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Visual Resource -Appendix 5.13 A

Landscape Photographs and Simulations

Submitted to:

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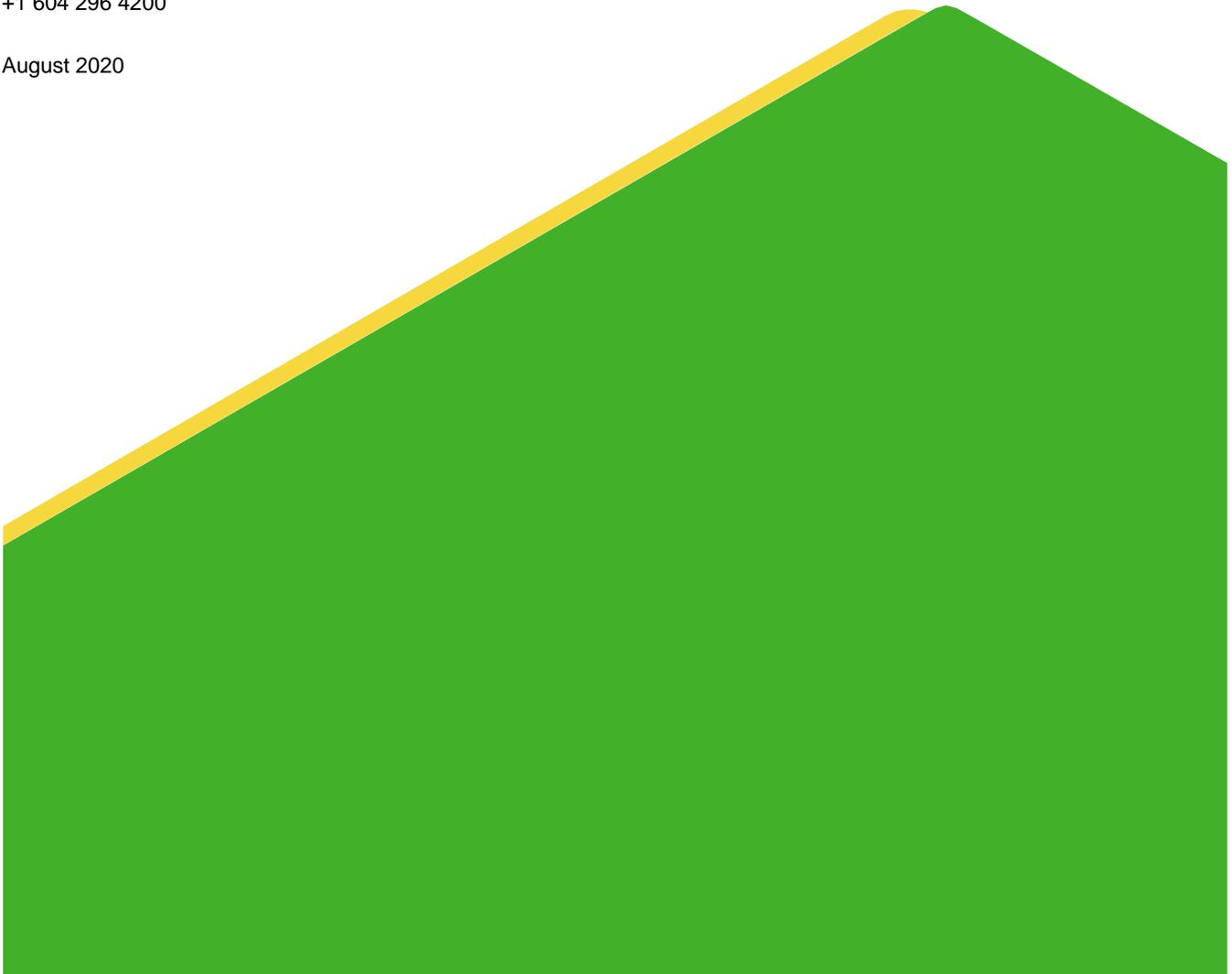


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1.0 INTRODUCTION

This report is included as Appendix 5.13A of the Applicant's (Hydrostor Inc.) Application for Certification (AFC) for a proposed Advanced Compressed Air Energy Storage (A-CAES) facility in the County of San Luis Obispo, California (the Project).

A photographic field survey was conducted by Golder Associates Ltd. (Golder) field staff during a field survey conducted between July 10th and 11th, 2021 to capture landscape photographs and observation information from viewpoint locations near the Project. Simulations of Project-related components were rendered in advanced 3D landscape modelling software (Autodesk 3D StudioMAX) from key observation points (KOPs) and composited with photographic images gathered during the photographic field survey. This included landscape modelling for daytime viewing as well as nighttime viewing to illustrate the Project lighting design. Photographic and simulation images are presented in Figure 1 to Figure 18. Photographic inventory information for surveyed KOPs is presented Table 1.

Following California Energy Commission (CEC) guidelines for preparing simulations, panoramic images presented in this report are provided as full page colour images of the existing site and the proposed Project from each KOP sized so that when held 10 inches from the viewers eye it is in scale with the actual viewing experience. Based on standards for scaled panoramic simulations that have a cylindrical projection, the images presented are 4.5 inches high by 15.5 inches wide and represent an approximately 90-degree horizontal field of view (New Zealand Institute of Landscape Architects 2010, Palmer 2019). Panoramic images presented in this report were prepared for presentation on A3 paper size (i.e., 11 by 17) while minimizing edge distortion. The horizontal extent of these panoramic images represents a sufficiently wide field of view to depict the landscape context which an observer can view in a single viewing direction.

These images do not account for effects presented by seasonal atmospheric conditions (e.g., fog and haze) beyond those presented in the photographs and simulations. Due to variations in the calibration of different monitors, printers, and other media that may be used to display these images, consistent reproduction is not guaranteed.

There are two options for the 230 kV transmission line route that would extent from the Project illustrated in these simulations. The preferred option for the transmission line route interconnects at the PG&E Morro Bay substation to the northwest (Preferred Route). An alternative routing is also proposed slightly further to the north than the Preferred Route (Alternate 1). The 230 kV transmission line routes used in the Application are considered to be preliminary and subject to change. The generation tie routing options simulated here were prepared for the purposes of supporting the visual assessment.

2.0 LANDSCAPE PHOTOGRAPHS AND SIMULATIONS

Figure 1: KOP1 (Cerro Cabrillo) – Existing Conditions



Figure 2: KOP1 (Cerro Cabrillo) – Project Site with Preferred Route Simulation



Figure 3: KOP2 (Canet Road) – Existing Conditions



Figure 4: KOP2 (Canet Road) – Project Site with Preferred Route Simulation



Figure 5: KOP3 (Quintana Road) – Existing Conditions



Figure 6: KOP3 (Quintana Road) – Project Site with Preferred Route Simulation



Figure 7: KOP4 (San Luisito Creek Road / State Route-1) – Existing Conditions



Figure 8: KOP4 (San Luisito Creek Road / State Route-1) – Project Site with Preferred Route Simulation



Figure 9: KOP5 (State Route-1 Southbound) – Existing Conditions



Figure 10: KOP5 (State Route-1 Southbound) – Project Site with Preferred Route Simulation



Figure 11: KOP6a (State Route-1 Southbound / San Bernardo Creek Road) – Existing Conditions



Figure 12: KOP6a (State Route-1 Southbound / San Bernardo Creek Road) – Project Site with Preferred Route Simulation



Figure 13: KOP6b (State Route-1 Northbound / San Bernardo Creek Road) – Existing Conditions



Figure 14: KOP6b (State Route-1 Northbound / San Bernardo Creek Road) – Project Site with Alternate 1 Simulation



Figure 15: KOP7 (Little Morro Creek Road) – Existing Conditions



Figure 16: KOP7 (Little Morro Creek Road) – Project Site with Preferred Route Simulation



Figure 17: KOP5 (State Route-1 Southbound Southbound) – Existing Nighttime Conditions

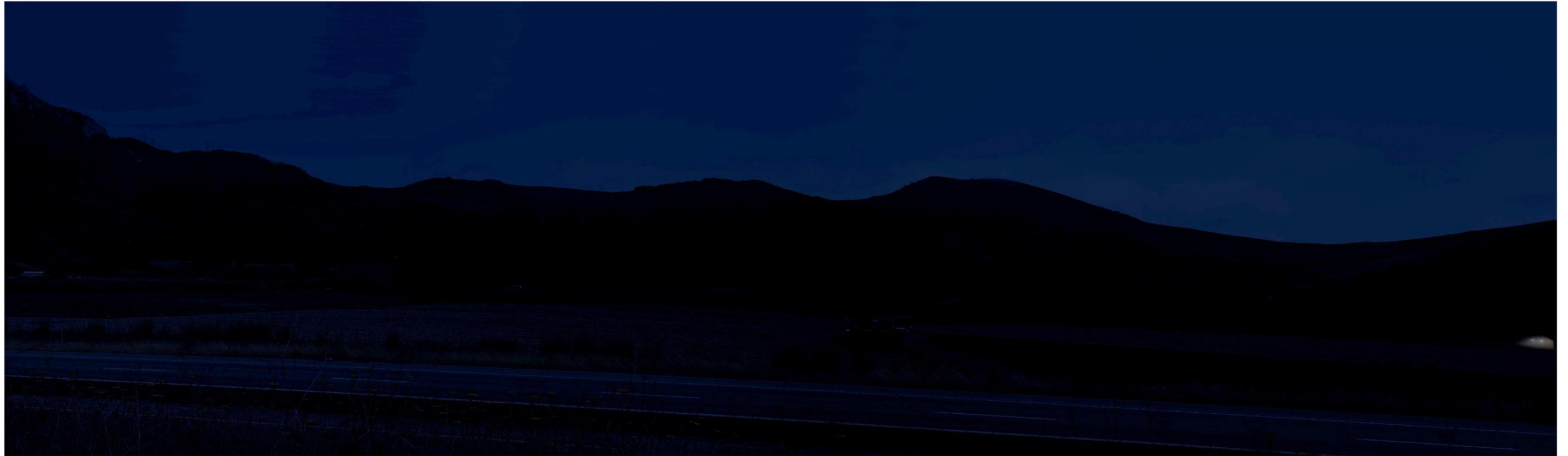


Figure 18: KOP5 (State Route-1 Southbound Southbound) – Nighttime Project Lighting Simulation



3.0 PHOTOGRAPHIC INVENTORY OBSERVATION LOG

Date Started: 07/10/2021 Date Completed: 07/11/2021

Photographer: Maria Sheen (Golder)

Type of Camera: Nikon Z5

Lens: 50mm

Projection: UTM Zone 10 Datum: NAD 83

Table 1: Key Observation Point Observations

Key Observation Point	Photo Date	Viewing Conditions	Viewpoint Type	Viewing Duration ^(a)	Purpose of Photo	F Stop ^(b)	ISO	Exposure (sec)	X Coordinate	Y Coordinate	Elevation (MASL)	Approx. Viewing Direction (°) ^(c)
KOP1 - Cerro Cabrillo	07/10/2021	Clear and sunny	Recreational users	Sustained / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/9	100	1/500	698680	3914329	267	90°
KOP2 - Canet Road	07/10/2021	Clear and sunny	Residents, local motorists, agricultural workers	Permanent / Sustained / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/8	100	1/500	701067	3914618	30	250°
KOP3 - Quintana Road	07/11/2021	Clear and sunny	Residents and local motorists	Permanent / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/9	100	1/500	699111	3915356	16	135°
KOP4 - San Luisito Creek Road / State Route-1	07/11/2021	Clear and sunny	Residents, local motorists and regional travellers	Permanent / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/11	200	1/500	701329	3914645	31	250°
KOP5 - State Route-1 Southbound	07/11/2021	Clear and sunny	Local motorists and regional travellers	Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/10	200	1/400	700199	3914992	41	185°
KOP6a - State Route-1 Southbound / San Bernardo Creek Road	07/11/2021	Clear and sunny	Residents, local motorists and regional travellers	Permanent / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/11	200	1/500	699200	3915411	15	160°
KOP6b - State Route-1 Northbound / San Bernardo Creek Road					Project site and PG&E's Morro Bay substation alternate option (Alternate 1)	f/11	200	1/500				260°
KOP7 - Little Morro Creek Road	07/11/2021	Clear and sunny	Residents and local motorists	Permanent / Brief	Project site and PG&E's Morro Bay substation preferred option (Preferred Route)	f/10	200	1/400	695821	3916951	17	150°

Notes:

- a) Viewing duration ratings reflect the exposure of viewers related to types of activities typically available at each site and the opportunities they present for viewing: Brief = temporary and/or intermittent viewing opportunity (i.e., moving vehicle); Sustained = extended viewing opportunity (i.e., rest stop, viewpoint); Permanent = continual viewing opportunity (i.e., residence).
- b) Aperture settings may vary for separate frames of a panoramic sequence to normalize exposure of each image.
- c) Viewing direction provided for panorama presented in this report.

°= degrees; mm= millimetres; sec= seconds; MASL= metres above sea level; NAD= North American Datum; UTM= Universal Transverse Mercator; ISO = International Standards Organization is a numerical value used colloquially in the context of film to represent the sensitivity of a given film emulsion to light, often referred to as "film speed."; KOP = Key Observation Point;

REFERENCES

- Palmer, J.F. 2019. The Best Paper Format and Viewing Distance to Represent the Scope and Scale of Visual Impacts. *Journal of Digital Landscape Architecture*, 4-2019, pp. 142-151. Available at: https://gispoint.de/fileadmin/user_upload/paper_gis_open/DLA_2019/537663015.pdf. Accessed June 2021.
- New Zealand Institute of Landscape Architects. 2010. Best Practice Guide - Visual Simulations BPG 10.2. Available at: https://nzila.co.nz/media/uploads/2017_01/vissim_bpg102_lowfinal.pdf. Accessed June 2021.