FORM GEN. 160 (Rev. 6-80)

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

DATE: February 25, 2015

TO: Timeyin Dafeta, Plant Manager
Hyperion Treatment Plant

Mark Starr, Plant Manager
Terminal Island Water Reclamation Plant

FROM: Masahiro Dojiri, Division Manager
Environmental Monitoring Division

SUBJECT: **ASSESSMENT OF BIOSOLIDS FOR JANUARY 2015**

This report contains data from the analysis of composite biosolids and digested sludge samples collected in January 2015 at the Hyperion Treatment Plant and Terminal Island Water Reclamation Plant, respectively. The samples were tested in accordance with EPA's Part 503 Sewage Sludge Regulations, Tables 1 and 3, to furnish a beneficial use assessment. Analyses were also performed to determine if pathogen and vector control requirements of Part 503 were met.

Hyperion Treatment Plant

The metals and nutrient analyses data are presented in Tables 1 and 2 of this report. All metals detected in the composite sample were below their respective ceiling and pollutant concentration limits listed in EPA 40 CFR 503.13, Tables 1 and 3. Also for the month, fecal coliform and *Salmonella* results were below the EPA 40 CFR Part 503 limit for Class A biosolids (Table 6). The January helminth ova and enteric virus results were below the limits for Class A biosolids. The January dioxin and polychlorinated biphenyl results were non-detect (Table 5).

Terminal Island Water Reclamation Plant

Beginning in July 2010, TIWRP began injecting digested sludge into TIRE with a goal of 100% injection, but may occasionally produce biosolids due to operational logistics.

For January 2015, the metals and nutrient analyses data are presented in Tables 3 and 4. All metals detected in the composite sample were below their respective aforementioned limits. Fecal coliform was below the EPA 40 CFR Part 503 limit for Class A biosolids (Table 7). *Salmonella* was not tested for January because the sample bottle was damaged during processing. As Terminal Island digested sludge is not being managed in Kern County, fecal coliform testing alone is approved for Class A compliance. January dioxin and polychlorinated biphenyl results were non-detect (Table 5).

Graphs of the concentrations of selected metals in HTP and TIWRP biosolids and digested sludge over the past 24 months are shown in Figures 1 through 10.

If you have any questions about this report, please contact Kay Yamamoto of my staff at (310) 648-5727.

MAD:jh

Attachment: Appendix 1 - Arizona ELAP-Certified Monthly Biosolids Monitoring Report with Class A and B Microbiological Requirements.

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Table 1. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT HYPERION TREATMENT PLANT

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
			mg/kg dry weight									
Jan-15	8.2	27.6	ND	8.15	45.7	728	17.2	22.1	1.16	37.7	4.46	942
Dec-14	8.3	26.7	ND	11.1	40.4	794	21.6	22.8	1.56	39.3	5.58	996
Nov-14	8.3	28.0	ND	4.75	41.4	864	15.3	12.5	1.71	35.6	ND	1,060
Oct-14	8.6	27.1 ^	ND	8.12	47.6	893	26.8	24.4	1.44	35.4	3.76	1,050
Sep-14	8.1	33.2	ND	8.19	39.8	741	20.3	19.4	1.05	30.7	2.77	907
Aug-14	8.2	26.6	ND	9.32	55.3	868	25.0	22.4	1.62	33.3	3.46	1,110
Jul-14	8.4	27.3	1.06	10.3	44.0	802	18.5	27.0	1.72	37.0	ND	1,110
Jun-14	8.4	25.8	1.74	11.4	52.3	899	20.3	28.7	1.63	35.5	ND	1,310
May-14	8.5	27.4	ND	11.0	52.6	880	19.1	26.6	1.58	38.0	ND	1,380
Apr-14	8.2	28.6	ND	10.2	47.9	748	18.1	23.9	2.01	36.4	ND	1,230
Mar-14	8.4	29.2	ND	8.60	51.7	791	18.9	28.2	1.35	41.1	ND	1,360
Feb-14	8.5	28.1	ND	10.6	56.2	811	15.9	36.3	1.27	44.5	ND	1,410
Average	8.3	28.0	0.234	9.31	47.9	818	19.8	24.5	1.51	37.0	1.67	1,150
Maximum	8.6	33.2	1.74	11.4	56.2	899	26.8	36.3	2.01	44.5	5.58	1,410
Minimum	8.1	25.8	ND	4.75	39.8	728	15.3	12.5	1.05	30.7	ND	907
Ceiling Conc.*			75	85	***	4300	75	840	57	420	100	7500
Pollutant Conc.**			41	39	***	1500	***	300	17	420	100	2800

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^ The value represents the average of two %TS analysis performed for the month
* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.
** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
*** Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995

Table 2. HTP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
Jan-15	27.6	3,800	40,600	43,100	1,570	7,170	18.1	28,600	1,160	7,610	39,100
Dec-14	26.7	4,500	43,400	42,700	1,920	6,930	22.5	29,100	1,460	7,870	37,200
Nov-14	28.0	4,400	42,500	39,300	1,080	7,000	10.7	28,600	1,350	7,680	41,100
Oct-14	27.1 ^	4,300	40,600	44,600	1,310	7,120	18.5	31,800	1,340	8,410	39,900
Sep-14	33.2	3,700	34,600	37,300	1,340	5,930	6.02	23,000	1,170	6,900	32,200
Aug-14	26.6	4,500	37,600	49,600	1,710	6,390	22.6	28,100	1,560	7,260	46,600
Jul-14	27.3	4,000	36,100	45,100	1,320	5,860	14.7	28,200	1,220	8,530	48,400
Jun-14	25.8	4,400	41,500	45,000	1,450	6,670	11.6	25,600	1,500	8,640	40,300
May-14	27.4	5,100	42,300	43,800	1,750	6,820	7.30	25,200	1,530	8,250	39,400
Apr-14	28.6	4,600	36,700	42,300	1,170	5,700	17.5	26,700	1,070	8,040	45,100
Mar-14	29.2	5,000	40,400	40,800	1,490	6,230	27.4	25,300	1,170	7,120	42,500
Feb-14	28.1	4,800	40,900	42,700	1,280	6,410	17.8	26,300	1,210	8,330	36,300
Average	28.0	4,430	39,800	43,000	1,450	6,520	16.2	27,200	1,310	7,890	40,700
Maximum	33.2	5,100	43,400	49,600	1,920	7,170	27.4	31,800	1,560	8,640	48,400
Minimum	25.8	3,700	34,600	37,300	1,080	5,700	6.02	23,000	1,070	6,900	32,200

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Table 3. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT TERMINAL ISLAND WATER RECLAMATION PLANT

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
	mg/kg dry weight											
Jan-15	7.7	1.7	ND	3.49	ND	153	30.2	15.7	1.20	ND	29.7	826
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	7.6	1.8	ND	ND	20.7	197	25.1	7.82	2.06	22.3	27.4	855
Oct-14	7.6	1.8 ^	ND	3.80	ND	198	28.3	12.5	1.00	ND	42.4	837
Sep-14	7.6	1.5	ND	4.05	ND	255	33.1	14.2	0.932	ND	46.6	885
Aug-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-14	7.6	1.6	ND	3.16	ND	178	22.8	12.7	1.15	ND	44.3	753
Jun-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-14	7.6	1.5	ND	4.64	ND	178	23.2	15.9	0.881	ND	51.7	815
Apr-14	7.5	1.5	ND	4.08	ND	120	17.0	ND	0.891	ND	33.3	769
Mar-14	7.2	1.5	ND	3.92	ND	156	21.6	ND	0.660	ND	40.5	706
Feb-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Average	7.6	1.6	ND	3.39	2.59	179	25.2	9.85	1.10	2.79	39.5	806
Maximum	7.7	1.8	ND	4.64	20.7	255	33.1	15.9	2.06	22.3	51.7	885
Minimum	7.2	1.5	ND	ND	ND	120	17.0	ND	0.660	ND	27.4	706
Ceiling Conc.*			75	85	***	4300	75	840	57	420	100	7500
Pollutant Conc.**			41	39	***	1500	***	300	17	420	100	2800

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^ The value represents the average of two %TS analysis performed for the month
* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.
** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
*** Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995

NS No Sampling Required
ND Not Detected

Table 4. TIWRP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
Jan-15	1.7	2,700	25,800	40,700	10,300	11,200	ND	29,100	41,100	67,400	33,600
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	1.8	3,700	27,700	35,400	ND	12,400	ND	30,700	45,900	53,500	30,700
Oct-14	1.8 ^	2,900	28,600	40,600	9,460	11,100	ND	32,000	41,500	28,200	51,700
Sep-14	1.5	4,100	31,600	45,900	10,700	13,700	ND	26,600	51,000	52,900	41,100
Aug-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-14	1.6	3,200	25,400	46,400	9,110	11,000	ND	17,000	46,100	54,000	11,100
Jun-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-14	1.5	4,100	25,900	42,700	11,100	12,600	ND	25,800	50,900	51,300	27,200
Apr-14	1.5	3,800	25,200	41,700	10,900	11,400	ND	19,600	50,200	61,300	29,900
Mar-14	1.5	3,200	25,500	37,900	10,200	10,100	ND	26,100	50,100	58,200	20,700
Feb-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Average	1.6	3,500	27,000	41,400	8,980	11,700	ND	25,900	47,100	53,300	30,800
Maximum	1.8	4,100	31,600	46,400	11,100	13,700	ND	32,000	51,000	67,400	51,700
Minimum	1.5	2,700	25,200	35,400	ND	10,100	ND	17,000	41,100	28,200	11,100

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^ The value represents the average of two %TS analysis performed for the month
NS No Sampling Required

Table 5. CONCENTRATIONS OF DIOXIN AND PCBs IN HTP AND TIWRP BIOSOLIDS

Sampling Date	Dioxin 2,3,7,8-TCDD (ppb ng/g wet wt.)	PCBs**							Total PCBs***
		AR 1016	AR 1221	AR 1232	AR 1242	AR 1248	AR 1254	AR 1260	
		ppm (mg/kg) wet weight							ppm (mg/kg wet wt.)
HTP BIOSOLIDS									
Jan-15	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Dec-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Nov-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Oct-14	<0.00100 ^^	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Sep-14	<0.50000 *	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
Aug-14	<0.50000 *	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
Jul-14	<0.00100 ^^	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
Jun-14	<0.50000 *	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
May-14	<0.50000 *	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Apr-14	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Mar-14	<0.50000 *	<0.00126	<0.02100	<0.01600	<0.00987	<0.00787	<0.00741	<0.00349	ND
Feb-14	<0.50000 *	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
TIWRP BIOSOLIDS / DIGESTED SLUDGE @, #									
Jan-15	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Oct-14	<0.00100 ^^	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Sep-14	<0.50000 *	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
Aug-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-14	<0.00100 ^^	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
Jun-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-14	<0.50000 *	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Apr-14	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Mar-14	<0.50000 *	<0.00126	<0.02100	<0.01600	<0.00987	<0.00787	<0.00741	<0.00349	ND
Feb-14	NS	NS	NS	NS	NS	NS	NS	NS	NS

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* Low Resolution 2,3,7,8-TCDD analysis by method EPA 8280A.
^^ High resolution 2,3,7,8-TCDD analysis by method EPA 1613B.
** Polychlorinated biphenyls (Arochlors)
*** Sum of AR 1016, AR 1221, AR 1232, AR 1242, AR 1248, AR 1254, AR 1260

ND Not Detected
NS No Sampling Required
@ Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.
\# TIWRP changed from analyzing Biosolids to analyzing Digested Sludge in July 2010

Note: California Title 22 lists 10 ppb for Dioxin and 50 ppm for PCBs as the Total Threshold Limit Concentration (TTLC) for hazardous waste

Table 6. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Sampling Date	%TS	FECAL COLIFORM MPN/gram TS (dry wt)		SALMONELLA, sp. MPN/4 grams TS (dry wt)		HELMINTH OVA Viable Helminth Ova/4 grams TS (dry wt)			ENTERIC VIRUS PFU/4 grams TS (dry wt)		
		Silo#/Farm		Silo#/Farm		Raw Sludge	Silo#/Farm		Raw Sludge	Silo#/Farm	
January 6, 2015	26.8	Farm	<6.7	Farm	<1.5	6.3	Farm	<0.5	6.0	Farm	<0.5
December 9, 2014	27.1	Silo #2	16.6	Silo #2	<1.5	5.5	Silo #2	<0.5	8.2	Silo #2	<0.5
November 4, 2014	25.9	Silo #2	<6.9	Silo #2	<1.6	6.0	Silo #2	<0.5	15.2	Silo #2	<0.5
October 7, 2014	26.4	Farm	<6.8	Farm	<1.6	9.4	Farm	<0.5	13.2	Farm	<0.5
September 9, 2014	26.6	Silo #2	<6.8	Silo #2	<1.3	7.5	Silo #2	<0.5	5.4	Silo #2	<0.5
August 5, 2014	26.7	Silo #2	<6.7	Silo #2	<1.6	11.7	Silo #2	<0.5	28.9	Silo #2	<0.5
July 8, 2014	25.6	Farm	<7.8	Farm	<1.7	4.4	Farm	<0.5	24.8	Farm	<0.5
June 3, 2014	25.4	Silo	<7.9	Silo	<1.7	4.7	Silo	<0.5	14.7	Silo	<0.5
May 6, 2014	27.8	Silo #5	<7.2	Silo #5	<1.5	6.4	Silo #5	<0.5	14.8	Silo #5	<0.5
April 8, 2014	27.8	Farm	<7.2	Farm	<1.5	6.9	Farm	<0.5	21.6	Farm	<0.5
March 4, 2014	28.3	Silo #5	<7.1	Silo #5	<1.4	6.8	Silo #5	<0.4	20.3	Silo #5	<0.5
February 4, 2014	27.8	Silo #5	14.4	Silo #5	<1.5	8.9	Silo #5	<0.5	32.9	Silo #5	<0.4
Requirement*			<1000		<3			<1			<1

* EPA 40 CFR Part 503 Class A requirements
NA Data not yet available from Biovir.
NS No Sampling Required

Table 7. TIWRP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Sampling Date	TOTAL SOLIDS		FECAL COLIFORM		SALMONELLA, sp.	
	%		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)	
	Silo#/Farm		Silo#/Farm		Silo#/Farm	
	6 Times/Year@		6 Times/Year@		Quarterly	
Jan-15	TIWRP Digester Sludge	1.60	TIWRP Digester Sludge	<11.3	TIWRP Digester Sludge	NT
Dec-14	NS	NS	NS	NS	NS	NS
Nov-14	TIWRP Digester Sludge	1.83	TIWRP Digester Sludge	<9.8	TIWRP Digester Sludge	<1.6
Oct-14	NS	NS	NS	NS	NS	NS
Sep-14	TIWRP Digester Sludge	1.61	TIWRP Digester Sludge	<11.2	TIWRP Digester Sludge	<2.0
Aug-14	NS	NS	NS	NS	NS	NS
Jul-14	TIWRP Digester Sludge	1.49	TIWRP Digester Sludge	13.4	TIWRP Digester Sludge	<2.1
Jun-14	NS	NS	NS	NS	NS	NS
May-14	TIWRP Digester Sludge	1.67	TIWRP Digester Sludge	<12.0	TIWRP Digester Sludge	<1.6
Apr-14	NS	NS	NS	NS	NS	NS
Mar-14	TIWRP Digester Sludge	1.42	TIWRP Digester Sludge	<14.1	TIWRP Digester Sludge	<2.3
Feb-14	NS	NS	NS	NS	NS	NS
Requirement*				<1000		<3

* EPA 40 CFR Part 503 Class A requirements
NS No Sampling Required
NT Not Tested (sample bottle damaged during processing). Please note that Terminal Island bisolids are not managed at Kern County; therefore, fecal coliform testing alone is approved by Class A regulations.
@ Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.

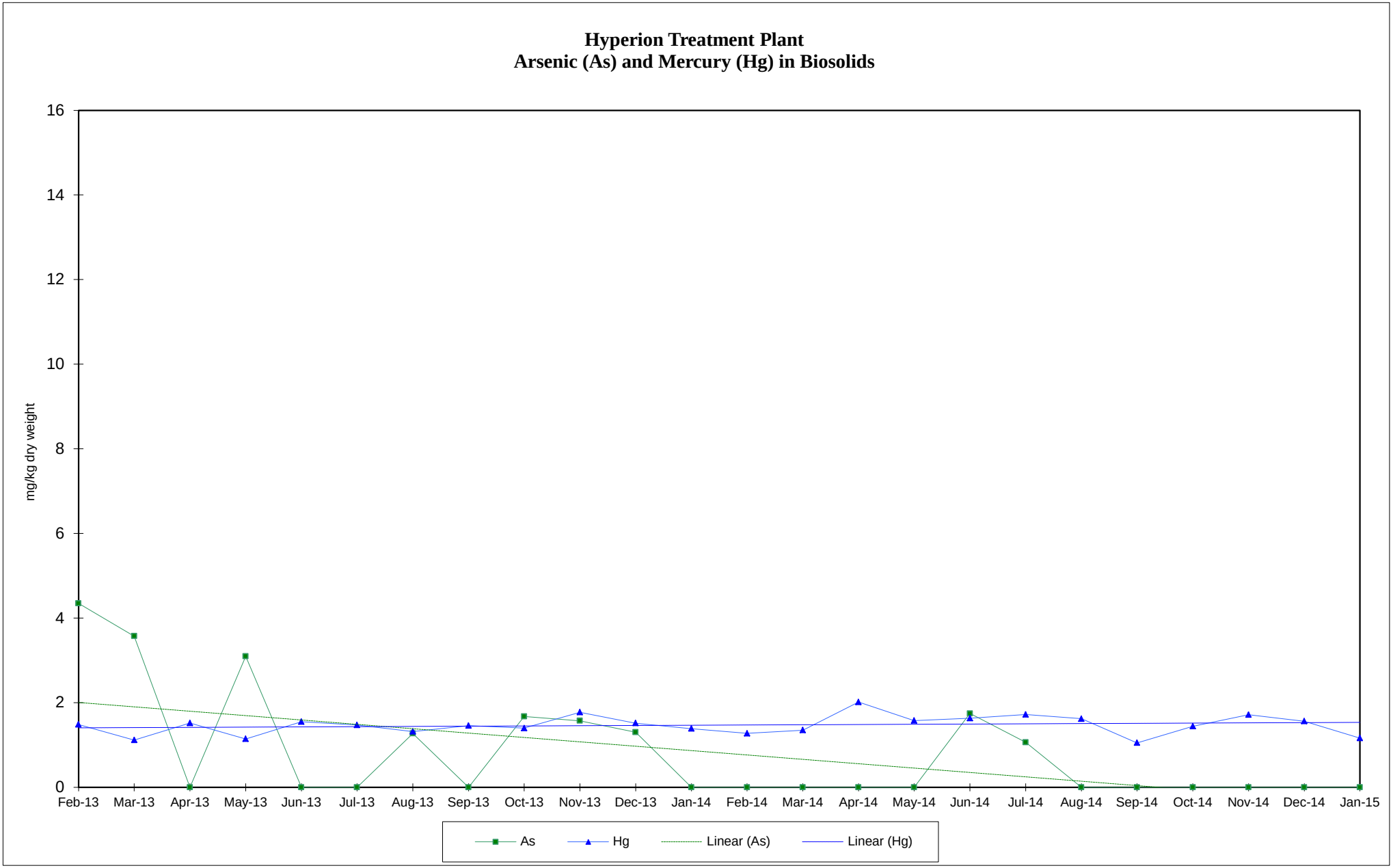

Figure 1. Concentrations of arsenic and mercury in HTP biosolids from February 2013 to January 2015

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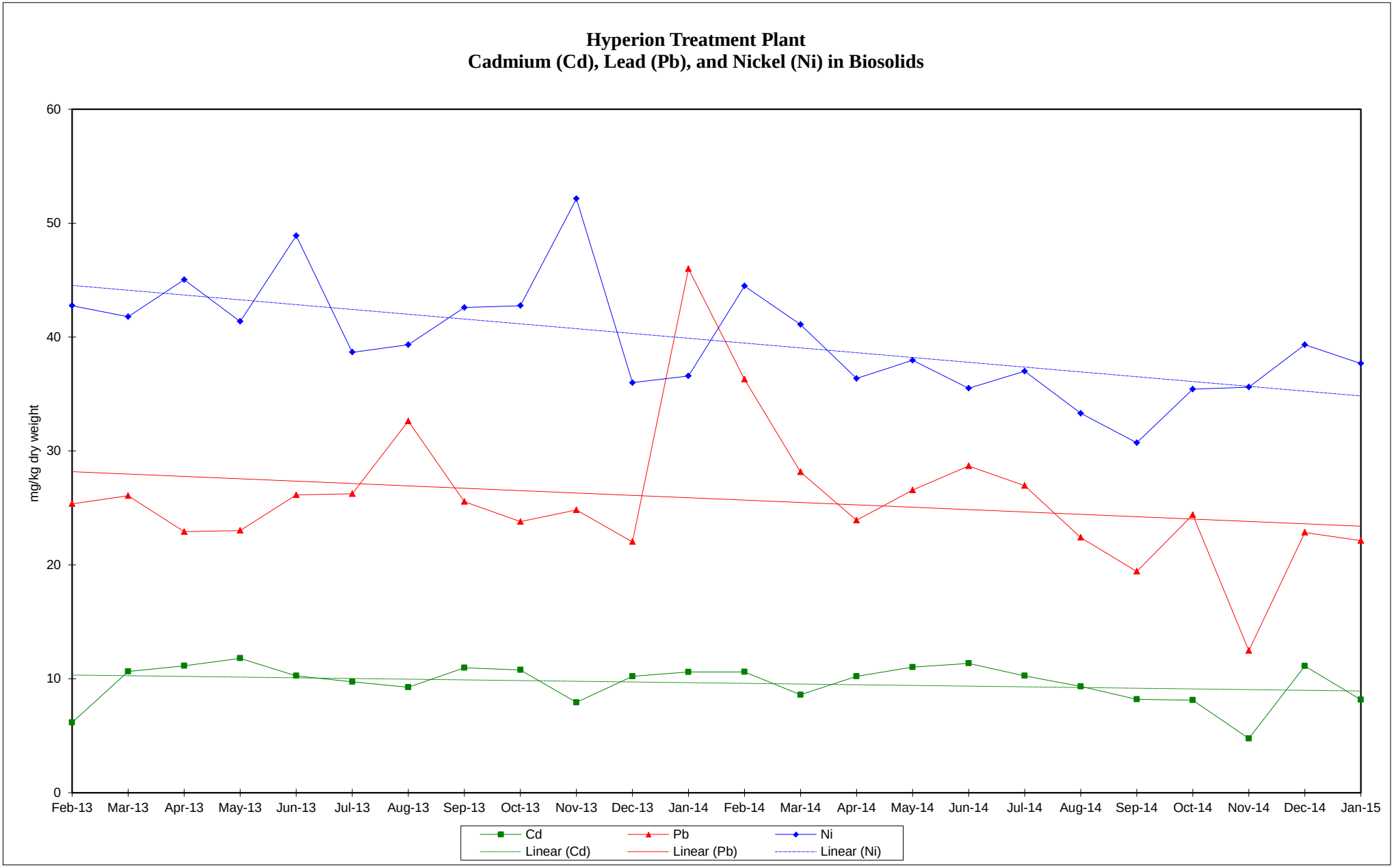

Figure 2. Concentrations of cadmium, lead, and nickel in HTP biosolids from February 2013 to January 2015

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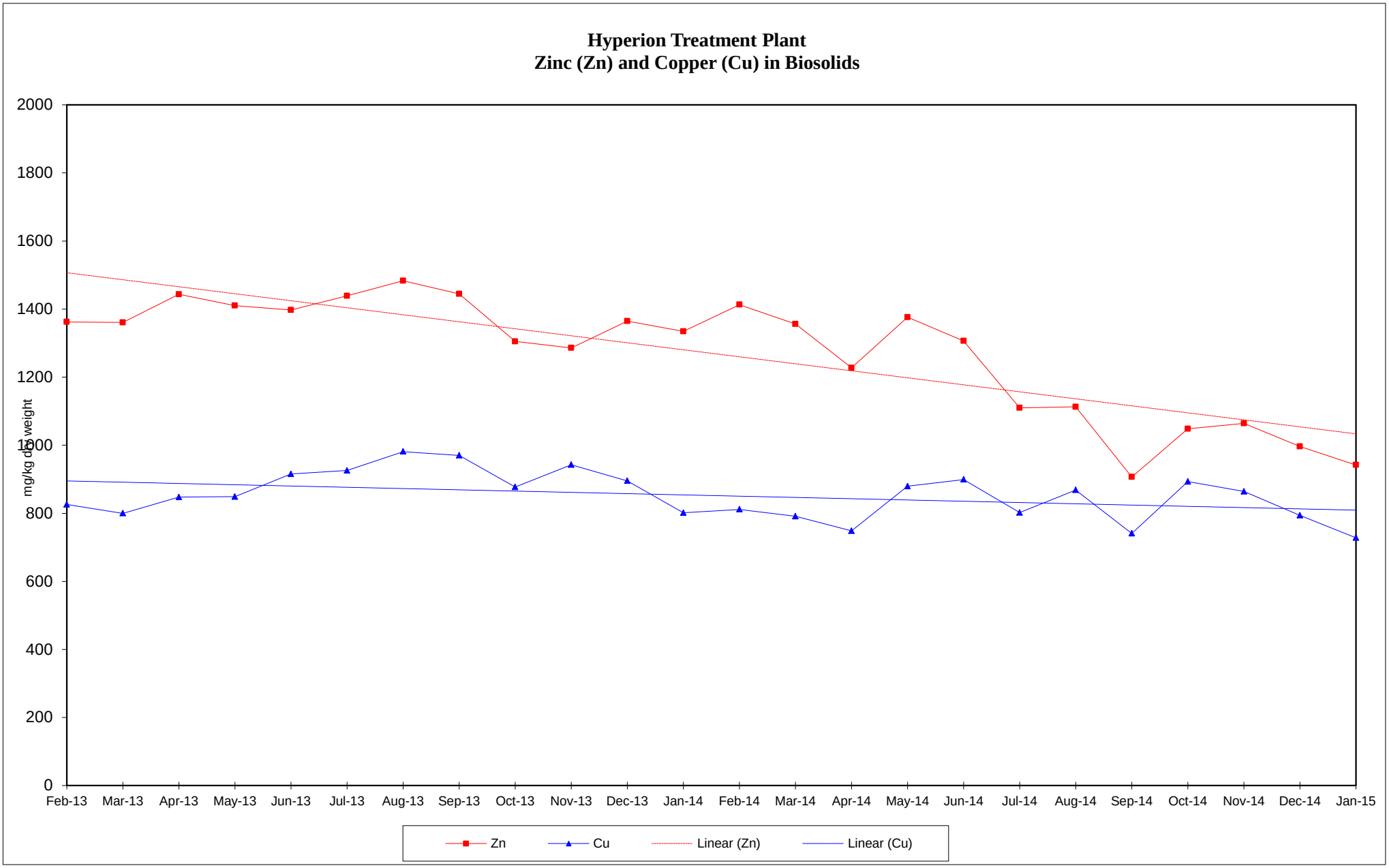

Figure 3. Concentrations of zinc and copper in HTP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

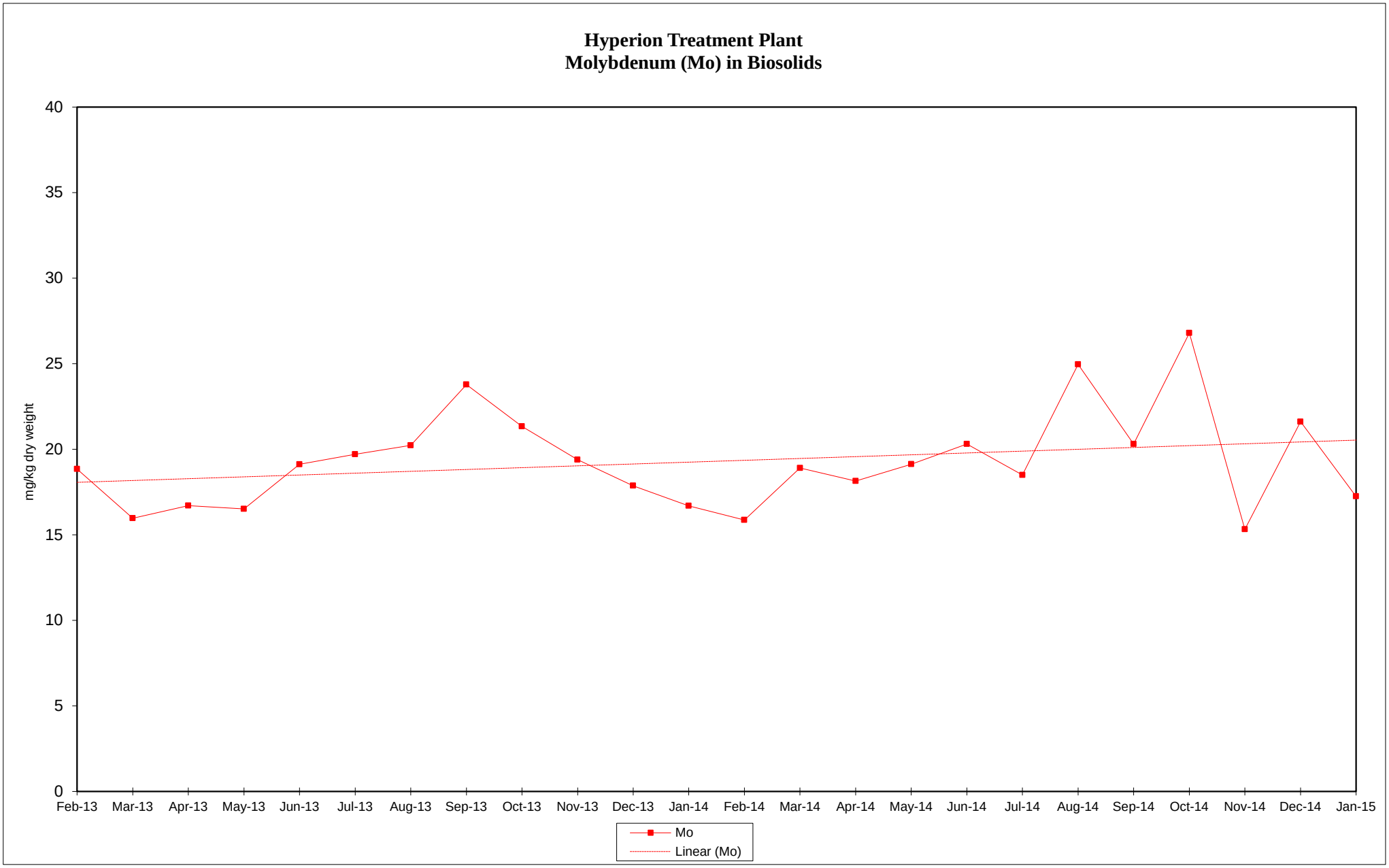

Figure 4. Concentrations of molybdenum in HTP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

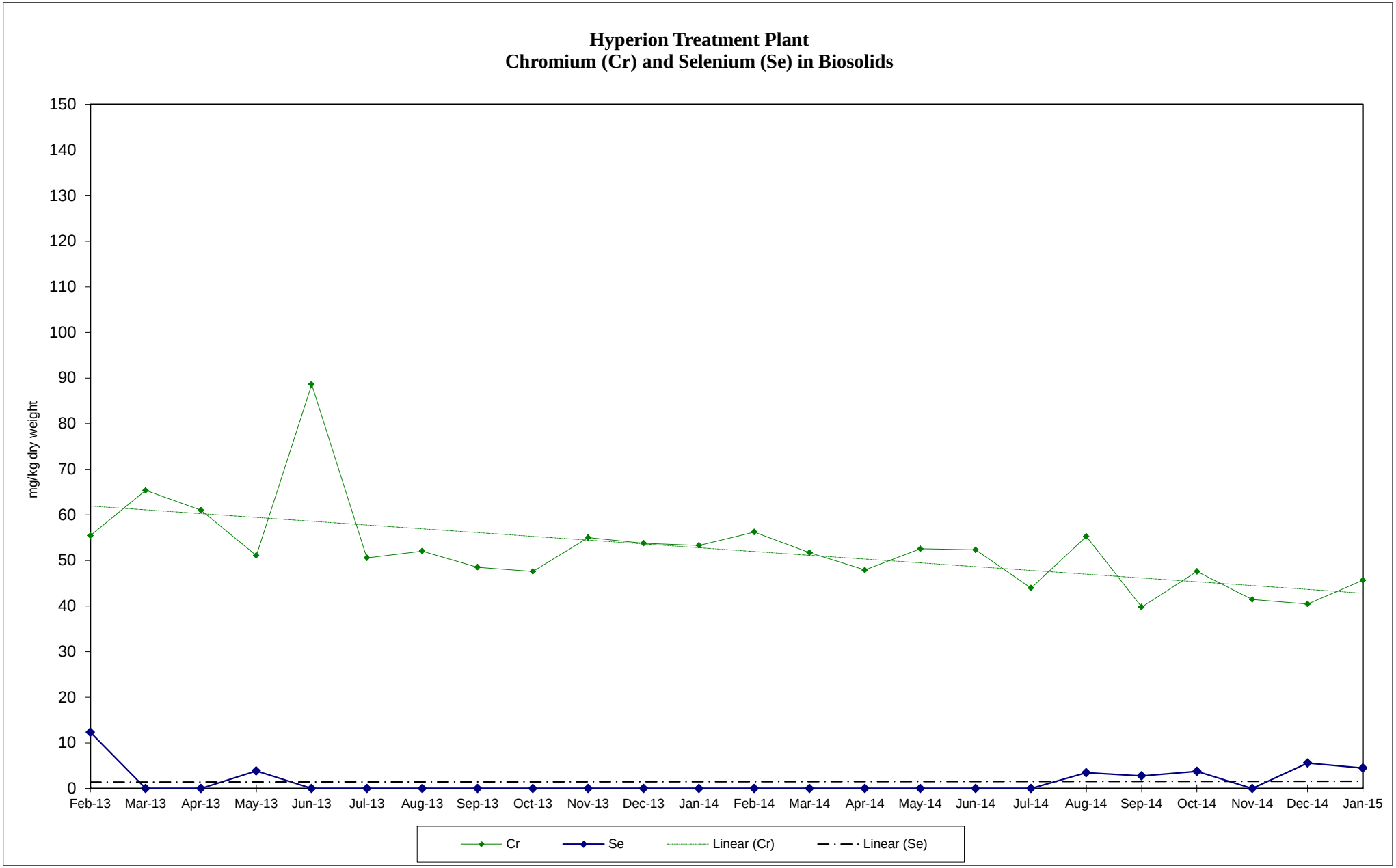

Figure 5. Concentrations of chromium and selenium in HTP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

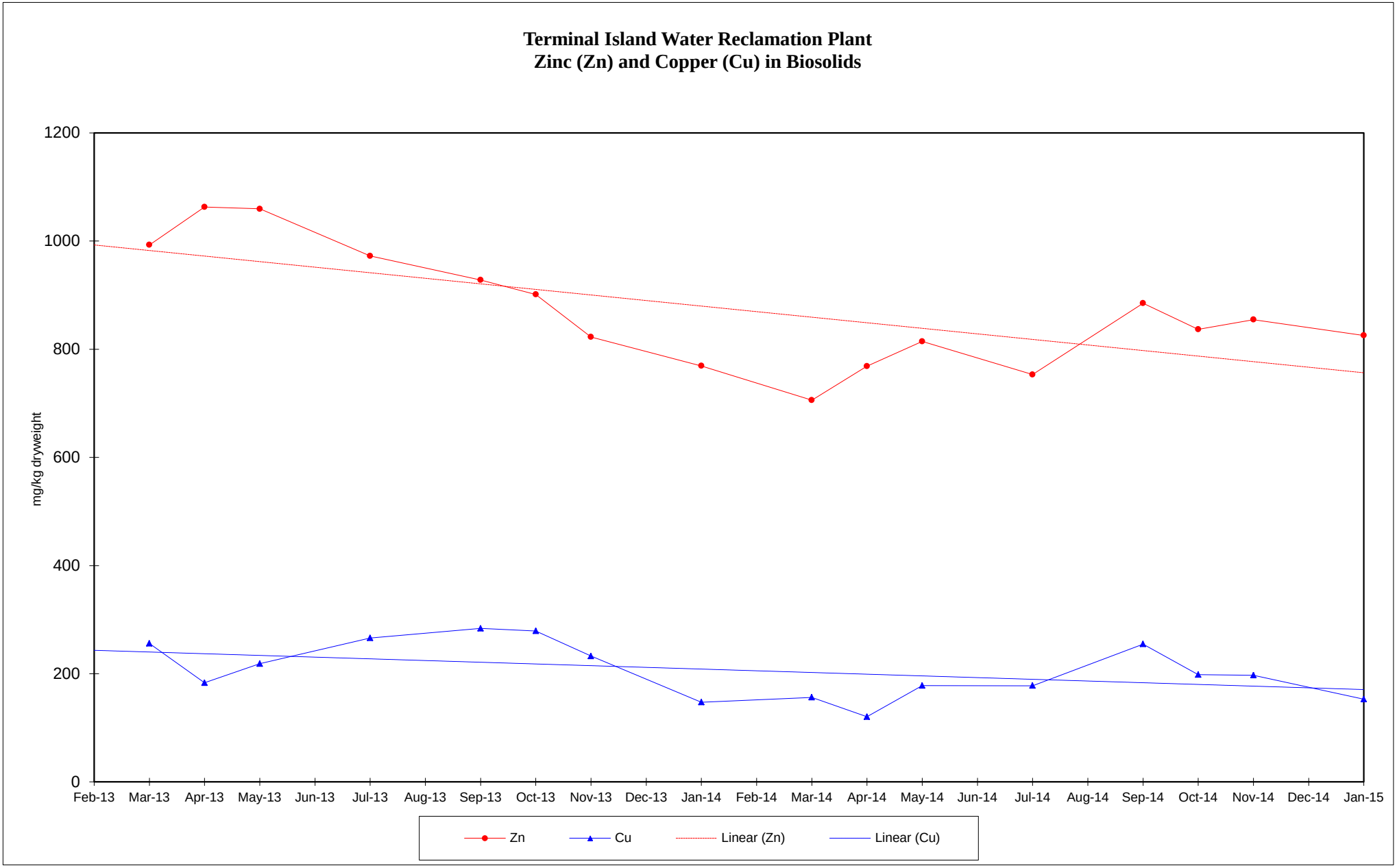

Figure 6. Concentrations of zinc and copper in TIWRP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

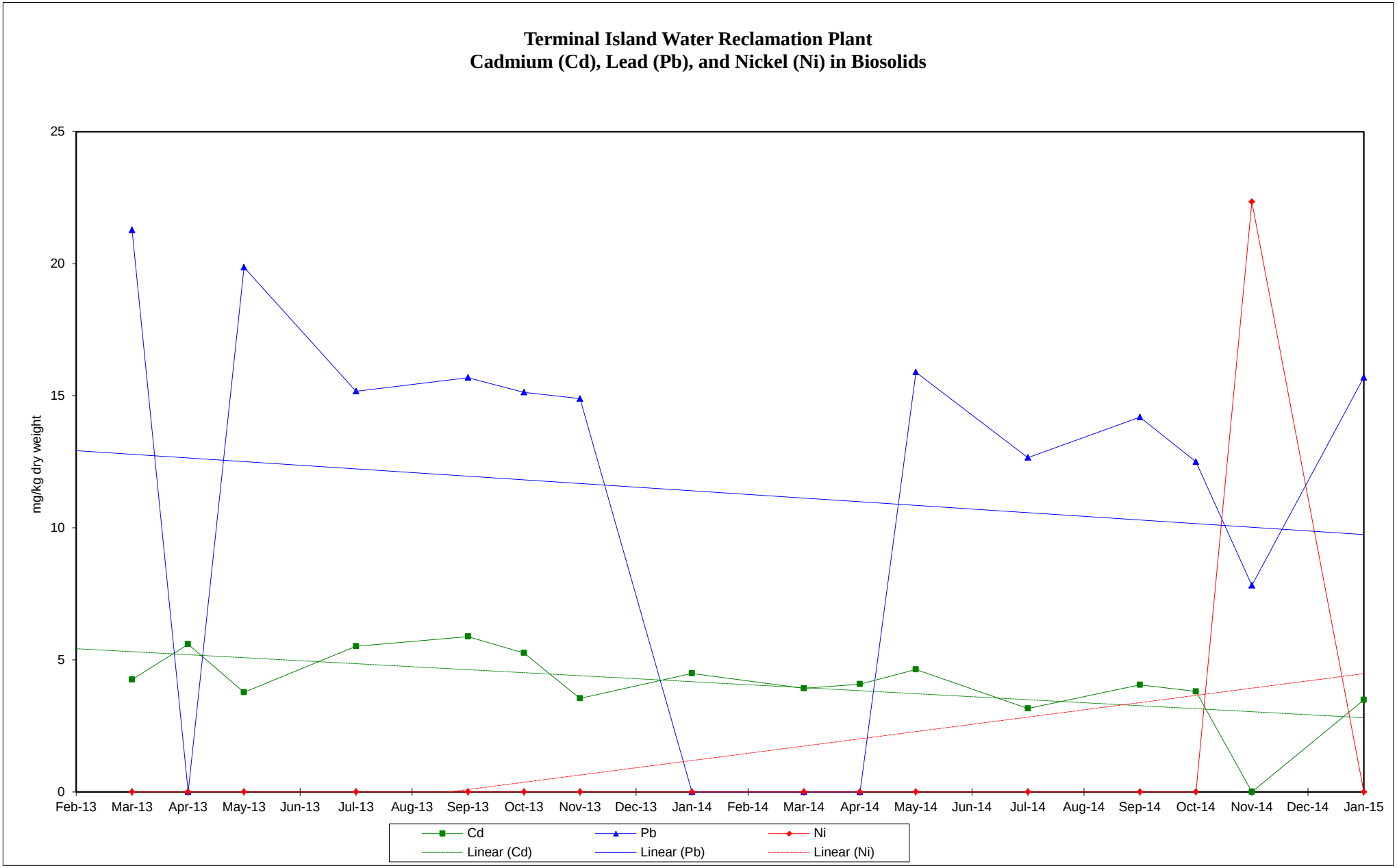

Figure 7. Concentrations of cadmium, lead, and nickel in TIWRP biosolids from February 2013 to January 2015

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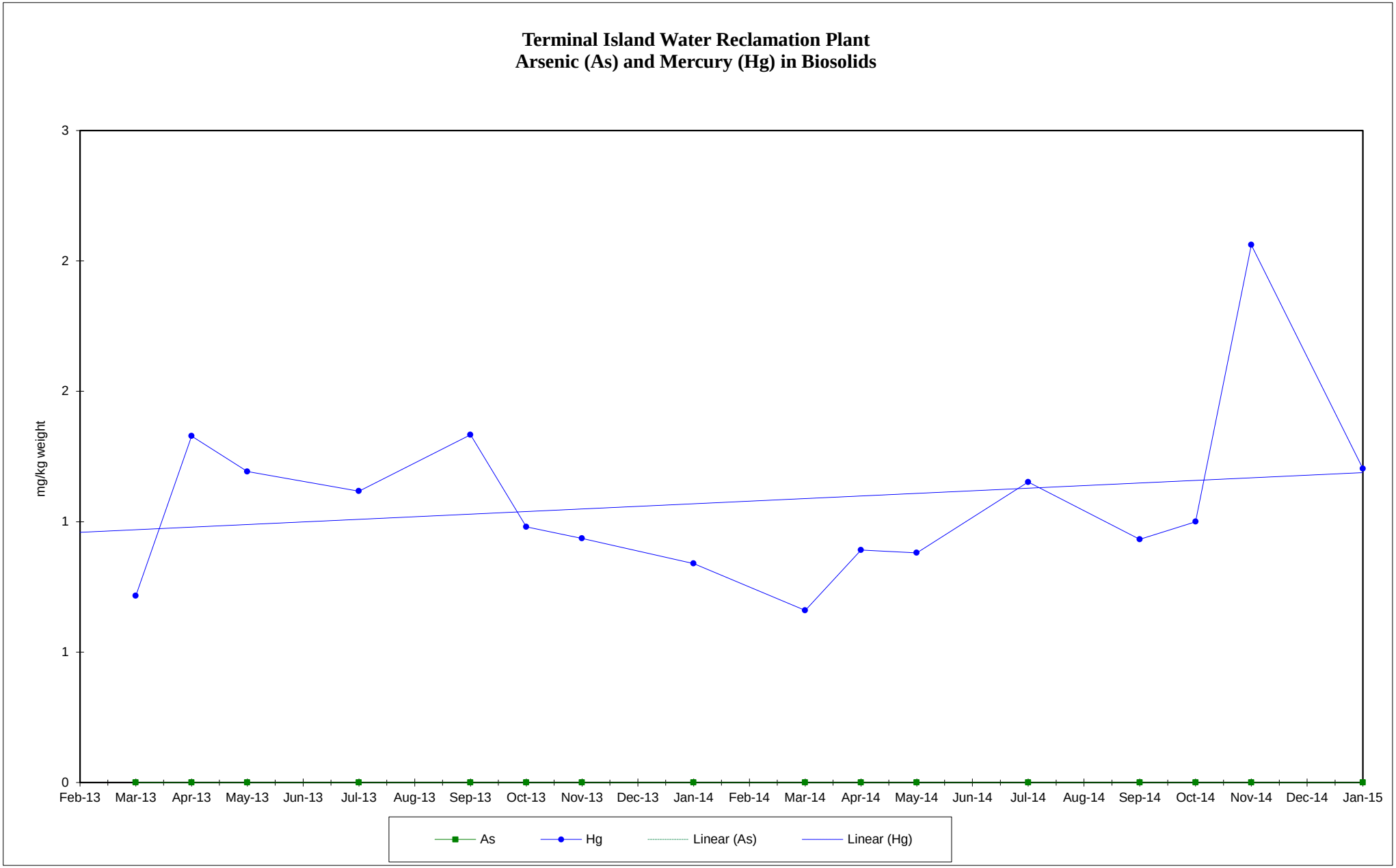

Figure 8. Concentrations of arsenic and mercury in TIWRP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

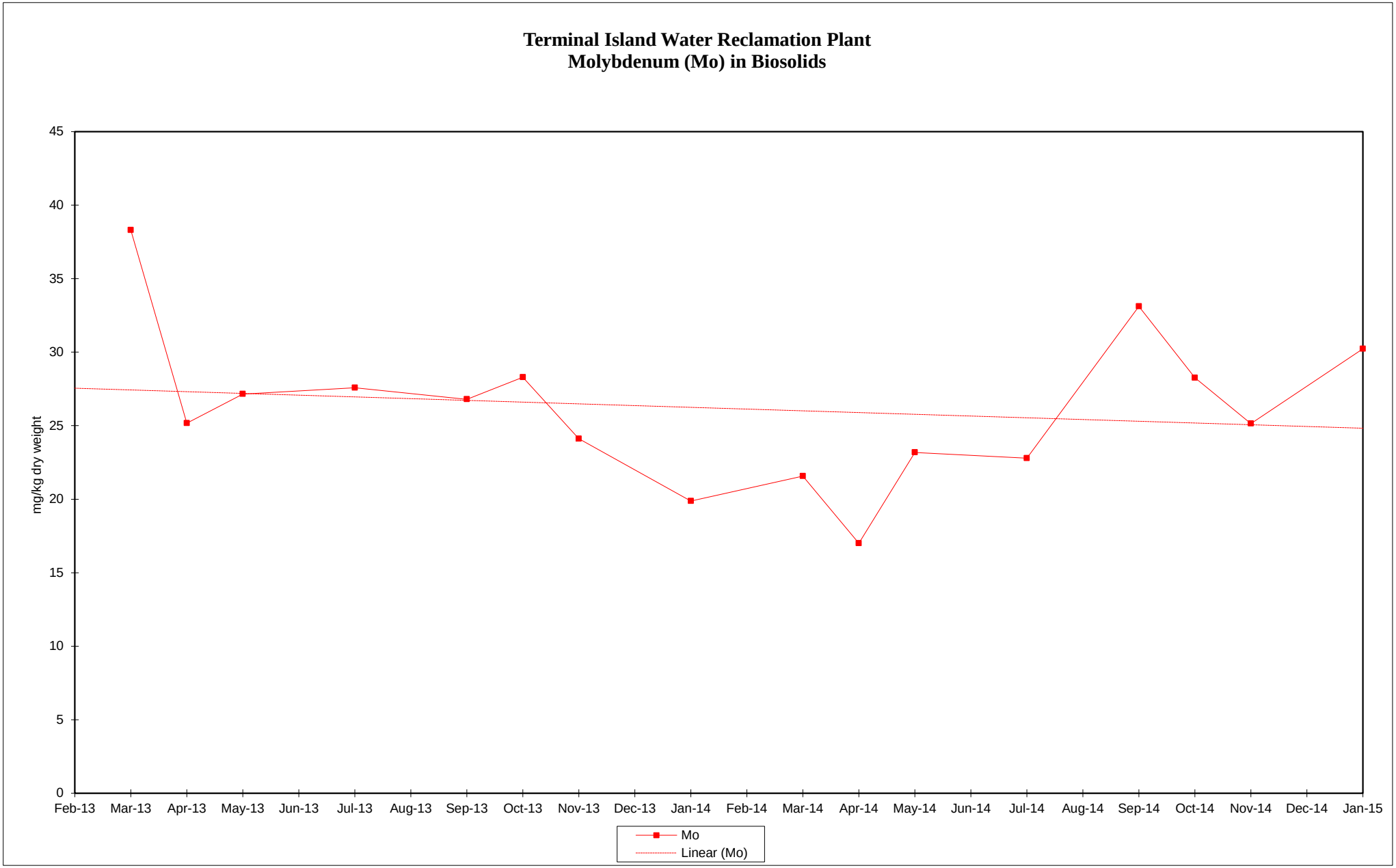

Figure 9. Concentrations of molybdenum in TIWRP Biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

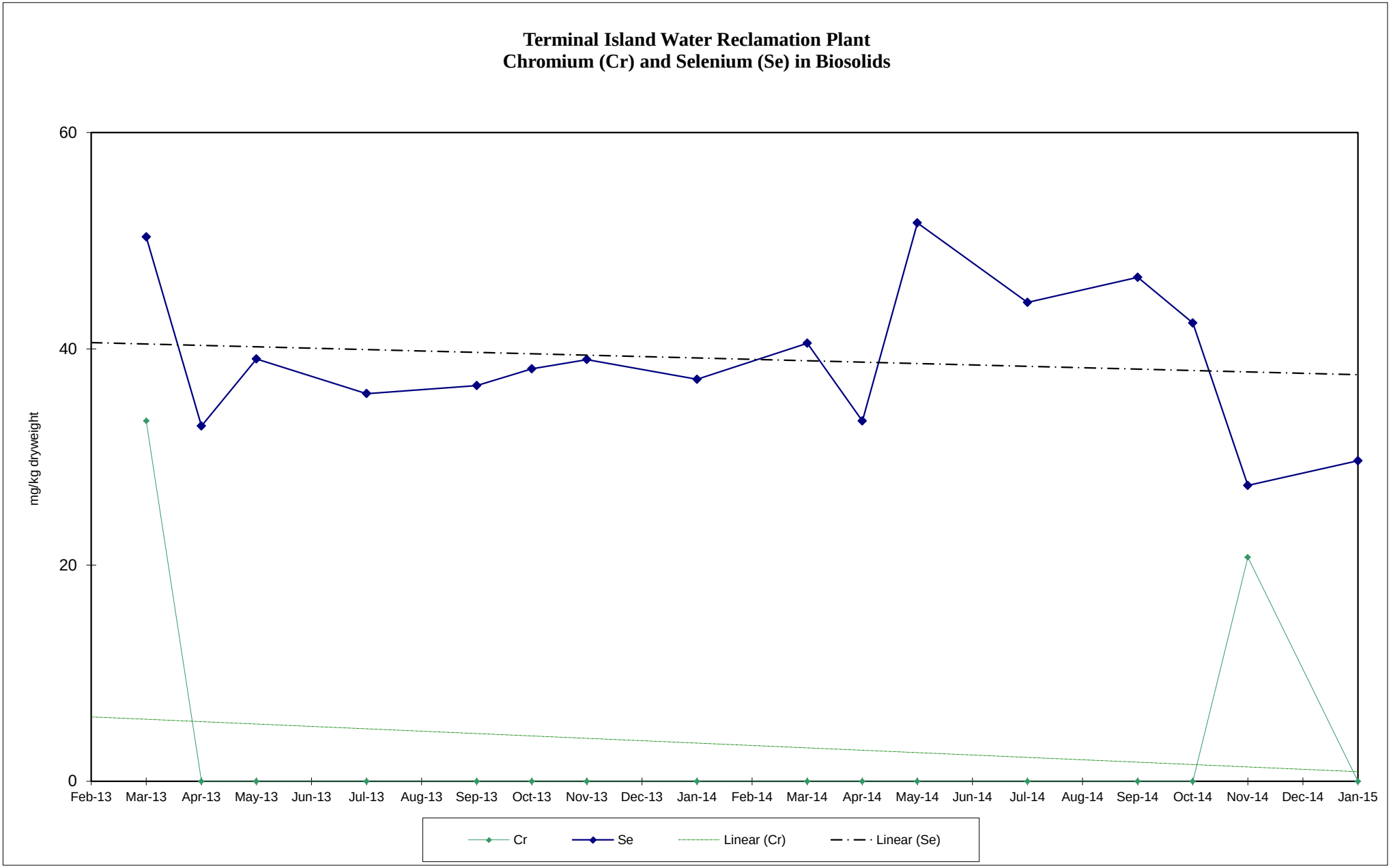

Figure 10. Concentrations of chromium and selenium in TIWRP biosolids from February 2013 to January 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

Appendix 1

Monthly Biosolids Monitoring Report

HYPERION TREATMENT PLANT
MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE
January 2015

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690
Dept. of Public Works/ Bureau of Sanitation
City of Los Angeles, CA

Table 1. TOTAL SOLIDS AND TOTAL VOLATILE SOLIDS

Sample date: 01/05/2015
Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	3.48	84.5
TWAS	4.49	84.6
Digested Sludge	2.28	67.8

Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS* : METALS DATA

Sample date: 01/05/2015

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	SM 2540 G	EPA 3050/ EPA 6010B									EPA 7471A
Unit	%	mg/kg dry weight									
Results	27.6	ND	8.15	45.7	728	17.2	22.1	37.7	4.46	942	1.16
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

TABLE 3. BIOSOLIDS^ - CLASS B COMPLIANCE MICROBIOLOGICAL MONITORING DATA

Sample Date				7-Jan-15	8-Jan-15	9-Jan-15	12-Jan-15	13-Jan-15	14-Jan-15	15-Jan-15	Geomean
PARAMETERS	Method #	Unit	Req #								
Total Solids	SM 2540G	%	-----	2.15	2.53	2.22	2.28	2.25	2.27	2.27	
Fecal Coliform	SM 9221E	MPN/gram TS(dry wt.)	<2,000,000	7.9E+04	1.4E+06	3.6E+05	4.0E+06	9.8E+05	1.1E+06	2.2E+05	6.2E+05

Table 4. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690 Helminth Ova and Enteric Virus analyzed by Aerotech, an Arizona ELAP Lic No. AZ0611

Sample date	Parameters	FECAL COLIFORM		SALMONELLA, sp.		HELMINTH OVA*			ENTERIC VIRUS*		
		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)		Viable Helminth Ova/4 grams TS (dry wt)			MPN IU/4 grams TS (dry wt)^^		
	%TS	Silo#/Farm		Silo#/Farm		Sludge	Silo#/Farm		Sludge	Silo#/Farm	
1/6/2015	26.8	Farm	<6.7	Farm	<1.5	*****	Farm	*****	*****	Farm	*****

* 24- Hour composite sample
** Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation
*** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
**** Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995
***** No lab with Arizona certification available
^ Grab sample of digested sludge
# EPA 40 CFR Part 503 Class B requirement
SM Standard Methods, 20th Ed. 1998

TERMINAL ISLAND WATER RECLAMATION PLANT
MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE
January 2015

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690
Dept. of Public Works/ Bureau of Sanitation
City of Los Angeles, CA

Table 1. TOTAL SOLIDS AND VOLATILE SOLIDS

Sample date: 01/12/2015
Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	3.87	82.2
TWAS	3.02	80.6
Digested Sludge	1.78	60.5

Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS*: METALS DATA

Sample date: 01/12/2015

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	SM 2540 G	EPA 3050/ EPA 6010B									EPA 7471A
Unit	%	mg/kg dry weight									
Results	1.7	ND	3.49	ND	153	30.2	15.7	ND	29.7	826	1.20
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

TABLE 3. BIOSOLIDS^ - CLASS A COMPLIANCE MICROBIOLOGICAL MONITORING DATA

Sample Date: 01/06/2015

Parameters	TOTAL SOLIDS	FECAL COLIFORM	SALMONELLA, sp.
Method No.	SM2540G	SM 9221E	SM 9260D
Unit	%	MPN/gram TS (dry wt)	MPN/4 grams TS (dry wt)
Frequency	6 Times/Year@	6 Times/Year@	Quarterly
Results	1.60	<11.3	NT
Requirement#		<1000	<3

* 24-Hour composite sample
** Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation
*** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
**** Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995
@ Sampling frequency for TIWRP is 6 months/year. The months are: Jan, Mar, May, Jul, Sep and Nov.
# EPA 40 CFR Part 503 Class A requirements
^ Grab sample from Farm
NS Sampling not required
NT Not Tested (sample bottle damaged during processing)
SM Standard Methods, 20th Ed. 1998