

Technical Memorandum

To: Kathy Arnold (Rosemont Copper Company)
Cc: Joel Carrasco (Tetra Tech)
From: Elton Smith
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Subject: **Rainfall Run-off Volumes - Rosemont Heap Leach Facility**
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1.0 Introduction

This memorandum provides the potential volume of stormwater run-off that will be captured by the Heap Leach Pad and associated ponds as per the feasibility design configuration (including the Phase 1 and 2 pads). The following section describes the results and methodology used in the volume calculations.

2.0 Climate Data

The precipitation values associated with all calculations were obtained from the Western Regional Climate Center (WRCC) website. The data from the Nogales 6N, Arizona weather station was found to be most appropriate due to its similar elevation and regional proximity to the project site. The “wettest” and “driest” year precipitations values were obtained by averaging the 20 years with the highest and lowest rainfall values, respectively.

3.0 Run-off Calculation Methodology

In order to calculate the cumulative rainfall run-off for each month of the average, wet, and dry scenarios the following assumptions were made:

- All rainfall coincident on the Heap Leach Pad and associated ponds is captured and no longer contributes to off-site stormwater flows
- Infiltration was omitted from the calculations for the sake of simplicity
- Evaporation was omitted from the calculations for the sake of simplicity

The run-off volumes were then calculated by multiplying the cumulative rainfall depth by the total Heap Leach Facility’s footprint. The results for all three (3) precipitation scenarios including monthly and yearly totals are provided in Table 1.0.



Table 1.0 Rainfall Run-off Volumes

Area of Heap Leach Facilities (ft ²): 9,210,847						
Operating Month	Avg. Year Precipitation (in/mo)	Dry Year Precipitation (in/mo)	Wet Year Precipitation (in/mo)	Avg. Year Run-off Volume (ac-ft/mo)	Dry Year Run-off Volume (ac-ft/mo)	Wet Year Run-off Volume (ac-ft/mo)
Jan	1.10	0.10	2.32	19.4	1.8	40.8
Feb	0.85	0.14	1.73	15.0	2.4	30.5
Mar	0.90	0.10	1.85	15.9	1.8	32.6
Apr	0.39	0.01	0.94	6.9	0.1	16.5
May	0.22	0.00	0.57	3.9	0.0	10.1
Jun	0.47	0.02	1.12	8.3	0.3	19.7
Jul	4.34	2.09	6.67	76.5	36.9	117.5
Aug	4.13	2.21	6.32	72.8	39.0	111.3
Sep	1.55	0.39	2.92	27.3	6.9	51.4
Oct	1.33	0.08	3.16	23.4	1.5	55.7
Nov	0.66	0.18	1.30	11.6	3.1	22.9
Dec	1.43	0.13	3.21	25.2	2.2	56.5
Yearly Total	17.37	5.45	32.09	306.1	96.0	565.5