

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:	2QTR	Reporting period:	From September 1, 2013 to August 31, 2014
Registration No:	WQ0004446	Date:	3-3-2014
Name of Registrant:	K-3 Resources, L.P.		
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: 312.59 dry tons / quarter
 Treated Domestic Septage - Land Applied: 0.00 gallons / quarter
 Method used to treat Domestic Septage: NA
 Water Treatment Plant Sludge - Land Applied: 2.99 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, 10 tons/acre in 4 to 6 cuttings.*

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

**Facilities Approved
by TCEQ for
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 Plantation	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: 12/01/2013 - 02/28/2014>

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
12/02/2013	10:45 AM	152384	Sealy, City of		20	10.00	1.700000	1.541900	1	61.38	Hay/Pasture	12/02/2013
12/03/2013	03:45 AM	152385	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	05:00 AM	152386	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	10:00 AM	152387	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	11:30 AM	152388	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	11:00 AM	152468	HC MUD 8		20	14.00	2.380000	2.158660	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	04:00 PM	152469	HC MUD 8		20	14.00	2.380000	2.158660	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	06:00 AM	154521	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	11:00 AM	154522	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/03/2013
12/03/2013	02:30 PM	154523	HC WCID 109		20	15.10	2.567000	2.328269	1	61.38	Hay/Pasture	12/03/2013
12/04/2013	05:00 AM	152390	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	11:00 AM	152392	Bellville, City of		20	21.70	3.689000	3.345923	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	01:00 PM	152393	FB 30		13	14.60	1.613300	1.463263	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	04:00 PM	152394	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	09:30 AM	152470	HC MUD 8		20	14.00	2.380000	2.158660	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	05:30 AM	154526	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	05:45 AM	154527	Tomball South		20	15.70	2.669000	2.420783	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	02:30 PM	154528	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	12/04/2013
12/04/2013	06:15 PM	154529	Sealy, City of		20	10.00	1.700000	1.541900	1	61.38	Hay/Pasture	12/04/2013
12/05/2013	05:15 AM	152395	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/05/2013
12/05/2013	07:15 AM	152396	Tomball North		20	10.90	1.853000	1.680671	1	61.38	Hay/Pasture	12/05/2013
12/05/2013	07:00 AM	154530	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/05/2013
12/05/2013	01:45 PM	154531	Pecan Grove Water		13	27.08	2.992340	2.714052	1	61.38	Hay/Pasture	12/05/2013
12/06/2013	06:30 AM	152399	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	08:30 AM	152400	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	10:00 AM	152581	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	01:00 PM	152582	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	07:00 AM	154532	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	11:00 AM	154533	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	02:30 PM	154534	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/06/2013
12/06/2013	06:30 PM	154535	HC WCID 109		20	15.10	2.567000	2.328269	1	61.38	Hay/Pasture	12/06/2013
12/07/2013	06:00 AM	152583	FB 30		13	14.60	1.613300	1.463263	1	61.38	Hay/Pasture	12/07/2013



Land Application Manifest Summary By Site

<Application Date Range: 12/01/2013 - 02/28/2014>

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
12/07/2013	08:00 AM	152584	Cinco Central		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/07/2013
12/09/2013	09:30 AM	152511	HC MUD 365		20	14.00	2.380000	2.158660	1	61.38 Hay/Pasture	12/09/2013
12/10/2013	05:00 AM	152587	Cinco Central		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	07:00 AM	152588	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	09:45 AM	152589	FB 106		13	15.70	1.734850	1.573509	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	12:45 PM	152590	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	03:15 PM	152591	Eagle Lake WWTP		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	06:00 AM	154517	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	11:30 AM	154518	NWHC 21- 23		20	14.00	2.380000	2.158660	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	03:30 PM	154519	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	08:00 AM	154520	HC WCID 92		20	15.10	2.567000	2.328269	1	61.38 Hay/Pasture	12/10/2013
12/10/2013	01:15 PM	154544	HC MUD 200		20	12.50	2.125000	1.927375	1	61.38 Hay/Pasture	12/10/2013
12/11/2013	05:45 AM	152592	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	07:45 AM	152593	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	10:30 AM	152594	FB 106		13	15.70	1.734850	1.573509	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	12:00 PM	152595	Langham Creek		13	14.00	1.547000	1.403129	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	06:30 AM	154541	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	08:50 AM	154542	FB 30		13	14.60	1.613300	1.463263	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	10:20 AM	154543	Cinco Central		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/11/2013
12/11/2013	04:50 PM	154545	HC WCID 109		20	15.10	2.567000	2.328269	1	61.38 Hay/Pasture	12/11/2013
12/12/2013	04:15 AM	152597	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	06:00 AM	152598	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	10:00 AM	152599	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	12:30 PM	152600	Meadow Place		20	14.40	2.448000	2.220336	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	09:15 AM	152686	Cinco Central		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	11:30 AM	152687	Tomball South		20	15.70	2.669000	2.420783	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	10:15 AM	152710	HC MUD 71		20	14.00	2.380000	2.158660	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	12:15 PM	152711	HC MUD 71		20	14.00	2.380000	2.158660	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	07:15 AM	154546	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	09:30 AM	154547	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/12/2013
12/12/2013	12:15 PM	154548	FB 30		13	14.60	1.613300	1.463263	1	61.38 Hay/Pasture	12/12/2013
12/13/2013	09:35 AM	152264	HC MUD 71		20	14.00	2.380000	2.158660	1	61.38 Hay/Pasture	12/13/2013



Land Application Manifest Summary By Site

<Application Date Range: 12/01/2013 - 02/28/2014>

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
12/13/2013	04:15 AM	152782	Tomball North		20	10.90	1.853000	1.680671	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	06:15 AM	152783	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	08:45 AM	152784	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	01:15 PM	152786	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	07:15 AM	154550	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	09:00 AM	154551	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	11:15 AM	154552	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/13/2013
12/13/2013	03:00 PM	154553	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/13/2013
12/14/2013	09:00 AM	152718	HC MUD 71		20	14.00	2.380000	2.158660	1	61.38	Hay/Pasture	12/14/2013
12/14/2013	04:00 AM	152787	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/14/2013
12/14/2013	09:30 AM	152788	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/14/2013
12/14/2013	12:00 PM	154557	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/14/2013
12/17/2013	09:30 AM	152265	HC 155		20	11.70	1.989000	1.804023	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	03:35 PM	152266	HC 155		20	11.70	1.989000	1.804023	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	09:00 PM	152769	HC 155		20	11.70	1.989000	1.804023	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	05:00 AM	152795	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	07:00 AM	152796	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	09:15 AM	152797	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	11:00 AM	152798	Bellville, City of		20	21.70	3.689000	3.345923	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	07:15 AM	154623	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	09:15 AM	154624	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	12:45 PM	154625	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/17/2013
12/17/2013	03:30 PM	154626	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	12/17/2013
12/18/2013	04:45 PM	152633	HC 155		20	11.70	1.989000	1.804023	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	09:15 AM	152697	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	11:30 AM	152698	Tomball South		20	15.70	2.669000	2.420783	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	12:45 PM	152699	Sealy, City of		20	10.00	1.700000	1.541900	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	05:30 PM	152700	HC WCID 92		20	15.10	2.567000	2.328269	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	05:00 AM	152799	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	07:30 PM	152800	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	03:45 PM	152923	Tomball North		20	10.90	1.853000	1.680671	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	08:15 PM	152941	HC MUD 200		20	12.50	2.125000	1.927375	1	61.38	Hay/Pasture	12/18/2013



Land Application Manifest Summary By Site

<Application Date Range: 12/01/2013 - 02/28/2014>

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
12/18/2013	08:30 AM	154630	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	11:00 AM	154631	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/18/2013
12/18/2013	02:00 PM	154632	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/18/2013
12/19/2013	08:00 AM	152768	HC 155		20	11.70	1.989000	1.804023	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	03:00 AM	152924	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	05:00 AM	152925	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	06:15 AM	152926	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	09:45 AM	152927	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	03:00 PM	152929	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	05:30 AM	154633	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	08:00 AM	154634	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	10:30 AM	154635	FB 30		13	14.60	1.613300	1.463263	1	61.38	Hay/Pasture	12/19/2013
12/19/2013	12:00 PM	154636	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/19/2013
12/20/2013	05:15 AM	152930	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	01:15 AM	152931	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	09:30 AM	152932	Rosenberg (1-A)		20	16.50	2.805000	2.544135	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	11:35 AM	152933	Tomball South		20	15.70	2.669000	2.420783	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	03:30 PM	152934	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	07:30 AM	154638	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	09:45 AM	154639	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	01:00 PM	154640	FB 106		13	15.70	1.734850	1.573509	1	61.38	Hay/Pasture	12/20/2013
12/20/2013	03:00 PM	154641	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/20/2013
12/21/2013	05:15 AM	152935	Richmond Regional		20	14.20	2.414000	2.189498	1	61.38	Hay/Pasture	12/21/2013
12/21/2013	10:00 AM	152936	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/21/2013
12/21/2013	11:30 AM	152938	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/21/2013
12/21/2013	01:15 PM	152939	Langham Creek		13	14.00	1.547000	1.403129	1	61.38	Hay/Pasture	12/21/2013
12/23/2013	05:00 PM	152940	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38	Hay/Pasture	12/23/2013
12/24/2013	07:15 AM	153061	Cinco Central		20	14.80	2.516000	2.282012	1	61.38	Hay/Pasture	12/24/2013
12/26/2013	12:00 PM	153062	Chelford City		20	14.33	2.436100	2.209543	1	61.38	Hay/Pasture	12/26/2013
12/26/2013	02:00 PM	153065	Meadow Place		20	14.40	2.448000	2.220336	1	61.38	Hay/Pasture	12/26/2013
12/27/2013	11:45 AM	153005	West Memorial		20	12.00	2.040000	1.850280	1	61.38	Hay/Pasture	12/27/2013
12/27/2013	02:15 PM	153006	West Memorial		20	12.00	2.040000	1.850280	1	61.38	Hay/Pasture	12/27/2013



Land Application Manifest Summary By Site

<Application Date Range: 12/01/2013 - 02/28/2014>

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
12/27/2013	04:15 AM	153066	Tomball North		20	10.90	1.853000	1.680671	1	61.38 Hay/Pasture	12/27/2013
12/27/2013	06:15 AM	153067	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/27/2013
12/27/2013	09:45 AM	153068	HC MUD 26		13	12.50	1.381250	1.252794	1	61.38 Hay/Pasture	12/27/2013
12/27/2013	11:15 AM	153069	Bellville, City of		20	21.70	3.689000	3.345923	1	61.38 Hay/Pasture	12/27/2013
12/27/2013	01:45 PM	153070	Tomball South		20	15.70	2.669000	2.420783	1	61.38 Hay/Pasture	12/27/2013
12/27/2013	01:45 PM	154657	Ponderosa JPA		20	14.90	2.533000	2.297431	1	61.38 Hay/Pasture	12/27/2013
12/28/2013	08:15 PM	153009	West Memorial		20	12.00	2.040000	1.850280	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	10:30 AM	153010	West Memorial		20	12.00	2.040000	1.850280	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	01:15 AM	153072	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	08:45 AM	153073	Sealy, City of		20	10.00	1.700000	1.541900	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	08:45 AM	154661	FB 106		13	15.70	1.734850	1.573509	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	11:00 AM	154662	Chelford City		20	14.33	2.436100	2.209543	1	61.38 Hay/Pasture	12/28/2013
12/28/2013	01:30 PM	154663	Cinco Central		20	14.80	2.516000	2.282012	1	61.38 Hay/Pasture	12/28/2013
Site Total				0	2,603		315.584940	286.235551			

Cumulative Pollutants
February 28, 2014

<i>Pollutants</i>	Cumulative Pollutants 11/30/2013	Weighted Means	Application 12/01/13 to 02/28/2014	Cumulative to 02/28/2014	
	<i>(kg/ha)</i>	<i>(mg/kg)</i>	<i>(kg/ha)</i>	<i>(kg/ha)</i>	<i>(lb./ac.)</i>
Arsenic	3.21	5.64	1.6198	4.83	4.31
Cadmium	3.88	2.34	0.6721	4.55	4.06
Chromium	53.10	23.70	6.8068	59.91	53.49
Copper	173.46	349.07	100.2547	273.71	244.39
Lead	32.55	17.20	4.9399	37.49	33.47
Mercury	1.00	0.71	0.2039	1.20	1.07
Molybdenum	3.21	10.67	3.0645	6.27	5.60
Nickel	10.80	14.72	4.2277	15.03	13.42
Selenium	4.93	8.80	2.5274	7.46	6.66
Zinc	312.26	851.60	244.5839	556.84	497.18

Biosolids Application (12/01/2013 to 02/28/2014):

315.61 (tons/acre)


 Charles E. Pehl, PhD, PG
 Compliance Director

Appendix A
Agronomic Rate Calculations

TCEQ 04446

Part 1: Biosolids Application Rate

2/28/2014

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

Nutrients	Percent	Conversion Factor	Pounds per ton
Total Nitrogen (TKN)	3.72	x 20 =	74.4
Ammonium Nitrogen (NH4)	0.4	x 20 =	8
Nitrate Nitrogen (NO3)	0.07	x 20 =	1.4
Total Phosphorus (P)	1.01	x 20 =	20.2
Total Potassium (K)	0.31	x 20 =	6.2

Pollutants (mg/kg x 0.002 = lb./ton)	mg/kg*	lb./ton
Total Arsenic (As)	5.64	x 0.002 = 0.01128
Total Cadmium (Cd)	2.34	x 0.002 = 0.00468
Total Chromium (Cr)	23.7	x 0.002 = 0.0474
Total Copper (Cu)	349.07	x 0.002 = 0.69814
Total Lead (Pb)	17.2	x 0.002 = 0.0344
Total Mercury (Hg)	0.71	x 0.002 = 0.00142
Total Molybdenum (Mo)	10.67	x 0.002 = 0.02134
Total Nickel (Ni)	14.72	x 0.002 = 0.02944
Total Selenium (Se)	8.8	x 0.002 = 0.0176
Total Zinc (Zn)	851.6	x 0.002 = 1.7032

* 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>N lb/ac</u>
A. Crop nutrient need for specific yield goal**	<u>350</u>
B. Nutrients available in soil	<u>152.73</u>
= 2 x NO3-N (ppm)(0-6"soil depth)+ 6 x NO3-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, NH4-N and NO3-N from Step 1)

	<u>%</u>	<u>lb./ton</u>
A. Organic-N = Total N-(NH ₄ -N+NO ₃ -N)	<u>3.25</u>	<u>65</u>
B. Ammonium Nitrogen (NH ₄ -N)	<u>0.4</u>	<u>8</u>
C. Nitrate Nitrogen (NO ₃ -N)	<u>0.07</u>	<u>1.4</u>
D.Total PAN = (0.3 x 3A) + (0.5 x 3B) + 3C =	<u>1.445</u>	<u>24.9</u>

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

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>24.9</u>	<i>lb./ton</i>
C. Sludge application rate(SARN)	<u>7.92</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.)
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	0.01128	0.089365687	0.089365687	3191.489362
Cadmium	35	1.7	0.00468	0.037077253	0.037077253	7478.632479
Chromium	2677	134	0.0474	0.375526024	0.375526024	56476.79325
Copper	1339	67	0.69814	5.531007141	5.531007141	1917.953419
Lead	268	13	0.0344	0.272533655	0.272533655	7790.697674
Mercury	15	0.76	0.00142	0.011249936	0.011249936	10563.38028
Molybdenum	Monitor	Monitor				
Nickel	375	18.7	0.02944	0.233238104	0.233238104	12737.77174
Selenium	89	4.5	0.0176	0.139435823	0.139435823	5056.818182
Zinc	2500	125	1.7032	13.4935849	13.4935849	1467.82527
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:	1467.83	<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:	<u>1462.12</u>	<i>tons/acre</i>
D. Maximum allowable biosolids application rate:	<u>7.92</u>	<i>tons/acre/yr</i>
E. Years remaining to reach the maximum cumulative loading:	<u>185</u>	<i>years</i>