



**AERIALSOLUTIONS**  
Industrial UAV systems

## SITE NAME

### PV System Inspection Report

## LOCATION

Power: 0.85 MW<sub>DC</sub>  
Module Technology: Monocrystalline  
Racking: Fixed-tilt 15°  
Azimuth: 15° SW  
Location: LATITUDE, LONGITUDE

Contact:  
CONTACT NAME  
COMPANY NAME  
ADDRESS  
PHONE NUMBER  
EMAIL

Report Generated: May 11, 2018



CONFIDENTIAL

## Site Overview

The SITE NAME Solar Project is located in CITY, STATE, Canada, approximately 5 miles northeast of CITY, STATE. The Solar Facility encompasses one rooftop installation, split into east and west sections. In total, the Solar Project was constructed using 2,502 CanadianSolar CS6U-340 Wp monocrystalline modules. Peak power is 850.68 kWdc.

## Summary of Major Findings

All affected kW reported in DC.

- Shattered module on southern edge.
- Module issues affecting 23 kWdc (98%) of affected DC.

*Note: Affected DC measures kWp of modules affected by the defect, and does not mean that all of the capacity from affected modules is lost.*

## Defects by Site

	Cell	Module	Cracking	Other	Total
<b>SITE NAME</b>	1	67	1	3	<b>69</b>
<b>Total</b>	<b>1</b>	<b>67</b>	<b>1</b>	<b>3</b>	<b>69</b>

## Estimated Affected DC (kW) by Site

	Cell	Module	Cracking	Other	Total
<b>SITE NAME</b>	0.11	22.78	0.34	0	<b>23.23</b>
<b>Total</b>	<b>0.11</b>	<b>22.78</b>	<b>0.34</b>	<b>0</b>	<b>23.23</b>

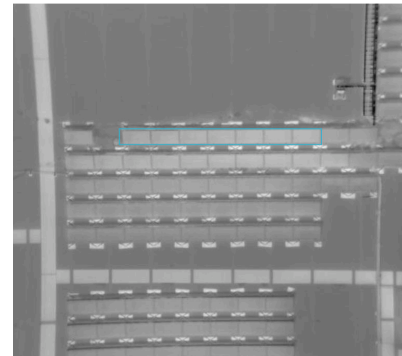
## Aerial Thermography with UAS

The SITE NAME Solar Project was inspected with an unmanned aerial system (UAS) on April 27, 2018 at approximately 3:00 PM local time. The UAS was a Falcon 8+ with a Radiometric 640x512 thermal camera with a FLIR Tau2 core. Camera heading was maintained (UAS does not turn around for each pass).

## Examples of Faults

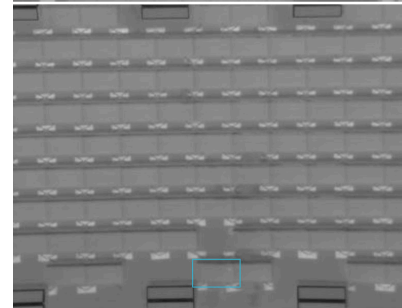
Module

Modules presents as hotter than the surrounding modules. Possibly string issue(s).



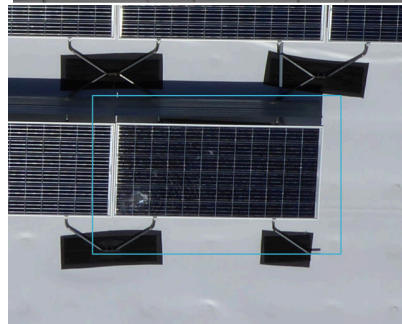
Cell

Single hot spot with distinct geometry.



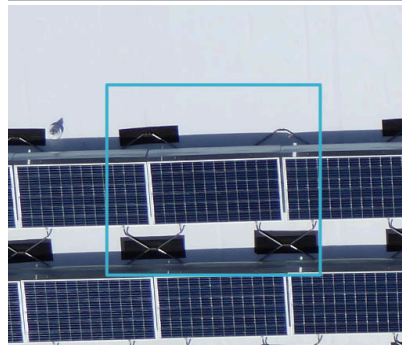
Cracking

Cracked or shattered glass on module.



Other

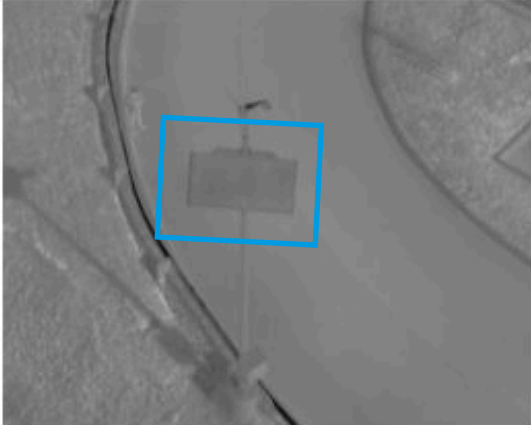
Missing slip sheets on roof mount.



## Inspection of Parking Lot Modules

The SITE NAME Solar Project requested that modules in the parking lot be inspected as well. There appears to be no damage or soiling present on these modules.

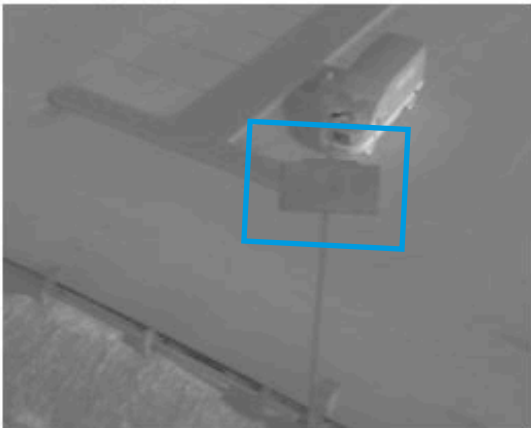
**Panel 1**



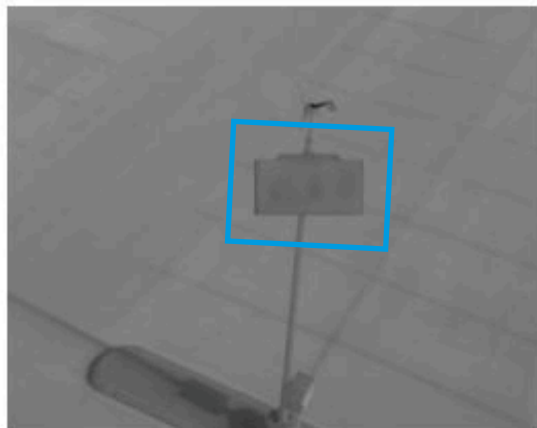
**Panel 2**



**Panel 3**



**Panel 4**

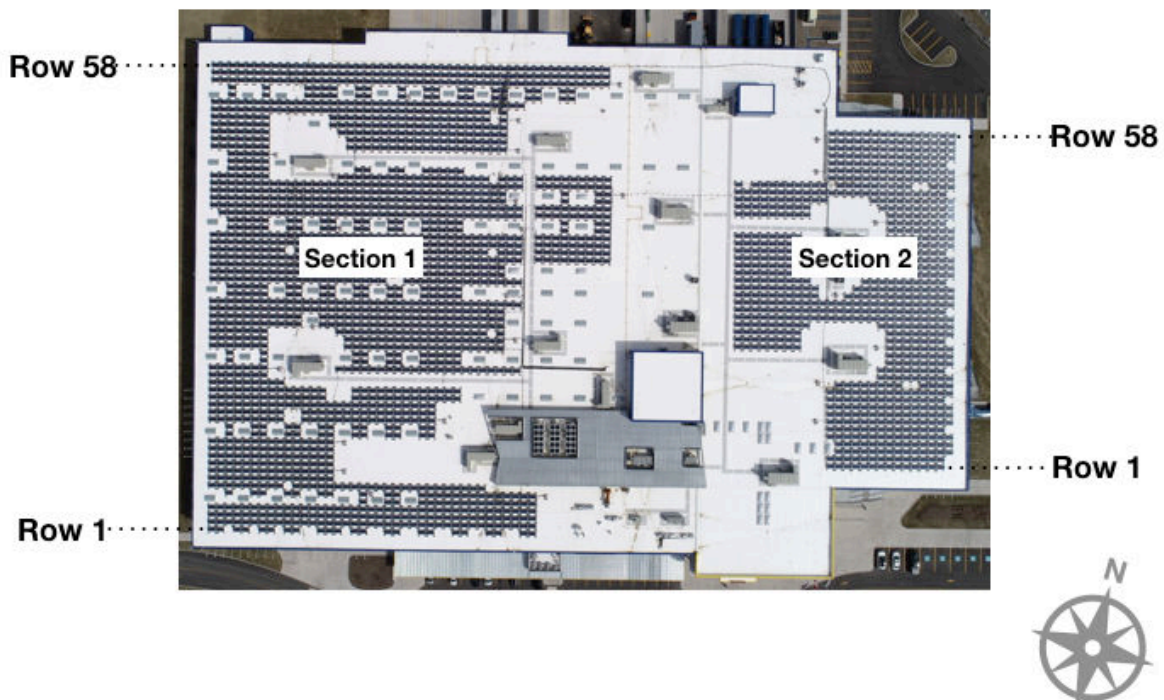


## Localizing Defects

Defects at the SITE NAME Solar Project are localized using local coordinate systems defined for each section. The Section number (1- for west, 2- for east) is given, followed by the row number (south-north) for the row. All GPS locations in the .KML files are accurate to the nearest module.

Modules are counted up from **1** starting at the westernmost module in the Section, as illustrated in the diagram below.

### OVERVIEW OF SITE AND ARRAYS ANALYZED (ROW NUMBERING):



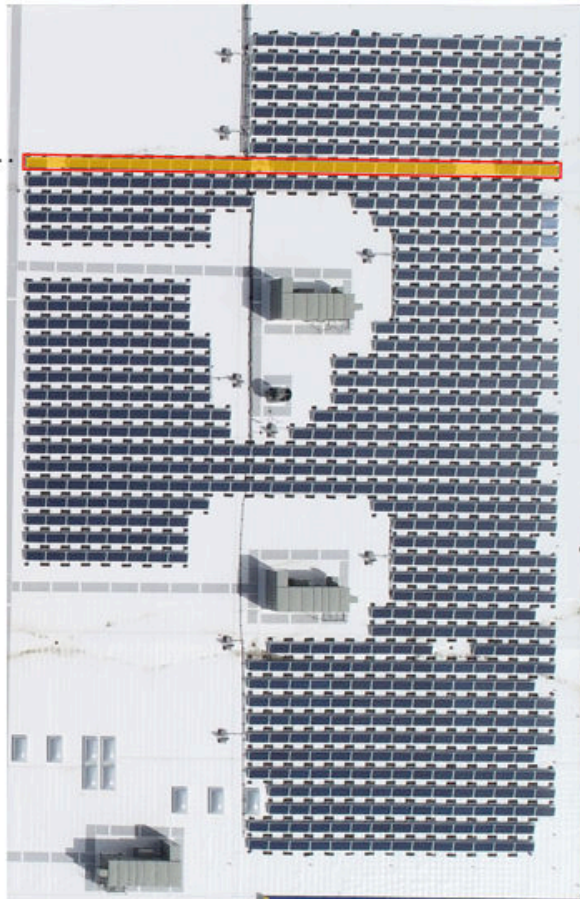
### OVERVIEW OF SITE AND ARRAYS ANALYZED (MODULE NUMBERING):

Highlighted defect in Section 2, Row 25, Position 15.



Additional example of defect localization:

**Section 2  
Row 39**



**Section 2, Row 39**



**Defects detected in Section 2, Row 39, Modules 3-9**

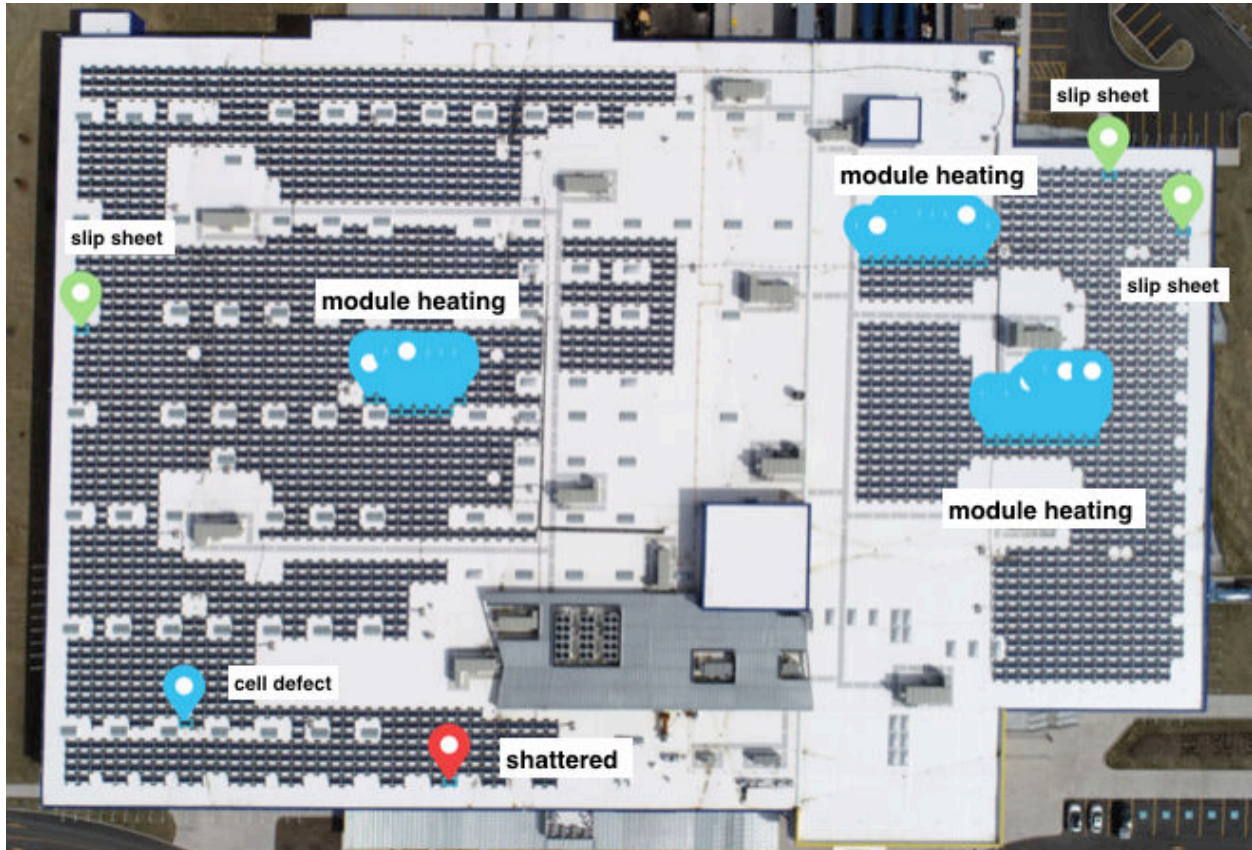


# SITE NAME Solar Project

[Link to images](#)

[Link for .KML download](#)

Defects are indicated with colored pins.



## Defect Locations

tag_name	section_id	row	module
cracking	1	1	31
cell	1	5	10
module	1	33	26
module	1	33	27
module	1	33	28
module	1	33	29
module	1	33	30
other	1	40	1
module	2	22	16
module	2	22	15
module	2	22	11
module	2	22	12
module	2	22	13
module	2	22	14
module	2	22	19
module	2	22	18
module	2	22	17
other	2	46	20
module	2	23	11
module	2	23	12
module	2	23	13
module	2	23	14
module	2	23	19
module	2	23	18
module	2	23	17
module	2	23	16
module	2	23	15
module	2	24	19
module	2	24	18



module	2	24	17
module	2	24	16
module	2	24	15
module	2	24	14
module	2	25	15
module	2	25	16
module	2	25	17
module	2	25	18
module	2	25	19
module	2	38	1
module	2	38	2
module	2	38	5
module	2	38	3
module	2	38	6
module	2	38	8
module	2	38	10
module	2	38	4
module	2	38	7
module	2	38	9
module	2	39	3
module	2	39	4
module	2	39	5
module	2	39	6
module	2	39	7
module	2	39	8
module	2	39	9
other	2	41	26
module	1	35	31
module	1	35	30
module	1	35	29
module	1	35	28
module	1	35	27

module	1	35	26
module	1	35	25
module	1	35	24
module	1	34	27
module	1	34	28
module	1	34	29
module	1	34	30
module	1	34	31
module	1	34	24
module	1	34	25
module	1	34	26