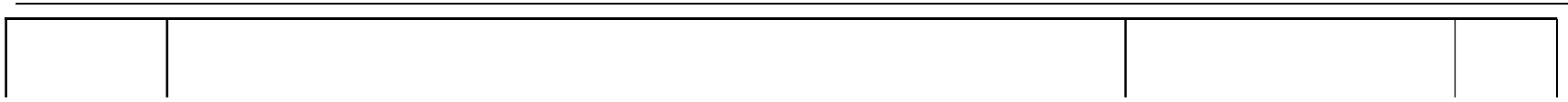
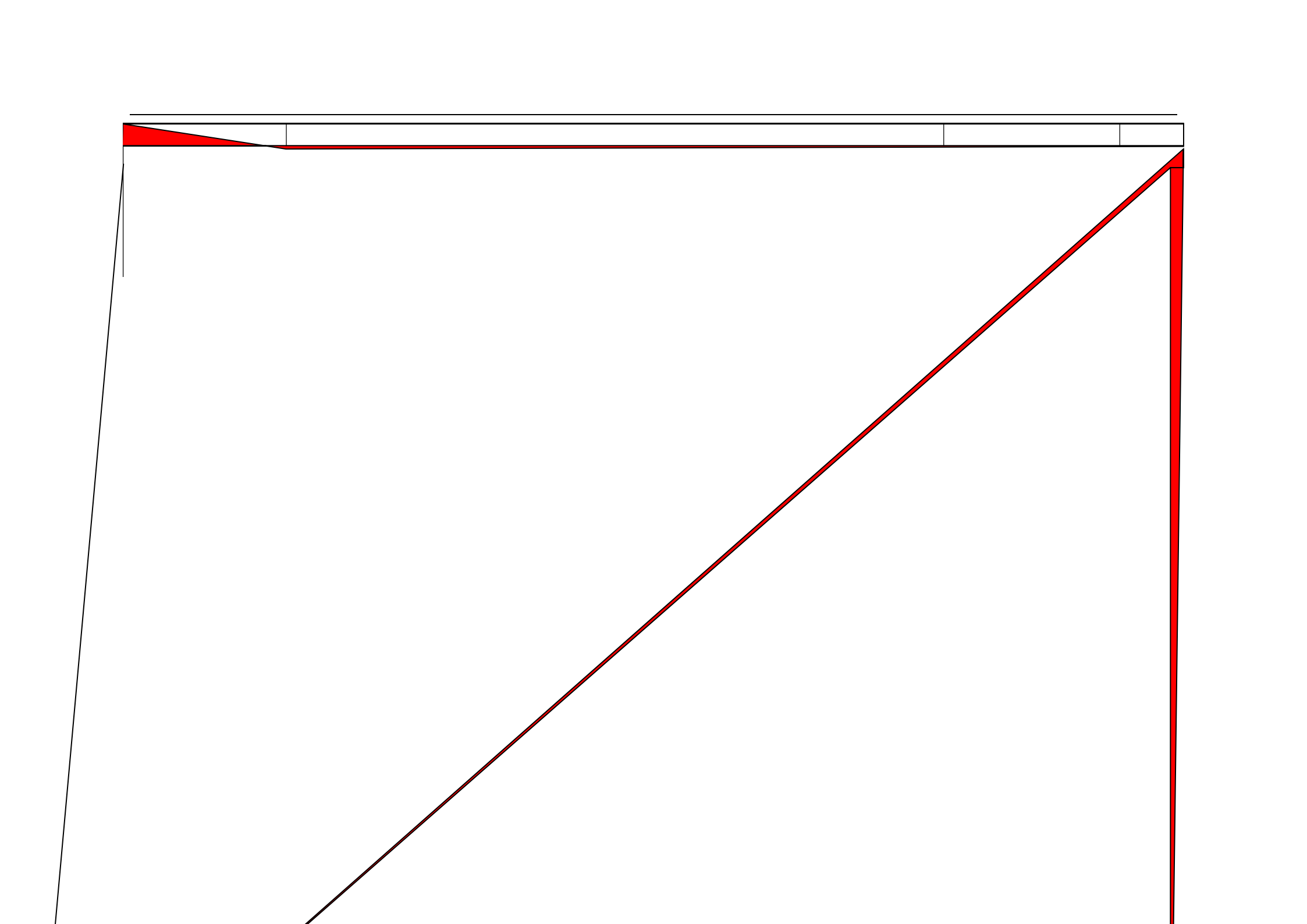
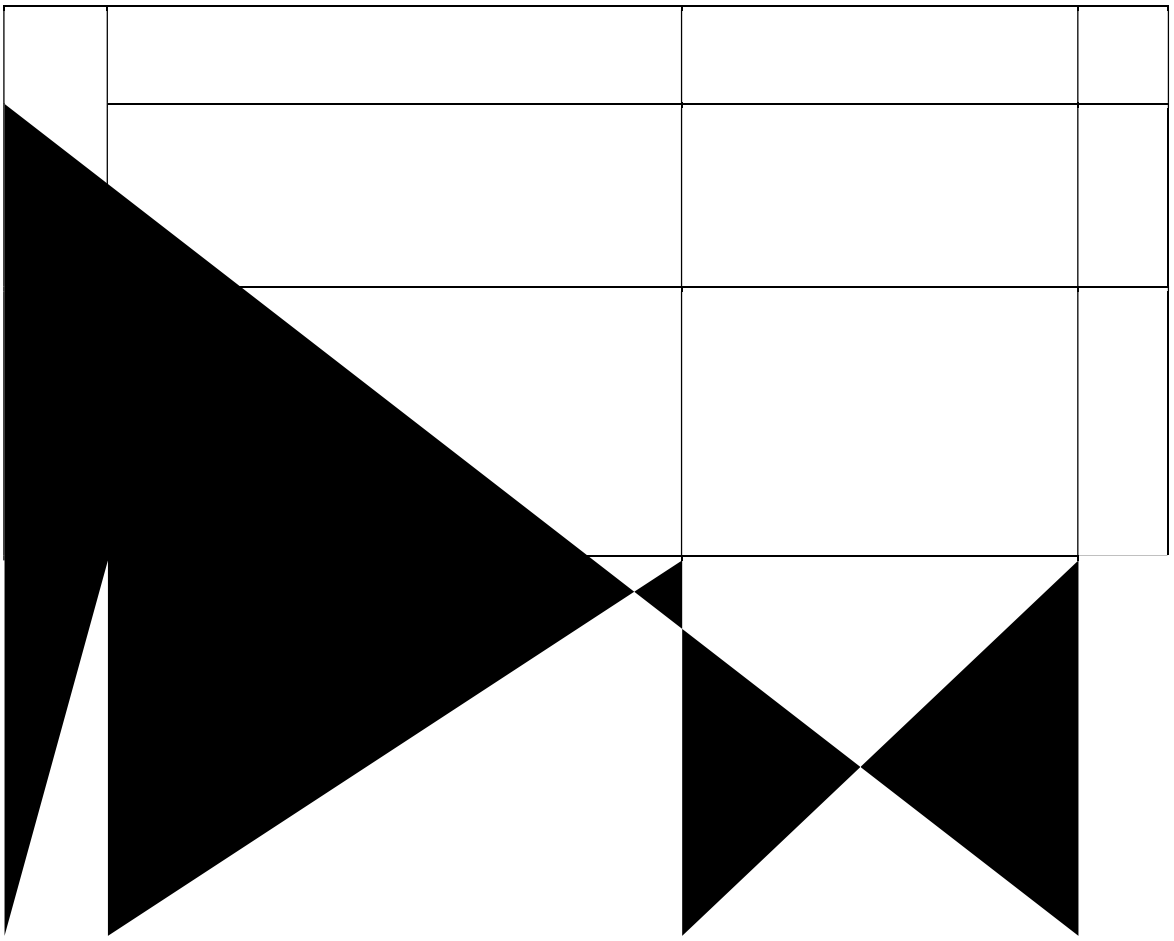
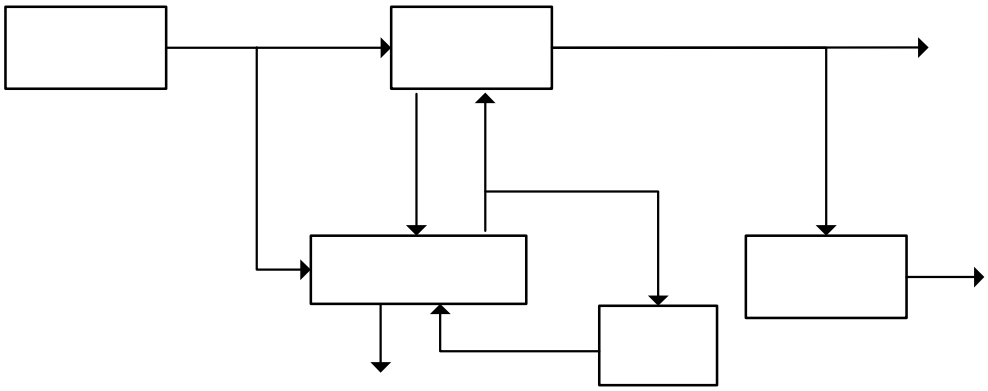
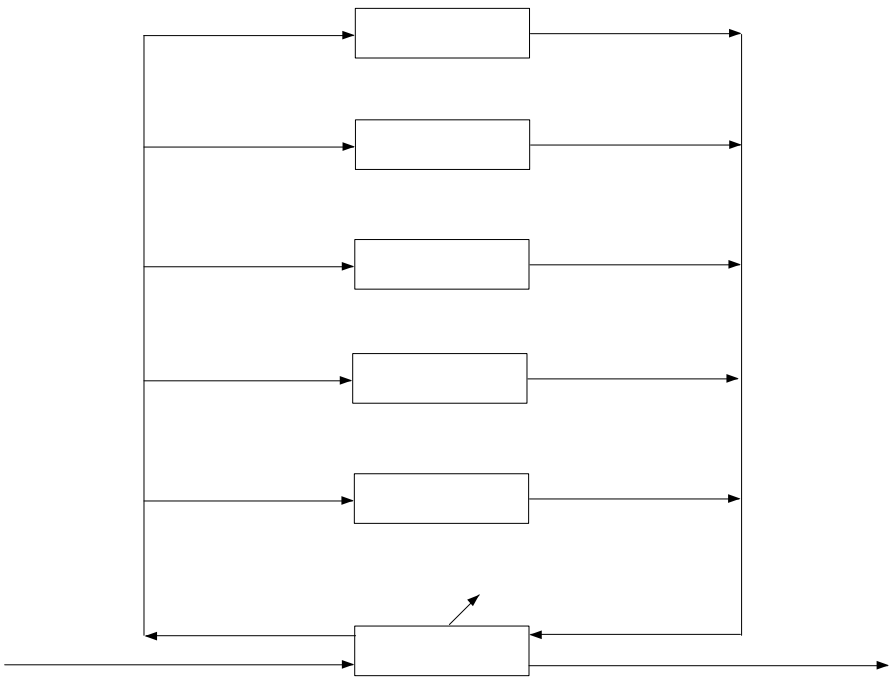


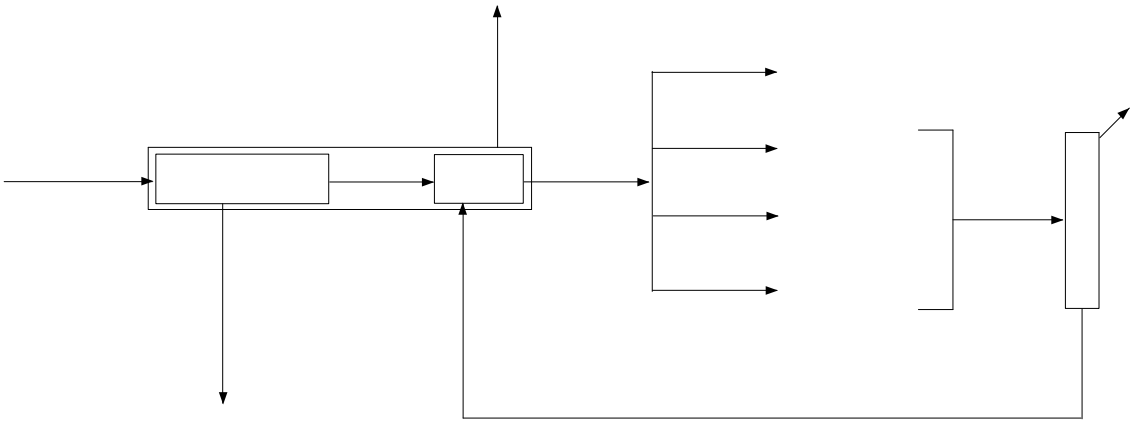


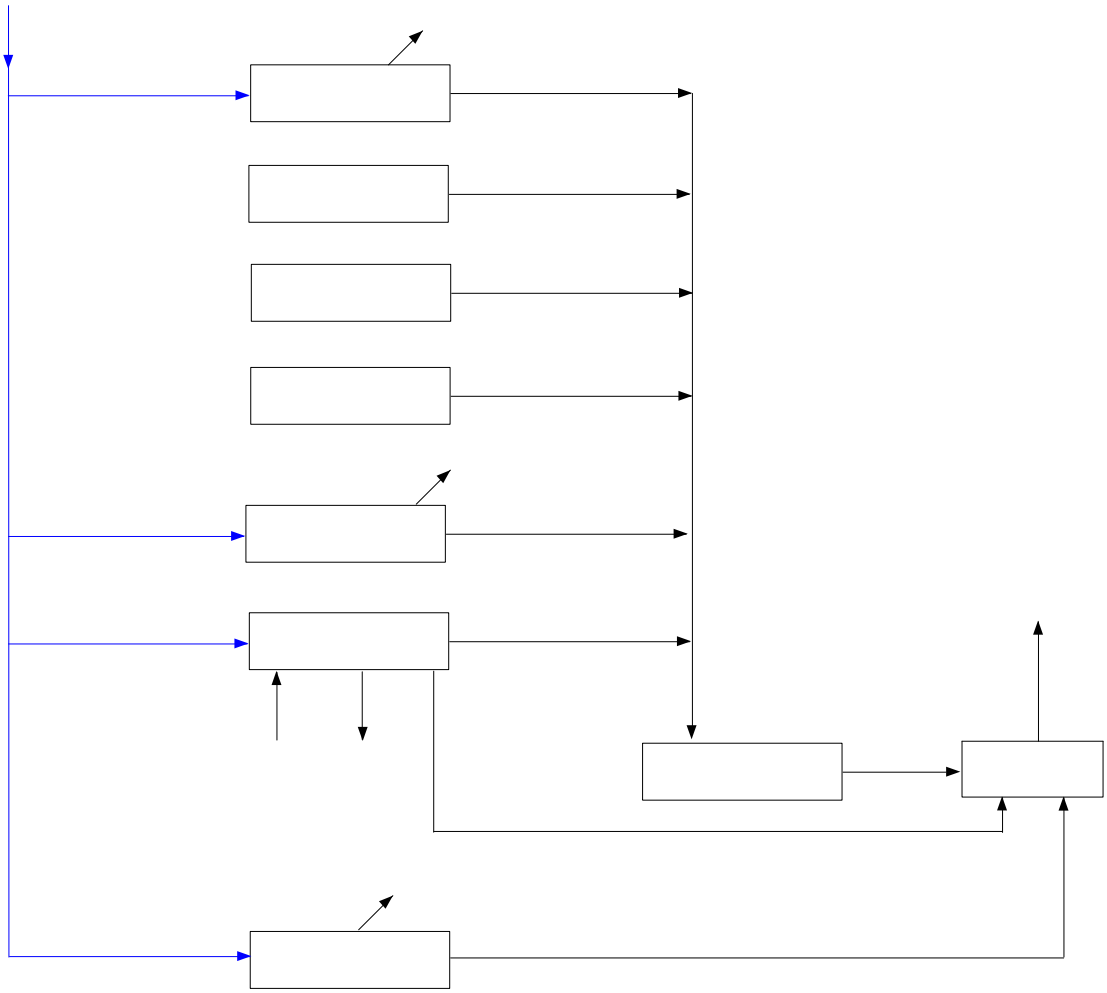


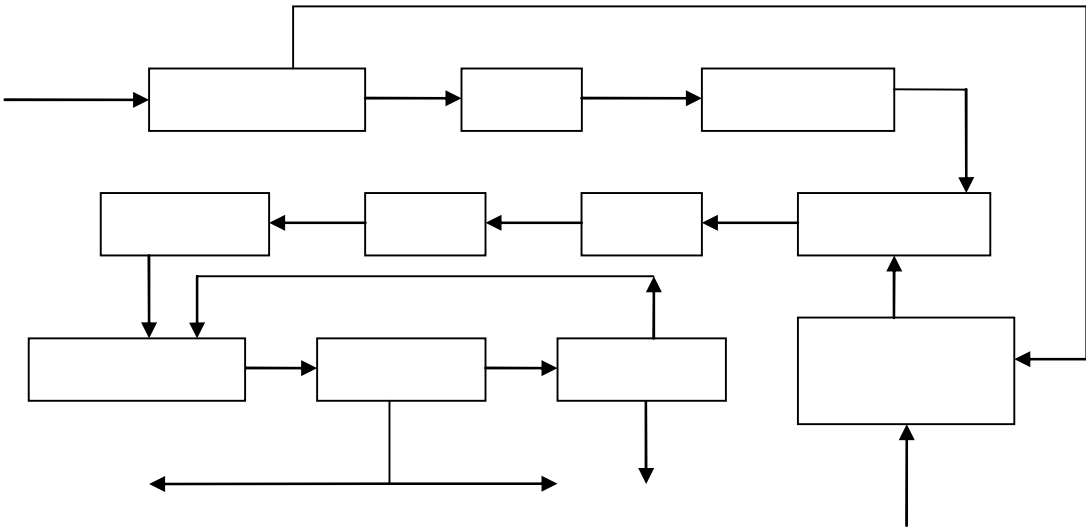


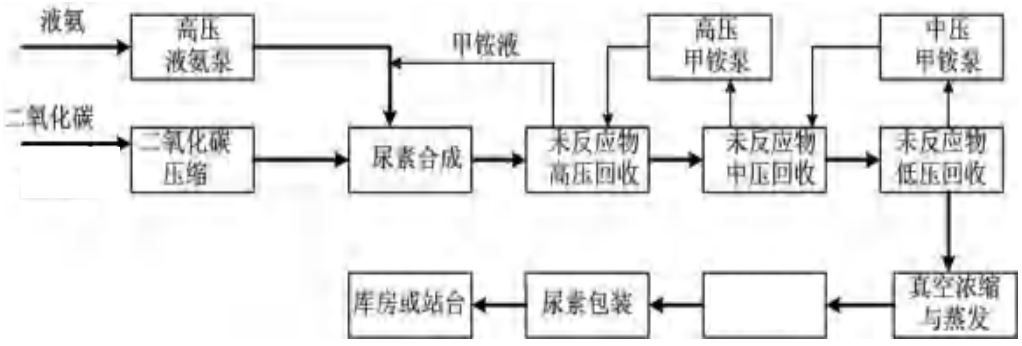


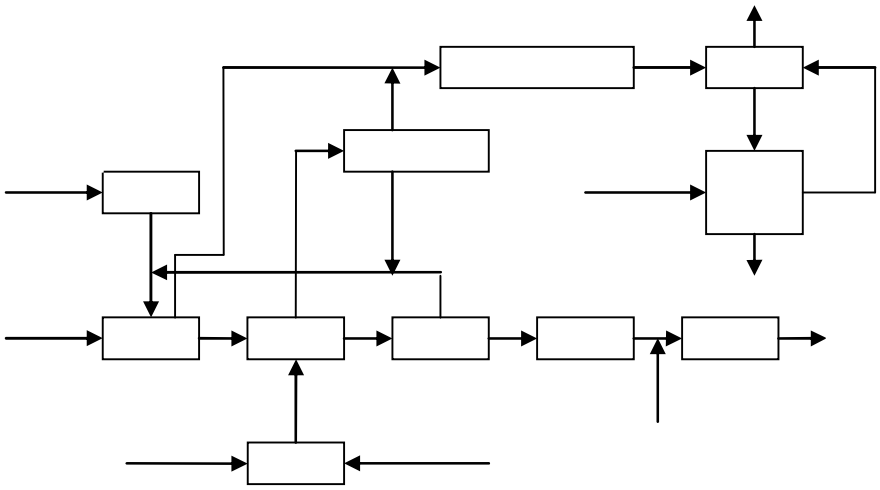


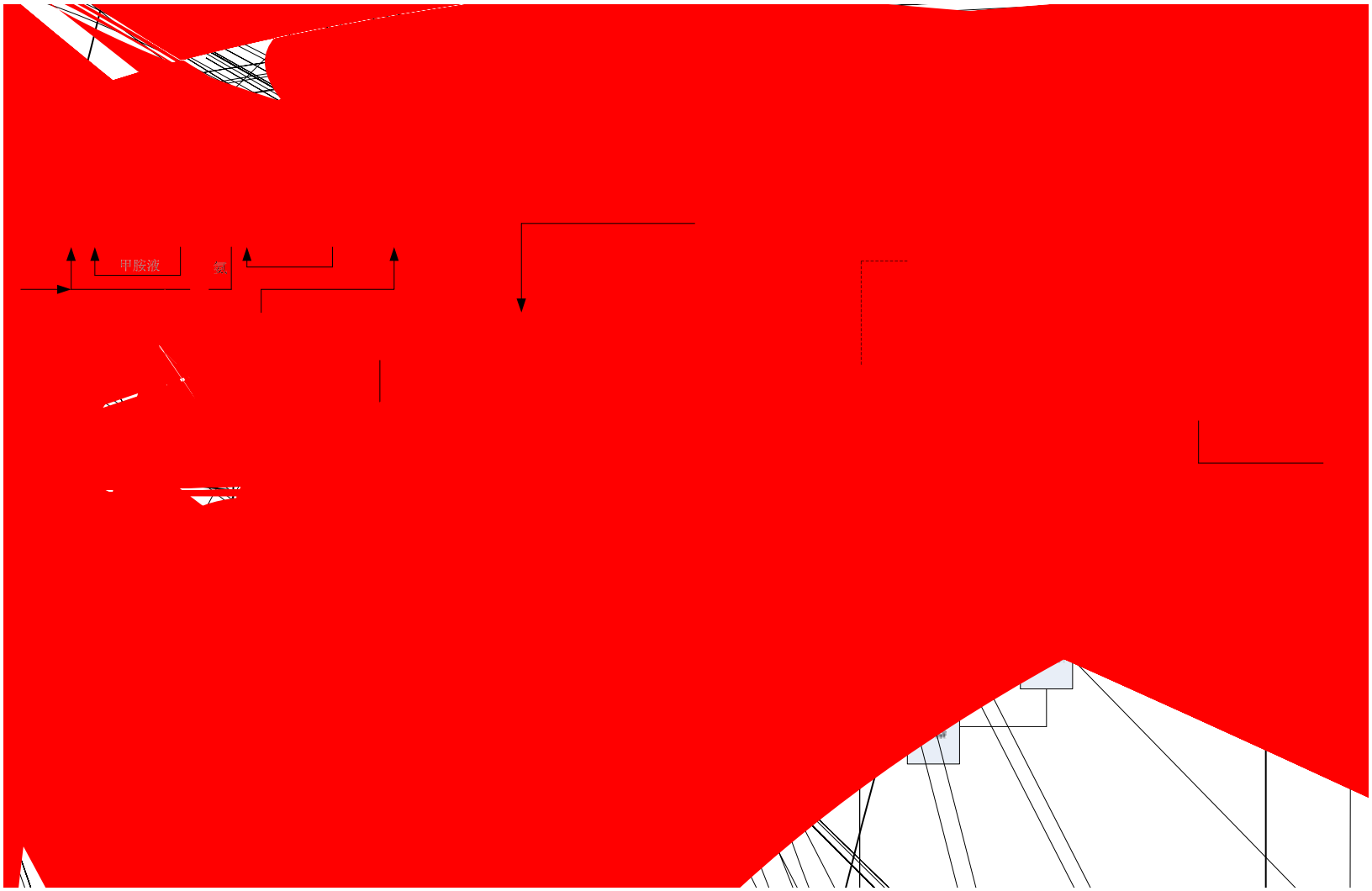







液氨
高压
液氨泵
甲铵液
高压
甲铵泵
中压
甲铵泵
二氧化碳
二氧化碳
压缩
尿素合成
未反应物
高压回收
未反应物
中压回收
未反应物
低压回收
库房或站台
尿素包装
真空浓缩
与蒸发

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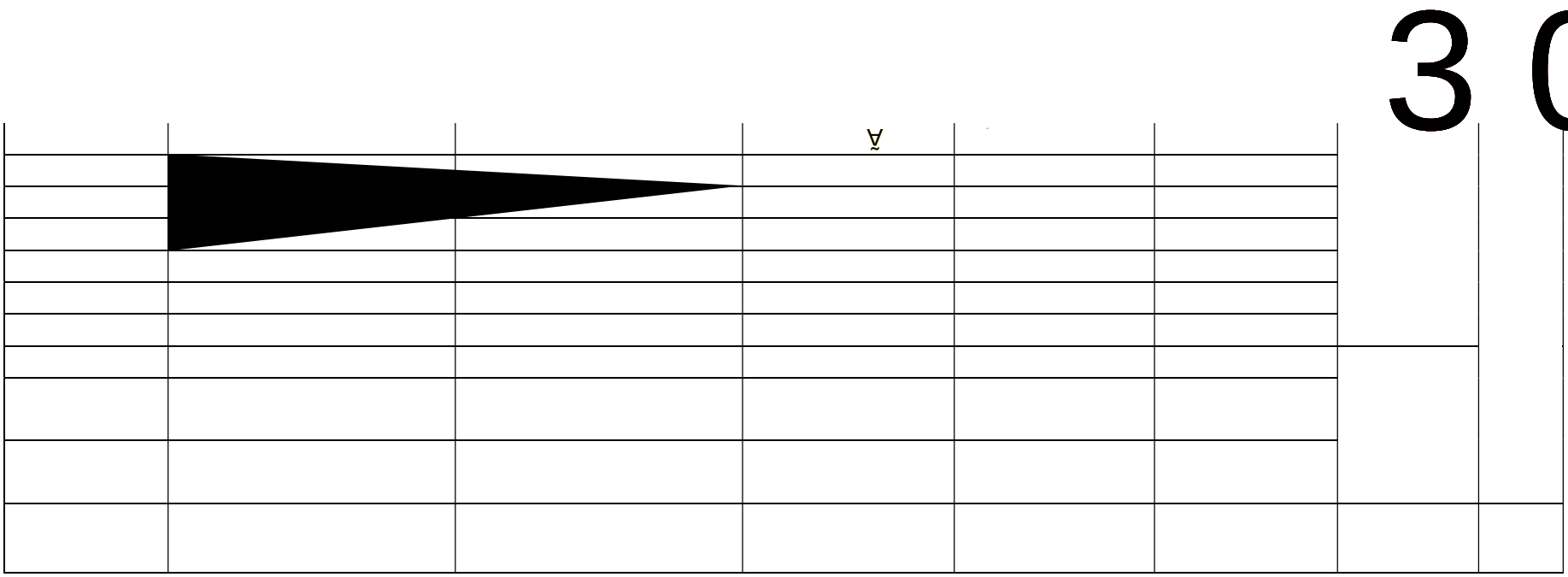
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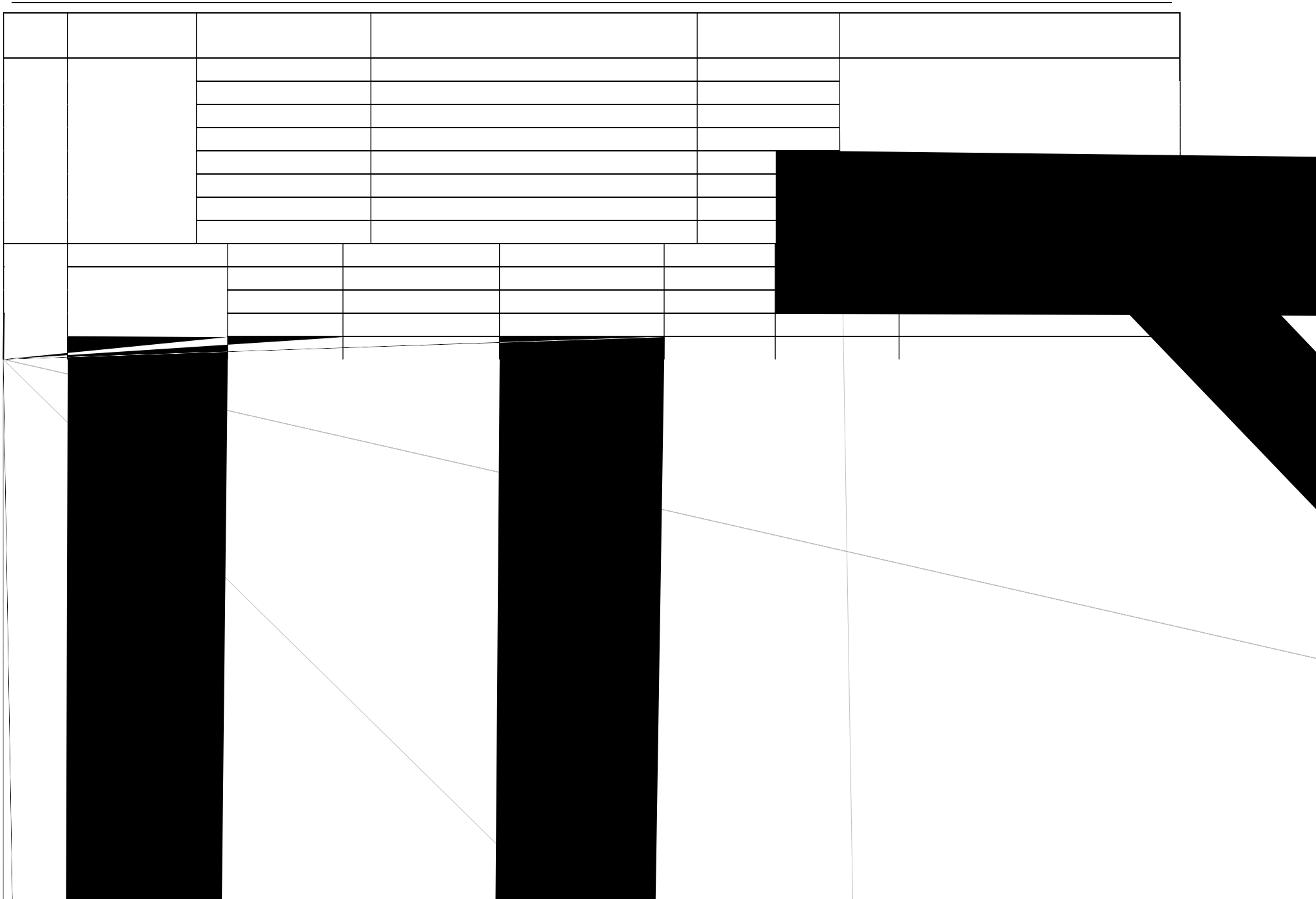

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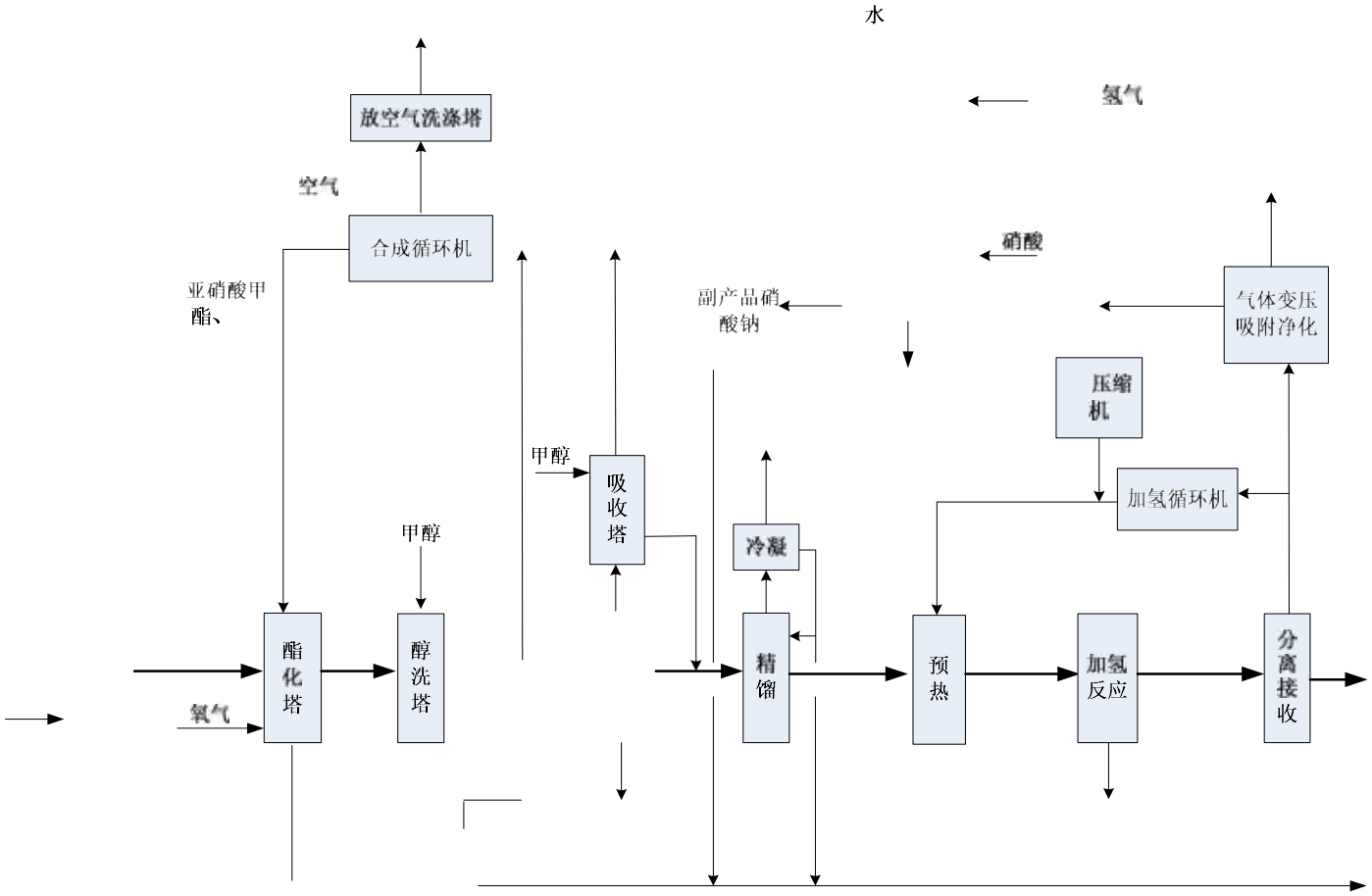
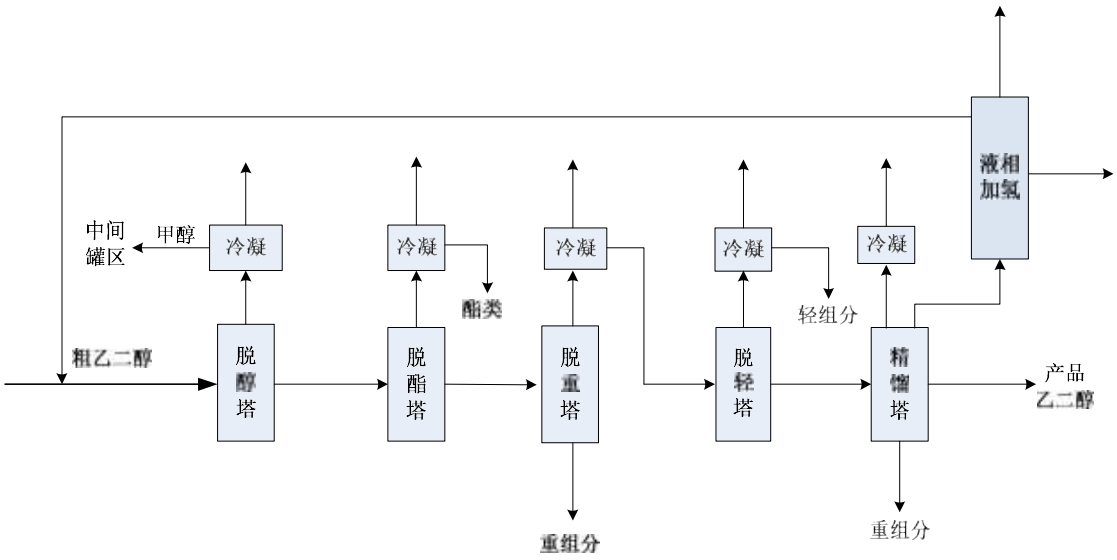

水
氢气
放空气洗涤塔
空气
合成循环机
硝酸
亚硝酸甲酯、
副产品硝酸钠
气体变压吸附净化
压缩机
甲醇
吸收塔
加氢循环机
甲醇
冷凝
酯化塔
醇洗塔
精馏
预热
加氢反应
分离接收
氧气


液相加氢
中间罐区
甲醇
冷凝
冷凝
冷凝
冷凝
冷凝
酯类
轻组分
粗乙二醇
脱醇塔
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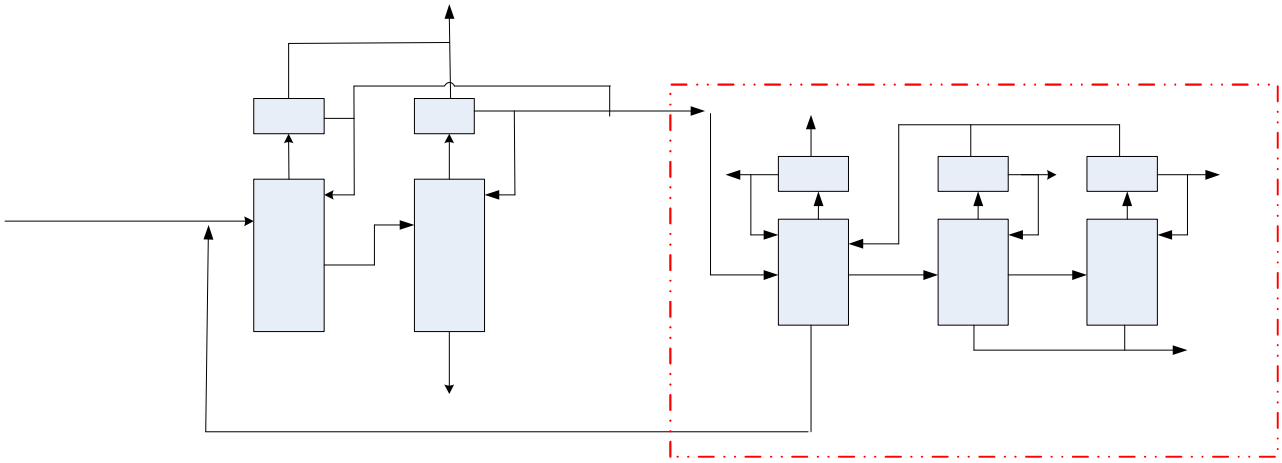
脱重塔
脱轻塔
精馏塔
产品乙二醇
重组分
重组分



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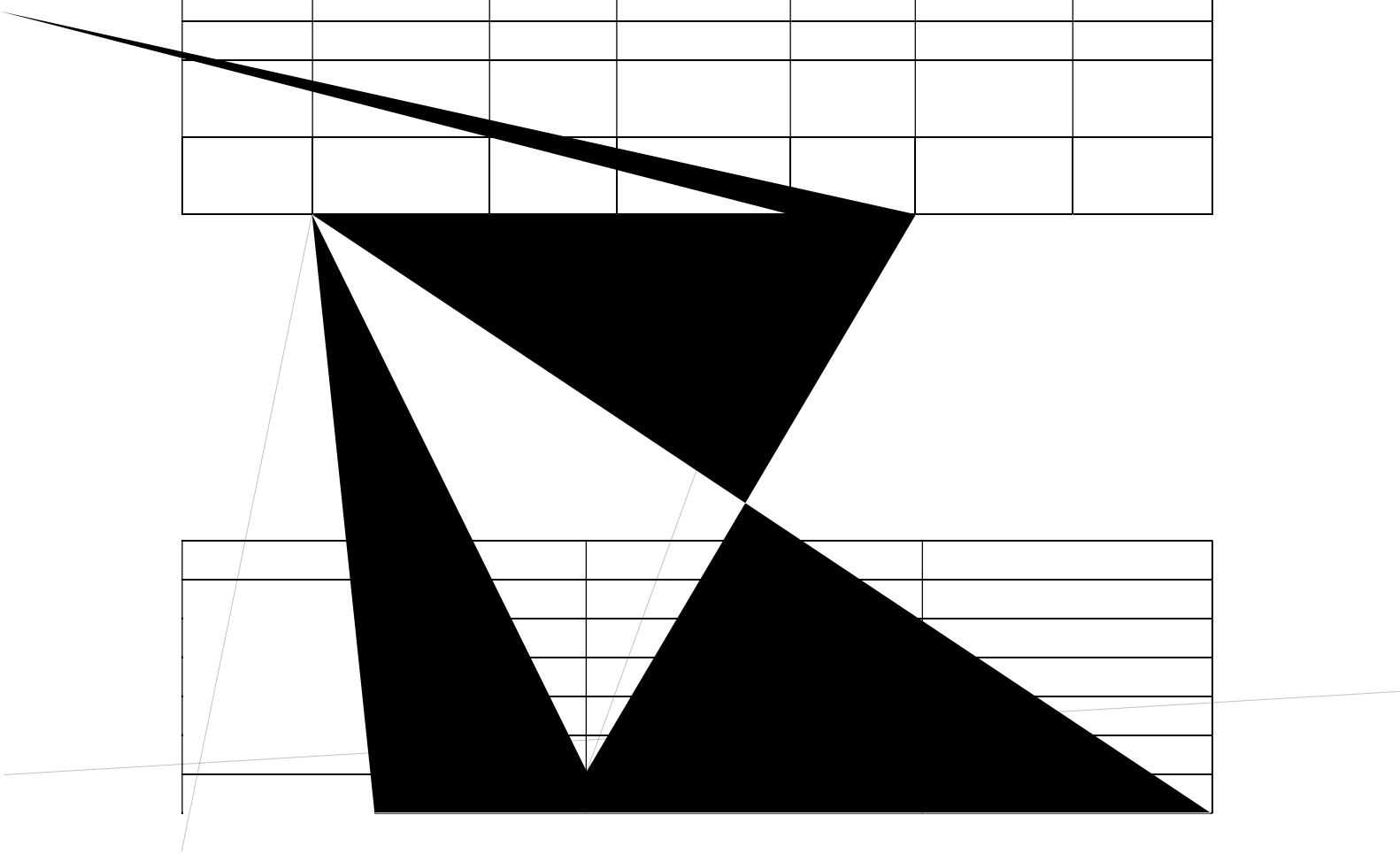

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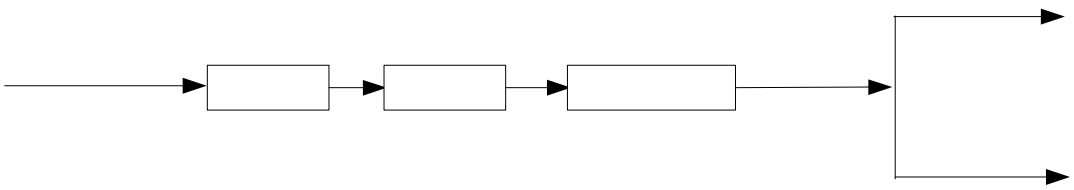
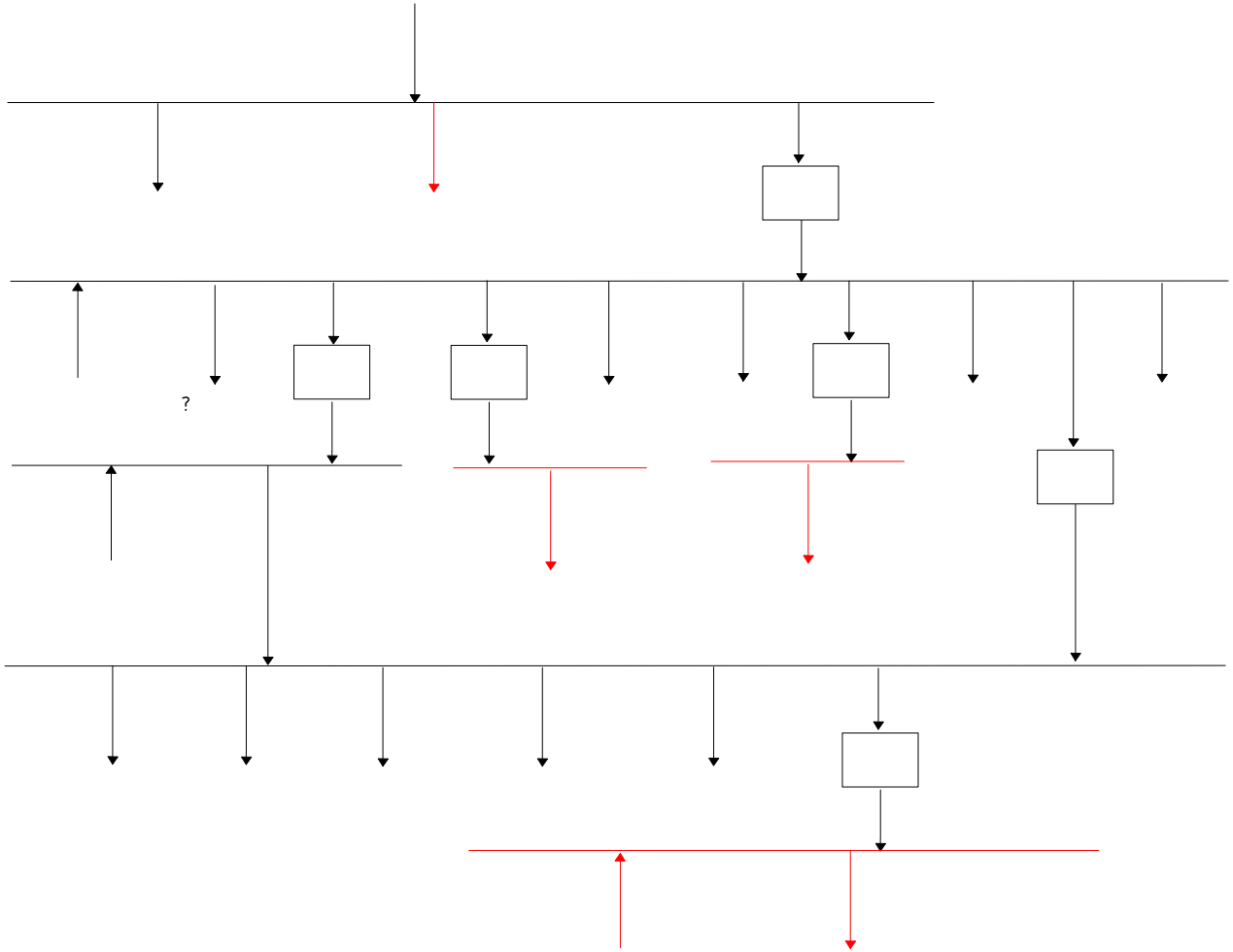
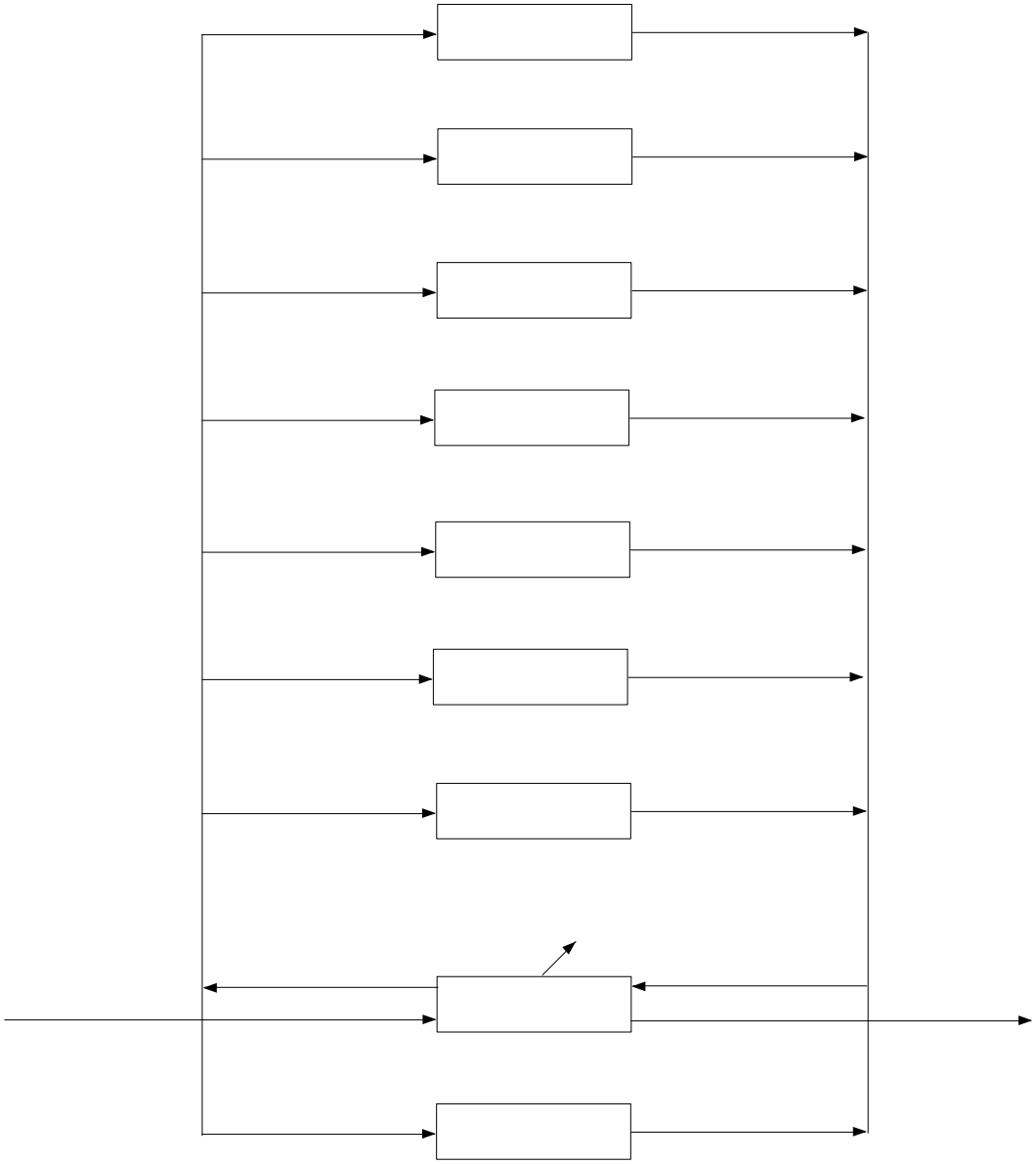
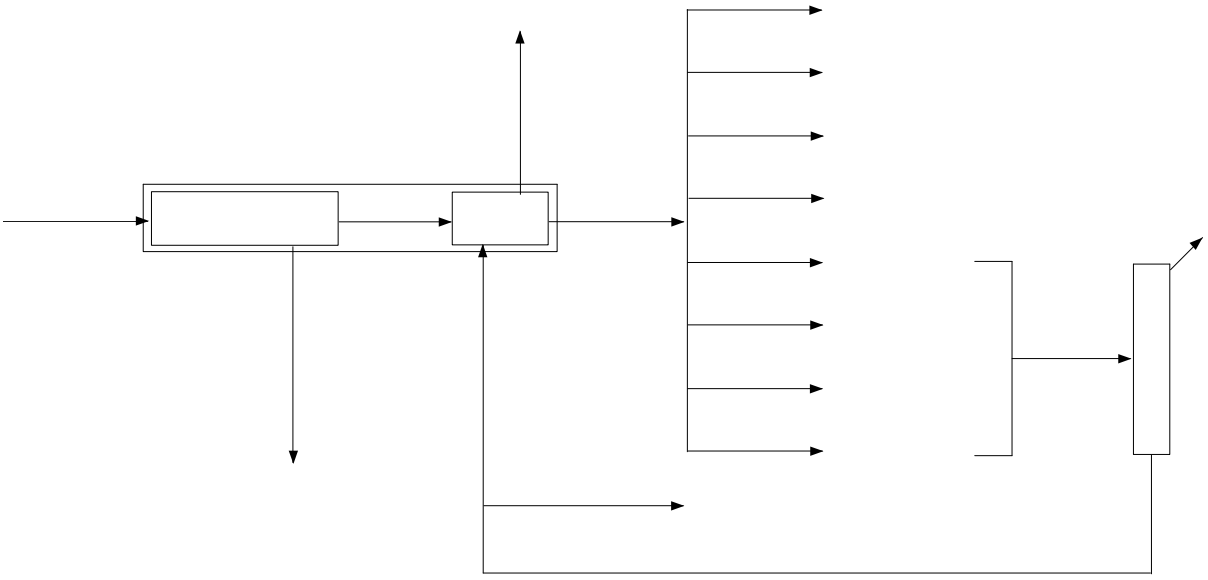
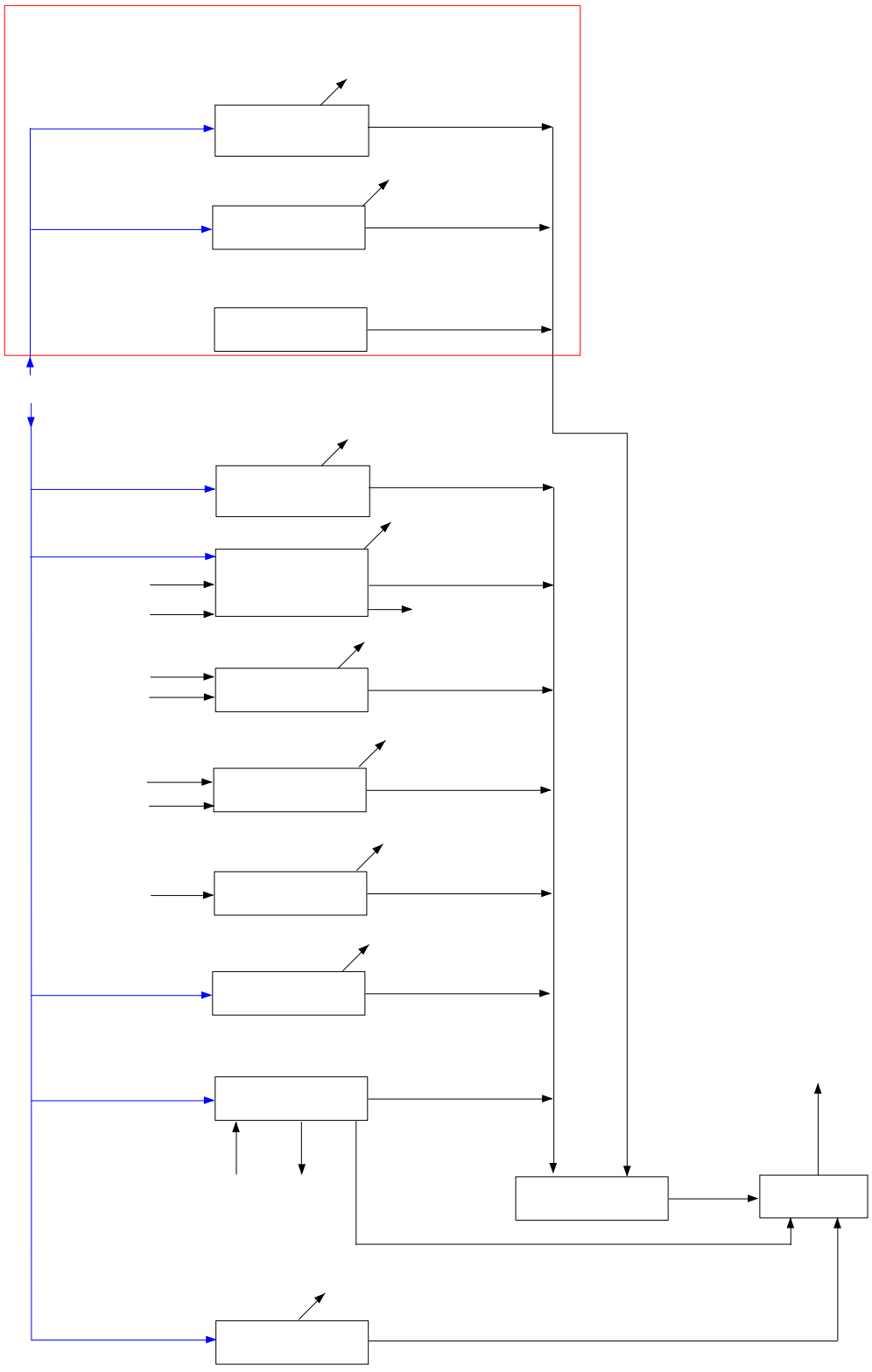
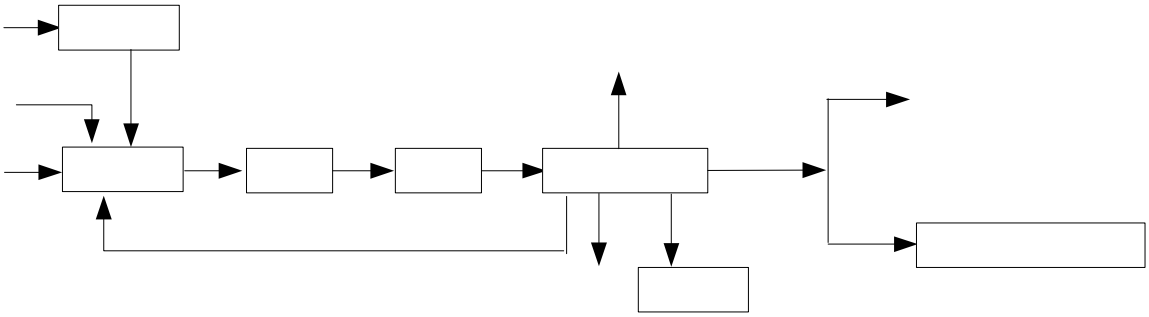


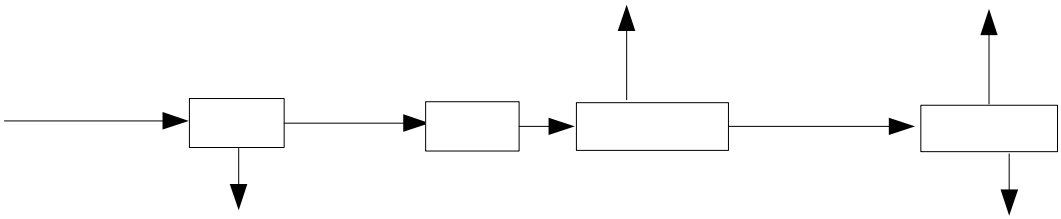


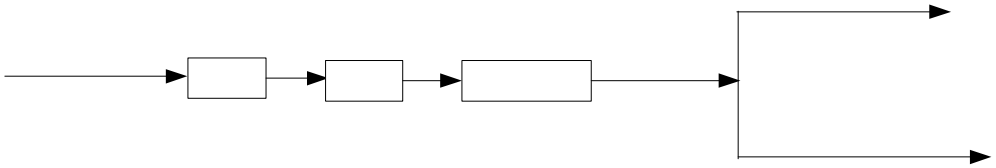


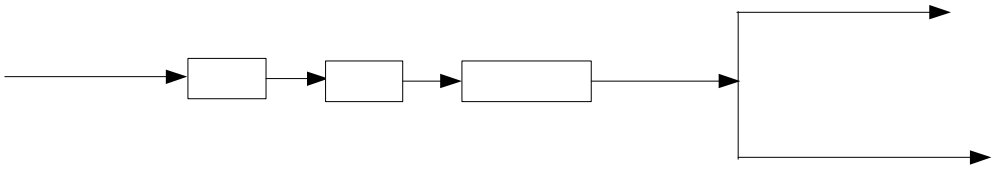


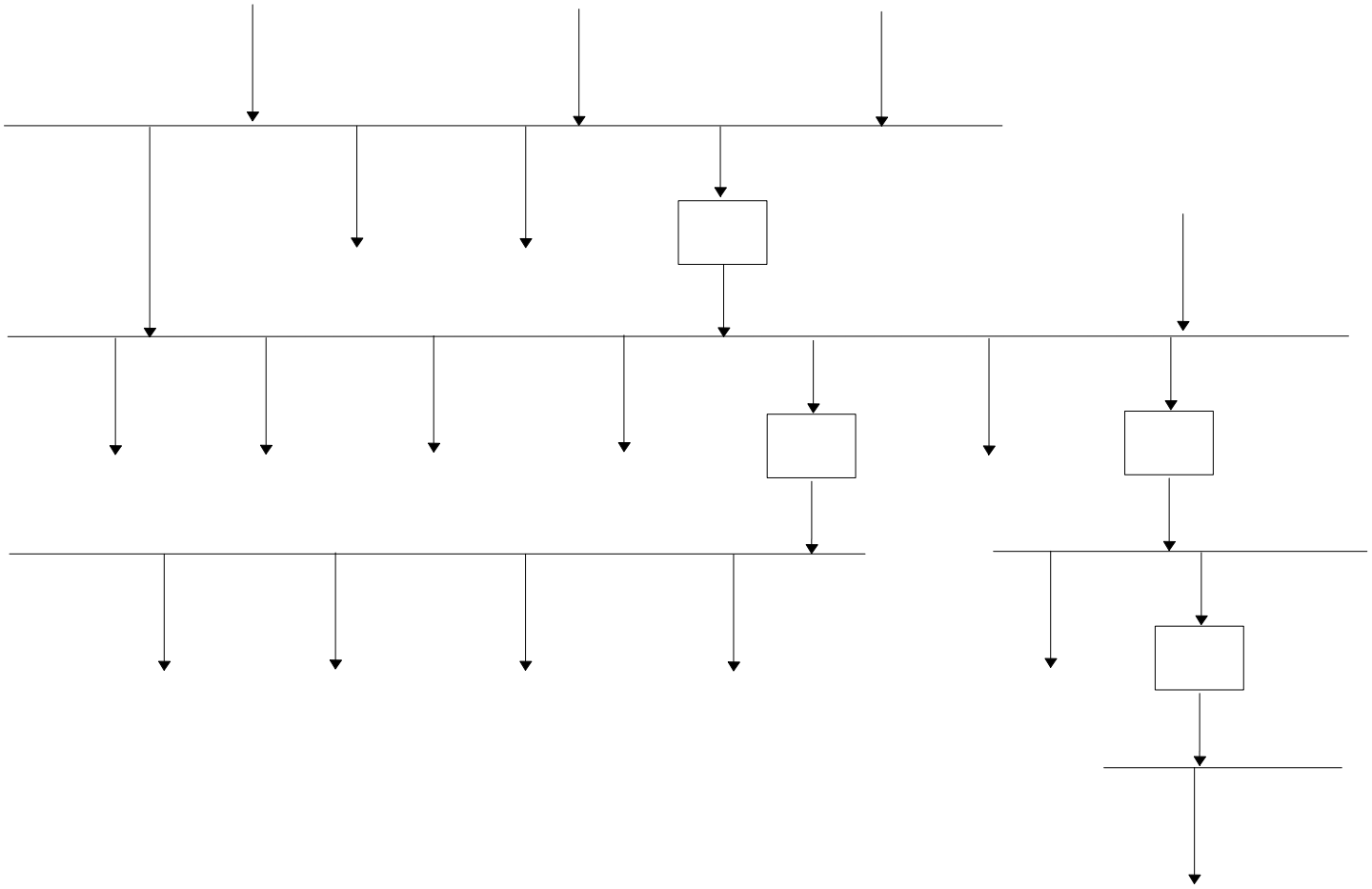


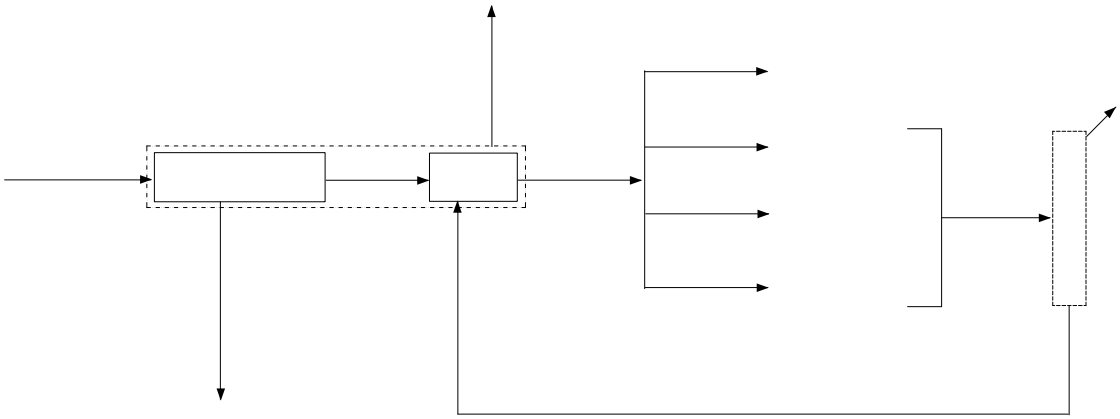


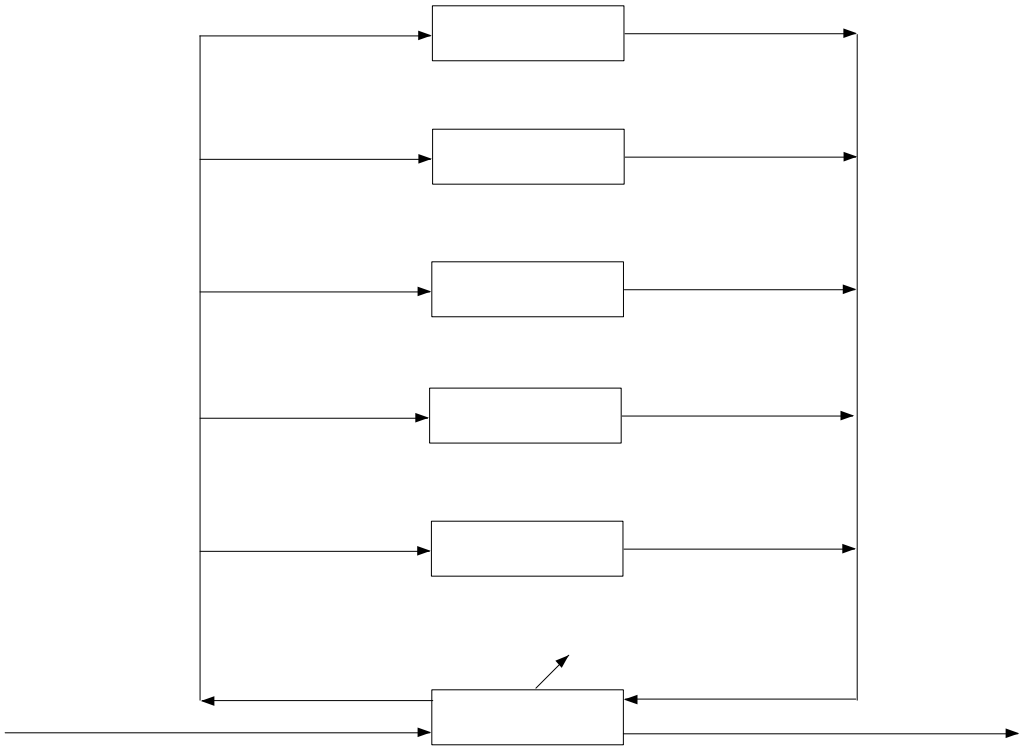


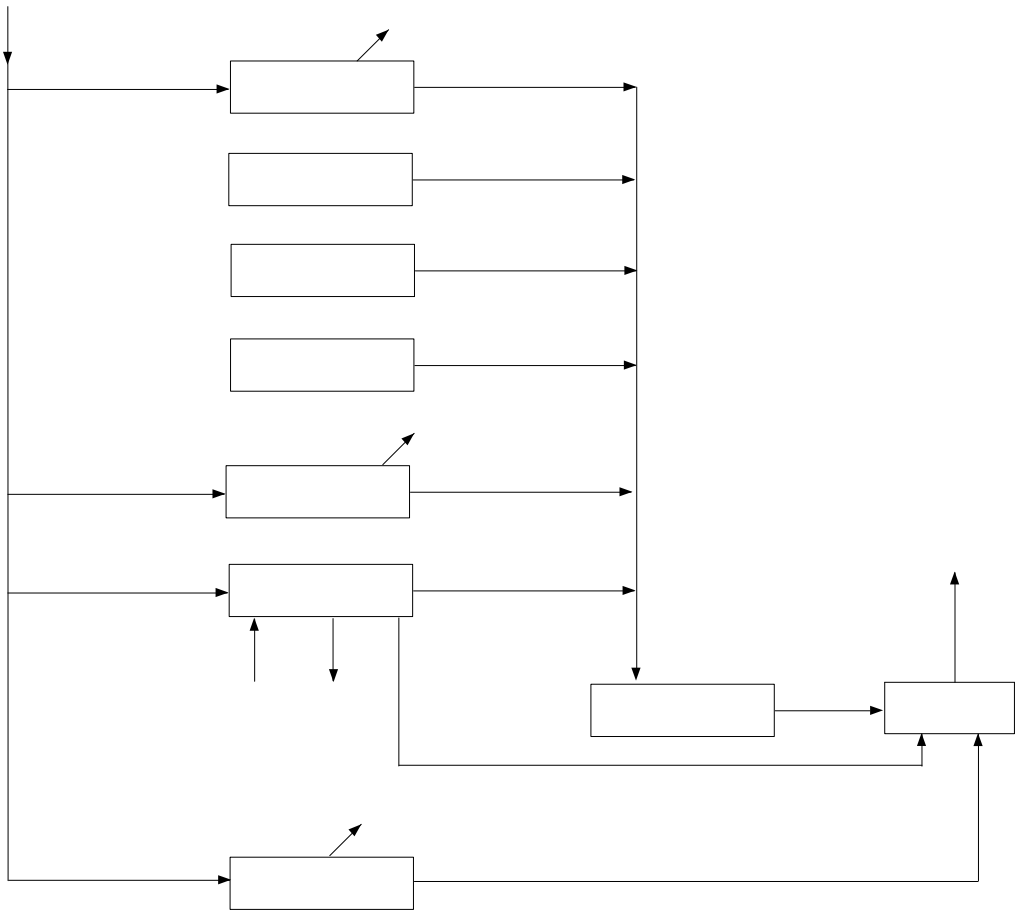


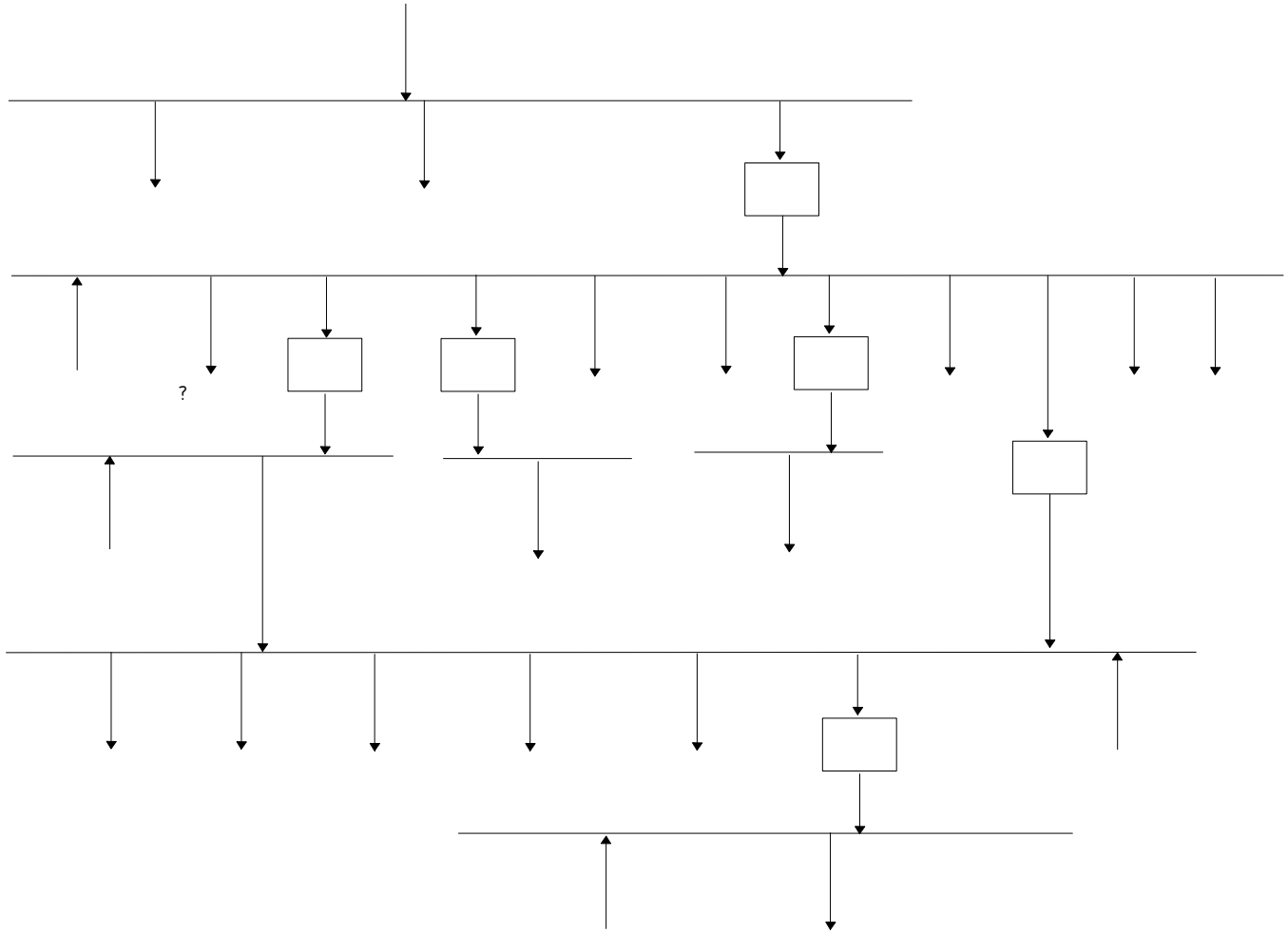


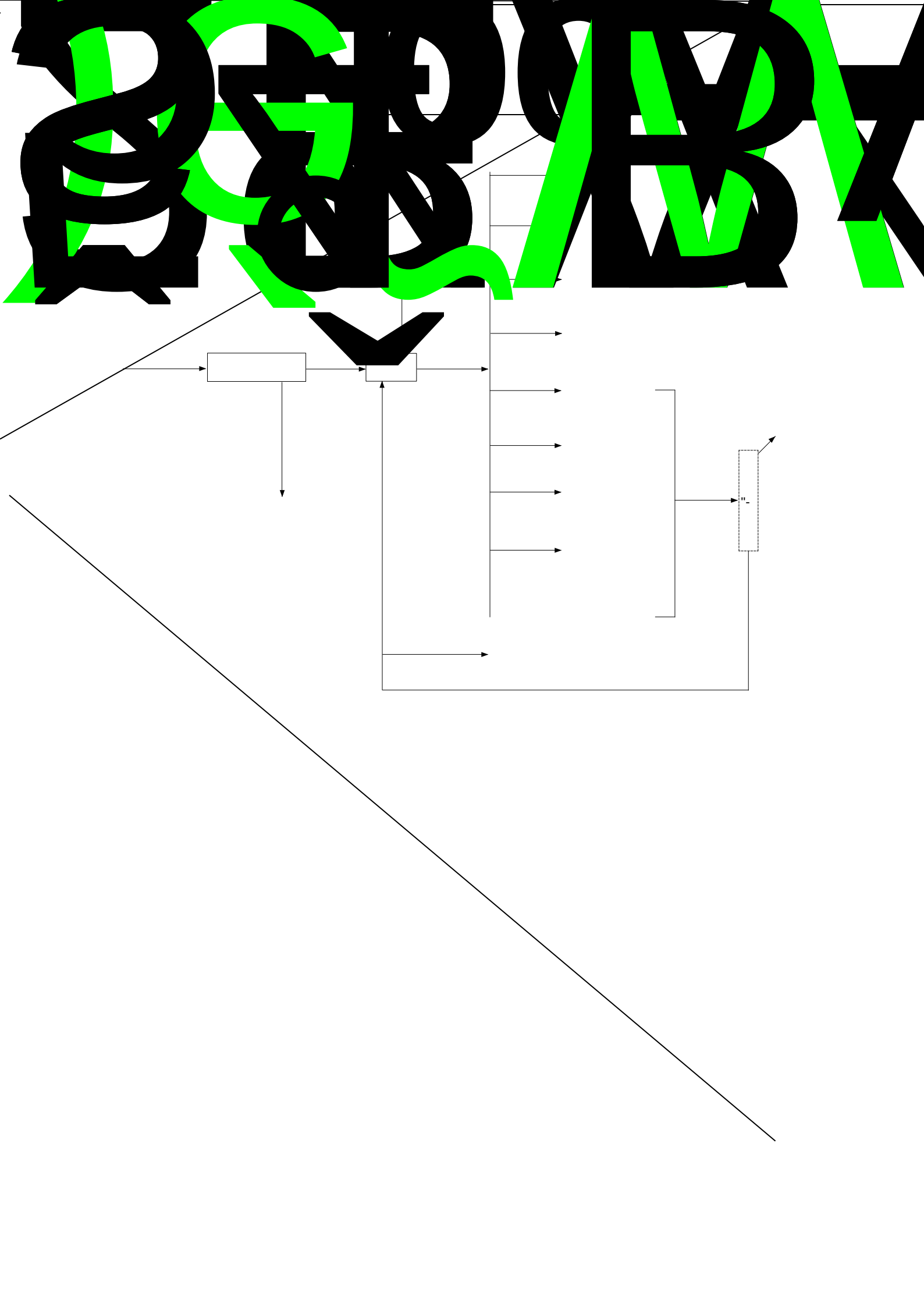


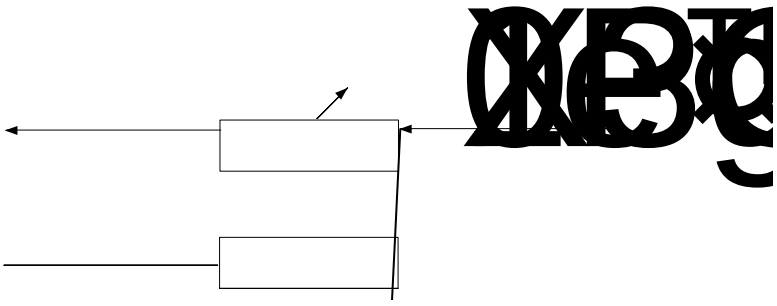


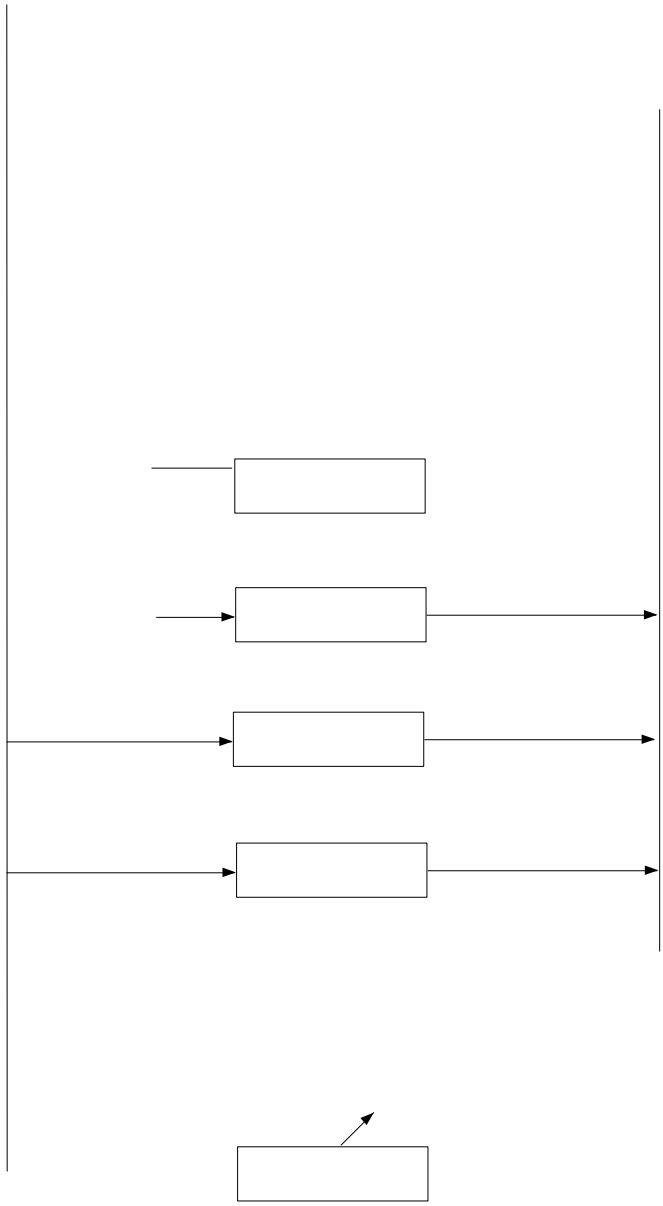


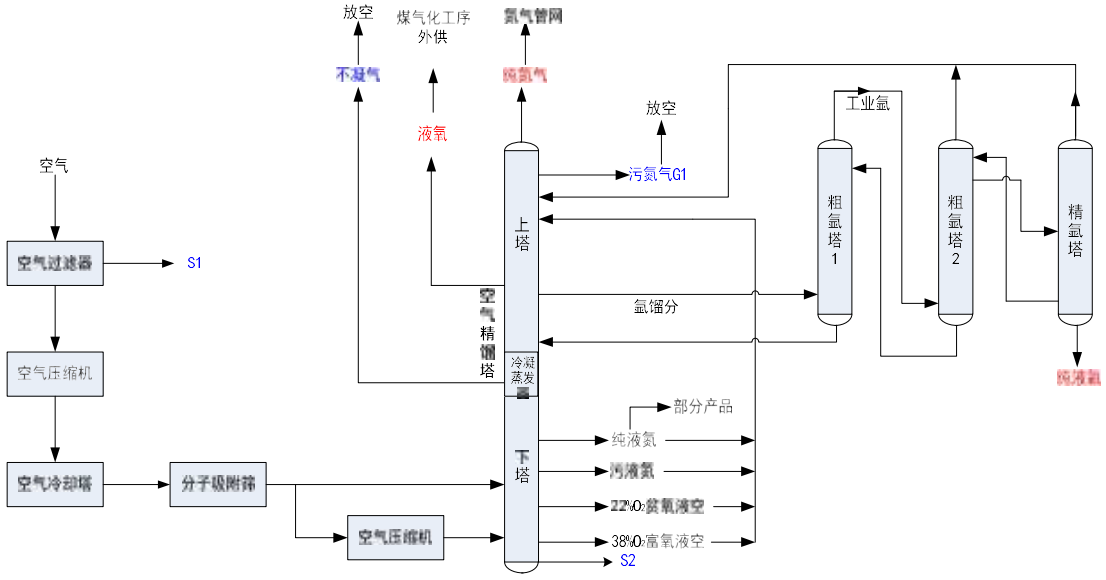


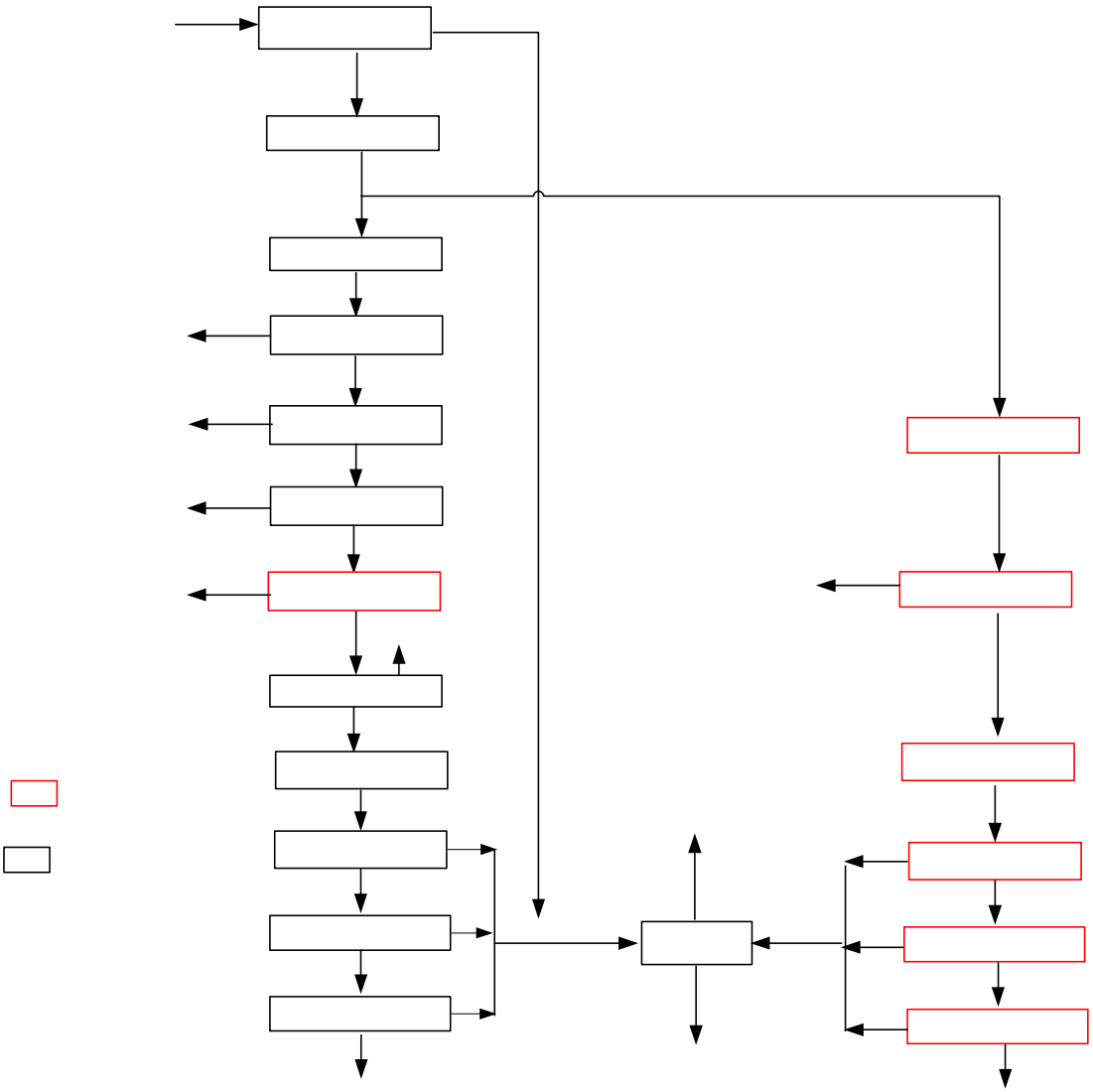


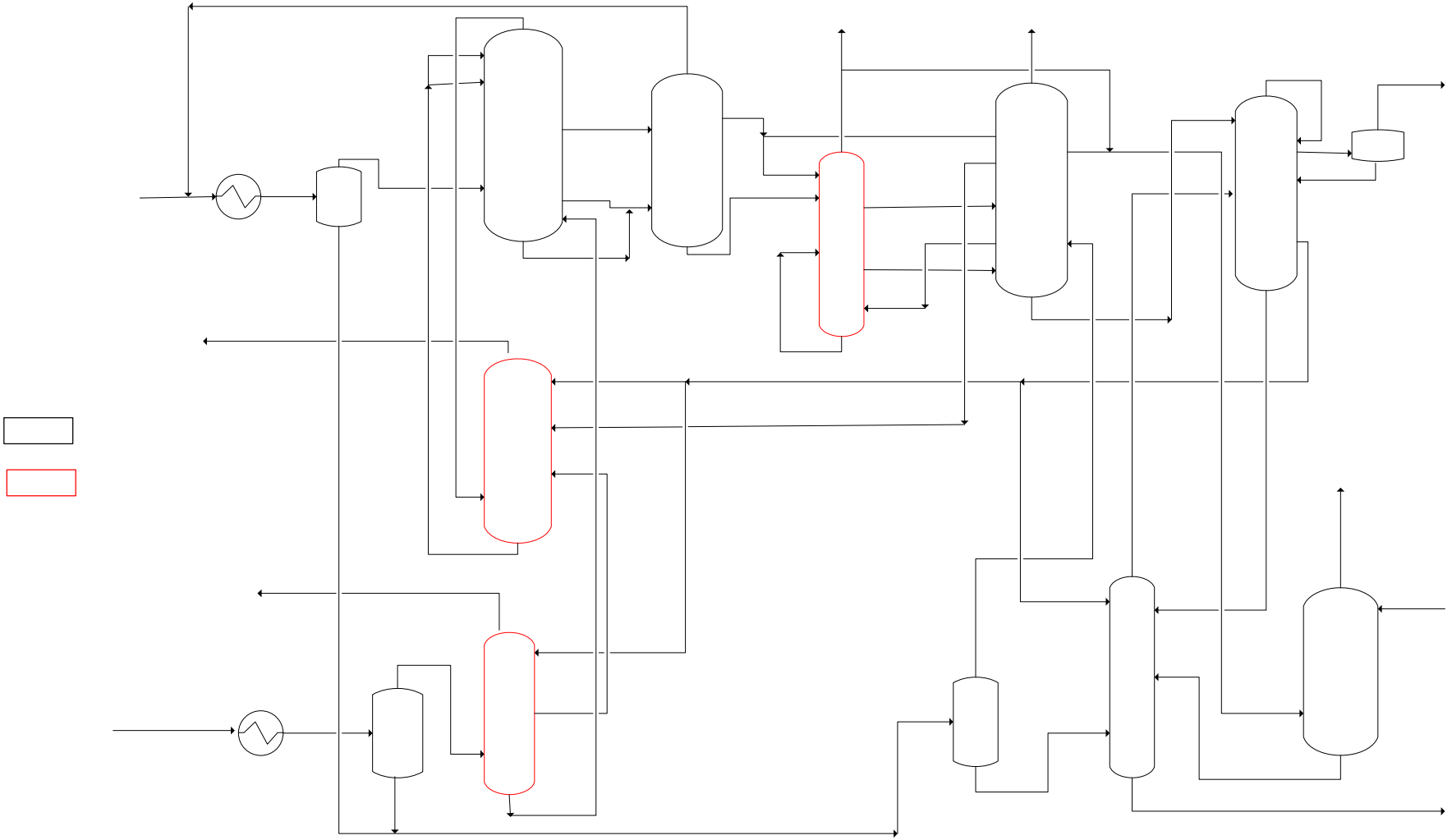


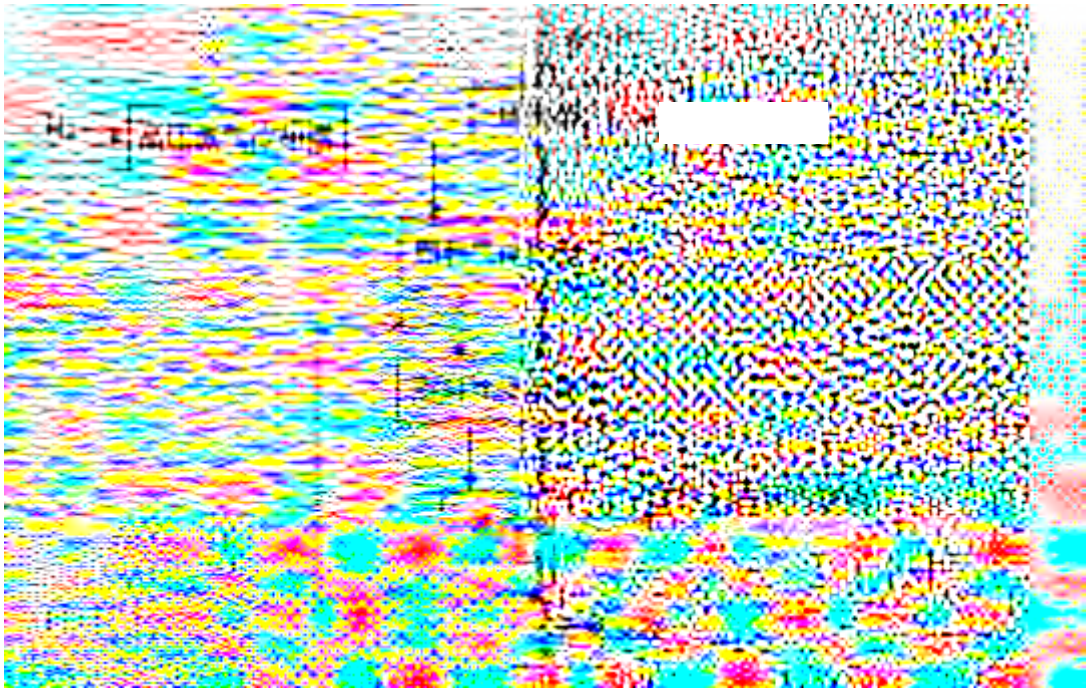


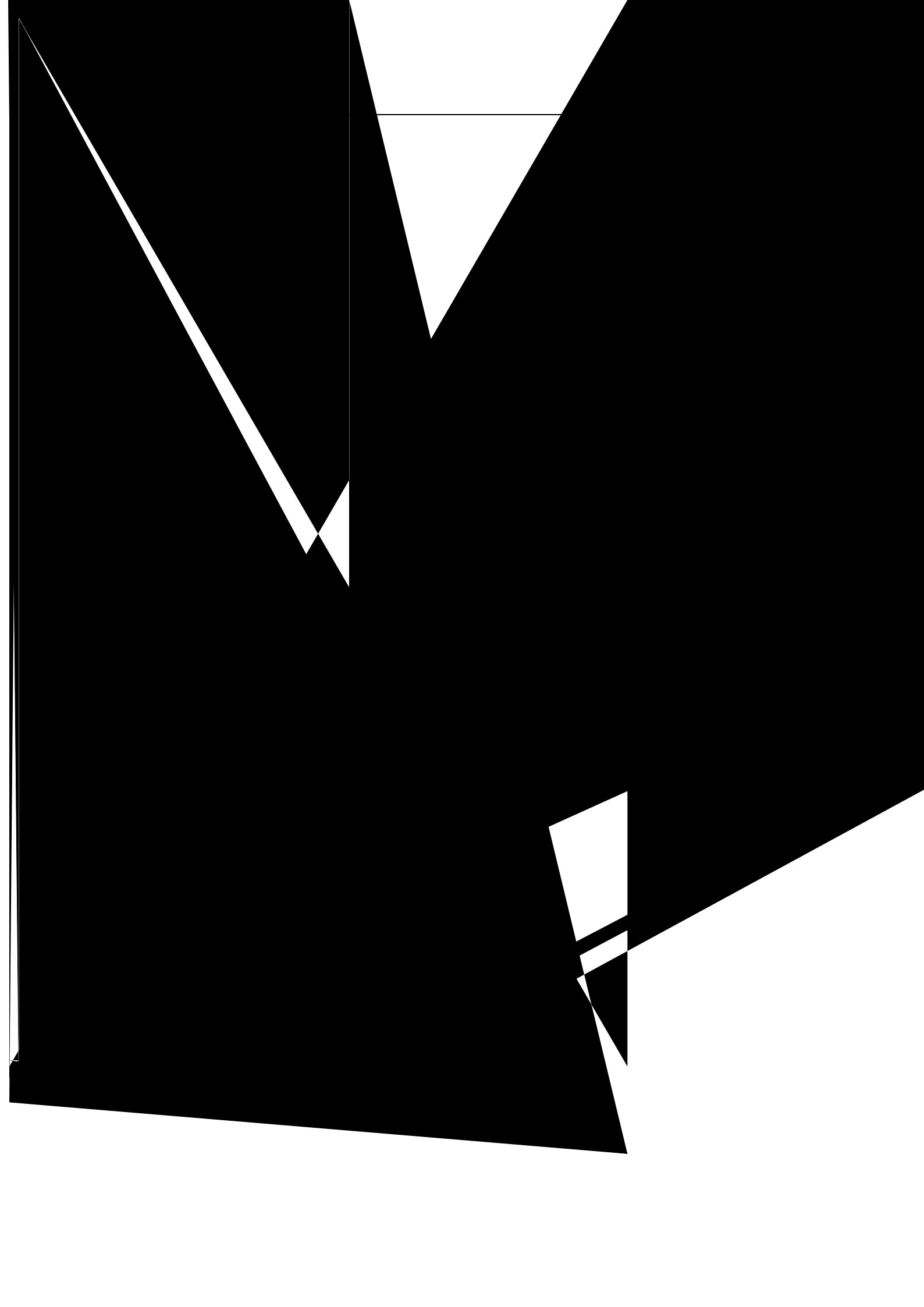


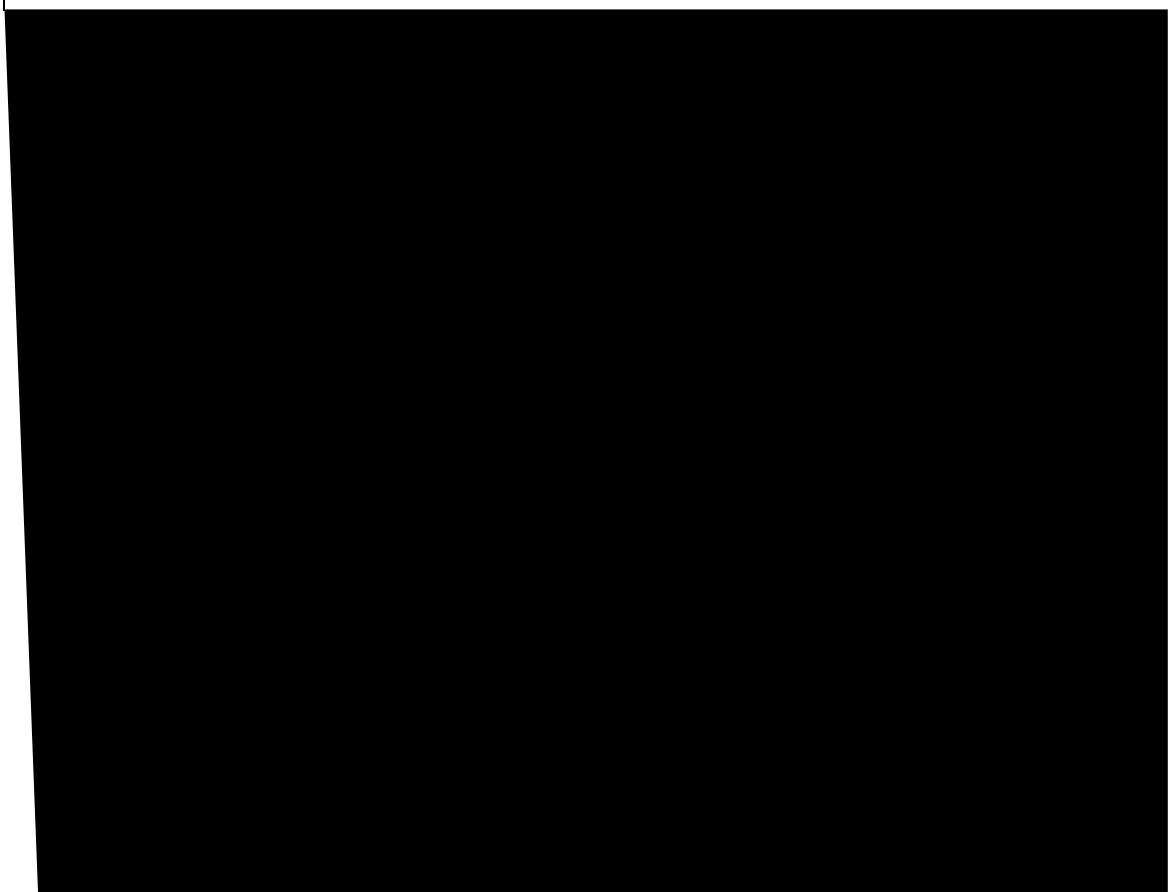

放空
煤气化工序
外供
氮气管网
不凝气
液氧
纯氮气
放空
工业氩
空气
污氮气G1
粗氩塔1
粗氩塔2
精氩塔
空气过滤器
S1
上塔
空气精馏塔
氩馏分
空气压缩机
冷凝蒸发器
部分产品
纯液氮
污液氮
空气冷却塔
分子吸附筛
下塔
22%O2贫氧液空
空气压缩机
38%O2富氧液空
S2
纯液氩











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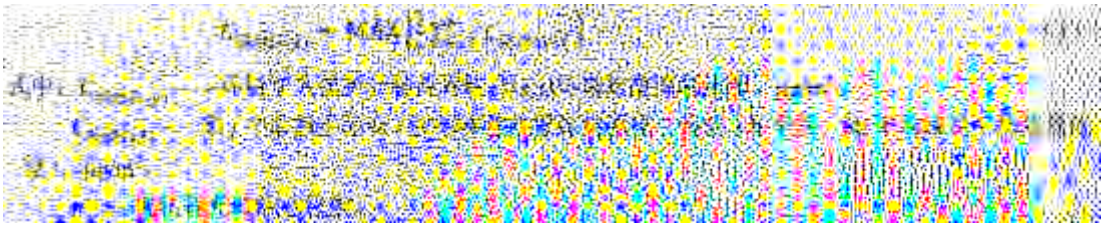

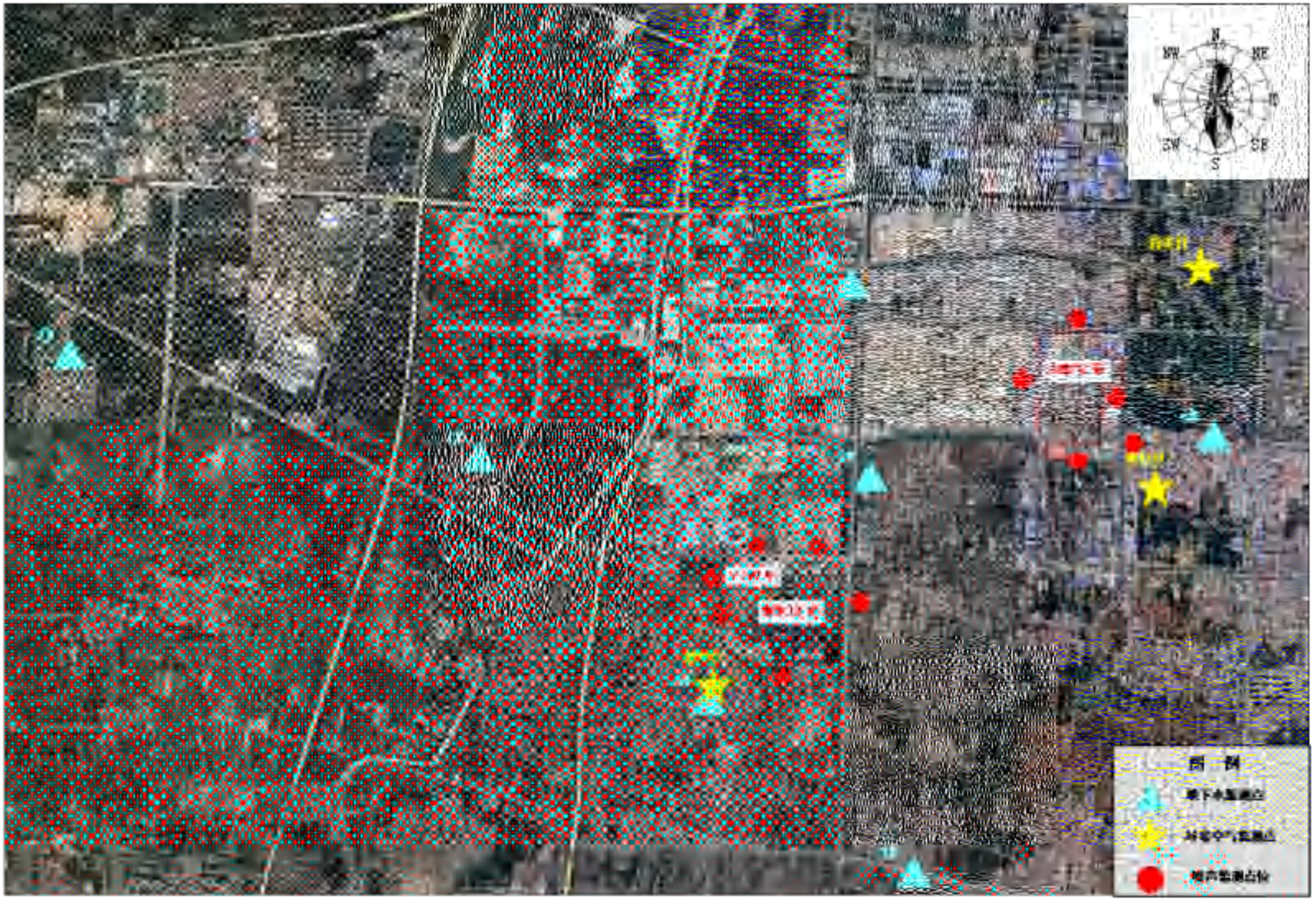
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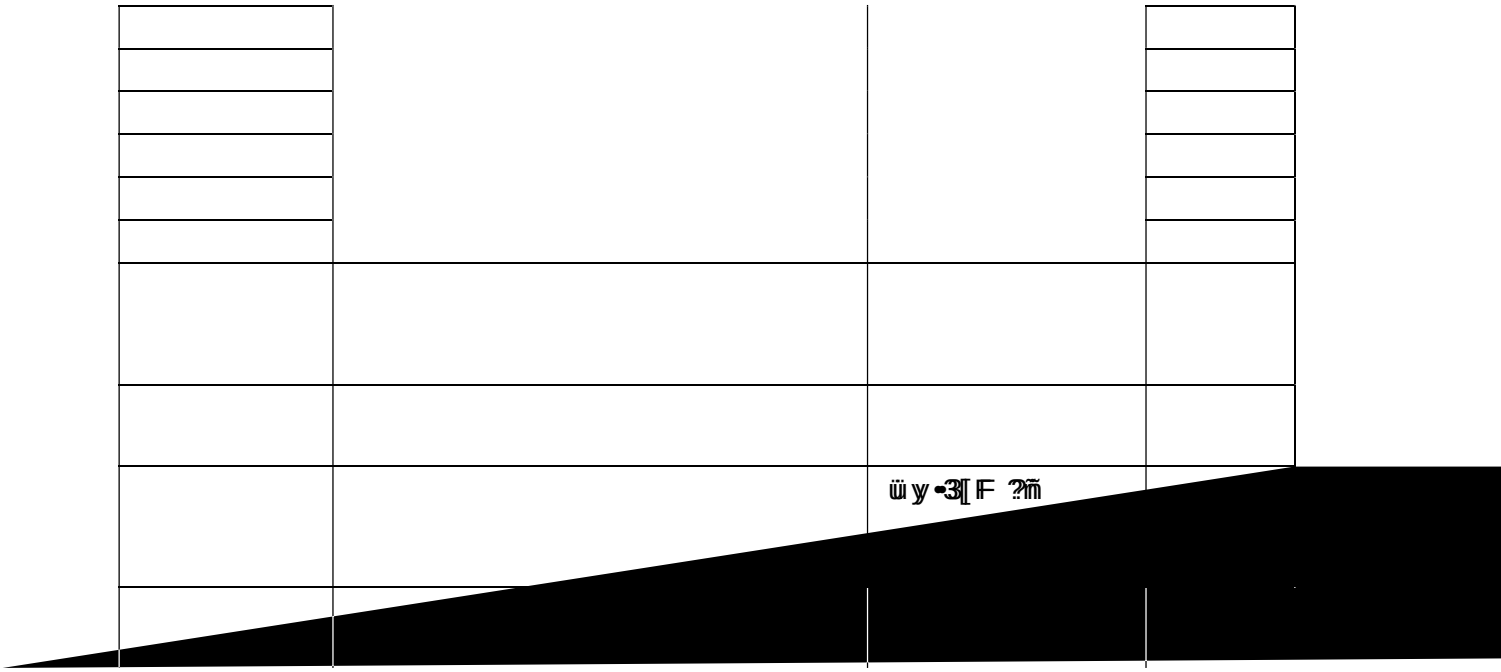
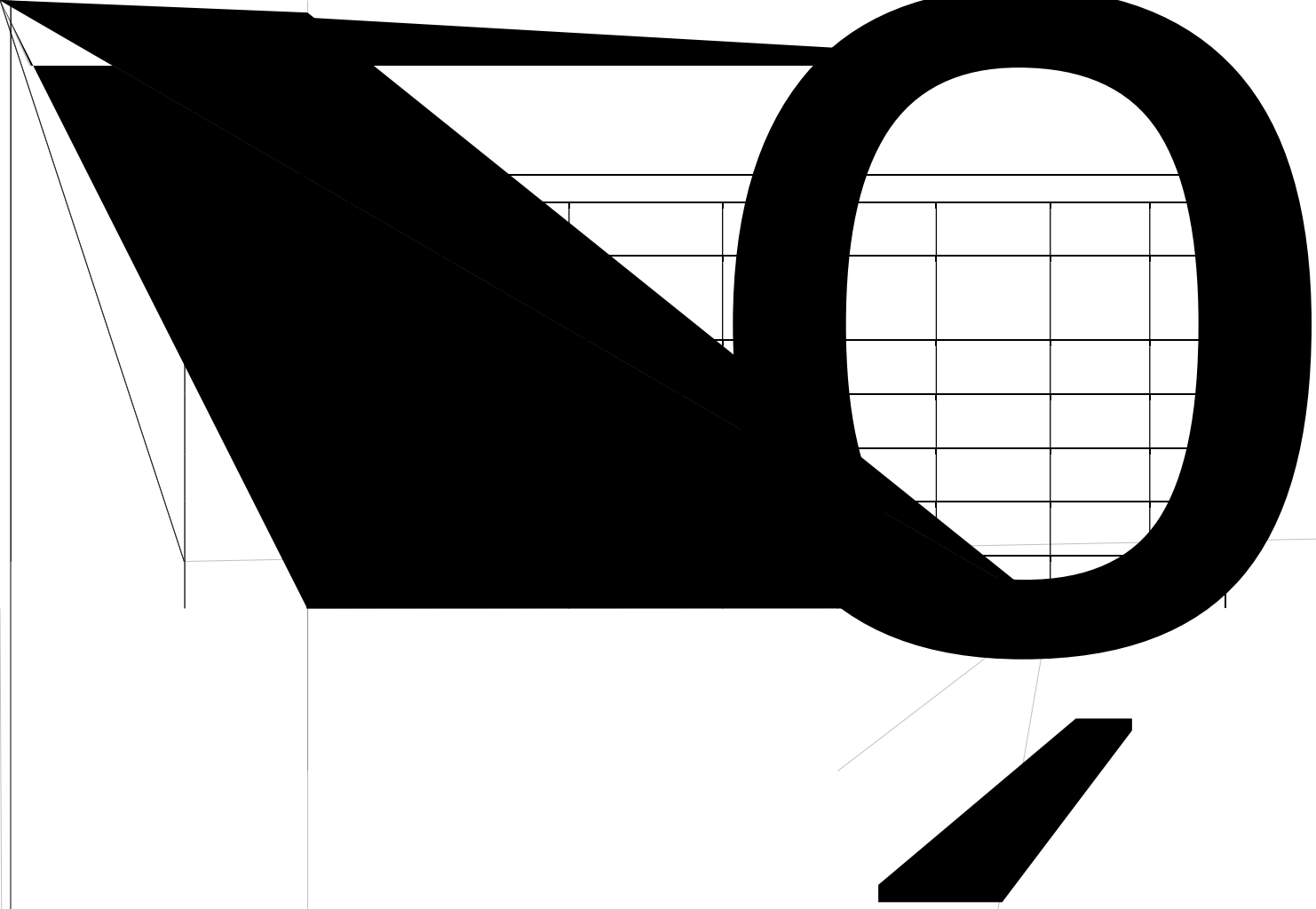
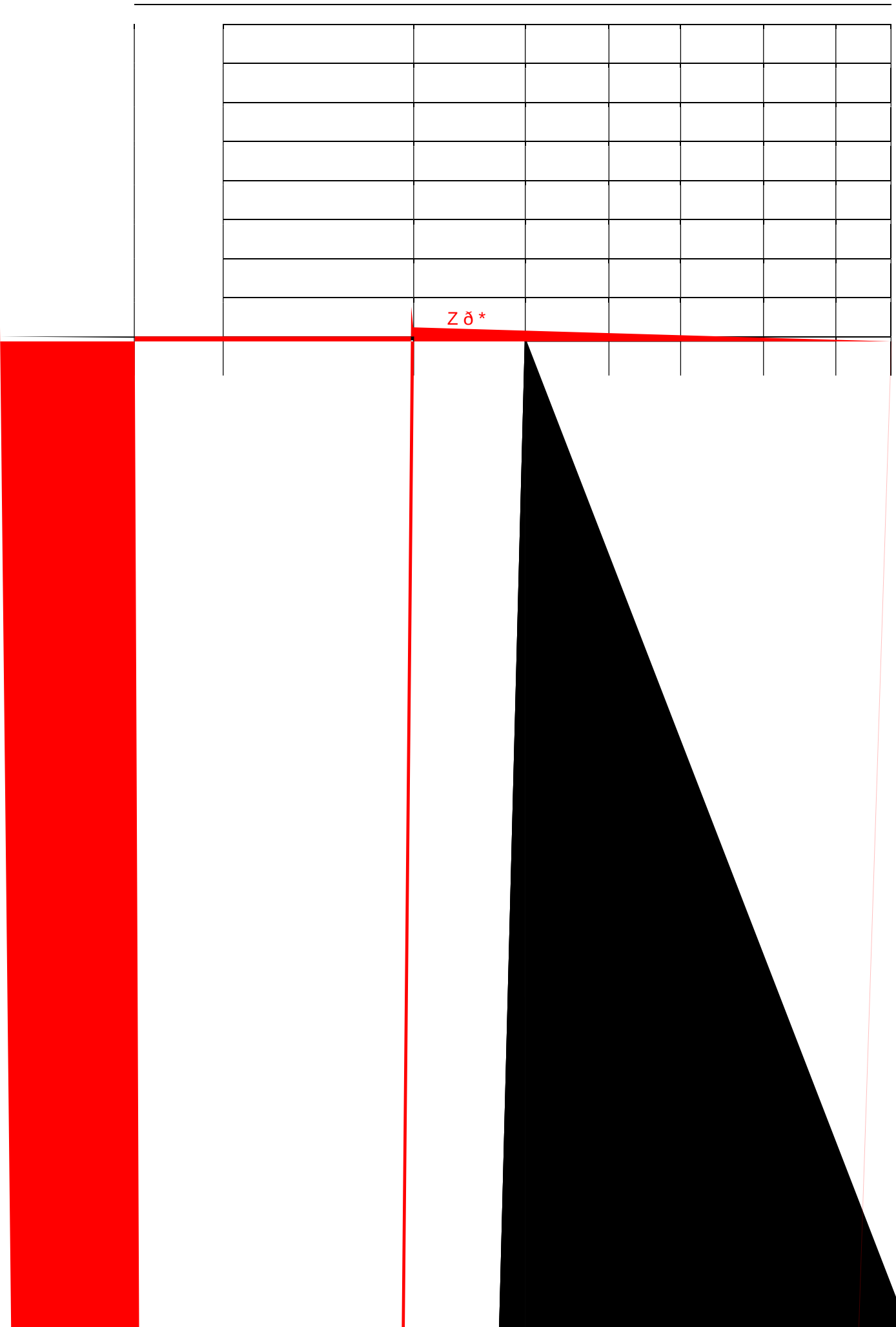


$$S_{pH,\ j}=\frac{7.0-pH_j}{7.0-pH_{sd}} \qquad pH_j \quad 7.0$$

$$S_{pH,\ j}=\frac{pH_j-7.0}{pH_{su}-7.0} \qquad pH_j>7.0$$

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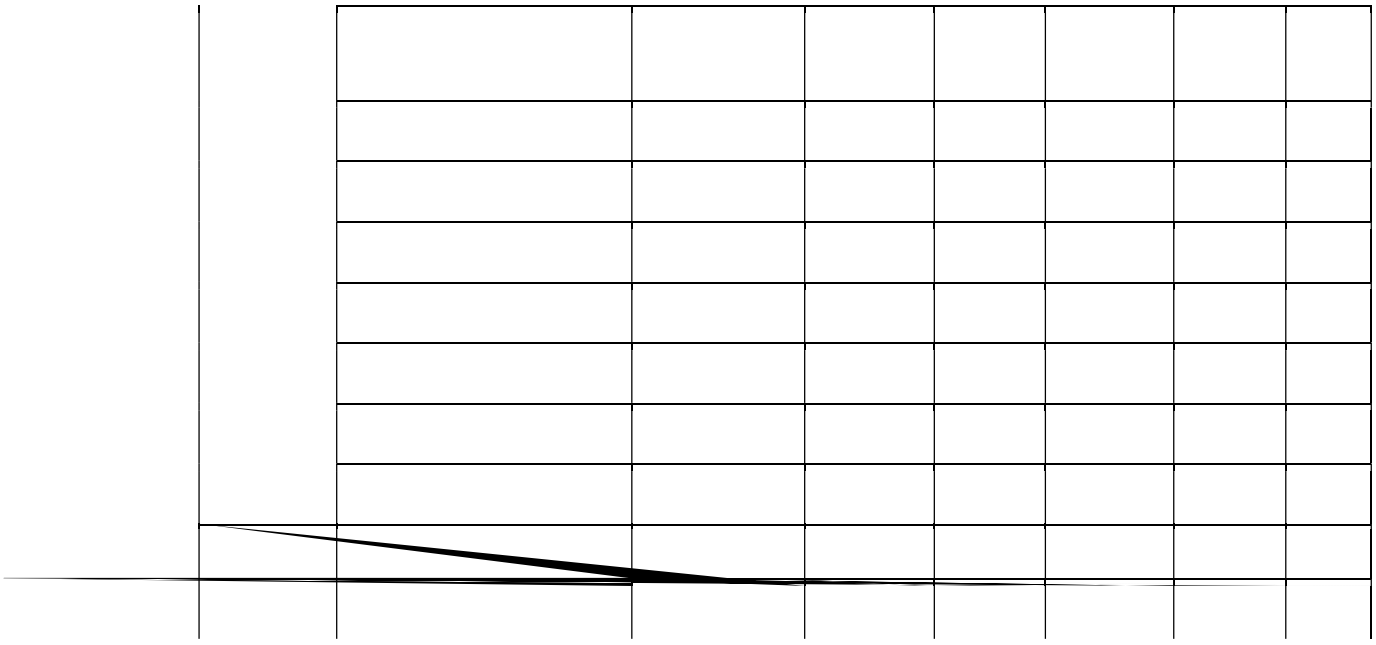

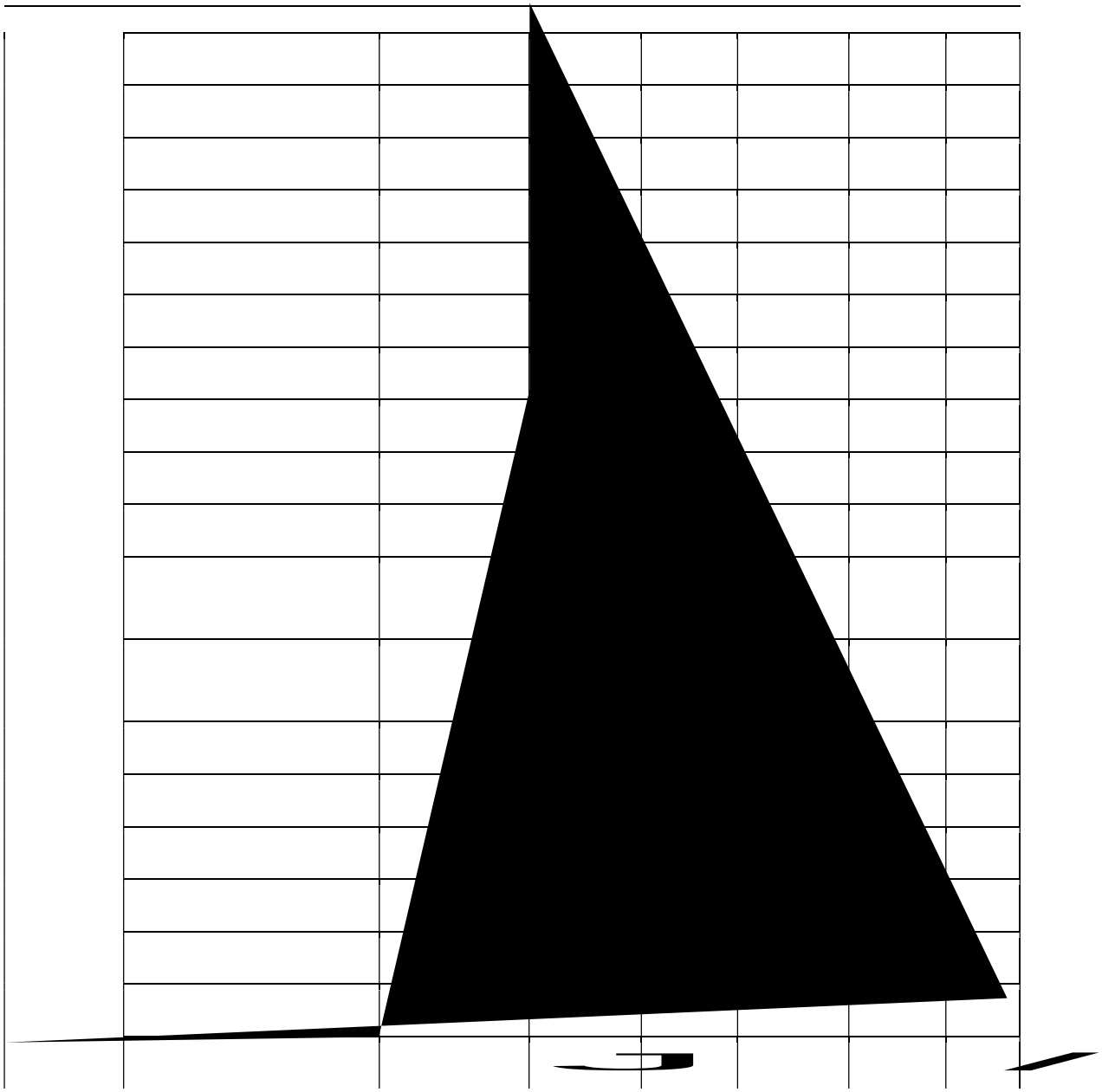

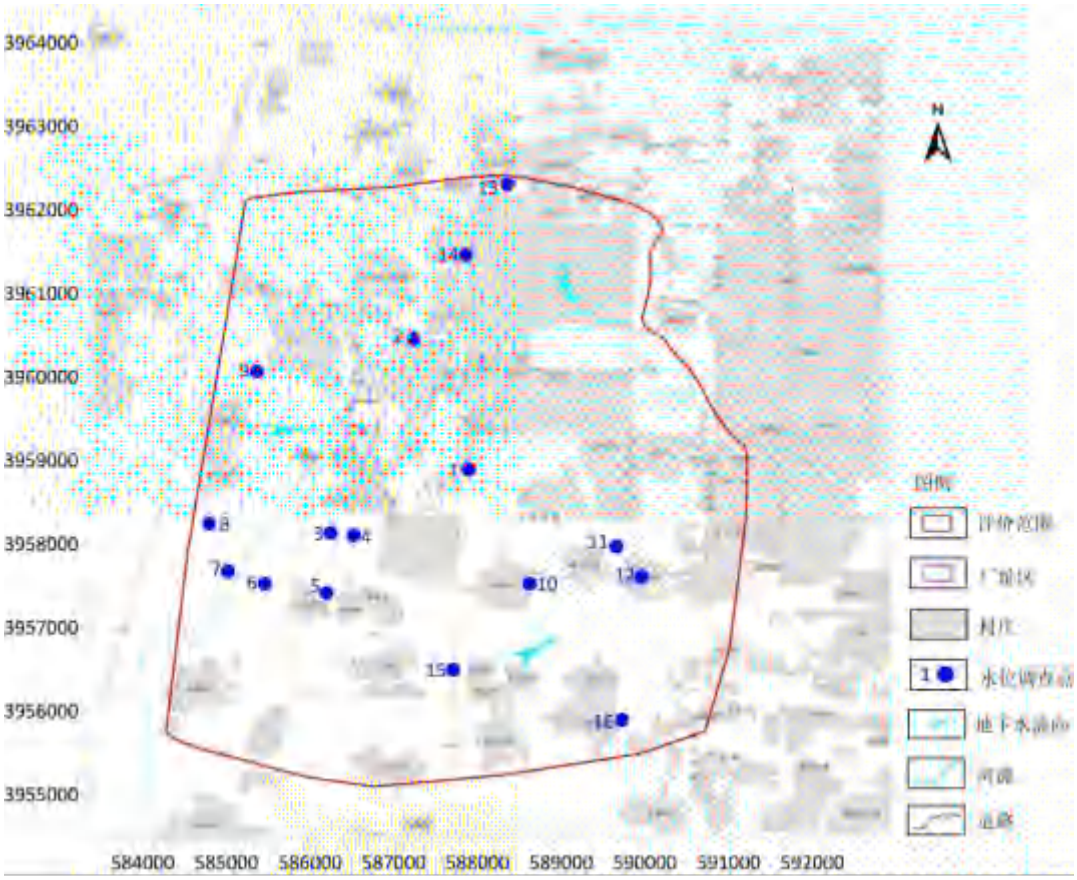
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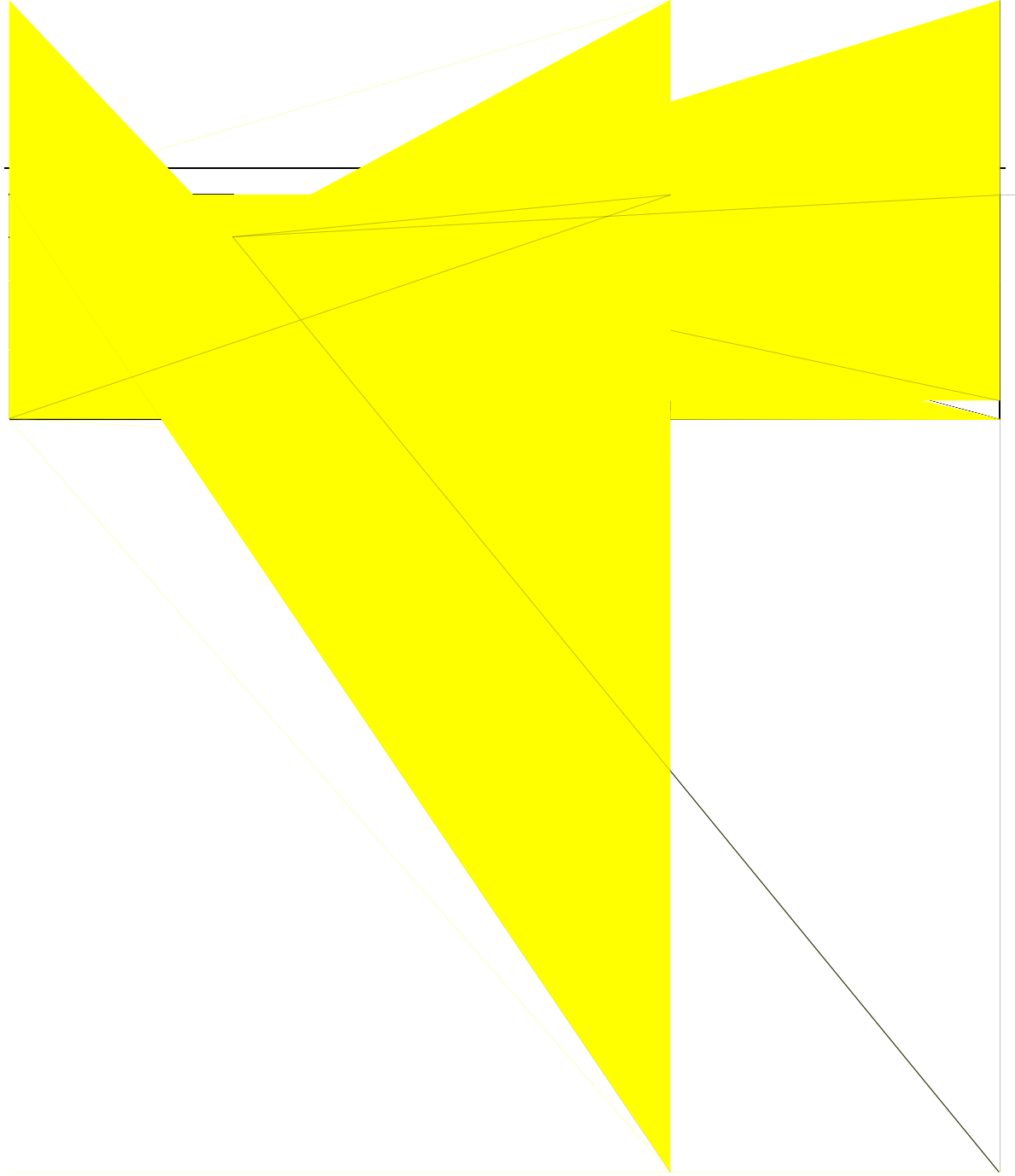
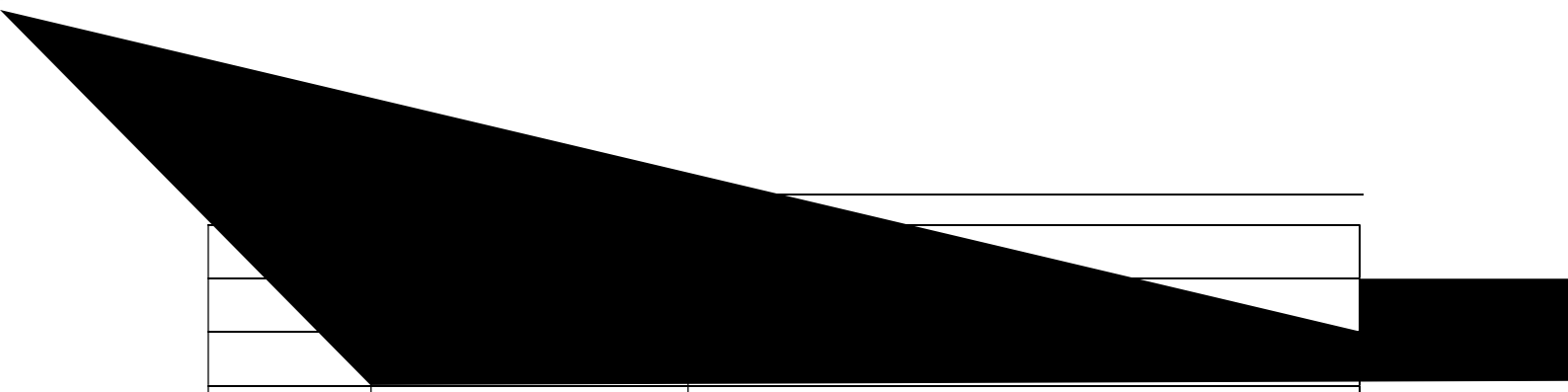
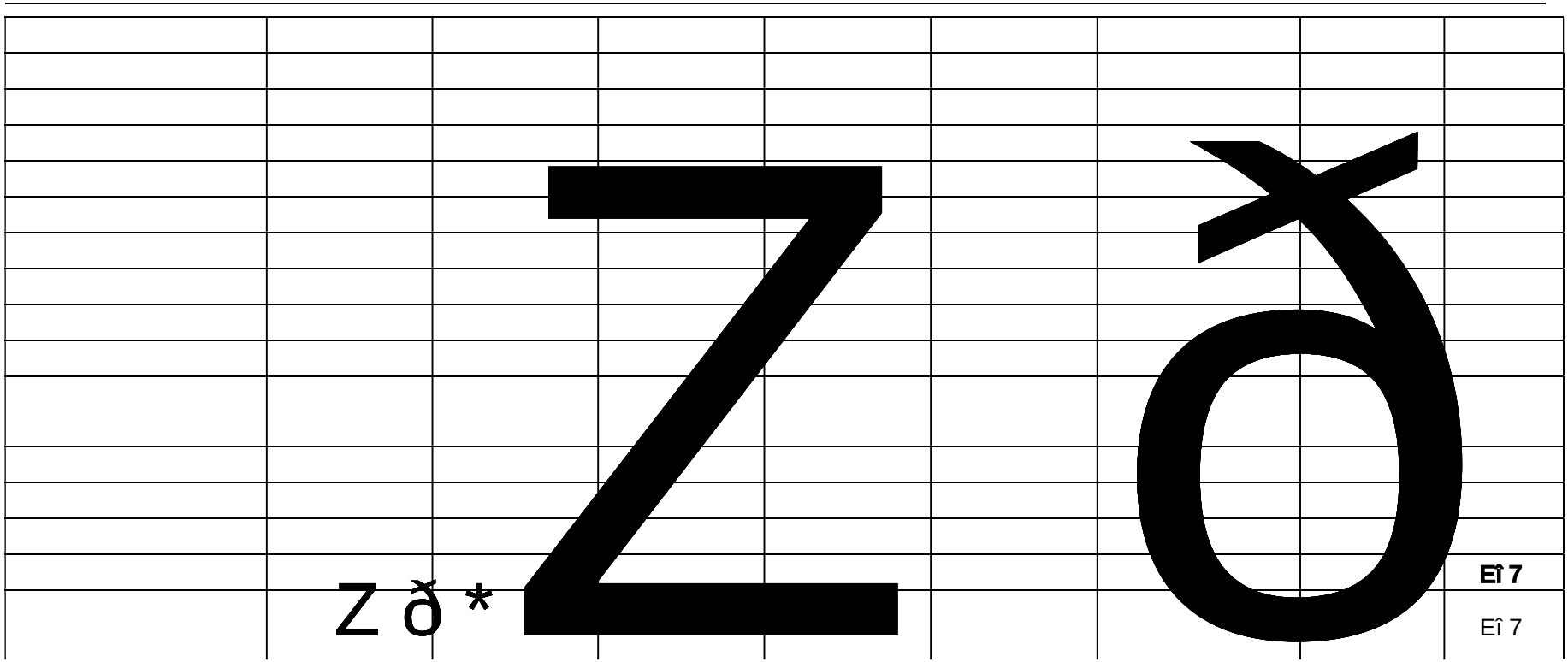
图例
评价范围
厂区边界
村庄
水位调查点
地下水流向
河流
道路







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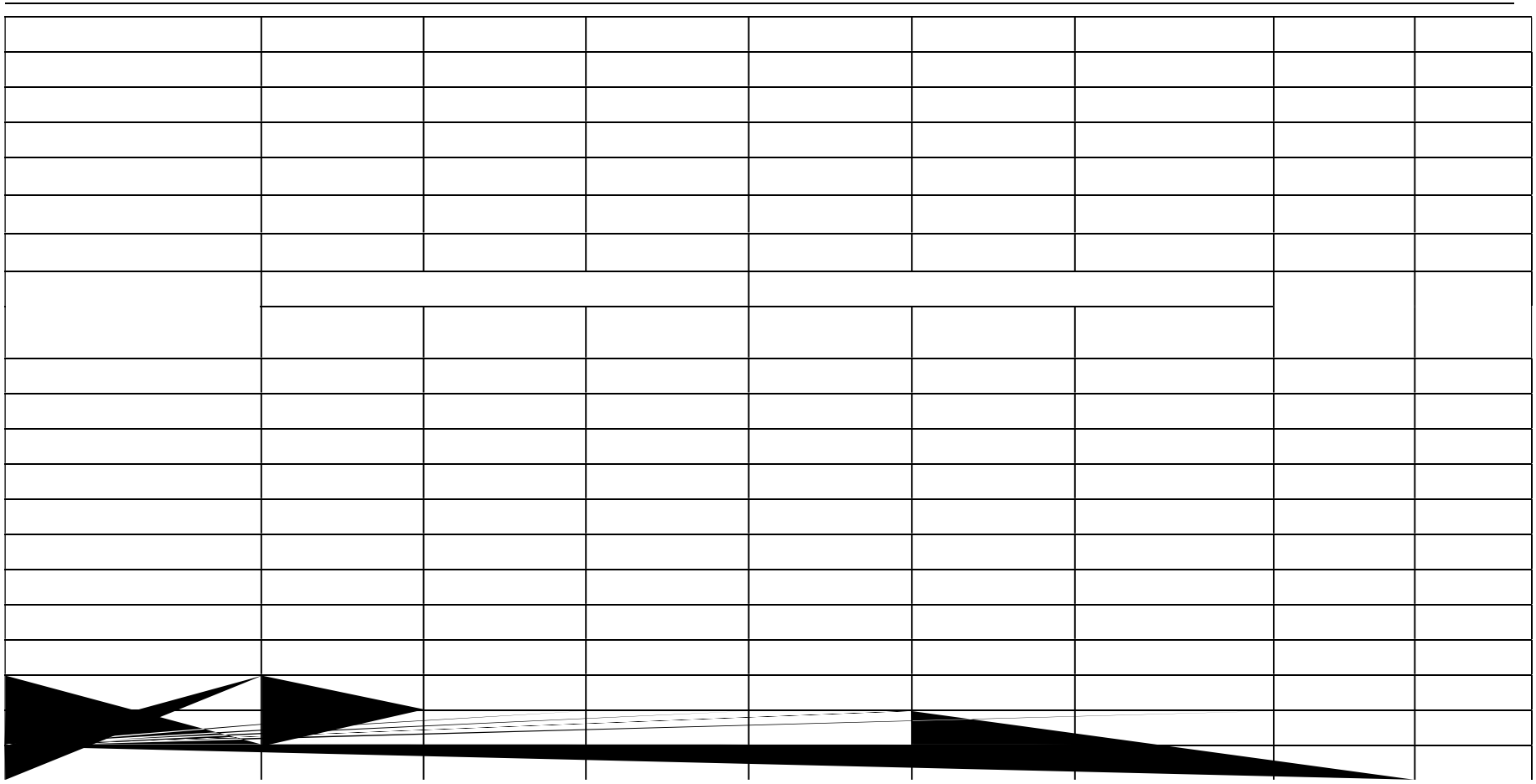

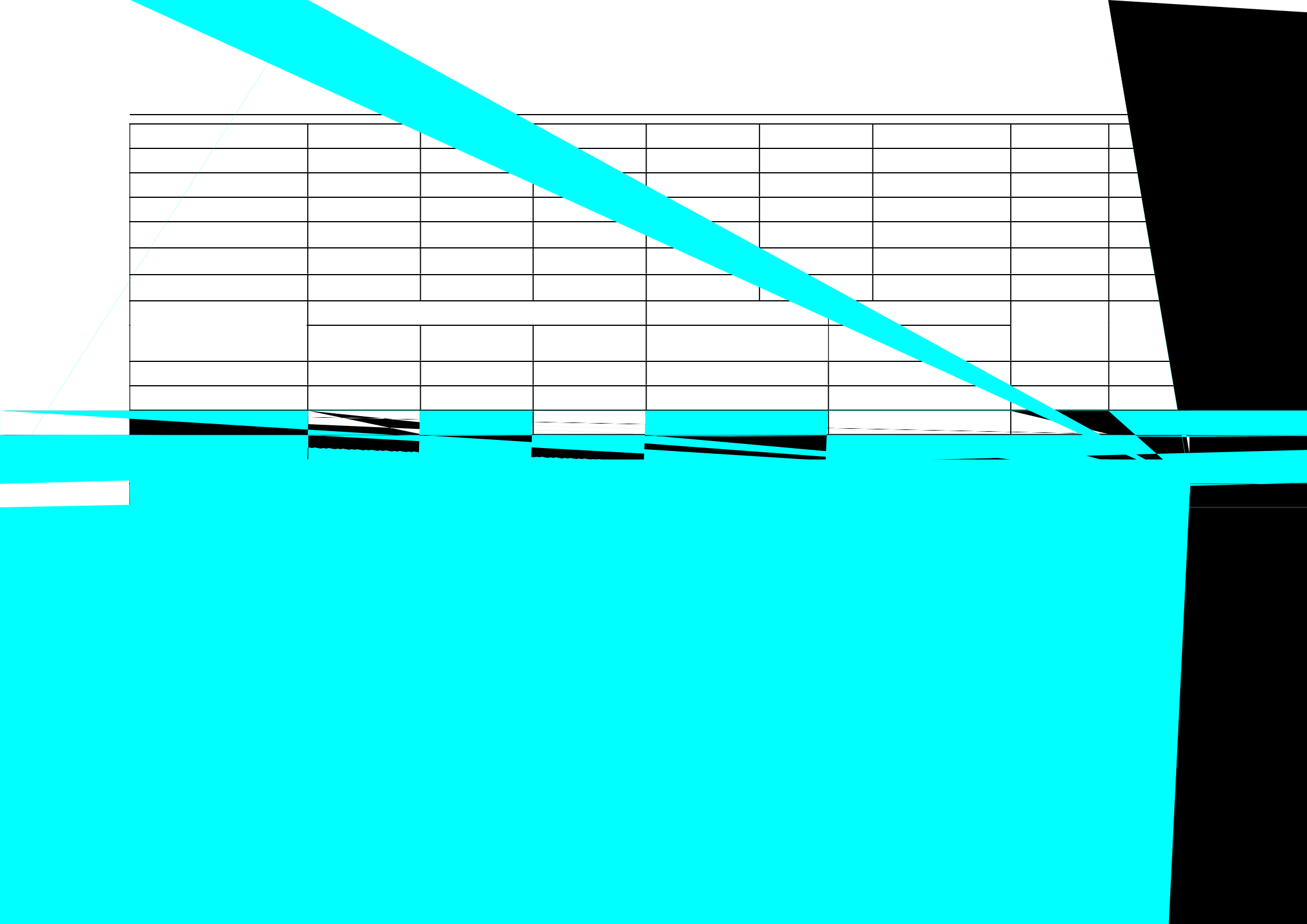

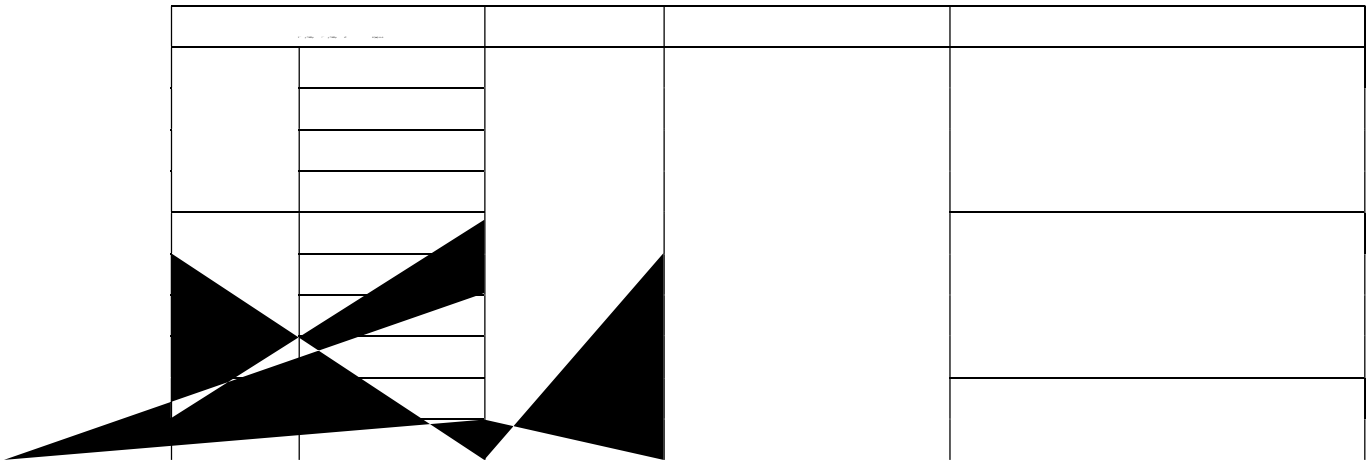

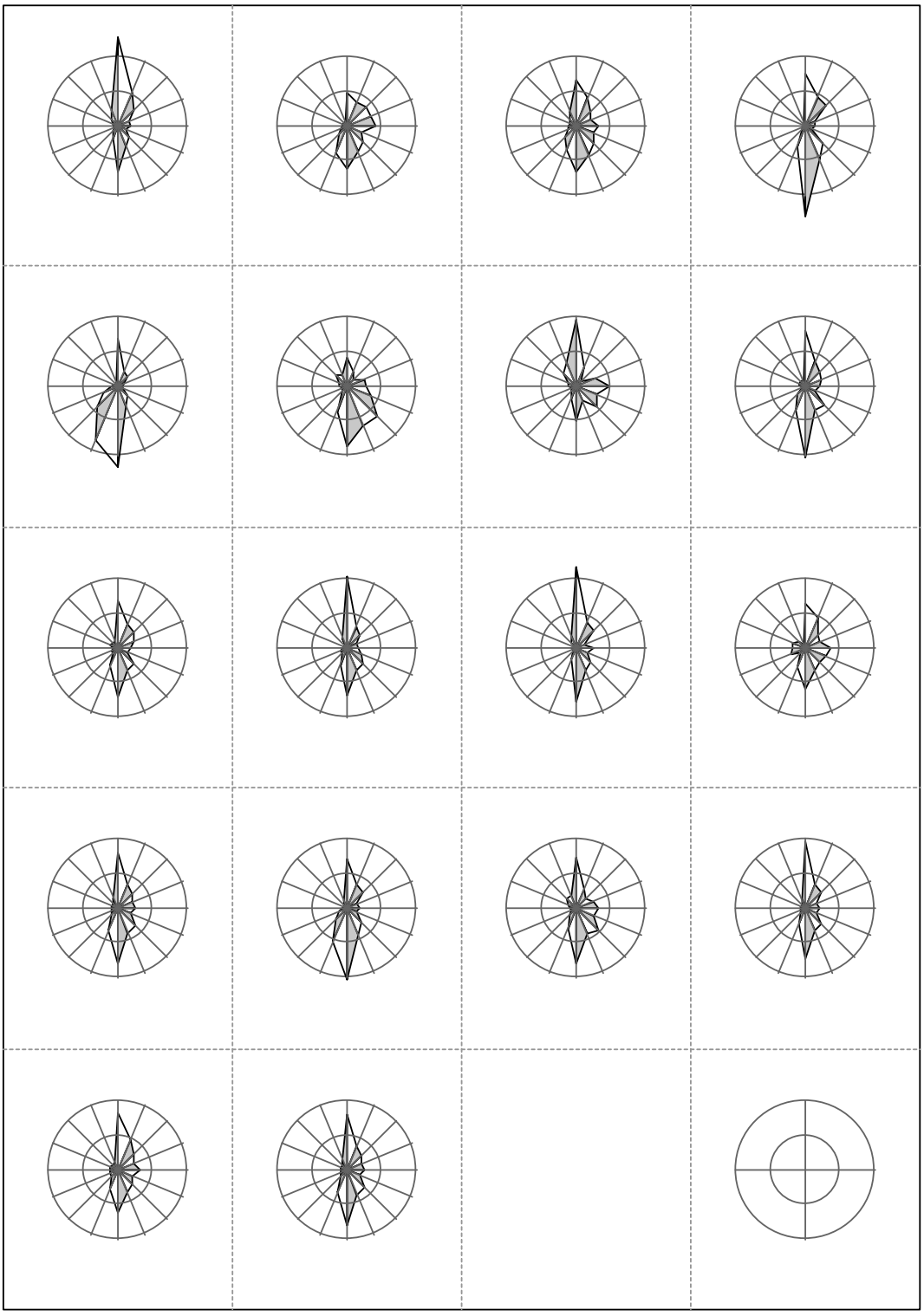

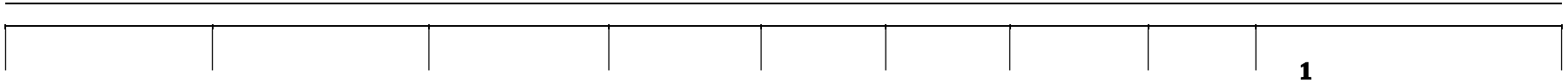
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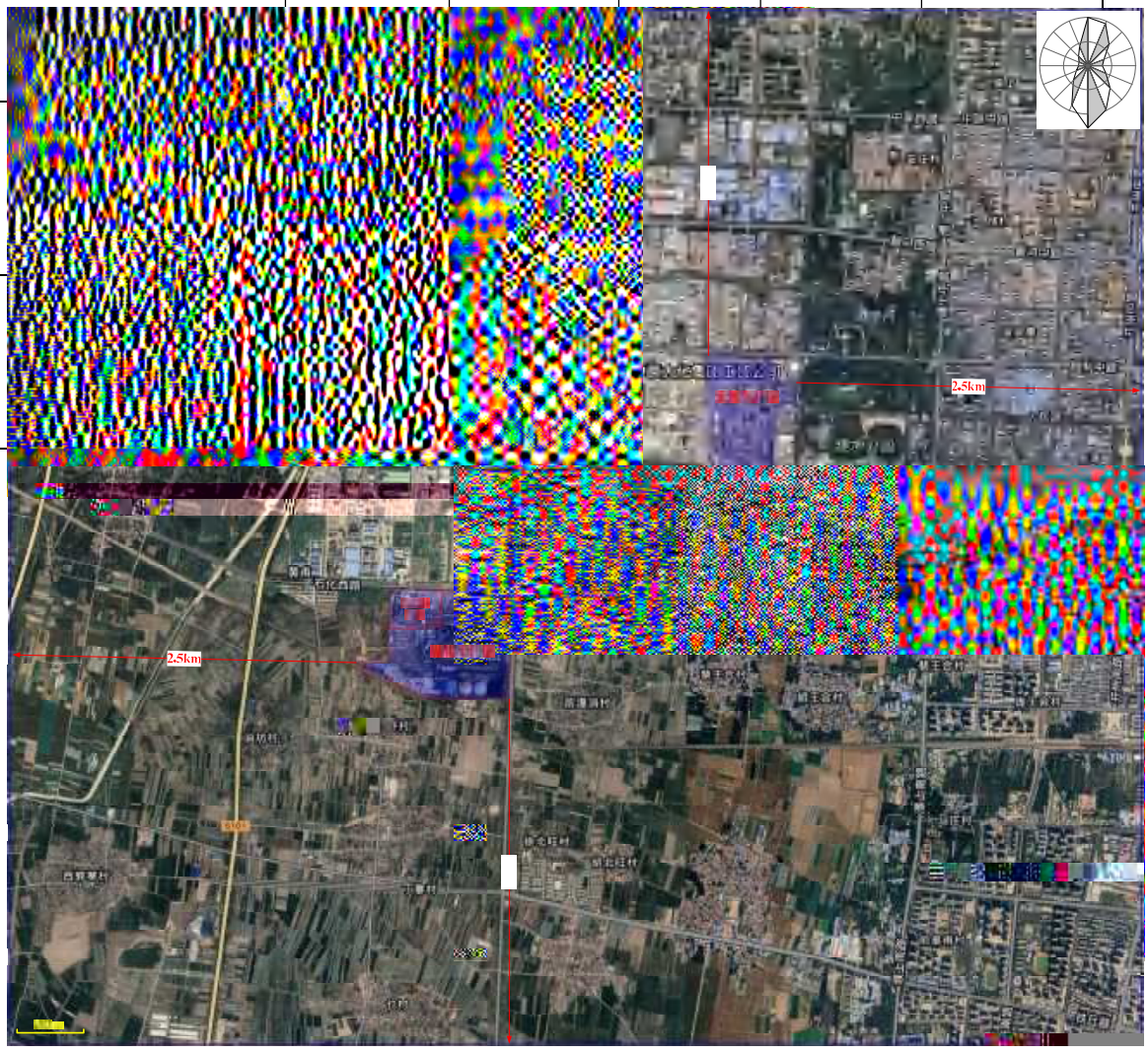
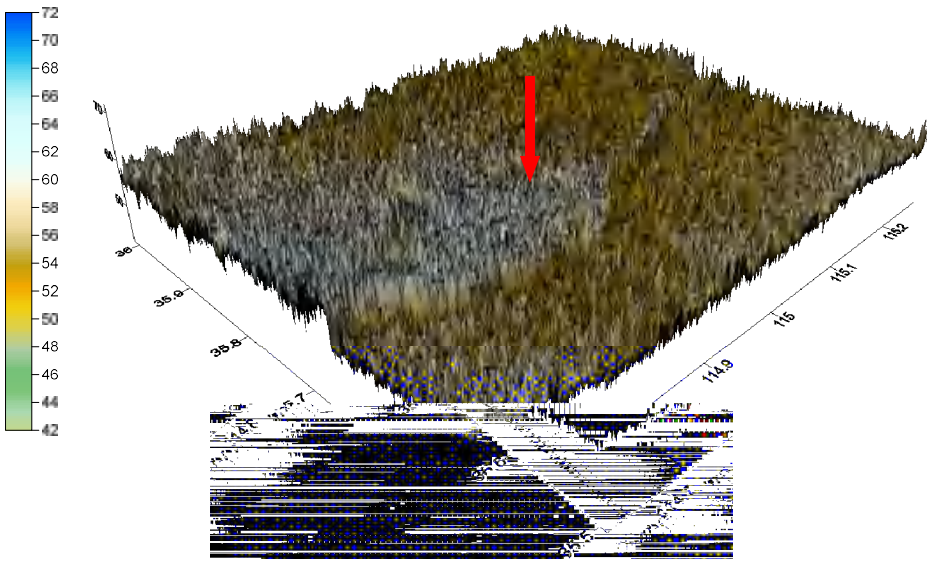

2.5km
2.5km


72
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35.8
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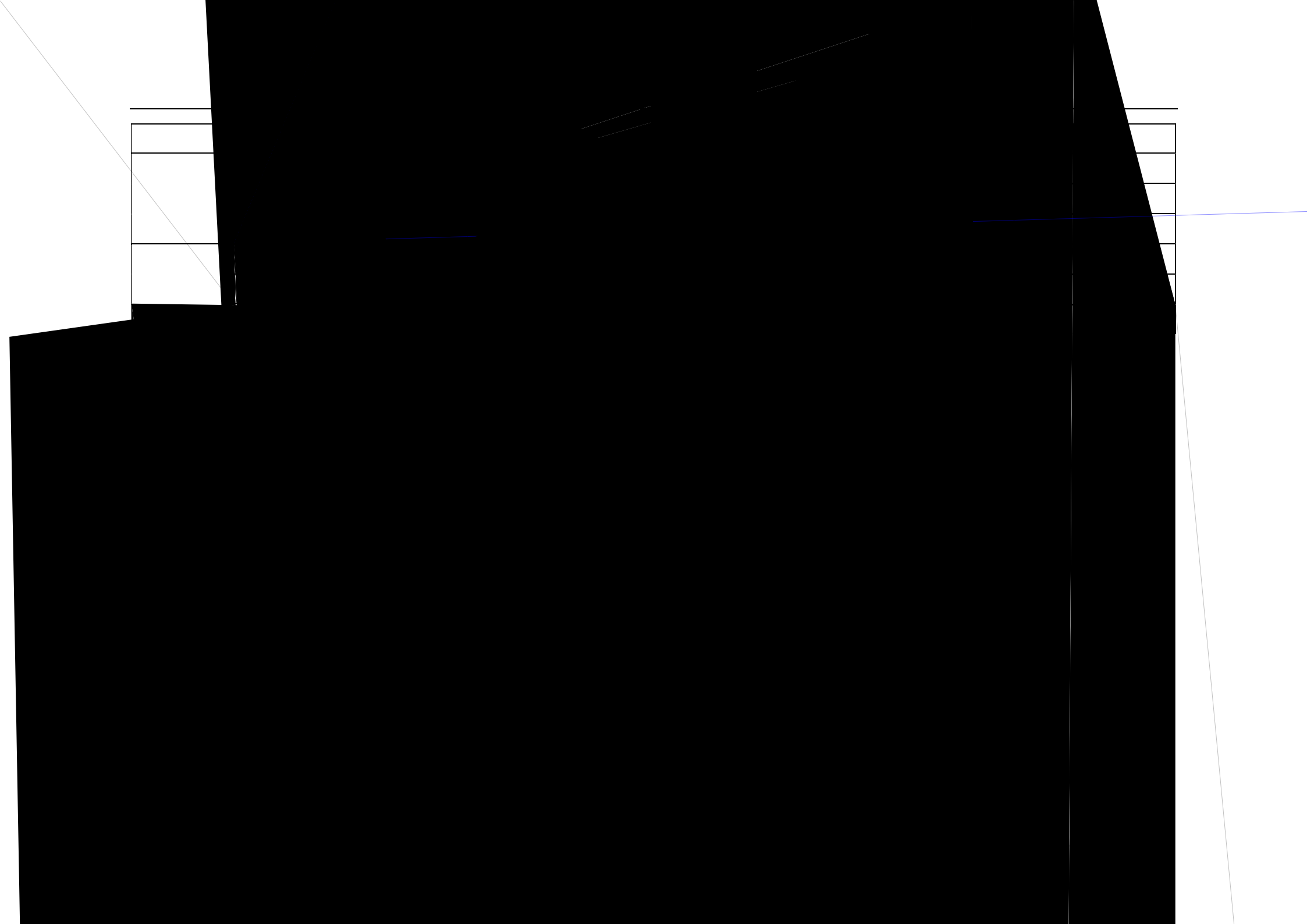
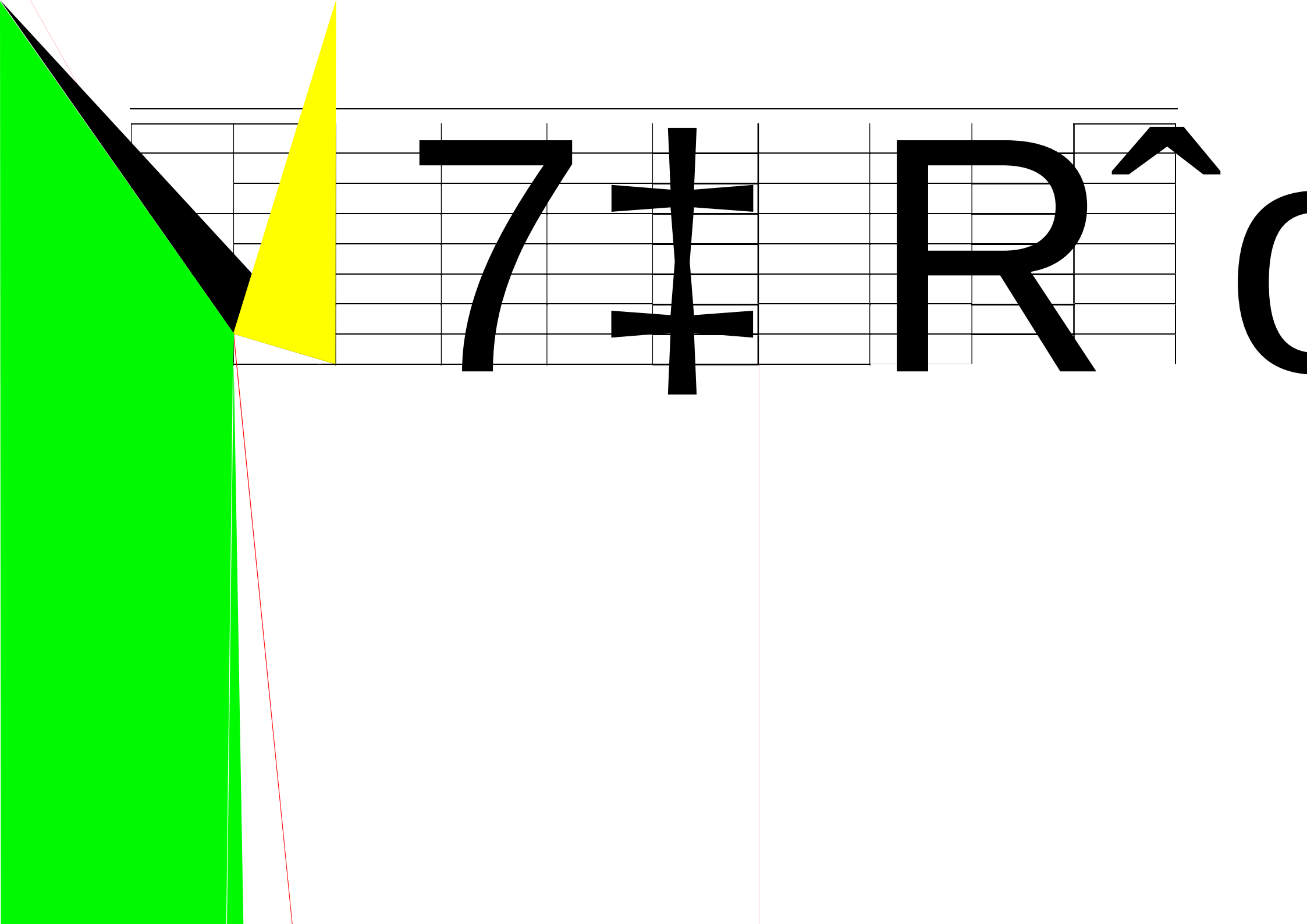
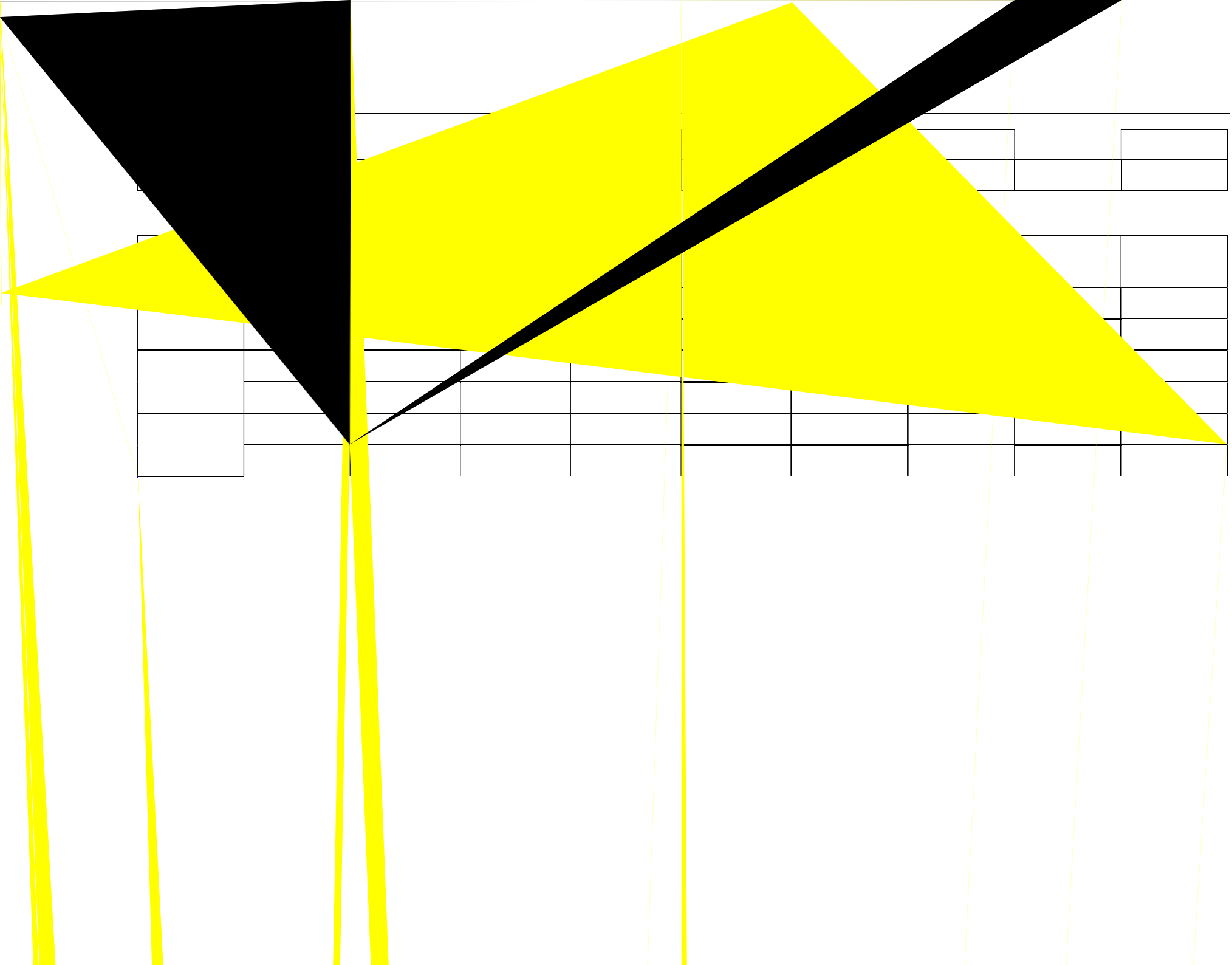
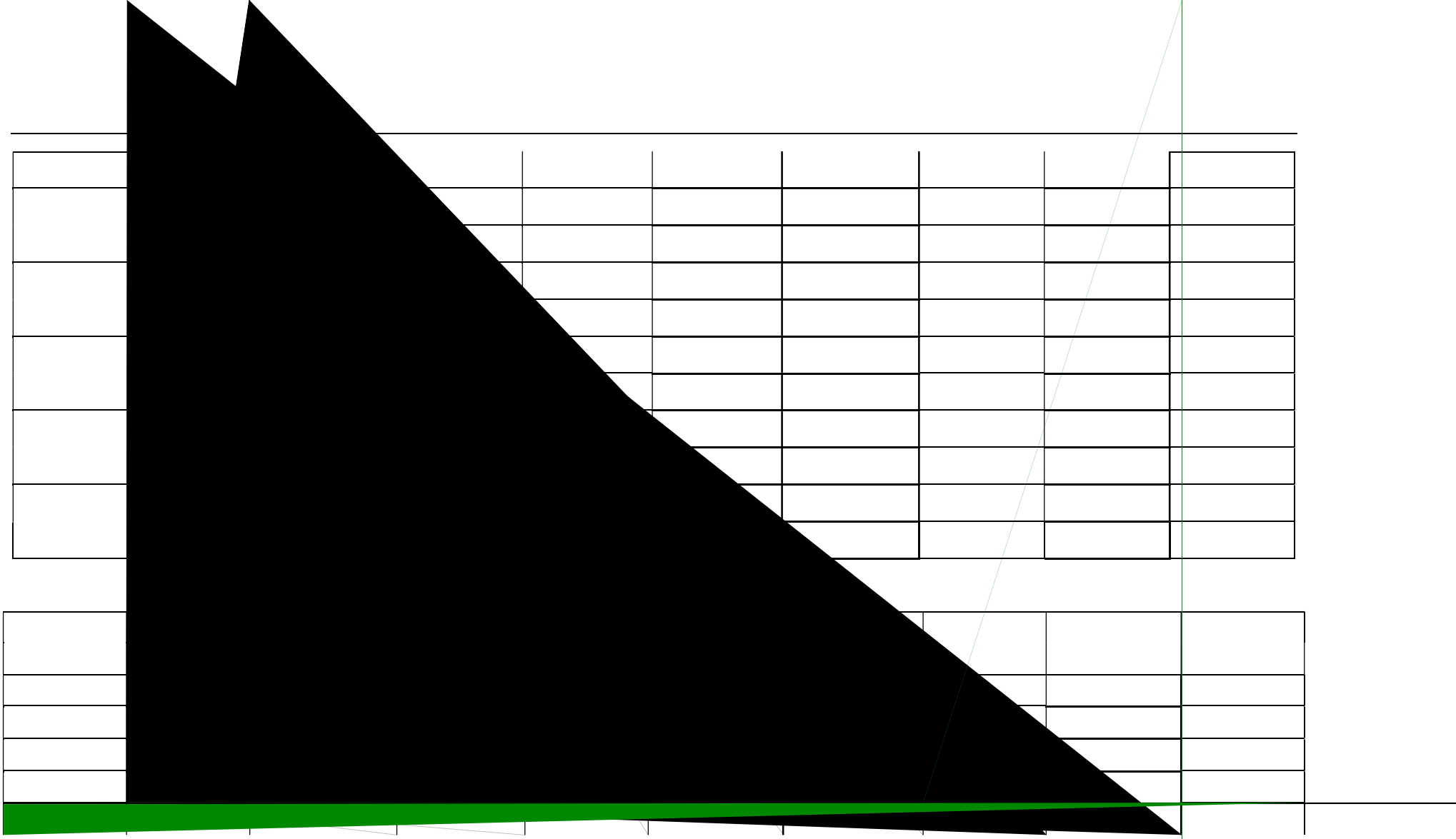
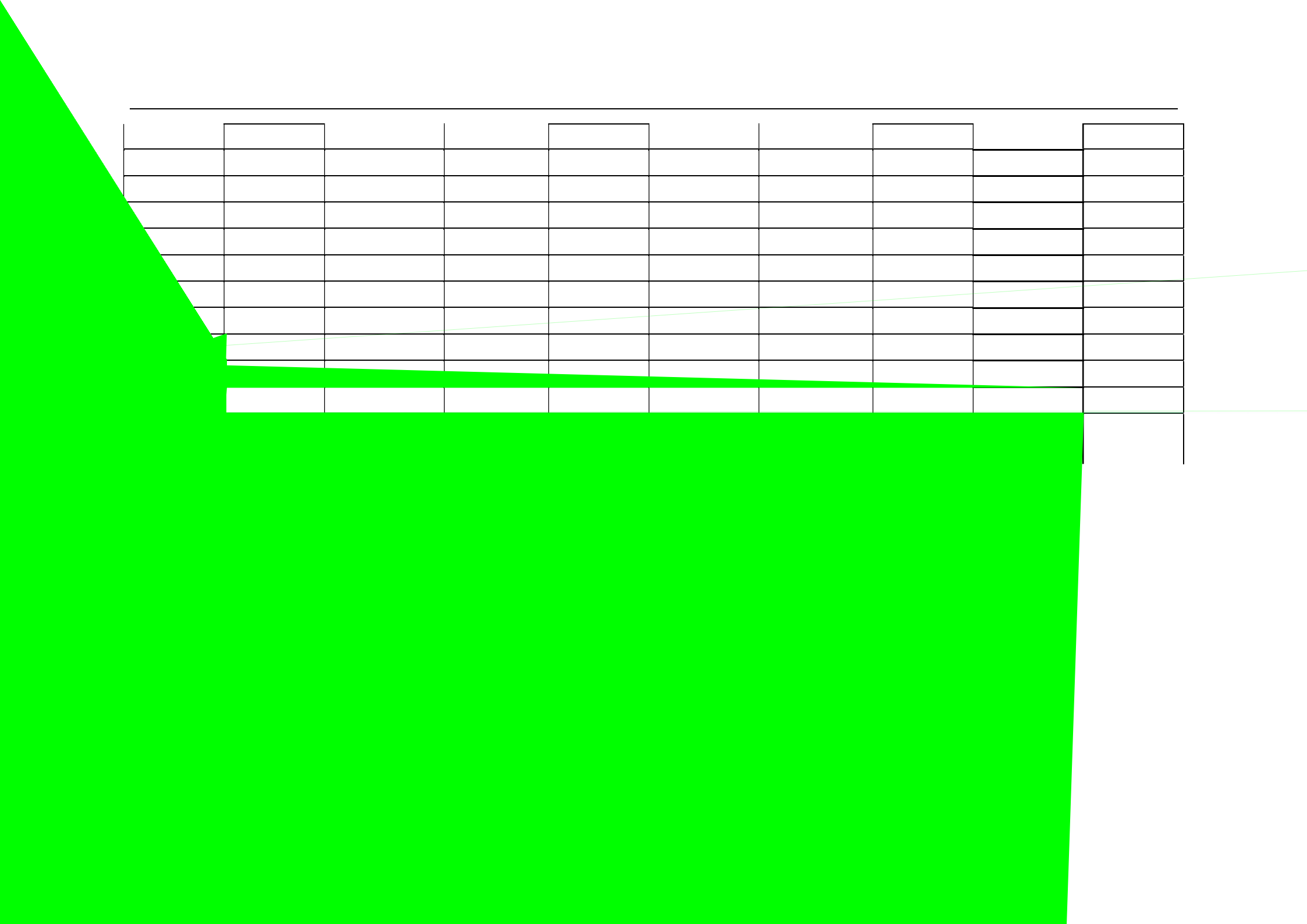
115
115.1
115.2

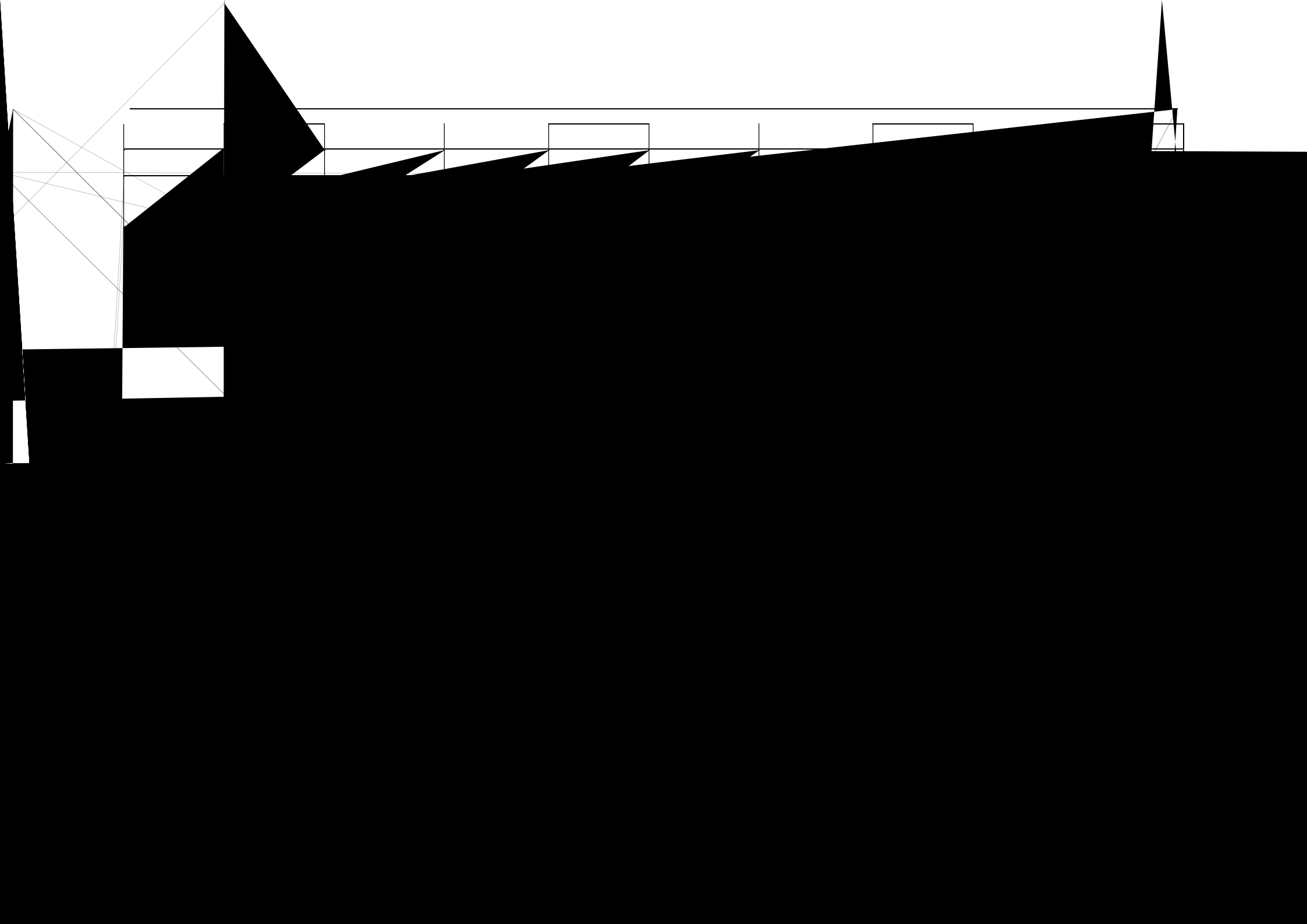



7+Rˆ







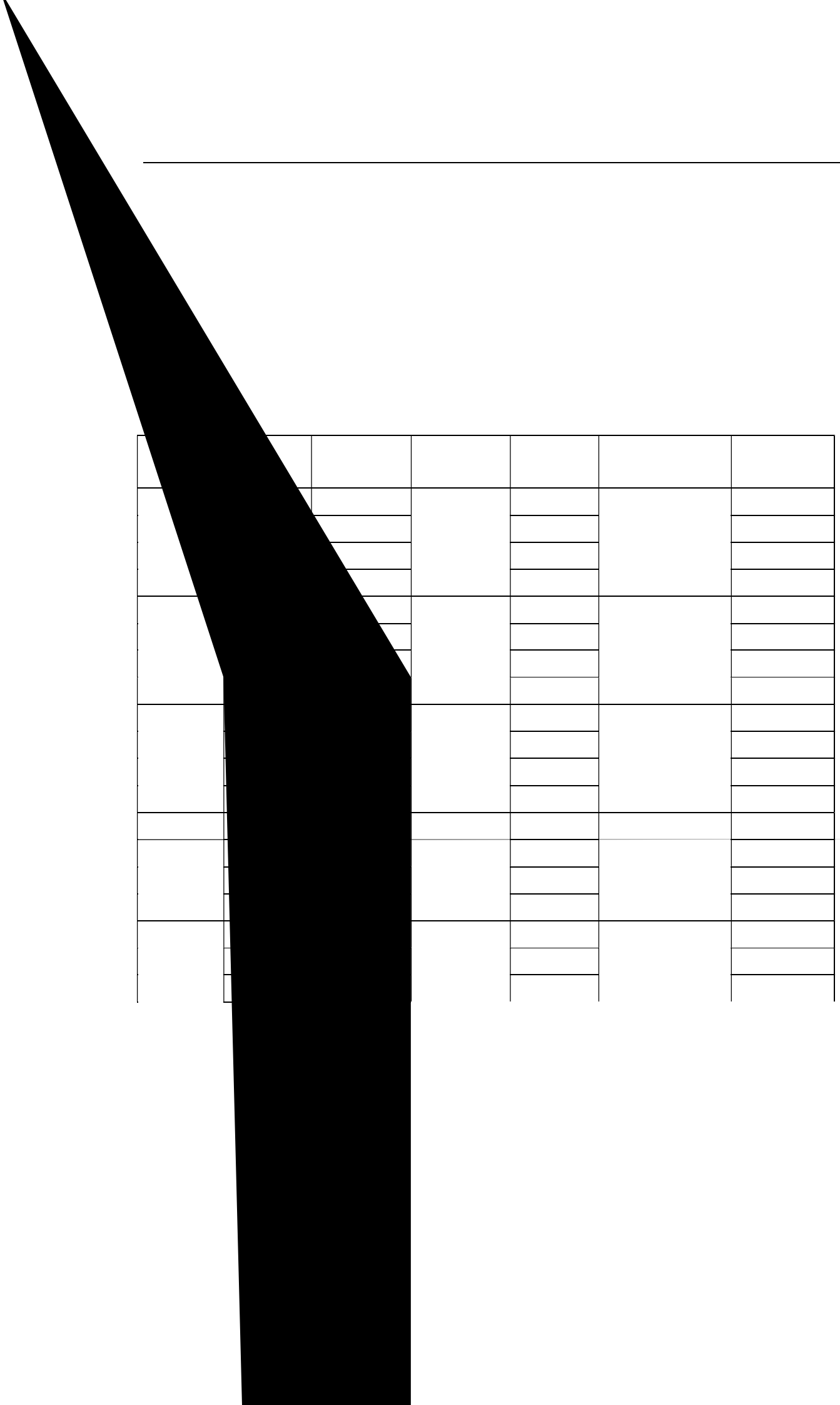


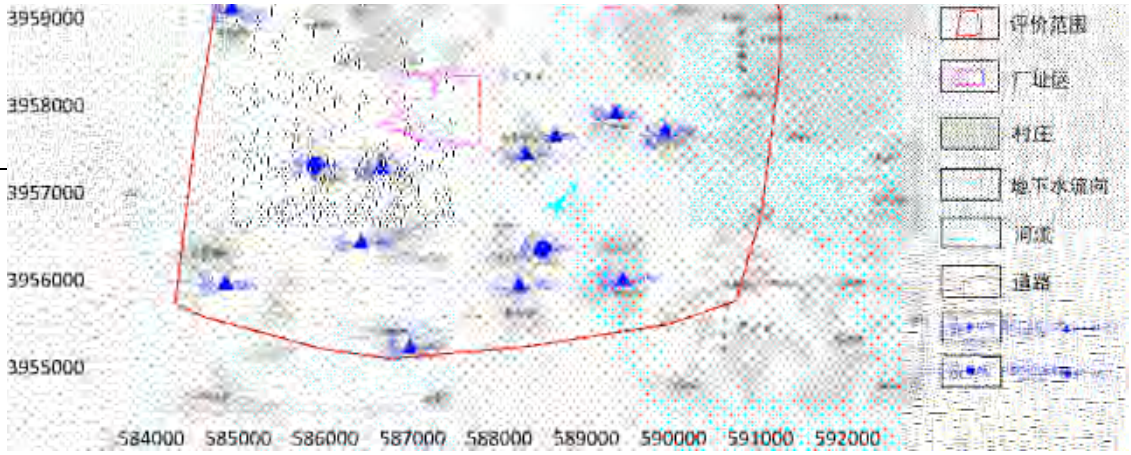
$$\left[\overline{C}_{\text{本项目(a)}} - \overline{C}_{\text{区域削减（a)}}\right] C_{\text{区域削减(a)}} \times 100\%$$

$\overline{C}_{\text{本项目(a)}}$

$\overline{C}_{\text{区域削减（a)}}$

	$\overline{C}_{\text{本项目(a)}}$	$\overline{C}_{\text{区域削减（a)}}$	

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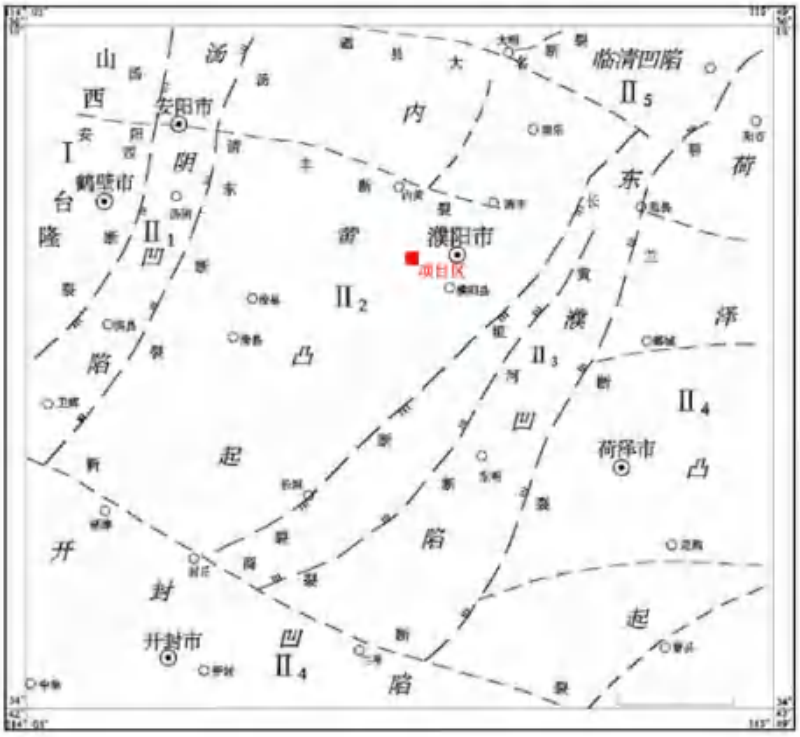
评价范围
厂址区
村庄
地下水流向
河流
道路


山
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汤
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内
临清凹陷
Ⅱ5
安阳市
Ⅰ
鹤壁市
台
隆
Ⅱ1
凹
濮阳市
项目区
东
荷
Ⅱ2
凸
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泽
陷
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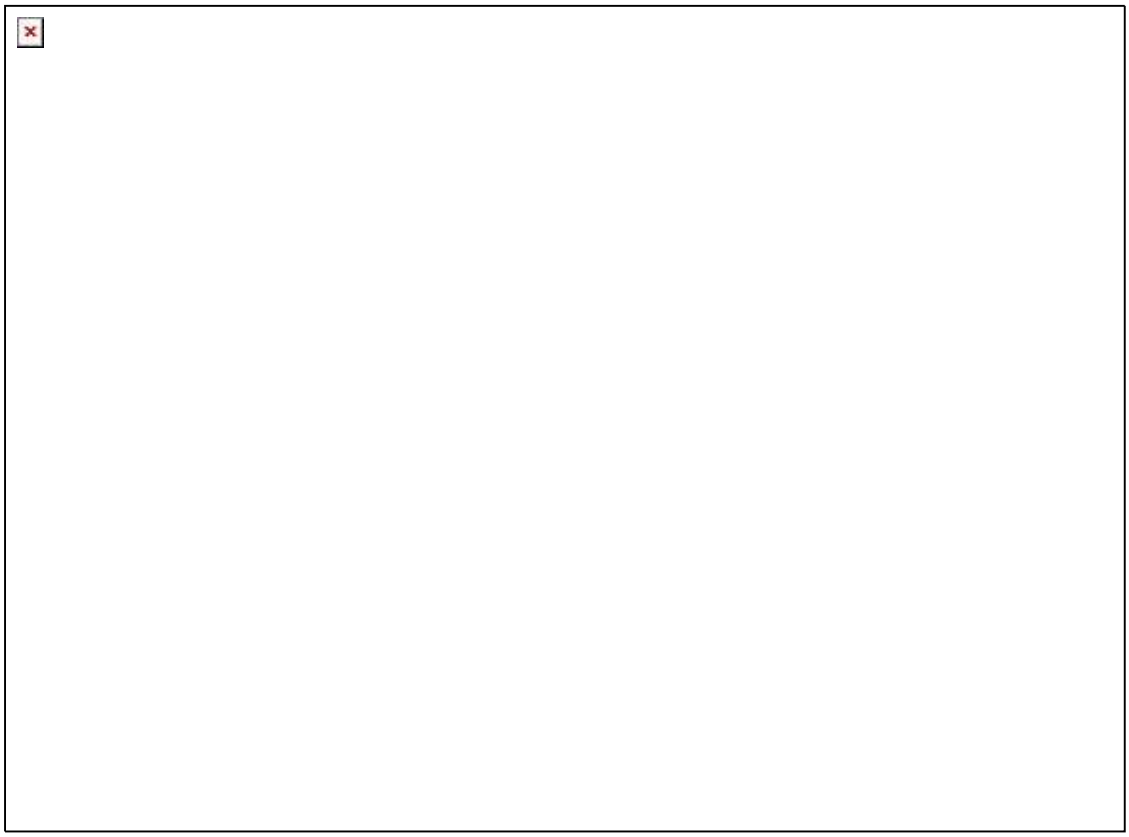
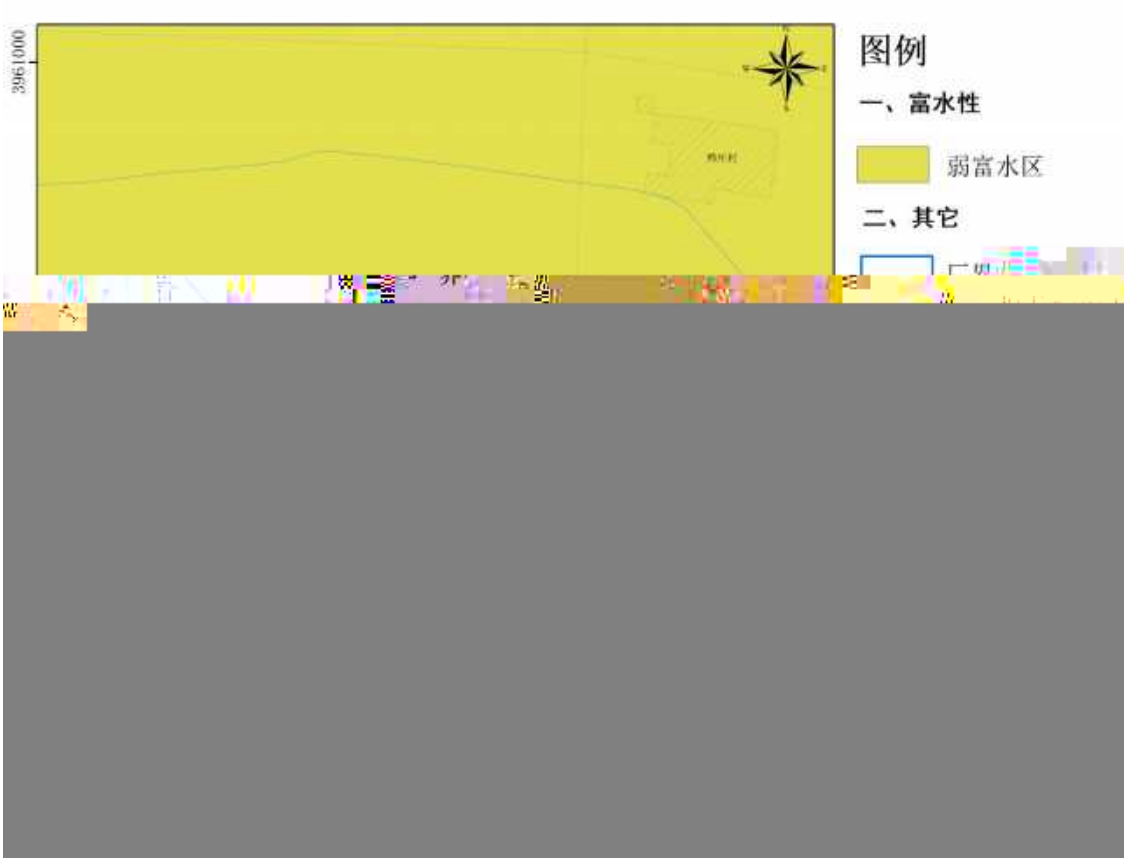


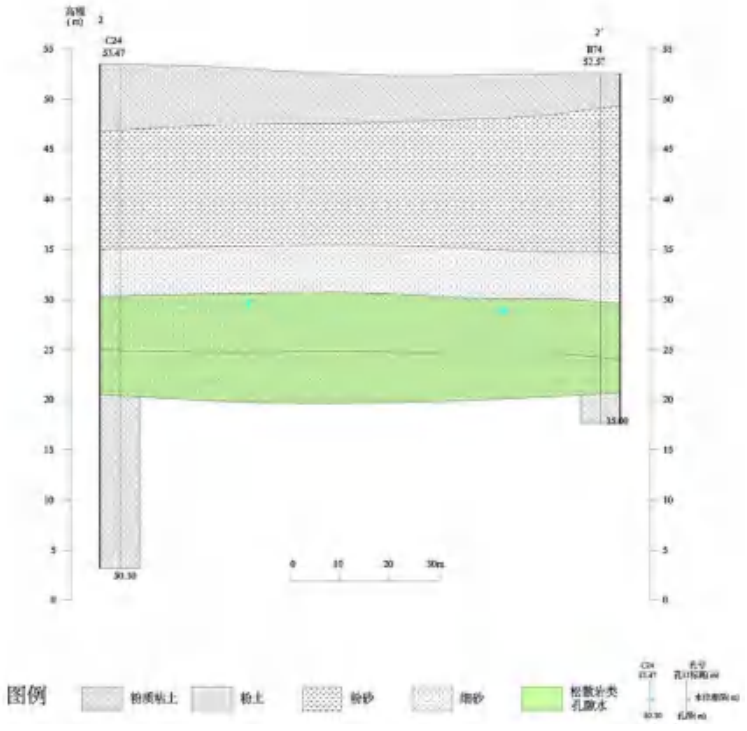

3961000
图例
一、富水性
弱富水区
二、其它

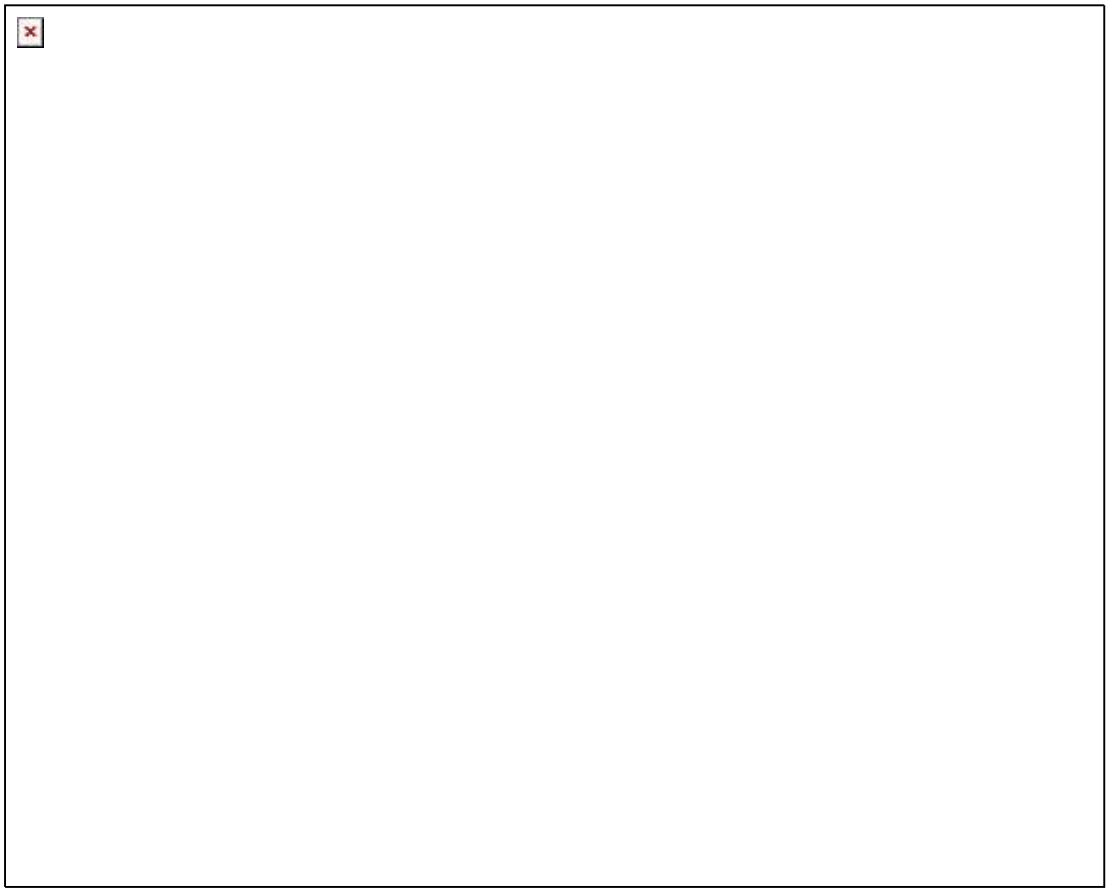
钻 孔 柱 状 图

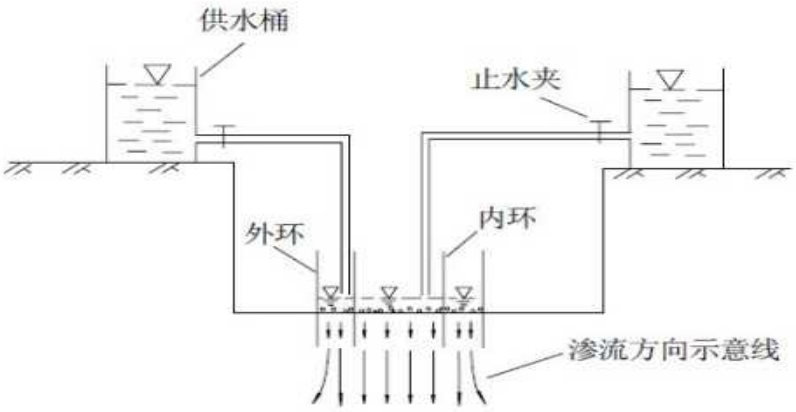
工程名称	1万吨每年草酸二甲酯合成草酰胺工程试验示范项目岩土工程勘察				
工程编号	KC202310			钻孔编号	1
孔口高程(m)	53.14	坐标(m)	X=1280.20	开工日期		稳定水位深度(m)	
孔口直径(mm)	127		Y=1159.50	竣工日期		稳定水位日期	

地层编号	地层名称	时代成因	层底高程(m)	层底深度(m)	分层厚度(m)	柱状图 1:200	地层描述	岩芯采取率%	标贯击数(击)	附注
①	杂填土		51.94	1.20	1.20		杂填土：杂色，稍密，稍湿，粉土、建筑垃圾构成。			
②	粉土		49.44	3.70	2.50		粉土：黄褐，稍密，稍湿，粉粒为主，干强度低，韧性低，切面粗糙，稍有粘性。		=15.0 2.00~2.30	
③	粉质粘土		48.64	4.50	0.80		粉质粘土：黄褐，稍湿，可塑，干强度中等，韧性中等，切面较光滑。		=15.0 4.00~4.30	
④	细砂	Q_4^{1-01}	33.14	20.00	15.50		细砂：黄，中密~密实，稍湿~湿，上部混有粉质粘土成分，中密~密实，稍湿~湿。		=16.0 6.00~6.30 =17.0 8.00~8.30 =25.0 10.00~10.30 =29.0 12.00~12.30 =30.0 14.00~14.30 =30.0 16.00~16.30 =32.0 18.00~18.30 =35.0 20.00~20.30	

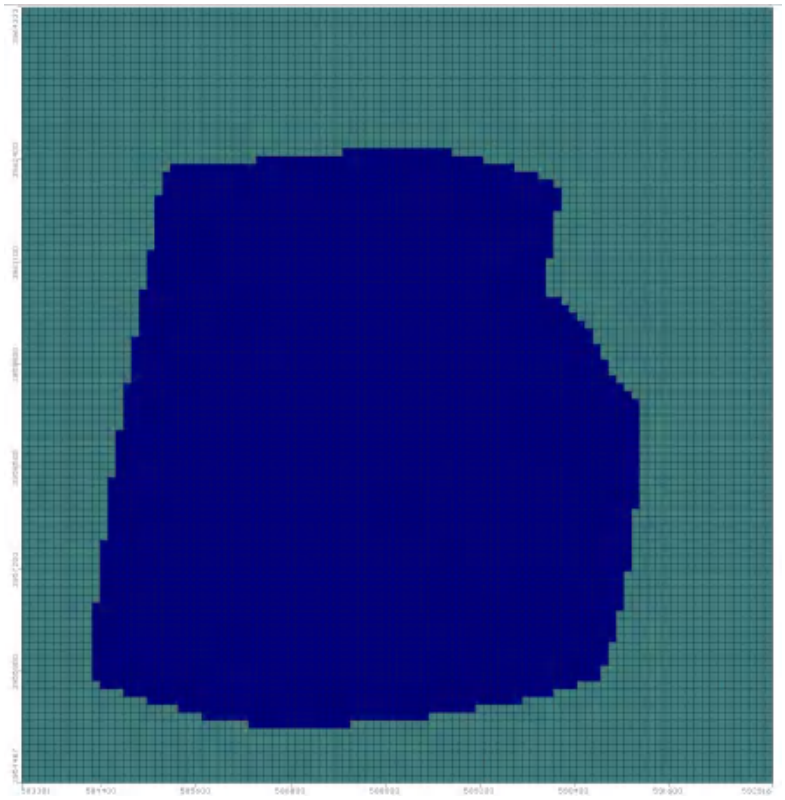
勘察单位	赛鼎工程有限公司	校对		审核		图号	01

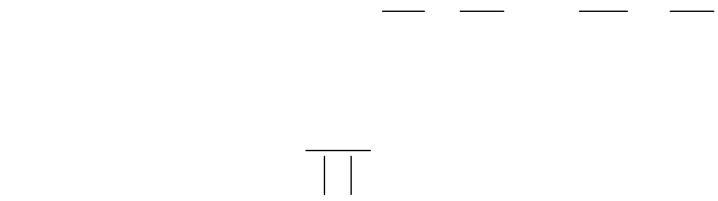

高程
(m)
2
C24
53.47
2'
B74
52.57
50
45
40
35
30
25
20
15
10
5
0
0
10
20
30m
50.30
35.00
图例
粉质粘土
粉土
粉砂
细砂
松散岩类
孔隙水

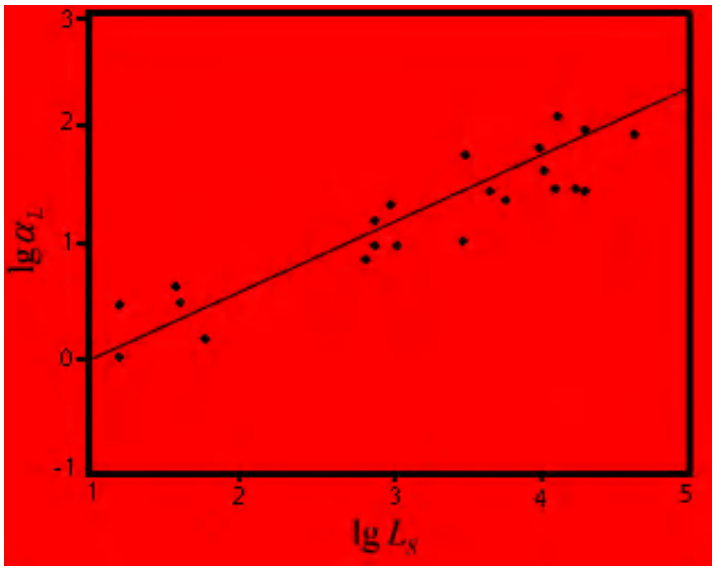


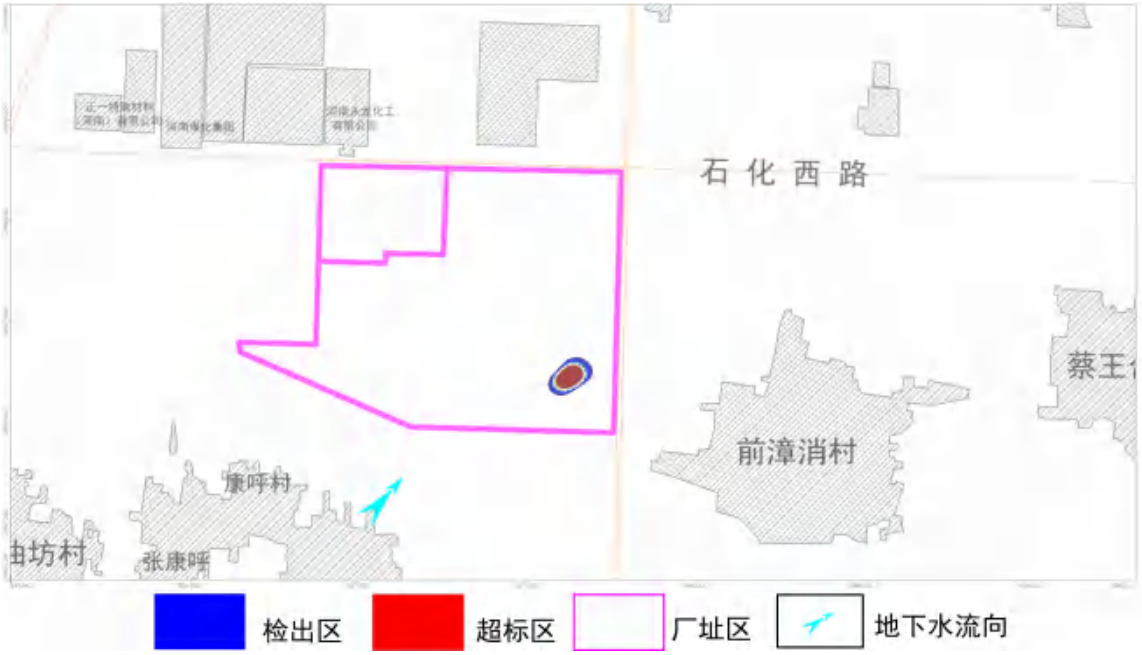

供水桶
止水夹
外环
内环
渗流方向示意线

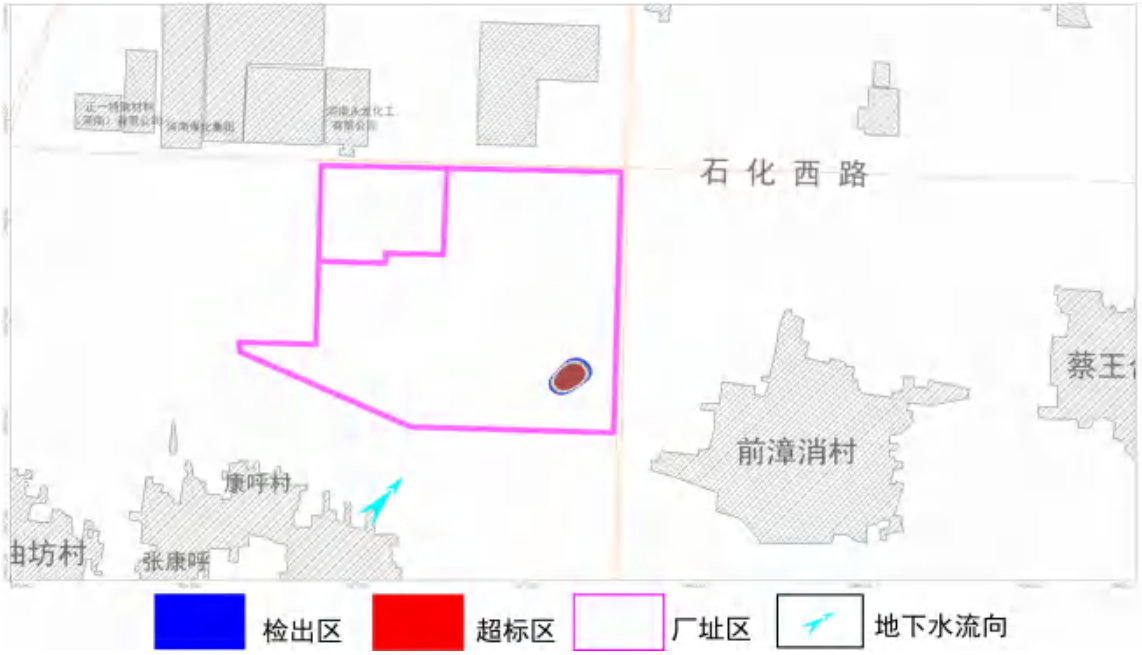
$$\sqrt{\qquad}$$

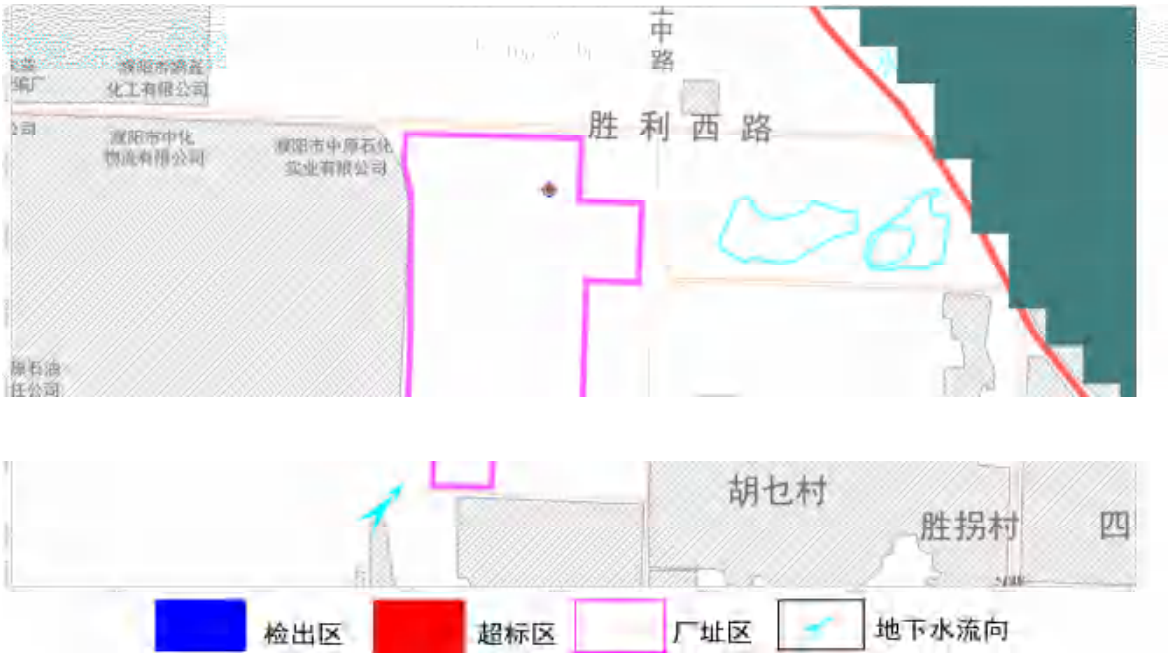


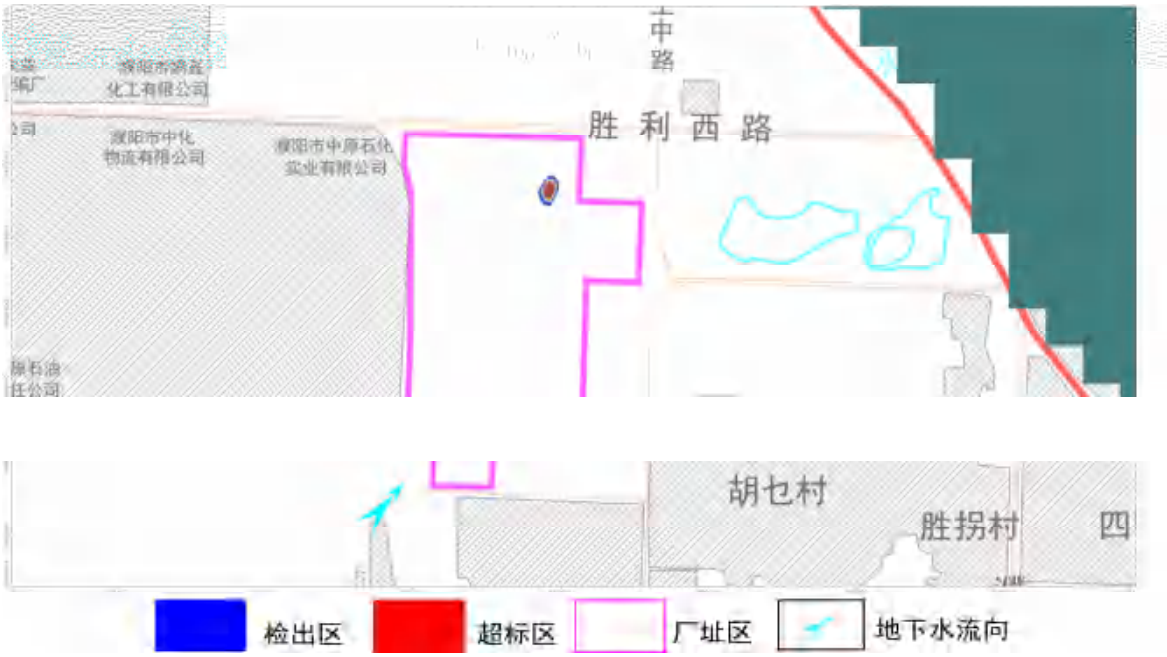



3
2
1
0
-1
1
2
3
4
5
lg α_L
lg L_S

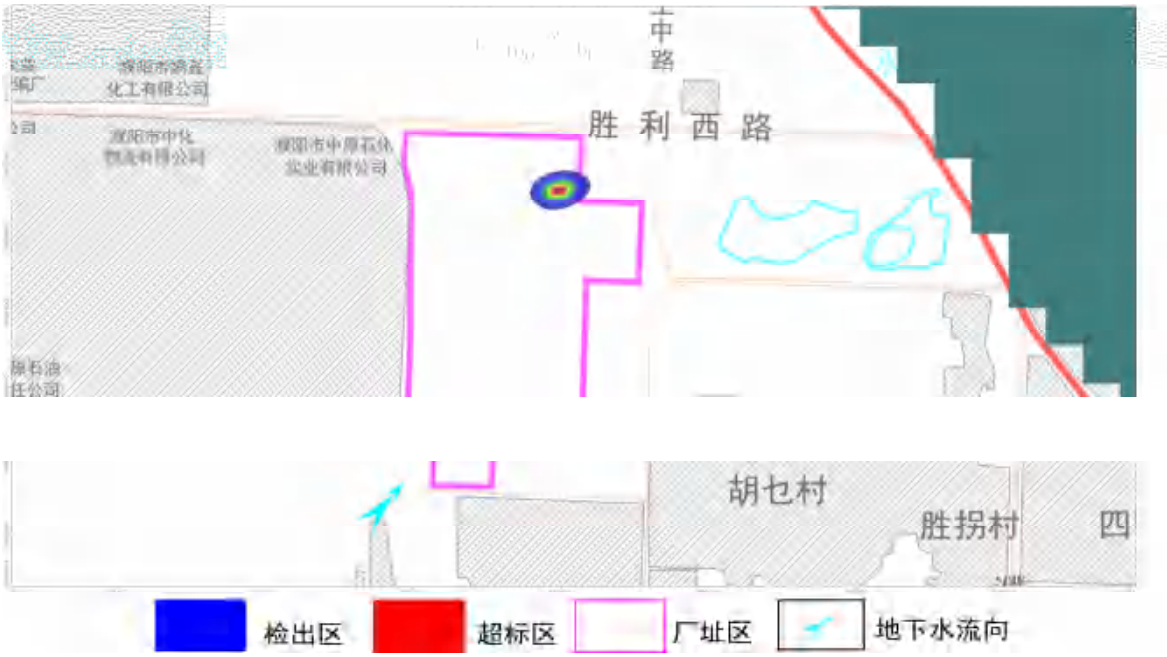

石化西路
前漳消村
康呼村
张康呼
检出区
超标区
厂址区
地下水流向


石化西路
前漳消村
康呼村
张康呼
检出区
超标区
厂址区
地下水流向


中路
胜利西路
胡七村
胜拐村
四
检出区
超标区
厂址区
地下水流向


中路
胜利西路
濮阳市中化物流有限公司
濮阳市中原石化实业有限公司

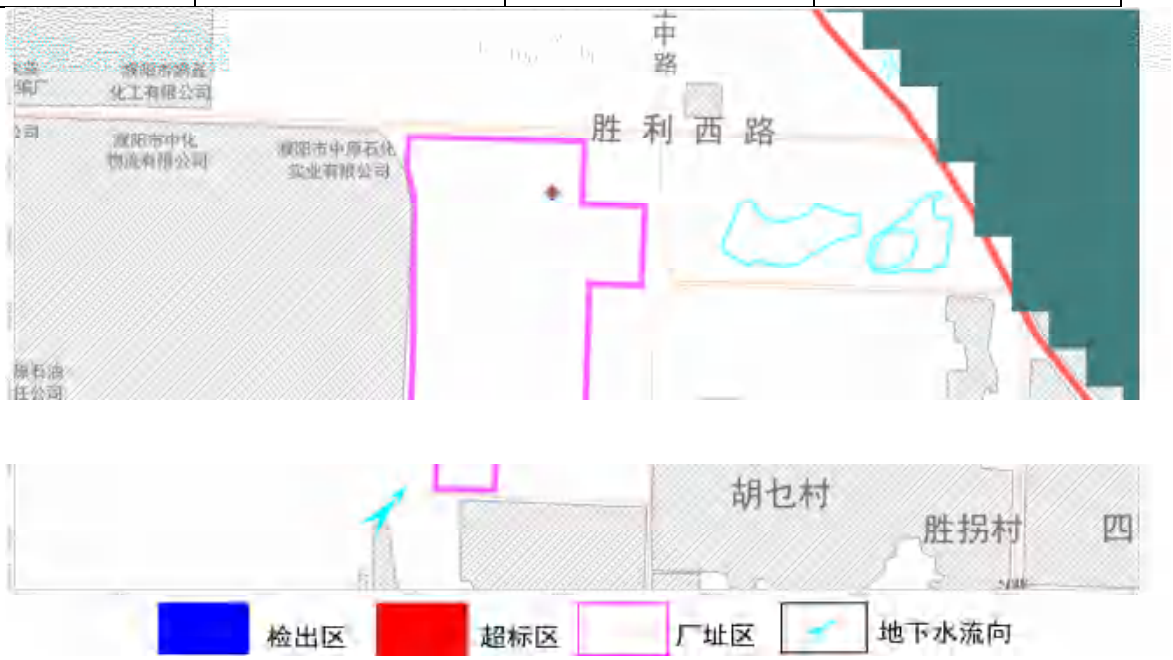
胡屯村
胜拐村
四

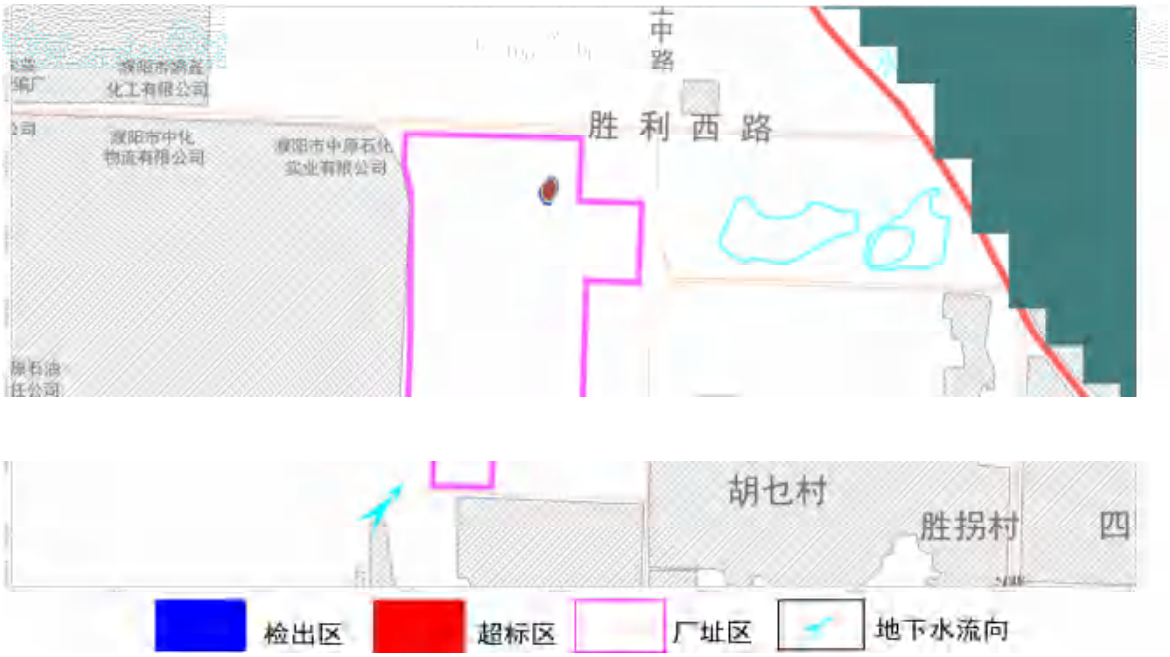

检出区
超标区
厂址区
地下水流向

中路
胜利西路
濮阳市中化物流有限公司
濮阳市中原石化实业有限公司

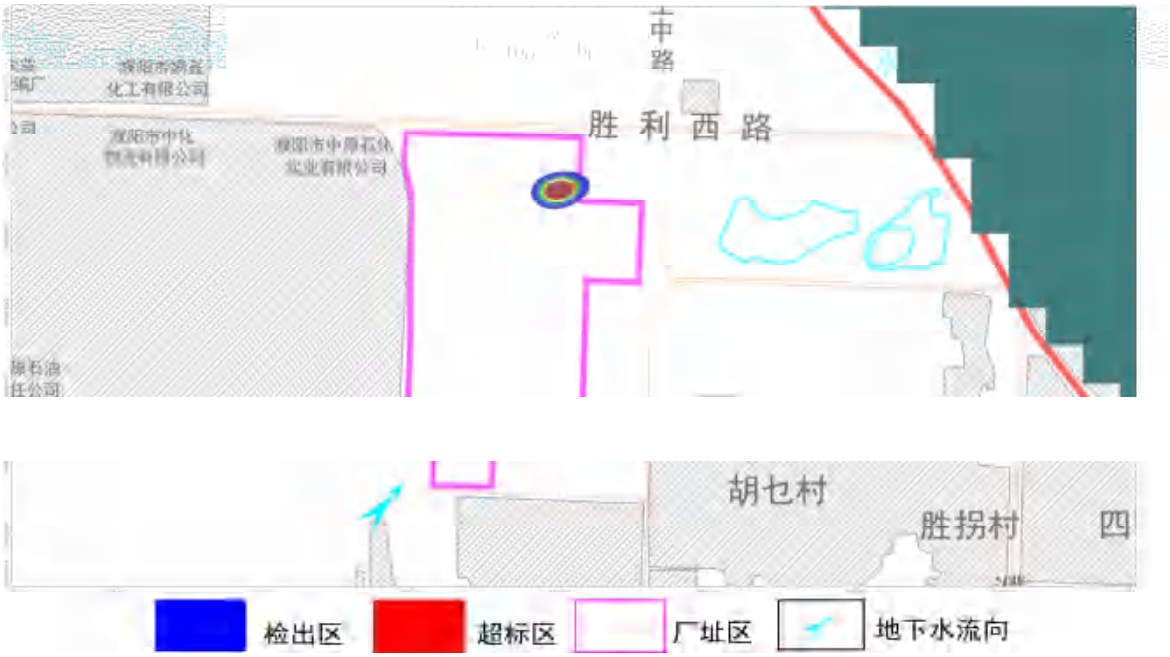
胡屯村
胜拐村
四

检出区
超标区
厂址区
地下水流向


中路
胜利西路
胡七村
胜拐村
四
检出区
超标区
厂址区
地下水流向


中路
胜利西路
濮阳市中化物流有限公司
濮阳市中原石化实业有限公司

胡屯村
胜拐村
四


检出区
超标区
厂址区
地下水流向

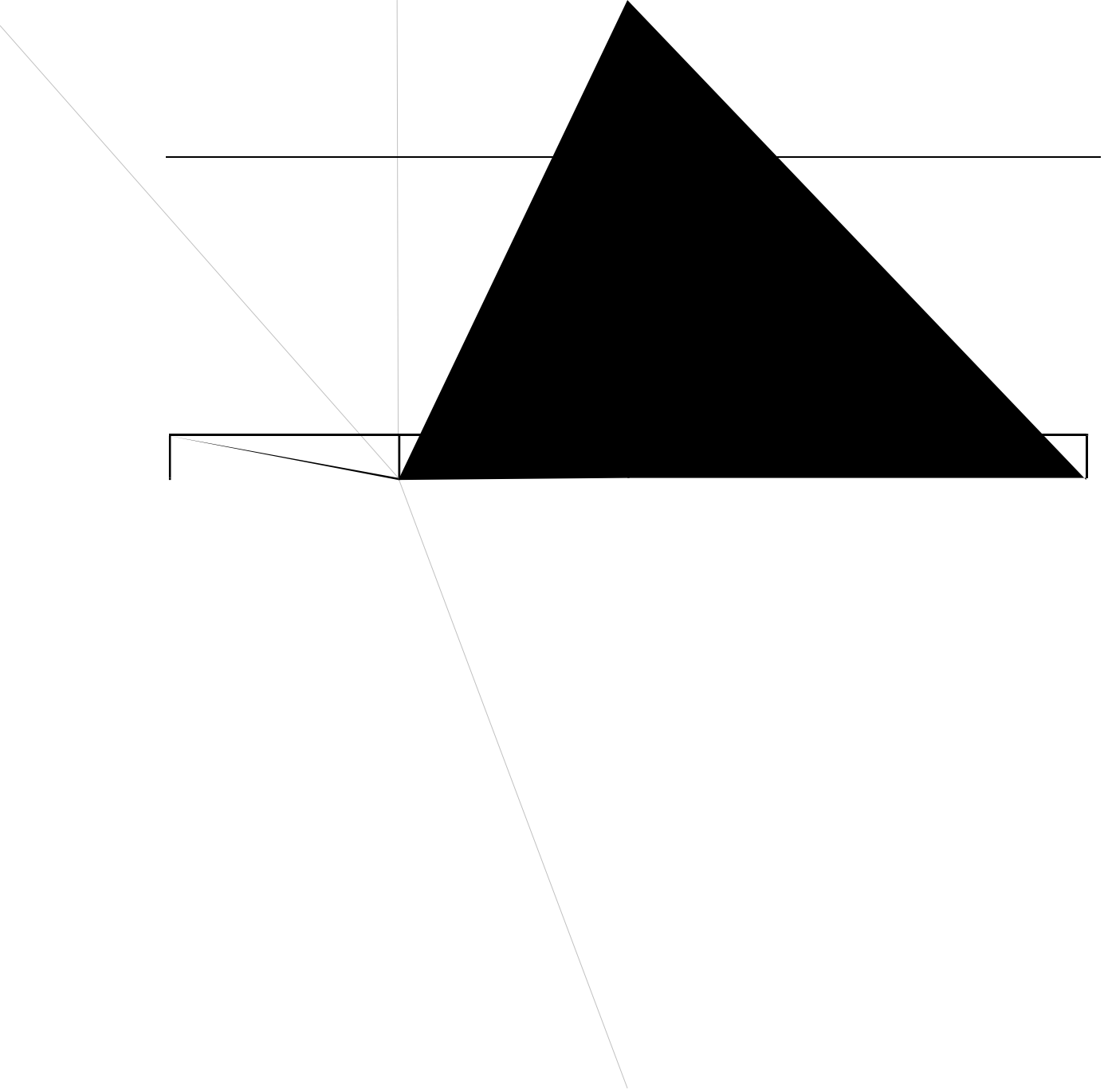
中路
胜利西路
濮阳市中化物流有限公司
濮阳市中原石化实业有限公司

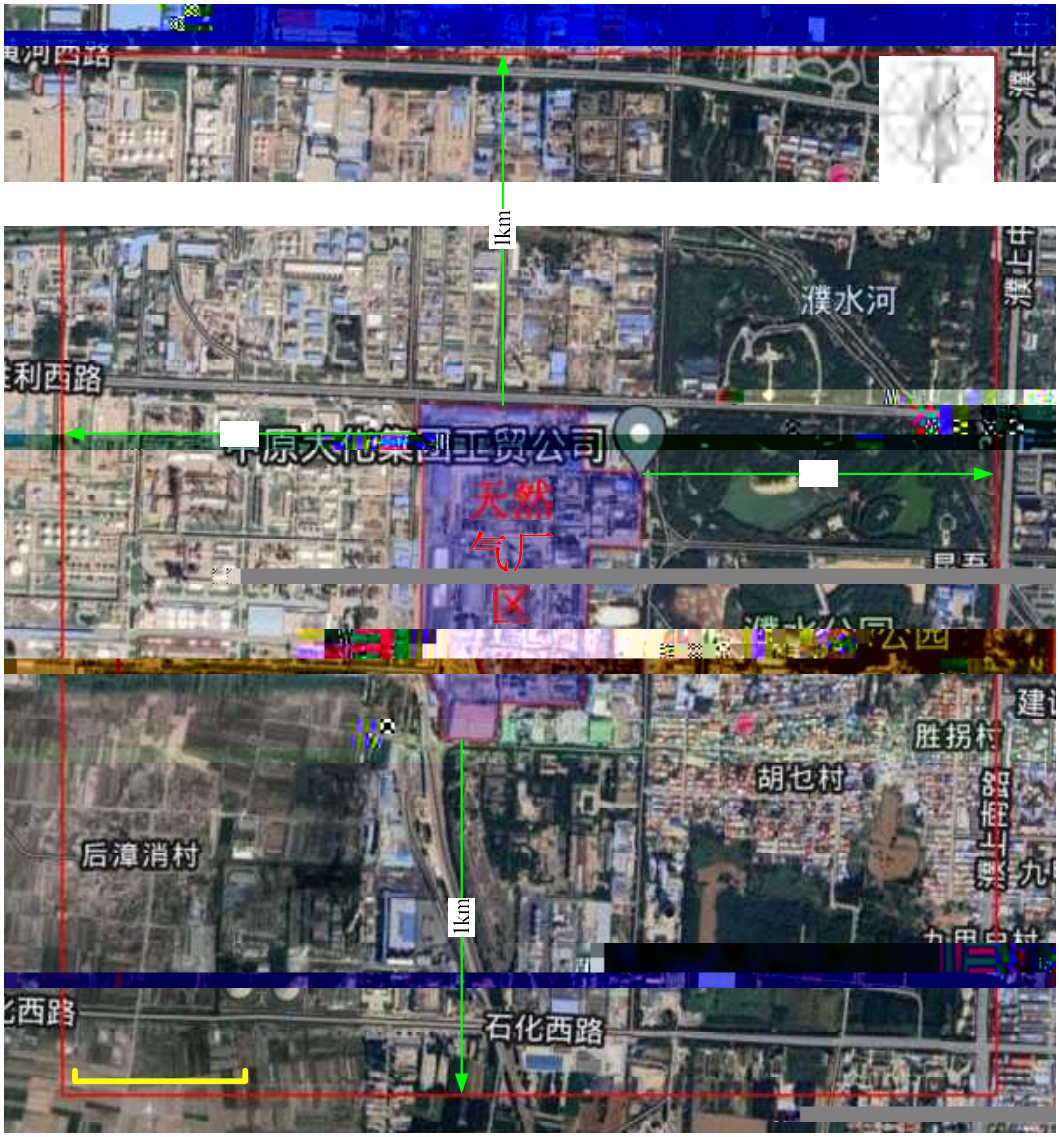
胡屯村
胜拐村
四

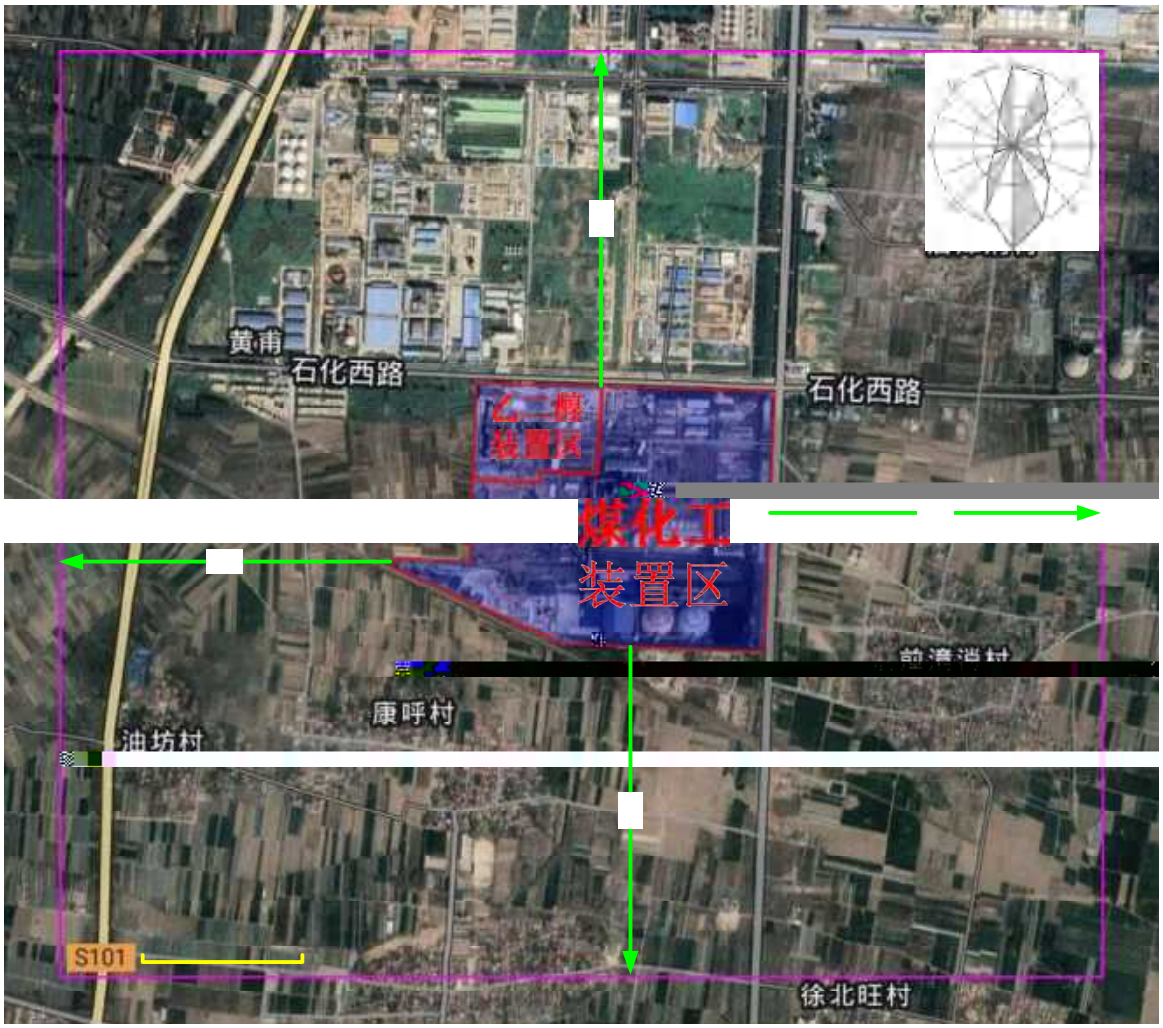
检出区
超标区
厂址区
地下水流向

$$L_{eqg}=10\lg\left[\frac{1}{T}\left(\sum_{i=1}^{N}t_i10^{0.1L_{Ai}}+\sum_{j=1}^{M}t_j10^{0.1L_{Aj}}\right)\right]$$

$$L_{eq}=10\lg\left(10^{0.1L_{eqa}}+10^{0.1L_{eqb}}\right)$$




濮水河
天然
气厂
区
胜拐村
胡七村
后漳消村
1km
1km
石化西路


黄甫
石化西路
石化西路
乙二醇
装置区
炼化工
装置区
康呼村
油坊村
S101
徐北旺村

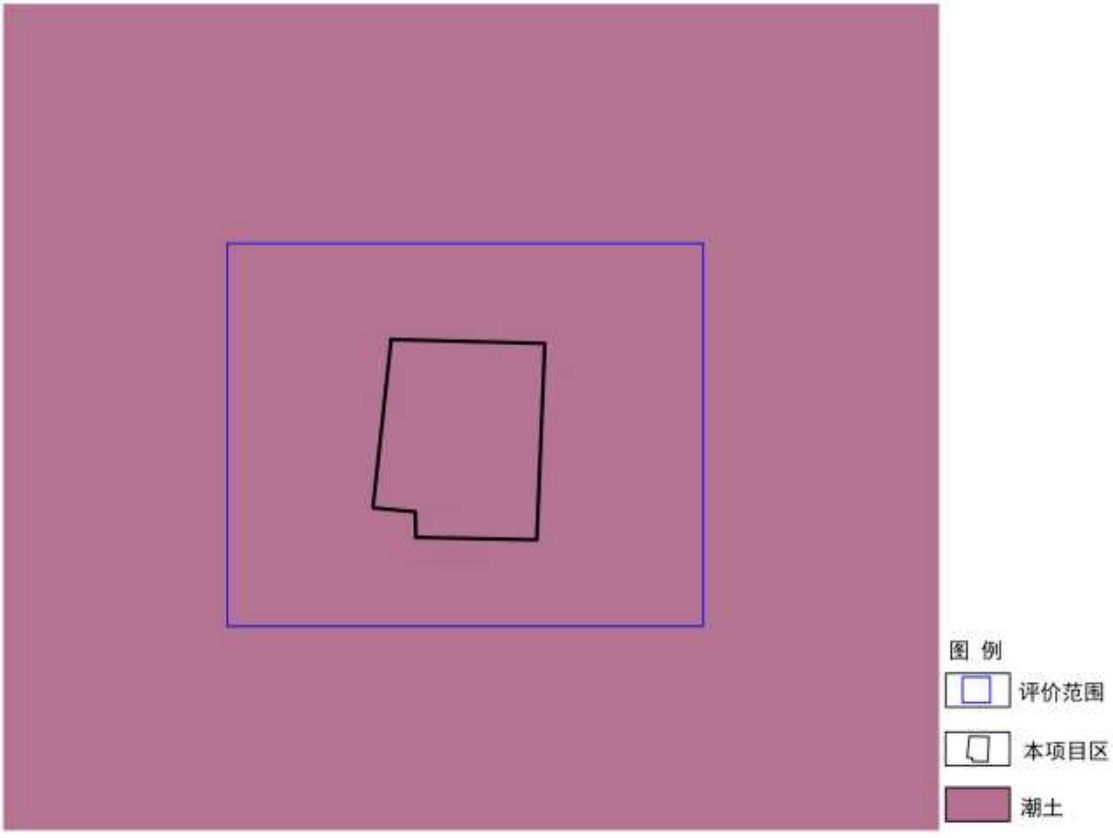
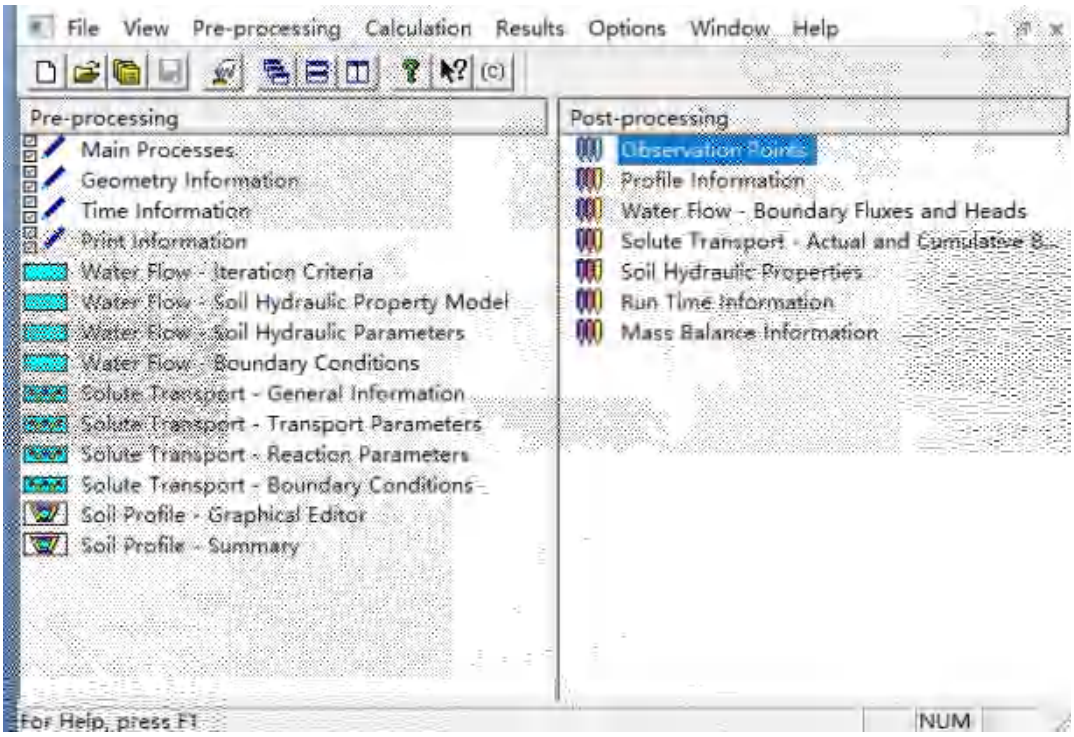


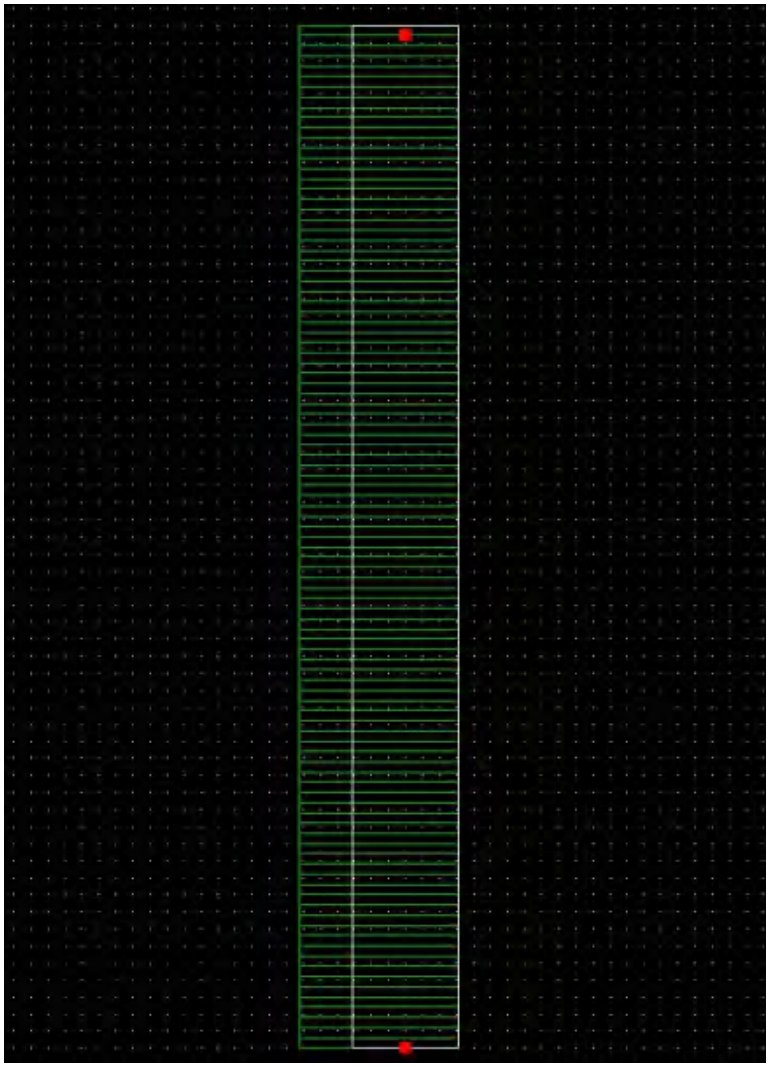
图 例
评价范围
本项目区
潮土

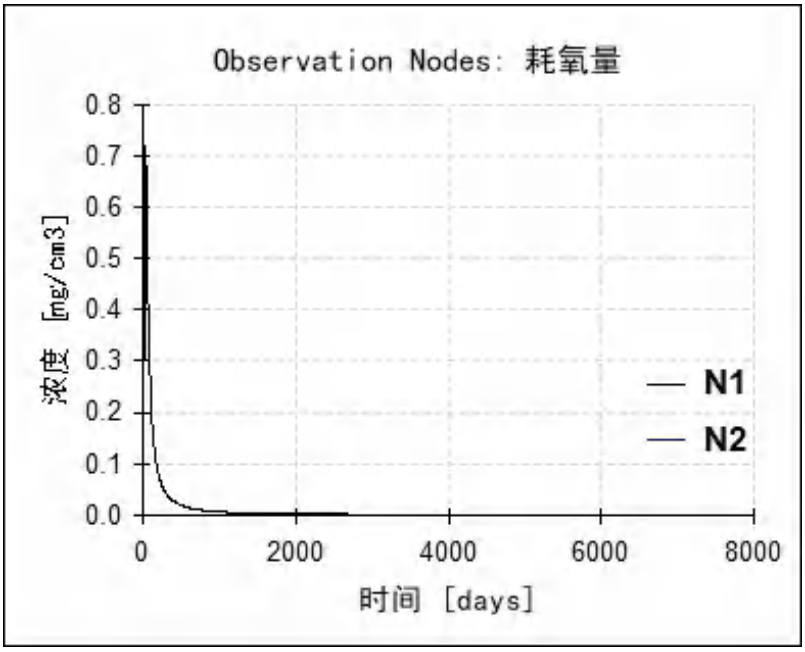
$$\frac{\partial \theta c}{\partial t} = \frac{\partial}{\partial x}\left(\theta D \frac{\partial c}{\partial x}\right) - \frac{\partial qc}{\partial x}$$

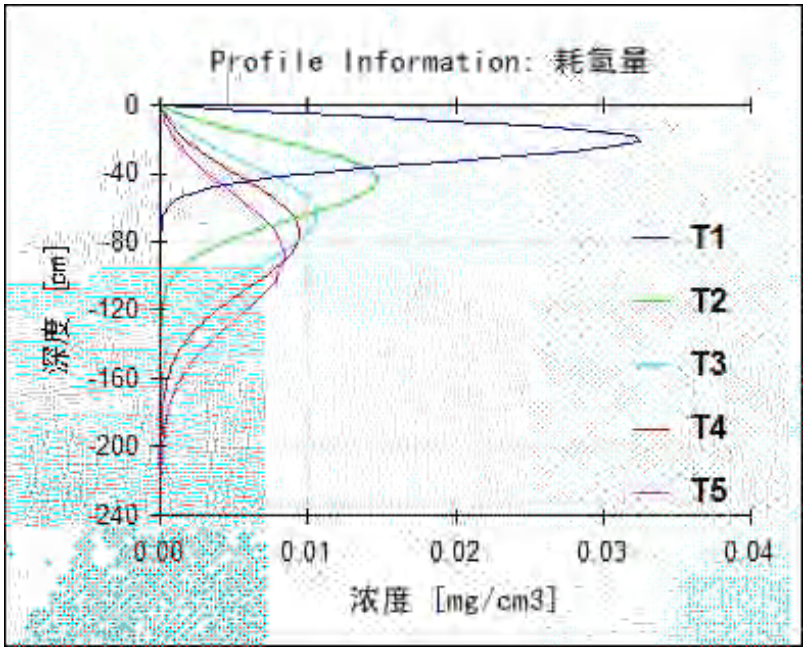
$$c(z,t) = \begin{cases} c_0 & 0 \le t \le t_0 \\ 0 & t > t_0 \end{cases}$$

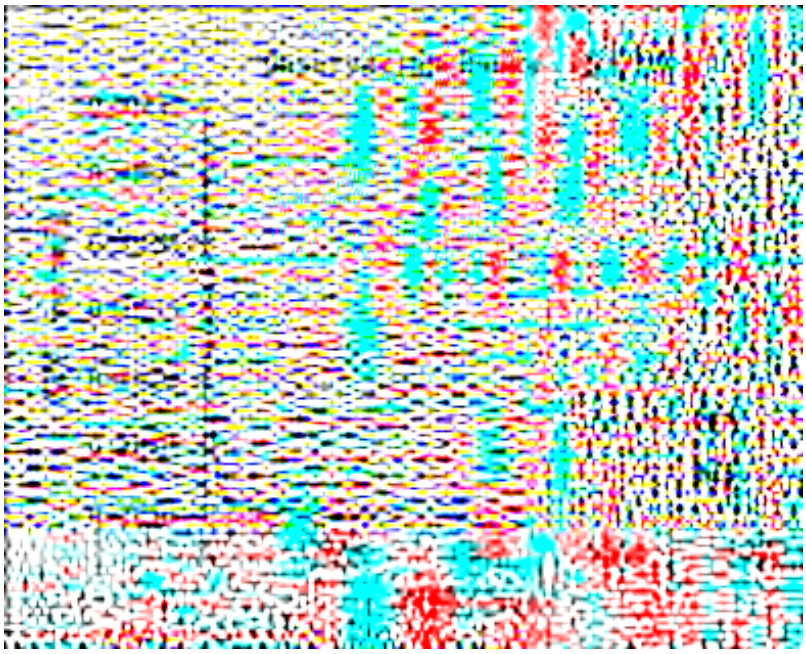
$$-\theta D \frac{\partial c}{\partial z} = 0 \qquad t > 0, \quad z = L$$

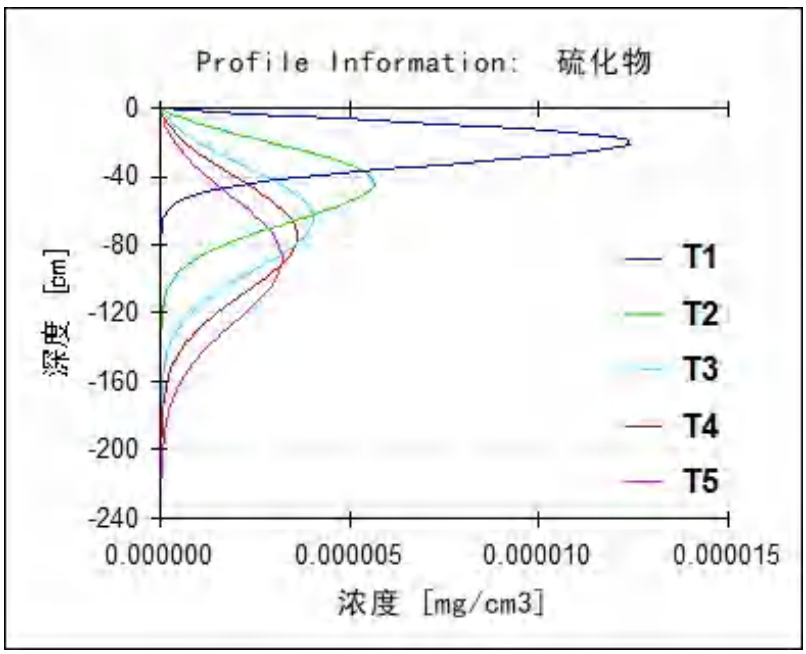

File View Pre-processing Calculation Results Options Window Help
Pre-processing
Main Processes
Geometry Information
Time Information
Print Information
Water Flow - Iteration Criteria
Water Flow - Soil Hydraulic Property Model
Water Flow - Soil Hydraulic Parameters
Water Flow - Boundary Conditions
Solute Transport - General Information
Solute Transport - Transport Parameters
Solute Transport - Reaction Parameters
Solute Transport - Boundary Conditions
Soil Profile - Graphical Editor
Soil Profile - Summary
Post-processing
Observation Points
Profile Information
Water Flow - Boundary Fluxes and Heads
Solute Transport - Actual and Cumulative B...
Soil Hydraulic Properties
Run Time Information
Mass Balance Information
For Help, press F1
NUM

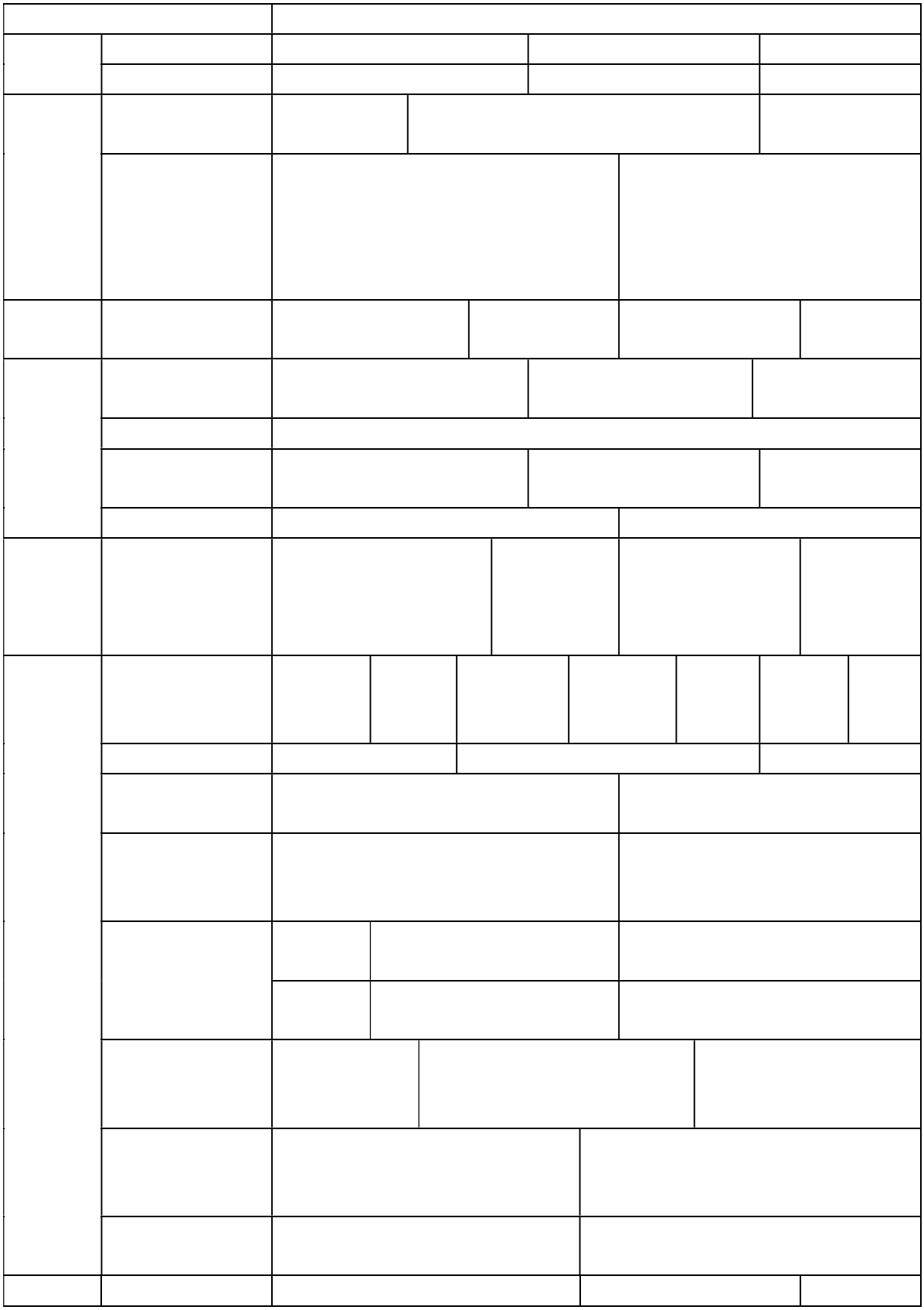


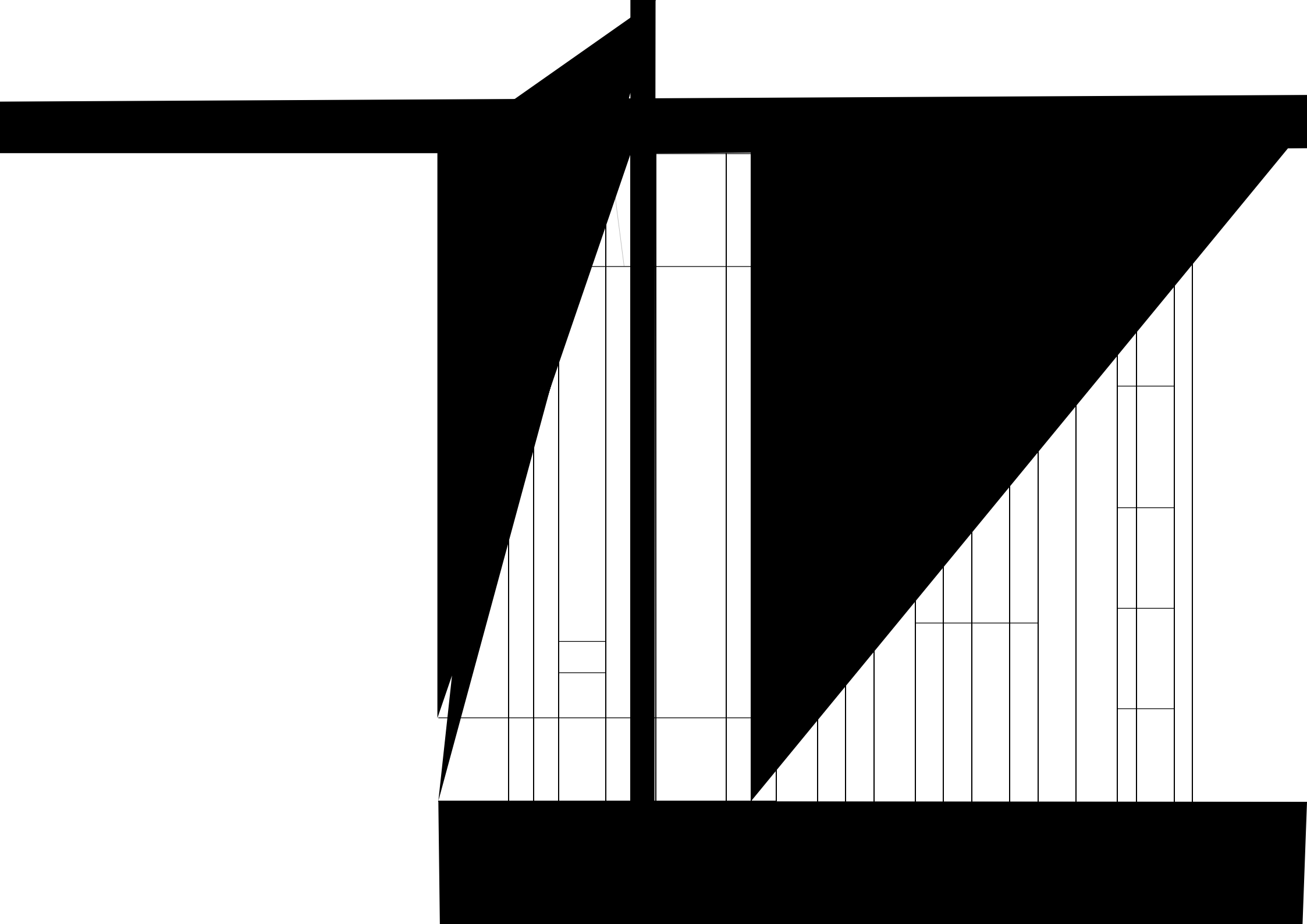

Observation Nodes: 耗氧量
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
浓度 [mg/cm3]
0
2000
4000
6000
8000
时间 [days]
N1
N2

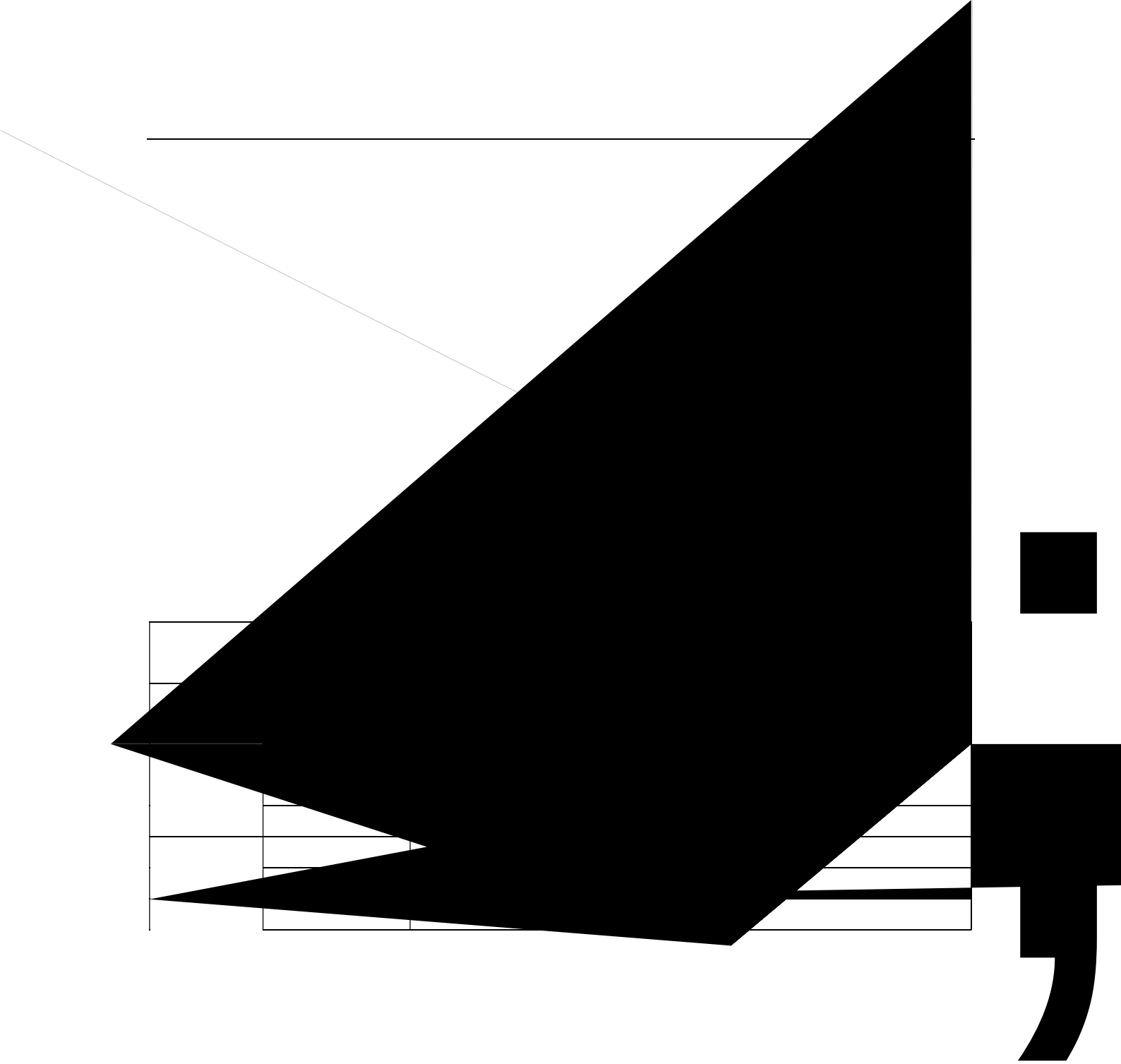

Profile Information: 耗氧量
0
-40
-80
-120
-160
-200
-240
深度 [cm]
0.00
0.01
0.02
0.03
0.04
浓度 [mg/cm3]
T1
T2
T3
T4
T5




Profile Information: 硫化物
0
-40
-80
-120
-160
-200
-240
深度 [cm]
T1
T2
T3
T4
T5
0.000000
0.000005
0.000010
0.000015
浓度 [mg/cm3]







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