

Corporate Environmental Affairs

February 28, 2020

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Oklahoma Water Resources Board

Oklahoma Water Resources Board
3800 N. Classen
Oklahoma City, OK 73118
(405) 530-8800

**Consumptive Water Use Report – Quarter 4, 2019 and Annual Report
Mine L.E.-1565 – Covia Corporation – Roff Facility**

Dear Sir or Madam:

Enclosed please find Covia's consumptive water use report for the fourth quarter of 2019 and the annual report for 2019. As noted on the attached worksheet, the plant remains below our allocated equal proportionate share.

If you have any questions or require any additional information, please contact myself or Jim Bonsall at (580) 456-7772.

Respectfully,

David Caldwell
QC Supervisor

Attachments

CC: Plant
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Consumptive Use of Pitwater Worksheet Annual 2019

Enter Values in Yellow

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Pit Groundwater Volume		Amount	(gallons)
1	Total volume of water pumped from the producing mine pit(s)	6,687	2,178,886,580
2	Volume of precipitation that falls onto the surface of water in the producing mining pit(s)	496	161,578,502
3	Portion of total precipitation that flows over the land surfaces that drains into the mine pit water	985	320,998,419
4	Other non-pit waters pumped from the producing mine pit	440	143,360,624
5	Add lines 2 through 4	1,921	625,937,546
6	Pit Groundwater Volume (Line 1 - Line 5)	4,766	1,552,949,034

Area of Pit:	116	(acres)	Rainfall:	51.3	(inches)
Area of Watershed Drainage:	298	(acres)	Weighted CN:	78	
Retention Before Runoff (s):	2.9		Runoff:	47.97684	
Area of Watershed Drainage Kite:	89		Weighted CN Kite:	66	
Retention Before Runoff (s) Kite:	5.2		Runoff:	45.54756	

Defined Elements of Consumptive Use		Amount	(gallons)
7	Volume of pit water that is driven off (by drying) the mined material transported off the mine site	39	12,643,504
8	Volume of pit water that is carried away with the mined material transported off the mining site (shipped)	0	0
9	Volume of pit water that evaporates from the producing mine pit, process water ponds, and lined ponds (excluding structures used for augmentation)	7	2,231,070
10	Volume of pit water that is used for other beneficial uses off the mine site	0	0
11	Defined Elements of Consumptive Use of Pit Groundwater (add Lines 7 through 10)	46	14,874,573

Tons Mined: 1,055,733 % Moisture 5.0

ASHRAE Evaporation Model	A:	95	
	B:	37.4	
	V:	5	(mi/hr)
	Pw:	0.69	(in-Hg)
	Pa:	0.522	(in-Hg)
	Hv:	970.4	(Btu/lb)
Evap Area:	10		(acre)

Pit Groundwater Balance		Amount	(gallons)
12	Total groundwater from pit	4,766	1,552,949,034
13	Groundwater Augmentation (Volume of pit groundwater returned to the groundwater basic or sub basin)	0	0
14	Stream Augmentation (Volume of put groundwater discharged to a definite stream, during flow conditions that are less than or equal to 50% exceedance or median historic flows.	0	0
15	Precipitation & Run-off (Volume of precipitation and surface run-off into a recharge pit or holding pond used for augmentation)	0	0
16	Recycled Pit Groundwater (Volume of pit groundwater returned to a mine pit or holding basin not included on lines 7 through 10)	4,766	1,552,949,034
17	Other Non-Consumptive Losses (Including pit groundwater returned to the land surface from which surface run-off flows into a mine pit, and other losses not included in lines 7 through 10)	0	0
18	Add lines 13 through 18	4,766	1,552,949,034
19	Other Consumptive Use (adjusted) Line 12 minus 18	0	0

Credits

Total Reported Consumptive Use Of Pit		Amount	(gallons)
21	Total Reported Consumptive Use Of Pit (add Line 11 and Line 19)	46	14,874,573
	Facility's Equal Proportionate Share (EPS)	192	62,693,815

at 0.2 acre-feet for 962 acres

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Consumptive Use of Pitwater Worksheet Quarter 4

Enter Values in Yellow

Pit Groundwater Volume		Amount (gallons)
1	Total volume of water pumped from the producing mine pit(s)	547,543,500
2	Volume of precipitation that falls onto the surface of water in the producing mining pit(s)	41,575,755
3	Portion of total precipitation that flows over the land surfaces that drains into the mine pit water	83,033,143
4	Other non-pit waters pumped from the producing mine pit	37,035,545
5	Add lines 2 through 4	161,644,444
6	Pit Groundwater Volume (Line 1 - Line 5)	385,899,056

Area of Pit:	116	(acres)	Rainfall:	13.2	(inches)
Area of Watershed Drainage:	298		Weighted CN:	78	
Retention Before Runoff (s):	2.9		Runoff:	10.26	
Area of Watershed Drainage Kite:	89		Weighted CN Kite:	66	
Retention Before Runoff (s) Kite:	5.2		Runoff:	8.517604	

Defined Elements of Consumptive Use		Amount (gallons)
7	Volume of pit water that is driven off (by drying) the mined material transported off the mine site	4,078,785
8	Volume of pit water that is carried away with the mined material transported off the mining site (shipped)	0
9	Volume of pit water that evaporates from the producing mine pit, process water ponds, and lined ponds (excluding structures used for augmentation)	557,767
10	Volume of pit water that is used for other beneficial uses off the mine site	
11	Defined Elements of Consumptive Use of Pit Groundwater (add Lines 7 through 10)	4,636,553

Tons Mined: 340,579 % Moisture 5.0

ASHRAE Evaporation Model			
A:	95		
B:	37.4		
V:	5		(mi/hr)
Pw:	0.69		(in-Hg)
Pa:	0.522		(in-Hg)
Hv:	970.4		(Btu/lb)
Evap Area:	10		(acre)

Pit Groundwater Balance		Amount (gallons)	
12	Total groundwater from pit	385,899,056	
13	Groundwater Augmentation (Volume of pit groundwater returned to the groundwater basic or sub basin)	0	
14	Stream Augmentation (Volume of put groundwater discharged to a definite stream, during flow conditions that are less than or equal to 50% exceedance or median historic flows.	0	Credits
15	Precipitation & Run-off (Volume of precipitation and surface run-off into a recharge pit or holding pond used for augmentation)	0	
16	Recycled Pit Groundwater (Volume of pit groundwater returned to a mine pit or holding basin not included on lines 7 through 10)	385,899,056	
17	Other Non-Consumptive Losses (Including pit groundwater returned to the land surface from which surface run-off flows into a mine pit, and other losses not included in lines 7 through 10)	0	
18	Add lines 13 through 18	385,899,056	
19	Other Consumptive Use (adjusted) Line 12 minus 18	0	

Total Reported Consumptive Use Of Pit		Amount (gallons)
21	Total Reported Consumptive Use Of Pit (add Line 11 and Line 19)	4,636,553

Facility's Equal Proportionate Share (EPS) 62,693,815 at 0.2 acre-feet for 962 acres