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February 5, 2019

VIA: ELECTRONIC FILING

Mr. Adam J. Teitzman
Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 20180231-EI; Petition for approval of the big bend south gypsum storage area closure project for cost recovery through the environmental cost recovery clause, by Tampa Electric Company

Dear Mr. Teitzman:

Attached for filing in the above docket is Tampa Electric Company's Responses to Staff's First Data Request (Nos. 1-17) dated January 18, 2019.

Thank you for your assistance in connection with this matter.

Sincerely,

James D. Beasley

JDB/pp
Attachment

cc: Emily Knoblauch (w/attachment)

1. Please refer to Paragraph 11 on page 5 of TECO's Petition. TECO states that, "there are concerns with the proximity of the bottom of the South Gypsum Storage Area (SGSA) to the water table in the area and the effect this will have on the long-term stability of the storage area."

a. Has TECO determined the distance between the bottom of the SGSA and the water table?
   i. If so, what was the distance?
   ii. If not, why has the distance not been determined?
b. Please provide the most recent groundwater and/or soil monitoring of the SGSA completed. How often is this monitoring conducted?
c. Are all environmental requirements being met at the SGSA? If not, are there currently any outstanding violations?
d. Are there any potential or current environmental concerns for the East Gypsum Storage Area (EGSA)? If so, please list the concerns and any actions taken to address the concerns.

A. a. Yes.

i. The bottom elevation of the SGSA is at approximately 6.5 feet National Geodetic Vertical Datum (NGVD). Historical water level data for the SGSA (see attached Table 1, Water Table in Vicinity of SGSA) indicates numerous readings less than five feet below this elevation, including a maximum high water table elevation at approximately 5.1 feet NGVD. Therefore, the distance between the two has been as small as 1.4 feet, and is frequently less than the rule required 5 foot separation.

ii. N/A

b. Attached are Tables 2-4 , Background Groundwater Monitoring for SGSA, SGSA Appendix III Statistically Significant Increases, and Appendix IV Groundwater Protection Standards Exceedances, respectively, containing historical results for the SGSA background and compliance wells for the previous three years. These wells are currently monitored annually.

c. All environmental operating requirements are currently being met for the SGSA, with the exception of the above-noted groundwater exceedances. The closure project is being performed to eliminate the potential for future groundwater violations. Since the SGSA is being

closed, the requirements of the closure plan are being followed until the project is complete.

d. There are no environmental concerns for the EGSA. The EGSA design differs from the SGSA because, unlike the SGSA, no gypsum was used beneath the liner to construct the subbase of the storage area.

TABLE 1 - WATER TABLE IN VICINITY OF SGSA

Well Number	Date Sampled	Analyte	Result	Units
B-1	8/13/2008	Water Level, N.G.V.D.	3.04	feet
B-1	11/12/2008	Water Level, N.G.V.D.	0.63	feet
B-1	2/18/2009	Water Level, N.G.V.D.	-0.3	feet
B-1	5/13/2009	Water Level, N.G.V.D.	-1.51	feet
B-1	8/18/2009	Water Level, N.G.V.D.	5.11	feet
B-1	11/11/2009	Water Level, N.G.V.D.	2.15	feet
B-1	2/10/2010	Water Level, N.G.V.D.	2.7	feet
B-1	5/5/2010	Water Level, N.G.V.D.	2.47	feet
B-1	8/19/2010	Water Level, N.G.V.D.	2.24	feet
B-1	11/11/2010	Water Level, N.G.V.D.	0.14	feet
B-1	2/16/2011	Water Level, N.G.V.D.	0.81	feet
B-1	5/12/2011	Water Level Relative to NGVD	0.54	Feet
B-1	8/17/2011	Water Level Relative to NGVD	3.04	Feet
B-1	11/16/2011	Water Level Relative to NGVD	2.3	Feet
B-1	2/15/2012	Water Level Relative to NGVD	0.67	Feet
B-1	5/16/2012	Water Level Relative to NGVD	-0.98	Feet
B-1	8/23/2012	Water Level Relative to NGVD	3.74	Feet
B-1	11/14/2012	Water Level Relative to NGVD	1.96	Feet
B-1	2/20/2013	Water Level Relative to NGVD	0.52	Feet
B-1	5/8/2013	Water Level Relative to NGVD	0.59	Feet
B-1	8/14/2013	Water Level Relative to NGVD	3.2	Feet
B-1	11/20/2013	Water Level Relative to NGVD	1.74	Feet
B-1	2/19/2014	Water Level Relative to NGVD	1.36	Feet
B-1	8/14/2014	Water Level Relative to NGVD	0.56	Feet
B-1	11/19/2014	Water Level Relative to NGVD	2.24	Feet
B-1	5/21/2015	Water Level Relative to NGVD	-0.03	Feet
B-1	5/19/2016	Water Level Relative to NGVD	2.38	Feet
B-1	5/24/2017	Water Level Relative to NGVD	-0.37	Feet
B-1	5/22/2018	Water Level Relative to NGVD	2.51	Feet
B-2	8/13/2008	Water Level, N.G.V.D.	2.76	feet
B-2	11/12/2008	Water Level, N.G.V.D.	0.83	feet
B-2	2/18/2009	Water Level, N.G.V.D.	1	feet
B-2	5/13/2009	Water Level, N.G.V.D.	0.22	feet
B-2	8/18/2009	Water Level, N.G.V.D.	3.84	feet
B-2	11/11/2009	Water Level, N.G.V.D.	1.64	feet
B-2	2/10/2010	Water Level, N.G.V.D.	2.94	feet
B-2	5/5/2010	Water Level, N.G.V.D.	1.72	feet
B-2	8/19/2010	Water Level, N.G.V.D.	2.13	feet
B-2	11/11/2010	Water Level, N.G.V.D.	1.06	feet
B-2	2/16/2011	Water Level, N.G.V.D.	1.65	feet
B-2	5/12/2011	Water Level Relative to NGVD	0.8	Feet
B-2	8/17/2011	Water Level Relative to NGVD	2.11	Feet
B-2	11/16/2011	Water Level Relative to NGVD	1.56	Feet
B-2	2/15/2012	Water Level Relative to NGVD	1.2	Feet
B-2	5/16/2012	Water Level Relative to NGVD	0.3	Feet
B-2	8/23/2012	Water Level Relative to NGVD	2.97	Feet
B-2	11/14/2012	Water Level Relative to NGVD	1.44	Feet
B-2	2/20/2013	Water Level Relative to NGVD	1.14	Feet
B-2	5/8/2013	Water Level Relative to NGVD	1.37	Feet
B-2	8/14/2013	Water Level Relative to NGVD	2.58	Feet

Well Number	Date Sampled	Analyte	Result	Units
B-2	11/20/2013	Water Level Relative to NGVD	1.37	Feet
B-2	2/19/2014	Water Level Relative to NGVD	1.74	Feet
B-2	8/14/2014	Water Level Relative to NGVD	1.23	Feet
B-2	11/19/2014	Water Level Relative to NGVD	2.66	Feet
B-2	5/21/2015	Water Level Relative to NGVD	0.82	Feet
B-2	5/19/2016	Water Level Relative to NGVD	2.32	Feet
B-2	5/24/2017	Water Level Relative to NGVD	1.01	Feet
B-2	5/22/2018	Water Level Relative to NGVD	3.70	Feet
B-37	8/13/2008	Water Level, N.G.V.D.	2.72	feet
B-37	11/12/2008	Water Level, N.G.V.D.	0.87	feet
B-37	2/18/2009	Water Level, N.G.V.D.	0.75	feet
B-37	5/13/2009	Water Level, N.G.V.D.	0.14	feet
B-37	8/18/2009	Water Level, N.G.V.D.	3.95	feet
B-37	11/11/2009	Water Level, N.G.V.D.	1.74	feet
B-37	2/10/2010	Water Level, N.G.V.D.	2.62	feet
B-37	5/5/2010	Water Level, N.G.V.D.	1.87	feet
B-37	8/12/2010	Water Level, N.G.V.D.	3.68	feet
B-37	11/11/2010	Water Level, N.G.V.D.	1.12	feet
B-37	2/16/2011	Water Level, N.G.V.D.	1.52	feet
B-37	5/12/2011	Water Level Relative to NGVD	0.92	Feet
B-37	8/17/2011	Water Level Relative to NGVD	2.39	Feet
B-37	11/16/2011	Water Level Relative to NGVD	1.8	Feet
B-37	2/15/2012	Water Level Relative to NGVD	1.18	Feet
B-37	5/16/2012	Water Level Relative to NGVD	0.43	Feet
B-37	8/23/2012	Water Level Relative to NGVD	3.07	Feet
B-37	11/14/2012	Water Level Relative to NGVD	1.39	Feet
B-37	2/21/2013	Water Level Relative to NGVD	0.97	Feet
B-37	5/8/2013	Water Level Relative to NGVD	1.31	Feet
B-37	8/14/2013	Water Level Relative to NGVD	3.08	Feet
B-37	11/20/2013	Water Level Relative to NGVD	1.84	Feet
B-37	2/19/2014	Water Level Relative to NGVD	2.11	Feet
B-37	8/14/2014	Water Level Relative to NGVD	1.58	Feet
B-37	11/19/2014	Water Level Relative to NGVD	2.60	Feet
B-37	5/21/2015	Water Level Relative to NGVD	0.85	Feet
B-37	5/19/2016	Water Level Relative to NGVD	2.05	Feet
B-37	5/24/2017	Water Level Relative to NGVD	0.72	Feet
B-37	5/22/2018	Water Level Relative to NGVD	4.03	Feet
B-38	8/13/2008	Water Level, N.G.V.D.	3.28	feet
B-38	11/12/2008	Water Level, N.G.V.D.	1.45	feet
B-38	2/18/2009	Water Level, N.G.V.D.	1.31	feet
B-38	5/13/2009	Water Level, N.G.V.D.	0.26	feet
B-38	8/18/2009	Water Level, N.G.V.D.	4.54	feet
B-38	11/11/2009	Water Level, N.G.V.D.	2.55	feet
B-38	2/10/2010	Water Level, N.G.V.D.	3.2	feet
B-38	5/5/2010	Water Level, N.G.V.D.	2.38	feet
B-38	8/12/2010	Water Level, N.G.V.D.	3.96	feet
B-38	11/11/2010	Water Level, N.G.V.D.	1.89	feet
B-38	2/16/2011	Water Level, N.G.V.D.	2.26	feet
B-38	5/12/2011	Water Level Relative to NGVD	1.43	Feet
B-38	8/17/2011	Water Level Relative to NGVD	3.34	Feet
B-38	11/16/2011	Water Level Relative to NGVD	2.77	Feet

Well Number	Date Sampled	Analyte	Result	Units
B-38	2/15/2012	Water Level Relative to NGVD	2.03	Feet
B-38	5/16/2012	Water Level Relative to NGVD	0.91	Feet
B-38	8/23/2012	Water Level Relative to NGVD	3.63	Feet
B-38	11/14/2012	Water Level Relative to NGVD	2.58	Feet
B-38	2/21/2013	Water Level Relative to NGVD	1.91	Feet
B-38	5/8/2013	Water Level Relative to NGVD	1.96	Feet
B-38	8/14/2013	Water Level Relative to NGVD	3.87	Feet
B-38	11/20/2013	Water Level Relative to NGVD	2.79	Feet
B-38	2/19/2014	Water Level Relative to NGVD	2.97	Feet
B-38	8/14/2014	Water Level Relative to NGVD	2.65	Feet
B-38	11/19/2014	Water Level Relative to NGVD	2.93	Feet
B-38	5/21/2015	Water Level Relative to NGVD	1.46	Feet
B-38	5/19/2016	Water Level Relative to NGVD	2.64	Feet
B-38	5/24/2017	Water Level Relative to NGVD	1.45	Feet
B-38	5/22/2018	Water Level Relative to NGVD	4.66	Feet
B-44	8/13/2008	Water Level, N.G.V.D.	1.28	feet
B-44	11/12/2008	Water Level, N.G.V.D.	-0.16	feet
B-44	2/18/2009	Water Level, N.G.V.D.	-0.38	feet
B-44	5/13/2009	Water Level, N.G.V.D.	-0.09	feet
B-44	8/18/2009	Water Level, N.G.V.D.	1.39	feet
B-44	11/11/2009	Water Level, N.G.V.D.	1.15	feet
B-44	2/10/2010	Water Level, N.G.V.D.	-0.33	feet
B-44	5/5/2010	Water Level, N.G.V.D.	0.12	feet
B-44	8/19/2010	Water Level, N.G.V.D.	0.78	feet
B-44	11/11/2010	Water Level, N.G.V.D.	-0.33	feet
B-44	2/16/2011	Water Level, N.G.V.D.	-0.46	feet
B-44	5/12/2011	Water Level Relative to NGVD	-0.12	Feet
B-44	8/17/2011	Water Level Relative to NGVD	-3	Feet
B-44	11/16/2011	Water Level Relative to NGVD	-0.04	Feet
B-44	2/15/2012	Water Level Relative to NGVD	-0.12	Feet
B-44	5/16/2012	Water Level Relative to NGVD	0.42	Feet
B-44	8/23/2012	Water Level Relative to NGVD	0.55	Feet
B-44	11/14/2012	Water Level Relative to NGVD	-0.28	Feet
B-44	2/20/2013	Water Level Relative to NGVD	-0.31	Feet
B-44	5/8/2013	Water Level Relative to NGVD	0.03	Feet
B-44	8/14/2013	Water Level Relative to NGVD	0.76	Feet
B-44	11/20/2013	Water Level Relative to NGVD	-0.22	Feet
B-44	2/19/2014	Water Level Relative to NGVD	-0.21	Feet
B-44	8/14/2014	Water Level Relative to NGVD	0.02	Feet
B-44	11/19/2014	Water Level Relative to NGVD	-0.24	Feet
B-44	5/21/2015	Water Level Relative to NGVD	-0.04	Feet
B-44	5/19/2016	Water Level Relative to NGVD	0.8	Feet
B-44	5/24/2017	Water Level Relative to NGVD	1.54	Feet
B-44	5/22/2018	Water Level Relative to NGVD	1.82	Feet
B-5	8/13/2008	Water Level, N.G.V.D.	2.77	feet
B-5	11/12/2008	Water Level, N.G.V.D.	1.29	feet
B-5	2/18/2009	Water Level, N.G.V.D.	1.28	feet
B-5	5/13/2009	Water Level, N.G.V.D.	0.45	feet
B-5	8/18/2009	Water Level, N.G.V.D.	3.79	feet
B-5	11/11/2009	Water Level, N.G.V.D.	2.59	feet
B-5	2/10/2010	Water Level, N.G.V.D.	2.83	feet

Well Number	Date Sampled	Analyte	Result	Units
B-5	5/5/2010	Water Level, N.G.V.D.	2.04	feet
B-5	8/12/2010	Water Level, N.G.V.D.	3.64	feet
B-5	11/11/2010	Water Level, N.G.V.D.	1.36	feet
B-5	2/16/2011	Water Level, N.G.V.D.	1.98	feet
B-5	5/12/2011	Water Level Relative to NGVD	1.2	Feet
B-5	8/17/2011	Water Level Relative to NGVD	2.53	Feet
B-5	11/16/2011	Water Level Relative to NGVD	2.02	Feet
B-5	2/15/2012	Water Level Relative to NGVD	1.63	Feet
B-5	5/16/2012	Water Level Relative to NGVD	0.63	Feet
B-5	8/23/2012	Water Level Relative to NGVD	3.58	Feet
B-5	11/14/2012	Water Level Relative to NGVD	2.08	Feet
B-5	2/21/2013	Water Level Relative to NGVD	1.68	Feet
B-5	5/8/2013	Water Level Relative to NGVD	1.96	Feet
B-5	8/14/2013	Water Level Relative to NGVD	2.89	Feet
B-5	11/20/2013	Water Level Relative to NGVD	1.89	Feet
B-5	2/19/2014	Water Level Relative to NGVD	2.24	Feet
B-5	8/14/2014	Water Level Relative to NGVD	1.64	Feet

Highlight indicates water table less than 5 feet from bottom of SGSA

TABLE 2 - APPENDIX III BACKGROUND GROUNDWATER MONITORING

Well Number	Date Sampled	Analyte	Result	Units	Avg.
B-4R	5/19/2016	Boron	95.62	ug/L	32
B-4R	5/24/2017	Boron	0.08	mg/L	
B-4R	5/17/2018	Boron	0.09	mg/L	
B-4R	5/19/2016	Chloride	14.94	mg/L	24
B-4R	5/24/2017	Chloride	27.21	mg/L	
B-4R	5/17/2018	Chloride	30.82	mg/L	
B-4R	5/19/2016	pH	6.28	pH Units	5.80-6.50
B-4R	5/24/2017	pH	6.19	pH Units	
B-4R	5/17/2018	pH	5.96	pH Units	
B-4R	5/19/2016	Sulfate	17.47	mg/L	272.27
B-4R	5/24/2017	Sulfate	49.55	mg/L	
B-4R	5/17/2018	Sulfate	749.80	mg/L	

Highlight indicates Appendix III Average Background for constituent.

TABLE 3 - SGSA APPENDIX III STATISTICALLY SIGNIFICANT INCREASES					
Well Number	Date Sampled	Analyte	Result	Units	Avg. Background*
B-1	5/19/2016	Boron	160.93	ug/L	32
B-1	5/24/2017	Boron	0.10	mg/L	
B-1	5/22/2018	Boron	0.13	mg/L	
B-2	5/19/2016	Boron	45668.86	ug/L	
B-2	5/24/2017	Boron	47.04	mg/L	
B-2	5/22/2018	Boron	51.59	mg/L	
B-37	5/19/2016	Boron	158605.30	ug/L	
B-37	5/24/2017	Boron	176.60	mg/L	
B-37	5/22/2018	Boron	3.50	mg/L	
B-38	5/19/2016	Boron	11984.94	ug/L	
B-38	5/24/2017	Boron	104.97	mg/L	
B-38	5/22/2018	Boron	78.36	mg/L	
B-44	5/19/2016	Boron	1851.28	ug/L	
B-44	5/24/2017	Boron	1655.30	ug/L	
B-44	5/22/2018	Boron	1800.87	ug/L	
B-2	5/19/2016	Chloride	825.94	mg/L	24
B-2	5/24/2017	Chloride	813.79	mg/L	
B-2	5/22/2018	Chloride	817.80	mg/L	
B-37	5/19/2016	Chloride	4175.80	mg/L	
B-37	5/24/2017	Chloride	4870.79	mg/L	
B-37	5/22/2018	Chloride	57.65	mg/L	
B-38	5/19/2016	Chloride	306.50	mg/L	
B-38	5/24/2017	Chloride	2647.02	mg/L	
B-38	5/22/2018	Chloride	1842.66	mg/L	
B-44	5/19/2016	Chloride	10996.40	mg/L	
B-44	5/24/2017	Chloride	10837.40	mg/L	
B-44	5/22/2018	Chloride	11042.24	mg/L	
B-1	5/19/2016	pH	6.88	pH Units	5.80-6.50
B-1	5/24/2017	pH	6.81	pH Units	
B-1	5/22/2018	pH	6.77	pH Units	
B-2	5/19/2016	pH	6.72	pH Units	
B-2	5/24/2017	pH	6.70	pH Units	
B-2	5/22/2018	pH	6.58	pH Units	
B-37	5/19/2016	pH	6.80	pH Units	
B-37	5/24/2017	pH	6.77	pH Units	
B-37	5/22/2018	pH	6.72	pH Units	
B-38	5/19/2016	pH	6.82	pH Units	
B-38	5/24/2017	pH	6.83	pH Units	
B-38	5/22/2018	pH	6.59	pH Units	
B-44	5/19/2016	pH	6.58	pH Units	
B-44	5/24/2017	pH	6.52	pH Units	
B-44	5/22/2018	pH	6.29	pH Units	
B-1	5/19/2016	Sulfate	228.29	mg/L	272.27
B-1	5/24/2017	Sulfate	232.82	mg/L	
B-1	5/22/2018	Sulfate	285.37	mg/L	
B-2	5/19/2016	Sulfate	1207.54	mg/L	
B-2	5/24/2017	Sulfate	1259.29	mg/L	
B-2	5/22/2018	Sulfate	1285.58	mg/L	
B-37	5/19/2016	Sulfate	3948.60	mg/L	
B-37	5/24/2017	Sulfate	4391.44	mg/L	
B-37	5/22/2018	Sulfate	1053.54	mg/L	
B-38	5/19/2016	Sulfate	1239.80	mg/L	
B-38	5/24/2017	Sulfate	1620.40	mg/L	
B-38	5/22/2018	Sulfate	175.67	mg/L	
B-44	5/19/2016	Sulfate	1671.20	mg/L	
B-44	5/24/2017	Sulfate	1710.54	mg/L	
B-44	5/22/2018	Sulfate	1639.62	mg/L	
* Average background calculated for SSI comparison. See Table 2.					
Highlighted indicates increase above average background.					

TABLE 4 - APPENDIX IV GROUNDWATER PROTECTION STANDARDS EXCEEDANCES

Well #	Date Sampled	Analyte	Result	Units	MCL
B-1	5/19/2016	Arsenic	1.56	ug/L	10
B-1	5/24/2017	Arsenic	1.89	ug/L	
B-1	5/22/2018	Arsenic	2.23	ug/L	
B-2	5/19/2016	Arsenic	7.17	ug/L	
B-2	5/24/2017	Arsenic	3.88	ug/L	
B-2	5/22/2018	Arsenic	3.58	ug/L	
B-37	5/19/2016	Arsenic	10.28	ug/L	
B-37	5/24/2017	Arsenic	3.20	ug/L	
B-37	5/22/2018	Arsenic	7.52	ug/L	
B-38	5/19/2016	Arsenic	2.85	ug/L	
B-38	5/24/2017	Arsenic	9.56	ug/L	
B-38	5/22/2018	Arsenic	3.77	ug/L	
B-44	5/19/2016	Arsenic	18.57	ug/L	
B-44	5/24/2017	Arsenic	11.52	ug/L	
B-44	5/22/2018	Arsenic	15.75	ug/L	
B-1	5/19/2016	Gross Alpha[1]	11.20	pCi/L	15
B-1	5/24/2017	Gross Alpha[1]	17.20	pCi/L	
B-1	5/22/2018	Gross Alpha[1]	13.70	pCi/L	
B-2	5/19/2016	Gross Alpha[1]	38.00	pCi/L	
B-2	5/24/2017	Gross Alpha[1]	87.50	pCi/L	
B-2	5/22/2018	Gross Alpha[1]	42.20	pCi/L	
B-37	5/19/2016	Gross Alpha[1]	75.00	pCi/L	
B-37	5/24/2017	Gross Alpha[1]	124.70	pCi/L	
B-37	5/22/2018	Gross Alpha[1]	22.20	pCi/L	
B-38	5/19/2016	Gross Alpha[1]	20.00	pCi/L	
B-38	5/24/2017	Gross Alpha[1]	60.80	pCi/L	
B-38	5/22/2018	Gross Alpha[1]	61.70	pCi/L	
B-44	5/19/2016	Gross Alpha[1]	121	pCi/L	
B-44	5/24/2017	Gross Alpha[1]	217	pCi/L	
B-44	5/22/2018	Gross Alpha[1]	77.5	pCi/L	

Footnote 1 - Gross Alpha used by FDEP as surrogate for Ra226/228.
Highlight indicates level above MCL.

2. Please refer to Paragraph 11 on page 5 of TECO's Petition. Please provide a list of the Appendix III and IV constituents.

A. The Appendix III constituents listed in the rule are: Boron, Calcium, Chloride, Fluoride, pH, Sulfate, and Total Dissolved Solids ("TDS"). The Appendix IV constituents are: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium and Radium 226 & 228.

Statistically Significant Increases ("SSI") have occurred for the Appendix III Constituents Boron, Chloride, Fluoride, pH, and Sulfate (see attached Tables 2 and 3), thus requiring Assessment Monitoring for the Appendix IV constituents (Groundwater Protection Standards) Antimony, Arsenic, Beryllium, Cadmium, Cobalt, Fluoride, and Radium 226/228. Monitoring for these has revealed statistically significant increases for two constituents only, Arsenic and Radium 226/228, during the past three years (see attached Table 4).

3. Please refer to Paragraph 12 on page 5 of TECO Petition. The Petition states that TECO, "must close the facility, given its lack of usefulness, the ongoing risk of environmental impacts, and the applicability of CCR Rule compliance obligations and operating criteria."

a. Please identify and provide the specific CCR Rule language that obligates TECO to close the SGSA at this time.
b. Please discuss, in detail, the specific ongoing environmental risks and their impacts if the SGSA is not closed.

A. a. As stated in the Company's petition, the SGSA was formerly a beneficial reuse storage area that was exempt from the CCR Rule. Since the storage area has ceased being used for beneficial reuse, it is now defined as a CCR Landfill under the rule. Therefore, since the SGSA is defined as a landfill, it must meet the following requirements: "(a) Except as provided for in § 257.100 for inactive CCR surface impoundments, ***all CCR landfills***, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under § 257.90 through § 257.98." Upon determining the applicability of these provisions to the SGSA, Tampa Electric began an evaluation of historical groundwater data collected for the area under the provisions of 257.94 (Detection Monitoring) and 257.95 (Assessment Monitoring). This evaluation has resulted in the conclusion that statistically significant increases in Appendix III constituent levels (see attached Tables 2 and 3) and Appendix IV, Groundwater Protection Standards (see attached Table 4), have occurred in the vicinity of the SGSA. Part 257.96(a) of the rule goes on to state: " Within 90 days of finding that any constituent listed in Appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h) or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures *to prevent further releases, to remediate any releases and to restore the affected area to original conditions.*" Accordingly, Tampa Electric has proceeded with an assessment of corrective measures as required under § 257.96(a) to comply with the remediation goals (italicized above) within that subpart.

b. As discussed above, the SGSA groundwater monitoring program has revealed elevated levels of Appendix III and Appendix IV constituents

in the vicinity of this CCR unit. Even though the storage area was constructed with a protective liner above the gypsum subbase that was approved by FDEP, the levels of some of these constituents have continued to persist, remaining above their respective maximum contaminant limits ("MCL"), for the Appendix IV Groundwater Protection Standards, as described in the previous response. Although contamination appears to be localized, there is no guarantee it would remain so. Furthermore, the SGSA is in an area of the Big Bend site that contains sensitive wetlands, as well as the headwaters of Newman's Branch and Jackson Branch, both tributaries to Tampa Bay. Unless the gypsum is removed from the site, there would be the possibility of damage caused by violent weather or high water table conditions , resulting in gypsum being transported into sensitive environmental areas or even into Tampa Bay. It is therefore prudent and in the best interest of the environment and Tampa Electric's customers to close this CCR landfill by removing the gypsum.

4. Please refer to Paragraph 15 on page 6 of TECO's Petition. What entity, TECO or its consultant(s), did the preliminary analysis? If an entity other than TECO was involved, please identify its name.

A. Moretrench, a construction company, performed the analysis by estimating quantities based on core samples taken by S&ME, a geotechnical engineering consultant.

5. Please refer to Paragraph 15 on page 7 of the Petition. TECO indicated that it initiated the closure project in April 2018. Has TECO used a contractor for this project? If so, please identify the name and its responsible activities.

A. Tampa Electric is using Moretrench as the primary civil works contractor. Trucking and disposal have been performed by Zimmer (trucking only), Waste Management (disposal only) and ACMS (trucking and disposal).

6. Please refer to Paragraph 15 on page 7 of TECO's Petition. The SGSA Closure Project was initiated in April 2018. Why was the project not included in TECO's Environmental Cost Recovery Clause cost recovery projections for 2019?

A. The project was begun in conjunction with work on the Big Bend Modernization project. At the time that the ECRC projection for 2019 was submitted, the company had not completed the evaluation of the SGSA closure and collection of cost estimates to create this petition. Work began earlier in 2018 to commence gypsum reprocessing to take advantage of opportunities for beneficial reuse that provide customer value.

7. Please refer to Paragraph 16 on pages 6 and 7 of TECO's Petition.

a. What was the estimated cost for the alternative "cap and close method" that was considered?

b. What was the estimated cost to remediate and maintain the SGSA, rather than closing the site? Why was this alternative rejected?

A. a. Tampa Electric did not obtain an estimate for the cap and close method because that method would not achieve the *remediation goals* of the CCR Rule, as detailed in Responses 3a and b.

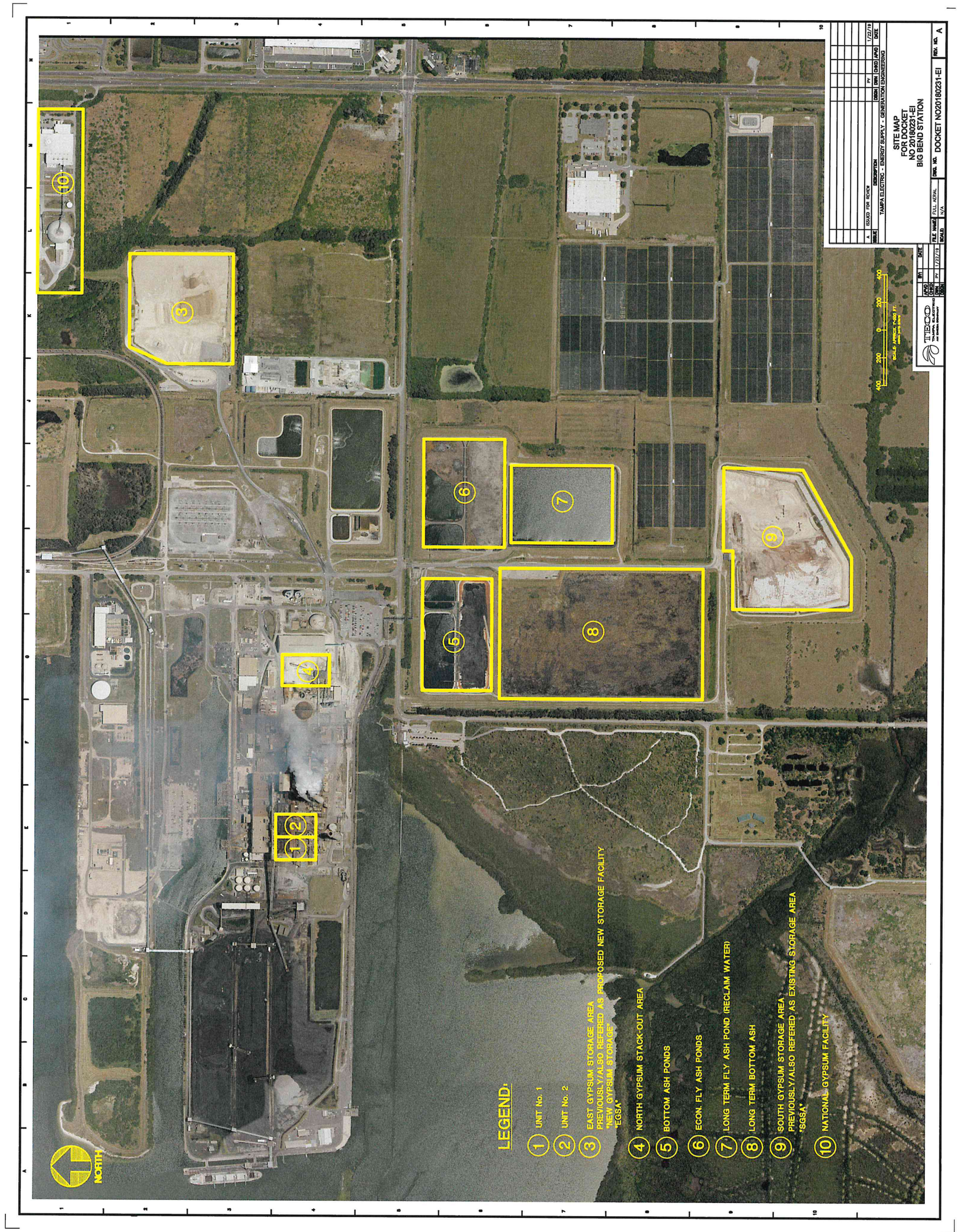
b. As described above in Response 3a, the cap and close method would not achieve the standards of § 256.96(a) of the rule. Furthermore, closure by removal provides the advantages listed in Tampa Electric's Petition, Paragraph 14, on Page 6, which are not provided by the cap and close method.

8. TECO indicated at Paragraph 19 on page 9 of the Petition, that capital expenditures are allocated to appropriate rate classes on a demand basis. Please identify all the capital activities referred in this Paragraph, if any, and specify the estimate of the capital expenditure amount associated with each.

A. Tampa Electric has no project expenditures classified as capital at this time and does not expect to incur any. However, the company wanted to ensure that the proper allocation basis, consistent with historical treatment, was referenced should any be incurred.

9. Please provide a map or diagram to scale of the SGSA and the EGSA. Please include the two Gypsum storage areas and the Big Bend Units 1&2 in one diagram.

A. The attached site map provides a scale diagram of the SGSA and the EGSA and shows Big Bend Units 1 and 2.


LEGEND:
1 UNIT No. 1
2 UNIT No. 2
3 EAST GYPSUM STORAGE AREA PREVIOUSLY/ALSO REFERED AS PROPOSED NEW STORAGE FACILITY "NEW GYPSUM STORAGE" "EGSA"
4 NORTH GYPSUM STACK-OUT AREA
5 BOTTOM ASH PONDS
6 ECON. FLY ASH PONDS
7 LONG TERM FLY ASH POND (RECLAIM WATER)
8 LONG TERM BOTTOM ASH
9 SOUTH GYPSUM STORAGE AREA PREVIOUSLY/ALSO REFERED AS EXISTING STORAGE AREA "SGSA"
10 NATIONAL GYPSUM FACILITY
NORTH
SITE MAP
FOR DOCKET
NO 20180231-EI
BIG BEND STATION
TAMPA ELECTRIC - ENERGY SUPPLY - GENERATION ENGINEERING
DOCKET NO20180231-EI
REV. NO. A

Please refer to Attachment A of the Petition for questions 10 – 15 below.

10. Please refer to activity "Excavation and Preparation of CCR Material for Processing, Sale, or Disposal" listed in Exhibit A of the Petition.

a. Please provide a breakdown of the Operations and Maintenance (O&M) expenditures for component activities (e.g., Excavation, Preparation) that comprise the estimated annual O&M costs.

b. Please specify whether TECO or its contractor will perform each of the component activities for 2019 and 2020.

c. For any contractor that has been retained, please identify its name and the services it will provide, as well as any associated cost for each activity component the contractor is providing.

d. Please provide an explanation of whether the sales proceeds, if any, will be used to offset the expenditures of disposal and/or the entire closure project.

A. a. The attached SGSA Cost Schedule shows detailed breakdown of O&M expenditures, Exhibit A, Estimated Costs by Activity, line item Excavation and Preparation of CCR Material for Reprocessing Sale, or Disposal. In preparing the gypsum, it must first be removed from SGSA, then screened as an integral part of the "preparing" process. The two steps are not separately identified in the service contract. After screening, and testing (costs of which are minimal), delivery to the customer, reprocessing or disposal will occur, depending on the quality of the gypsum ($5,156,532). Dewatering entails management of storm water on the site to allow work to progress ($1,436,400).

The attached schedule also shows that the amount of this line item has increased by $1,775,000 as a portion of the costs were previously misclassified within the Restoration line item. The total estimated project costs remain the same.

b. All activities will be performed by contractors.

c. The primary contractor is Moretrench. Moretrench is performing all work necessary to excavate material, screen material, load trucks and dewater the site.

d. Any sales proceeds generated will be credited to the ECRC consistent with historical treatment.

Tampa Electric

ECRC - SGSA Cost Schedule

O&M Costs	Detailed Categories	Total		Total 2018	2019	2020	2021	2022	2023
Excavation and Preparation of Material	Removing and screening	$ 5,156,532	*	$ 2,536,476	$ 2,599,940	$ 20,116	**$ -**	**$ -**	**$ -**
	Dewatering	$ 1,436,400	*	$ -	$ 1,436,400	$ -	$ -	$ -	$ -
Subtotal		**$ 6,592,932**	*****	**$ 2,536,476**	**$ 4,036,340**	**$ 20,116**	**$ -**	**$ -**	**$ -**
Trucking		**$ 1,898,496**		**$ 712,525**	**$ 1,150,971**	**$ 35,000**	**$ -**	**$ -**	**$ -**
Disposal (landfill and associated trucking)	Disposal Fees - (Waste Management)	$ 695,000		$ 695,000					
	Disposal/Trucking (A.C.M.S)	$ 2,950,489		$ 838,691	$ 2,058,737	$ 53,061	$ -	$ -	$ -
Subtotal		**$ 3,645,489**		**$ 1,533,691**	**$ 2,058,737**	**$ 53,061**	**$ -**	**$ -**	**$ -**
Additional Reprocessing Equipment & Maintenance	Installation of Temporary New Equipment	$ 240,808		$ 240,808					
	Maintenance of Reprocessing System	$ 852,292		$ 637,339	$ 181,622	$ 33,331	$ -	$ -	$ -
Subtotal		**$ 1,093,100**		**$ 878,147**	**$ 181,622**	**$ 33,331**	**$ -**	**$ -**	**$ -**
Restoration (grading, backfill and seed/sod)	Backfill	$ 2,105,697	*	$ -	$ 2,105,697	$ -	$ -	$ -	$ -
	Final Grading /Seeding	$ 225,179	*	$ -	$ 27,849	$ 197,330	$ -	$ -	$ -
Subtotal		**$ 2,330,876**	*****	**$ -**	**$ 2,133,546**	**$ 197,330**	**$ -**	**$ -**	**$ -**
Post-Closing Groundwater Monitoring		$ 100,000				**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**
Total Recoverable O&M		**$ 15,660,892**		**$ 5,660,839**	**$ 9,561,215**	**$ 363,838**	**$ 25,000**	**$ 25,000**	**$ 25,000**

*** Adjustment of $1,775,000 made to amounts to correct mis-categorized costs. The total estimated project cost did not change as a result.**

11. Please refer to activity "Additional Reprocessing Equipment & Maintenance" listed in Exhibit A of the Petition.

a. Please provide a breakdown of the O&M expenditures for component activities (e.g., Equipment, Maintenance) that comprise the estimated annual O&M costs.
b. Please provide an explanation of why the expenditure associated with the Reprocessing Equipment is categorized as an O&M cost.

A. a. The SGSA Cost Schedule provided in Staff's First Data Request, No. 10 shows a detailed breakdown of O&M expenditures, Exhibit A, Estimated Costs by Activity, line item Additional Reprocessing Equipment and Maintenance. The line item includes maintenance of the reprocessing system of $852,292, and reprocessing equipment of $240,808.

b. The reprocessing equipment is classified as an O&M expenditure as it represents a grouping of relatively small expenditures for equipment that is expected to be used temporarily and then removed and disposed of. Therefore, the company has decided to expense it.

12. Refer to activity "Truck Fees" listed in Exhibit A of the Petition, please explain how each of the estimated annual O&M expenditure amount was established.

A. The truck fees estimate is based on estimated material "preparation" activity (as described in the response to Staff's First Data Request, No. 10, part a) for each year, multiplied by trucking contract rates.

13. Please refer to activity "Transportation and Disposal in Permitted Landfill Site Restoration" listed in Exhibit A of the Petition.

a. Please provide a breakdown of the O&M expenditures for component activities (e.g., Transportation, Disposal).
b. Please specify whether TECO or its contractor will perform each of the component activities for 2019 and 2020.
c. For any contractor that has been retained, please identify its name and the services it will provide, as well as any associated cost for each activity component the contractor is providing.

A. a. The schedule provided in Staff's First Data Request, No. 10 shows a detailed breakdown of O&M expenditures, Exhibit A, Estimated Costs by Activity, line item Transportation and Disposal. The line item is comprised of estimated Disposal Fees to be paid to Waste Management of $695,000 and estimated Disposal/Trucking costs paid to A.C.M.S. of $2,950,489. The line item excludes trucking costs for Zimmer which are included in the line item referred to in response to Staff's First Data Request, No.12.

b. All activities will be performed by contractors.

c. The contractors that will perform the activities are A.C.M.S. and Waste Management. The estimate for disposal fees with Waste Management is $695,000; the estimate for disposal and trucking with A.C.M.S. is $ 2,950,489.

14. Please refer to activity "Site Restoration" listed in Exhibit A of the Petition.

a. Please explain how each of the estimated annual O&M expenditure amounts was established, and provide the expenditure breakdown by activity.
b. Please specify whether TECO or its contractor will perform the activities for 2019 and 2020.
c. For any contractor that has been retained, please identify its name and the services it will provide, as well as any associated cost for each activity component the contractor is providing.

A. a. Site restoration was estimated by Moretrench based upon a final elevation drawing provided by Tampa Electric. The attached schedule shows a detailed breakdown of O&M expenditures, Exhibit A, Estimated Costs by Activity, line item Site Restoration. The line item is comprised of Backfill of $2,105,697, and Final Grade/Seeding of $225,179.

b. All activities will be performed by contractors.

c. Moretrench will perform all restoration related activities; backfill for $2,105,697 and final grade and seeding for $225,179.

15. Please refer to activity "Post-Closure Groundwater Monitoring" listed in Exhibit A of the Petition.

a. Please explain how each of the estimated annual O&M expenditure amounts was established, and provide the expenditure breakdown by activity.
b. Please specify whether TECO or its contractor will perform the activities or 2020 through 2023.
c. For any contractor that has been retained, please identify its name and the services it will provide, as well as any associated cost for each activity component the contractor is providing.

A. a. The estimate provided in the petition for post-closure care and monitoring includes up to four years of monitoring at $25,000 annually, for a total of $100,000, to verify that the groundwater standards or background levels of contaminants have been achieved by the remediation. This estimate is a maximum based on experience with previous monitoring programs at the site, as well as a verbal estimate from Tampa Electric's contract consultant.

b. Personnel from Tampa Electric's Central Testing Laboratory will perform the well sampling and analysis for this period (costs of which are not included in this request). Data management and statistical evaluations will be performed by Tampa Electric's contract consultant.

c. Data Management, statistical analysis and report generation will be performed by Geosyntec Consultants of Tampa, Florida. The verbal estimate is a lump sum for these activities only.

16. Please complete Table 1 below to provide the estimated residential customer bill impact resulting from all the activities requested by TECO in the instant Petition.

Table 1: Estimated Residential Customer Bill Impact

	¢ / 1,000 kWh	¢ / 1,200 kWh
2020		
2021		
2022		
2023		

A.

Table 1: Estimated Residential Customer Bill Impact

	¢ / 1,000 kWh	¢ / 1,200 kWh
2020	80 cents	82 cents
2021	Less than 1 cent	Less than 1 cent
2022	Less than 1 cent	Less than 1 cent
2023	Less than 1 cent	Less than 1 cent

Please refer to the following documents for question 17 below.

i. Petition of Tampa Electric Company For Approval Of A New Environmental Program For Cost Recovery Through The Environmental Cost recovery Clause," filed August 29, 2011, in Docket No. 20110262-EI.
ii. Order PSC-12-0493-PAA-EI, issued September 26, 2012, in Docket No. 201120262-EI.
iii. Petition of Tampa Electric Company For Approval Of A New Environmental Program For Cost Recovery Through The Environmental Cost recovery Clause," filed October 15, 2015, in Docket No. 20150223-EI.
iv. TECO's instant Petition

17. Please provide a drawing to show all the gypsum and coal ash storage facilities (ponds, storage area, etc.) at the Big Bend Station. Please also clearly mark out the locations of the following:

a. The "Existing Storage Facility" and "Proposed New Storage Facility" described in document (i) (pages 11 and 12).
b. The New Gypsum Storage approved in document (ii).
c. The North Gypsum Stack out area discussed in document (iii).
d. SGSA and EGSA discussed in document (iv).

A. See the site map provided in Staff's First Data Request, No. 9.