

Hingtgen, Robert J

From: Bennett, Jim
Sent: Wednesday, February 12, 2014 4:06 PM
To: howwcook@yahoo.com
Cc: Hingtgen, Robert J
Subject: Soitec PEIR - Additional Information on Construction Water
Attachments: Construction Water Demand AECOM 7-9-13 REVISED_RUGGED_FOR COUNTY.pdf;
Construction Water Demand AECOM 7-9-13 REVISED_TDS_FOR COUNTY.pdf

Good Afternoon Mr. Cook,

The attached information is being provided per our discussion we had at the Boulevard Planning Group meeting last Thursday night regarding the construction water demand assumptions for the Rugged and Boulevard project sites. The two attached documents provide backup detail to the numbers that were included in the PEIR. These water demand estimates were prepared by AECOM, a consultant hired by Soitec. The Department of Planning & Development Services will provide responses to your comments including those you provided me last Thursday after the public review period has ended.

Thank you,

Jim Bennett, P.G. #7707, CHG#854
Groundwater Geologist

County of San Diego

Planning & Development Services
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Estimation Sheet

Project	
Rugged Solar	
Subject	
Construction Water Demand	
Methodology	
From the initial geotechnical investigation of the site, the difference between optimal moisture content and lowest observed value at the site and then multiplying through by dry unit weight determined through the proctor test yield roughly 8.38pcf.	
Estimated Water Use During Clearing, Grubbing and Grinding	
Empirical Rate of Water Used for clearing, grubbing, grinding and dust control (Based 42.1 acre site located near Boulevard, CA)	24,204 GAL/ACRE
Input Total Disturbance (Minus 20% that is low lying grass and already cleared from Sunrise Powerlink). 575 Acres X .20 = 460 acres	460 ACRE
Total water to clear, grub and grind 460 acres	11,133,840 GAL
Conversion to gallons per acre-foot	325,851
Total water to clear, grub and grind 460 acres	34 ACRE-FT
Total water to clear, grub and grind 460 acres	
Input expected duration to clear, grub and grind	40 DAY
Water demand to clear, grub and grind	0.85 ACRE-FT/DAY
Water demand to clear, grub and grind	278,346 GAL/DAY
Estimated Mass grading	
Input quantity of on-site fill used to balance site	29,835 CY
Input optimum moisture content	9 %
Input observed moisture content	2.5 %
Input dry unit weight of on-site fill	129 PCF
Weight of water to reach saturation	8.385 PCF
Water required to hydrate and gain compaction	30 GAL/CY
Input contingency to account for evaporation during summer months	1.667
Water required to hydrate and gain compaction	50 GAL/CY
Water for grading	1,505,012 GAL
Conversion to gallons per acre-foot	325,851
Water required for grading	5 ACRE-FT
Input quantity of Scrapers (CAT 627H @ 24 cubic yards per load)	3 EA
Volume per haul	24 CY/EA
Time per haul	10 MIN
Hauls per hour	18 EA/HR
Grading Rate	432 CY/HR
Grading Rate for each work day	3,456 CY/DAY
Time to complete grading (work days)	9 DAYS
Water demand to complete mass grading	0.54 ACRE-FT/DAY
Water demand to complete mass grading	174,336 GAL/DAY
Estimated Water Use for Concrete	
Quantity of concrete per tracker foundation	2.5 CY
Rate at which trackers are installed	40 EA/DAY
Quantity of concrete placed per day	100 CY/DAY
Percent of water in concrete	20 %
Conversion to gal/cubic yard	202 GAL/CY
Rate for placing concrete	4,040 GAL/DAY
Time to complete tracker foundations	90 DAY
Total water use for concrete	363,600 GAL
Estimated Water Use for Wind Days	
Based on 300 construction days out of 365 day calendar year	18 Wind Days
Dust suppression water demand on wind days	54,000 GAL/DAY
Total water use for wind days	972,000 GAL
Daily Dust Control	
Based on 300 construction days	300 Days
	18,000 GAL/DAY
Total Water Use for Daily Dust Control	5,400,000 GAL
Total Estimated Construction Demand	
Total Water Days 1-40	452,682 GAL Per DAY
Total Water Days 41-50	174,336 GAL Per DAY
Total Project Water Usage	19,374,452 Gallons
	59.46 ACRE-FT



Estimation Sheet

Project	
Tierra Del Sol Solar Farm	
Subject	
Construction Water Demand	
Methodology	
From the initial geotechnical investigation of the site, the difference between optimal moisture content and lowest observed value at the site and then multiplying through by dry unit weight determined through the proctor test yield roughly 8.38pcf.	
Estimated Water Use During Clearing, Grubbing and Grinding	
Empirical Rate of Water Used for clearing, grubbing, grinding and dust control <i>(Based 42.1 acre site located near Boulevard, CA)</i>	24,204 GAL/ACRE
Input Total Disturbance	420 ACRE
Total water to clear, grub and grind 420 acres	10,165,680 GAL
Conversion to gallons per acre-foot	325,851
Total water to clear, grub and grind 420 acres	31 ACRE-FT
<i>Total water to clear, grub and grind 420 acres</i>	
Input expected duration to clear, grub and grind	40 DAY
Water demand to clear, grub and grind	0.78 ACRE-FT/DAY
Water demand to clear, grub and grind	254,142 GAL/DAY
Estimated Mass grading	
Input quantity of on-site fill used to balance site	9,429 CY
Input optimum moisture content	9 %
Input observed moisture content	2.5 %
Input dry unit weight of on-site fill	129 PCF
Weight of water to reach saturation	8.385 PCF
Water required to hydrate and gain compaction	30 GAL/CY
Input contingency to account for evaporation during summer months	1.667
Water required to hydrate and gain compaction	50 GAL/CY
Water for grading	475,641 GAL
Conversion to gallons per acre-foot	325,851
Water required for grading	1.5 ACRE-FT
Input quantity of Scrapers (CAT 627H @ 24 cubic yards per load)	1 EA
Volume per haul	24 CY/EA
Time per haul	10 MIN
Hauls per hour	6 EA/HR
Grading Rate	144 CY/HR
Grading Rate for each work day	1,152 CY/DAY
Time to complete grading (work days)	8 DAYS
Water demand to complete mass grading	0.18 ACRE-FT/DAY
Water demand to complete mass grading	58,112 GAL/DAY
Estimated Water Use for Concrete	
Quantity of concrete per tracker foundation	2.5 CY
Rate at which trackers are installed	40 EA/DAY
Quantity of concrete placed per day	100 CY/DAY
Percent of water in concrete	20 %
Conversion to gal/cubic yard	202 GAL/CY
Rate for placing concrete	4,040 GAL/DAY
Time to complete tracker foundations	63 DAY
Total water use for concrete	254,520 GAL
Estimated Water Use for Wind Days	
Based on 249 construction days out of 365 day calendar year	15 Wind Days
Dust supression water deamnd on wind days	54,000 GAL/DAY
Total water use for wind days	810,000 GAL
Daily Dust Control	
Based on 249 construction days	249 Days
	18,000 GAL/DAY
Total Water Use for Daily Dust Control	4,482,000
Total Estimated Construction Demand	
Total Water Days 1-40	272,142 GAL Per DAY
Total Water Days 41-49	76,112 GAL Per DAY
Total Project Water Usage	16,187,841 Gallons
	50 ACRE-FT