COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

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GRACE ROBINSON HYDE
Chief Engineer and General Manager

December 17, 2018
File No. 31-320.10

Via Electronic Mail
Mr. Chris Marks
Denali Water Solutions
2001 West Key Street
Colton, CA 92324

Dear Mr. Marks:

Transmittal of LACSD JWPCP Biosolids Monitoring Report

Attached please find the LACSD JWPCP Biosolids Monitoring Report for October 2018. The Report includes the following data for your files:

Biosolids
- total and soluble metals
- digester performance
- detected priority pollutants
- miscellaneous constituents

I certify, under penalty of law, that the Class B pathogen reduction requirements in 503.32(b)(3) and the vector attraction reduction requirements in 503.33(b)(1) have been met. These determinations have 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.

I certify, under penalty of law, that the biosolids are non-hazardous in accordance with Title 22, California Code of Regulations (CCR), Division 4.5, Chapter 11, Article 3, Section 66261.24(a)(2)(A) Table II (Priority Pollutant Metals).

Attached are the analytical test results from LACSD/Contract Labs in accordance with CCR Title 22, Division 4.5, Chapter 11, Article 3, Section 66261.24(a)(2)(A) Table II, and from Test America in accordance with Arizona Administrative Code Title 18, Chapter 9, Article 10, Section 18-9-1012.

Should you have any further questions or require additional information, please contact Tom C. Fang at (562) 908-4288, extension 2825.

Very truly yours,

Matthew J. Bao
Supervising Engineer
Reuse and Compliance

MJB:TF:GS:nm
Attachments

DMS#4489853

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: Joint Water Pollution Control Plant (JWPCP) **Monitoring Period:** 10/01/2018 to 10/31/2018

1. Pollutant and Nitrogen concentrations (report results in mg/kg on a 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_3-N	% solids
Result	6.60	6.1	354	13.9	0.55	27.7	45.8	26.3	845	52,000	5,900	28.3
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 10/02/18 **Sample Number(s):** 18100300283

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

__√__ anaerobic for 19 days at 35.6 °C (96.2 °F) (range for past month)
Class B: either 15 days at 35°C to 55°C or 60 days at 20°C
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 20 - 15(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
___ fecal coliform: geometric mean of seven samples = _____ (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

__√__ Option 1: % VS_{in} = 76 % VS_{out} = 59 % VSR = 53 % per Van Kleeck method
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days (anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Matthew J. Bao - Supervising Engineer

Phone: (562) 908-4288 Extension 2824 **E-mail:** mbao@lacsd.org

Prepared By: G. Salva GS **Reviewed By:** T. Fang TCF J. Montezuma JLM

Signature: _____ **Date:** 12/17/18

BIOSOLIDS MANAGEMENT PROGRAM
JWPCP Biosolids Cake -Total Metals Concentrations
mg/kg Dry Weight

Sample No.	Date	% TS	As	Cd	Cr	Cu	Pb	Hg	Mo	Ni	Se	Zn	Al
18010300161	1/2/2018	28.5	7.32	6.2	93.2	355	16.7	0.88	23.6	44.2	26.2	780	6,470
18020700156	2/6/2018	27.8	7.22	4.9	100	339	18.6	0.53	22.4	41.6	24.7	780	-
18030700129	3/6/2018	28.8	6.94	5.6	100	326	17.0	0.24	26.3	39.7	28.9	712	-
18040400112	4/3/2018	28.2	6.79	6.2	117	306	15.3	0.24	28.5	38.7	23.6	688	6,740
18050200160	5/1/2018	28.8	6.51	6.4	102	316	16.6	0.56	25.2	41.9	24.1	737	-
18060600114	6/5/2018	28.6	6.39	6.9	101	326	16.7	1.8	25.2	40.7	25.1	785	-
18071100273	7/10/2018	28.3	7.39	7.6	107	340	17.4	0.61	28.5	43.9	28.3	817	6,110
18080800108	8/7/2018	27.8	6.95	7.2	111	337	17.9	0.56	30.9	43.3	28.7	804	-
18090500259	9/4/2018	28.0	5.87	6.2	95.6	338	16.0	0.77	29.7	44.9	25.0	749	-
18100300283	10/2/2018	28.3	6.60	6.1	81.3	354	13.9	0.55	27.7	45.8	26.3	845	8,950
MEAN		**28.3**	**6.80**	**6.3**	**100.8**	**334**	**16.6**	**0.67**	**26.8**	**42.5**	**26.1**	**770**	**7,070**
MAX			**7.39**	**7.6**	**117**	**355**	**18.6**	**1.8**	**30.9**	**45.8**	**28.9**	**845**	**8,950**
TABLE 1 LIMITS		\	**75**	**85**	\	**4,300**	**840**	**57**	**75**	**420**	**100**	**7,500**	\
TABLE 3 LIMITS		\	**41**	**39**	\	**1,500**	**300**	**17**	\	**420**	**100**	**2,800**	\

Sample No.	Date	% TS	Sb	Ba	Be	Co	Fe	Mn	K	Ag	Tl	Sn	V
18010300161	1/2/2018	28.5	3.6	1,050	0.087	6.3	91,000	215	1,000	3.9	< 0.10	57.2	40.3
18020700156	2/6/2018	27.8	-	-	-	-	-	-	-	-	-	-	-
18030700129	3/6/2018	28.8	-	-	-	-	-	-	-	-	-	-	-
18040400112	4/3/2018	28.2	2.8	1,170	0.058	5.8	90,100	220	876	3.0	< 0.10	44.5	38.3
18050200160	5/1/2018	28.8	-	-	-	-	-	-	-	-	-	-	-
18060600114	6/5/2018	28.6	-	-	-	-	-	-	-	-	-	-	-
18071100273	7/10/2018	28.3	4.7	1,240	0.088	7.1	96,500	229	988	3.2	< 0.10	47.0	47.7
18080800108	8/7/2018	27.8	-	-	-	-	-	-	-	-	-	-	-
18090500259	9/4/2018	28.0	-	-	-	-	-	-	-	-	-	-	-
18100300283	10/2/2018	28.3	4.3	1,040	0.070	6.6	109,000	210	900	2.9	< 0.10	63.9	68.9
MEAN		**28.3**	**3.8**	**1,125**	**0.076**	**6.4**	**96,700**	**219**	**941**	**3.3**	**ND**	**53.2**	**48.8**
MAX			**4.7**	**1,240**	**0.088**	**7.1**	**109,000**	**229**	**1,000**	**3.9**	**ND**	**63.9**	**68.9**

\ = No limit
ND = Not Detected
-- = No Sample
Statistics use detected values only

BIOSOLIDS MANAGEMENT PROGRAM
JWPCP Biosolids Cake - Nutrients and Miscellaneous Constituents
mg/kg Dry Weight (or as indicated)

Sample No.	Date	% TS	Sulfur	PO_4	NH_3-N	Org-N	NO_3-N	NO_2-N	Boron	Paint FilterTest (ml/100 g)	pH
18010300161	1/2/2018	28.5	29,600	83,800	5,700	51,800	< 139	4.96	23.6	< 1.0	8.2
18020700156	2/6/2018	27.8	28,200	-	5,790	50,300	< 144	3.61	-	-	-
18030700129	3/6/2018	28.8	28,300	-	5,620	48,900	< 139	3.61	-	-	-
18040400112	4/3/2018	28.2	29,000	85,800	5,740	49,900	< 142	< 3.55	20.1	< 1.0	8.2
18050200160	5/1/2018	28.8	30,500	-	3,910	50,700	< 139	5.86	-	-	-
18060600114	6/5/2018	28.6	33,300	-	5,380	48,700	< 140	< 3.49	-	-	-
18071100273	7/10/2018	28.3	35,200	72,000	5,220	46,300	< 141	< 3.54	24.5	< 1.0	8.0
18080800108	8/7/2018	27.8	30,700	-	6,710	48,800	< 144	< 3.60	-	-	-
18090500259	9/4/2018	28.0	30,300	-	6,320	49,900	< 143	< 3.57	-	-	-
18100300283	10/2/2018	28.3	33,700	81,600	5,900	52,000	< 142	3.79	27.7	< 1.0	8.1
MEAN		**28.3**	**30,900**	**80,800**	**5,630**	**49,700**	**ND**	**4.37**	**24.0**	**ND**	**8.1**
MAX			**35,200**	**85,800**	**6,710**	**52,000**	**ND**	**5.86**	**27.7**	**ND**	**8.2**

ND = Not Detected
- = No Sample
Statistics use detected values only.

4th Quarter BIOSOLIDS MANAGEMENT PROGRAM
JWPCP Biosolids Cake - Soluble Metals Concentrations - mg/L
Analyzed by California Title 22 Waste Extraction Test

Sample No.	Date	Al	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Fe
18010300164	1/2/2018	132	0.05	0.09	23.3	< 0.01	< 0.005	1.10	0.095	< 0.10	2,250
18040400114	4/3/2018	128	0.05	0.14	22.5	< 0.01	< 0.005	1.12	0.087	< 0.10	2,160
18071100276	7/10/2018	108	0.05	0.09	25.8	< 0.01	< 0.005	1.19	0.11	< 0.10	2,340
18100300285	10/2/2018	151	0.05	0.09	23.8	< 0.01	< 0.005	1.12	0.12	< 0.10	2,360
MEAN		**130**	**0.05**	**0.10**	**23.9**	**ND**	**ND**	**1.13**	**0.10**	**ND**	**2,280**
MAX		**151**	**0.05**	**0.14**	**25.8**	**ND**	**ND**	**1.19**	**0.12**	**ND**	**2,360**
TITLE 22 STLCs		****	**15**	**5.0**	**100**	**0.75**	**1**	**5**	**80**	**25**	****

Sample No.	Date	Pb	Hg	Mo	Ni	K*	Se	Ag	Tl	Sn	V	Zn
18010300164	1/2/2018	0.04	< 0.0005	0.25	< 1.0	< 50.0	0.02	< 0.02	< 0.040	< 0.04	0.79	8.34
18040400114	4/3/2018	0.07	< 0.0015	0.39	< 1.0	< 50.0	0.02	< 0.02	< 0.040	< 0.04	0.75	9.29
18071100276	7/10/2018	0.02	< 0.0011	0.31	< 1.0	< 50.0	0.03	< 0.02	< 0.040	< 0.04	0.87	7.58
18100300285	**43,375**	0.02	< 0.0010	0.30	< 1.0	< 50.0	0.03	< 0.02	< 0.040	0.05	1.36	6.69
MEAN		**0.04**	**ND**	**0.31**	**ND**	**ND**	**0.03**	**ND**	**ND**	**0.05**	**0.94**	**8.00**
MAX		**0.07**	**ND**	**0.39**	**ND**	**ND**	**0.03**	**ND**	**ND**	**0.05**	**1.36**	**9.29**
TITLE 22 STLCs		**5.0**	**0.2**	**350**	**20**	****	**1.0**	**5**	**7.0**	****	**24**	**250**

ND = Not Detected
\ = No Limit
Statistics use detected values only.
* = Previous January, April, and July data were reported in incorrect units.

2018 BIOSOLIDS MANAGEMENT PROGRAM

JWPCP Digester Performance

Month	Temp (°F)	Detention Time (Days)	VSD (%)
January	96.1	19	51
February	96.0	19	52
March	96.2	19	52
April	96.3	19	52
May	96.2	18	52
June	96.2	19	50
July	96.3	18	49
August	96.2	19	47
September	96.1	18	50
October	96.2	19	53
MEAN	**96.2**	**19**	**51**
MIN	**96.0**	**18**	**47**

Semi-Annual JWPCP Biosolids Cake Detected Priority Pollutants mg/kg on a Dry Weight Basis

Date	1/2/18	7/10/18
Sample Numbers	18010300161	18071100273
	18010300162	18071100274
Constituent	**Result (mg/kg)**	**Result (mg/kg)**
Arsenic	7.32	7.39
Cadmium	6.2	7.6
Chromium	93.2	107
Copper	355	340
Lead	16.7	17.4
Mercury	0.88	0.61
Nickel	44.2	43.9
Selenium	26.2	28.3
Silver	3.9	3.2
Zinc	780	817
Antimony	3.6	4.7
Diethylhexyl Phthalate	78.8	49.5