

Attachment D  
**Quarterly Sludge Summary Report Form**

Note 1: If your site has more than one land application field, please submit a separate form for each field.

Note 2: Please place this sheet at the top of your Quarterly Sludge Report.

Note 3: If you have more than one permitted site, then fill-out this form for each one of those sites.

Note 4: Please send a copy of this sheet and all attachments to the local TCEQ regional office.

For TCEQ Quarter:	Reporting period: <u>3rd</u>	From September 1, <u>2013</u>	to August 31, <u>2014</u>
Registration No:	<u>WQ0004446</u>	Date:	<u>6/3/14</u>
Name of Registrant:	<u>K-3 Resources, LP</u>		
Mailing Address:	<u>PO Box 2236, Alvin, TX 77512</u>		
Contact Person	Name	Telephone	
	<u>Charles E. Pehl, PhD, PG</u>	No: <u>281-585-2817</u>	

Field No. (if any): \_\_\_\_\_ (Submit separate form for each field, if site has two or more fields).

Class B Sewage Sludge Land Applied: 0.00 dry tons /quarter  
 Treated Domestic Septage - Land Applied: 0.00 gallons / quarter  
 Method used to treat Domestic Septage: N/A  
 Water Treatment Plant Sludge - Land Applied: 0.00 dry tons /quarter  
 Class A sludge land applied: 0.00 dry tons /quarter

a. Acreage used for Sludge Application/disposal at this site 61.38

b. Site Vegetation (such as grass type etc) and # of cuttings Bermudagrass and native pasture grasses, 7 tons/acre in 4 to 6 cutting

c. Does any of the sludge you have generated or received ~~DOES~~ NOT MEET concentration limits for any of the metals listed in Table 3 of "30 TAC §312.43 (b)"? Yes  No

d. Site location Latitude: N 29°54'13" Longitude: W95°57'28"

e. Site physical address: West side of SH 362, Waller Co. Texas

Please attach the information regarding the following items (Sewage Sludge only):

\* Please note the following information shall be provided in computer generated report format:

\* Please place check mark before each item below to indicate you have attached that item with this report.

1. Metal concentration, pathogen analysis data and vector attraction certifications of sludge for each source.
2. Provide a list containing the name and permit number of each source of sludge.
3. Date of delivery of each load of sludge land applied.
4. Date of land application of each load of sludge.
5. The cumulative metal loading rates for any metals as listed in Table 2 of "30 TAC §312.43 (b)"?
6. The suggested agronomic rate for the class B sludge.

PLEASE MAIL THE COMPLETED ANNUAL REPORT TO:

Texas Commission on Environmental Quality  
 Municipal Permits Team (MC 148)  
 Wastewater Permitting Section  
 P.O. Box 13087  
 Austin, TX 78711-3087

Application Rate Report By Site

<Date Range: 09/01/2013 - 05/31/2014>

TCEQ # 22430

Permit No.: WQ0004446000

Site ID: 04446

Address: Lat: 29 degrees 54' 13.25"N Lon: 95 degrees 57' 28.24"W Quality: Class B

Generator	Dry Tons	Lbs/ Acre	Lbs/ Ton	Lbs														
				Arsenic	Cadium	Chromium	Copper	Lead	Mercury	Moly	Nickel	Selenium	Zinc	Phos	Potas	TKN	A-Nit	N-Nit
Bellville, City of	11.07	18.53	102.75	0.07	0.04	0.44	10.20	1.26	0.02	0.11	0.44	0.16	29.17	210.27	26.56	847.73	4.43	6.64
Chelford City	80.39	4.29	3.28	0.73	0.27	2.19	24.38	0.36	0.02	2.19	0.91	1.09	151.30	16.08	16.08	16.08	16.08	16.08
Cinco Central	55.35	123.55	137.01	0.30	0.02	0.89	14.50	0.24	0.07	0.37	0.53	0.32	16.61	808.14	265.69	5568.41	907.77	0.00
Cinco Southwest	2.38	6.63	170.98	0.00	0.00	0.02	0.43	0.01	0.00	0.02	0.02	0.01	0.89	28.08	10.47	298.93	37.13	30.94
Eagle Lake WWTP	2.52	1.85	45.29	0.04	0.01	0.15	2.01	0.28	0.01	0.04	0.14	0.09	5.18	79.00	22.14	4.53	0.50	0.00
FB 106	15.61	3.28	12.93	0.80	0.21	0.64	16.74	0.48	0.03	0.76	0.64	0.80	30.91	56.21	3.12	84.31	3.12	3.12
FB 30	8.07	35.23	268.01	0.07	0.01	0.26	4.44	0.07	0.02	0.09	0.15	0.12	13.54	190.37	59.69	1790.76	103.25	0.00
HC 155	9.95	1.22	7.57	0.18	0.53	1.07	0.53	0.71	0.04	0.36	1.42	0.36	34.35	21.88	1.99	5.97	3.98	1.99
HC MUD 200	4.25	18.04	260.63	0.03	0.01	0.08	1.88	0.05	0.00	0.05	0.11	0.04	3.86	213.35	73.10	718.25	96.05	0.85
HC MUD 26	19.34	63.15	200.43	0.12	0.03	0.71	6.27	0.35	0.01	0.21	0.37	0.36	19.72	707.75	262.99	2130.99	197.24	549.19
HC MUD 365	2.38	2.48	64.18	0.02	0.02	0.09	0.57	0.04	0.00	0.04	0.07	0.09	3.30	35.70	35.70	51.88	14.28	10.95
HC MUD 71	9.52	20.23	130.49	0.08	0.06	0.54	6.11	0.93	0.03	0.33	0.38	0.06	13.29	114.24	51.41	892.98	133.28	28.56
HC MUD 8	7.14	17.28	148.57	0.03	0.02	0.28	5.03	0.22	0.01	0.11	0.24	0.08	9.54	484.09	118.52	364.14	58.55	19.99
HC WCID 109	7.70	0.81	6.50	0.07	0.04	0.32	5.16	0.43	0.01	0.11	0.32	0.07	15.87	1.54	1.54	10.78	3.08	10.78
HC WCID 92	5.13	22.73	272.05	0.04	0.01	0.16	3.15	0.18	0.00	0.10	0.14	0.08	8.65	162.23	45.18	975.46	200.23	0.00
Langham Creek	10.83	32.47	184.03	0.08	0.03	0.35	9.31	0.35	0.01	0.19	0.26	0.13	20.14	303.21	112.62	1472.74	64.97	8.66
Meadow Place	7.34	5.77	48.28	0.06	0.02	0.69	6.92	0.47	0.00	0.08	0.21	1.07	18.80	138.07	35.25	148.35	1.47	2.94
NWHC 21- 23	2.38	4.00	103.41	0.02	0.00	0.09	1.34	0.06	0.00	0.03	0.07	0.03	3.64	89.01	24.28	100.44	26.66	0.48
Pecan Grove Water Tr	5.98	0.13	1.35	0.44	0.02	0.25	0.30	0.00	0.00	0.00	0.24	0.00	0.85	1.20	1.20	1.20	1.20	1.20
Ponderosa JPA	25.33	78.41	190.00	0.08	0.02	0.20	4.24	0.42	0.02	0.11	0.25	0.11	14.94	435.68	141.85	3718.44	288.76	207.71
Richmond Regional WW	26.13	15.09	35.45	0.11	0.07	4.04	40.44	1.79	0.00	0.57	1.00	0.20	57.70	94.08	141.11	538.33	31.36	15.68
Rosenberg (1-A)	2.81	5.43	118.77	0.17	0.01	0.14	2.57	0.31	0.01	0.04	0.08	0.04	5.56	0.00	15.15	307.43	0.56	1.68
Sealy, City of	8.50	18.85	136.14	0.09	0.03	0.49	6.22	0.63	0.02	0.13	0.42	0.14	8.34	272.00	35.70	714.00	119.00	0.00
Tomball North WWTP	9.27	23.24	153.89	0.05	0.02	0.40	15.08	0.41	0.01	0.26	0.25	0.19	16.45	277.95	31.50	1015.44	68.56	0.00
Tomball South WWTP	13.35	35.20	161.86	0.03	0.02	0.60	34.16	0.35	0.01	0.23	0.30	1.08	18.28	317.61	53.38	1622.75	98.75	13.35
West Memorial	8.16	25.23	189.80	0.15	0.01	0.20	6.04	0.29	0.02	0.23	0.18	0.11	12.40	244.80	60.38	1011.84	212.16	0.00
Total	360.88	583.25	99.20	3.86	1.55	15.28	228.01	10.71	0.38	6.78	9.14	6.84	533.30	5302.55	1646.61	24412.17	2692.42	930.77
Weighted Test Data				5.35	2.15	21.18	315.91	14.84	0.52	9.39	12.67	9.48	738.89	0.73	0.23	3.38	0.37	0.13

**Appendix A  
Agronomic Rate Calculations**

TCEQ 04446

**Part 1: Biosolids Application Rate**

5/31/2014

**Step 1- CALCULATE QUANTITY OF NUTRIENTS & METALS IN POUNDS PER TON.**

<b>Nutrients</b>		<b>Percent</b>	<b>Conversion Factor</b>	<b>Pounds per ton</b>
<b>Total Nitrogen</b>	<b>(TKN)</b>	3.38	x 20 =	67.6
<b>Ammonium Nitrogen</b>	<b>(NH4)</b>	0.37	x 20 =	7.4
<b>Nitrate Nitrogen</b>	<b>(NO3)</b>	0.13	x 20 =	2.6
<b>Total Phosphorus</b>	<b>(P)</b>	0.73	x 20 =	14.6
<b>Total Potassium</b>	<b>(K)</b>	0.23	x 20 =	4.6

<b>Pollutants</b>	<i>(mg/kg x 0.002 = lb./ton)</i>	<b>mg/kg*</b>		<b>lb./ton</b>
<b>Total Arsenic</b>	<b>(As)</b>	5.35	x 0.002 =	0.0107
<b>Total Cadmium</b>	<b>(Cd)</b>	2.15	x 0.002 =	0.0043
<b>Total Chromium</b>	<b>(Cr)</b>	21.18	x 0.002 =	0.04236
<b>Total Copper</b>	<b>(Cu)</b>	315.91	x 0.002 =	0.63182
<b>Total Lead</b>	<b>(Pb)</b>	14.84	x 0.002 =	0.02968
<b>Total Mercury</b>	<b>(Hg)</b>	0.52	x 0.002 =	0.00104
<b>Total Molybdenum</b>	<b>(Mo)</b>	9.39	x 0.002 =	0.01878
<b>Total Nickel</b>	<b>(Ni)</b>	12.67	x 0.002 =	0.02534
<b>Total Selenium</b>	<b>(Se)</b>	9.48	x 0.002 =	0.01896
<b>Total Zinc</b>	<b>(Zn)</b>	738.89	x 0.002 =	1.47778

\* Values from sludge tests (dry weight)

(Conversion: mg/kg x 0.0001 = %; PPM = mg/kg)

**Appendix A  
Agronomic Rate Calculations**

TCEQ 04446

**Step 2.- SOIL TEST ANALYSIS AND FERTILIZER RECOMMENDATIONS**

Note: Please include fertilizer recommendation from the local County Extension Service or equivalent source for determining the nitrogen need for the specific crop(s)

Intended Crop(s): Bermudagrass, Winter Rye and native pasture grasses

Yield Goal(s): 7 tons/ac in 4 to 6 cuttings.

pH: 7.0

	<u><i>N lb/ac</i></u>
A. Crop nutrient need for specific yield goal**	<u>350</u>
B. Nutrients available in soil	<u>152.73</u>
= 2 x NO <sub>3</sub> -N (ppm)(0-6" soil depth)+ 6 x NO <sub>3</sub> -N(ppm)(6-24" soil depth)	
C. Nutrient amount still needed: (A -B) (enter this amount in step 4A.)	<u>197.27</u>

\*\* Crop nutrient need is based on 50 lb.N/ton of forage, Texas Agriculture Extension Service, Fertilizing Summer Perennial Pastures, Publication I-2210.

**Step 3 - CALCULATE THE PLANT AVAILABLE NITROGEN (PAN) PROVIDED BY THE SLUDGE.**

(Use the values for Total N, NH<sub>4</sub>-N and NO<sub>3</sub>-N from Step 1)

	<u>%</u>	<u>lb./ton</u>
A. Organic-N = Total N-(NH <sub>4</sub> -N+NO <sub>3</sub> -N)	<u>2.88</u>	<u>57.6</u>
B. Ammonium Nitrogen (NH <sub>4</sub> -N)	<u>0.37</u>	<u>7.4</u>
C. Nitrate Nitrogen (NO <sub>3</sub> -N)	<u>0.13</u>	<u>2.6</u>
D.Total PAN = (0.3 x 3A) + (0.5 x 3B) + 3C =	<u>1.364</u>	<u>23.58</u>

**Step 4. CALCULATE MAXIMUM SLUDGE APPLICATION RATE FROM CROP NITROGEN NEED (BARN):**

A. Enter amount from Step 2. Nitrogen amount still needed:	<u>197.27</u>	<i>lb./ac./yr</i>
B. Enter amount from Step 3D. Total PAN in sludge	<u>23.58</u>	<i>lb./ton</i>
C. Sludge application rate(SARN)	<u>8.37</u>	<i>ton/ac./yr</i>

**Appendix A  
Agronomic Rate Calculations**

TCEQ 04446

**Step 5 - CALCULATE MAXIMUM SLUDGE APPLICATION RATE BASED ON METALS (SARM).**

	A	B	C	D	E	F
	Cumulative Metal Limits (lb./ac.)	Max Metal Loading/yr (lb./ac./yr)	Metals in Sludge (lb./ton)	Metals Applied Annually at SARN (lb./ac./yr)	Metals Applied Annually at SARM (lb./ac./yr)	Max Sludge Loading Rate (ton/ac.)
<b>Pollutants</b>	<i>Appendix C</i>	<i>Appendix C</i>	<i>(Step 1)</i>	<i>C x SARN</i>	<i>B/C</i>	<i>A/C</i>
Arsenic	36	1.8	0.0107	0.089516073	0.089516073	3364.485981
Cadmium	35	1.7	0.0043	0.035973749	0.035973749	8139.534884
Chromium	2677	134	0.04236	0.354383257	0.354383257	63196.41171
Copper	1339	67	0.63182	5.285798617	5.285798617	2119.274477
Lead	268	13	0.02968	0.248302528	0.248302528	9029.649596
Mercury	15	0.76	0.00104	0.008700628	0.008700628	14423.07692
Molybdenum	Monitor	Monitor				
Nickel	375	18.7	0.02534	0.211994139	0.211994139	14798.73717
Selenium	89	4.5	0.01896	0.158619135	0.158619135	4694.092827
Zinc	2500	125	1.47778	12.36308993	12.36308993	1691.726779
Other						

If value in column B > D use nitrogen for biosolids application rate.

If value in column B < D use pollutant for biosolids application rate.

**Step 6. CALCULATE SITE LIFE AND MAXIMUM APPLICATION RATE BASED ON CUMULATIVE LOADING OF NITROGEN OR LIMITING METAL(S).**

A. Maximum allowable cumulative biosolids loading rate:	1691.73	<i>tons/acre</i>
B. Previous application of biosolids:	5.71	<i>tons/acre</i>
C. Remaining biosolids application rate to reach metal limits:	1686.02	<i>tons/acre</i>
D. Maximum allowable biosolids application rate:	8.37	<i>tons/acre/yr</i>
E. Years remaining to reach the maximum cumulative loading:	202	<i>years</i>

**Facilities Approved  
by TCEQ for  
Land Application**

Date: 05/31/2014

Facility Name	Permit Number	Approval Date
BMI Lime Stabilization Facility	4364	3/3/2004
BMI Lime Stabilization Facility	4538	7/26/2004
Addicks	11696-002	2/4/2003
Aldine Jr High	12072-001	2/4/2003
Arcola, City of	13362-001	1/26/2006
Bacliff	10627-001	2/4/2003
Bay View, City of	10770-001	8/22/2012
Bellville, City of	10385-002	3/3/2004
BC1	12332-001	2/4/2003
BC 31	14546-001	12/2/2011
Bernard Timbers WSC	12097-001	7/26/2004
Bilma	12025-001	1/26/2006
Blue Ridge	11553-001	2/4/2003
Burton, City	12193001	3/4/2014
Carby MHP	14217-001	1/12/2005
Castlewood	11883-001	2/4/2003
Chelford City	14418-001	7/24/2013
Cinco Central	13558-001	2/4/2003
Cinco South	13172-002	2/4/2003
Cinco Southwest	14343-001	12/2/2011
Copperfield	11947-001	2/4/2003
Crosby	11388-001	2/4/2003
Cy-Klein	11366-001	3/3/2004
Durkee Manor	10419-001	3/3/2004
Dynamics Products	11841-001	10/21/2005
Emerson EST	14285-001	12/10/2004
Fairgreen	11791-001	2/4/2003
Fondren (HC WCID) Road	10570-001	2/4/2003
Fort Bend 25	12003-001	4/29/2003
Fort Bend 26	12073-001	3/3/2004
Fort Bend 30	12068-001	3/08/2012
Fort Bend 37	12370-001	2/4/2003
Fort Bend 81	13051-002	2/4/2003
Fort Bend 106	12356-001	2/4/2003
Fort Bend 116	13976-001	2/4/2003
Fort Bend 142	14408-001	3/29/2007
Fry Road	11989-001	10/21/2005
Grantham	12070-002	2/4/2003
Greentrails	12289-001	2/4/2003
Harris County Detention Center (HCDC)	13561-001	11/7/2006
Harris County Juvenile Boot Camp (HCBC)	13921-001	12/10/2004
HC/FB 1	12805-001	2/4/2003
HC 8	11727-001	4/29/2013
HCFWSD 6	10184-001	3/3/2004
HC FWSD 58	11941-001	2/4/2003
HC WCID 109	11026-002	2/4/2003
HC 24	11988-001	2/4/2003
HC 26	11406-001	2/4/2003
HC 58	11941-001	3/3/2004
HC 70	11486-001	1/12/2005
HC 71	11947-001	5/15/2013

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<b>Facility Name</b>	<b>Permit Number</b>	<b>Approval Date</b>
HC 82	11799-001	3/3/2004
HC 89	12939-001	4/29/2003
HC WCID 92	10908-001	5/15/2013
HC 104	11925-001	9/5/2012
HC 105	11792-002	4/29/2003
HC 122	12250-001	4/26/2004
HC 130	12574-001	11/14/2013
HC 155	12726-001	2/4/2003
HC 185	12124-001	12/2/2011
HC 196	12447-001	2/4/2003
HC 200	12294-001	3/3/2004
HC 238	12802-001	2/4/2003
HC 249	13765-001	2/4/2003
HC 284	12949-001	2/4/2003
HC 345	12356-001	12/2/2011
HC 358	13290-002	5/15/2013
HC 365	13881-001	4/18/2013
HC 368	12044-001	3/3/2004
HC 374	14354-001	4/10/2013
HC 391	14327-001	12/2/2011
HC 405	14448-001	6/6/2013
HC 432	14589-001	11/14/2013
HC 408	14606-001	6/6/2013
Heather Glen	11231-001	2/4/2003
High Meadow	10812-001	2/4/2003
Hillman Schrimp	03719-001	2/4/2003
Holiday Inn Airport	14066-001	2/4/2003
Horsebend Bayou	12128-001	3/15/2011
Hunter's Glen	11618-001	2/4/2003
Inverness Forest	10783-001	2/4/2003
Katy, City of	10706-001	4/29/2003
Langham Creek	11682-001	12/13/2005
Manford Williams Elementary 8	13007-001	4/29/2003
Mayde Creek	11969-001	3/3/2004
Meadow Hill	11215-001	3/3/2004
Meadow Place	11039-001	10/15/2012
MC UD 2	11271-001	5/3/2013
MC 15	11395-001	2/4/2003
MC 24	14116-001	11/14/2013
MC 56	13760-001	12/2/2011
MC 112	14671001	3/15/2011
MC-Woodland Oaks	14166-001	5/3/2013
Missouri City	13873-001	2/4/2003
New Ulm	13655-001	2/7/2007
Northforest	10905-001	2/4/2003
Northampton	10910-001	12/10/2004
Northline	10518-001	2/4/2003
North Mission Glen	12379-001	1/15/2013
North Park	11855-001	2/4/2003
NWHC 9	14030-001	2/4/2003
NWHC 10	11912-002	2/4/2003
NWHC 15	11939-001	3/3/2004

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Facility Name	Permit Number	Approval Date
NWHC 20	13625-001	3/3/2004
NWHC 21-23	12144-001	3/3/2004
NWHC 24	13760-001	11/14/2013
NWHC 36	13573-001	12/2/2011
Oakwilde	10236-001	3/3/2004
Orange Grove	12070-004	2/4/2003
Palmer Plantation	12937-001	3/3/2004
Pearland, City of	21484-001	3/3/2004
Pecan Grove Plantation	11655-001 11971-001	3/3/2005 1/12/2005
Plantation Crossing	14490-001	12/2/2011
Ponderosa, Joint Powers	11081-001	2/4/2003
Rayford Road	12030-001	2/4/2003
Remington	11328-001	4/29/2005
Richmond, City of	10258-003	3/15/2011
River Oaks MHP	12692-001	12/10/2004
Riverside MHP(Glen Oaks)	12296-001	11/7/2006
Rosenberg, City of	10607-003	3/20/2013
Sealy, City of	10276-001	3/15/2011
Sienna Plantation	14100-001	3/15/2011
Southern Montgomery County	11001-01	7/26/2005
SWHC 1	12641-001	2/4/2003
Spring Creek	11574-001	2/4/2003
Spring Cypress	13711-001	2/4/2003
Sugarland, City of	12833-001	4/29/2005
Tiki Island	10879-001	2/4/2003
Timbercrest	13487-001	3/3/2004
Timberlake	11267-001	3/8/2012
Timberlane	11142-002	1/26/2006
City of Tomball, North	101616-001	2/26/2013
City of Tomball, South	101616-002	2/26/2013
Varco Shaffer	3994	12/10/2004
Waller, City of	10310-001	9/13/2012
WHC 7	12140-001	12/2/2011
WHC 11	13689-001	2/4/2003
WHC 15	12233-001	12/10/2004
Westlake	11284-001	11/14/2013
West Memorial	11152-001	2/4/2003
Westmont MHP	12761-001	12/10/2004
West Park	12346-001	7/26/2004
Ann Louise Ed Complex (Alief ISD)Wilson	13609-001	2/4/2003
WHC 10 (Winchester)	10472-001	2/4/2003
Wild Peach Elementary (CBISD)	12103-001	9/3/2013
Williamsburg	11598-001	3/3/2004
Willow River Farms	13466-001	7/26/2004
Woodcreek	11933-001	2/4/2003
Woodland Oaks	11670-001	3/3/2004