

# **CITY OF BANDON**



## **ANNUAL BIOSOLIDS REPORT**

**2020**



**BIOSOLIDS ANALYSIS 2020**

**BIOSOLIDS WORKSHEET**

**NEILSON RESEARCH  
ANALYSIS REPORT  
JULY 2020 #20051069**



Name Bandon STP  
 File No. 5664  
 Phone No. 541-347-9122  
 Permit No. 101546

# Biosolid Analysis

2020

Lab analysis #

20051069 Date

07/30/20

mg/kg dry-wt.

Arsenic 16.7  
 Cadmium 0.334  
 Chromium  
 Copper 3.34  
 Lead 16.7  
 Mercury 0.132  
 Molybdenum 16.7  
 Nickel 1.67  
 Selenium 16.7  
 Zinc 16.7

nutrient and metals analysis is an average fo 2 sample events if land applied on same parcel

Total Mertic tons 51.453 Total US tons 57.16428

Total US tons 57.17 Total Mertic tons 51.453

Acres land 18

applied 18

City used primary site, total acres

Cake Biosolid 0.85 Replace the 1 with the appropriate decimal

Liquid Biosolid 0.5 Dewater (10-50%) and Liquid

% Total Solids 1.49

% Volatile Solids 77

Conversion

US-> Metric tons multiply by 1.1

Metric -> US tons multiply by 0.9

Total Organic 4.728 47280

TKN 4.88 48800

NH4 0.152 1520

NO3 0.876 8760

pH 3.2

Fecal Coliform ND <2,000,000 /dry gr. Total Solids

org./100ml ND

Anaerobic D. 0.2 Replace the 1 with the appropriate decimal

Aerobic D. 0.3 Replace the 1 with the appropriate decimal

Drying Bed 0.15 Replace the 1 with the appropriate decimal

Gal/yr. 920152

lb. TS/yr. 114340 114340 lb. TS/yr.= %TS x 8.34 x gal/yr 114343 lb. dry yr

Dry TS US ton/ 57.17 51.45 Dry Metric tons

Ceiling Limits

Ceiling Limits

Biosolid 503.13  
 concentration Table 2 Conc.

503.13  
 Table 2 metal  
 lb./ton biosolid

Yearly  
 lb. Metal per  
 ton biosolids

Yearly  
 Loading  
 lb./ac-yr.

Yearly  
 Loading  
 kg/ha

Metal

Arsenic

Cadmium

mg/kg

mg/kg

75

85

0.150

0.170

1.90948

0.03819

0.10608

0.00212

0.119

0.002

color key

requires entered value

calculated value

replace the 1 with # from selection

<b>Chromium</b>	0	1200	2.400	0.00000	0.00000	0.000
<b>Copper</b>	3.34	4300	8.600	0.38190	0.02122	0.024
<b>Lead</b>	16.7	840	1.680	1.90948	0.10608	0.119
<b>Mercury</b>	0.132	57	0.114	0.01509	0.00084	0.001
<b>Molybdenum</b>	16.7	75	0.150	1.90948	0.10608	0.119
<b>Nickel</b>	1.67	420	0.840	0.19095	0.01061	0.012
<b>Selenium</b>	16.7	100	0.200	1.90948	0.10608	0.119
<b>Zinc</b>	16.7	7500	15.000	1.90948	0.10608	0.119

There is no Ceiling limit for Chromium, table value is a past limit that is no longer valid, used here for loading calculations.

		<b>mg/kg dry-wt.</b>	<b>lb. N / yr.</b>	<b>lb./ac-yr.</b>	<b>kg/ha</b>
<b>Total Organic</b>	4.728	4.728	0.0000	0.0000	0.0000
<b>TKN</b>	4.88	4.88	0.0000	309.9884	347.1871
<b>NH4</b>	0.152	0.152	0.0000	0.0000	0.0000
<b>NO3</b>	0.876	0.876	1001.6184	55.64547	62.32292

**lb. mineralized organic N/dry ton**

0.0000

**lb. inorganic N/dry ton**

17.5200

**Total lb. available N/dry ton**

17.520

**Nitrogen loading rate N lb./acre**

0 kg/ha

**Number dry tons land applied per acre**

3.176

**Total lb. Org-N produced per year**

0.000

**Total lb. NH4 produced per year**

0.000

**Total lb. NO3 produced per year**

1001.61840

**Total lb. Available N per year**

1001.618

**Total number of acres required per year**

ERR

7.114 metric ton/ha

#### Trace Metals

Sample calculation:

$(((5.0 \text{ mg As}/1000000 \text{ mg TS} \times 140000 \text{ lb. Total Solids})) = 0.07 \text{ lb. As/yr.}$

$(((5.0 \text{ mg As}/1000000 \text{ mg TS}) \times 140000 \text{ lb. TS}) / 52 \text{ ac} = 0.013 \text{ lb. As/ac-yr.}$

$(\text{EPA cumulative loading } 41 \text{ total lb. As/ac} / 0.013 \text{ lb. As/ac/yr.}) = 2719.3 \text{ yr. site life for As}$

$(0.013 \text{ lb. As/ac-yr.}) \times 1.12 \text{ conversion factor} = 0.015 \text{ kg/ha-yr.}$

$(2.6 \text{ tons biosolid is equivalent to a loading rate of } 100 \text{ lb. total available N/ac}) .$



Metal	Analysis	Cumulative Limits		Yearly lb. Metal per ton biosolids	Biosolid Loading lb./ac-yr.	Biosolid Loading kg/ha-yr.
	Biosolid concentration mg/kg	40 CFR 503.13 Table 3 Conc. mg/ha	40 CFR 503.13 Table 2 metal lb./ac biosolid			
<i>Arsenic</i>	16.7	41	45.920	2.338	0.1299	0.145
<i>Cadmium</i>	0.334	39	43.680	0.047	0.0026	0.003
<i>Chromium</i>	0	1200	1344.000	0.000	0.0000	0.000
<i>Copper</i>	3.34	1500	1680.000	0.468	0.0260	0.029
<i>Lead</i>	16.7	300	336.000	2.338	0.1299	0.145
<i>Mercury</i>	0.132	17	19.040	0.018	0.0010	0.001
<i>Molybdenum</i>	16.7	18	20.160	2.338	0.1299	0.145
<i>Nickel</i>	1.67	420	470.400	0.234	0.0130	0.015
<i>Selenium</i>	16.7	100	112.000	2.338	0.1299	0.145
<i>Zinc</i>	16.7	2800	3136.000	2.338	0.1299	0.145

Metal	Biosolid Analysis mg/kg	Table 3 metal mg/ha	lb. Metal per /ac biosolid	Loading lb./ac-yr.	Loading kg/ha-yr.	Site Life in years
<i>Arsenic</i>	16.7	41	45.920	0.106	0.119	345.08309
<i>Cadmium</i>	0.334	39	43.680	0.002	0.002	16412.488
<i>Chromium</i>	0	1200	1344.000	0.000	0.000	ERR
<i>Copper</i>	3.34	1500	1680.000	0.021	0.024	63124.956
<i>Lead</i>	16.7	300	336.000	0.106	0.119	2524.9982
<i>Mercury</i>	0.132	17	19.040	0.001	0.001	18102.197
<i>Molybdenum</i>	16.7	18	20.160	0.106	0.119	151.49989
<i>Nickel</i>	1.67	420	470.400	0.011	0.012	35349.975
<i>Selenium</i>	16.7	100	112.000	0.106	0.119	841.66608
<i>Zinc</i>	16.7	2800	3136.000	0.106	0.119	23566.65



Neilson Research Corporation  
245 S Grape St  
Medford, OR 97501  
TEL: (541) 770-5678 FAX: (541) 770-2901  
Website: [www.nrclabs.com](http://www.nrclabs.com)

June 10, 2020

Steve James  
City of Bandon  
P.O. Box 67  
Bandon, OR 97411  
TEL: (541) 347-9122  
FAX: (541) 347-1415

RE: Digester #3-AMENDED

Order No.: 20051069

Dear Steve James:

Neilson Research Corporation received 1 sample(s) on 5/28/2020 for the analyses presented in the following report.

The results relate only to the parameters tested or to the sample as received by the laboratory. This report shall not be reproduced except in full, without the written approval of Neilson Research Corporation. If you have any questions regarding these test results, please feel free to call.

Sincerely,  
Neilson Research Corporation

Tamra Schmedemann  
Senior Project Manager  
245 S Grape St  
Medford, OR 97501



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## Case Narrative

WO#: 20051069  
Date: 6/10/2020

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**CLIENT:** City of Bandon

**Project:** Digester #3-AMENDED

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The analyses were performed according to the guidelines in the Neilson Research Corporation Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Neilson Research Corporation certifies that this report is in compliance with the requirements of NELAP. No unusual difficulties were experienced during analysis of this batch except as noted below or qualified with data flags on the reports.

The report is amended changing the Report To Name from Bill Nielson to the correct name of Steve James. TRS

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Revision v1



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## Analytical Report

WO#: 20051069  
Date Reported: 6/10/2020

CLIENT: City of Bandon  
Lab ID: 20051069-01  
Client Sample ID: Digester #3  
Project: Digester #3-AMENDED  
Sample Location: Grab  
Collection Date: 5/27/2020 9:30:00 AM  
Received Date: 5/28/2020 10:45:00 AM  
Matrix: SLUDGE

Analyses	Method	NELAP Status	Result Qual	DF	MDL	RL	Units	MCL	Date Analyzed	Analyst
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### SLUDGE ANALYSES MERCURY BY EPA 245.1

Mercury	E245.1	A	0.403	1	0.118	0.132	mg/Kg-dry		06/01/20 16:03	KMC
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### SLUDGE ANALYSES TRACE METALS BY EPA 200.7 ICP

Arsenic	E200.7	A	27.2	1	0.856	16.7	mg/Kg-dry		06/01/20 20:52	SJS
Cadmium	E200.7	A	1.73	1	0.0200	0.334	mg/Kg-dry		06/01/20 20:52	SJS
Copper	E200.7	A	259	1	0.195	3.34	mg/Kg-dry		06/01/20 20:52	SJS
Lead	E200.7	A	20.7	1	0.888	16.7	mg/Kg-dry		06/01/20 20:52	SJS
Molybdenum	E200.7	A	6.53	J	0.132	16.7	mg/Kg-dry		06/01/20 20:52	SJS
Nickel	E200.7	A	16.7	1	0.220	1.67	mg/Kg-dry		06/01/20 20:52	SJS
Potassium	E200.7	A	9420	1	5.66	334	mg/Kg-dry		06/01/20 20:52	SJS
Selenium	E200.7	A	8.89	J	1.72	16.7	mg/Kg-dry		06/01/20 20:52	SJS
Zinc	E200.7	A	1050	1	0.241	16.7	mg/Kg-dry		06/01/20 20:52	SJS

### FECAL COLIFORM BACTERIA BY MTF

Fecal Coliform Bacteria	A9221E		ND ERFC	100	200	200	MPN/100mL		05/28/20 13:00	DJK
FC/g Total Solids	A9221E		ND ERFC	100	134	134	MPN/g TS		05/28/20 13:00	DJK
FC/g Volatile Solids	A9221E		ND ERFC	100	174	174	MPN/g VS		05/28/20 13:00	DJK

### SLUDGE ANALYSES AMMONIA NITROGEN AS N

Nitrogen, Ammonia (As N)	E350.1	A	0.152	1	0.00911	0.0335	% Wt-dry		06/01/20 10:48	SCM
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### SLUDGE ANALYSES NITRATE NITROGEN AS N

Nitrate Nitrogen	E353.2	A	0.876	10	0.0105	0.0335	% Wt-dry		06/01/20 15:30	SCM
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### SLUDGE ANALYSES TOTAL KJELDAHL NITROGEN

CI	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
PL	Permit Limit		

Revision v1

NELAP A Accredited. ORELAP 100016, OR-028





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WO#: 20051069  
Date Reported: 6/10/2020

CLIENT: City of Bandon  
Lab ID: 20051069-01  
Client Sample ID Digester #3  
Project: Digester #3-AMENDED  
Sample Location: Grab

Collection Date: 5/27/2020 9:30:00 AM  
Received Date: 5/28/2020 10:45:00 AM  
Matrix: SLUDGE

Analyses	Method	NELAP Status	Result Qual	DF	MDL	RL	Units	MCL	Date Analyzed	Analyst
<b>SLUDGE ANALYSES</b>										
<b>TOTAL KJELDAHL NITROGEN</b>										
Nitrogen, Kjeldahl, Total	E351.2	A	4.88	10	0.720	1.05	% Wt-dry		05/29/20 15:04	SCN
<b>SLUDGE ANALYSES</b>										
<b>PH BY SM 4500 H-B</b>										
pH	A4500-H+B		3.2	HR	1	0.1	pH Units		05/28/20 17:46	DLM
<b>SLUDGE ANALYSES</b>										
<b>TOTAL PHOSPHORUS AS P</b>										
Phosphorus, Total (As P)	A4500-P-E	A	2.94	250	0.138	0.419	% Wt-dry		06/05/20 12:01	KMC
<b>SLUDGE ANALYSES</b>										
<b>% TOTAL SOLIDS</b>										
Total Solids	A2540G		1.49	1	0.0100	0.0100	%		05/29/20 9:49	KEC
<b>SLUDGE ANALYSES</b>										
<b>% VOLATILE SOLIDS</b>										
Volatile Solids	E160.4	A	77.0	1	0.0100	0.0100	%		05/29/20 9:49	KEC

### QUALIFIERS

CI Sample container temperature is out of limit as specified at testcode  
H Holding times for preparation or analysis exceeded  
MI Recovery outside control limits due to Matrix Interference  
PL Permit Limit

E Value above quantitation range  
J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit

Revision v1

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## QC SUMMARY REPORT

WO#: 20051069

22-Jun-20

**Client:** City of Bandon  
**Project:** Digester #3-AMENDED

**TestCode:** AMMONIA\_SL

Sample ID: <b>MB-4983</b>	SampType: <b>MBLK</b>	TestCode: <b>AMMONIA_S</b>	Units: <b>% Wt</b>	Prep Date: <b>5/29/2020</b>	RunNo: <b>12064</b>						
Client ID: <b>PBS</b>	Batch ID: <b>4983</b>	TestNo: <b>E350.1</b>	<b>E350.1</b>	Analysis Date: <b>6/1/2020</b>	SeqNo: <b>180008</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	ND	0.000500									

Sample ID: <b>LCS-4983</b>	SampType: <b>LCS</b>	TestCode: <b>AMMONIA_S</b>	Units: <b>% Wt</b>	Prep Date: <b>5/29/2020</b>	RunNo: <b>12064</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>4983</b>	TestNo: <b>E350.1</b>	<b>E350.1</b>	Analysis Date: <b>6/1/2020</b>	SeqNo: <b>180010</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	0.218	0.0998	0.1840	0	119	65	135				

Sample ID: 20050906-11AMS	SampType: MS	TestCode: AMMONIA_S	Units: mg/L	Prep Date: 5/29/2020	RunNo: 12064						
Client ID: BatchQC	Batch ID: 4983	TestNo: E350.1	E350.1	Analysis Date: 6/1/2020	SeqNo: 180014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	3390	513	168.7	3117	164	70	130				S1

Sample ID: 20050906-11AMSD	SampType: MSD	TestCode: AMMONIA_S	Units: mg/L	Prep Date: 5/29/2020	RunNo: 12064						
Client ID: BatchQC	Batch ID: 4983	TestNo: E350.1	E350.1	Analysis Date: 6/1/2020	SeqNo: 180015						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Ammonia (As N)	3270	513	168.7	3117	89.4	70	130	3394	3.79	20	

**Qualifiers:** CI Sample container temperature is out of limit as specified at testcode  
J Analyte detected below quantitation limits  
PL Permit Limit

E Value above quantitation range  
MI Recovery outside control limits due to Matrix Interference  
RL Reporting Detection Limit

H Holding times for preparation or analysis exceed  
ND Not Detected at the Reporting Limit

Revision v1





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## QC SUMMARY REPORT

WO#: 20051069

22-Jun-20

**Client:** City of Bandon  
**Project:** Digester #3-AMENDED

**TestCode:** FECAL-C-25MPN

Sample ID: <b>MB-R12172</b>	SampType: <b>MBLK</b>	TestCode: <b>FECAL-C-25</b>	Units: <b>MPN/100mL</b>	Prep Date:	RunNo: <b>12172</b>						
Client ID: <b>PBW</b>	Batch ID: <b>R12172</b>	TestNo: <b>A9221E</b>		Analysis Date: <b>5/28/2020</b>	SeqNo: <b>181738</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fecal Coliform Bacteria	ND	2.00									

Sample ID: LCS-R12172	SampType: LCS	TestCode: FECAL-C-25	Units: MPN/100mL	Prep Date:	RunNo: 12172						
Client ID: LCSW	Batch ID: R12172	TestNo: A9221E		Analysis Date: 5/28/2020	SeqNo: 181739						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fecal Coliform Bacteria	Positive	2.00	1.000	0	0	0	0				

**Qualifiers:**  
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## QC SUMMARY REPORT

WO#: 20051069

22-Jun-20

**Client:** City of Bandon  
**Project:** Digester #3-AMENDED

**TestCode:** HG\_SL

Sample ID: MB-4992	SampType: MBLK	TestCode: HG_SL	Units: mg/Kg	Prep Date: 6/1/2020	RunNo: 12087						
Client ID: PBS	Batch ID: 4992	TestNo: E245.1	SW7471A	Analysis Date: 6/1/2020	SeqNo: 180430						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.000200									

Sample ID: LCS-4992	SampType: LCS	TestCode: HG_SL	Units: mg/Kg	Prep Date: 6/1/2020	RunNo: 12087						
Client ID: LCSS	Batch ID: 4992	TestNo: E245.1	SW7471A	Analysis Date: 6/1/2020	SeqNo: 180431						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	26.4	0.481	27.90	0	94.8	50	150				

Sample ID: 20051069-01AMS	SampType: MS	TestCode: HG_SL	Units: mg/Kg-dry	Prep Date: 6/1/2020	RunNo: 12087						
Client ID: Digester #3	Batch ID: 4992	TestNo: E245.1	SW7471A	Analysis Date: 6/1/2020	SeqNo: 180434						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.53	0.132	3.291	0.4033	94.9	75	125				

Sample ID: 20051069-01AMSD	SampType: MSD	TestCode: HG_SL	Units: mg/Kg-dry	Prep Date: 6/1/2020	RunNo: 12087						
Client ID: Digester #3	Batch ID: 4992	TestNo: E245.1	SW7471A	Analysis Date: 6/1/2020	SeqNo: 180435						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.66	0.132	3.289	0.4033	99.1	75	125	3.527	3.79	25	

**Qualifiers:** CI Sample container temperature is out of limit as specified at testcode  
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## QC SUMMARY REPORT

WO#: 20051069

22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: ICP\_200.7\_SL

Sample ID: 20050993-09AMS	SampType: MS	TestCode: ICP_200.7_SL	Units: mg/L	Prep Date: 6/1/2020	RunNo: 12093						
Client ID: BatchQC	Batch ID: 4997	TestNo: E200.7	E200.7	Analysis Date: 6/1/2020	SeqNo: 180546						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	5.01	0.0492	5.000	0.1672	96.9	70	130				
Cadmium	5.11	0.000983	5.000	0.03484	102	70	130				
Copper	12.5	0.00983	5.000	9.438	60.7	70	130				MI
Lead	6.02	0.0492	5.000	0.9234	102	70	130				
Molybdenum	5.25	0.0492	5.000	0.1857	101	70	130				
Nickel	5.60	0.00492	5.000	0.4737	103	70	130				
Selenium	5.27	0.0492	5.000	0.1571	102	70	130				
Zinc	31.1	0.0492	5.000	26.46	92.3	70	130				

Sample ID: 20050993-09AMSD	SampType: MSD	TestCode: ICP_200.7_SL	Units: mg/L	Prep Date: 6/1/2020	RunNo: 12093						
Client ID: BatchQC	Batch ID: 4997	TestNo: E200.7	E200.7	Analysis Date: 6/1/2020	SeqNo: 180547						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	4.97	0.0487	5.000	0.1672	96.1	70	130	5.014	0.812	25	MI
Cadmium	5.09	0.000973	5.000	0.03484	101	70	130	5.111	0.346	25	
Copper	12.3	0.00973	5.000	9.438	56.9	70	130	12.47	1.53	25	
Lead	6.01	0.0487	5.000	0.9234	102	70	130	6.023	0.170	25	
Molybdenum	5.22	0.0487	5.000	0.1857	101	70	130	5.248	0.540	25	
Nickel	5.62	0.00487	5.000	0.4737	103	70	130	5.599	0.327	25	
Selenium	5.29	0.0487	5.000	0.1571	103	70	130	5.270	0.437	25	
Zinc	30.9	0.0487	5.000	26.46	89.1	70	130	31.07	0.523	25	

**Qualifiers:**

CI	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
J	Analyte detected below quantitation limits	MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
PL	Permit Limit	RL	Reporting Detection Limit		

Revision v1



Neilson Research Corporation  
245 S Grape St  
Medford, OR 97501  
TEL: (541) 770-5678 FAX: (541) 770-2901  
Website: www.nrclabs.com

## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: ICP\_200.7\_SL

Sample ID: MB-4997	SampType: MBLK	TestCode: ICP_200.7_SL	Units: mg/Kg	Prep Date: 6/1/2020	RunNo: 12103						
Client ID: PBS	Batch ID: 4997	TestNo: E200.7	E200.7	Analysis Date: 6/1/2020	SeqNo: 180631						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.0143	0.0500									J
Cadmium	0.0000800	0.00100									J
Copper	ND	0.0100									
Lead	0.0304	0.0500									J
Molybdenum	ND	0.0500									
Nickel	ND	0.00500									
Potassium	ND	1.00									
Selenium	ND	0.0500									
Zinc	0.00128	0.0500									J

Sample ID: LCS-4997	SampType: LCS	TestCode: ICP_200.7_SL	Units: mg/Kg	Prep Date: 6/1/2020	RunNo: 12103						
Client ID: LCSS	Batch ID: 4997	TestNo: E200.7	E200.7	Analysis Date: 6/1/2020	SeqNo: 180632						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	183	10.7	178.0	0	103	50	150				
Cadmium	143	0.214	151.0	0	94.8	50	150				
Copper	160	2.14	151.0	0	106	50	150				
Lead	86.0	10.7	76.10	0	113	50	150				
Molybdenum	46.7	10.7	50.70	0	92.1	50	150				
Nickel	86.6	1.07	89.20	0	97.1	50	150				
Potassium	2200	214	2420	0	91.0	50	150				
Selenium	183	10.7	189.0	0	96.9	50	150				
Zinc	355	10.7	335.0	0	106	50	150				

**Qualifiers:** C1 Sample container temperature is out of limit as specified at testcode  
J Analyte detected below quantitation limits  
PL Permit Limit  
E Value above quantitation range  
MI Recovery outside control limits due to Matrix Interference  
RL Reporting Detection Limit  
H Holding times for preparation or analysis exceed  
ND Not Detected at the Reporting Limit

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: ICP\_200.7\_SL

Sample ID: 20050993-09AMS	SampType: MS	TestCode: ICP_200.7_SL Units: mg/Kg				Prep Date: 6/1/2020			RunNo: 12103		
Client ID: BatchQC	Batch ID: 4997	TestNo: E200.7		E200.7		Analysis Date: 6/1/2020			SeqNo: 180634		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	484	4.92	55.00	429.5	99.8	70	130				E

Sample ID: 20050993-09AMSD	SampType: MSD	TestCode: ICP_200.7_SL	Units: mg/Kg	Prep Date: 6/1/2020	RunNo: 12103						
Client ID: BatchQC	Batch ID: 4997	TestNo: E200.7	E200.7	Analysis Date: 6/1/2020	SeqNo: 180635						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	490	4.87	55.00	429.5	110	70	130	484.4	1.14	25	E

Qualifiers: C1 Sample container temperature is out of limit as specified at testcode  
J Analyte detected below quantitation limits  
PL Permit Limit

E Value above quantitation range  
MI Recovery outside control limits due to Matrix Interference  
RL Reporting Detection Limit

H Holding times for preparation or analysis exceed  
ND Not Detected at the Reporting Limit

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: NO2\_COLOR\_SL

Sample ID: MB-4979	SampType: MBLK	TestCode: NO2_COLOR	Units: % Wt	Prep Date: 5/28/2020	RunNo: 12004						
Client ID: PBS	Batch ID: 4979	TestNo: A4500-NO2-B A4500-NO2-B	Analysis Date: 5/28/2020	SeqNo: 178957							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite Nitrogen	0.0000118	0.0000250									

Sample ID: LCS-4979	SampType: LCS	TestCode: NO2_COLOR	Units: %Wt	Prep Date: 5/28/2020	RunNo: 12004						
Client ID: LCSS	Batch ID: 4979	TestNo: A4500-NO2-B A4500-NO2-B		Analysis Date: 5/28/2020	SeqNo: 178958						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite Nitrogen	0.000101	0.0000250	0.00009625	0	105	80	120				

Sample ID: 20051069-01AMS	SampType: MS	TestCode: NO2_COLOR	Units: % Wt-dry	Prep Date: 5/28/2020	RunNo: 12004						
Client ID: Digester #3	Batch ID: 4979	TestNo: A4500-NO2-B A4500-NO2-B		Analysis Date: 5/28/2020	SeqNo: 178960						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite Nitrogen	0.0450	0.00794	0.03056	0.01594	95.0	75	125				

Sample ID: 20051069-01AMSD	SampType: MSD	TestCode: NO2_COLOR	Units: % Wt-dry	Prep Date: 5/28/2020	RunNo: 12004						
Client ID: Digester #3	Batch ID: 4979	TestNo: A4500-NO2-B A4500-NO2-B		Analysis Date: 5/28/2020	SeqNo: 178961						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrite Nitrogen	0.0463	0.00795	0.03062	0.01594	99.3	75	125	0.04496	3.00	25	

Qualifiers:	C1 Sample container temperature is out of limit as specified at testcode	E Value above quantitation range	H Holding times for preparation or analysis exceed
	J Analyte detected below quantitation limits	MI Recovery outside control limits due to Matrix Interference	ND Not Detected at the Reporting Limit
	PL Permit Limit	RL Reporting Detection Limit	

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: NO2NO3\_SL

Sample ID: LCS-4999	SampType: LCS	TestCode: NO2NO3_SL	Units: % Wt	Prep Date: 6/1/2020	RunNo: 12075						
Client ID: LCSS	Batch ID: 4999	TestNo: E353.2	A4500-NO3-E	Analysis Date: 6/1/2020	SeqNo: 180137						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	0.0227	0.00100	0.02370	0	95.8	60	140				

Sample ID: 20051069-01AMS	SampType: MS	TestCode: NO2NO3_SL	Units: % Wt-dry	Prep Date: 6/1/2020	RunNo: 12075						
Client ID: Digester #3	Batch ID: 4999	TestNo: E353.2	A4500-NO3-E	Analysis Date: 6/1/2020	SeqNo: 180141						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	1.07	0.0335	0.1674	0.8764	116	70	130				

Sample ID: 20051069-01AMSD	SampType: MSD	TestCode: NO2NO3_SL	Units: % Wt-dry	Prep Date: 6/1/2020	RunNo: 12075						
Client ID: Digester #3	Batch ID: 4999	TestNo: E353.2	A4500-NO3-E	Analysis Date: 6/1/2020	SeqNo: 180142						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	1.06	0.0335	0.1674	0.8764	112	70	130	1.070	0.546	25	

Sample ID: <b>MB-4999</b>	SampType: <b>MBLK</b>	TestCode: <b>NO2NO3_SL</b>	Units: <b>% Wt</b>	Prep Date: <b>6/1/2020</b>	RunNo: <b>12075</b>						
Client ID: <b>PBS</b>	Batch ID: <b>4999</b>	TestNo: <b>E353.2</b>	<b>A4500-NO3-E</b>	Analysis Date: <b>6/1/2020</b>	SeqNo: <b>183508</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate Nitrogen	ND	0.0000500									

Qualifiers:	CI	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
	J	Analyte detected below quantitation limits	MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	RL	Reporting Detection Limit		

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245 S Grape St  
Medford, OR 97501  
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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: PH\_W

Sample ID: LCS-R11996	SampType: LCS	TestCode: PH_W	Units: pH Units	Prep Date:	RunNo: 11996						
Client ID: LCSW	Batch ID: R11996	TestNo: A4500-H+B		Analysis Date: 5/28/2020	SeqNo: 178820						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.9	0.1	6.9	0	100	97.1	102.9				

Sample ID: 20051069-01ADUP	SampType: DUP	TestCode: PH_W	Units: pH Units	Prep Date:	RunNo: 11996						
Client ID: Digester #3	Batch ID: R11996	TestNo: A4500-H+B	Analysis Date: 5/28/2020	SeqNo: 178822							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	3.2	0.1						3.2	0	10	RH

Qualifiers:	CI	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
	J	Analyte detected below quantitation limits	MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	RL	Reporting Detection Limit		

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: PHOS-T\_SL

Sample ID: MB-5030	SampType: MBLK	TestCode: PHOS-T_SL	Units: % Wt	Prep Date: 6/5/2020	RunNo: 12235						
Client ID: PBS	Batch ID: 5030	TestNo: A4500-P-E	A4500-P-E	Analysis Date: 6/5/2020	SeqNo: 182696						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.00000250									

Sample ID: LCS-5030	SampType: LCS	TestCode: PHOS-T_SL	Units: % Wt	Prep Date: 6/5/2020	RunNo: 12235						
Client ID: LCSS	Batch ID: 5030	TestNo: A4500-P-E	A4500-P-E	Analysis Date: 6/5/2020	SeqNo: 182697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.149	0.0124	0.1560	0	95.6	50	150				

Sample ID: 20051069-01AMS	SampType: MS	TestCode: PHOS-T_SL	Units: %Wt-dry	Prep Date: 6/5/2020	RunNo: 12235						
Client ID: Digester #3	Batch ID: 5030	TestNo: A4500-P-E	A4500-P-E	Analysis Date: 6/5/2020	SeqNo: 182699						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	9.67	0.419	6.711	2.939	100	75	125				

Sample ID: 20051069-01AMSD	SampType: MSD	TestCode: PHOS-T_SL	Units: % Wt-dry	Prep Date: 6/5/2020	RunNo: 12235						
Client ID: Digester #3	Batch ID: 5030	TestNo: A4500-P-E	A4500-P-E	Analysis Date: 6/5/2020	SeqNo: 182700						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	9.64	0.419	6.711	2.939	99.9	75	125	9.671	0.273	25	

Qualifiers:	CI Sample container temperature is out of limit as specified at testcode	E Value above quantitation range	H Holding times for preparation or analysis exceed
	J Analyte detected below quantitation limits	MI Recovery outside control limits due to Matrix Interference	ND Not Detected at the Reporting Limit
	PL Permit Limit	RL Reporting Detection Limit	

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: SOLIDS\_TOT\_SL

Sample ID: MB-R12096	SampType: MBLK	TestCode: SOLIDS_TOT	Units: %	Prep Date:	RunNo: 12096						
Client ID: PBS	Batch ID: R12096	TestNo: A2540G		Analysis Date: 5/29/2020	SeqNo: 180562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Solids	ND	0.0100									

Sample ID: 20051069-01ADUP	SampType: DUP	TestCode: SOLIDS_TOT	Units: %	Prep Date:	RunNo: 12096						
Client ID: Digester #3	Batch ID: R12096	TestNo: A2540G		Analysis Date: 5/29/2020	SeqNo: 180564						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Solids	1.49	0.0100						1.490	0	5	

Qualifiers:	CI	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
	J	Analyte detected below quantitation limits	MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	RL	Reporting Detection Limit		

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: SOLIDS\_VOL\_SL

Sample ID: MB-R12096	SampType: MBLK	TestCode: SOLIDS_VOL	Units: %	Prep Date:	RunNo: 12096						
Client ID: PBS	Batch ID: R12096	TestNo: E160.4		Analysis Date: 5/29/2020	SeqNo: 180565						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Volatile Solids	ND	0.0100									

Sample ID: 20051069-01ADUP	SampType: DUP	TestCode: SOLIDS_VOL	Units: %	Prep Date:	RunNo: 12096						
Client ID: Digester #3	Batch ID: R12096	TestNo: E160.4		Analysis Date: 5/29/2020	SeqNo: 180567						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Volatile Solids	76.9	0.0100						77.00	0.130	5	

Qualifiers:	C1	Sample container temperature is out of limit as specified at testcode	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
	J	Analyte detected below quantitation limits	MI	Recovery outside control limits due to Matrix Interference	ND	Not Detected at the Reporting Limit
	PL	Permit Limit	RL	Reporting Detection Limit		

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## QC SUMMARY REPORT

WO#: 20051069  
22-Jun-20

Client: City of Bandon  
Project: Digester #3-AMENDED

TestCode: TKN\_SL

Sample ID: MB-4975	SampType: MBLK	TestCode: TKN_SL	Units: % Wt	Prep Date: 5/28/2020	RunNo: 12036						
Client ID: PBS	Batch ID: 4975	TestNo: E351.2	E351.1	Analysis Date: 5/29/2020	SeqNo: 179542						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	0.000625									

Sample ID: LCS-4975	SampType: LCS	TestCode: TKN_SL	Units: % Wt	Prep Date: 5/28/2020	RunNo: 12036						
Client ID: LCSS	Batch ID: 4975	TestNo: E351.2	E351.1	Analysis Date: 5/29/2020	SeqNo: 179543						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	0.364	0.126	0.3590	0	101	50	145				

Sample ID: 20050703-01AMS	SampType: MS	TestCode: TKN_SL	Units: % Wt-dry	Prep Date: 5/28/2020	RunNo: 12036						
Client ID: BatchQC	Batch ID: 4975	TestNo: E351.2	E351.1	Analysis Date: 5/29/2020	SeqNo: 179550						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	5.22	1.29	1.692	3.673	91.6	75	125				

Sample ID: 20050703-01AMSD	SampType: MSD	TestCode: TKN_SL	Units: % Wt-dry	Prep Date: 5/28/2020	RunNo: 12036						
Client ID: BatchQC	Batch ID: 4975	TestNo: E351.2	E351.1	Analysis Date: 5/29/2020	SeqNo: 179551						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	5.13	1.29	1.692	3.673	86.2	75	125	5.222	1.75	25	

Qualifiers:	CI Sample container temperature is out of limit as specified at testcode	E Value above quantitation range	H Holding times for preparation or analysis exceed
	J Analyte detected below quantitation limits	MI Recovery outside control limits due to Matrix Interference	ND Not Detected at the Reporting Limit
	PL Permit Limit	RL Reporting Detection Limit	

Revision v1





# Chain of Custody Record

This Chain of Custody is a LEGAL DOCUMENT and must be filled out accurately.

Section A Required Client Information	Section B Required Project Information	Section C Invoice Information	Section D Rush Status (Subject to Scheduling)
Company: City of Bandon	Project Name:	Attention: Bill Nielson	<input checked="" type="checkbox"/> Standard: 10 Business Days
Address: PO Box 67	Project Number: <u>Digester #3</u>	Company Name: City of Bandon	<input type="checkbox"/> Priority: 5 Business Days (List x 1.50)
Bandon, OR 97411	Report To: <u>Steve James</u>	Address: PO Box 67	<input type="checkbox"/> Express: 3 Business Days (List x 1.75)
Email: <a href="mailto:wastewater@cityofbandon.org">wastewater@cityofbandon.org</a>	Copy To:	Bandon, OR 97411	<input type="checkbox"/> Rush: 2 Business Days (List x 2.00)
Phone: 541-347-9122		P.O. #	<input type="checkbox"/> Rush: Same Day (List x 3.00)
Collected By (Print): <u>Steve James</u>			Authorized <input type="checkbox"/> Yes <input type="checkbox"/> No
Collected By (Sign): <u>[Signature]</u>			
Email Report <input type="checkbox"/> Mail Report <input checked="" type="checkbox"/> Fax Report <input type="checkbox"/>			

Section E Sample Information					Analysis Requested										NRC Workorder # <u>2005009</u> (Lab Use Only)	
Sample ID	Comp/Grab	Matrix*	Date Collected	Time Collected	No. of Containers										Remarks / Field Data	NRC Sample # (Lab Use Only)
<u>Digester #3</u>	<u>Grab</u>	<u>SL</u>	<u>5-27-20</u>	<u>0930</u>		<u>1</u>										<u>01</u>

\*Matrix: DW - Drinking Water WW - Wastewater W - Water S - Soil/Solid SL - Sludge O - Oil WP - Wipe OT - Other

Section F				Section G Lab Use Only	
Relinquish/Receive	Sign	Print	Date	Time	Temp: <u>2.6</u>
Relinquished By: <u>[Signature]</u>		<u>Steve James</u>	<u>5-27-20</u>	<u>0930</u>	4°C +/- 2°C: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Received By:					Received on Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Relinquished By:					Number of Bottles Received: <u>2</u>
Received By:					pH Checked: <u>7.19</u>
Relinquished By:					COC Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Received By Laboratory: <u>[Signature]</u>		<u>Vincenza Gill</u>	<u>5/28/2020</u>	<u>1045</u>	Field Blank Included: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Received Via <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other <input type="checkbox"/> Hand					
Payment: <input checked="" type="checkbox"/> Invoice <input type="checkbox"/> Cash <input type="checkbox"/> VISA, M/C <input type="checkbox"/> Check # <input type="checkbox"/> Amount <input type="checkbox"/>					



Neilson Research Corporation  
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## Sample Log-In Check List

Client Name: **Bandon, City of**

Work Order Number: **20051069**

RcptNo: **1**

Logged by: **Vincenza Gill** 5/28/2020 10:45:00 AM

*Vincenza Gill*

Completed By: **Tamra Schmedemann** 5/28/2020 4:46:34 PM

*Tamra Schmedemann*

Reviewed By: **Tamra Schmedemann** 5/28/2020 4:46:38 PM

*Tamra Schmedemann*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
2. How was the sample delivered? UPS

### Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐  
4. Shipping container/cooler in good condition? Yes ☒ No ☐  
Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☒  
No. Seal Date: Signed By:  
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
6. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
7. Sample(s) in proper container(s)? Yes ☒ No ☐  
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
10. Was preservative added to bottles? Yes ☐ No ☐ NA ☒  
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☒  
12. Were any sample containers received broken? Yes ☐ No ☒  
13. Does paperwork match bottle labels? Yes ☒ No ☐  
(Note discrepancies on chain of custody)  
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
15. Is it clear what analyses were requested? Yes ☒ No ☐  
16. Were all holding times able to be met? Yes ☒ No ☐  
(If no, notify customer for authorization.)

### Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

18. Additional remarks:

### Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good				TRS



- B Analyte detected in the associated method blank.
- BA BOD Alternative Calculation: The initial results performed by Standard Methods did not fall within parameters of the Standard Methods calculation. An alternate approved calculation was performed using the HACH method and the value reported is an estimated concentration.
- C Sample(s) does not meet NELAP/ORELAP sample acceptance criteria. See Case Narrative.
- C1 Sample(s) does not meet NELAP/ORELAP sample acceptance criteria for temperature.
- CF Results confirmed by re-analysis.
- CU Cleanup performed as specified by method.
- D1 The diesel elution pattern for the sample is not typical.
- D2 The sample appears to be a heavier hydrocarbon range than diesel.
- D3 The sample appears to be a lighter hydrocarbon range than diesel.
- D4 Detected hydrocarbons do not have pattern and range consistent with typical petroleum products and may be due to biogenic interference.
- D5 Detected hydrocarbons in the diesel range appear to be weathered diesel.
- E Estimated value.
- ER Elevated reporting limit due to matrix. Report limits (MDLs, MRLs & PQLs) are adjusted based on variations in sample preparation amounts, analytical dilutions, and percent solids, where applicable.
- FC Fecal Coliforms: Sample(s) received past 40 CFR Part 136 specified holding time. Results reported as estimated values.
- G1 The gasoline elution pattern for the sample is not typical.
- G2 The sample appears to be a heavier hydrocarbon range than gasoline.
- G3 The sample appears to be a lighter hydrocarbon range than gasoline.
- G4 Detected hydrocarbons in the gasoline range appear to be weathered gasoline.
- HP Sample re-analysis performed outside of method specified holding time.
- HR Sample received outside of method specified holding time.
- HS Sample analyzed for volatile organics contained headspace.
- HT ☐ At the client's request, the sample was analyzed outside of method specified holding time.
- H Analysis performed outside of method specified holding time.
- J Analyte detected below the Minimum Reporting Limit (MRL) and above the Method Detection Limit (MDL). The J flag result is an estimated value and the user should be aware that this data is of limited reliability.
- L Dissolved metals were not filtered within 15 minutes of collection per 40 CFR Part 136.
- MI Surrogate, Duplicate Sample (DUP) or Matrix Spikes recoveries are out of control limits due to matrix interference. Sample results may be biased.
- N See Case Narrative on page 2 of report.
- NLR No Legionella Recovered.
- PLR Presence of Legionella Recovered.
- Q Initial calibration verification (ICV), continuing calibration verification (CCV) or laboratory control sample (LCS) exceeded high recovery limits, but associated samples are non-detect and the sample results are not affected. Data meets EPA/NELAP requirements.
- R Relative percent difference (RPD) is outside of the accepted recovery limits.
- R1 Relative percent difference (RPD) is outside of the accepted recovery limits. However, analyses are not controlled on RPD values for sample concentrations that are less than the reporting limit.
- R3 The relative percent difference (RPD) and/or percent recovery for the duplicate (DUP) or matrix spike (MS)/matrix spike duplicate (MSD) cannot be accurately calculated due to the concentration of analyte already present in the sample.
- R4 Duplicate analysis failed due to result being at or near the method reporting limit.
- S Surrogate and/or matrix spike recovery is outside of the accepted recovery limits. Sample results may be biased.
- S1 Surrogate or matrix spike recovery is outside of control limits due to dilution necessary for analysis.
- SC Sub-contracted to another laboratory for analysis.
- SP Sample(s) were not collected per EPA Method 5035A protocols. The results are considered minimum values.
- # Value exceeds regulatory level for TCLP contaminant.
- X1 The motor oil elution pattern for the sample is not typical.
- X2 The sample appears to be a heavier hydrocarbon range than motor oil.
- X3 The sample appears to be a lighter hydrocarbon range than motor oil.
- \* Value exceeds Maximum Contaminant Level or is outside the acceptable range.



**CITY OF BANDON  
BIOSOLIDS  
MANAGEMENT PLAN  
2020**



# **City of Bandon**

## **Biosolids Management Plan**

### **2020**

**File Number: 5664**

**Permit Number: 101546**

#### **I Treatment Facility**

##### **Introduction:**

The City of Bandon (pop. 3,235) owns and operates a municipal sewage collection and treatment system under National Discharge Elimination System (NPDES) permit number 101546. Wastewater processed by the sewage treatment works is principally of domestic origin. The current facility was upgraded in 1994. The facility is an activated sludge plant with aerobic digesters. There is no required local pretreatment permit for this facility. Treated effluent from the treatment plant is discharged to the Coquille River (RM 1.1), in Coos County, Oregon.

##### **A) Wastewater Processing:**

Bandon operates an activated sludge plant with aerobic digesters. Designed average dry weather flow is approximately 0.45 million gallons per day (MGD). Influent passes through the headwork (screening and grit removal, flow monitoring, automatic sampling, flow splitting, and grit separation). The plant is run in plug flow, from the headwork in flow enters two aeration basins. Aeration basin #1 is 157,000 gallons, and #2 is 141,000 gallons. Aeration basin effluent is transferred to one of two secondary clarifiers (190,246 gallons each) where solids are allowed to settle out. Portions of the solids are returned to the aeration basin and portions of the solids are wasted to the aerobic digesters. Bandon operates a three-cell aerobic digester. The cells are 128,000 gallons (#1), 133,000 (#2), and 133,000 (#3). The aerobic digester is run in series. Sludge can be removed from the digester directly or pumped to the sludge thickening process where it can thicken before land application or pump to the drying beds (47,270 gallons). Sludge can receive further treatment by desiccation in one of two drying beds prior to being land applied on a regional authorized biosolids site(s). Clarifier effluent is directed to ultraviolet channels for disinfection and discharged to the Coquille River.

B) Solids Processing:

There are three potential end routes for generating biosolids from this facility and they are:

- 1) Liquid Biosolids removed from the aerobic digester
- 2) Dewatered Biosolids taken from the sludge thickening process (after aerobic digester) and
- 3) Cake Biosolids from the air-drying beds

C) Solids Storage Structure:

From the aerobic digesters sludge can be pumped to a truck for land application or to the sludge thicken building. Thickened biosolid can be pumped into a trailer for land application, or pumped to one of two drying beds (total about 47,000 gallons). Biosolids can receive further treatment by desiccation in the drying beds prior to being land applied. All Class B biosolids are land applied on a regional DEQ authorized land application site(s).

D) Septage Receiving Facility:

No septage is received at the Bandon wastewater treatment facility.

E) Pretreatment Program:

The city's industrial wastewater pretreatment program protects the environment and the area's wastewater collection, treatment facilities and biosolids quality by regulating potentially contaminated wastewater discharges from commercial and industrial activities.

Bandon's Ordinance No. 1254 maintains biosolids quality; currently the city's biosolids are at or below 50% of the "clean sludge" criteria identified in EPA 40 CFR Part 503.13 and Oregon DEQ's Oregon Administrative Rules Chapter 340 Division 50.

## II Solid Treatment Processes

The EPA's 40 CFR Part 503 and DEQ's OAR 340-50 allow permittees to use EPA approved alternatives to satisfy Class A and B biosolids pathogen and vector attraction reduction criteria. The permittee must notify the Department in writing and get approval prior to any process change that would utilize pathogen reduction or vector attraction reduction alternatives other than their primary reduction alternatives contained in this management plan. The permittee must also certify that the alternatives used are EPA approved and that sampling and monitoring conforms to the 40 CFR 503 and OAR 340-050 regulations.



## Pathogen Reduction

To meet the Part 503 regulatory requirements, pathogen reduction must be met before vector attraction reduction or at the same time vector attraction reduction is achieved.

## Class A Biosolids

With all Class A alternatives microbial monitoring for fecal coliforms or *Salmonella* sp. is required (see section A and B below). This management plan lists the primary alternative and options employed by the permittee to meet Class A and B biosolids criteria.

### A) Monitoring for Fecal Coliform or *Salmonella* sp.

Monitoring for Fecal Coliform or *Salmonella* sp. is required to detect growth of bacterial pathogens. Because Class A biosolids may be used without site restrictions, all Class A material must be tested to show that the microbial requirements are met at the time when it is ready to be used, disposed, sold or given away. In addition to meeting process requirements, Class A biosolids must meet one of the following requirements:

- Either the density of the fecal coliforms in the biosolids be less than 1,000 MPN per gram total solids (dry gram weight),
- Or the density of *Salmonella* sp. bacterial in the biosolids be less than 3 MPN per 4 grams of total solids (dry weight basis).

Unlike Class B biosolids, Class A requirements are not based on an average value. Sampling for Class A biosolids consists of at least seven (7) discrete samples taken over a 2 week period. Test results are required before Class A material can be released for use or disposal. The microbial requirement that a Class A biosolids must meet is either:

- At the time of use or disposal, or
- At the time the biosolids are prepared for sale or given away in a bag or other container for land application, or
- At time the biosolid or material derived from the biosolid is prepared to meet the requirements in 503.10(b), 503.10(c), 503.10(e) or 503.10(f).

### B) Class A Pathogen Reduction Alternatives

#### Alt. 1) Sewage Sludge treated in known Processes 503.32(a)(5)

This requirement relies on comprehensive monitoring of bacteria, enteric viruses and viable helminth ova to demonstrate adequate reduction of pathogens:

- Either the density of the fecal coliforms in the sewage sludge be less than 1,000 MPN per gram total solids (dry gram weight), *or* the density of *Salmonella* sp. bacteria in the sewage be less than 3 MPN per 4 grams of total solids (dry weight basis).
- The density of enteric viruses in the sewage sludge must be test prior to pathogen reduction treatment and then again after pathogen treatment at which time the enteric viruses must be less than 1PFU per 4 grams of total solids (dry weight basis).
- The density of viable helminth ova in the sewage sludge must be tested prior to pathogen reduction treatment and then again after pathogen treatment at which time the viable helminth ova must be less than 1PFU per 4 grams of total solids (dry weight bases).

Class B biosolids can be met by using one of three alternatives, the two primary alternatives used by this facility are Alt. 1) Monitor sewage sludge for fecal coliform 503.32(b)(2), and Alt. 2) Use Process to Significantly Reduce Pathogen (PSRP) 503.32(b)(3).

Alt. 1) Monitor sewage sludge for fecal coliform 503.32(b)(2) requires that seven samples of treated sewage sludge (biosolids) be collected and that the geometric mean fecal coliform density of these samples be less than 2 million MPN per dry gram biosolid (dry weight basis).

Alt. 2) Use Process to Significantly Reduce Pathogen (PSRP) 503.32(b)(3)\* considers sludge treated in one of the PSRP's listed in Appendix B of the 40 CFR Part 503 to meet Class B biosolid criteria for pathogen reduction. For this facility the following PSRP's are primarily used:

- #1 Aerobic digestion, sludge is treated in air/oxygen for a specified residence time at a specified temperature. Values of the mean cell residence time and temperature shall be between 40 days at 20C (68F) and 60 days at 15C (59F)
- #2 Air Drying, sludge air dried on beds for a minimum of three months ambient temperature above 0C (32F) two out of the three months
- #3 Lime stabilization, sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 with no further addition of alkali agent, and maintain sludge pH of 12 active-mix for two hours.

\* The Department recommends the permittee still collect and run a geometric mean for fecal coliform density on a representative sample each year to ensure the pathogen reduction is less than 2 million MPN per dry gram biosolid (dry weight basis).



### C) Vector Attraction

This facility primarily uses the following vector attraction reduction options:

Opt. 1) The percent of volatile solid reduction calculation to use for anaerobic digester that is decanted and that does not have appreciable grit accumulation would be the Van Kleeck or Approximate Mass Balance (AMB) equation depending upon the percent of solids in the decantant (Attachment A).

Opt. 2) To meet the biosolid vector attraction reduction requirements an aerobic digester must provide a 40 day detention time at 20C in a completely mixed high rate digester in order to achieve a volatile solids reduction of 38% or more. There are alternative volatile solid reduction methods that are deemed equivalent to the 38% volatile solid reduction criteria under the EPA's and the DEQ's regulations.

Opt. 3) When the 38% volatile solids reduction cannot be met for aerobically treated solids vector attraction reduction can be demonstrated by showing a less than 15% additional volatile solid loss during bench-scale aerobic batch digestion (2% TS or less) of the sewage sludge for 30 additional days at 20C (68F).

Opt. 4) The Specific Oxygen Uptake Rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams (mg) of oxygen per hour per gram of total solids (2% or less total solids, dry weight basis) at a temperature of 20C.

Opt. 5) Aerobic treatment of sludge for at least 14 days at over 40C (104F), during the process the average temperature must be over 45C (Compost).

Opt. 6) The pH of the sewage sludge shall be raised to a pH of 12 or higher by the addition of alkali agent and without the addition of more alkali agent. The batch shall remain at a pH of 12 or, for two hours or more active mix; and at a pH of 11.5 or higher for an additional 22 hours.

Opt. 7) The sewage sludge must achieve 75% solid by drying prior to mixing with other materials. Sewage sludge treated in aerobic or anaerobic process (i.e. sewage sludge that does not contain unstabilized solids generated in primary wastewater treatment).

Opt. 8) Sewage sludge land applied shall be incorporated into the soil within six hours after application or placement on the land.

### III Biosolid Characteristics

Bandon's treatment utilizes an activated sludge process. The treatment facility wastes activated sludge from the secondary clarifiers to the aerobic digester. The sludge under goes a minimum of 60 days of digestion at a minimum temperature of

15C prior to removal and staff performing a volatile solids reduction calculation. For the past five years the average volatile solids reduction criteria has been achieved by Bandon's wastewater treatment facility.

Annually, Bandon has generated approximately 33 dry tons of biosolids. For the year 2020, Bandon land applied 33 tons (29.9 dry metric tons) of Class B biosolid. Under the 40 CFR Part 503, Bandon is required to sample biosolids two times per year. Frequency of monitoring depends on the amount biosolid generated that is marketed to be sold or given away, land application and surface disposal.

### Sampling

The following are sampling reference publications: "Sludge Sampling and Analysis Guidance Document", (EPA 1993) and ASTM Standard E 300-86, "Standard Practice for Sampling Industrial Chemicals" (ASTM 1992a).

1) Aerobic Digesters

Sample location: Sample port on discharge line from the digester to the storage lagoon.

2) Number and type of sample taken per day: Class B Biosolids, composite of seven or more discrete samples collected throughout the pump over sampling period.

Sample storage and transport: Samples are stored at 4C in ice chest or refrigerator. Samples are transported in ice chest to maintain temperature during delivery to laboratory. Pathogen samples are delivered to lab within six hours of sample collection.

Sample analysis method: EPA 9045; EPA 160.3; EPA 160.4; SM 4500-NH3B; EPA 353.2; EPA 365.3; EPA 351.3; SW-846 7060; SW-846 6010; SW-846; SW-846 7481; SW-847 7471; SW-846 7740; SM18th, 9221E.1; SM 18:92600.1; ASTM D 4994-89; EPA 600/1-87/014; EPA 8240; EPA 1613; EPA 8270; EPA 1613B; EPA 1668 (many include one or more of the referenced methods).

3) Sludge Thickening Process

Sample location: Center of eight quadrants from the basin.

Number and type of sample taken per event: Composite from all sampling points in each lagoon. Sample includes the entire proposed sludge column to be dredged (not the water cap *above* the sludge layer).

Sample storage and transport: Composite sample is stored at 4C in ice chest or refrigerator. Samples are transported in ice chest to maintain temperature during delivery to laboratory. Pathogen samples are delivered to lab within six hours of



sample collection.

Sample analysis method: EPA 9045; EPA 160.3; EPA 160.4; SM 4500-NH3B; EPA 353.2; EPA 365.3; EPA 351.3; SW-846 7060; SW-846 6010; SW-846; SW-846 7481; SW-847 7471; SW-846 7740; SM 18th, 9221E.1; SM 18:92600.1; ASTM D 4994-89; EPA 600/1-87/014; EPA 8240; EPA 1613; EPA 8270; EPA 1613B; EPA 1668 (may include one or more of the referenced methods).

#### 4) Air Drying Beds (ADB)

Sample location: Center of four quadrants from each ADB in service.

Number and type of sample taken per batch: Four discrete samples from each ADB in service are mixed together to form a composite sample, a minimum of six times per year.

Sample storage and transport: Samples are stored at 4C in ice chest or refrigerator. Samples are transported in ice chest to maintain temperature during delivery to laboratory. Pathogen samples are delivered to lab within six hours of sample collection.

Sample analysis method: EPA 9045; EPA 160.3; EPA 160.4; SM 4500-NH3B; EPA 353.2; EPA 365.3; EPA 351.3; SW-846 7060; SW-846 6010; SW-846; SW-846 7481; SW-847 7471; SW-846 7740; SM 18th, 9221E.1; SM 18:92600.1; ASTM D 4994-89; EPA 600/1-87/014; EPA 8240; EPA 1613; EPA 8270; EPA 1613B; EPA 1668 (may include one or more of the referenced methods).

#### Compost

Sample location: Random depths and locations within the compost pile.

Number and type of sample taken per batch: seven discrete samples are mixed together to form a composite sample for metal analysis. NOTE: for Class A Biosolid seven discrete samples are required for pathogen testing.

Sample storage and transport: Sample is stored at 4C in ice chest or refrigerator. Samples are transported in ice chest to maintain temperature during delivery to laboratory. Pathogen samples are delivered to lab within six hours of sample collection.

Sample analysis method: EPA 9045; EPA 160.3; EPA 160.4; SM 4500-NH3B; EPA 353.2; EPA 365.3; EPA 351.3; SW-846 7060; SW-846 6010; SW-846; SW-846 7481; SW-847 7471; SW-846 7740; SM 18th, 9221E.1; SM 18:92600.1; ASTM D 4994-89; EPA 600/1-87/014; EPA 8240; EPA 1613; EPA 8270; EPA 1613B; EPA 1668 (may include one or more of the referenced methods).

#### Biosolid Analysis:

#### Biosolid Chemical Analysis:

From Bandon's 2020 biosolids analysis the following is a representative sampling of the biosolid metal concentration.

Metal	Lb./acre-yr.	Site life years
Arsenic (As)	0.1299	345
Cadmium (Cd)	0.0026	16412
Chromium (Cr)	0.0000	
Copper (Cu)	0.0260	63124
Lead (PB)	0.1299	2524
Mercury (Hg)	0.0010	18102
Molybdenum (Mo)	0.1299	151
Nickel (Ni)	0.0130	35349
Selenium (Se)	0.1299	841
Zinc (Zn)	0.1299	23566

The site life would be limited to 151 years based on the Molybdenum loading Bandon's 2020 biosolid analysis (Attachment B).

#### Biosolid Nutrient Analysis:

For the year 2020, the biosolids contained about 1001 pounds lbs. total nitrogen (N), Bandon needs approximately 10.01 acres to land apply on to handle their annual biosolid nitrogen production.

#### IV Biosolids Beneficial Reuse Program

##### Transportation and Land Application:

Biosolids are off loaded into city owned tanker truck at the plant. The biosolids loading area is impounded in case of accidental spillage of biosolids during the truck loading process. This area has a drain that ties back into the facility. During the summer months Bandon's biosolids are land applied on one site totaling 18 acres. The biosolid land application sites are capable of assimilating Bandon's annual total nitrogen production. The perennial agronomic biosolid land application rate for pastures and grass is 140 lb. available N per acre-yr. The agronomic land application rate for annual rye grass, the predominate crop utilized by Bandon's land application program, is 100 lb. available N per acre-yr.

Land application: Bandon land applies on authorized pastures and farmlands. All DEQ site authorizations for Bandon are part of Bandon's Biosolid Management Plan. Bandon currently has 18 acres that are authorized for land application.



### Biosolids Site Management Information:

Site	Use/Acres	Lb. N/Acre	Lb. N/Site
Dew Valley	18	100	482
Total	18	100	482

Long term biosolid application rates and site restrictions are contained in the biosolid site authorization letter. References to the OAR 340-50, the 40 CFR Part 503, site setbacks, site agronomic loading rates, land application restrictions and site restrictions are also detailed out in the site authorization letter.

### BIOSOLIDS LAND APPLICATION PLAN

#### Agronomic Application Rate and Site Crops

Biosolids is required to be land applied to a site at a rate that is equal to or less than the agronomic rate for the site. An agronomic rate is the quantity of biosolids application rate designed to provide the annual total amount of nitrogen needed by a crop and to minimize the amount of nitrogen passing below the root zone of the crop or vegetation to groundwater.

Biosolids application rates for the Bandon sites were developed based on Oregon State University (OSU) Extension Service Fertilizer Guide: Seed Production Agronomy FG63. The annual application rate for hay is 100 available nitrogen (N) per acre, unless the application site demonstrates additional nitrogen is required to match crop uptake rates. *(\*Note: If more than one type of crop is used at the same site, then state each type of crop and the application rate.)* The land application sites authorized for use can assimilate the total plant available nitrogen the Biosolids provides on an annual basis. Specific site agronomic loading rates are stated in the Department issued site authorization letters.

#### Site Inventory of Existing and Potential Sites

The City of Bandon currently land applies biosolids to the Department authorized sites listed in the <table below/Appendix letter>. Surface application of biosolids is performed using a 4000 gallon tanker truck for delivery and a portable 6x6 Pioneer pump and spray cannon can be used. Site maps with the general location and size of existing authorized sites are included as Appendix <state letter> of this Biosolids management plan. The City of Bandon currently has 18 acres that are authorized for land application. This is an adequate land base for current <and future> operations, based on current Biosolids generation rates.

### *Biosolids Land Application Site Inventory*

*\*Note: May be included as an Appendix*

Site Name/ Identifier	Site location (Lat/Long)	Area (ac)	Type of Crop	Application (lb. N/AC)	Time of year applied (month)	Harvest Cycle
Dew Valley	43 5' N	18	Hay	100	June/	Year
	123 21' W				October	

#### Site Selection Criteria for a New Site

If necessary, the City of Bandon will locate additional sites for land applying biosolids. Prior to using any site for land application, the City of Bandon is required to receive a written site authorization letter from the Department. The following site conditions will be considered when determining the suitability of a site for land application:

- All sites will be located on <agricultural/forest/reclamation> land in <name of county or more defined area>.
- A site should be on a stable geologic formation not subject to flooding or excessive run-off from adjacent land.
- Minimum depth to permanent groundwater should be four feet <and the minimum depth to temporary groundwater should be one foot at the time when application of liquid Biosolids occurs>.
- Topography should be suitable for normal agricultural operations. <Biosolids should not be land applied on bare soils when the slope exceeds 12 percent.>.
- Soil should have a minimum rooting depth of 24 inches.

#### Public Notification

The City of Bandon will notify the public of the proposed land application activity by phone and onsite visit. A current copy of the city's Bio-Solid Manage Report will be available for review. Each year prior to land application of alkaline-stabilized domestic septage, the City of Bandon will verify for those sites to be used for the year that the property owners who received prior notification have not changed. If a property owner has changed, notification of the land application activity will be made to the new property owner and documented.

#### Site Management Practices

Site access restrictions and setbacks will be followed as required in OAR 340-050, and 40 CFR 503, and outlined in the Department's site authorization letters. The City of Bandon will ensure that access is restricted by appropriate means as necessary, such as fencing or posting of signs at the land application site. Biosolids land application will not occur in those areas designated as buffer strips and will be achieved through accurate measurement of the buffer area prior to commencing



land application.

### Crop Management Practices

As listed in the Biosolids Land Application Site Inventory table on page 9, biosolids are applied to Hay. Timing of application and the harvest cycle of the crop are also listed. Soil conditions must be favorable for application such that runoff, leaching, or soil compaction does not occur. The timing of land application will take into consideration tilling and irrigation practices that may occur on an authorized site.

*\*Note: If tilling or irrigation occurs, describe those practices.*

The overall management of nutrients at the land application sites takes into account the amount of Biosolids land applied, the amount of commercial fertilizers used and the amount of residual nutrients in the soil. When additional sources of nitrogen (e.g., commercial fertilizer) are applied to a site, then the application of Biosolids should be reduced to compensate for the additional nitrogen loading.

If Biosolids is applied to a site two out of three years at the agronomic rate, prior to the third application, a representative composite soil sample will be collected from grab sample taken across the entire site, and analyzed by an independent commercial laboratory. If existing nitrate-nitrogen levels in the soil profile are elevated, the Biosolids application rate, site management practices, or both will be adjusted. Application rates must be adjusted to account for available nitrogen carried over from previous applications. If crop removal of nitrogen exceeds the calculated agronomic rate, additional nitrogen may be required to sustain crop production.

### V Contingency Options

In the event biosolids are spilled between the treatment facility and the land application site, Bandon's sewage treatment workers shall contain the spill. Lime, absorbent (for example sand) and remove spilled sludge solids spills with a front end loader or shovels and dispose of the spillage at a DEQ authorized application or disposal site. All spills into waters of the state or spills on the ground surface that are likely to enter waters of the state shall be reported immediately to Oregon Emergency Response System (OERS) at 1-800-452-0311 and your regional biosolids coordinator at 541-440-3338. All spills of 25 gallons or more on the ground surface shall be report to the regional biosolids coordinator at 541-440-3338.

### VI Reporting

Daily Reporting and Recordkeeping (40 CFR 503.17 & 40 CFR 503.18):

Each year prior to land application of biosolids the source operators shall check to see if contiguous property owners have changed. The operators shall keep a record of contact (date, and/or written log of phone call with name and number, and/or

Xerox of postcard with name and address, etc.) with contiguous property owners, which notify them of the biosolid land application practice. Operator shall provide this documentation in the Annual Biosolid Report.

### Annual Reporting

The Annual Biosolid Report is due February 19, of each year for the previous year's land applied biosolids. Part of this report is the submittal of the daily site logs, which have the date, time, and quantity gal-lb. N/acre land applied for each day-tank-batch land applied. Site logs shall have a scaled map showing the site and the land application location that coincides with the daily site loading methods (truck spreader bar, irrigation cannon). Daily records should clearly show the location of daily biosolid loading site log.

Annual Report shall have a signed copy of the certification statements for pathogen reduction, vector attraction reduction and biosolids have been land applied at approved agronomic loading. Person signing statements should be the operator of record at the treatment plant. The operator shall show how the vector attraction reduction was met i.e., volatile solids reduction was achieved by time and temperature, the Van Kleeck equation filled out with digester records (MCRT), bench scale test, sour test or any other EPA approved alternative method appropriated for biosolid generated at your facility. Certification of pathogen reduction is required and is satisfied by submittal of test results in the Annual Biosolids Report. All the previous year's biosolids sampling and analysis that is required by the permit shall be included in Bandon's Annual Biosolid Report (in the year's annual report appendix).

### VII Certification Statement

The City of Bandon's facility is capable of meeting their primary alternatives for achieving Class B biosolid pathogen and vector attraction reduction criteria. As required under 40CFR 503.17 a signed Class B biosolid and vector attraction certification statements shall accompany all biosolids that are land applied (Attachment C). For Class B biosolid annual biosolid analysis must be provided upon request. Certification statements must also show conformance with nutrient and land application loading rates where applicable.



## Attachment A

Calculation of the % volatile solids reduction for the aerobic digesters is to be based on comparison of a representative grab sample of total and volatile solids entering the digestion process (a weighted blend of the primary and secondary clarifier solids) and a representative composite sample of the solids existing in the sludge holding tanks.

Typically in the past we've used the Van Kleeck equation for digesters. The assumption is that there is no grit accumulation in the digester. This volatile solids equation assumes the fixed solids input equals the fixed solids output. The Van Kleeck equation is appropriate if the digester decantant is low in total solids. The Van Kleeck equation can be used to calculate the volatile solids reduction for a digester that decants provided VS<sub>b</sub> equal VS<sub>d</sub>.

FVSR: Fractional Volatile Solids Reduction  $FVSR = 1 - VS_b * (1 - VS_f) / VS_f(1 - VS_b)$

VS<sub>f</sub> Feed Sludge Fractional Volatile Solid, (kg/kg)

VS<sub>b</sub> Digested Sludge (digester bottom) Fractional Volatile Solids, (kg/kg) VS<sub>d</sub>  
Decantant Fractional Volatile Solids

For this equation to be valid VS<sub>b</sub> must equal VS<sub>d</sub>.

For digesters with decant withdrawal (decant high in solids) and no grit accumulation, where the volatile and fixed concentrations are known for all streams as well as the volumetric flow rates for the decant and digester sludge then the Approximate Mass Balance equation should be used.

FVSR: Fractional Volatile Solids Reduction

$$FVSR = F_{yb} - B_{yb} - D_{yd} / F_{yb}$$

F<sub>yb</sub> (F) Feed Sludge Volumetric Flow Rate (m<sup>3</sup>/d)

(y<sub>b</sub>) Feed Sludge Volatile Solids Concentration (kg/m<sup>3</sup>)

B<sub>yb</sub> (B) Digester Sludge (bottom) Volumetric Flow Rate (M<sup>3</sup>/d)

(B<sub>b</sub>) Digester Sludge (bottom) Volatile Solids Concentration (kg/m<sup>3</sup>)

D<sub>yd</sub> (D) Decantate Volumetric Flow Rate (m<sup>3</sup>/d)

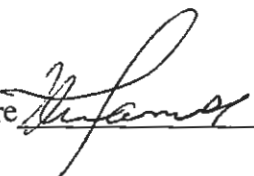
(y<sub>d</sub>) Decantate Volumetric Solids Concentration (kg/ m<sup>3</sup>)

Assumptions: Fixed Solids and Volatile Flows Streams.

## Attachment B

### Class B Biosolid Certification Statement

"I certify, under penalty of law, that the information used to determine compliance with Class B Pathogen Reduction requirements in 40 CFR Part 503.32 Sec.(b)(2) and Vector Attraction Reduction requirements 40 CFR part 503.33 Sec.(b)(1) was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluated this information. I certify that all Class B biosolids land applied has met the abovementioned Pathogen and Vector Attraction Reduction requirements. I also certify that all Class B biosolids were land applied at ergonomic rates. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature  Date 1-22-21



**DMR PAGES SHOWING**

**MCRT, VOLATILE  
REDUCTION AND  
GALLONS REMOVED  
&  
SITE  
APPLICATION LOGS**



WASTEWATER TREATMENT PLANT PROCESS CONTROL REPORT  
(VALUE)

June 2020

ALKALINITY		AMMONIA		NITRATE		AEROBIC DIGESTER 1							AEROBIC DIGESTER 2							AEROBIC DIGESTER 3										
INF	EFF	INF	EFF	INF	EFF	MLSS	MLSS	MLSS	PH	DO	TEMP	%	MLSS	MLSS	MLSS	PH	DO	TEMP	%	MLSS	MLSS	MLSS	PH	DO	TEMP	%	DAYS	MCRT	%	
MGL	MGL	MGL	MGL	MGL	MGL	MGL	GALS	LBS		PPM		VOLA	MGL	GALS	LBS		PPM		VOLA	MGL	GALS	LBS		PPM		VOLA	SRT		REDUC	
						10820			5.51	1.8	23.4	81	12440			6.42	2.3	23.2	80	14010			3.78	8.8	21.6	82			44	
160	140	31.0	22.0			10460	87294	7615	6.60	1.0	22.2	79	11560	112461	10842	4.91	4.6	23.2	83	13260	100623	11128	3.79	7.9	21.9	82		11	46.9	55
						10160	56761	4810	6.82	1.3	20.3	82	10150	97837	8282	4.61	3.5	21.8	81	12280	100623	10305	4.11	2.7	21.3	82		9	41.2	49
						9950			6.99	1.9	20.9	82	10510			3.32	2.7	22.7	82	12510			4.18	2.6	22.4	83				40
170	150	30.0	23.0			10670	74768	6653	6.96	0.7	20.9	85	9060	108283	8182	2.91	5.0	23.0	95	12500	99926	10417	3.02	6.1	22.6	83		15	57.5	46
						10680			6.49	1.5	20.3	82	9940			3.28	3.1	22.0	83	11710			2.79	6.5	21.7	82				49
						9010			5.14	3.1	22.0	83	9310			2.84	6.0	22.9	86	12040			2.75	8.4	22.1	81				47
160	120	37.0	23.0			10080			6.96	1.6	21.9	86	10230			4.19	6.5	23.1	84	10780			2.67	5.8	22.2	85				37
						11600			6.78	1.2	21.7	84	9760			3.85	4.1	22.6	84	5820			2.61	6.2	21.6	68				74
						11160	96889	8999	7.24	1.4	22.5	84	9370	106194	8299	2.84	6.2	23.4	84	11240	116639	10934	2.60	6.9	22.4	83		11	35.3	40
180	170	42.0	33.0			10720	107650	9624	7.35	1.2	22.6	84	9370	79732	6231	2.62	6.5	23.2	84	9710	112461	9107	2.60	5.5	22.6	83		10	52.9	40
						11160			7.17	2.1	21.9	83	9920			6.37	1.5	23.2	83	10190			2.98	6.0	22.6	83				40
						10360			6.99	0.8	21.7	83	9800			6.46	1.2	22.9	82	10760			2.68	6.8	22.4	80				46
670	580	140.0	101.0	0.00	0.00	136830	423162	37701	87.00	19.6	282.3	1078	131420	504507	41836	54.62	53.2	297.2	1091	146810	530272	51891	40.56	80.2	287.4	1057	55	233.8	606	
180	170	42.0	33.0	0.00	0.00	11600	107650	9624	7.35	3.1	23.4	86	12440	112461	10842	6.46	6.5	23.4	95	14010	116639	11128	4.18	8.8	22.6	85	15	57.5	74	
160	120	30.0	22.0	0.00	0.00	9010	56761	4810	5.14	0.7	20.3	79	9060	79732	6231	2.62	1.2	21.8	80	5820	99926	9107	2.60	2.6	21.3	68	9	35.3	37	
170	145	35.0	27.5	0.00	0.00	10305	82206	7217	6.25	1.9	21.9	83	10750	96097	8367	4.20	4.1	22.9	84	11293	106054	10378	3.12	6.2	22.1	81	#DIV/0!	46.8	47	

107

180	170	42.0	33.0	0.00	0.00	11600	107650	9624	7.35	3.1	23.4	86	12440	112461	10842	6.46	6.5	23.4	95	14010	116639	11128	4.18	8.8	22.6	85	15	57.5	74
160	120	30.0	22.0	0.00	0.00	9010	56761	4810	5.14	0.7	20.3	79	9060	79732	6231	2.62	1.2	21.8	80	5820	99926	9107	2.60	2.6	21.3	68	9	35.3	37



BANDON WASTEWATER TREATMENT PLANT MONITORING REPORT

RECEIVING STREAM COOVILLE RIVER  
RM 1.1

DAILY LOG  
REGARDING BREAKDOWN, BYPASSING,  
ODORS, COMPLAINTS, ETC.

LIQUID SLUDGE DISPOSAL			GALLONS		DEWATERED SLUDGE DISPOSAL		FROM AND TO LOCATIONS	MAN HRS		
GALES REMOVED	% SOLIDS	FROM AND TO LOCATIONS	REMOVED	LBS OUT	CU. YDS.	% SOLIDS		PER DAY	DAY	
31736	1.0	LEFFS FIELD # 7		2647.0				16.0	1	AIRLIFTED # DIG. TO# 2/ WORKED ON COMPUTER/ BETH
								16.0	2	SWITCHED INF. PUMPS NOW # 1
31760	1.0	LEFFS FIELD # 7		2649.0				16.0	3	CLEANED DO - SS PROBE WITH VINEGER
								16.0	4	
								16.0	5	RAS PUMP PLUGED / PUMPED SCUM BOX
								3.0	6	
								3.0	7	HOSED CLAIFIER
								16.0	8	RASPUMP PLUGED / HOSED CLAIFIER
15876	1.3	LEFFS FIELD # 7		1721.0				16.0	9	BOB DILLARD / DMRS
								16.0	10	3 BLOWERS ON
								16.0	11	SRT= 6.50
								16.0	12	RAS PUMP PLUGED / PUMPED SCUM BOX
								3.0	13	
								3.0	14	ADJUSTED AIR DIG. / HOSED CLAIFIER
								16.0	15	STEVE LEVAL 3 CLASS ON ZOOM 3 DAYS
								16.0	16	BEACH ON CLAIFIER PLUGED
								16.0	17	AIRLIFTED # 1 DIG. TO # 2
								16.0	18	CLEANED CAKE ROOM / MACHINE
								16.0	19	UNPLUGED 3 WATER PUMPS
								3.0	20	
31755	1.0	LEFFS FIELD # 7		2648.0				3.0	21	DRAINED # 1 CLAIFIER/ RAIN WATER
								16.0	22	RAS PUMP PLUGED / PUMPED SCUM BOX
31000	1.0	LEFFS FIELD # 7		2585.0				16.0	23	MOWED AT CIY PARK
								16.0	24	AIRLIFTED # 1 DIG. TO # 2
								16.0	25	SCRUBBED CLAIFIER
								16.0	26	RAS PUMP PLUGED / HOSED CLAIFIER
								3.0	27	RAS PUMP PLUGED / HOSED CLAIFIER
								3.0	28	
								16.0	29	RAS PUMP PLUGED / HOSED HEADWORKS
								16.0	30	HOESED M. L. CHANNEL / ADJUSTED AIR IN AB / M. L. CHANNEL
								16.0	31	
142127	5.3		0.0	12250.0	0.0	0.0	ALL DEWATERED SLUDG	378.0		ADDITIONAL INFORMATION
31760	1.3		0.0	2649.0	0.0	0.0	CAKE AND MEASURED IN	18.0		
15876	1.0		0.0	1721.0	0.0	0.0	YDS.	3.0		
#DIV/0!	1.1		0.0	2450.0	0.0	0.0		12.5		
31760	1.3		0.0	2649.0	0.0	0.0		16.0		
15876	1.0		0.0	1721.0	0.0	0.0		3.0		

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 UPON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE 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 TO SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINES AND IMPRISONMENT FOR KNOWING VIOLATIONS. THE MONTHLY AVERAGE DIGESTER SRT IS BASED ON THE MONTHLY AVERAGE TOTAL DIGESTER POUNDS DIVIDED BY THE MONTHLY TOTAL POUNDS HAULED WHICH IS DIVIDED BY THE NUMBER OF DAYS OF THE MONTH. THIS GIVES A TRUE SRT.

SIGNATURE: \_\_\_\_\_

WASTEWATER TREATMENT PLANT PROCESS CONTROL REPORT  
5

July 2020

ALKALINITY		AMMONIA		NITRATE		AEROBIC DIGESTER 1						% VOLA	AEROBIC DIGESTER 2						% VOLA	AEROBIC DIGESTER 3						% VOLA	DAYS		% VOL REDUC
INF	EFF	INF	EFF	INF	EFF	MLSS	MLSS	MLSS	PH	DO	TEMP		MLSS	MLSS	MLSS	PH	DO	TEMP		MLSS	MLSS	MLSS	PH	DO	TEMP		SRT	MCRT	
MGL	MGL	MGL	MGL	MGL	MGL	MGL	GALS	LBS		PPM			MGL	GALS	LBS		PPM			MGL	GALS	LBS		PPM					
170	150	37	28			12900	95123	9520	6.89	2.0	21.6	83	9440	108283	8525	6.39	3.5	21.3	82	10200	106980	9093	2.58	7.7	22.5	83	20	43.2	43
						6910	109215	6294	5.58	3.0	21.8	85	8570	108970	7789	3.07	3.2	22.7	84	10560	113853	10027	2.79	7.7	22.0	84	9	53.2	48
						8580	109215	7815	4.66		22.8	86	8510	108979	7735	3.52		23.2	84	9870	89489	7366	2.91		22.5	83	9	39.7	46
						8640	109215	7870	4.55	2.3	23.4	87	9009	79732	5985	3.54	6.1	23.2	84	9000	87392	6500	3.74	7.4	22.9	83	9	44.8	40
185	140	38.0	23.0			8090	109216	7369	5.03		23.3	85	8540	56753	4042	3.56		23.0	85	9360	91570	7148	3.38		22.8	84	8	33.7	42
						8010	100604	6721	6.98	0.9	21.8	83	7820	85303	5583	6.92	1.6	22.9	83	8550	97141	6927	2.86	6.1	22.0	84	8	35.2	42
						8210	32491	2225	7.60		21.2	84	8060	81821	5509	7.07		22.2	83	6530	100623	5480	3.44		22.6	81	14	21.2	47
						8170			7.08	2.8	20.3	84	8170			7.02	2.1	21.5	84	8350			4.23	5.0	21.9	79			49
180	150	35.0	22.0			9570			6.88	2.3	20.7	85	7920			6.79	2.8	21.0	83	9050			4.96	1.7	22.4	84			42
						7990	35622	2374	6.73	2.2	19.8	84	7290	81125	4932	6.63	1.0	19.6	83	9200	120121	9217	7.14	0.9	21.4	83	7	21.9	40
						8100	35622	2408	6.57		19.9	83	8040	76250	5113	6.66		20.5	84	8720	108283	7875	7.15		21.0	83	7	22.9	40
						7200			6.40	2.0	20.1	86	8670			6.64	0.9	21.1	84	9030			7.26	1.1	21.3	81			47
190	160	33.0	26.0			7940	35622	2359	6.02		15.6	82	7780	77643	5038	6.63		20.5	84	9310	95052	7380	7.26		20.8	82	6	22.3	44
						6880			4.27	3.6	19.6	84	8280			6.91	0.8	20.6	84	8640			7.26	1.0	20.6	84			54
						15720			4.25	3.6	19.4	92	9130			7.05	0.5	20.5	84	8250			7.14	0.7	20.6	83			46
180	150	29.0	25.0			6860	35622	2038	4.21		19.4	84	8230	88596	5674	7.06		21.0	85	8920	108879	8107	7.16		20.1	83	7	33.4	46
905	750	170.0	122.0	0.00	0.00	138950	807566	56991	93.60	24.7	330.5	1357	134459	951555	66896	84.66	22.5	344.7	1340	143540	1119395	85120	81.27	39.3	348.3	1304	104	371.4	716
190	160	37.0	26.0	0.00	0.00	15720	109215	9520	7.60	3.6	23.4	92	9440	108979	8525	7.07	6.1	23.2	85	10560	120121	10027	7.26	7.7	22.9	84	20	53.2	64
170	140	29.0	22.0	0.00	0.00	6860	32491	2038	4.21	0.9	16.6	82	7290	56753	4042	3.07	0.5	19.6	82	6530	87392	5480	2.68	0.7	20.1	63	6	21.2	40
180	150	33.0	24.0	0.00	0.00	11290	70863	5779	5.91	2.3	19.5	87	8365	82866	6081	6.91	2.3	21.5	84	8971	101762	7738	6.08	3.9	21.8	82	ERR	33.8	45

200

190	160	37.0	26.0	ERR	ERR	15720	109215	9520	7.60	3.6	23.4	92	9440	108979	8525	7.07	6.1	23.2	85	10560	120121	10027	7.26	7.7	22.9	84	20	53.2	64
170	140	29.0	22.0	ERR	ERR	6860	32491	2038	4.21	0.9	16.6	82	7290	56753	4042	3.07	0.5	19.6	82	6530	87392	5480	2.68	0.7	20.1	63	6	21.2	40



RECEIVING STREAM COQUILLE RIVER  
R M 11

LIQUID SLUDGE DISPOSAL			DEWATERED SLUDGE DISPOSAL				MAN HRS		DAILY LOG	
GALS REMOVED	% SOLIDS	FROM AND TO LOCATIONS	GALLONS REMOVED	LBS OUT	CU YDS	% SOLIDS	FROM AND TO LOCATIONS	PER DAY	DAY	REGARDING BREAKDOWN, BYPASSING, ODORS, COMPLAINTS, ETC
15982	1.0	LEFFS FIELD # 6		1333.0				16.0	1	SCRUBBED CLARIFIER, HOSED MIX, LIQ.
								3.0	2	HOLIDAY
								16.0	3	HOSED HEAD WORKS, HOSED CLARIFIER
								3.0	4	HOSED CLARIFIER, CLEAN SCREEN ON CLARIFIER, RAN COMPACT
								3.0	5	RAS PUMP PLUGGED, HOSED CLARIFIER, HOSED HEAD WORKS
								16.0	6	CLEANED 3 WATER FILTERS, HOSED MIX LIQ. CHANNEL
								16.0	7	JAR TEST DIG. #1, AIR LIFT 2-3 DIG.
								16.0	8	AIR LIFT DIG # 2-3, HOSED MIX LIQ. CHANNEL
								16.0	9	PULLED WASTING VALVE APART, AIR LIFT 1-2 AHS 2-3 DIG.
								16.0	10	HOSED HEAD WORKS, CLEAN SCREEN CLARIFIER
								3.0	11	REMOVE RAGS FROM HEAD WORKS, SEWER BLOCKAGE
								3.0	12	SWITCH INF. PUMPS TO #2. UNPLUG 3 WATER PUMPS.
								16.0	13	AIR LIFT 1-2 AND 2-3, BACK FLUSH INF. PUMP # 1.
								16.0	14	COMSPAN WORK ON PHONES, HOSED CLARIFIER
								16.0	15	SCRUBBED CLARIFIER, HOSED HEAD WORKS, MIX LIQ. CHANNEL
								16.0	16	UV CHANNEL, CLEANING NEW SLEEVES A
								16.0	17	HOSED MIX LIQ CHANNEL, HIMMELRICK CLEAN ALL WET WELLS
								3.0	18	PUMP SCUM BOX, AB PROBE CLEANED, HOSED CLARIFIER
								3.0	19	CLEANED 3 WATER PUMP DRAINS, HOSED MIX LIQ. CHANNEL
								16.0	20	AIR LIFT DIG #2 INTO #3, INCREASED WASTING
								16.0	21	AIR LIFT DIG #2 INTO #3, SWITCH INF. PUMPS TO # 1.
								16.0	22	HOSED MIX LIQ CHANNEL, SCRUBBED CLARIFIER, RAN COMPAC.
								16.0	23	ORDERED NEW VFO SLOWER, HOSED HEAD WORKS,
								16.0	24	HOSED MIX LIQ. CHANNEL, TOOK APART RAS REMOVE RAGS.
								3.0	25	HOSED MIX LIQ. CHANNEL, HOSED HEAD WORKS,
								3.0	26	AIR LIFT DIG. #2 INTO #3, RAN COMPACTOR, HOSED CLARIFIER.
								16.0	27	HOSED HEAD WORKS, HOSED MIX LIQ CHANNEL
								16.0	28	HOSED HEAD WORKS, GREESES MOVING PARTS IN PLANT.
								16.0	29	RAS PUMP PLUGGED / HOSED CLARIFIER
								16.0	30	RAS PUMP PLUGGED / HOSED M. L. CHANNEL / CLARIFIER
								16.0	31	SCRUB CLARIFIER, HOSED HEAD WORKS, MIX. LIQ.
317441	10.0		0.0	24205.0	0.0	0.0	ALL DEWATERED SLUDGE	379.0		ADDITIONAL INFORMATION
31842	1.0		0.0	2646.0	0.0	0.0	CAKE AND MEASURED IN	16.0		
15890	0.7		0.0	928.0	0.0	0.0	YDS.	3.0		
ERR	0.9		0.0	2200.5	0.0	0.0		12.2		
31842	1.0		ERR	2646.0	ERR	ERR		16.0		
15890	0.7		ERR	928.0	ERR	ERR		3.0		

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 UPON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE 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 TO SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINES AND IMPRISONMENT FOR KNOWING VIOLATIONS. THE MONTHLY AVERAGE DIESTER SRT IS BASED ON THE MONTHLY AVERAGE TOTAL DIESTER POUNDS DIVIDED BY THE MONTHLY TOTAL POUNDS HAULED WHICH IS DIVIDED BY THE NUMBER OF DAYS OF THE MONTH. THIS GIVES A TRUE SRT.

SIGNATURE: \_\_\_\_\_

# WASTEWATER TREATMENT PLANT PROCESS CONTROL REPORT

August 2020

[illegible]



RECEIVING STREAM COQUILLE RIVER  
RM 11

LIQUID SLUDGE DISPOSAL			DEWATERED SLUDGE DISPOSAL				MAN HRS		DAILY LOG REGARDING BREAKDOWN, BYPASSING, ODORS, COMPLAINTS, ETC.
GALS REMOVED	% SOLIDS	FROM AND TO LOCATIONS	GALLONS REMOVED	LBS OUT	CU YDS	% SOLIDS	FROM AND TO LOCATIONS	PER DAY	
31779	0.8	LEFFS FIELD # 2		2120.0				3.0	1 HOSED CLARIFIER, MIX LIQ. RAN COMPACTOR
31664	0.8	LEFFS FIELD # 2		2113.0				3.0	2 CLEANED AB PROBE, HOSED HEAD WORKS
								16.0	3 HOSED MIX LIQ. CHANNEL, TURN 3RD BLOWER ON.
								16.0	4 AIR LIFT DIG #2 INTO #3, CLEANED DO/SS PROBE.
								16.0	5 PULLED JETTY #2 PUMP REMOVED GLOG.
								8.0	6 HOSED MIX LIQ CHANNEL, HOSED CLARIFIER.
								8.0	7 HOSED HEAO WORKS, ADJUST AIR MIX LIQ CHANNEL
								3.0	8 HOSED CLARIFIER, HOSED HEAD WORKS.
								3.0	9 HOSED MIX LIQ CHANNEL, HOSED CLARIFIER.
31765	0.7	LEFFS FIELD#2		1854.0				16.0	10 SET UP FOR DIG.#1 CLEAN OUT. HOSED CLARIFIER.
								16.0	11 SWITCH FROM CLARIFIER #2 INTO # 1. ADD OIL VFD BLOWER.
								16.0	12 UNWIRE RAS PUMP #2 AND REMOVED.RESET TOTALIZER.
								16.0	13 HIMMELRICK CLEANED DIG. #1. PRESSURE WASH RAS ROOM.
								16.0	14 AIRLIFT DIG #2 INTO #3.
								3.0	15 COMPACTER TRIPPED OK
								3.0	16 PUMPED SCUM BOX
31829	0.7	LEFFS FIELD # 1		1858.0				16.0	17 CHANGED SOLIDS FROM 3000MGL TO 2500
31674	0.8	LEFFS FIELD # 1		2113.0				16.0	18 HOSED CLAIFIER / HEADWORKS
								16.0	19 AIRLIFTED # 2 DIG. TO # 3
								16.0	20 REMOVED RAS PUMP / READY FOR NEW ONE
								16.0	21 SCRUBBER CLAIFIER
								3.0	22
								3.0	23 UNPLUGED 3 WATER PUMPS
31767	0.8	LEFFS FIELD # 1		2119.0				16.0	24 SWITCHED INF. PUMPS
31809	0.7	LEFFS FIELD # 1		1857.0				16.0	25 PLUMER CHECKED BACKFLOW DEVICES
								16.0	26 RAS PUMP PLUGED / NO WASTING
								16.0	27 BOB DILLARD ON SITE FOR RAS PUMP
								16.0	28 RAS PUMP PLUGED / NO WASTING
								3.0	29
31655	0.8	LEFFS FIELD # 1		2112.0				3.0	30 HOSED CLAIFIER / HEADWORKS
								16.0	31 HOSED M. L. CHANNEL
253932	6.1		0.0	16146.0	0.0	0.0	ALL DEWATERED SLUDGE	350.0	ADDITIONAL INFORMATION
31829	0.8		0.0	2120.0	0.0	0.0	CAKE AND MEASURED IN	16.0	
31655	0.7		0.0	1854.0	0.0	0.0	YDS.	3.0	
ERR	0.8		0.0	2018.3	0.0	0.0		11.3	
31829	0.8		ERR	2120.0	ERR	ERR		16.0	
31655	0.7		ERR	1854.0	ERR	ERR		3.0	

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 UPON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES TO SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINES AND IMPRISONMENT FOR KNOWING VIOLATIONS. THE MONTHLY AVERAGE DIGESTER SRT IS BASED ON THE MONTHLY AVERAGE TOTAL DIGESTER POUNDS DIVIDED BY THE MONTHLY TOTAL POUNDS HAULED WHICH IS DIVIDED BY THE NUMBER OF DAYS OF THE MONTH. THIS GIVES A TRUE SRT.

SIGNATURE: \_\_\_\_\_

## WASTEWATER TREATMENT PLANT PROCESS CONTROL REPORT

114

September 2000

[illegible]



RECEIVING STREAM COQUILLE RIVER  
R M 11

LIQUID SLUDGE DISPOSAL			DEWATERED SLUDGE DISPOSAL				MAN HRS		DAILY LOG	
GALS REMOVED	% SOLIDS	FROM AND TO LOCATIONS	GALLONS REMOVED	LBS OUT	CU YDS.	% SOLIDS	FROM AND TO LOCATIONS	PER DAY	DAY	REGARDING BREAKDOWN, BYPASSING, ODORS, COMPLAINTS, ETC.
31754	0.8	LEFFS FIELD # 1		2119.0				16.0	1	INSTALLED NEW BLOWER 5810 / RESSE ELECT. RAS PUMP
								16.0	2	SCRUB CLARIFIER, TIGH PACK GLAND GRIT PUMP.
								16.0	3	CLEAND PIPES DIG#1, REPLACE DIFFUSERS DIG #1.
								16.0	4	HOSED HEAD WORKS, MIX. LIQ.
								3.0	5	HOSED MIX LIQ CHANNEL, HOSED CLAROIFER.
								3.0	6	HOSED HEAD WORKS, MIX LIQ.
								3.0	7	HOLIDAY
								16.0	8	AIR LIFT DIG #2 INTO #3. HOSED EFF CHANNEL. HOSE CLARIFIER
								8.0	9	CLEANED RAKE ARM CLARIFIER #2
								8.0	10	START UP ON NEW RAS GRINDER PUMP.
								8.0	11	TRANSFER TO CLARIFIER #2. DRAIN CLARIFIER #1
								3.0	12	PUMP SCUM BOX, HOSED CLARIFIER, FLUSH CLARIFIER #1
								3.0	13	HOSED EFF CHANNEL, HOSED MIX. LIQ.
31880	1.0	LEFFS FIELD # 1		2659.0				8.0	14	AB PROBE CLEANED, HOSE CLARIFIER.
31819	1.0	LEFFS FIELD #1		2654.0				8.0	15	RAN COMPACTOR, BLOCKAGE AT JETTY AND HERRITAGE LINE.
								8.0	16	AIR LIFT DIG#2 INTO #3 START 2-3 DIG TRANSFER.
								8.0	17	HIMMELRICK CLEAN DIG. #2. SHUT 3RD BLOWER OFF.
								8.0	18	NO WASTING, HOSE CLARIFIER, HEAD WORKS, MIX LIQ.
								3.0	19	
								3.0	20	PUMPED SCUM BOX / UNPLUGED BEACH
								18.0	21	DRAINED # 2 AB / HOSED CLAIRIER
								16.0	22	HOSED CLAIRIER
								16.0	23	RAS PUMP CHECK OK
								16.0	24	SCRUBBED CLAIRIER
								16.0	25	HOSED HEADWORKS
								3.0	26	
								3.0	27	HOSED CLAIRIER LOOKS GOOD
								16.0	28	
								16.0	29	SHIPPED 75 HP MOTOR TO HPS
								16.0	30	MEET WITH CITY MANAGER ON NEW RAS PUMP
									31	
190728	4.9		0.0	12993.0	0.0	0.0	ALL DEWATERED SLUDGE	299.0		ADDITIONAL INFORMATION
31880	1.0		0.0	2659.0	0.0	0.0	CAKE AND MEASURED IN	18.0		
31746	0.7		0.0	1853.0	0.0	0.0	YDS.	3.0		
ERR	0.8		0.0	2185.5	0.0	0.0		10.0		
31880	1.0		ERR	2659.0	ERR	ERR		16.0		
31746	0.7		ERR	1853.0	ERR	ERR		3.0		

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SIGNATURE: \_\_\_\_\_

WASTEWATER TREATMENT PLANT PROCESS CONTROL REPORT  
0

October 2020

ALKALINITY		AMMONIA		NITRATE		AEROBIC DIGESTER 1							AEROBIC DIGESTER 2							AEROBIC DIGESTER 3										
INF	EFF	INF	EFF	INF	EFF	MLSS	MLSS	MLSS	PH	DO	TEMP	%	MLSS	MLSS	MLSS	PH	DO	TEMP	%	MLSS	MLSS	MLSS	PH	DO	TEMP	%	DAYS	MORT	%	
MGL	MGL	MGL	MGL	MGL	MGL	MGL	GALS	LBS		PPM		VOLA	MGL	GALS	LBS		PPM		VOLA	MGL	GALS	LBS		PPM		T/L	SRT		REDUC	
180	160	38.0	29.0																		7280	103408	6276	7.22	0.8	21.3	84	7	11.9	42
						4450			7.54	1.0	18.3	89									7250			4.58	6.3	20.3	83			40
190	160	37.0	24.0			7190			7.38	0.7	18.9	89									6520			4.34	4.9	20.4	83			40
						8470			7.38	0.7	19.2	86									6690			4.14	4.4	20.2	85			44
200	150	47.0	26.0			7360			7.13	1.8	19.6	88									5920			4.58	4.8	20.7	81			
						8510			6.95	0.6	19.8	85									5980			4.05	4.6	20.6	80			45
						7100			6.52	0.6	20.2	86									6460			3.59	4.7	20.1	86			16
						7620			7.07	0.5	19.8	85	8440			6.63	1.1	19.3	85		6080			3.75	5.4	20.7	85			30
200	150	41.0	24.0			8800			6.32	1.5	17.1	86	8090			7.13	1.0	18.5	83		4820			3.17	3.6	19.3	84			42
						7230			4.88	4.3	16.4	85									3750			2.93	0.3	18.0	85			30
						7250			5.06	2.4	17.3	87	8600			6.94	1.5	17.7	85		4710			2.71	5.9	17.1	84			35
200	140	34.0	21.0			7740			7.15	0.8	19.4	85	8090			6.36	1.1	18.1	84		4570			2.74	5.9	18.7	87			26
970	760	197.0	124.0	0.00	0.00	79720	0	0	73.38	14.9	205.0	947	30820	0	0	27.06	4.7	74.6	337	69830	103408	6276	47.71	57.6	237.4	1067	7	11.9	390	
200	160	47.0	29.0	0.00	0.00	8600	0	0	7.54	4.3	20.2	88	8800	0	0	7.13	1.5	19.3	85	7280	103408	6276	7.22	6.3	21.3	87	7	11.9	45	
180	140	34.0	21.0	0.00	0.00	4450	0	0	4.88	0.5	16.4	85	6440	0	0	6.38	1.0	17.7	83	3750	103408	6276	2.71	0.8	17.1	80	7	11.9	16	
190	150	40.5	25.0	0.00	0.00	6625	0	0	8.21	2.4	18.3	87	7520	0	0	8.77	1.2	18.7	84	5903	103408	6276	3.98	4.8	19.8	84	ERR	11.9	35	

74

200	160	47.0	28.0	ERR	ERR	8800	ERR	ERR	7.54	4.3	20.2	88	8500	ERR	ERR	7.13	1.5	19.3	85	7280	103408	6276	7.22	6.3	21.3	87	7	11.9	45
180	140	34.0	21.0	ERR	ERR	4450	ERR	ERR	4.88	0.5	16.4	85	6440	ERR	ERR	6.36	1.0	17.7	83	3750	103408	6276	2.71	0.3	17.1	80	7	11.9	16

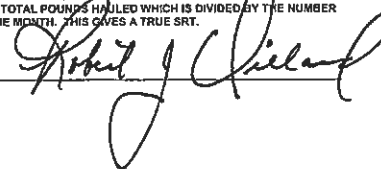


RECEIVING STREAM COQUILLE RIVER  
R.M. 1.1

LIQUID SLUDGE DISPOSAL			DEWATERED SLUDGE DISPOSAL				MAN HRS		DAILY LOG REGARDING BREAKDOWN, BYPASSING, ODORS, COMPLAINTS, ETC
GALS MOVED	% SOLIDS	FROM AND TO LOCATIONS	GALLONS REMOVED	LBS OUT	CU. YDS	% SOLIDS	FROM AND TO LOCATIONS	PER DAY	
15926	0.7	LEEFIS FIELD # 5	930.0					16.0	1   PUMPED SCUM BOX / CLEANED UV CHANNEL A
								16.0	2   TURNED # 3 BLOWER ON
								3.0	3
								3.0	4   HOSED CLAIFIER
								16.0	5   PUMPED SCUM BOX
								16.0	6   CLEANED ALL UV'S AND CHANNELS
								16.0	7   RECALIBRATED AB PRBE
								16.0	8   WORKED ON CAKE MACHINE
								16.0	9   PUMPED SCUM BOX
								3.0	10
								3.0	11   LOWERED FIRST 2 CELLS IN AB
								3.0	12   HOLIDAY
								16.0	13   PUMPED SCUM BOX
								16.0	14   PLANT SLIGHTLY UP SET
								16.0	15   CLEANED AIR PIPES DIG. # 2
								16.0	16   TAG CALIB. FLOW METER / SCRUBBED CLAIFIER
								3.0	17
								3.0	18   PUMPED SCUM BOX
								16.0	19   ADJUSTED AB PROBE
								16.0	20   DEPT. HEAD MEETING CITY HALL
								16.0	21   SCRUBBED PART OF CLAIFIER / INSTALLED WATER END OF AB
								16.0	22   JAR TEST @ 2 DIG. / WORKED ON PIONNER PUMP
								16.0	23   HOSED HEADWORKS / M. L. CHANNEL
								3.0	24
								3.0	25   # 2 DIG. OFF FOR DECANT
								16.0	26   ADJUSTED AIR AB / M. L. CHANNEL
								16.0	27   DECANTED # 2 DIG. / PUMPED SCUM BOX
								16.0	28   SCRUBBED CLAIFIER
								16.0	29   PUMPED SCUM BOX
								16.0	30   FIXED OIL LEAK ON BLOWER # 5810
								3.0	31
15926	0.7		0.0	930.0	0.0	0.0	ALL DEWATERED SLUDG	356.0	ADDITIONAL INFORMATION
15926	0.7		0.0	930.0	0.0	0.0	CAKE AND MEASURED IN	16.0	
15926	0.7		0.0	930.0	0.0	0.0	YDS.	3.0	
ERR	0.7		0.0	930.0	0.0	0.0		11.8	
15926	0.7		ERR	930.0	ERR	ERR		16.0	
15926	0.7		ERR	930.0	ERR	ERR		3.0	

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SIGNATURE:



## ON SITE BIO-SOLIDS APPLICATION LOG

Lefts. Field #1

Dove

[illegible]



"Ostridge

951 20<sup>th</sup> Sept 15

Site location and number:

[illegible]

Leaky Field #43

De

[illegible]



[illegible]

letts Field #5

Dave  
79 432 545

[illegible]



Site location and number: Lefts Field #6

[illegible]

## ON SITE BIO-SOLIDS APPLICATION LOG

2020  
5 Jan 18

L-PS Field #7

[illegible]



**DEQ AUTHORIZATION  
LETTER**

**LETTER OF AGREEMENT**

**CITY OF BANDON &**

**DEW VALLEY**

**DAVID LEFF PROPERTY**



AGREEMENT BETWEEN  
CITY OF BANDON  
AND  
DAVID LEFF

This agreement is entered into by and between David Leff, hereinafter referred to as Landowner, and the City of Bandon, a municipal corporation.

WHEREAS, the City of Bandon operates a municipal wastewater treatment plant which produces an end product of sludge; and

WHEREAS, the City of Bandon needs a location at which this material may be disposed; and

WHEREAS, the Landowner is willing to allow the use of his fields for such disposal considering that the material presents no serious hazard to the Landowner's fields and would act as a fertilizer encouraging the growth of hay and young trees.

NOW, THEREFORE, IT IS HEREBY AGREED that the City of Bandon may apply sludge from their municipal wastewater treatment plant to Landowner's fields subject to the following terms and conditions:

A. Site Designation

1. For purposes of this agreement, each contiguous area to which sludge is applied shall be called a "disposal site".
2. Each sludge spray irrigation gun set up shall be called a "setting".
3. The City of Bandon shall secure prior approval from the Landowner or designee to use a disposal site.
4. Each disposal site and setting shall bear a unique number for purposes of record keeping.
5. The City of Bandon shall measure, stake, number and map each setting in accordance with the City's equipment capabilities.
6. A map will be maintained, jointly by the Landowner and the City of Bandon, showing the location of each disposal site setting



used.

7. The Landowner may, at any time, temporarily or permanently discontinue a disposal site if it is deemed necessary.

B. Posting of Disposal Site Areas

1. The Landowner shall post approaches to disposal sites with no trespassing signs to control access.
2. The Landowner shall further agree to gate, lock and provide key to the City of Bandon, approaches to disposal sites if access is not controlled by no trespassing signs.
3. The City of Bandon shall post approaches to disposal sites to advise of the disposal activities during application of sludge and maintain such posting for a minimum period of 45 days after completion of such application and/or as required by regulatory agencies.
4. Such signs shall include terminology as may be required by regulatory agencies.

C. Method of Disposal

The City of Bandon shall dispose of sludge in the following manner:

1. Application only on sites designated by the DEQ and Landowner.
2. Application shall be rotated among the designated sites and settings.
3. Application shall be under pressure utilizing a spray gun.
4. All equipment shall stay on the roads.
5. There shall be no application within any drainage ditch.
6. No more than 100 pounds/acre of nitrogen shall be applied in any given two year cycle unless more is allowed by DEQ in writing.

D. Documentation

1. The City of Bandon shall furnish the Landowner a quarterly summary of the number of loads of sludge applied to designated sites including the date of application and quantities spread.
2. The City of Bandon shall furnish the Landowner a copy of such other data as is required by regulatory agencies.
3. Upon completion of use of a given disposal site, the City of Bandon shall furnish the Landowner such data pertaining to that site as is available which would be relevant to tree growth, including the total amounts of nitrogen and water applied to the site.

E. Maintenance of Landowner's Roads

The City of Bandon shall maintain the Landowner's roads used hereunder in accordance with the following:

1. Repair of Specific Damage

It shall be the responsibility of the City of Bandon to repair any specific road damage caused by operation of the City.

2. Unusual Road Damage

The Landowner will perform maintenance of unusual road damage which is not related to the use by the City of Bandon. Examples of unusual road damage would be major slides, culvert replacement and wash out of a fill.

F. Comply with Laws

The City of Bandon shall strictly comply with all environmental and other laws, regulations, and DEQ recommendations applicable to the disposal of municipal sludge. The Landowner reserves the right to promulgate



rules not inconsistent with the terms of this agreement and the City of Bandon agrees to comply with the same as soon as reasonably possible.

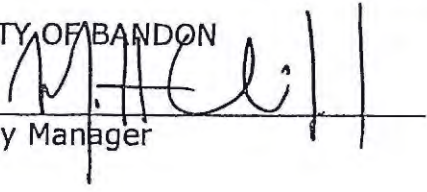
G. Termination

This agreement may be terminated by either party upon thirty (30) days written notice or at any other time by mutual agreement of the parties. In case of breach of this agreement by the City of Bandon, the Landowner may order the immediate suspension of the application of sludge on his property. Notwithstanding the termination or suspension of this agreement, the rights and obligations of each party under Paragraphs D, E, F, and H shall continue in full force and effect.

H. Hold Harmless

It is hereby agreed that the City of Bandon shall indemnify, defend and hold harmless David Leff and his agents and employees from all claims, actions, demands, loss, damage or expense by any person or persons whatsoever arising out of this agreement and/or the application of sludge on Mr. Leff's fields by the City of Bandon. Actions covered by this paragraph include, but are not limited to, actions by governmental officials for the cleanup of hazardous wastes.

CITY OF BANDON

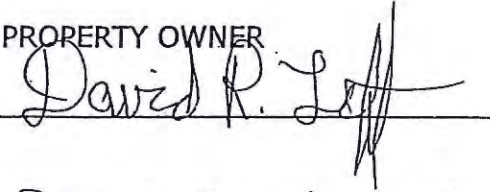
  
City Manager

\_\_\_\_\_  
City Attorney

  
Wastewater Treatment Plant

10/11/00  
Date

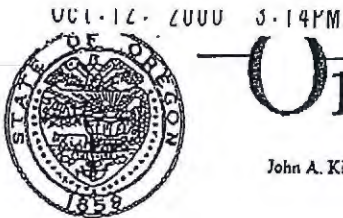
PROPERTY OWNER



87432 Cranberry Creek Ln,

Bandon, Or. 97411-9215

10-11-00  
Date



# Oregon

John A. Kitzhaber, M.D., Governor

NO-0211 Y. 2/3

Department of Environmental Quality  
Western Region Roseburg Office  
725 SE Main  
Roseburg, OR 97470  
(541) 440-3338  
FAX (541) 440-3396

October 11, 2000

Bill Nielson  
Bandon Wastewater Treatment Plant  
PO Box 67  
Bandon OR 97411

Re: File number 5664  
Authorization to Land Apply Biosolids  
David Leff Property  
87432 Cranberry Creek Lane  
Bandon OR  
Twp. 29S S, R. 15W W. Sec. 24 and 25

Bill:

This letter represents approval of your request to apply aerobic biosolids the above referenced property. Approval is subject to criteria detailed in the Oregon Administrative Rules, Chapter 340, Division 50 and the following conditions:

**Responsibility:**

It is the responsibility of Bandon Wastewater Treatment Facility (BWTF) to insure the proper handling and application of all biosolids generated. Transportation of the biosolids to the application site shall be done in such a manner as to prevent leaking or spilling the biosolids onto the highways, streets, roads, waterways or other land surfaces not approved for biosolids application.

**Site Description:**

The site has approximately 30 acres of hay pasture and trees, which can be used for biosolid land application. The site is on the West Side of Highway 101 just south of Bandon, Oregon. The land application of biosolids on this ranch is to help to remediate and stabilize the farm's sandy loam-loamy sand soils. This authorization is good for two years at which time another site visit is required to review the farm practices and crop response to land applied biosolids over the previous two years. This authorization can be renewed in two years as an on going remedial land application practice to help reestablish the soil organic horizon on this farm. This biosolids application site is only that portion of this parcel that is shaded on the enclosed map.

Based upon an evaluation of this property the Department is pleased to grant you authorization to land apply stabilized biosolids subject to the conditions under your National Pollutant Discharge Elimination (NPDES) permit and the following stipulations:



BWTF  
Leff Site  
October 11, 2000  
Page 2 of 3

1. This site is approved for summer application (June 1 through Oct. 31) of biosolids. During biosolid land application, care should be taken to avoid wet soil conditions, which may have occurred as a result of precipitation, especially in low and concave areas of sites. Application is authorized when the temporary water table is at least 12 inches below the ground surface.
2. Biosolids shall be applied evenly and in a manner to prevent ponding or runoff.
3. Biosolids shall not be applied closer than 50 feet to any drainage ditch, channel, pond or waterway or within 200 feet of any well or domestic water source.
4. Biosolids application rate shall not exceed approximately 32,000 gallons/acre/years. Changes in biosolids characteristics or crops management may necessitate appropriate adjustments in the application rate to maintain proper agronomic nitrogen loading (75 to 100 lb. Total N/acre depending upon digester-solids analysis).
5. If other sources of nitrogen are used, the biosolids application rate must be reduced so that commercial nitrogen in combination with biosolids nitrogen does not exceed agronomic loading rate of this site (100 lb. Total N/acre-year).

Site Use Limitations:

1. Controlled access to the biosolids site must be maintained for a period of 12 months following biosolids application.
2. Grazing animals should not be allowed on pasture within 30 days following biosolids application and 90 days for lactating animals.

Accidental Spillage:

The permittee shall immediately clean up any spillage of biosolids and notify the DEQ Roseburg office at 440-3338 of any such occurrences. Spillage which cannot be completely cleaned up shall be covered with hydrated lime (calcium Hydroxide) or lime (calcium oxide). A 50-lb. bag of liming material shall remain available during transportation of the biosolids.

Monitoring:

1. BWTF shall maintain daily records of accumulated biosolids application. Daily land application shall be kept on a field grid map or other easily readable system. BWTF is responsible for tracking the land application of biosolids on daily basis (number of dry pounds Nitrogen land applied per acre).

BWTF  
Leff Site  
October 11, 2000  
Page 3 of 3

2. A copy of this authorization letter and the biosolids certification statements shall be carried with all biosolids s that are to be land applied. The responsible parties who apply biosolids shall review these documents prior to land applying biosolids to this site.
3. BWTF shall provide the DEQ with monthly summaries of biosolids land application activities along with a current BWTF biosolids analysis in BWTF's annual report due February 19 of each year.
4. A copy of this site authorization letter and a signed biosolid pathogen and vector attraction reduction certification statement shall accompany all biosolids land applied at this site.

If you have any questions regarding this approval please call me at 440-3338.

Sincerely,

*Paul Kennedy*

Paul Kennedy, RS  
Environmental Specialist

cc: Biosolids Program, DEQ-Portland





## DEPARTMENT OF ENVIRONMENTAL QUALITY

## ROSEBURG REGIONAL OFFICE

725 SE Main Street, Roseburg OR 97470

FAX

Date: 10-12-2000

Number of pages including cover sheet 4

To:

BILL NIELSEN

BARIDON STA

RUBEN KRETZSCHMAR

COOS BAY DEQ

Phone: 347-9122

Fax phone: 541-347-1415

CC:

From:

PAUL KENNEDY

RSB DEQ

Phone: (541) 440-3338

Fax phone: (541) 440-3396

REMARKS:

☐ Urgent☐ For your review☐ Reply ASAP☐ Please comment

John A. Kitzhaber, M.D., Governor

Western Region Eugene Office

165 East 7<sup>th</sup> Avenue, Suite 100

Eugene, OR 97401

(541) 686-7838

FAX (541) 686-7551

OTRS 1-800-735-2900

October 3, 2014

Bill Nielsen, Wastewater Supervisor  
City of Bandon  
P.O. Box 67  
80 Fillmore Ave  
Bandon OR 97411

RE: City of Bandon Biosolids Management Plan Approval  
File No. 5664  
NPDES No. 101546  
Coos County

Dear Mr. Bill Nielsen:

The Department of Environmental Quality (Department) has reviewed the City of Bandon's updated 2014 Biosolids Management Plan. Based upon review of the Biosolids Management Plan, the Department is pleased to advise the City that its Biosolids Management Plan is approved subject to the following conditions:

1. The City shall not make any significant changes in its solids handling activities that could substantially change the quality, or quantity of Biosolids, or land application activities outlined in the Biosolids Management Plan.
2. The City shall notify the Department of the connection of any new Significant Industrial User (SIU) to provide the Department the opportunity to evaluate the impact on Biosolids quality, or quantity.
3. The City shall maintain detailed records adequate to characterize its solids stabilization, Biosolids handling, and land application activities.
4. Annually, by February 19<sup>th</sup>, a comprehensive report shall be submitted to the Department's Eugene office that describes solid handling for the previous year. At a minimum, the report shall include the following:
  - Data on each site that received Biosolids that demonstrates biosolids were applied at agronomic rates and all other required management practices were followed.
  - Information sufficient to demonstrate that biosolids met pathogen reduction requirements required under 40 CFR § 503.32 and vector attraction standards required under 40 CFR § 503.33.
  - A detailed description of any violation of 40CFR § 503, or OAR Chapter 340 Division 50 and remedial actions taken to prevent the recurrence of similar violations in the future.



5. For Class B biosolids, application sites must meet the site selection criteria set forth in OAR 340-050-0070 and must be located within Coos County. For proposed new application sites that are deemed by the DEQ to be sensitive with respect to residential housing, runoff potential or threat to groundwater, an opportunity for public comment shall be provided in accordance with OAR 340-050-0030.
6. Under OAR 340-050-0030(3) this site authorization is a part of Bandon's Biosolid Management Plan (BMP) are enforceable under Bandon's NPDES permit; Under OAR 340-050-0031(2) and (3) these plans are part of your NPDES permit shall remain in effect until your NPDES expires and/or the site is terminated.

If you have any questions about this Biosolids Management Plan approval please call me at (541) 687-7439.

Sincerely,

Paul Kennedy, NRS3  
Water Quality Program  
Western Region DEQ—Eugene Office

CC: Steve Nichols, WQ Program, Coos Bay DEQ  
File