Tank Wagon Ethyl + Filling Station Ethyl

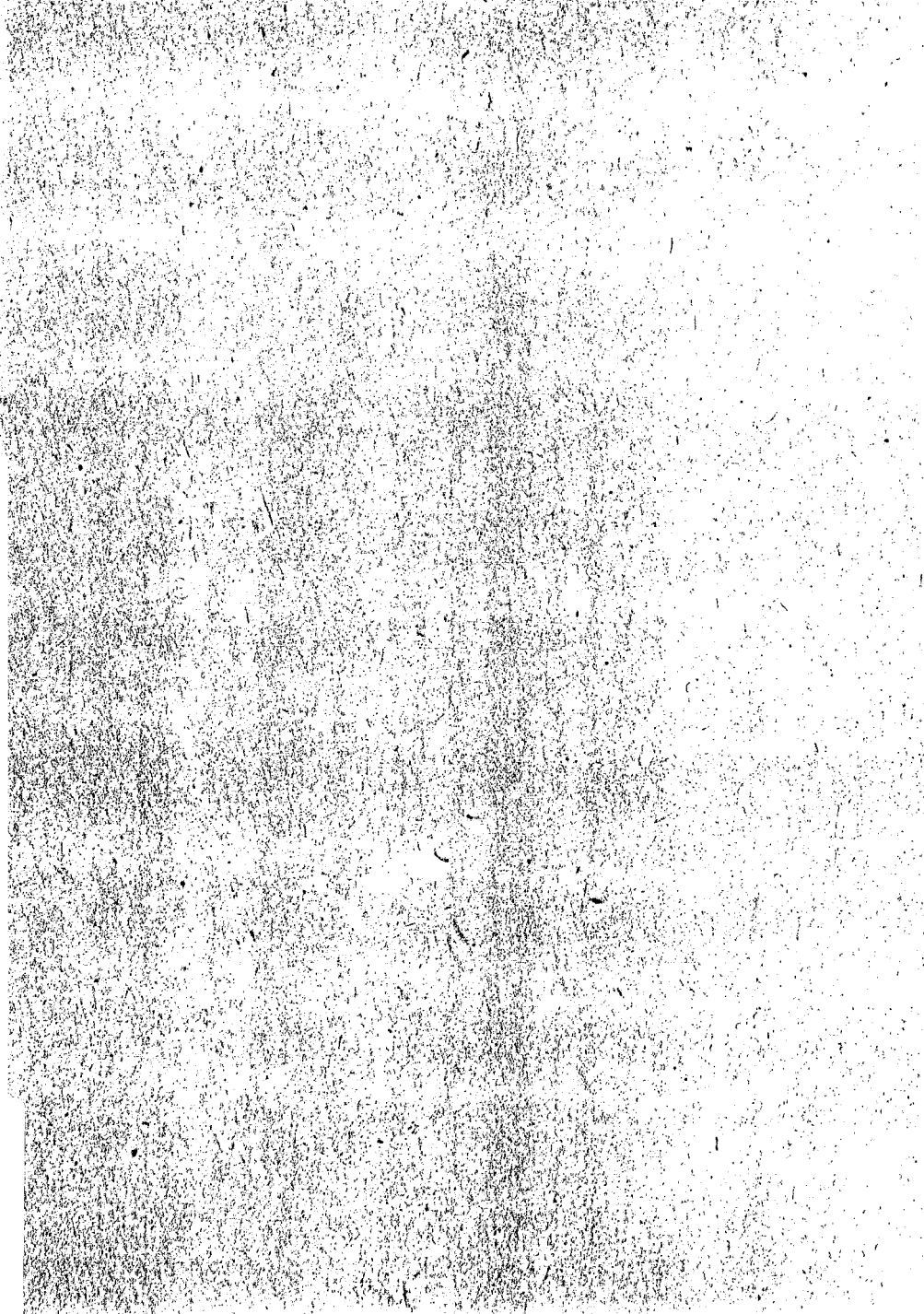
1927-1929

Lead in urine, total ✓

" " " mg/liter ✓

" " feces, total ✓

" " " mg/gm ash ✓



.24 – .279	1	6	6	36
.28 – .319	1	7	7	49
.32 – .359	0	8	0	0
.36 – .399	0	9	0	0
.40 – .439	0	10	0	0
.44 – .479	0	11	0	0
.48 – .519	0	12	0	0
.52 –	4	13	52	676
	49		183	1157

$$Nu_1 = \frac{183}{49} = 3.734694$$

$$Nu_2 = \frac{1157}{49} = 23.612244$$

$$(Nu_1)^2 = 13.947939$$

$$Pi_2 = 9.664305$$

$$Sigma = 3.108747 \times .04 = .124350 \text{ mgs.}$$

$$P.E._{sig.} = \frac{.67449 \times .124350}{\sqrt{98}} = \frac{.083873}{9.899494}$$

$$= \pm .008472$$

$$mean = 3.734694 \times .04 + .02$$

$$= .169388 \text{ mgs. Pb}$$

$$P.E._m = \frac{.083873}{7} = \pm .011982$$

mean = .169 ± .012 mgs. Pb

S.D. = .124 ± .008 mgs. Pb

Test of Difference

mean 1927 = .169
mean 1929 = .099
Diff. = .070

$$P.E._{dif.} = \sqrt{(.012)^2 + (.006)^2}$$

$$= \sqrt{.000144 + .000036}$$

$$= \sqrt{.000180}$$

$$= \pm .013$$

The difference is beginning 5.3 x $P.E._{dif}$

.24 - .279	1	6	6	36	.24 - .279
.28 - .319	1	7	7	49	.28 - .319
.32 - .359	0	8	0	0	.32 - .359
.36 - .399	0	9	0	0	.36 - .399
.40 - .439	1	10	10	100	.40 - .439
.44 - .479	0	11	0	0	.44 - .479
.48 -	1	12	12	144	.48 - .519
	36		98	496	.52 -

$Nu_1 = \frac{98}{36} = 2.722222$ Nu_1

$Nu_2 = \frac{496}{36} = 13.777777$ Nu_2

$(Nu_1)^2 = 7.410493$ $(Nu_1)^2$

$Pi_2 = 6.367284$ Pi_2

Sigma = 2.523348 x .04 = .100934 mgs. Sigma

$P.E._{sig.} = \frac{.67449 \times .100934}{8.485281} = \frac{.068079}{8.485281}$ $P.E._{sig.}$

$= \pm .008023$

mean = 2.722222 x .04 + .02 mean

= .128888 mgs./gm. ash

$P.E._m = \frac{.068079}{6} = \pm .011347$ $P.E._m$

mean = .129 ± .011 mgs./gm. ash mean

S.D. = .101 ± .008 mgs. S.D.

Test of Difference

mean 1927 = .129
mean 1929 = .123
Diff. = .006

Dif
$P.E._d$

$P.E._{dif.} = \sqrt{(.011)^2 + (.010)^2}$

$= \sqrt{.000121 + .000100}$

$= \sqrt{.000321}$

$= \pm .018$

The differen
certainly no

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.48 - .559	0	6	0	0	.48 - .559
.56 - .639	4	7	28	196	.56 - .639
.64 - .719	1	8	8	64	.64 - .719
.72 - .799	0	9	0	0	.72 - .799
.80 - .879	0	10	0	0	.80 - .879
.88 - .959	0	11	0	0	.88 - .959
.96 -1.039	0	12	0	0	.96 -1.039
1.04 -	1	13	13	169	1.04 -
	36		124	680	

$Nu_1 = \frac{124}{36} = 3.444444$ $Nu_1 =$

$Nu_2 = \frac{680}{36} = 18.888889$ $Nu_2 =$

$(Nu_1)^2 = 11.864194$ $(Nu_1)^2 =$

$Pi_2 = 7.024695$ $Pi_2 =$

Sigma = 2.650414 x .08 = .212033 mgs. Sigma =

$P.E._{sig.} = \frac{.67449 \times .212033}{8.485281} = \frac{.143014}{8.485281}$ $P.E._{sig.} =$

$= \pm .016854$ =

mean = 3.444444 x .08 + .04 mean =

= .315556 mgs. =

$P.E._m = \frac{.143014}{6} \pm .023836$ $P.E._m =$

mean = .316 ± .024 mgs. Pb mean =

S.D. = .212 ± .017 mgs. S.D. =

Test of Difference

mean 1927 = .316
mean 1929 = .315
Diff. = .001

$P.E._{dif.} = \sqrt{(.024)^2 + (.023)^2}$
$= \sqrt{.000576 + .000529}$
$= \sqrt{.001105}$
$= \pm .033$

Diff
$P.E._{di}$

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1929 but it i

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.24 - .279	0	6	0	0	.24 - .279
.28 - .319	0	7	0	0	.28 - .319
.32 - .359	1	8	8	64	.32 - .359
.36 - .399	1	9	9	81	.36 - .399
.40 - .439	1	10	10	100	.40 - .439
.44 - .479	2	11	22	242	.44 - .479
.48 - .519	0	12	0	0	.48 - .519
.52 -	1	13	13	169	.52 -
	49		139	855	

$$Nu_1 = \frac{139}{49} = 2.836735$$

$$Nu_2 = \frac{855}{49} = 17.448979$$

$$(Nu_1)^2 = 8.047065$$

$$Pi_2 = 9.401914$$

$$Sigma = 3.066254 \times .04 = .122650 \text{ mgs.}$$

$$P.E._{sig.} = \frac{.67449 \times .122650}{\sqrt{98}} = \frac{.082726}{9.899494}$$

$$= \pm .008357$$

$$mean = 2.836735 \times .04 + .02$$

$$= .133469 \text{ mgs./liter}$$

$$P.E._m = \frac{.082726}{7} = \pm .011818$$

mean = .133 ± .012 mgs./liter

S.D. = .123 ± .008

Test of Difference

mean 1927 = .133
mean 1929 = .092
Diff. = .041

$$P.E._{dif.} = \sqrt{(.012)^2 + (.010)^2}$$

$$= \sqrt{.000144 + .000100}$$

$$= \sqrt{.000244}$$

$$= \pm .016$$

Diff
$P.E._{di}$

The differenc
certainly not