Nogales IWTP

Pre-Treatment Analysis

Table 1

AHL Based on Average Influent Flow of 14.74 MGD (645 lps)

Bolded shows limiting

Bolded italicized shows limiting with 25% safety factor

		MAHL KG/DAY				MAHL KG/MOS				
Pollutant	MAHL - Safety (lb/day)	AHL_{eff} (kg/day)	AHL_{inh} (kg/day)	AHL_{solids} (kg/day)	MAHL - Safety (kg/day)	AHL_{eff} (kg/30 days)	AHL_{inh} (kg/30 days)	AHL_{solids} (kg/30 days)	MAHL - Safety (kg/30 day)	Exceedance first impacts:
Arsenic	2.3	5.07	5.57	**1.39**	***1.04***	152	167	**42**	***31.3***	*solids*
Cadmium	0.41	0.82	289.95	**0.25**	***0.19***	25	8699	**7**	***5.58***	*solids*
Chromium	1.69	45.23	60.22	**1.02**	***0.77***	1357	1807	**31**	***23.0***	*solids*
Copper	12.64	**7.65**	15.05	41.82	***5.73***	**229**	452	1254	***172***	*effluent*
Cyanide	5.03	**3.04**	23.42	-	***2.28***	**91**	703		***68.4***	*effluent*
Lead	1.47	**0.89**	27.88	1.37	***0.67***	**27**	836	41	***20.0***	*effluent*
Mercury	0.08	**0.050**	30.67	0.054	***0.04***	**1.5**	920	1.6	***1.09***	*effluent*
Nickel	13.83	9.62	21.19	**8.36**	***6.27***	288	636	**251**	***188***	*solids*
Selenium	0.55	0.37	-	**0.34**	***0.25***	11	-	**10**	***7.48***	*solids*
Silver	1.84	1.47	-	**1.12**	***0.83***	44	-	**33**	***25.0***	*solids*
Zinc	26.74	-	**16.17**	79.40	***12.1***	-	**485**	2382	***364***	*inhibition*
1,4-Dichlorobenzene	8.87	**5.36**	278.80	5.70	***4.02***	**161**	8364	171	***121***	*effluent*

Table 2: 3rd quarter of 2014

AHL based on recorded flows

Reflects daily average in which pretreatment monitoring took place

Highlight/bold contaminants and loadings where exceedances are taking place

Loadings Summary and Processes Impacted Based on Daily Average

Pollutant	Average Arizona Contribution (LPS)	Average Sonora Contribution (LPS)	Average NIWTP INF (LPS)	MAHL Arizona (kg/day)	MAHL Sonora (kg/day)	MAHL TOTAL (kg/day)	Average Loading Arizona (kg/day)	Average Loading Sonora (kg/day)	Average Loading Total (kg/day)	Processes Impacted by Total Loadings*
Arsenic	94.04	507.6	601.6	0.152	0.820	0.972	0.067	0.242	0.315	
Cadmium				0.027	0.146	0.173	0.011	0.094	0.106	
Chromium				**0.112**	**0.602**	**0.714**	0.060	**1.207**	**1.272**	**Solids**
Copper				0.835	4.506	5.341	0.863	3.990	4.946	
Cyanide				0.332	1.793	2.125	0.000	0.000	0.000	
Lead				0.097	0.524	0.621	0.017	0.415	0.437	
Mercury				0.005	0.029	0.034	0.004	0.007	0.011	
Nickel				**0.913**	**4.931**	**5.844**	0.005	**5.064**	**5.101**	**Solids, Effluent**
Selenium				0.036	0.196	0.232	0.009	0.015	0.026	
Silver				0.122	0.656	0.778	-0.027	0.082	0.052	
Zinc				**1.766**	**9.533**	**11.299**	**2.515**	**9.838**	**12.598**	**Treatment process**
1,4-Dichlorobenzene				0.586	3.162	3.748	0.027	0.000	0.030	

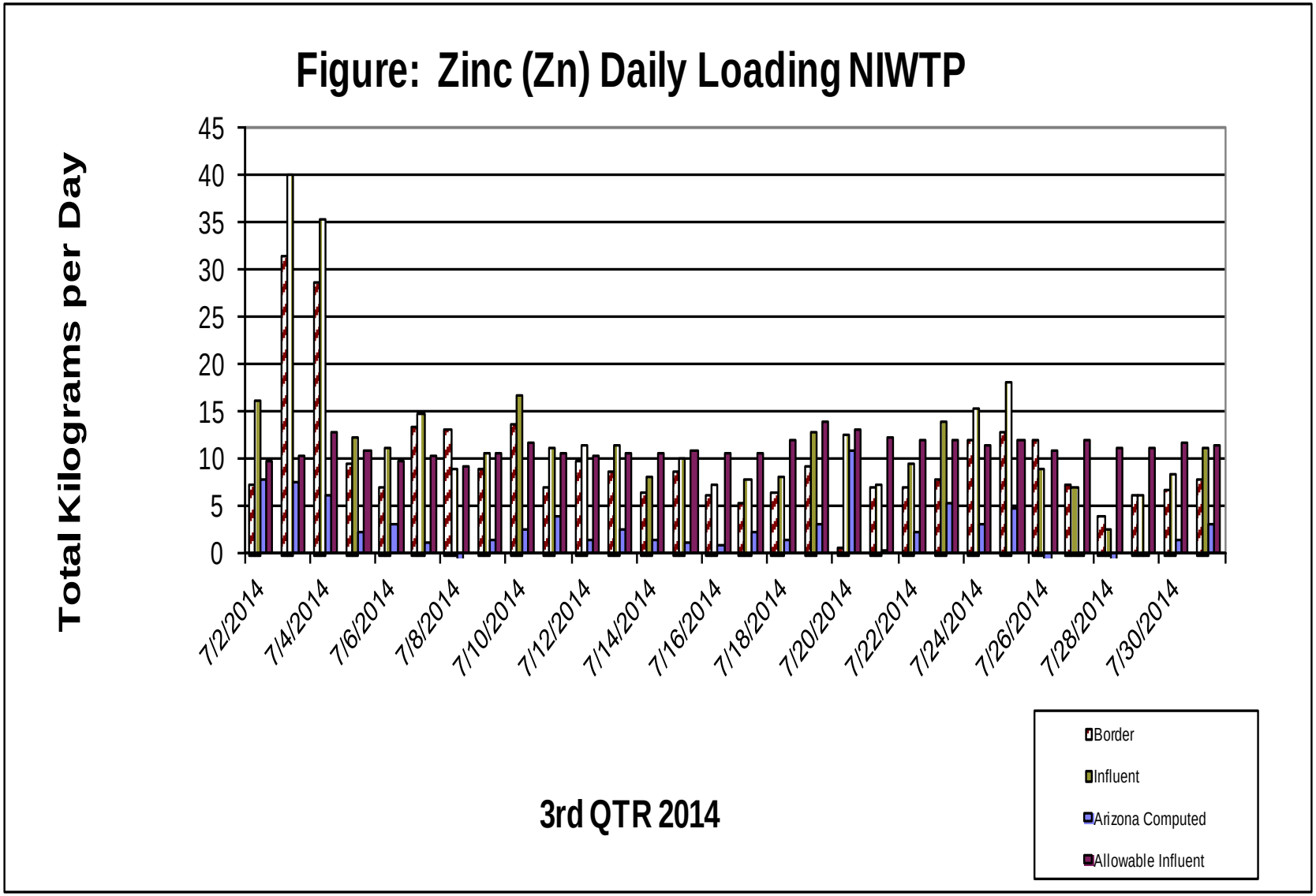
Figure: Zinc (Zn) Daily Loading NIWTP
Total Kilograms per Day
45
40
35
30
25
20
15
10
5
0
7/2/2014
7/4/2014
7/6/2014
7/8/2014
7/10/2014
7/12/2014
7/14/2014
7/16/2014
7/18/2014
7/20/2014
7/22/2014
7/24/2014
7/26/2014
7/28/2014
7/30/2014
3rd QTR 2014
Border
Influent
Arizona Computed
Allowable Influent

Table 3: 3rd quarter of 2014

AHL based on recorded flows

Reflects monthlhy average in which pretreatment monitoring took place

Highlight/bold contaminants and loadings where exceedances are taking place

Loadings Summary and Processes Impacted Based on Monthly Totals

Pollutant	MAHL Arizona (kg/mo)	MAHL Sonora (kg/mo)	MAHL TOTAL (kg/mo)	Actual Loadings Arizona (kg/mo)	Actual Loadings Sonora (kg/mo)	Actual Loadings Sonora Exc (kg)	Actual Loadings Sonora Exc (%)	Actual Loadings Total (kg/mo)	Processes Impacted by Total Loadings*
Arsenic	4.56	24.60	29.16	2.02	7.25			9.45	
Cadmium	0.81	4.39	5.20	0.32	2.83			3.17	
Chromium	3.35	18.07	21.42	0.30	36.22	**18.15**	**100%**	38.15	Solids
Copper	25.05	135.19	160.23	0.31	119.70			148.37	
Cyanide	9.97	53.80	63.76	0.17	0.00			0.00	
Lead	2.91	15.72	18.63	0.15	12.46			13.10	
Mercury	0.16	0.86	1.01	0.11	0.21			0.33	
Nickel	27.40	147.92	175.32	0.11	151.92	**4.00**	**3%**	153.04	Solids, Effluent
Selenium	1.09	5.88	6.97	0.14	0.46			0.77	
Silver	3.65	19.68	23.33	-0.81	2.46			1.56	
Zinc	52.99	285.99	338.98	0.13	295.13	**9.14**	**3%**	377.95	Treatment Process
1,4-Dichlorobenzene	17.58	94.87	112.44	0.81	0.00			0.89	

Change by Quarter - Mx

Table 4: 3rd quarter of 2014
Shows loading changes over time for Sonora

	Last Quarter		Current Quarter		Change		
Pollutant	**Average Loadings Sonora (kg/day)**	**Total Loadings Sonora (kg/mo)**	**Average Loadings Sonora (kg/day)**	**Total Loadings Sonora (kg/mo)**	**Average Loadings Sonora (kg/day)**	**Total Loadings Sonora (kg/mo)**	**% change**
Arsenic	0.192	5.771	0.242	7.250	0.04967	1.479	**26%**
Cadmium	0.227	6.813	0.094	2.826	-0.13279	-3.987	-58%
Chromium	1.240	37.302	1.207	36.222	-0.03258	-1.080	-3%
Copper	5.478	164.4	3.990	119.698	-1.488	-44.7	-27%
Cyanide	0.020	0.604	0.000	0.000	-0.02000	-0.604	-100%
Lead	0.288	8.639	0.415	12.460	0.127	3.821	44%
Mercury	0.015	0.442	0.007	0.209	-0.008	-0.233	-54%
Nickel	6.730	201.912	5.064	151.918	-1.66606	-49.994	-25%
Selenium	0.027	0.808	0.015	0.463	-0.01156	-0.345	-43%
Silver	0.014	0.425	0.082	2.464	0.06813	2.039	**487%**
Zinc	10.773	323.2	9.838	295.133	-0.935	-28.0	-9%
1,4-Dichlorobenzene	0.000	0.000	0.000	0.000	0.00000	0.000	0%

Change by Quarter - Az

Table 5: 3rd quarter of 2014
Shows loading changes over time for Arizona

	Last Quarter		Current Quarter		Change		
Pollutant	**Average Loadings AZ (kg/day)**	**Total Loadings AZ (kg/mo)**	**Average Loadings AZ (kg/day)**	**Total Loadings AZ (kg/mo)**	**Average Loadings AZ (kg/day)**	**Total Loadings AZ (kg/mo)**	**%change**
Arsenic	0.039	1.159	0.067	2.017	0.028	0.858	**72%**
Cadmium	0.000	0.000	0.011	0.319	0.011	0.319	0%
Chromium	0.000	0.000	0.060	0.297	0.060	0.297	0%
Copper	0.000	0.000	0.863	0.314	0.863	0.314	0%
Cyanide	0.000	0.000	0.000	0.165	0.000	0.165	0%
Lead	0.000	0.000	0.017	0.149	0.017	0.149	0%
Mercury	0.000	0.000	0.004	0.000	0.004	0.000	0%
Nickel	0.000	0.000	0.005	0.114	0.005	0.114	0%
Selenium	0.000	0.000	0.009	0.141	0.009	0.141	0%
Silver	0.041	1.241	-0.027	-0.811	-0.068	-2.052	-166%
Zinc	0.000	0.000	2.515	0.130	2.515	0.130	0%
1,4-Dichlorobenzene	0.000	0.000	**0.027**	**0.810**	0.027	0.810	0%

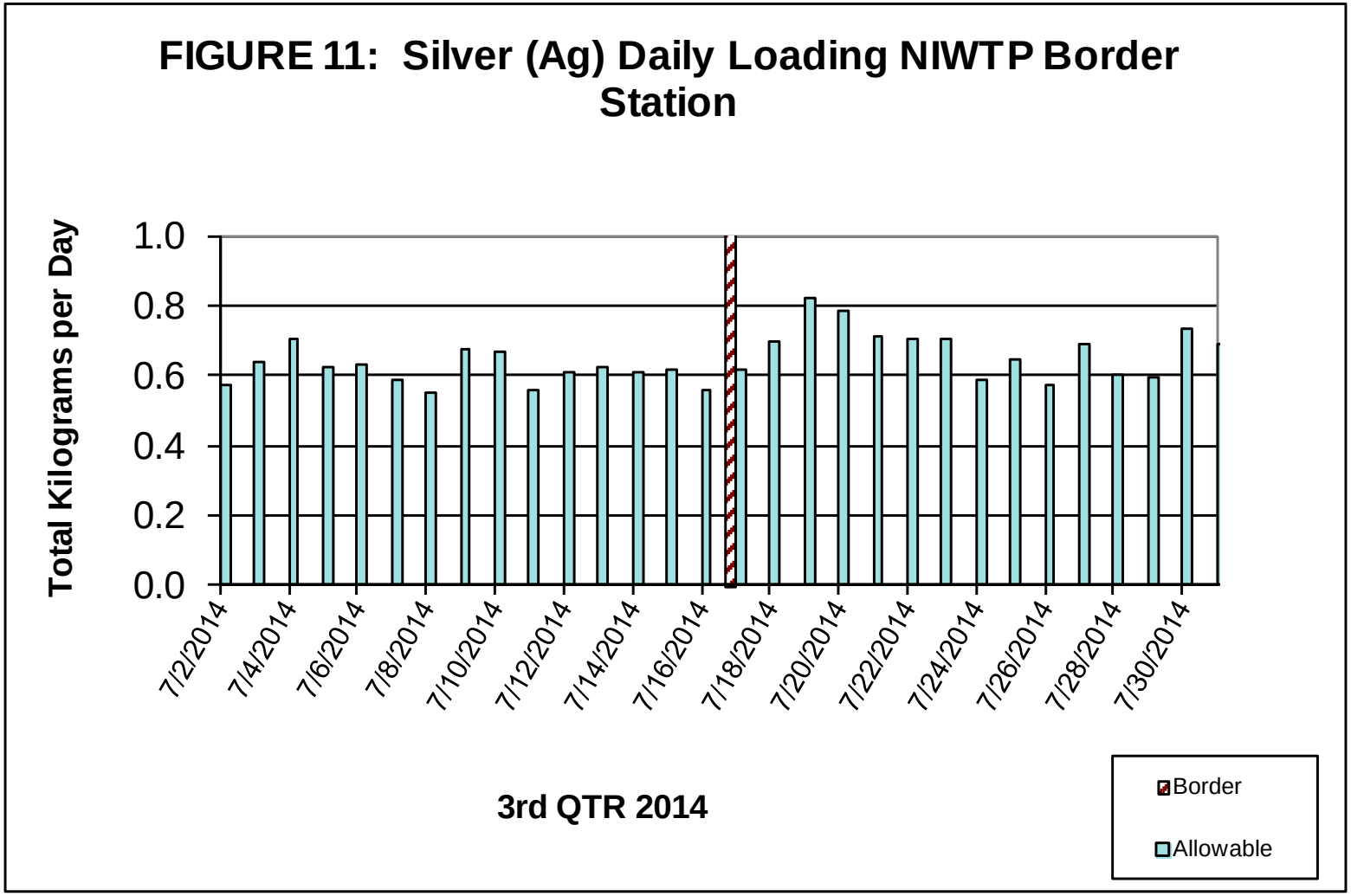
FIGURE 11: Silver (Ag) Daily Loading NIWTP Border Station
Total Kilograms per Day
1.0
0.8
0.6
0.4
0.2
0.0
7/2/2014
7/4/2014
7/6/2014
7/8/2014
7/10/2014
7/12/2014
7/14/2014
7/16/2014
7/18/2014
7/20/2014
7/22/2014
7/24/2014
7/26/2014
7/28/2014
7/30/2014
3rd QTR 2014
Border
Allowable

Questions?