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DAVE MARTIN
Secretary

RAJ SOLOMON, P.E.
Deputy Secretary

Certified Mail - Return Receipt Requested

April 4, 2011

Honorable, Mayor Gayla Brumfield
City of Clovis, City Hall
321 North Connelly
Clovis, New Mexico 88101

RE: Sewage Sludge-Land Application, SIC 4952, Compliance Evaluation Inspection, City of Clovis, Water Reclamation Plant (Waste Water Treatment Plant), NML000002, March 1, 2011

Mayor Brumfield:

Enclosed, please find a copy of the report for the referenced inspection that the New Mexico Environment Department (NMED) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. This inspection may be used by USEPA to determine compliance with Standards for the Use or Disposal of Sewage Sludge in 40 Code of Federal Regulations (CFR) Part 503 in accordance with requirements of the federal Clean Water Act.

Problems noted during this inspection are discussed in the Further Explanations section of the inspection report. You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and to modify your operational and/or administrative procedures, as appropriate. Further, you are encouraged to notify in writing, both the USEPA and NMED, regarding modifications and compliance schedules at the addresses below:

Diana McDonald (6EN-WM)
U.S. Environmental Protection Agency
Allied Bank Tower
Region VI Enforcement Branch
1445 Ross Avenue
Dallas, Texas 75202-2733

Program Manager
New Mexico Environment Department
Surface Water Quality Bureau
Point Source Regulation Section
P.O. Box 5469
Santa Fe, New Mexico 87502

I appreciate the cooperation of Mr. Clint Bunch and Mr. Durwood Billington during this inspection. If you have any questions about this inspection report, please contact me at (505) 827-0418.

Sincerely,

/s/Erin S. Trujillo
Erin S. Trujillo
Surface Water Quality Bureau

cc: Marcia Gail Adams, USEPA (6EN-AS) by e-mail
Samuel Tates, EPA (6EN-AS) by e-mail
Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
Diana McDonald, USEPA (6EN-WM) by e-mail
Ted Palit, USEPA (6EN-WT) by e-mail
Frank Fiore, NMED Environmental Health Division (NMED District IV) by e-mail
Clint Bunch, Director, Public Works Department, City of Clovis by e-mail



Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code			NPDES								yr/mo/day						Inspec. Type		Inspector		Fac Type							
1	N	2	5	3	N	M	L	0	0	0	0	0	2	11	12	1	1	0	3	0	1	17	18	Z	19	S	20	1
Remarks																												
W W T P S E W A G E S L U D G E - C O M P O S T																												
Inspection Work Days						Facility Evaluation Rating						BI		QA		Reserved												
67						70						71		72		73 74 75 80												

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) City of Clovis, Water Reclamation Plant (Wastewater Treatment Plant or WWTP), 879 CR 7, Clovis, NM. From US 60, take Prince Street south, to CR 7, travel east approx 1 mile. Curry County		Entry Time /Date 1425 hrs / 03/01/2011	Permit Effective Date Not Applicable
		Exit Time/Date 1652 hrs / 03/01/2011	Permit Expiration Date Not Applicable
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) -Clint Bunch, Director, Public Works Dept, 575-769-2376, fax 769-2378, cbunch@cityofclovis.org -Durwood Billington, Wastewater Superintendent, Public Works Dept, 575-769-7865, fax 762-6815, dbillington@cityofclovis.org			Other Facility Data Entrance Latitude 34.361187° Longitude -103.174598°
Name, Address of Responsible Official/Title/Phone and Fax Number Gayla Brumfield / City of Clovis, City Hall, 321 N Connelly, Clovis, New Mexico 88101 / Mayor / 575-769-7828		Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

N	Permit	N	Flow Measurement	N	Operations & Maintenance	N	CSO/SSO
U	Records/Reports	S	Self-Monitoring Program	S	Sludge Handling/Disposal	N	Pollution Prevention
N	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
N	Effluent/Receiving Waters	N	Laboratory	N	Storm Water	N	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

- 1) City of Clovis, an operator of a publically owned treatment works (POTW) with a design flow rate equal to or greater than one (1) million gallons per day, prepares and applies sewage sludge for land application.
- 2) The City did not document recordkeeping or submit reports with certification language to USEPA per Standards for the Use or Disposal of Sewage Sludge in 40 Code of Federal Regulations (CFR) Part 503.
- 3) See attached further explanations.

Name(s) and Signature(s) of Inspector(s) Erin S. Trujillo /s/Erin S. Trujillo	Agency/Office/Telephone/Fax NMED/SWQB/505-827-0418	Date 04/04/2011
Signature of Management QA Reviewer Richard E. Powell /s/Richard E. Powell	Agency/Office/Phone and Fax Numbers NMED/SWQB/505-827-2798	Date 04/04/2011

City of Clovis Water Reclamation Plant
Compliance Evaluation Inspection – Sewage Sludge – Land Application
USEPA Region 6 Tracking No. NML000002
March 1, 2011

Further Explanations

Introduction

On March 1, 2011, a Compliance Evaluation Inspection (CEI) was conducted at the City of Clovis Water Reclamation Plant (Waste Water Treatment Plant or WWTP) at 879 County Road 7, Clovis, New Mexico by Erin S. Trujillo of the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB). The purpose of this inspection was to document the facility's compliance with Standards for the Use or Disposal of Sewage Sludge in 40 Code of Federal Regulations (CFR) Part 503 under authority of Sections 405(d) and (e) of the Clean Water Act (CWA), as amended.

USEPA has not issued a "sludge-only" permit to the facility. Section 405(e) of the CWA requires any person that uses or disposes of sewage sludge generated by a treatment works to comply with 40 CFR 503 standards no later than February 19, 1994 or when compliance with the standards required construction of new pollution control facilities no later than February 19, 1995. The 40 CFR 503 standards are designed to be self-implementing. More information on sewage sludge standards is available at the following USEPA's websites:

<http://water.epa.gov/polwaste/wastewater/treatment/biosolids/index.cfm>

<http://water.epa.gov/scitech/wastetech/biosolids/upload/fr2-19-93.pdf>

Upon arrival at approximately 1425 hours at the City of Clovis, Public Works Complex, 801 South Norris Street, Clovis, New Mexico on March 1, 2011, the inspector made introductions, presented credentials and stated the purpose of the inspection to Mr. Clint Bunch, Director, Public Works Department. The inspector, Mr. Bunch and Mr. Durwood Billington, Wastewater Superintendent toured the sludge and compost handling areas at the WWTP. An exit interview and preliminary findings of the inspection were discussed with Mr. Bunch and Mr. Billington on site. The inspector left the facility at approximately 1652 hours on March 1, 2011.

City of Clovis also does not have a National Pollutant Discharge Elimination System (NPDES) permit for direct discharges of treated effluent to Berry Williams Lake. The City has a Discharge Permit from the New Mexico Groundwater Quality Bureau (GWQB) DP-79 to use treated effluent or leachate (reclaimed water) for irrigation of cropland and city's parks, golf courses and on-site landscaping, and to discharge reclaimed water to Berry Williams Lake. This inspection did not include waste water treatment plant operations for discharges to Berry Williams Lake.

This report is based on review of files maintained by NMED and the operator, observations by NMED personnel, and verbal information provided by the operator's representatives. Reviewed files maintained by the operator included sludge management summary reports submitted to GWQB, SWQB and USEPA, written procedures, compost facility operational logs, and laboratory analytical reports. Additional information was obtained from Mr. Billington by telephone on March 28, 2011.

Facility's On-Site Sewage Sludge/Biosolid Management

The following table provides a summary of the facility's sewage sludge handling operations and land application:

City of Clovis Water Reclamation Plant	Sewage Sludge Handling Summary
Category	Design flow greater than 1 MGD and serves 10,000 people. <u>Notes:</u> City of Clovis WWTP has a current design flow of 5 MGD and majority of the wastewater treated is from domestic sources according to on site representatives.
This facility uses or disposes of sludge by:	Land application (farm lands, pasture and public contact sites)
This facility applies prepared sludge to:	WWTP grounds and public contact sites (city parks, schools and golf courses)
This facility prepares:	Class A sludge
Pollutant Concentrations: § 503.13(b)(3) Table 3	A review of the facility's summary reports with monitoring results since 1999 and the analytical laboratory testing results for June 2010 indicate that the sewage sludge did not exceed ceiling concentration in § 503.13(b)(1) Table 1 or monthly average concentrations in § 503.13(b)(3) Table 3.
Pathogen Standards: § 503.15 and § 503.32(a)	Class A Alternative 5, PFRP Option 1 (Composting). <u>Notes:</u> City of Clovis selected the density of Fecal Coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis) alternative. This option requires selection of a Processes to Further Reduce Pathogens (PFRP). City of Clovis selected windrow composting method, where the temperature of the sewage sludge is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow. All sludge is composted at the treatment plant's on-site composting facility. The City has at least one operator that has met the standards and criteria adopted by the New Mexico Environmental Improvement Board for Certification as a Compost Facility Operator presented by NMED (expiration date June 18, 2013).
Vector Attraction Reduction (VAR): § 503.15 and § 503.33(b)	VAR Option 1 (mass of volatile solids reduced by a minimum of 38%). <u>Notes:</u> Based on information from on-site operator representative, the facility returns sludge to the composting facility for further treatment if the percent of total volatile solids (%TVS) of individual compost piles is too high. Records of %TVS of the sludge from the digester or return activated sludge (RAS) basin are kept to spot check or confirm vector attraction reduction requirements. See Findings Below.
Frequency of Monitoring § 503.16	Once (1)/Quarter
Amount of sewage sludge:	Equal to or greater than 290 but less than 1,500 metric tons per 365 day period. Based on copies of information in NMED SWQB files and information provided by the on-site representatives on the day of this inspection, the quantity of compost produced from 1999 to 2010 ranged from 346 to 712 dry tons per year. See Findings Below.
On-site laboratory:	Fecal Coliform See Findings Below Total Volatile Solids
Contract laboratory:	Ask Labs, 5935 Glenoak Lane, Amarillo, TX 79109, 806-353-442 Metals and % Solids

Land Application Records/ Reports (U = Unsatisfactory)

CWA and Sewage Sludge Standard Requirements

Per § 503.3(b) direct enforceability, “No person shall use or dispose of sewage sludge through any practice for which requirements are established in this part except in accordance with such requirements.”

Recordkeeping standards in 40 CFR 503.17(a) § 503.10(b)(1) bulk sewage sludge or (e) sewage sludge sold or given away in a bag or other container for application to the land state:

(1) The person who prepares the sewage sludge in § 503.10(b)(1) or (e) shall develop the following information and shall retain the information for five years: (i) The concentration of each pollutant listed in Table 3 of § 503.13 in the sewage sludge. (ii) The following certification statement: “I certify, under penalty of law, that the Class A pathogen requirements in § 503.32(a) and the vector attraction reduction requirement in (insert one of the vector attraction reduction requirements in § 503.33(b)(1) through § 503.33(b)(8)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.” (iii) A description of how the Class A pathogen requirements in § 503.32(a) are met. (iv) A description of how one of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(8) is met.

Reporting standards in 40 CFR 503.18 state:

(a) Class I sludge management facilities, POTWs (as defined in 40 CFR 501.2) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more shall submit the following information to the permitting authority: (1) The information in § 503.17(a), except the information in § 503.17 (a)(3)(ii), (a)(4)(ii) and in (a)(5)(ii), for the appropriate requirements on February 19 of each year.

Vector attraction reduction standards in 40 CFR 503.33(a)(1) state:

One of the vector attraction reduction requirements in § 503.33 (b)(1) through (b)(10) shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site... (b)(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent (see calculation procedures in “Environmental Regulations and Technology – Control of Pathogens and Vector Attraction in Sewage Sludge”, EPA-625/R-92/013, 1992, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268).

Findings for Recordkeeping and Reporting

City of Clovis did not submit certification statements in reports to USEPA Region 6 each year. Also, certification statements were not documented or contained in record keeping. Unless otherwise notified or instructed by USEPA Region 6, the City of Clovis should submit required record keeping information to the USEPA Region 6 Biosolids Coordinator and Enforcement Officer, Ted Palit (6EN-WT), USEPA Region 6 (OECA), 1445 Ross Ave., Suite 1200, Dallas, TX 75202-2733. Documentation of submittal (e.g., Certified Mail, Return Receipt Requested) is recommended.

There was no site-specific documentation or written procedure describing how vector attraction reduction is met or calculated at the facility. The facility's written procedures and other documentation only state that vector attraction reduction requirements in § 503.33 (b) are met using Option 1 (mass of volatile solids reduced by a minimum of 38%). Calculations to confirm that individual sludge piles meet volatile solids reduction requirements are not documented. Guidance on methods of calculation is provided in Appendix C, Determination of Volatile Solids Reduction by Digestion, "Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge", EPA-625/R-92/013, updated July 2003 available at:

<http://www.epa.gov/nrmrl/pubs/625r92013/625R92013.pdf>

Generally, the facility's self-monitoring and sludge-handling programs are well documented. Reviewed record keeping indicates that the self-monitoring and sludge handling programs are satisfactory. However, the following items were noted:

Documentation of Approved Analytical Methods: The facility only lists the use of HACH analytical procedures for detecting Fecal Coliforms in sludge Method 10028 (Most Probable Number) MPN A-1 Method Broth which is based on Standard Methods on laboratory bench sheets. Approved analytical methods listed in § 503.8 for Fecal Coliform are Part 9221 E (Fecal Coliform Procedure) or Part 9222 D (Fecal Coliform Membrane Filter Procedure), Standard Methods for the Examination of Water and Wastewater. USEPA Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge guidance states, "*The membrane filter method is not allowed for Class A because, at the low fecal coliform densities expected, the filter would have too high a loading of sewage sludge solids to permit a reliable count of the number of fecal Coliform colonies.*"

Documentation of Sludge Pile Management: Compost pile temperatures are recorded twice a day (am and pm). The reading times fluctuated. USEPA Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge guidance recommends the following operational guidelines for windrow composting (see Chapter 7, Page 52): "*Temperatures should be taken at approximately the same time each day in order to demonstrate that 55 deg C has been reached in the pile within 24 hours after pile turning.*"

Record keeping of compost data provided during the active phase did not include monitoring for moisture content or oxygen content. USEPA Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge guidance (see Chapter 7, Page 52) states, "*...overly dried compost can cause both odor problems and vector attraction if moisture is reintroduced into the material and microbial activity resumes. It is therefore recommended that the composting process be maintained at moisture levels between 45-60% (40-55% total solids).*" Also, Appendix J of the above-referenced guidance states, "*For optimum aerobic biological activity, air within the pile should have oxygen levels of between 5% and 15%*" and "*Operational parameters such as moisture, oxygen...should be monitored at a frequency necessary to assure that the compost operation is operating within acceptable ranges.*"

A discrepancy was noted on record keeping and logs for June of 2010. The facility's chain of custody and the commercial laboratory analytical reports did not refer to composite pile #141. This pile was listed on the facility's Quarterly Compost Data log. Other facility logs did indicate when sludge piles were remixed into raw sludge due to high Fecal Coliform readings. The facility may have other records or logs to document how the June 2010 #141 pile was handled. Record keeping for June 2010 needs to be annotated (amended and/or corrected) to document sludge handling, as appropriate.

Metric Ton Calculation: The facility's sewage sludge summary for 2010 indicated that 215 dry tons was generated for June 2010. Based on verbal information from the on-site facility representative, the facility uses a different factor to convert kilograms to pounds than shown in USEPA Region 6 guidance (see excerpt and example below). Conversion calculations and methods used by the facility to demonstrate required monitoring frequency need to be clearly documented in the facility's written procedures.

Dry Metric Ton Calculation Examples – For Information Purposes

Converting Cubic Yards to Dry Metric Tons											
To convert cubic yards of sewage sludge to dry metric tons, the following equation can be used.											
X yd ³	X	27 ft ³	X	Y lbs	X	1 KG	X	1 MT	X	% Dry MT	= Dry Metric Tons
1		1 yd ³		1 ft ³		2.2046 lbs		1000 KG		1 MT	
<i>Short Conversion:</i> $\frac{(X)(27)(Y)(\%)}{(2.2046)(1000)}$											
Where: X = Cubic yards of sewage sludge Y = Unit weight of sewage sludge in pounds per cubic foot % = Percent of solids in the sewage sludge The other values in the equation are conversion factors. For example, if the permittee disposes of 100 cubic yards of sewage sludge with a solids content of 25% and a unit weight of 75 pounds per cubic foot, the amount disposed is 22.96 dry metric tons. $\frac{(100)(27)(75)(0.25)}{(2.2046)(1000)} = 22.96$ dry metric tons											

Source: USEPA Region 6, NPDES Reporting Requirements Handbook, Revised August 25, 2004

The following are example calculations using the facility's June 2010 data and USEPA guidance above:

-Cubic yards of sewage sludge recorded = 420.80 yd³

-Unit weight of sewage sludge = 35.98 ave lbs / 5 gallon bucket ~ 46.3 lb/ft³

Notes: It is unknown if the facility's weight of sewage sludge is adjusted to consider the weight of the bucket. For example, an empty 5-gallon bucket with metal handle could weigh approximately 1.9 pounds. Other references or conversion factors for a 5 gallon bucket are typically stated to be 2/3 or 0.667 ft³. However, there is a different conversion factor if the material weighed is dry or liquid, for example:

35.98 ave lbs / (5 gallon bucket x 0.15556 ft³/gallons) = 46.3 lb/ft³ (dry)
 Where 5 Gallons (US dry) x 0.15556 ft³/gallons = 0.7778 ft³

35.98 ave lbs / (5 gallon bucket x 0.13368 ft³/gallons) = 53.8 lb/ft³ (liquid)
 Where 5 Gallons (US liquid) x 0.13368 ft³/gallons = 0.6684 ft³

-Percent of solids in the sewage sludge = 70.3 % (more solid than liquid)

Short Conversion: $\frac{(420.80)(27)(46.3)(0.703)}{(2.2046)(1000)} = 168$ dry metric tons