

## References

### Pinnacle Genetics

<u>Manure Sample Analysis</u>	<i>(#/1000 gal or #/ton basis)</i>					
	N	NH4	OrgN	1st Year AvN	P2O5	K2O
B/G Pit	24.5	20.4	4.1	21.4	18.3	13.3

<u>Application Method</u>	<u>N retention</u>	<u>% N retention, from MWPS</u>
SURFACE, SOLID		0.75
SURFACE, LIQUID		0.8
AERWAY		0.9
SURFACE, INCORP		0.95
INJECT		0.98
IRRIGATE		0.7
NONE		0

<u>Organic N Mineralization</u>	<u>% of OrgN</u>	LMFA Regulations
Year of App	0.35	
Year 1 after App	0.35	
Year 2 after App	0.175	
Year 3 after App	0.0875	
Year 4 after App	0.04375	

<u>N, P, &amp; K Requirements</u>	<u>lbs/bu or t, from IL Agronomy Handbook</u>		
<u>Crop</u>	<u>N</u>	<u>P</u>	<u>K</u>
Corn	1.2	0.43	0.28
Soybeans	0	0.85	1.3
Corn Silage	1.2	2.6	7
Wheat	1	0.9	0.3
Grass Hay	150	12	50
Alfalfa Hay	0	12	50

REPORT NO.  
F09127-6001  
ACCOUNT NUMBER  
14507

# A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, IN 46808 • Phone 260-483-4759 • Fax 260-483-5274  
www.algreatlakes.com • lab@algreatlakes.com



QUALITY ANALYSES FOR INFORMED DECISIONS

162321022021  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 45574  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE NORTH BARN

## MANURE ANALYSIS REPORT

DATE SAMPLED: 04/18/2009  
DATE RECEIVED: 05/07/2009  
DATE REPORTED: 05/12/2009 PAGE: 1

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	96.44	8033.5	
Solids	%	3.56	296.5	
Nitrogen, Total (TKN)	%	0.354	29.5	23.1 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.237	19.7	19.7 *
Nitrogen, Organic (N)	%	0.117	9.7	3.4 *
Phosphorus (P)	%	0.217	41.4 (as P <sub>2</sub> O <sub>5</sub> )	41.4 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.121	12.1 (as K <sub>2</sub> O)	12.1 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT NO.  
F09127-6001  
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14507

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QUALITY ANALYSES FOR INFORMED DECISIONS

162321022021  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 45575  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE MIDDLE BARN

## MANURE ANALYSIS REPORT

DATE SAMPLED: 04/17/2009  
DATE RECEIVED: 05/07/2009  
DATE REPORTED: 05/12/2009 PAGE: 2

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY @ POUNDS PER 1,000 GAL
Moisture	%	98.37	8194.2	
Solids	%	1.63	135.8	
Nitrogen, Total (TKN)	%	0.184	15.3	14.4 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.167	13.9	13.9 *
Nitrogen, Organic (N)	%	0.017	1.4	0.5 *
Phosphorus (P)	%	0.101	19.3 (as P <sub>2</sub> O <sub>5</sub> )	19.3 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.079	7.9 (as K <sub>2</sub> O)	7.9 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

A&L

REPORT NO.  
F08137-6007  
ACCOUNT NUMBER  
14507

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QUALITY ANALYSES FOR INFORMED DECISIONS

! 6 2 3 2 1 0 2 2 0 2 !  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 40974  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE S-G BARN 5-2-08

### MANURE ANALYSIS REPORT

DATE RECEIVED: 05/16/2008  
DATE REPORTED: 05/20/2008 PAGE: 7

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	98.58	8211.7	
Solids	%	1.42	118.3	
Nitrogen, Total (TKN)	%	0.345	28.7	27.9 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.329	27.4	27.4 *
Nitrogen, Organic (N)	%	0.016	1.3	0.5 *
Phosphorus (P)	%	0.034	6.4 (as P <sub>2</sub> O <sub>5</sub> )	6.4 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.190	19.0 (as K <sub>2</sub> O)	19.0 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT NO.  
F08137-6007  
ACCOUNT NUMBER  
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**QUALITY ANALYSES FOR INFORMED DECISIONS**

! 6 2 3 2 1 0 2 2 0 2 !  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 40973  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE N-G BARN 4-30-08

### MANURE ANALYSIS REPORT

DATE RECEIVED: 05/16/2008  
DATE REPORTED: 05/20/2008 PAGE: 6

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	98.99	8245.9	
Solids	%	1.01	84.1	
Nitrogen, Total (TKN)	%	0.294	24.5	21.9 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.246	20.5	20.5 *
Nitrogen, Organic (N)	%	0.048	4.0	1.4 *
Phosphorus (P)	%	0.031	6.0 (as P <sub>2</sub> O <sub>5</sub> )	6.0 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.141	14.1 (as K <sub>2</sub> O)	14.1 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon



REPORT NO.  
F07309-6009  
ACCOUNT NUMBER  
14507

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QUALITY ANALYSES FOR INFORMED DECISIONS



|||||  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 38783  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNADE SOUTH BARN

### MANURE ANALYSIS REPORT

DATE SAMPLED: 10/17/2007  
DATE RECEIVED: 11/05/2007  
DATE REPORTED: 11/09/2007 PAGE: 4

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	96.02	7998.5	
Solids	%	3.98	331.5	
Nitrogen, Total (TKN)	%	0.462	38.5	30.2 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.310	25.8	25.8 *
Nitrogen, Organic (N)	%	0.152	12.7	4.4 *
Phosphorus (P)	%	0.197	37.6 (as P <sub>2</sub> O <sub>5</sub> )	37.6 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.201	20.1 (as K <sub>2</sub> O)	20.1 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT NO.  
F07309-6009  
ACCOUNT NUMBER  
14507

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QUALITY ANALYSES FOR INFORMED DECISIONS



|||||  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 38784  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNADE NORTH BARN

## MANURE ANALYSIS REPORT

DATE SAMPLED: 10/11/2007  
DATE RECEIVED: 11/05/2007  
DATE REPORTED: 11/09/2007 PAGE: 5

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	98.75	8225.9	
Solids	%	1.25	104.1	
Nitrogen, Total (TKN)	%	0.305	25.4	22.9 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.259	21.6	21.6 *
Nitrogen, Organic (N)	%	0.046	3.8	1.3 *
Phosphorus (P)	%	0.038	7.2 (as P <sub>2</sub> O <sub>5</sub> )	7.2 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.172	17.1 (as K <sub>2</sub> O)	17.1 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT NO.  
F06306-6006  
ACCOUNT NUMBER  
14507

## A & L GREAT LAKES LABORATORIES, INC.

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TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 33475  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE SOUTH

### MANURE ANALYSIS REPORT

DATE SAMPLED: 10/23/2006  
DATE RECEIVED: 11/02/2006  
DATE REPORTED: 11/08/2006 PAGE: 3

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	98.95	8242.5	
Solids	%	1.05	87.5	
<del>Nitrogen</del> Total (N)	%	0.314	26.2	✓ 23.8 *
<del>Nitrogen</del> Ammonium $\text{NH}_4\text{-N}$	%	0.270	22.5	22.5 *
Nitrogen, Organic (N)	%	0.044	3.7	1.3 *
Phosphorus (P)	%	0.029	5.6 (as $\text{P}_2\text{O}_5$ )	✓ 5.6 (as $\text{P}_2\text{O}_5$ ) *
Potassium (K)	%	0.116	11.6 (as $\text{K}_2\text{O}$ )	✓ 11.6 (as $\text{K}_2\text{O}$ ) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon



REPORT NO.  
F06306-6006  
ACCOUNT NUMBER  
14507

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|||||  
TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

LAB NUMBER: 33474  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE NORTH

### MANURE ANALYSIS REPORT

DATE SAMPLED: 10/22/2006  
DATE RECEIVED: 11/02/2006  
DATE REPORTED: 11/08/2006 PAGE: 2

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY <sup>@</sup> POUNDS PER 1,000 GAL
Moisture	%	97.26	8101.8	
Solids	%	2.74	228.2	
<del>Nitrogen</del> Total (N)	%	0.388	32.3	27.5 *
<del>Nitrogen</del> Ammonium NH <sub>4</sub> -N	%	0.299	24.9	24.9 *
Nitrogen, Organic (N)	%	0.089	7.4	2.6 *
Phosphorus (P)	%	0.112	21.4 (as P <sub>2</sub> O <sub>5</sub> )	21.4 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.176	17.6 (as K <sub>2</sub> O)	17.6 (as K <sub>2</sub> O) *

<sup>@</sup> Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT NO.  
F06258-6002  
ACCOUNT NUMBER  
14507

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TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

FOR: PINNACLE-GESTATION

LAB NUMBER: 33034  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: FARROWING RM8

### MANURE ANALYSIS REPORT

DATE SAMPLED: 09/14/2006  
DATE RECEIVED: 09/15/2006  
DATE REPORTED: 09/27/2006 PAGE: 1

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL**	FIRST YEAR AVAILABILITY@ POUNDS PER 1,000 GAL
Moisture	%	98.71	8222.5	
Solids	%	1.29	107.5	
Nitrogen, Total (N)	%	0.247	20.6	18.4 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.208	17.3	17.3 *
Nitrogen, Organic (N)	%	0.039	3.2	1.1 *
Phosphorus (P)	%	0.027	5.2 (as P <sub>2</sub> O <sub>5</sub> )	5.2 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.173	17.3 (as K <sub>2</sub> O)	17.3 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon

REPORT  
F05263-6008  
ACCOUNT NUMBER  
14507

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**A & L GREAT LAKES LABORATORIES, INC.**

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TO: CARTHAGE VETERINARY SERVICE  
34 WEST MAIN ST  
PO BOX 220  
CARTHAGE, IL 62321-0220

FOR: PINNACLE-PIT SAMPLE

LAB NUMBER: 28772  
MANURE TYPE: SWINE, LIQUID PIT  
SAMPLE ID: PINNACLE

## MANURE ANALYSIS REPORT

DATE SAMPLED: 09/19/2005  
DATE RECEIVED: 09/20/2005  
DATE REPORTED: 09/28/2005 PAGE: 1

PARAMETER	UNIT	ANALYSIS RESULT	TOTAL POUNDS PER 1,000 GAL	FIRST YEAR AVAILABILITY POUNDS PER 1,000 GAL
Moisture	%	99.64	8300.0	
Solids	%	0.36	30.0	
Nitrogen, Total (N)	%	0.093	7.7	6.5 *
Nitrogen, Ammonium (NH <sub>4</sub> -N)	%	0.070	5.8	5.8 *
Nitrogen, Organic (N)	%	0.023	1.9	0.7 *
Phosphorus (P)	%	0.018	3.5 (as P <sub>2</sub> O <sub>5</sub> )	3.5 (as P <sub>2</sub> O <sub>5</sub> ) *
Potassium (K)	%	0.059	5.9 (as K <sub>2</sub> O)	5.9 (as K <sub>2</sub> O) *

@ Estimate of first-year availability does not account for incorporation losses. Consult MWPS-18, "Livestock Waste Facilities Handbook" for additional information.

\* Source: MWPS-18, Livestock Waste Facilities Handbook, 1993

\*\* Manure density assumed to be 8.33 lb/gallon



**Twin Valley Pumping, Inc.**

# 19 Bear Court  
Pittsfield, IL 62363  
o (217) 285-9543  
m (217) 248-3239

RECEIVED ... 11 2005

**Invoice**

INVOICE #

535

DATE

10/18/2005

**BILL TO**

Pinnacle Genetics, LLC  
c/o Carthage Veterinary Clinic  
34 West Main  
P.O. Box 220  
Carthage, IL 62321

**TERMS**

Net 30

SERVICED	DESCRIPTION	QTY	RATE	AMOUNT
10/10/2005	Across from Stans house 7 hoses	648,000	0.0062	4,017.60
10/11/2005	North of Richards hose to north road 11 hoses	1,097,000	0.0072	7,898.40
10/13/2005	30 a east of saw mill on corner 10 hoses	250,000	0.0072	1,800.00
		<div>④</div> <div><b>PAID</b></div> <div>CK. NO. <u>3997</u></div> <div>DATE <u>11-9-05</u></div>		
Thank you for your business.			<b>Total</b>	\$13,716.00

**Twin Valley Pumping, Inc.**

# 19 Bear Court  
Pittsfield, IL 62363  
o (217) 285-9543  
m (217) 248-3239

RECEIVED APR 09 2005

**Invoice**

INVOICE #

476

DATE

4/8/2005

**BILL TO**

Pinnacle Genetics, LLC  
c/o Carthage Veterinary Clinic  
34 West Main  
P.O. Box 220  
Carthage, IL 62321

**PAID**  
3488  
CK. NO. 4/13/05  
DATE

**TERMS**

Net 30

SERVICED	DESCRIPTION	QTY	RATE	AMOUNT
4/2/2005	Applied to two fields along west side of driveway	629,000	0.0065	4,088.50
Thank you for your business.			<b>Total</b>	\$4,088.50