



California
**Department of
Conservation**
Geologic Energy Management
Division

**Joint Hearing:
Senate Natural Resources and Water Committee
Assembly Natural Resources Committee
January 27, 2020**

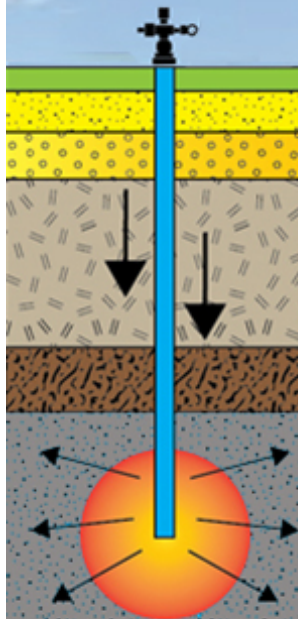
Uduak-Joe Ntuk, State Oil and Gas Supervisor, Department of Conservation

CalGEM Priorities

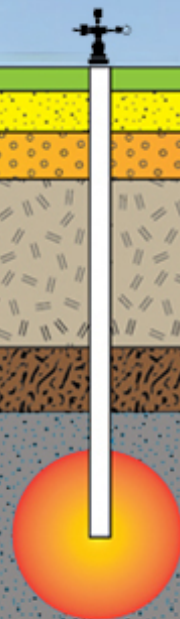
- Strengthening its regulatory program, emphasizing compliance, and **safeguarding public health, safety, and the environment** through field inspections and enforcement.
- Continuing to **professionalize**, and building upon **progress** in recent years to **improve** the state's rules and **oversight** of oil and gas production.
- Helping to **advance** the state's transition toward **carbon neutrality** by 2045.
- As production has been reducing in recent decades, continuing to ensure that operators take **responsibility** for safely decommissioning wells and infrastructure.

Phases of Cyclic Steam Well

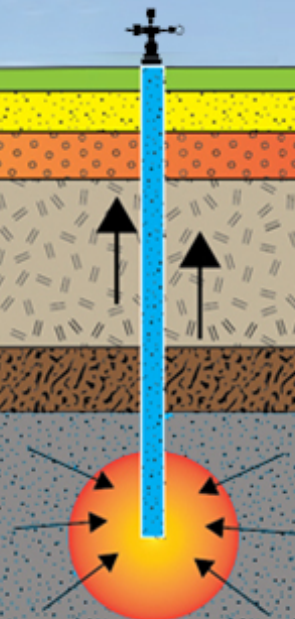
1. Steam Injection



2. Heat Diffusion



3. Production



Surface Expressions

According to Title 14, section 1720.1, of CalGEM's regulations, "surface expression" means a flow, movement, or release from the subsurface to the surface of fluid or other material such as oil, water, steam, gas, formation solids, formation debris, material, or any combination thereof, that is outside of a wellbore and that appears to be caused by injection operations.



**2011 surface expression in
Midway Sunset**

Cymric 1Y Surface Expression



[CalOES Spill Report 19-3040:](#)

- Reported May 10, 2019. Ceased same day.
- 105 barrels water and oil recovered.
- Release contained and area cleaned.

[CalOES Spill Report 19-3668:](#)

- June 8, 2019. Ceased June 12.
- Reactivated June 18. Additional vent reported June 23.
- All vents inactive since August 1.
- 31,798 barrels water and oil recovered. Per [Cal Spill Watch](#), site cleanup completed October 11.

Chevron Cymric 1Y Area Surface Expression Response

- ✓ July 22, 2019 - A Unified Command was established for emergency response, resources protection and recovery efforts.
- ✓ Notices of Violation issued for each event and amended each time an expression reactivated.
- ✓ Order to Chevron on July 12, 2019 to perform remedial work at 1Y.
- ✓ A letter to Chevron on September 10, 2019, requesting extensive technical reports and data relating to its cyclic steam operations in the entire Cymric field. The purpose of that letter is to enable CalGEM and the National Labs to conduct a full assessment of the field to gain a holistic view of the causes of these multiple surface expressions. That assessment is currently in process.
- ✓ Order to Chevron on October 2, 2019, to pay \$2.7 million in civil penalties.
- ✓ Site cleanup completed October 11, 2019.

Cymric 1Y Surface Expression



Cymric 1Y Surface Expression





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Oil Field Surface Expressions

Under strengthened regulations effective April 1, 2019, surface expressions violate state regulations enforced by the Geologic Energy Management Division (CalGEM, formerly DOGGR). A surface expression can occur when steam injected under pressure to produce oil breaks through natural geologic barriers and comes to the surface. The releases in the Cymric, Midway Sunset, and McKittrick oil fields in Kern County are not near population centers or sources of drinking water. All of the expressions are contained and are clustered in a few areas. CalGEM is collaborating with independent experts from the Lawrence Livermore and Sandia National Laboratories to investigate the expressions in the Cymric field.

Refer to the [California Office of Emergency Services \(CalOES\) Spill Report](#) for additional information on specific surface expressions. Use "Search" to enter the incident number, for example, 19-7291 (numbers available below), for reports.

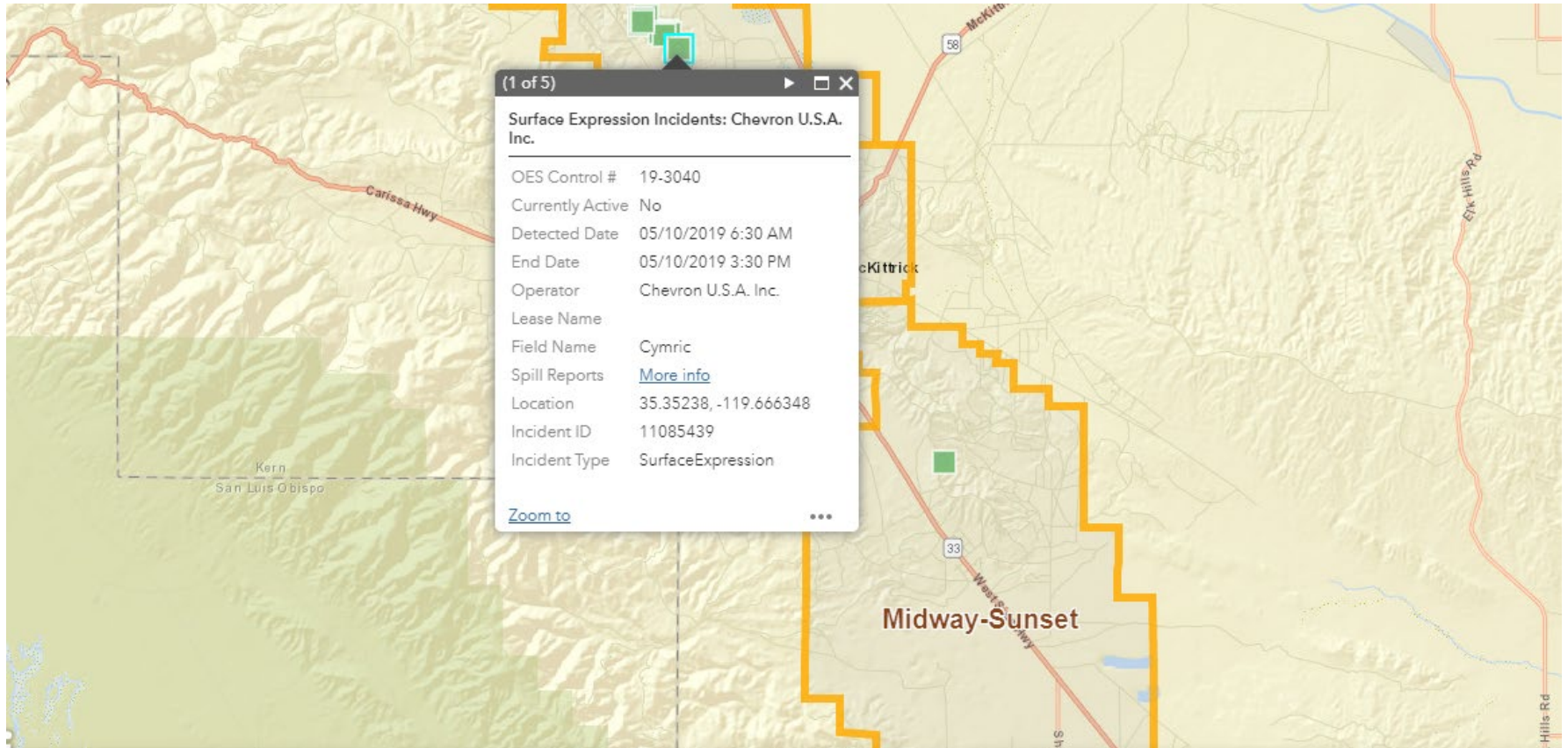
Enlarge map image for current map.



Chevron Cymric McPhee 36W Area Surface Expressions

- [CalOES Spill Report 19-7291](#): Incident began November 13, 2019. Expression inactive since November 14. Recovered volume: 20 barrels water and oil. Located approximately 120 feet west of March 29, 2018 expression in Gauge Setting 5-D area. Chevron posted danger signage and lights. External company monitoring for any gas emissions. Chevron notified of two vertical cracks on hillside and road above. Operator addressing. Environmental cleanup complete and site restored.
 - **DOGGR Response:** [Notice of Violation, November 18, 2019](#) (PDF)

Interactive Online Map of All Surface Expressions in the Region



CalGEM Initiatives

- Independent review of CalGEM's permitting process for well stimulation and underground injection control. That review will be conducted by the Office of State Audits and Evaluation at the California Department of Finance.
- Concurrent, third-party scientific review by the Lawrence Livermore National Laboratory of pending well stimulation permit applications to ensure the state's technical standards for public health, safety and environmental protection are met prior to approval of each permit.
- Given the extent of recent, unprecedented surface expressions in the Cymric and Midway-Sunset fields, a moratorium was put in place in November on new permits for high-pressure steam injection above fracture pressure pending an investigation of the cause of these spills.
- Examine current oil and gas regulations, and identify gaps that need to be filled better protect public health and safety. CalGEM is coordinating with other state and local entities.
- Extensive public meetings in both the pre-rule making and formal rule making processes, especially in communities that are impacted the most by oil and gas operations.

Recent Reports

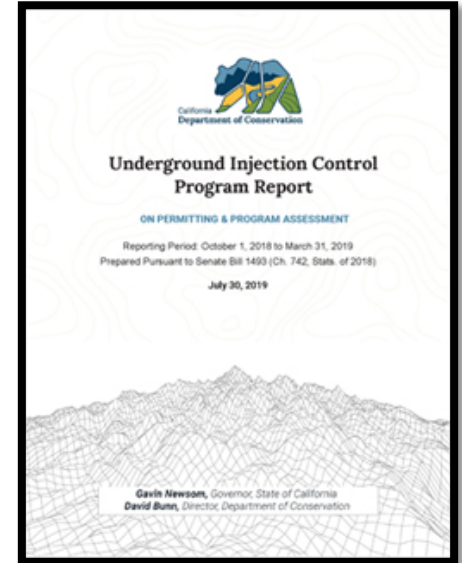
AB 2729 Report - This report provides annual updates on the milestones, achievements, and persistent challenges of CalGEM's Idle Wells Program.

SB 4 Report – Provides descriptive statistics of well stimulation permits, chemicals used, water volumes, and other data.

SB 854 Report – Reports on how many of various types of oil field operations that CalGEM should witness and how many they actually witness.

SB 1493 Report – Includes summary statistics about the UIC program including aquifer exemptions, project reviews, and other indicators.

CCST Orphan Well Report – This report provides a rough estimate of the cost to remediate the state's orphan wells under different scenarios and assumptions.



SB 1493 Report



Office of Spill Prevention & Response (OSPR)

Created in 1991 by the *Lempert-Keene-Seastrand Oil Spill Prevention and Response Act*;

OSPR is the lead State agency for oil spill prevention, preparedness, response, and recovery/restoration in California

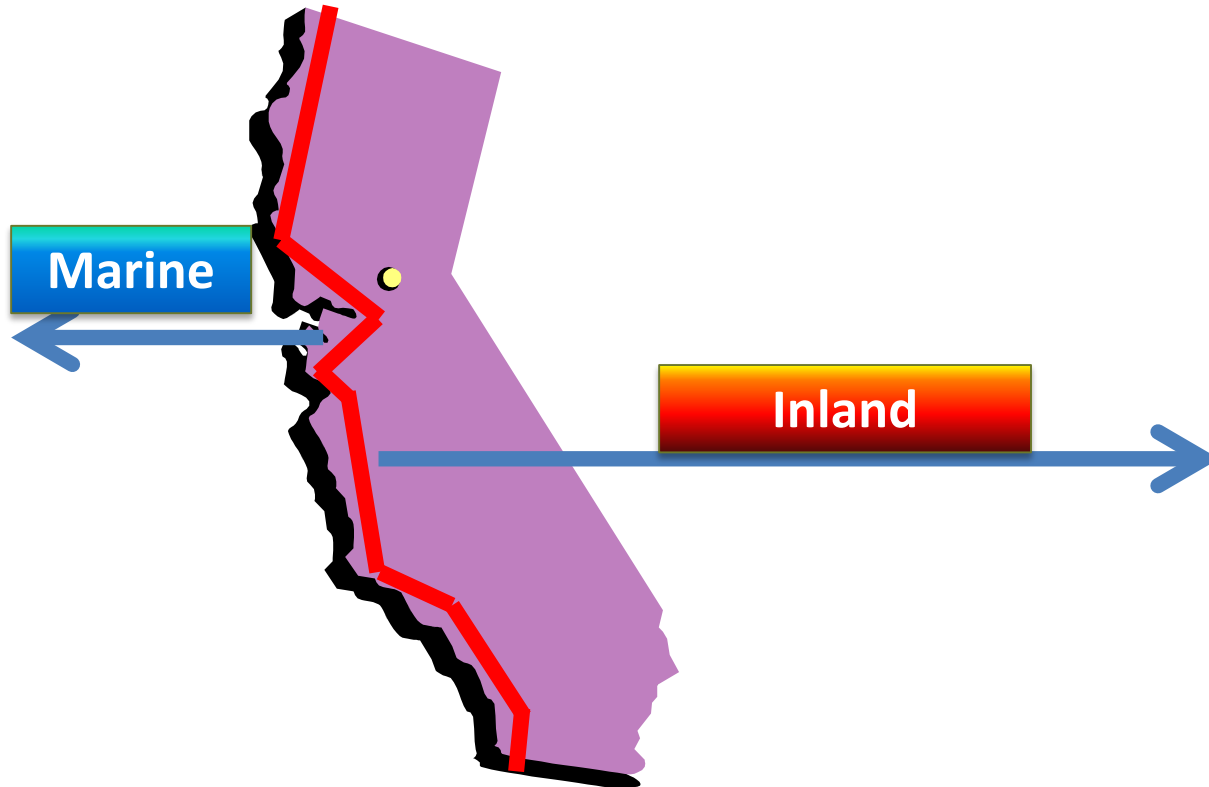
OSPR Administrator Thomas Cullen



California Department of
Fish and Wildlife

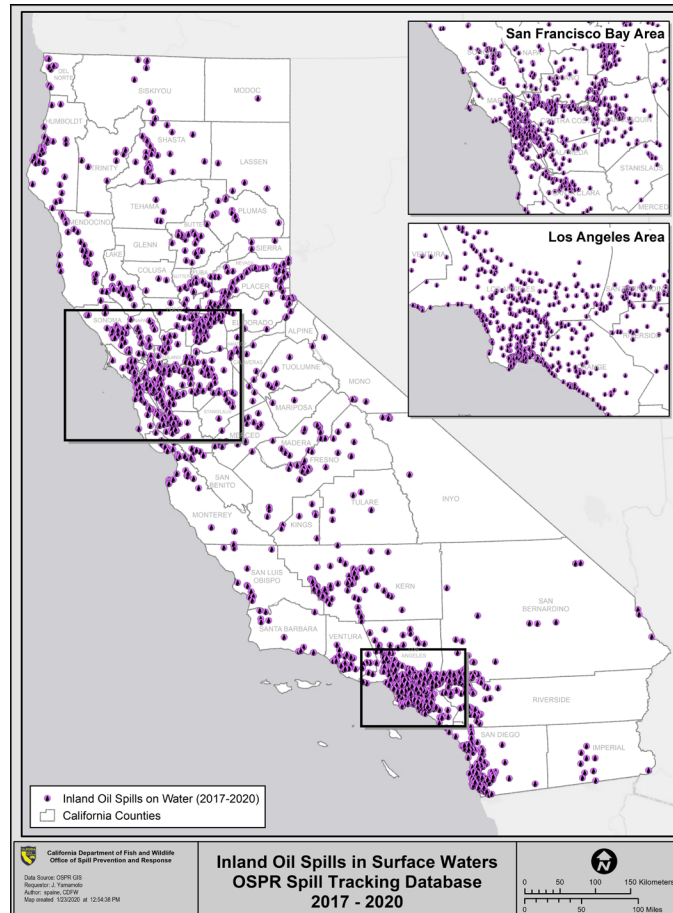
pre-July 2014

OSPR's efforts were limited to marine oil spills

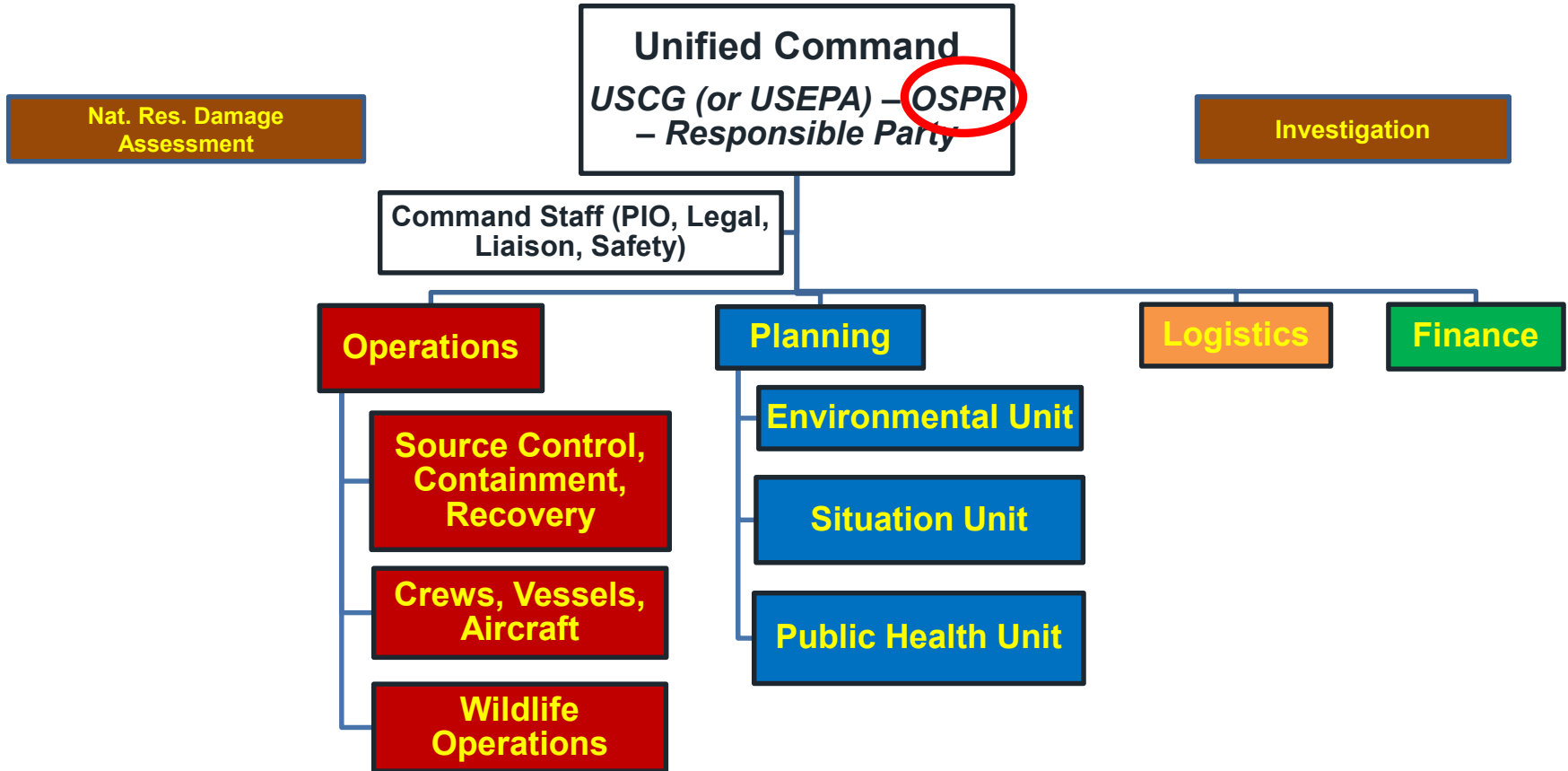


Oil Spills as reported to CalOES

2017-2020



Incident Command Structure



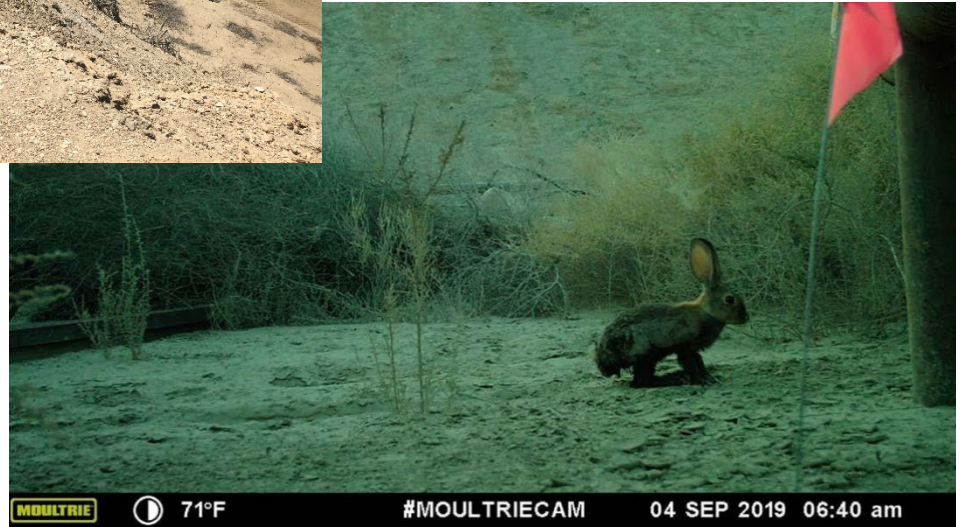
“Zon” gun (noise-maker for hazing)

Exclusionary Fencing



OSPR UAV Flight

Oiled cottontail on night camera





THANK YOU

Questions?