

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:	1st Reporting period:	From September 1, 2013	to August 31, 2014
Registration No:	WQ0004446	Date:	12/04/2013
Name of Registrant:	K-3 Resources, LP		
Mailing Address:	PO Box 2236, Alvin, TX 77512		
Contact Person	Name	Telephone	
	Charles E. Pehl, PhD, PG	No: 281-585-2817	

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

Class B Sewage Sludge Land Applied: 42.29 dry tons /quarter
 Treated Domestic Septage - Land Applied: 0 gallons / quarter
 Method used to treat Domestic Septage:
 Water Treatment Plant Sludge - Land Applied: 2.99 dry tons /quarter
 Class A sludge land applied: 0 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, 10 tons/acre in 4 to 6 cutting*

c. Does any of the sludge you have generated or received: 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: *W 95°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

**Facilities Approved
by TCEQ for
Land Application**

Date: 11/30/2013

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
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
HC 82	11799-001	3/3/2004

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Land Application**

Facility Name	Permit Number	Approval Date
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
NWHC 20	13625-001	3/3/2004

**Facilities Approved
by TCEQ for
Land Application**

Facility Name	Permit Number	Approval Date
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	11655-001	3/3/2005
Plantation	11971-001	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	Pending (7/25/13)
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



Land Application Manifest Summary By Site

<Application Date Range: 09/01/2013 - 11/30/2013>

TCEQ # 22430

Site Type: Land Application
Permit No: WQ0004446000
Site Name: Carl Miller Farms 2 RN102913472
Address: Lat: 29 degrees 54' 13.25"N Lon: 95 degrees 57' 28.24"W Quality: Class B

Delivery Date	Time	Manifest	Generator	Liquid Gallons	Cake Yards	Percent Solids	Dry Tons	Dry Metric Tons	Field #	Acres	Land Use	Appl. Date
11/19/2013	04:45 PM	152256	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	11/19/2013
11/20/2013	03:45 PM	151911	Sealy, City of		20	10.00	1.700000	1.541900	1	61.38	Hay/Pasture	11/20/2013
11/20/2013	02:45 PM	152259	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	11/20/2013
11/21/2013	06:00 AM	151913	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	11/21/2013
11/21/2013	09:45 AM	151914	Pecan Grove Water		13	27.08	2.992340	2.714052	1	61.38	Hay/Pasture	11/21/2013
11/21/2013	11:30 AM	151941	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	11/21/2013
11/21/2013	09:45 AM	152260	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	11/21/2013
11/22/2013	04:15 AM	151942	Richmond Regional		20	12.96	2.203200	1.998302	1	61.38	Hay/Pasture	11/22/2013
11/22/2013	06:15 AM	151943	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	11/22/2013
11/22/2013	08:00 AM	151944	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	11/22/2013
11/22/2013	10:45 AM	151945	Meadow Place		20	14.40	2.448000	2.220336	1	61.38	Hay/Pasture	11/22/2013
11/22/2013	02:00 PM	151946	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	11/22/2013
11/23/2013	08:15 AM	151949	Tomball North		20	10.90	1.853000	1.680671	1	61.38	Hay/Pasture	11/23/2013
11/23/2013	10:45 AM	151950	Richmond Regional		20	12.96	2.203200	1.998302	1	61.38	Hay/Pasture	11/23/2013
11/25/2013	05:00 AM	151952	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	11/25/2013
11/25/2013	06:30 AM	151953	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	11/25/2013
11/27/2013	05:15 AM	151957	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	11/27/2013
11/27/2013	09:45 AM	151958	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	11/27/2013
11/21/2013	07:45 AM	152307	Cinco Southwest		20	14.00	2.380000	2.158660	1	61.38	Hay/Pasture	11/29/2013
11/29/2013	07:45 AM	152382	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	11/29/2013
11/29/2013	09:30 AM	152383	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	11/29/2013
Site Total				0	378		45.284090	41.072671				

**Appendix A
Agronomic Rate Calculations**

TCEQ 04446

Part 1: Biosolids Application Rate

11/30/2013

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

Nutrients	Percent	Conversion Factor	Pounds per ton
Total Nitrogen (TKN)	3.16	x 20 =	63.2
Ammonium Nitrogen (NH4)	0.36	x 20 =	7.2
Nitrate Nitrogen (NO3)	0.08	x 20 =	1.6
Total Phosphorus (P)	0.95	x 20 =	19
Total Potassium (K)	0.29	x 20 =	5.8

Pollutants (mg/kg x 0.002 = lb./ton)	mg/kg*	lb./ton
Total Arsenic (As)	6.15	x 0.002 = 0.0123
Total Cadmium (Cd)	1.35	x 0.002 = 0.0027
Total Chromium (Cr)	26.52	x 0.002 = 0.05304
Total Copper (Cu)	324.47	x 0.002 = 0.64894
Total Lead (Pb)	12.73	x 0.002 = 0.02546
Total Mercury (Hg)	0.52	x 0.002 = 0.00104
Total Molybdenum (Mo)	9.47	x 0.002 = 0.01894
Total Nickel (Ni)	12.14	x 0.002 = 0.02428
Total Selenium (Se)	7.5	x 0.002 = 0.015
Total Zinc (Zn)	756.21	x 0.002 = 1.51242

* 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 and native pasture grasses
Winter Rye

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

pH: 7.0

	<u>N lb/ac</u>
A. Crop nutrient need for specific yield goal**	300
B. Nutrients available in soil = 2 x NO3-N (ppm)(0-6"soil depth)+ 6 x NO3-N(ppm)(6-24" soil depth)	25.04
C. Nutrient amount still needed: (A -B) (enter this amount in step 4A.)	274.96

** 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, NH4-N and NO3-N from Step 1)

	<u>%</u>	<u>lb./ton</u>
A. Organic-N = Total N-(NH4-N+NO3-N)	2.72	54.4
B. Ammonium Nitrogen (NH4-N)	0.36	7.2
C. Nitrate Nitrogen (NO3-N)	0.08	1.6
D.Total PAN = (0.3 x 3A) + (0.5 x 3B) + 3C =	1.256	21.52

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

A. Enter amount from Step 2. Nitrogen amount still needed:	274.96	<i>lb./ac./yr</i>
B. Enter amount from Step 3D. Total PAN in sludge	21.52	<i>lb./ton</i>
C. Sludge application rate(SARN)	12.78	<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 <u>SARN</u> (lb./ac./yr)	Metals Applied Annually at <u>SARM</u> (lb./ac./yr)	Max Sludge Loading Rate (ton/ac.)
Pollutants	<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	0.0123	0.157156506	0.157156506	2926.829268
Cadmium	35	1.7	0.0027	0.03449777	0.03449777	12962.96296
Chromium	2677	134	0.05304	0.677689517	0.677689517	50471.34238
Copper	1339	67	0.64894	8.291475019	8.291475019	2063.364872
Lead	268	13	0.02546	0.32530119	0.32530119	10526.31579
Mercury	15	0.76	0.00104	0.01328803	0.01328803	14423.07692
Molybdenum	Monitor	Monitor				
Nickel	375	18.7	0.02428	0.310224387	0.310224387	15444.81054
Selenium	89	4.5	0.015	0.191654275	0.191654275	5933.333333
Zinc	2500	125	1.51242	19.32411725	19.32411725	1652.979992
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:	1652.98	<i>tons/acre</i>
B. Previous application of biosolids:	<u>5.71</u>	<i>tons/acre</i>
C. Remaining biosolids application rate to reach metal limits:	1647.27	<i>tons/acre</i>
D. Maximum allowable biosolids application rate:	<u>12.78</u>	<i>tons/acre/yr</i>
E. Years remaining to reach the maximum cumulative loading:	129	<i>years</i>

Cumulative Pollutants

November 30, 2013

<i>Pollutants</i>	Cumulative Pollutants 8/31/2013	Weighted Means	Application 9/01/13 to 11/30/2013	Cumulative to 11/30/2013	
	(kg/ha)	(mg/kg)	(kg/ha)	(kg/ha)	(lb./ac.)
Arsenic	3.15	6.15	0.0041	3.15	2.82
Cadmium	1.80	1.35	0.0009	1.80	1.61
Chromium	10.13	26.52	0.0179	10.15	9.06
Copper	36.55	324.47	0.2185	36.77	32.83
Lead	23.38	12.73	0.0086	23.39	20.88
Mercury	0.52	0.52	0.0004	0.52	0.46
Molybdenum	1.58	9.47	0.0064	1.59	1.42
Nickel	4.73	12.14	0.0082	4.74	4.23
Selenium	1.13	7.50	0.0051	1.14	1.01
Zinc	55.77	756.21	0.5092	56.28	50.25

Biosolids Application (9/01/13 to 11/30/13):

0.74 (tons/acre)



Charles E. Pehl, PhD, PG

Compliance Director